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VŠB - Technical University of Ostrava
Faculty of Economics
Department of European Integration



International Conference on European Integration 2014

ICEI 2014

Proceedings

of the 2nd International Conference
on European Integration 2014

May 15 – 16, 2014

Ostrava, Czech Republic

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Faculty of Economics

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The conference is organized by:
VŠB – Technical University of Ostrava,
Faculty of Economics,
Department of European Integration



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Foreword

Ladies and gentlemen, dear readers,

it is with pleasure that I can address you on the occasion of the International Conference on European Integration (ICEI) taking place in Ostrava and organised in the context of this year's 10th anniversary of the Czech Republic's membership in the European Union. It was very encouraging to see that this anniversary has revived national discussion not only about the past 10 years, but also about the scope to which extent we can draw on the potential offered by the EU membership to the Czech Republic. At the same time, we find ourselves only a short period ahead of the European elections which are scheduled here in the Czech Republic for 23 and 24 May. I therefore also trust that this moment will contribute to active participation by voters.

What the EU membership has brought to the Czech Republic? Being a Czech national, I can say that for me personally the main benefit lies in the November 1989 dream of „The return to Europe“ becoming a reality. This was of course meant symbolically, as the Czech place has always been in the centre of Europe – by its geographical position, history or culture. In this sense, accession to the EU has had in the first place a civilizational dimension: it has reflected Czech re-attachment to the community of values based on freedom, democracy, respect to human rights and principles of the rule of law.

The perspectives of membership have also had an enormous motivating potential for the whole country. Here, I would add that the same applies to the full integration into NATO in 1999. The EU accession was not an objective in itself, but it was also a beginning of a new journey or story, which we live to date and which has brought both successes and partial failures. In spite of that only few doubt today that our country, the Czech Republic, has largely benefited from the EU membership.

We are now marking 10 years in the Union. I therefore trust that the conference will contribute to further analysis of the achievements as well as of the unused potential EU offers. I trust it will also discuss challenges ahead of us and the future of our Union. The dialogue on EU'S future continues and you can be part of it.

Wishing you an inspirational experience



Jan Michal

*Head of the Representation of the European
Commission in the Czech Republic*

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Globalization of the World Economy and the Impact of China's Expansion on the Competitiveness of EU

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Abstract

Globalization has become the most important phenomenon of global economy. Financial crisis, which have been attacking Asia since 1996, represented natural costs of its too quick economic growth and widespread liberalization. Although, it showed its resilient and internal motivation during financial crisis, still it was not able to escape economy stagnation earlier than the end of the millennium. Temporary free market place was filled by China. It becomes world's second largest economy in terms of GDP volume in 2009 and simultaneously the largest goods exporter in the world. It is the biggest FDI recipient and became the world's third largest country concerning outbound FDI in 2013. They can be assigned by the attribute "engine of the world economy", what historically was the role of the US. China's economic growth carries various risks. Beside the internal ones, it lies mainly in a fact that the economies of the EU countries, which were not able to adapt to the consequences of financial crisis, can sustain only thanks to exports of which the significant part heads to China. Since China's quality and technical level of production is increasing, liabilities in the EU current account of the balance of payment is deepened by mutual trade relations; negatively affecting unemployment rate and government debt. Through acquisitions, China purchases the know-how of the EU companies and thereby gradually assumes their own export markets. By this, companies lose their competitiveness and all 28-member block loses its real opportunity to adapt to this situation successfully.

Keywords: *Chinese economy, Competitiveness, Globalization, European Union, FDI, Financial crisis, Trade*

JEL Classification: *F10, F21, F50*

1. Introduction

Rapid global economy growth which is, under increasing globalisation pressure of all economic processes, brought many differentiated and even contradictory results for its territorial components in the last decades. In parallel, there were still stronger efforts for broader cooperation under various form of regional economic integration and creation of new trade blocks or another form of interest group with aim to promote global interests. These processes became catalyst of international financial or protracted economic crisis. Its enormous "toxicity" is demolishing the existing protecting safety nets and, to a large extent, undermined many positive changes in global economy progress and confirmed that any country or region is not immune to its consequences. On the other hand, the entire period beginning at the turn of the millennium changed the national economies position in term of international competition very quickly. Chinese

economy expanded at the expense of ASEAN4 countries (Hong Kong, Singapur, Taiwan and South Korea). Much like these countries, it offers sufficient extremely cheap labor force, enormous domestic market and shows a political support for economic reforms.

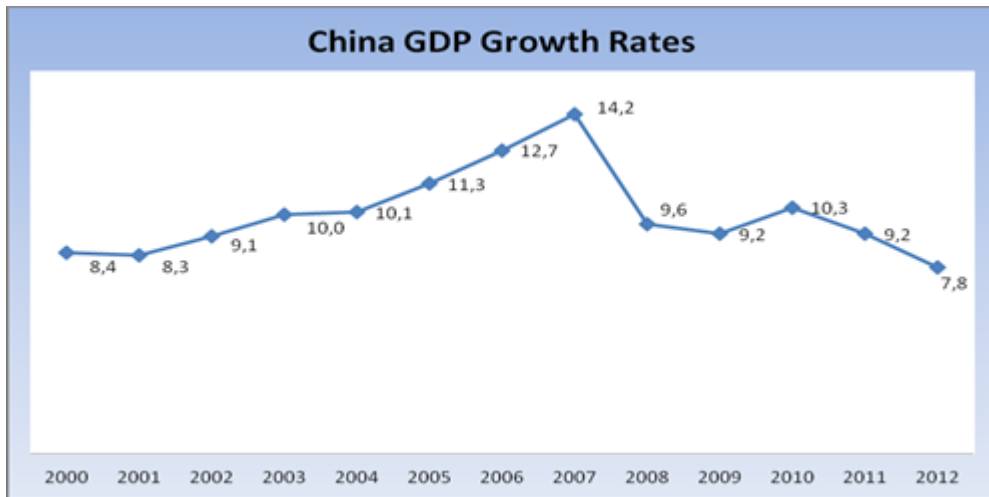
The presented article is devoted to analyzing international position of Chinese economy. It is focused on analysis of Chinese success and growing risk, which are important for European community. Hypothesis regarding its economic strategy with international focus and continuous growth of its competitiveness are tested. The main goal is to analyze links between inbound of FDI, as main driver of the internal comparative advantages revival, and export growth. Subsequently, it focuses on links between outbound of FDI with goal to secure energy inputs and technology for further economic growth. The article also highlights the importance of education support and growing research and development base with course to enter high-tech segment and ultimately to reach global economic and political dominance. Examination of the economic aspects of the Chinese economy expansion is in focus of a number of internationally recognized experts: G. Chow, B.C. Fishmann, F. Fukuyama, E. Graham, Ch.H. Kwan, P. Krugman, O. Shenkar, J. Stiglitz or A. Subramanian. Respected experts are also E. Cihelková, S. M. Obadi, P. Verček, M. Vošta, či I. Bolotov. Highly ranked are also analysis of international organizations and consulting firms like UNCTAD, OECD, or GoldmanSachs and McKinsey Global Institute.

2. China's Position in Global Economy

China has not introduced itself on global scene randomly. It was the culmination of a successful synchronization of the whole set of major strategic decisions and internal restructuring changes which fully rely on an existing comparative advantages of the country and its ability to overcome "its own weaknesses" quickly and efficiently. They were supported by the favorable international climate creating enough space for realization of new "*players*." Particularly important strategic steps China conducted in connection to ensuring its energy security. It began to build its own resources base, which should have crucial importance for its overall direction of its development strategy after 2020. In addition to construction of gas and oil pipelines, opening hundreds of new coal mines and dozens of thermal power plants, it has more than 50 under construction, including almost 20 new nuclear units. After its activating, it will form a part of China's energy mix after 2020 along with the construction of dozens of new environmentally friendly powerplants. It is obvious that in the future it will have a significant impact, for example, on the price of uranium on the world market which is likely to cause its acute shortage.¹

¹China based its philosophy of covering the demand for this strategic raw material on principle of three thirds: it obtains a 1/3 of uranium from home production, 1/3d from its foreign acquisitions and one-third from global commodity markets.

Figure 1: China GDP Growth Rates (2000-2012)



Source: Author calculation based on data from UNCTADStat. Available online at: <http://unctadstat.uncad.org/TableViewer/tableView.aspx>

The whole growth process of the Chinese economy is based on a high rate of foreign investment inflow, especially direct (FDI). Although, the share of fixed capital formation in GDP is enormous (about 54% of GDP) being to the detriment of internal consumption, the government spends huge financial resources for building regional infrastructure at an unprecedented rate, modernizing public administration and domestic industrial base and rapidly liberalizing economic life. Although, the whole process is grandiose and not avoiding the various errors and mistakes, implemented changes literally “catapulted” it among the world powers. China became the world's largest exporter of goods in 2009 and the biggest service exporter in 2013. It became the second biggest economy in terms of produced GDP (PPP) at the same time. It is natural that during the last decade China has become the largest recipient of FDI and should also be the largest or second largest exporter regarding outward investment by 2015. FDI helped China to “disenchant” and robust, until then, unused development potential. By its revival there was still increasing demand for new inputs and to that extent that until China wanted to maintain its robust expansion growth as a strategic priority, it was forced to acquire more and more additional resources from abroad and expansion overseas was simply the top priority. This fact is also reflected in the changes that have been made in the strategic objectives of the Chinese government after 2006, especially when it came to the form and intensity of support for investment projects of Chinese state companies abroad. Although the total volume of FDI is not the largest source of fixed investment in the Chinese economy, available data suggest that their impact on the overall economic performance was robust. The total number of foreign enterprises accounted for only about 3% of all Chinese businesses in 2008 and accounted for about 2-3 % of total fixed investment in the country. However, overseas companies contributed to it by more than 50 % (manufacturing 30 %, newly created employment 11 %) in terms of China's foreign

trade.² Despite the rapid growth of labor productivity and the transfer of many companies into Chinese hands, these shares have not been reduced even after 2009, causing overall output growth and the growing share of exports of products with a higher added value, as well as persistently high business profitability in this country.

The increasing expansion abroad is a proof of precision strategic thinking of Chinese administration. J. E. Stiglitz, in this regard noted that: *"In general, savings rate of close to 50% - if one compares with the U.S. (14%), while U.S. household savings rate is almost zero - China has accumulated enormous resources. They can be used - and it does - for strategic investments, including their own projects for the extraction of rare natural resources, for example oil. This is the new reality, which we can not avoid and we will have to deal with"*. (Stiglitz, J. 2006). Analyses show that the growth of the PRC national income was generated from 96 % by inward FDI by 2010. From this knowledge we can deduce the fact that the competitiveness of the domestic economy was heavily dependent on the enormous efficiency of such investments. On the other hand, it confirms that the degree of efficiency of domestic investment itself is still low, and, despite such disproportionately high share of GDP it did not bring expected economic effects. The fact that similar trend was confirmed as well by analysis of Chinese GDP per capita growth (Y) and outbound FDI/per capita is supprising. Although its level is lower (92 %), it is still significant. The economic interpretation of this finding confirms that the national income growth depends on outbound FDI, irrespective of other factors. It is understandable that these exports depend on the overall growth of the economy.

Rapid Chinese economy growth and subsequent domestic manufacturing consumption was naturally translated into increased consumption of all range of raw materials as well as energy carriers. Domestic base was not ready for this development in terms of technological and logistical capacities. Constantly increasing FDI inflows further increased imports of materials, machinery and equipment but also technology and know-how. Exporters from developed market economies, as well as developing countries, welcomed this demand growth as it helped to *"bridge"* financing of its imports and, moreover, caused the increase in unit prices of their exports and thus ultimately brings higher incomes. The GDP growth and export of partner countries was positively influenced by robust Chinese commodity import, raw materials for input and final products. In paralel, the business partners were focused on those countries that accepted Chinese goods in form of cheap consumer and industrial goods, implementation of various investment and forms of government assistance.

The intensity of FDI inflows into China was not only an expression of its internal "interest." It is estimated that about tree quarters were ensured by the largest transnational corporations (TNCs). This has many reasons, not including only a cheap labor force and a potential uncovered domestic market. According to the attractiveness index, regions of Hong Kong, Singapur and Taiwan which are a *"bumber zone"*

² According to available data, foreign companies in China have contributed to the creation of 45 million jobs, paid taxes accounted for 21% of state budget revenues, have 55.3% of the value of China's exports and 54.7% of the value of imports, and others. See, eg.: Graham. E. - Defect. E. 2008. p. 46.

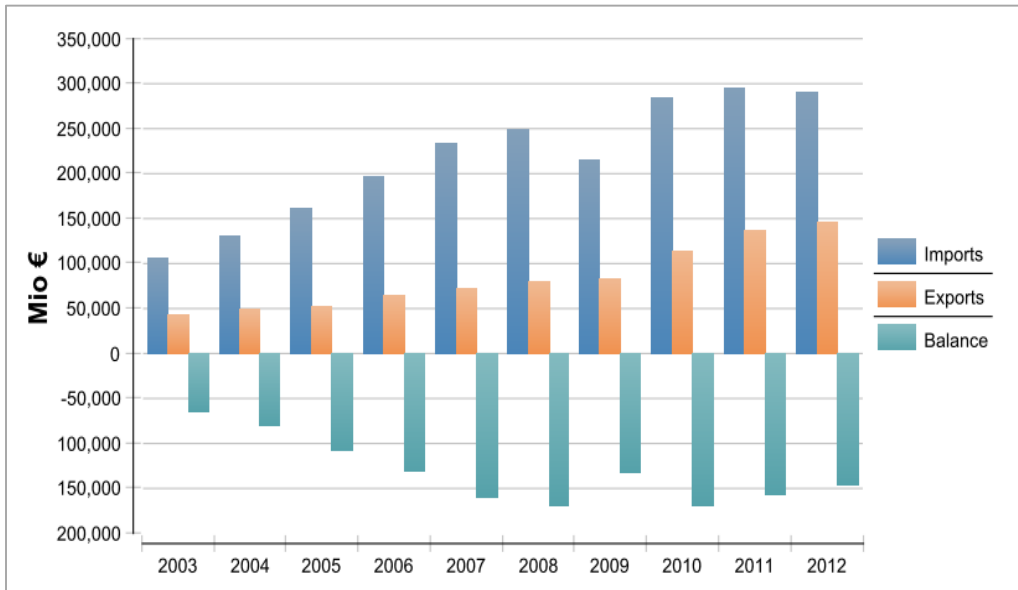
of China, belong to the most attractive for multinationals. All this background: domestic economic growth (in terms of GDP) owing to domestic reforms, FDI inflows, internal consumption that encourages import and subsequently export of own FDI was reflected in the expansion of China's foreign trade relations in all its components. They can be characterized by three key elements from current viewpoint, namely: its dynamics, especially in the form of growth, dominance of commodity structure in the form of manufactory products and considerable asymmetry that exists between China and its trading partners which is most clearly reflected in surplus/deficit of the trade balance. China has become the world biggest exporter and second biggest importer thanks to its rapid economic growth and rising volume of exports and imports. If we add to its business activities the trade flows crossing the country ASEAN4, this conglomerate (so-called Greater China) has outpaced EU regarding the world trade share.

3. Impact of Chinese FDI on the Changes of International Trade

In the context of financial and economic crisis, global trade has experienced the steepest decline since the Second World War. Specifically, the slump of global trade represented 20 % between autumn of 2008 and spring 2009 (UNCTAD, 2012). Except for China, all the countries from the "world trade triad", were affected by that decline. PRC was successful in changing the direction of its exports to new territories from stagnant markets while stimulating the growth of internal consumption. This was ultimately translated into only marginal GDP slowdown to 7.5-7.8 %. However, analysis of WTO and IMF confirm that China (Greater China) was still the key player essential to maintain global trade growth. Particularly in the EU and US case, it is confirmed that the export to China is a very important element and that a very "fragile" trade balance in their bilateral business relationship depends on it. J. Stiglitz warns: *"Unless China invests heavily in the education system, science and research, while not strive for stronger integration into the global economy, its trade surplus with other countries will be gradually closing, and on the other hand, developed economies will try to adjust their negative trade balances."*³ It is important to point out that in both cases this is already happening.

³ According to available data, the share of GDP China utilize for science and education is growing rapidly. It should reach about 3 % in 2014, what is significantly higher than the EU average. There are almost 25 million students in educational system and more than 50 % of foreign students at the US universities come from Greater China.

Figure 2: China-EU Trade trade flows and balance (annual data 2003-2012)



Source: European Commission. 2013. European Union, Trade in Goods with China. Available: [http:// trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113366.pdf](http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113366.pdf)

4. Impact of Chinese FDI on Economic Interest of EU

According to official data, countries of East and Southeast Asia participated in the global flow of FDI with more than 22 % share in 2012 (in financial terms \$336 billion). Share of China (together with Hong Kong) exceeded the value of \$124 billion (what is more than 7 % of all global FDI) (UNCTAD, 2014). It is interesting to observe that inward FDI reached a bigger volume regarding services than manufacturing for the first time in history. This change was translated into faster generation of new jobs in this region and to input costs decline. This ultimately resulted in an increase of the whole region competitiveness. The most active investors in China originated from Hong Kong, Taiwan, Singapur and Japan in 2011. There were established 27 700 non-financial companies in China in 2011, although, this represents only 1.1-percent growth in comparison to 2010, the most notable was the increase in the number of research centers, scientific laboratories, test facilities and quality and technical incubators. When we focus on other Chinese development plans, we should not lose sight that its vigorous foreign trade policy was oriented mainly on dynamic exports growth of products which were able to be produced on the basis of a cheap labor force and relatively low value added. This includes also foreign investors export from special economic zones dislocated on Chinese territory. The bulk of these goods were manufactured in the so-called processing procedure and manual labor participation of Chinese workers in its final price was only marginal. Such an export-led strategy inevitably stirs up further consumption growth of all tangible input, but especially energy carriers, which are always expensive.

It's specific consumption is up to three times higher compared to similar products produced in that period in developed economies and while the pressure on its decline grows stronger, still very low export prices do not cause enough pressure to change the situation in the energy consumption. One reason is that China's economy still uses electricity, oil or material inputs in which are transalted minimum cost of their procurement constantly stemming from the low cost of labor necessary for their extraction or production, not only in China, but also in deliveries from it outbonds FDI. Domestic producers therefore gaing such comparative advantage without increase their own costs and thus gaining more market space purposefully. Chinese energy company Sinopec Group and China National Petroleum produced hundreds of thousands of billion barrels per day in Angola, Vietnamese and Sudanese oil in a period when oil prices expirined sharp increase which peaked in July 2008 (\$147/bbl. Brent oil), with mining costs that were at 25-35 % of the world prices at that time. Country energy mix thus created a vast space for maintaining low prices of finished goods marked with "Made in China" or a high profit margin, as production costs were thanks to low prices of labor force and energy inputs so low that it squeezed goods of other countries from the market, including those that possess even cheaper labor force or better manufacturing know-how at that time.

Initial direction of Chinese FDI clearly reflected its expansion strategy, mainly in order to help to cover the rapidly growing domestic demand for raw materials and fuels. In light of the rapid progress of the economy, country increasingly focused on developing new positions in high technology, industrial production or penetration into services segment. However, energy sources and raw materials still attracted about 70 % of Chinese foreign transactions. Although it conducted trades on all continents, each part of the world is attractive for China from different point of view: Australia for the extraction of coal and other minerals, America for oil extraction and processing and technologies for processing shale gas, Europe for manufacturing technology and know-how. Important position has also Africa which created direct scope for Chinese investors, and furthermore, increases purchases of cheap Chinese products and for example large volume of construction works. At the beginning of the new millennium, Chinese government initiated a project of development policy so-called "go global" which goal was to systematically support the further expansion of Chinese FDI. Domestic corporations supported by the bank industry and various forms of government subsidies began to invest heavily abroad and within different areas: into big oil and other strategic resources, later into the electronics manufacturing and transport equipment or services of any kind.

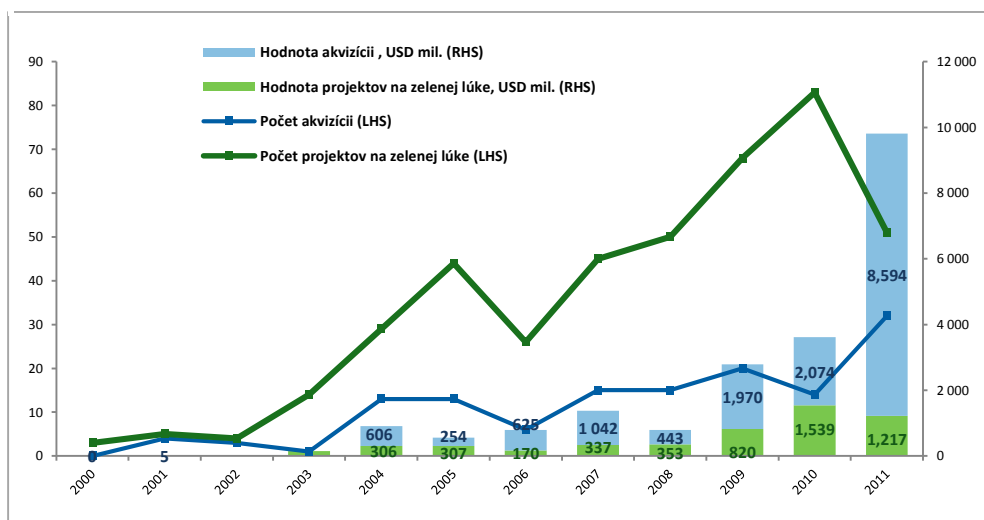
5. Chinese Strategic Ambitions in EU

European markets were outside concentrated investment interest of China almost until the end of the decade. It was quite natural, as this continent has nothing to offer in terms of raw materials. However, situation has changed dramatically since China starts to take into considerationm in its development strategies new technologies and industrial equipment. Chinese companies realized only 573 transactions with total volume of \$21 billions in Europe between period of 2000 and 2011, but it was less

than ten a year before 2004 (with average yearly volume less than \$100 million). Since the beginning of this year, there has been a growing number of mergers and acquisitions, but also Greenfield investments. They reach yearly number of 50 with average value of \$80 million. Number of transactions in this field grew approximately to 100 between 2009 and 2010 with yearly investments inflow of \$3 billion. There were identified 54 “green field” investments in 2011 and 37 acquisitions in total value of nearly \$10 billion. It was thus nearly threefold increase compared to the previous two years (Hanemann, T. – Rosen, D., H. 2012).

Increasing Chinese presence in Europe is confirmed by preliminary data, according to which the old continent is absorbing 90 % of acquisitions by Chinese companies (sectors like raw materials and energy excluded). Communications equipment and services, technology used to produce energy primarily from photovoltaic cells and the like did not avoid its interest. In the field of photovoltaic China increased its own production and exportation of cheaper solar cells, what resulted to a sharp decline in world prices of these devices and to the bankruptcy of the largest German companies. Applying its own comparative advantages, it improves its current global market share from 34 % to 57 %. It focused its interest mainly on the acquisition of German companies in order to get industrial know-how. The ownership was changed in dozen of manufacturers mainly in the construction sector, industrial technologies, and increasingly also in the chemistry (e.g. Coburg, Waldrich, FACC, Vensys, Saargumi etc.).

Figure 3: Chinese FDI in EU countries (2000 – 2011, in Mio \$)



(Note: ■ Acquisitions value, Mio \$; ■ Greenfield projects value, Mio \$; —■— number of acquisitions, —■— number of Greenfield projects)

Source: Hanemann, T. – Rosen, D., H. (2012): *China Invests in Europe Patterns, Impacts and Policy Implications*. Výskumná správa. Bruegel: Rhodium group, s. 39.

Although domestic managers see their comparative advantage mainly in about 2.5-fold higher labor productivity in German firms, in comparison to Chinese firm pointed out to “huge desire of Chinese to improve and compete on the same level as global players.” Typical result of Chinese coherent strategy on “*international economic chessboard*” is reflected in the current development in the global construction sector. Western European construction giants feared competitors from Japan recently, however they literally disappeared from this top list and the Chinese companies find themselves on the list of top three. Previously mentioned acquisition of German manufacturers in construction field and companies having expert knowledge fits to this expansion as a piece of a puzzle. They help Chinese companies to fill the gap in its own expertise necessary in the construction of airports, tunnels or skyscrapers which already successfully applied in developed countries. It is undisputed that the economic results achieved by China and its all over wide spectral international expansion are unique in a globalized world. However, it becomes more and more dependant on international environment developments, as it needs new resources, new technologies and new markets.

It will inevitably have to deepen its specialization and also look for its own production profile, if it wants to maintain its high rate of growth and increase its competitiveness. It turns out that the country started to realize risks arising from deepening dependence on imports energy resources to larger extent than the EU. Their delivery conditions are not under control. The new Chinese government therefore has prioritized efforts to not only acquire new resources but also reduce specific fuel consumption. While China was still completely self-sufficient in this segment at the turn of millennium, it will be importing 80 % of consumed oil, 42 % of natural gas and at least 6 % of coal. It is about half of total world imports in terms of coal (according to IEA, World Energy Outlook 2012). What will be the economic conditions of these operations in 2030 can not be objectively predicted. All these energy inputs will be more expensive, as the minimum cost of their extraction and mining operations and transport operations will be higher and international demand will exceed supply potential. If the import dependency in all big and rich courtiers grows rapidly and available resources become thinner, trade wars regarding securing their supplies will be much fiercer.⁴ Although the economic theory often points out to the possibility of so-called win-win positions, a real economic life confirms that this optimal growth trajectory is even in Chinese-EU relations only “*dream illusion*,” from the long term perspective. Therefore, global Chinese investment expansion meets growing resistance in some countries. Governments realize that such enforcement of economic interests’ narrows their operating space for the promotion of their own priorities while gradually losing their own market, they are more isolated from the supply of raw materials and thereby their political influence decreases. It seems paradoxical that unfavorable economic development in euro area, what would represent ideal opportunity for the expansion of Chinese investor in the region in a different period, probably contributes to its

⁴ However, according to experts China will be forced to fundamental changes in the structure of its achieved economic growth. It will ease it resilience and will respect factors such environmental protection, agreed emission reduction, water conservation and marine and deepen international cooperation with other national economies.

economic slowdown to a large extent. These producers were greatly affected by recent economic earthquake triggered by the financial crisis and with that related sharp drop in demand, forcing them to deep intervention in its own production and investment plans. The potential risks for both sides and the consequences of such developments were highlighted by IMF several times this year.

If Chinese government had not respond to the decline in demand by fiscal incentives and its own consumption support, the overall performance of the economy would decrease very rapidly. This would translate not only into its own production decline, but also contribute to import slowdown and this would result in a fall of the EU economic growth. With all above mentioned, development of the depression from years 2009 and 2010 would be restored with all its negatives for the entire world economy. Chinese investments abroad would slow, thereby reducing its incomes from developing countries and consequently resources for new purchases. European economy and economies of other developed countries are therefore still more depended on the development of "*Chinese dragon*". Unflattering assessment of Europe's position and expectations that arise from the changes affirmed the U.S. Treasury T. Geither: "*The crisis in Europe remains the main risk of the entire world economy. It is absolutely necessary that Europe has introduced credible recovery plan for their financial and economic stability as soon as possible*". (Geither, 2012). Chinese economy began to enter into the world economy and international monetary relations by using its enormous financial assets. And it is increasing its currency usage in global foreign currency markets by introducing of currency swaps with several major partners (Japan, Australia, Brazil, Indonesia and others). The \$ and € are thus gradually displaced by the Chinese currency. The share of Yuan in the world trade transactions reached approximately 10,3 %, while the euro share was only around 8 %. (Mihm, 2011).

6. Conclusion

Listed relations and data confirm that "*nothing is for free*" in global business. European economy which is underpinned by its historical comparative advantage is not untouched by Chinese development. This finding highlights the acute need to find an answer to the question, where Chinese economy is heading and what role will it play in the EU plans, whether China actually needs the old continent as a business partner and supplier of industrial technology from a long-term perspective. The EU will be probably overtaken by China gradually. The answer is certainly not easy and with today optics is not yet sufficiently clear. It can be only said in general terms with observing important signals of current Chinese economic development and with concentration on political leadership changes in country which took place in March 2013 and will be in power for the next ten years. However, it is clear that the period of Chinese economic presence in industrial production with higher energy intensity and carbon emissions is coming to its end and it starts to focus on more high-tech and research and development orientations. Innovation became the main tool of its development, which will be built on a robust scientific base and the transition to sophisticated production. This trend is confirmed

by successes of China in the space conquest, the production of advanced military equipment and still more dominant position in communications and information technologies.

Growing flexibility and performance of the whole economy is underpinned by fast finalization of highly sophisticated technical infrastructure, modern logistics methods and outsourcing centers which are not, in many cases, seen in developed countries. It can be hardly imagined what effects the predicted direction of China's economic position would bring regarding the EU future, but it is clear that Chinese presence will become permanent. Therefore, the gradual penetration of Chinese investments in the EU can not be underestimated. The EU will have to quickly adapt to the new situation, not only in the world markets, but also within its own economy. It is necessary to reformulate integration and development strategies in a relatively short time. The current situation suggests that the national administration in developed countries is aware of this risk, but is focusing more on their own particular policy issues, ignoring fact that this escalation is caused by in long-term underestimated and constantly deepening economic discrepancies and resulting consequences which solution is not so acute, but will be more urgent over the time. The question of supporting the whole European competitiveness will become a condition "*sine qua non*" for prosperity in a relatively short period. In case that EU begins losing this historical advantage, it can be understood that European community will not fulfil its historical goals and this may also be the reason for its breakup. Some countries would lose its "community burden" as well, but on the other hand, they will lose many positive multiplier effects that the integration has brought up until now.

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Job Satisfaction and Organizational Commitment - Key Issues and Facts for Romanian Organizations

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Abstract

The aim of our research is to establish the most important determinants of job satisfaction of employees from Romanian organizations to achieve the organizational commitment, in order to underline the importance of human resource practices in European context. We test four hypotheses: H1: Employees from technological solutions firms from Iasi believes that the salary is directly proportional to the work done; H2: Criteria for granting entitlements related to the fulfilment of the tasks of the employee; H3: The amount of salary increases does not meet the company's employees; H4: Employees with the received salary can buy all the goods and services they need. The results show that the investment in HRM in Romanian organizations means positive impact on employees and the quality of services offer to the customers.

Keywords: *Employee, Job, Satisfaction, Human resource, Commitment*

JEL Classification: *J28, J59, M12*

1. Introduction

After contributing to the work process, satisfaction is considered to be one of the factors profoundly impact work efficiency. Employees of an organization can be considered satisfied or unsatisfied, considering the level of involvement in carrying out the organization. They perceive the work not only as a means of obtaining remuneration from work, but as an activity that can create certain emotions, feelings. John Locke (1969) defines job satisfaction as being a positive emotion or pleasure resulting from the assessment made by a person on his work and on his experiences at work. Ability to develop employee takes the specific work performed and finally the desire to develop (Roussel, 1996).

Job satisfaction is quite difficult to quantify. Over time, they reveal numerous attempts to define job satisfaction, from different perspectives, as follows: a. from attitudinal perspective, satisfaction is perceived attitude has an employee in relation to various aspects of work attitudes with both affective and cognitive component. Attitudes that seem to be relevant to do the work in terms of this approach are: the work itself, salary, working conditions, promotion, appreciation, policy management, benefits, colleagues and control (Spector, 1997; Kreitner, Kinich, 2006); b. from a psychological perspective, satisfaction is considered to be a positive emotional state, occurred after achieving a correspondence between what an employee expects to receive for his work and what he actually receives (Evans, 1997);

c. from the perspective psycho sociological satisfaction is the result of the difference between what an employee should obtain estimated from the performance of work and what you get as a reward (Kreis, Brockopp, 1986).

2. Relationship Between Job Satisfaction and Organizational Commitment

The quality of human resource from organizations is considered as a major factor which contributes significantly to the organizational success (Pohlman, Gardiner, 2000). In management literature the relationship between job satisfaction and organizational commitment is very deeply analyse as a tool which can contribute to the performance (Allen, Meyer, 1990).

In the motivational theories term satisfaction occurs quite frequently. Theories focused on needs, Maslow and Alderfer's theories describe a set of needs that a person tries to satisfy them. Unlike Maslow presenting needs of people in a hierarchy, Adelfer suggested that needs are arranged along a continuum and that there are only three groups of needs (Prodan, Rotaru, 2006). Of intrinsic motivation theories, the cognitive assessment of Deci (Cognitive Evaluation Theory, 1975), explains satisfaction rather than motivation. They analyzed the needs of self-determination, control and skills that a person tries to satisfy them to be motivated to do the work. Under this theory, satisfaction is limited and can only be determined by studying higher order needs, but the description explains motivation on job satisfaction. Theories and theories of fairness are considered satisfaction. This applies especially in organizations. The feeling of inequity created by dissatisfaction over an individual will also create pressure on him that will make him want to change something, to surpass. In this process, dissatisfaction is the motivation. Fairness theories are useful in research on job satisfaction, with the factor remuneration. Therefore, assessment of job satisfaction is limited to the value of fairness.

Organizational commitment refers to the emotional attachment of employees, the sum of values and believes their involvement in organization. When is defined organizational commitment it is exposed believes in and acceptance of the organizational goals, mission and values and desire to maintain organizational membership. Employees becomes committed to their organizations when they have the conviction about the mission, goals and values, when they are ready to exert efforts to achieve the objectives and when they want to serve the organization (Robbins, Coulter, 2003).

Considering that job satisfaction is an employee mindset, a positive emotional experience, when there is a match between employee expectations and obtained compensation (money, gratitude, etc.). Can be considered as determinants of job satisfaction: the discrepancy, fairness, job, salary, promotions, positive relationships at work, with colleagues, superiors, help the emergence and maintenance of employee job satisfaction (Micle, Saucan, 2009), recognizing the organization's policies and culture. Organization should use more leverage to ensure optimal management of human resources by combining multiple factors of satisfaction that can be used

(Bougaud, 2002). Working conditions, money or benefits are seen as central to maintaining employee satisfaction, but above a certain level, these factors are not enough. Less tangible factors are represented by the recognition that each employee and provide the opportunity to advance.

3. Research Methodology

3.1 Aim of Research

Through this research is intended to demonstrate the existence of a positive relationship between satisfaction with pay and satisfaction with work in order to achieve the organizational commitment, satisfaction generated by determining the amount of compensation received by the employees of the Firms from technological solutions Iasi (County from North East of Romania, one of the major cultural and university city).

Job satisfaction of employees can usually be grouped into five distinct categories of variables: needs, discrepancy, satisfying personal values, equity, genetic models / dispositional (Kinicki, Kreitner, 2007). This can be explained as follows: the satisfaction of needs determined based on the extent to which a job with his duties and benefits, meet the needs of the employee and determine organizational commitment. Secondly, the model discrepancy explains that satisfaction is the result of the materialization or non-materialization of expectations of each employee. Third, the model based on the values of each employee is based on the belief that satisfaction comes from the perception that work satisfactorily that an individual has to work. Fourth, models of equity consider that satisfaction is based on the perception of fairness with which an individual is treated at work. This aspect is based in large part on how the results of their work are rewarded in relation to effort, comparing the work performed by other employees at work, and finally, components dispositional / genetic characteristics suggest that individual employees are just as important for determining satisfaction of the workplace, the factors related to work (Kinicki, Kreitner, 2007).

To fully understand the concept of satisfaction with the level of payment is necessary to review the research on this. Since the beginning of organizational science, salary was considered an important reward to motivate employees (Taylor, 1911). However, this concept has not been clarified until theorists began exploring fairness in social exchange (Adams, 1963; Homans, 1961). Soon after, researchers have hypothesized that sense of being treated fairly lead to specific organizational to behaviour such as job satisfaction (Locke, 1969) and, more specifically, satisfaction with pay (Locke, 1976), and that these attitudes have an impact on employee behaviour within the organization (Judge, Bono, 2001; Tett, Meyer, 1993). Satisfaction with pay received considerable attention among research since the introduction of the concept in the literature, although its perception has changed over time because it was found to have an increased importance in the work process. Employee satisfaction is based on many factors, and there can be included and terms of the contract of employment, and any change in them after the conclusion of the contract, can be a source

of satisfaction or dissatisfaction. Determinants of satisfaction are multiple, but as I mentioned in the paper, the remuneration is a factor over which can occur much easier to generate satisfaction in the case of employees dissatisfied and which can determine the organizational commitment. Money is one of the reasons most frequently cited (Jurgensen, 1978). Locke, Feren, McCaleb, Shaw, and Denny (1980) went as far as to support: "No other incentive or motivational technique comes close for the money, in terms of their instrumental value." For many employees the choice to work cannot be seen as a simple choice, since with money can provide goods and services necessary for living. Consequently, people work to live, and labour is the material aspect it provides. Some studies, such as those made by Beutell and Wittig - Berman (1999) and Sanchez and Brock (1996) have shown that there is a correlation between employee satisfaction and financial rights obtained. Others have shown a weak connection between these variables (Dunham, Hawk, 1977) and (Adams, Beehr, 1998). However, the study conducted by Malka and Chatman (2003) concluded that income and satisfaction with work were positively correlated, and the relationship was stronger for people oriented extrinsic values. In general, however, there is a lack of research centred on the relationship between wage levels and job satisfaction. Gerhart and Rynes (2003) concluded: "A curious fact in relation to pay - level satisfaction with the level of payment is that there are virtually no studies linking wage levels to general satisfaction at work."

3.2 Data

The survey questionnaires were distributing to 271 employees from technological solutions firms from Iasi County. Of 271 distributed questionnaires, the usable response rate was about 47, 97%. The respondents are employees at technological solutions firms and it was used the simple random sampling with sample representativeness claim. The selection was arbitrary and the sample was composed of individuals chosen arbitrarily by Human Resource specialists from analyzed companies. Sample was determined by the following formula:

$$n = t^2 * p * (1-p) / e^2, \quad (1)$$

where: n = sample size; t = the theoretical value of probability accepted (t = 1.96 for a 95 % confidence level); p = percentage of the population owns Surge sample (0.50); e = error of representativeness permissible limit (5 %). It then applied the formula

$$n1 = n / [1 + (n-1) / N], \quad (2)$$

where: n1 = sample size corrected ; n = sample size obtained earlier ; N = the total population.

The result was a sample of 130 people from a total population of 196 people. Employee's profiles from the technological solutions firms have the following characteristics: male, average age, 48-49 years, secondary education (including apprenticeships), function holds execution, comes from urban areas. The only criterion for selection of respondents was the origin (as an employee) under technological solutions firms. Data analysis was performed using a specialized soft processing statistics (SPSS 17.0). Given that salary as a factor determining job satisfaction

is composed of other sub factors, the latter are: satisfaction in actual salary, meaning he has the salary for each employee satisfaction with the level of living supported by salary received employee satisfaction regarding their involvement in setting their own goals, satisfaction of the remuneration policy.

The objective of this research is to determine the degree of satisfaction with the amount of compensation received by the employee in order to emphasize a relationship between satisfaction and reward as factors which generate organizational commitment. Specific research objectives are: O1. Identification of employee perceptions about the correlation between the remuneration and the work performed; O2. Identifying employee perceptions about the amount and frequency of pay increases; O3. Identifying the relationship between employee satisfaction and salary obtained; O4. Identification satisfaction of employees on the purchase of goods and services with wages obtained.

The general hypothesis of the research: Salary is an important factor in determining employee job satisfaction. Specific assumptions: H1: Employees from technological solutions firms from Iasi believes that the salary is directly proportional to the work done; H2: Criteria for granting entitlements related to the fulfilment of the tasks of the employee; H3: The amount of salary increases does not meet the company's employees; H4: Employees with the received salary can buy all the goods and services they need. The study was cross-sectional, questionnaire-based survey. Data collection was carried out between 25.08.2013-06.10.2013, through questionnaires administered face to face within the organization.

The research method used was survey and research instrument used was a questionnaire opinion. The choice of this tool was based on its utility and relatively low cost. However, it is possible that the use of the questionnaire to distort the relationship between expressed opinions and actual behaviour of employees. Questionnaires were applied to respondents face to face with human resources specialist firms surveyed. Type scale questions were single- choice and closed questions that require a single choice. The most common method for collecting data on satisfaction with work or to pay, in this case, the Likert scale (named after Rensis Likert). Other less common methods of measurement of job satisfaction include questions Yes / No, questions True / False, scoring systems, checklists, and forced choice answers. In terms of methodology, the questionnaire includes a total of 26 questions with closed questions which require a unique choice of the subjects of a set of proposed alternatives, scale, semantic differential, Likert attitudinal scale. The questionnaire begins with questions concerning the overall satisfaction of the respondents both to work and to pay. The remaining questions are focused on the research subject, being placed in the middle of its clear and cogent questions to respondents and you do not bother to understand the meaning of the question. At the end of the questionnaire are questions of identification, in order to outline the socio-economic profile of respondents.

3.3 Results

At the basis of this research have been five hypotheses, a general one and four specific hypothesis, whose results presented in the following.

The general hypothesis that salary is an important factor in determining employee job satisfaction is confirmed. Some studies (Beutell, 2010) and (Sanchez, Brock, 1996) have shown that there is a correlation between employee satisfaction and financial rights obtained. Following the correlation made between the overall satisfaction of employees offered work to pay their satisfaction obtained Kendall 's coefficient, showed a value of 0.292 , in the range [-1,1] (see Table 1). Interpreting this result, we can say that the two variables are related (0.292 is included in the interval [-1, 1]), and this is indicated software, inserting a correlation ** significance at 1%. Coefficient has a positive value, and this indicates a direct link between the variables, and not an indirect one. Since the value of sig < 0.05 (Sig. 0000), the connection between the variable is statistically significant.

Using Pearson chi -square test was attempted demonstrating an association between the two variables, “Salary is important factor for satisfaction” and “How satisfied are employees at work” because after performing correlation between coefficient Kendall registered a positive value contained in the interval [-1,1] which suggests a link between these two variables. This does not necessarily mean changing the value of one variable will produce comfort change in the other variable. Thus, the Count value shows us the number of frequencies observed inside and Expected Count the number of theoretical frequencies (calculated by multiplying the probability theory, represented by the event to be satisfied with salary and be satisfied with the job the number of cases, the default number of respondents). Residual value is the difference between the observed and theoretical frequencies and adjusted residual waste processing the result to be comparable and have as unit standard deviation of the distribution of residues. Adjusted indicates absolute value residual boxes with significant deviations from the theoretical frequencies (the Adjusted residual is greater than 2), while the sign indicates the direction of deviation.

As can be seen, the coefficient of association test, Pearson Chi -Square records a sig < 0.005 (sig 0.000), this may indicate an association between the two variables: job satisfaction in the companies analyzed depends on satisfaction salary.

Hypothesis 1 that employees consider that the salary received is directly proportional to the work done is invalidated. 31.5% of employees surveyed agree with this statement, which shows that employees do not consider salary received is proportional to the work performed, while 9.2% of respondents totally disagree with this statement (see Table 2). Hypothesis 2. Criteria for granting entitlements related to the fulfillment of the objectives of the employee were partially confirmed. Most employees surveyed in 30% believes that somehow, the criteria for granting entitlements related to the fulfillment of the objectives, while 10% are in total disagreement with this statement (see Table 3). The calculations shows that the base salary is actually the performance of employees, 44% of respondents agreeing with this statement and 11% strongly disagreed (see table 4). Hypothesis 3. The amount of wage increases do not meet company employees was partially confirmed. Most of the employees

surveyed, a percentage of 37.7%, it is considered somewhat satisfied with the amount received any increase over time. The less of respondents, with a rate of 3.8%, were in total agreement with this statement, considering the amount of any increase in total satisfaction received over time (see Table 5). Hypothesis 4. With the wage received, employees can buy all the goods and services they need for living, is partially confirmed. 47% of employees surveyed agree with the statement above mentioned, considering net salary allows purchase of goods and services sufficient to meet the needs and only 6.2% of respondents are in total agreement with this (see Table 6).

4. Conclusions

The purpose of this study was to present and test the existence of a positive link between job satisfaction of employees in the sample set and satisfaction with the amount of compensation offered by the organization in which the study was conducted. Initially we tried to verify the existence of a link between satisfaction with work and satisfaction of the respondents to pay resulting from the performance of work. Following the completion of the correlation between the two variables, the correlation coefficient Kendall used for ordinal variables indicated a relationship between variables, with a positive value indicating a consistent mix and in the range $[-1,1]$. In case identified a positive relationship between job satisfaction of employees in the sample set and satisfaction with reward, according to studies conducted by (Beutell, 2010), (Sanchez, Brock, 1996), (Malka, Chatman, 2003), contrary to studies of (Dunham, Hawk, 1977) and (Adams, Beehr, 1998), it can be said that between satisfaction with financial rewards received by employees and satisfaction with work and there is an association link direct and positive. However, this relationship is only valid for employees firms analysed technological solutions. Besides disadvantages considered, the results of this study are subject to limitations. The first limitation relates to the use of technological solutions firms, the size of the sample and background. It would be recommended that a subject so important and complex such as satisfaction with the workplace in terms of satisfaction with their financial rights granted in a context rarely studied could involve several organizations and participants in order to obtain a better generalization study. Secondly, the measurement concept can be much closer to the actual value in the organization by using a scale with open questions to gather new ideas from employees. However, as an exploratory study and investigation, with a particular focus on the implications of the rewards and satisfaction of their employees on workplace satisfaction in an industrial organization with a scale with closed questions and answers legacy was the best option. The study results are not relevant for all industrial organizations cannot be widely applied. Therefore, it is expected that the results of this study be used to provide a representation theoretical and practical literature in satisfaction with salary and other financial benefits and satisfaction with work. Based on this study, future studies could demonstrate a relationship between wage levels and satisfaction with work or to explore several areas of research that can make valuable contributions to job satisfaction and employee rewards systems in different sectors and the public sector.

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Appendix

Table 1: The correlation between satisfaction with work and satisfaction with salary

**. Correlation is significant at the 0.01 level (2-tailed).		Salary is an important factor in your satisfaction at work	How satisfied are you with the job
Kendall's tau_b	Correlation Coefficient	1.000	.292**
	Sig. (2-tailed)	.	.000
	N	130	130
	Correlation Coefficient	.292**	1.000
	Sig. (2-tailed)	.000	.
	N	130	130

Source: author calculations

Table 2: Are rewarded a little for what they do

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	12	9.2	9.2	9.2
disagree	32	24.6	24.6	33.8
neither agree nor disagree	37	28.5	28.5	62.3
agree	41	31.5	31.5	93.8
Strongly agree	8	6.2	6.2	100.0
Total	130	100.0	100.0	

Source: author calculations

Table 3: The amount of salary depends on how well I achieved the objectives

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	13	10.0	10.0	10.0
disagree	32	24.6	24.6	34.6
neither agree nor disagree	39	30.0	30.0	64.6
agree	36	27.7	27.7	92.3
strongly agree	10	7.7	7.7	100.0
Total	130	100.0	100.0	

Source: author calculations

Table 4: The performance is based on granting entitlements

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	11	8.5	8.5	8.5
disagree	31	23.8	23.8	32.3
neither agree nor disagree	37	28.5	28.5	60.8
agree	44	33.8	33.8	94.6
strongly agree	7	5.4	5.4	100.0
Total	130	100.0	100.0	

Source: author calculations

Table 5: I am satisfied with the amount of salary increases that we have received over time

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	25	19.2	19.2	19.2
disagree	44	33.8	33.8	53.1
neither agree nor disagree	49	37.7	37.7	90.8
agree	7	5.4	5.4	96.2
strongly agree	5	3.8	3.8	100.0
Total	130	100.0	100.0	

Source: author calculations

Table 6: Net salary allows me to purchase all goods and services necessary to cover the needs

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid strongly disagree	18	13.8	13.8	13.8
disagree	27	20.8	20.8	34.6
neither agree nor disagree	30	23.1	23.1	57.7
agree	47	36.2	36.2	93.8
strongly agree	8	6.2	6.2	100.0
Total	130	100.0	100.0	

Source: author calculations

To Some Disparities between National and Global Education in the European Context

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Abstract

The paper deals with education disparities in the Czech and European context which are represented, for instance, by syllabuses, education programmes, approach to competencies and transition from an information and knowledge-based society to a society highly skills-orientated. The paper concentrates on tertiary education as a part of education and training systems of a lifelong learning which is one of the challenges of a strategic framework for European cooperation in this field. The paper provides some figures from The Czech Republic aiming to show the differences throughout the regions within the population aged between 25 and 64 participating in education and training. All levels of education and training, including tertiary need to be made more attractive and efficient to enable all citizens to acquire key competencies to ensure their employability in today's labour market. There are a lot of possibilities and challenges for not only tertiary education to reflect the needs of our region.

Keywords: *Competence, Disparity, Education, Globalization, Skills, Tertiary*

JEL Classification: *A23, J11, M00*

1. Introduction

Being a member of the EU for 10 years has brought a lot of changes and opportunities into our society including education. Education plays an important role in a life both of an individual and society. Mainly from the point of view of employability its impact is indisputable. National education policy of every European country is confronted by global demands of European education area. Education is becoming a variable which has to face a lot of factors in time and space (rapid development of information technology and its unpredictable growth, changing demographic indicators, changes in conceptions of education systems together with their conceptions of key competencies etc.). It can be assumed not only from the aspects mentioned above that the significance of education will trend upwards. According to Skalkova (2004:3), consequences of globalization, frequently contradictory, are projected into techno-economic, socio-political and cultural dimensions.

Current European education goes along with disparities which have to be referred to not only from the point of view of the Czech Republic but also in connection with the European context. The polarity of national and global from many aspects of education is being formed by that. Briefly, we sum up them into points as follows:

content of education, approach to competencies, transition from an information and knowledge-based society to a society skills-orientated.

It is clearly evident that the change in the approach to the content of education, the approach to competencies and transition from an information and knowledge-based society to so-called skills-orientated society represents a process of creating many and varied possibilities for individuals, teams, businesses and institutions but at the same time it brings a lot of threats. The table 1 shows the disparities to clarify the issue.

Table 1: Education System Disparities

national system	global system
knowledge	skills
homogeneity	heterogeneity

Source: authors

It is worth noting that the range of problematic parts which should be solved not only by pedagogy is much wider - questions of contributions and consequences of so-called learning society and their impact on pedagogy, migration of population and tolerance in the framework of multicultural environment. There is a tension between tendencies of homogenisation and plurality in cultures, their originality and identity and therefore it is necessary to express this issue in educational conceptions and particular educational programmes (Skalkova, 2004, p. 4).

2. Sources and Methods

Our research is based on relevant documents connected to education policy of the Czech Republic within the EU. Other sources used in this contribution were collected from a web portal DV Monitor providing useful information and data of lifelong education both in the Czech Republic and in the European Union. The information and data are the result of a national project of the Ministry of Education, Youth and Sports and National Institute for Further Education – On Further and Lifelong Education 2009-2012. Following the aim of this paper, to define disparities in education in the Czech and European context comparative and analytical methods were applied.

3. European Education and Its Objectives

A strategic framework for European cooperation in education and training called ET 2020 (Education and training 2020) set out four strategic objectives:

1. Making lifelong learning and mobility a reality
2. Improving the quality and efficiency of education and training
3. Promoting equity, social cohesion and active citizenship
4. Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training.

Globalization trends have an impact on education on national level not only from the point of view of new programmes and forms of education. According to Parizek (1996:14-15) various disciplines such as economy, sociology and philosophy of education, psychology of education etc. permeate the system of educational disciplines. Old concepts from various disciplines come to life, for example human capital, human development, human resource development and increasingly appreciation of human resources is discussed in educational policy.

The greatest importance was attached to so-called European benchmarks in European education policy. We concentrate only on some of them considering the content of the paper:

1. By 2020, an average of at least 15 % of adults (25-64 years old) should participate in lifelong learning.
2. By 2020, the share of 30-34 year olds with tertiary educational attainment should be at least 40%.

If we look at the table 1 showing the share of people with completed tertiary education to the population aged 25-64 years old (%) in the Czech Republic, we can see the rise of this share in 1999 with 11,1%. Initially the share went up very slightly, in 2007 the annual growth started to increase by 1% in 2012.

Table 1: Share of People with Tertiary Educational Attainment within the Population Aged 25-64 (%)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Czech Republic	11,1	11,5	11,6	11,8	11,9	12,3	13,0	13,5	13,7	14,5	15,5	16,8	18,2	19,3
Rise		0,4	0,1	0,2	0,1	0,4	0,7	0,5	0,2	0,8	1,0	1,3	1,4	1,1

Source: DV Monitor, www.dvmonitor.cz

According to the comparison of each region and the share of people aged 25-64 years old with tertiary educational attainment (Table 2) the capital city Prague is on the top with 37,5%, followed by regions South Moravian with 23,3% and Central Bohemia with 18,6%. Moravian-Silesian region came in the seventh place with 16, 2%.

Table 2: Share of People Aged 25-64 with Completed Tertiary Education in Population in the Regions in the Czech Republic (%)

Region	Year	Indicator level	Ranking
Moravian-Silesian	2012	16,2	8
Olomouc	2012	16,0	9
Zlín	2012	15,9	10
South Moravian	2012	23,3	2
Vysočina	2012	15,0	11

Pardubice	2012	14,3	13
Hradec Králové	2012	16,3	5 – 7
Central Bohemia	2012	18,6	3
South Bohemia	2012	16,3	5 – 7
Prague	2012	37,5	1
Liberec	2012	14,4	12
Ústí nad Labem	2012	11,9	15
Karlovy Vary	2012	12,1	14
Plzeň	2012	17,9	4
South Bohemia	2012	16,3	5 – 7

Source: DV Monitor, www.dvmonitor.cz

According to the international comparison (table 3) the chart looks as follows:

Table 3: International Comparison

Country	Year	Share in %	Year	Share in %
EU-27	2000	19,5	2012	27,6
EU-15	2000	21,2	2012	29,1
ČR	2000	11,5	2012	19,3

Source: DV Monitor, www.dvmonitor.cz

As the previous table proves the Czech Republic in comparison with EU-15 and EU-27 countries lags behind them even if the share of people aged 25-64 with completed tertiary education to the population of the Czech Republic nearly doubled in 2012 from previous share 11,5% in 2000. For the foreseeable future it can be assumed that in the period of the decline of the population curve, the rise will not be so sharp like in the previous period. The decline of students is evident from the number of students accepted to a university.

Universities are facing significant challenges. They are forced to revalue their educational programmes fighting for students with budget deficit. It is evident that the conception of so-called key competencies together with labour market needs of professional competence will play the major role. Research in this field has not been available yet, it will be the subject of further study focused on the following skills: ICT, professional, work management, teamwork, dealing with customers, solving, special problems and situations, administrative management, language knowledge, technical, practical etc., communicative (verbal or written), literacy and numeracy.

4. Discourse of Competence or Competencies, Key Competencies and ‘Soft Skills’

Key competencies are being researched by many researchers (Veteska, Prucha, Tureckiova 2008 etc.). According to their content it is currently used so-called competency-based approach, it represents the trend which emphasizes formation and development of key competencies as a tool of transformation of encyclopedical

education. Formal and non-formal education is linked via key competencies (Havlickova, Zarska, 2012, p. 8).

Our paper is based on the definition of key competencies as a summary of demands on education involving essential knowledge, skills and abilities universally applicable in everyday work and life situations (Smolikova 2004, p. 46). Competencies as a summary of demands represent usable and useful knowledge applied in practice. They involve learning competencies: problem solving, communication, social and personal, working and civil.

Key competencies are anchored in so-called Framework educational programme which is based on the requirement to teach and equip the pupils with knowledge and skills in each subject along with acquiring knowledge and skills, attitudes and values needed in everyday life. According to Dictionary of foreign words key competencies are defined as a complex of qualification, knowledge, abilities, skills, attitudes and values important for a personal development of the individual and his appropriate position in society.

We think that the meaning of the term key competencies should be understood extensively beyond concrete subject knowledge. We can trace key competencies in Belz and Siegrist (2011). They focus on the personal development of the individual and his creativity, independence, responsibility, reliability, thinking etc. in the framework of the development of key competencies.

Key competencies are defined in Slovník cizích slov ABC (available at www.slovník-cizich-slov.abc.cz 20.1.2014) like a summary of abilities, knowledge, skills, attitudes and values which are important for a personal development of the individual and his position in society. It involves for example learning competencies, competencies in solving problems, communicative, social and personal, civic and working competencies. According to Duden (2001, p. 930) competence (German Kompetenz) is a word from Latin *competentia* and it means – meet together. According to Naom Chomsky an English word competence has two meanings: a) (Sachverhalt) from pragmatic aspect it means: abilities (professional, scientific, communicative, social), b) from the linguistic aspect it means a summary of all speaker's language skills.

5. Key Competencies as a Reflection of Newly Nascent Social, Cultural and Economic Reality

The usability of knowledge and skills in different time and space variables seems to be an idea strengthening ideological trends towards so-called key competencies which have to confront challenges in the national, international and globalizing environment, in which it is impossible to predict further development in all fields of human activity in. The determining indicators of assumed changes are primarily rapid technology development and mass share of information, pervasive cultural diversity supported by the openness of not only European society being affected by globalizing trends. All the above-mentioned aspects represent for the society not only opportunities and challenges but at the same time risks and threats. The preparation of

education for thinking in European and global context with an emphasis on intercultural communication is more important.

In this context research points out a rigid educational system of the Czech Republic and especially the fact that the structure of university graduates does not reflect both labour market and expectations of companies (Zelená kniha 2008, p. 43). One of the reasons for serious insufficiency of the Czech educational system is the disparity between labour market demand and supply of vocational and higher education and training caused for example by the lack of specialists to be able to anticipate changes in labour market needs or insufficient use of knowledge in managing labour market policy interventions (Národní strategický referenční rámec ČR 2007-2013, p.11).

A new fact which the country had never been confronted with before has appeared and become a reality in the Czech Republic since 1990. This is migration and an increasing number of foreigners with a residence permit. Their number is increasing steadily.

6. Conclusion

In conclusion we would like to stress that we agree with Skalkova's opinion that if the pedagogical objective is to find a language for expressing and interpreting the facts which are involved in education of a man, its objective is also to introduce it in the discussion in the pedagogical public at the same time.

In this article we wanted to point out some disparities between national and global conceptions of education. The presented data show that despite the openness of tertiary education in the Czech Republic we lag behind in global comparison. This opens the possibility of diversification of university education, creating new syllabuses which will reflect local and regional factors in education and need to be flexible enough to cater to the needs of our regions. The contribution of our paper we mainly see in emphasis of disparities between national and global education in European context because professional discourse on European educational policy is needed to be held and a paradigm shift in an educational system to be put into effect by a transformation of a conception of syllabuses in tertiary sphere concerning applying professional skills into practice.

Globalizing tendencies in education are not without disparities completely, it can be predicted that heterogeneous national environment will not be able to fulfil new educational reality without any discussions and in some ways it can be accepted even with a dilemma.

At the end we would like to present some important ideas. A knowledge-based society is de facto a "society of long-life education" but on the other hand knowledgeable does not automatically mean educated with a rising number of educated or even university educated population. Availability of knowledge is the feature of a knowledge-based society but it does not have to be accomplished by a university degree (Dopita, 2010, p. 217, 218).

If we return to the European framework indicators and mainly to the requirement that by 2020 the share of 30-34 year olds with tertiary educational attainment should be at least 40%, we have to state that a detailed analysis of the ratio national-global, and also the possibility of the national educational system is the matter of the utmost importance considering the quality of output.

We have to realize where the global needs on education are heading in distant future, where the Czech education is going and how it will affect educational reality itself.

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Perception of Slovakia's Membership in the European Union from the Perspective of Slovaks

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Abstract

In 2014, the Slovak Republic commemorating the 10th anniversary of its entry into the European Union integration group, the North Atlantic Treaty, NATO and the five years since the adoption of the common European currency, the euro. The present contribution discusses the polls in the European Union, the perception of the citizens of the Slovak Republic, while special attention is paid to research the topic of membership in the Union in terms of Slovaks. The research was done during the last ten years, and we used the available results of a series of Eurobarometer surveys annually entrusting of analyzes public opinion of the European Commission.

Keywords: *European Union, Membership, Public Opinion, Slovaks*

JEL Classification: *F020, H41, M31, Z130, Z180*

1. Introduction

The Slovak Republic has sought to join the EU and NATO since its inception in 1993. A full member of NATO, the most powerful political- military alliance in the world, has become SR 29 March 2004. A month later, the first May 2004, Slovakia entered the European Union, a political and economic integration of democratic countries in the history of the European continent has no equivalent (EurActiv.sk [online], 2009).

Slovak Republic became a member of European Union citizens with a high level of support. EU accession vetted Slovak citizens in a historically single successful referendum, as it was attended by majority of eligible voters (52, 15 %). For Slovakia's accession to the EU in a referendum 92.46 % participating citizens. The referendum was held on 16 and 17 May 2003, the citizens have to answer the question: "Do you agree that the Slovak Republic became a member of the European Union?" (Statistical Office of the Slovak Republic [online], 2014).

Additional milestones of European integration of the Slovak Republic include incorporation into the territory of the Slovak Republic to the Schengen Area 21 December 2007 and the adoption of the euro on 1 January 2009.

By joining the European Union, the Slovak Republic surrendered part of their sovereignty delegation to EU institutions such as the European Commission, the Council of the European Union, the European Court of Justice, and the like. On the other hand, Slovakia has committed to contribute to the EU budget.

On the professional level are still discussing the advantages and disadvantages of the Slovak Republic into the European Union in terms of economic terms, monetary, cultural and social terms. Positive view of citizens in the European Union undermines the ongoing economic crisis in Europe.

2. Problem Formulation

Ten years of Slovakia's membership in the European Union requires the assessment of positives and negatives in the balance sheet under evaluation. One possibility is precisely the analysis compares the perception of Slovakia's membership in the EU in terms of Slovaks.

The primary objective of the research study was polling in the European Union by Slovak citizens. In the research topics we focused on the analysis of support for EU membership by the citizens of the Slovak Republic. We have set the following research questions: What was the evolution of the perception of the citizens of the Slovak Republic for membership in the EU over the last ten years? Touched the economic crisis in Europe Slovaks reviews for EU membership?

2.1 Model and Data

When analyzing public opinion in the European Union in terms of Slovaks are available based on a series of Eurobarometer surveys, which enters of analyzes public opinion of the European Commission since 1973.

The European Commission has been monitoring the evolution of public opinion in the Member States, thus helping the preparation of texts, decision - making and the evaluation of its work. This surveys and studies address major topics Concerning European citizenship: enlargement, social situation, health, culture, information technology, environment, the Euro, defense, etc. (European Commission [online], 2014).

The standard Eurobarometer was established in 1973. Each survey Consists of Approximately 1,000 face-to -face interviews per country. Reports are published twice yearly (Standard Eurobarometer [online], 2014).

Although varied range of issues during the reporting period, the sponsor shows that to ensure consistency of the survey in order to compare the data in the timeline. Starting with Eurobarometer. 34 of 1990 in addition to the standard survey carried out separate supplementary surveys on specific topics: Special EB Flash EB, EB Qualitative.

We did the research focused on the research of the standard Eurobarometer, while we worked with autumn release of a national report for the Slovak Republic. We analyzed the available reports Desai: Eurobarometer 62, 64, 66, 68, 70, 72 74, 76, 78, 80.

2.1.1 Eurobarometer 2004

According to a survey conducted in autumn 2004 was Slovakia's membership in the European Union as a good thing 57% of the citizens of the Slovak Republic,

which was at the level of the European average (56% in EU25), while it was the second highest support among the ten new Member States. The highest support among the new member states should join the EU in Lithuania (69%) had a total membership of highest support in Luxembourg (85%). Conversely, had the lowest support for EU membership in Latvia (40%) and the UK (38%). In comparison to the European average, however, was much lower in Slovakia the number of people who thought that membership in the EU is a bad thing - only 4% compared to 13% in the EU25. On the contrary more people in Slovakia felt that EU membership is neither good nor bad thing - up to 37% compared to 28% in the EU25 (Eurobarometer 62 [online], 2014).

2.1.2 Eurobarometer 2005

According to a survey carried out in autumn 2005 was Slovakia's membership in the European Union as a good thing 50 % of the citizens of the Slovak Republic, which was at the level of the EU average, while it was the third highest ranking among the ten new Member States. Most people considered the EU membership as a good thing among the new member states in Lithuania (57 %), second place it was Poland (54 %). Overall, EU membership was a good thing most people in Luxembourg (82 %), Ireland (73 %) and the Netherlands (70 %). Conversely, at least they think that people in Austria (32 %), the UK (34 %) and perhaps surprisingly in Latvia (36 %).

In comparison to the European average there were much smaller number of people who thought that membership in the EU is a bad thing - only 7 % compared with 16 % in the EU25. On the contrary more people in Slovakia felt that EU membership is neither good nor bad thing - up to 42 % compared to 30 % in the EU25 (Eurobarometer 64 [online], 2014).

2.1.3 Eurobarometer 2006

After accession to the EU has increased the number of citizens who consider membership in the EU as a good thing by 11 percentage points to the following surveys initially fell by 3 respectively 4 percentage points. Since autumn 2005, the number of Slovak citizens who believed that membership in the EU is a good thing, again increasing. In autumn 2006, was Slovakia's membership in the European Union as a good thing 61 % of Slovaks, which is 6 percentage points higher than in spring 2006 and by up to 11 percentage points more than in autumn 2005. Simultaneously, equivalently, the number of those who thought that membership in the EU is neither a good nor a bad thing. Only 6 % of Slovak citizens thought that Slovakia's membership in the EU is a bad thing , in comparison with surveys conducted over the past two years occurred when these responses no significant change.

From a demographic point of view while we can conclude that the positive evaluate membership in the European Union and the younger generation of Slovaks with higher completed education, respectively still studying. Slovakia's membership in the EU as a good thing and 71 % of Slovaks aged 25-39 years and 68 % of Slovaks aged 15-24 years. In the age group 40-54 years considered membership in the European

Union as a good thing and 59% in the age group over 55 years it's been less than half, 48 % of citizens (Eurobarometer 66 [online], 2014).

2.1.4 Eurobarometer 2007

Opinions of Slovak citizens to their country's membership in the European Union do not deviate significantly from those of EU27 citizens. Union membership considered a good thing 58% of Slovaks and the same percentage of EU27 citizens. Conversely membership of the European Union considered a bad thing, only 6% of Slovak citizens, which is 7 percentage points less than the European average. Slovak citizens who are not EU membership as a good thing rather incline to the fact that EU membership is neither good nor bad (Eurobarometer 68 [online], 2014).

2.1.5 Eurobarometer 2008

Up to 62% of Slovaks think that the membership of the Slovak Republic in the EU is a good thing. Among the new member countries have expressed more positive about the EU citizens only Romania and Poland. Higher percentage of respondents than in Slovakia, however, their country's membership in the European Union as a good thing said in Ireland, but which citizens in a referendum rejected the Lisbon Treaty.

Besides the already mentioned 62% of Slovak citizens who join the European Union considered a good thing (about 9 percentage points higher than the EU27 average) a 31% of Slovaks felt that EU membership is neither good nor bad (by 4 percentage points more than the average EU27). Only 5% of Slovak citizens felt that their country's membership in the EU is a bad thing, which is 10 percentage points lower than the EU27 average (Eurobarometer 70 [online], 2014).

2.1.6 Eurobarometer 2009

Slovak Republic traditionally ranks among the countries of the European Union, which is the highest number of citizens satisfied with EU membership. In autumn 2009, was a member of the European Union as a good thing 68% of the citizens, which is the fourth highest number after Luxembourg (74%), the Netherlands (74%) and Ireland (72%) (Eurobarometer 72 [online], 2014).

2.1.7 Eurobarometer 2010

While the European average is more people who do not trust the EU (45%) than those who trust it (43%), Slovakia European Union in 2010, 71% of trusted and distrusted only 24% of citizens. Slovak Republic has become the country with the highest level of trust in the European Union among the European Union member states. Second highest level of trust in the EU prevailed in Bulgaria (65%), the third highest confidence in the EU that citizens of Estonia (64%). On the other hand, the lowest confidence in the EU that citizens of Great Britain, where the Union trusted only 20% of citizens and 64% do not trust her. Even in the "motor" of European integration, Germany and France prevailed distrust of trust in the EU. In Germany, 51% trust

the EU citizens and trusted him only 36% in France and 50% trust the EU citizens and trusted only 39% (Eurobarometer 74 [online], 2014).

2.1.8 Eurobarometer 2011

The Eurobarometer 2011, we could not find the survey results regarding support for EU membership (Eurobarometer 76 [online], 2014).

2.1.9 Eurobarometer 2012

The Eurobarometer 2012, we could not find the survey results regarding support for EU membership (Eurobarometer 78 [online], 2014).

2.1.10 Eurobarometer 2013

Slovaks traditionally have lower confidence in national institutions as the institutions of the European Union. In the case of the European institutions is contrary to their trust traditionally higher than the European average. National government trusted only 29 % of the citizens of the Slovak Republic (23 % of citizens EU28), the national parliament trusted 28 % of Slovak citizens (25 % of citizens EU28) and the European Union trusted 47 % of Slovaks (31% EU28). Roughly the same size, however, was a group of those Slovaks who trust the EU (49 %). In EU28 trust the European Union, even to 58 % of citizens. Perhaps somewhat paradoxically more confidence than the EU itself had Slovak citizens to its institutions. European Parliament (EP) 56 % of Slovaks trusted (and only 39 % of citizens EU28) , the European Central Bank (ECB) trusted 55 % of Slovak citizens (and only 34 % of citizens EU28) and the European Commission (EC) trusted 51% of Slovak citizens (and only 35 % of citizens EU28).

Confidence in the national government in this period declined by 8 percentage points, and confidence in the national parliament by 9 percentage points, confidence in the European Union fell by up to 26 percentage points (Eurobarometer 80 [online], 2014).

3. Problem Solution

According to a survey conducted in autumn 2004 was Slovakia's membership in the European Union as a good thing 57 % of Slovak citizens. Below the results probably reflect a more massive campaign of most political parties were in favor of membership, as well as citizens' enthusiasm for change.

In 2005, we observed a decrease citizens' trust in the EU at 50%. At the same time slightly increased the number of those who thought that membership of Slovakia in the EU is neither good nor bad (5 points). Increase in the number of those who thought that membership in the EU is a bad thing was modest and is located on the border of statistical error.

In 2006 again increased citizens' trust in the EU at 61%. Slovaks even rated their country's membership in the European Union positively than citizens of the EU25,

whereas the average in Europe was their country's membership in the EU as a good thing 53% of citizens, representing an increase of 8 percentage points less than in Slovakia on the other hand their country's membership in the EU considers bad thing 16% of EU25 citizens, which was 10 percentage points more than in Slovakia.

In the fall of 2007 again decreased public confidence by 6 percentage points (55 %), while about 6 percentage points increase in the number of those who did not consider EU membership nor good nor a bad thing. The number of Slovak citizens who consider EU membership is a bad thing while since spring 2005 kept constant at 6-7 %.

Since 2008, rising again trust, while 62 % of Slovaks felt that membership of the Slovak Republic is a good thing , as was most of the V4 countries , whereas in the Czech Republic support was at 46 % , 39 % in Austria and Hungary even only 31 % of citizens.

In autumn 2009 was 68 % of the citizens as a good thing for European Union membership. Moreover, a bad thing considered membership in the European Union, only 5% of Slovaks, which is 10 percentage points below the European average.

In 2010, the Slovak Republic became the country with the highest level of trust in the European Union among the European Union member states as the EU trusted to 71 %.

Between 2011 and 2012, a Eurobarometer survey results are not about support for EU membership. The reason was apparently falling confidence, which occurred from autumn 2010 to spring 2013.

In 2013, the European Union, 47 % of Slovaks trust, which is the second lowest confidence in the Union within the analyzed surveys.

4. Conclusion

In conclusion, it should be noted that during the reporting period include Slovakia to the European Union countries, where the majority of citizens evaluate membership of their country in the EU positively.

After long-term analysis of Eurobarometer surveys it can be stated that the confidence of citizens of the Slovak Republic to the European Union over the last decade gradually varies in the range of 46 % (2004) up to 71% (2010). In the reporting period there was a decline in three, while the largest decrease was recorded in the period from autumn 2012 to spring 2013 that confirms not only lower the confidence of 2013, but also unpublished data for 2011 and 2012.

We believe that declining trust in the EU and its institutions is probably a reflection of unfulfilled expectations Slovak citizens that the EU will bring them greater prosperity and increased living standards. In conclusion, said that the decline in confidence in the European Union by the Slovaks occurred during the economic crisis in Europe, so it was most likely a key factor reduction in polls in this research topic.

Downward decline in public confidence in the EU SR proves the rule Samuel Huntington's theory in its "third wave of democratization in the institutionalization of democratic behavior. He claimed that the disillusionment that the new democratic systems prevailed, often manifested resignation, cynicism and aversion to political issues (Huntington, 2008, p. 255).

Possible socio - economic impact of the recent crisis offered the interpretation aspect of psychology, which, however, the authors outsource psychologist.

In conclusion, the authors estimate the expected problems in the future, which is not easy due to the fact that there is no obvious development of the European Union as a whole. We think that Slovaks trust in the EU in the near future will be driven by the impact of the global crisis. To increase credibility can contribute Council of the European Union and the European Commission that will address issues that are a priority concern of EU citizens. We believe that the very important role played by representatives of the Slovak Republic in the European institutions , including Members of the European Parliament , who should explain to citizens the positive aspects of EU membership . Last but not least to mention the role of the mass media, which should increasingly informed about European politics.

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Evaluation of the Implementation of Selected Regional Operational Programs with a Focus on Public Projects Economic Efficiency

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Abstract

The paper aims to assessing of economic efficiency of public projects that were implemented by the regional operational programs for the local development of towns and villages. Mainly the paper deals with projects of reconstructions and newly built sports facilities in towns and villages inhabited by 500 up to 5000 people. Those projects were financed by two programs ROP NUTS II Northeast and Southeast which are similar in terms of development priorities. Quantitative research has been conducted in total on 69 supported projects. Statistical methods were applied in the research. Ex ante evaluation practices and evaluation indicators of financial and economic efficiency of projects have been analyzed as well. Among the others at the end we concluded recommendations for improvement of selected support programs implementations with regard to increase the economic efficiency of the expended public financial funds.

Keywords: *Efficiency, Evaluation, Project, Regional operational program*

JEL Classification: *H21, H71, R58*

1. Introduction

When Czech Republic became a member of EU as the other countries we started to withdraw European Structural Funds and the Cohesion Fund. In the first (abridged) programming period the funding exceeded 2.8 billion EUR, in the second programming period 2007-13 the amount was quantified to 26.7 billion EUR. Withdrawal of pre-accession funds as well as the first (abridged) programming period was negatively influenced by little experience in project management. This phenomenon was caused not only by beneficiaries of grants, but managing authority as well as local governments are facing to the objective critics Ministry for local Development was at the time of 2004-6 them engaging Authority of support aiming to the regions through the Joint Regional Operational Programme. Regional authorities then set up their own grant schemes which were financed from the JROP (SROP in Czech). Regional authorities have evaluated and administrated "their own" regional projects according to unified rules.

In the following programming period 2007-2013 a significant innovation have been carried out in regard of domestic implementation of the financial instruments of the EU regional policy. Original Joint Regional Operational Programme which was centrally managed was later replaced by a seven individual regional operational

programs which were managed by cohesion region governments NUTS 2. The total financial allocation of these programs amounts to 4.66 billion EUR, which makes almost 18 % of the allocation of structural funds in the Czech Republic. The main reason for this change according to the principle of subsidiarity was delegation of decision-making (about the allocation of EU funds) to the level where individual projects are instantly addressed. Within the regional operational programs, more space was given to regions to set their own development priorities according to their individual specific conditions and needs. Another benefit of ROPs compared to the previous Joint Regional Operational Program (SROP) was the possibility for local institutions to take initiative. In consonance with partnership principles local institutions are then more involved in influencing future economic and social development of their own regions and they can effectively build up necessary administrative capacity for truly effective regional policy (Šímanová, 2011).

This kind of systematic approach programming should have become a real tool for the implementation of regional policy, which has the ambition to be in operation even after support termination of EU funds. As negatives of regional operational programs were initially perceived mainly increased administration costs and concerns aimed to handling of individual regions complex administration of operational programs by individual regions.

The above mentioned doubts were however completely drowned out by the scandals associated with ROP overpriced projects which led to cuts off in subsidies from the European Commission or suspending the functioning of specific ROPs.

Although it might seem that these projects were just few isolated cases, they damaged the reputation of ROP and Regional Councils so heavily that for the next programming period 2014-20 ROP a regional program will be again centralized under Ministry of local development called "IROP". In this paper we are show that early reported problems of ROPs have absolutely fundamental nature which is associated with a very ambiguous assessment criteria allowing non-transparent handling during evaluation of the projects.

The main objective of this paper is to evaluate the economic efficiency of selected projects promoting regional development funded by two similarly arranged ROP. In the paper we will verify basic hypothesis:

"The evaluation criteria used in the ROP NUTS 2 are so ambiguous and therefore significant differences in economic efficiency between individual projects as well as between the entire regional operational programs are allowed."

2. Methodology Approach to the Assessment of the Public Projects in Regional Operational Programs

Evaluation of projects submitted for support from the ROP was conducted in 3 phases. The first and second phases are more - less formal. There the acceptability of the project was evaluated by checking the fulfilment of formalities. Both phases were carried out by staff of the regional offices. In the third stage substantive

evaluation was carried out by the committee and by at least two mutually independent evaluators. Each evaluator receives a table of evaluation criteria. The basis for the evaluation was the application for the grant and its annexes as well as the study of economic evaluation and budget needed requested for the event. For the area of promotion, which was chosen as the reference (see Sec. 2.1) every project was evaluated in three criteria. Actual amount of points given to every criteria have depended on the discretion of the evaluator. Criteria for evaluation are described in following paragraphs.

- a) The ability of the applicant, horizontal issues, fulfilment of indicators (20% weight of criteria), strong accent to conditions for successful preparation, implementation and success of the project (human resources, technical equipment, etc.), in which extent the project contributes to fulfilling the horizontal themes of this indicators.
- b) The project value in the technical point of view (40% weight of criteria), evaluators investigate whether the use of technology is environmentally friendly.
- c) The necessity and relevance of the project (40% weight of criteria) - here evaluator determines what activities the project covers and what is its linkup to other activities in the area. In addition, the evaluator assesses the extent to which the project meets its objectives and whether the applicant described reasons of benefits of the project for the development of the region. (Regional Council NUTS2 Northeast [online], 2014) and (Regional Council NUTS2 Southeast [online], 2014).

The overall rating does not contain any quantified criteria that are common in other operational programs (e.g. maximum amount per connected household to water supply and sewerage systems or specific financial value for thermal insulation of buildings, or maximum amount per project participant in projects on education).

The absence of such criteria may easily lead to overpricing of certain projects in regard of the target group or implementation of excessive projects that can greatly encumber the future budget of the municipality.

When assessing the socio-economic efficiency of public projects it is possible to use methods which due to their nature can contribute to a more accurate evaluation and comparison. These methods are referred to cost-utility analysis methods are based on decisions based on one criterion. Cost minimizing analysis (CMA), Cost-Benefit Analysis (CBA), Cost-effectiveness Analysis (CEA) and Cost-Utility Analysis (CUA) are belonging to this family of analyses. Above mentioned methods help to provide two on one hand the measurement of the cost and on the other hand benefits of the evaluated projects (Franc, 2012; Remer, 1995).

Simplified comparison of those methods is in Table 1.

The problem with public projects assessment methods lays of course in quantification of the benefits. As there is no methodology that could be applied in our case, we accept the simplistic assumption that the benefits for each stakeholder are approximately equal. In other words, every member of the target group should

have similar benefits of the project regardless of their preference. Therefore we assume that between cities and municipalities (beneficiaries) are similar distribution of the preferences to the infrastructure. In the context of the above mentioned simplification, we accept the assessment by CMA (cost-ratio) for projects that fall within the support area defined in Chap. 2.1 (examined projects).

Table 1: Input-output Methods Simplified Comparison

I-O	Indicator	Nature of the method	Application
CBA	NPV, BCR, IRR	societal acceptability of the project	the big infrastructure projects
CMA	Cost-ratio (C-R)	constant utility for each stakeholder	small health care projects - medicin
CEA	cost-effectiveness ratio(CE)	number of effects	the big societal project with number of effects
CUA	QUALY, HYE	utility measurement	the big societal project

Source: authors result based on (Franc, 2012), (Remer, 1995)

2.1 Description of the Research Methodology and Scrutinized Sample

It was necessary to ensure comparability of ROPs in terms of their focus in the first phase of the research. Program priorities, assisted areas, target groups and supported projects (number and financial allocation) were analysed in all seven regional operational programs. Very similar program priority (improvement life quality of local residents in rural areas), supported area (urban development and municipal development), target group (cities and municipalities with 500 to 5,000 inhabitants), and similarity in allocation of funds for comparable projects (construction and renovation of playgrounds and sports fields) were detected in two ROPs - ROP NUTS 2 Northeast and Southeast ROP NUTS 2.

There is in total of 70 projects of the construction and renovation of playgrounds and sports fields, the total allocation of funds amounts to CZK 761 million. A total of 24 projects with a volume of funds CZK 421 million was realized in the framework of ROP NUTS 2 Northeast. The remaining 46 projects were implemented then by the ROP NUTS 2 Southeast with financial allocation of amount CZK 340 million.

Approved projects itself were subjected to analysis in the second phase of research. We examine supported projects from these points of view

- a) the substantive part of the project,
- b) the eligible expenditure on implementation of the project,
- c) the size of the target group.

Information important to points a) and b) were collected from grants contracts which are publicly accessible. The size of the target group was quantified for all projects using the same methodology. It consists of number of inhabitants of the municipality and the surrounding satellite villages within a radius of 5 km. This procedure is based on the premise defined in the introduction to this chapter, i.e. "same distribution of the preferences of the population due to the infrastructure. This means that every inhabitant of the village and surrounding satellites (target group) has constant benefit from the project." Only such an approach can be effectively applied the above mentioned method of CMA. The source of data for calculation of the target group is the portal of the Czech Statistical Office.

From a practical reasons the projects were divided into

- a) Projects of new built sport facilities,
- b) Projects of reconstruction and enlargement of existing sport facilities.

Subsequently, according to the formula (1) we calculated average value (cost of the project) per capita (the target group) for each project, the cost-ratio:

$$CR = \frac{ECP}{STG} \quad (1)$$

where CR is cost-ratio, ECP is eligible cost of the project and STG is size of the target group.

In the third phase of research the individual cost-ratio were evaluated by the statistical characteristics of the central tendency and variability in order to analyse the magnitude of price differences between the individual supported projects and differences within the entire programs. In conclusion the research hypothesis is tested using of mathematical and statistical methods.

Specifically, we examined whether project cost-ratio on the given level of significance are statistically different from the mean value (arithmetic average), in both - projects of reconstruction as well as projects for new constructions. So we applied the test compliance of mean values at the 5% significance level with a standardized normal distribution $N(0,1)$ (Hindls, 2007; Kocourek, 2013).

The test statistic was calculated for each ROP, separately for new construction and reconstruction in the form:

$$Z = \frac{\bar{x} - \mu_0}{\sigma^2} \sqrt{n} \quad (2)$$

The critical values were then identified using MS Excel function:

$$x_{krit,L} = z_{\frac{\alpha}{2}} = NORMSINV\left(\frac{\alpha}{2}\right) = -z_{1-\frac{\alpha}{2}}, x_{krit,P} = z_{1-\frac{\alpha}{2}} = NORMSINV\left(1 - \frac{\alpha}{2}\right) = -z_{1-\frac{\alpha}{2}} \quad (3)$$

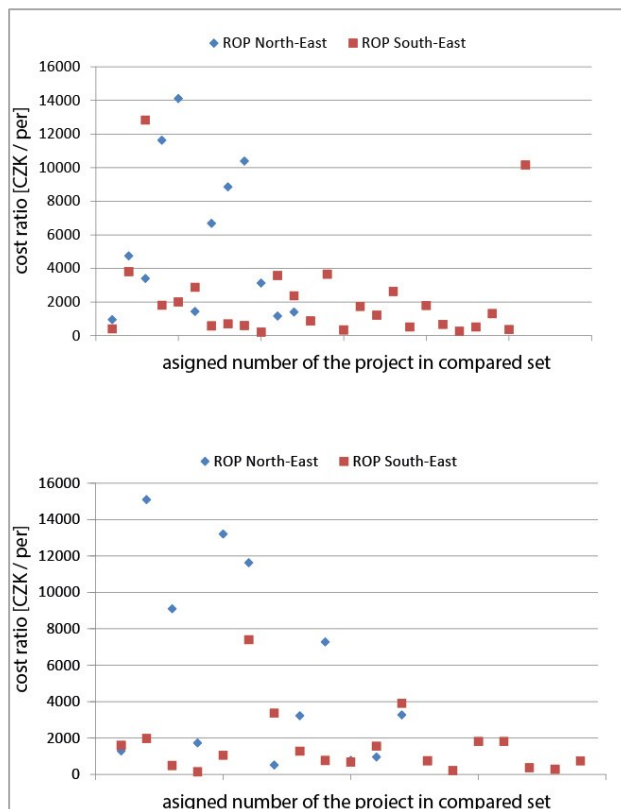
3. Problem Solution

In the first phase we calculated cost-ratio for all rated projects. The results are shown in Figure 1. It is obvious that the cost-ratios of ROP Southeast are on average significantly lower than the cost ratios of ROP Northeast, both for new construction and reconstruction. Indicators of the level and variability of statistical data file are shown in Table 2.

From the tab. 2 it is evident that the cost ratios of the projects of reconstructions in the ROP Northeast are paradoxically higher than new construction. The projects of reconstructions are on average by almost 30% cheaper in the ROP Southeast. Another distinctive fact is that a similar type of projects of new construction are on average more than 2.5 times more expensive and a similar types of projects of reconstructions are even more than 3.5 times more expensive in the ROP Northeast.

The standard deviation of the statistical data file, respectively the ratio of standard deviation and the average cost-ratio shows that the relative difference in cost-ratios is higher in the ROP Southeast, but the absolute standard deviation for of the ROP Northeast is significantly higher due to the higher costs of its projects.

Figure 1: Cost-ratio for Projects of a) New Construction and b) Reconstruction of Sport Facilities in ROP Northeast and ROP Southeast



Source: authors' calculations based on (CSO [online], 2014), (Regional Council NUTSII Northeast [online], 2014) and (Regional Council NUTSII Southeast [online], 2014)

Table 2: Basic Statistic Characteristic of the Data File

	ROP Northeast		ROP Southeast	
	New construction	Reconstruction	New construction	Reconstruction
Number of granted projects	12	12	26	19
Average cost-ratio	5 655,95	5 675,34	2 218,48	1 589,99
Standard deviation	4 392,65	5 122,36	2 917,07	1 689,85
Standard deviation/average cost-ratio (%)	77,66	90,26	131,49	106,28

Source: authors' calculations based on (CSO [online], 2014), (Regional Council NUTS2 Northeast [online], 2014) and (Regional Council NUTS2 Southeast [online], 2014)

A statistical test of compliance of mean values (the results are shown in Table 3) proved at statistically significant deviation from the mean value for projects of the ROP Northeast - for reconstructions and new constructions and in the ROP Southeast - projects of reconstruction. The hypothesis was not confirmed in the case of the ROP Southeast projects of new construction.

Table 3: Results of the Testing Hypothesis

	Test statistics Z	Critical value	H0 hypothesis
ROP Northeast - new construction	-3,811605621	(-1,96, 1,96)	not rejected
ROP Souththeast - new construction	1,759202594		rejected
ROP Northeast - recostruction	-3,499909443		not rejected
ROP Southeast - recostruction	2,210469122		not rejected

Source: authors' calculations

4. Conclusion

In the introduction of this paper we expressed the assumption that ambiguous evaluation criteria in the ROPs may lead to significant differences in social-economic efficiency of the granted projects, and thus to inefficient use of public funds. We focused on examination of two programs with similar objectives, priorities, areas of intervention and granted projects - the ROP Northeast and Southeast. It is evident that the similar projects are after application of the uniform (transparent) assessment methodology significantly different in the scope of economic or cost efficiency. At the 5% level of significance we found statistically significant deviation from the mean value in new sport facilities built from the financial support of the ROP Northeast and in projects of reconstruction in both ROPs. Newly built facilities in the ROP Northeast are on average 2.5 times more expensive and even 3.5 times more expensive in the projects of reconstruction than in the ROP Southeast. In the ROP Northeast there were supported only 24 projects. In the ROP Southeast (which has even about 20 million lower financial allocation for the area of intervention) there were supported 45 projects. However with expensive projects in smaller municipalities are other consequential problems connected like f. e. later costs of operation and maintenance of infrastructure (reinvestment) which could mean significant burden for the municipal budgets in the future, i.e. moral hazard of current local governments.

Important element to be named is, among others, very ambiguous criteria for project selection (non-quantified, methodologically unsubstantiated, evaluation is dependent on evaluator's opinion), which by the fact were already known in the call for grant applications. While the specific financial requirements of the certain type of projects were previously known and the benchmark value would have been methodically adjusted, the differences between the projects and the programs certainly would be smaller. Therefore efficiency of public funds could undergone positive changes. This benchmark value could certainly be the value that occurs most frequently in the file (modus) or a measure of central tendency (e.g. median). In the case of projects of construction of new infrastructure for sports is the median value

(median cost-ratio) 1730 CZK per member of the predefined target group member and for projects of reconstruction then 1550 CZK per member of the predefined target group. If there had been applied clearly measurable and assessable criteria of the above mentioned projects and programs, the aggregated savings in the ROP Northeast could amount up to CZK 260 million and dozens of other projects could be supported. In contrast, if there had been strong competition between projects the public funding support would be distributed in the same way in the ROP Southeast. The use of quantified evaluation criteria of cost efficiency and the use of common methodologies for ex ante evaluation of the cost effectiveness of typical projects would certainly help to reduce the disparity in quality management programs to support local development.

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Non Military Aspect of Population Growth as Current Demographic Problems of the EU Countries

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Abstract

These days, demographic problems – especially population growth and its non military aspect of security belong to the one of the most crucial problems in relation with the global problems of humankind. The problem of the world population belongs to one of the current key global problems of humankind. The fastening increase of the world population is a serious problem of the contemporary world. This problem's gravity was realized by humankind at the beginning of the 60-ties of the 20th century, whereupon demographic development has achieved a great significance since then. The term- population problem- has thus become a subject for many scientific discussions. The population influenced and still influences the functioning of society, therefore great attention to demographic processes was paid in the past and is still being paid even nowadays.

Key words: *Demographic problems, Population growth, Security*

JEL Classification: *J1, J110*

1. Introduction

At the beginning of the 21st century demographic factors account for a crucial determinant of the global security. Demographic trends influence the security background in many respects (Terem, 2004). They steadily and dynamically change the formal as well as contextual aspect of it. Some contemporary demographic trends have a specific character, and their diversity is being developed because of the world population's increase. Closer attention, which has been in the recent years given to demographic trends and demographic development in relation with globalization and dynamic changes in the security background, leads to various demographic myths frequently with a political background (Terem, 2008). The coincidence of various demographic, security-political (Kaňa, Mynarzová, 2012) and economic factors, has developed a few critical, or more exactly to say, catastrophic zones of development in the world. Among them there are first of all a larger part of Sub-Saharan Africa, Middle and South-East Asia (Lupták, 2005. p. 561-562).

The world demographic development in the 21st century will be characterized and influenced by many demographic factors. Opinions on what problems will be the most significant are differing according to specialists and analytics based

on the definition of which problem is the most significant one. In general, it is possible to say, that all these opinions state that the problems are interconnected.

The current world demographic development can be characterized through three main trends (Vaño, 2001, p. 31-35):

- Population grows the fastest in the poorest countries that are less capable to fulfill needs and create opportunities for its population
- The population growth in the developed countries is decreasing and the population ageing
- Countries strongly influenced by the HIV have high mortality and the life expectancy is shortening
- The urban growth is progressing mostly in the less developed regions (currently the city population exceeds the rural population for the first time in history)
- The increase of refugees because of persecutions in their own countries is an important source of the class of the poor (huge urban agglomerations, refugee camps, slums)
- The potential population growths in developed countries will mainly be as a result of immigration
- The next part is focused on one of the demographic problems –population growth as a non military aspect.

2. Population Growth

A qualified decision in the sphere of economy, social affairs, employment, education, health care and the residence building, cannot work without qualified, properly structured, variable and prompt demographic information. The meaning of demographic information is stressed due to the current social situation when the part of social changes is formed by decisive changes in the reproduction behavior of inhabitants. As a result of these changes there are changes in the increase and structure of inhabitants, and the structure of families and households is also being changed. Apart from information about the past and current population development, information about expected development is needed for decision processes. Demographic prognoses are the basis for the contemplation about future social development.

Changes in the sphere of global population's behavior, which have been intensively monitored since the second half of the 20th century, especially because of the steep increase of the world population and its irregular spread, are the subject of attention of many scientists as well as world organizations dealing with aspects of social life (Koper, 2012). Since the population changes have also economic and social effects (Rošteková, 2009), it is evident that in the period of evident population changes there is a need and significant demand for information and data concerning the future development of population and its parameters. The result of such a trend is to find out and predict an expected future development.

In 2003 the UN published a prognosis of the world population, which in contrast to the previous long-term one for the period up to 2150, has a significantly longer time horizon- up to the year 2300. But it is necessary to say that the results for such a long-term horizon have to be taken with very carefully, and as the most probable might be taken considered results for the period up to the year 2050 (Abrahám, 2008).

The prognosis is based on the finding that the population increase of the developed countries caused by high birth rate has slowed down, and it is proposed that it will be gradually slowing down in the next period. Thus it will approximate to the situation in the highly developed countries of the contemporary time, in which, on the contrary, the prognosis supposes the contemporary low birth rate will be overcome. Similarly, as in highly developed countries, in the third world countries as well, there is an expected increase of average life expectancy (a quicker process in third world countries, but developed countries will keep a certain head start).

The tendency of increase, decrease and subsequent increase of people results from assessments of future trends in life indicators. In some countries natality might decrease to an under-increase level, though in some cases for not a long time. There is a possible return to the values of increase after some time, and subsequently life expectancy will probably in some countries have the trend of steady and undisruptive slow increase. So there is an assumption that regions and countries will show the same demographic trends on a long-term horizon, but the particular levels of development will be reached in a different period of time.

More than the global development of inhabitants, it is important to monitor the regional increase of the world population. There live nearly 6,9 billion of population in the most developed countries of the world. While in these countries there is 1.22 billion – 17.9% of the world population, in the developing countries there is 5.69 billion that accounts for 82.1% of the world population. But according to the UN, the prediction of the world population's increase by the year 2050 differs. Globally, there will be an increase approximately of 2,5 billion, which accounts for the increase circa 40%. The developed countries (countries of North America, Japan, Europe, Australia and New Zealand) will participate with their increase only by 2%, and to less extent it will be developed countries (countries of Latin America and the Caribbean, Asia, apart from Japan, Malaysia and Polynesia) with the increase circa 49%, and to least extent developing countries (most countries of Africa) will participate with the increase 129%. The developing countries have in their demographic development “a kind of delay“ of 75 years, comparing to developed countries, and the process of demographic revolution should be finished in these countries in the period of 50 years. But this situation will not be a termination of population's increase, but it will require more than 50 more years. It means that a final solution to this problem can be expected in the second half of the 21 century. A very problematic region in the term is Africa wherein the population increase today is 2,9%. Another critical part is Latin and South Africa and Asia. South Asia had at the end of the 20th century 2,2 billion of population, which is the same number as the world population in the year 1950 (Veselá, 2003, p. 163).

Approximately 4.83 billion of the world population, which accounts for 70.5%, today lives in 20 countries of the world. In the European Union there live more than 501 millions of people, which accounts for only 7.4% of the world population.

In case of the most populated countries of the world, it is possible to see significant differences from the future point of view. In the year 2050 there will be a population increase in, first of all, less developed countries of the world. The most significant change will occur in the first position wherein India will get its position. That means that in the period of 100 years (1950 – 2050), there will be the most significant absolute increase of population; more than 1.3 billion of the population.

From the prognosis point of view, there is an assumption that life expectancy will steadily increase without a top limit, influenced mainly by the situation in a country. By the year of 2100 the age will vary between 66 and 97 years, and by the year 2300 between 87 up to unbelievable 106 years.

The population increase will naturally influence the ratio between the population and its life space. The density of population will keep on rising and its irregular structure in space, which will be in 2100 in average between 3, 6 of citizens per km² in Australia up to 540 citizens per km² in Micronesia. The most densely populated country will probably be Bangladesh with 200 people per km².

One of the most crucial trends of the future is aging of population. While in 2000 the world age average was 26 years, in the year 2100 it will be 44 years, and in the year 2300 it will be about more that 48 years. Also within the period of the years 2100 and 2300 there is an expected rise of population over the age of 65 in even more than one-third (from 24% to 32%), the number of population aged over 80 and more will increase twice as many (from 8.5% to 17%) and the number of people aged 100 will multiply 9 times (from 0.2% to 1.8%). Unbelievably, in the year 2000 there was world average retirement age 65 years, which meant that retired persons will enjoy their own fully deserved retirement period of life for only more than 2 weeks. If the average age for retirement time did not change by the year 2300, we would be in retirement period of life for 31 years in average.

Interestingly, the period of countries demographic development is also called as a demographic window. This period is characterized by the fact the number of children and youngsters under the age of 15 does not exceed 30%, and the number of people over 65 years and more does not reach 15% of the whole population. As a result in the period of 30-40 years, the people at the productive age are becoming a dominant part of population. This situation will be typical, e.g. in Africa approximately around the year 2045 or later. In difference to Europe that appeared in the demographic window before the year 1950, and at present the so called third age is coming to existence here dominated by old people.

Less developed countries might expect an increase in the number of population from 4.9 billion in the year 2000 up to 7.7 billion in 2050. The biggest increase will occur in less developed countries, whereby the population in the countries like Burkina Faso, Mali, Niger, Somalia and Yemen will increase even four times.

According to prognoses the international migration is not supposed to significantly change. (Bolečeková, M. 2010) More developed countries might in the next 50 years annually expect 2 millions of immigrants. Traditional recipients are supposed to be the United States of America, Germany, Canada, Great Britain and Australia. Most frequently immigrants will come from China, Mexico, India, Philippines and Indonesia.

In 2000 the most populated world countries were China, India and USA. By the end of the year 2050 the leading position should be definitely taken by India. The other countries such as Indonesia, Brasilia and Russia will be replaced by new extremely populated countries such as Pakistan and Nigeria (Kollár, Juhászová, 2013).

The first change of demographic balance as a cause of conflicts and wars' escalations was also pointed to by Samuel P. Huntington. In his book "The Clash of Civilizations" is stated: "The significant rise of one group provokes political, economical and social pressure on the groups. Even more important is the fact that it provokes military pressure on groups which are demographically less dynamic" (Huntington, 2001, p.63).

Most prognoses concerning the development of population are in accord with the fact that the number of world population is stabilizing and population processes will represent only a simple reproduction. Unsolved questions represent time and magnitude of this stabilization. If the population's rise terminates from the quantitative point of view, it does not mean that its qualitative rise will stop as well. In contrary, it is assumed that there will be an increase in the quality of general education, professional preparation (Kalický, Hitka, 2006, p. 43-49), population's health, living and cultural level.

3. Population Ageing

One of the important contemporary problems requiring a priority attention because of its temporary and future repercussions on individual countries is the decrease of population and the related problems of the population ageing. Population ageing is frequently mentioned at present. Contemporarily, it is the global demographic process and in the future it will "probably be a most prominent feature of the population behavior" (Rychtaříková, 2002, p. 43-46).

The population ageing is one of the main features of the current population development that has a future irreversible impact. The intensity and importance of this process is prominent in the global scale mainly in the last century. The population ageing is causally connected to the demographic transition and its conclusion in the more developed part of the world. Economic and social consequences of ageing are not required to especially mention. The era when the ratio of children and pensioners will change is coming. It will be the era when the social traditions, habits and norms will have to change. This is one of the main reasons to devote considerable attention to this phenomenon (Bleha, Vaňo, 2007, p. 62-80).

The population ageing is not a worldwide problem yet, it concerns mostly world developed countries. On the other hand, it is a known fact that the population ageing

in developing countries will culminate in few decades and will be more dramatic as the current population ageing in the developed world. In the developed countries, the population ageing is caused by the prolonged human life and the decrease of natality. This trend is resulting from many factors that are related to the modernization of the society which caused the decrease in fertility and natality. The health care improvement resulted in the prolonged life expectancy and a better health condition of the population. The science advance prolonged the average life expectancy which is the main reason for the population ageing.

Populations throughout the world are becoming older. The phenomenon, typical for developed countries, is becoming a fact for less developed countries. Till 2050, 1.2 billion from the overall 1.5 billion of population above 65 years of age will be in countries nowadays described as less developed. This phenomenon will greatly influence the health and socio-economic development of countries throughout the planet.

Currently, developed countries understand the need for the governments to find solutions to this issue addressing the whole society, resulting in creation of environment suitable for the ageing society while sustaining the economical development of states (Adašková, 2010). These priorities were declared by representatives of 159 countries at the Second UN World Assembly on Aging in Madrid in 2002.

In 2004, the estimated world population of people older than 65 was 461 million which is an increase of 10.3 million since 2003. The population ageing is usually imputed on developed countries of Europe and North America that currently have the highest percentage of older people in the world and till the half of the 21st century, the number of grandparents will exceed the number of their grandchildren (children up to 18 years of age) to put it figuratively. Even the less developed countries are witnessing the decrease in the natural population growth similarly to developed countries and thus there is an estimate of the increased numbers of older people.

The “oldest” country in the world is supposed to be Italy since 25% (2004) of its population is comprised of old people. Apart from Japan, the first 20 places are taken by European countries this being the reason that Europe is considered as a continent where this problem is the most prominent. In comparison with Europe, the USA are still relatively well based on the generation of the so called baby boom (born in 1946-64) that did not reach the pension age, yet. These people will influence the ageing in the near future. Till 2030, there is an estimate for the doubled increase in countries of Asia, Latin America and the Caribbean. Even the population of old people is ageing and up to 18% is comprised of people above 80 years of age. More than a half of them are living in only 6 countries of the world: China, the USA, India, Japan, Germany and Russia (World population to 2030 [online], 2004).

The answer for the question of what is causing the population ageing on the planet is a whole collection of factors. One of the most important one is the decrease in natality since the lower number results in less young people and a proportional increase of older people.

From the long-term demographic development perspective in the context of the population ageing indicators showing the long-term trends in fertility and natality are used for such projections. The overall fertility – the fertility index stands for the average number of children a single female gives birth to in her whole life. The level of sustainment of the population stability is based on 2.1 children. It is logical that a population with higher natality has the projection of a lower proportion of older people, and vice versa.

Fertility is currently in range of 1.1 – 1.7 for industrially developed countries, in the case of developing countries fertility reaches the values even higher than 7. The natality indicator is also significantly different for developed and developing countries. In the first case it reaches values of 10-15 and in the case of developing countries it is 30-40.

In the developed countries the fertility (the average number of children of a single female) and natality (the number of newborns for a 1000 inhabitants) decreased significantly which resulted in changed relative amounts of the overall world population. Differences between developed and developing countries in both these factors are significant and will in the future add to ever deepening demographic division between these countries.

The decrease in fertility and natality in the present reaches in some developed countries alarming figures. The danger of such a rapid decrease is clearer from the long-term demographic projections and repercussions of such a population development on the future generations and the future demographic structure of the society. These consequences are visible from estimates of the evolution of the amount of population for some countries till 2050. As examples for expected demographic changes can be given Japan and Germany that till the half of the century with abundance of the current population growth can lose up to 14% of their population. In the case of Italy and Hungary the estimated decrease is 25% and in case of Russia, Georgia and the Ukraine it is even 30-40%. The situation is not favorable even for Slovakia that according to these estimates would enter the second half of the century with the population decreased by 13% compared to the current state.

Regardless to the balance of the worldwide population evolution it is important to pay attention to its regional and national aspects. Many developed countries will be confronted in the coming decades with important problems and consequences of their negative demographic development. According to official sources of the European Union in the coming decades it will be necessary to create conditions for influx of approximately 1.5-1.9 million of immigrant annually to ensure the social and demographic stability of this region. This way only is possible to prevent a possible collapse of the social and health care network in this region (Kabát, 2003, p. 3).

The problem of the low natality in the developed countries is a frequently discussed issue. There are two levels of a possible solution to this problem. The first, vehemently but with a little effect supported by the majority of conservative groups of population and political parties is based on the support of measures to increase the level of domestic natality. Countries are starting to actively create and support the family “population” politics. This is not a new measure; after the First World War,

France decimated by the war started to award medals to women – “model citizens” for giving birth. Regardless the fact that France has one of the highest fertility index – 1.98 (Slovakia, together with Poland, has one of the lowest fertility index of the EU – 1.25) it strongly supports the family politics. In 2005, the Prime Minister Dominique de Villepin declared the government support of families with the goal of three children per family. He argued for a significant financial aid mainly after the birth of the third child; other measures for fulfillment of this goal, not only in France, are significant tax reductions for young families, child care services (building of nurseries, kindergartens that are either subsidized or free of charge, parental leaves, harmonizing occupation with child raising, as well as the politics of repeated integration of parents into the work life after such leave – e.g. Sweden).

The second approach to the problem solution is based in the liberalization of immigration policy and in creation of social conditions for its actual realization. The current situation in Europe in regard to this approach is not uniformed and relatively sensitive, as can be seen by the recent examples (Hoscheková, 2010).

Another important factor is lowering of the mortality rate, mostly newborn and child mortality, thanks to improvement and availability of the public health care and many programs focused on lowering of the sickness rate.

The worldwide average life length, according to the UN report, increased from 47 years of age during 1950-1955 to 68 years of age in 2005-2010. According to the UN Secretary-General Pan Ki-Mun report, people live longer because of a better nourishment and hygiene as well as because of the improvement in the health care mainly through vaccination and medication of infectious disease and parasites. Especially, the number of children and younger people deaths is lowered. However, the older people still die because of non-transmitted chronic and degenerative disease like cancer, diabetes, respiratory and heart disease. The report urges governments to create preventive measures against these phenomena. Among them is the fight against overweight, physical inactivity, alcohol and tobacco use. Overall, the number of deaths for over 60 years of age increased from 26% in 1950-1955 to 54% in 2005-2010. (World population to 2030 [online], 2004) All these demographic changes are resulting in the population ageing, huge differences in the age structure in developed as well as developing countries. There also is the question of the so called depopulation, a phenomenon that was not paid enough attention to. It is the decrease of the overall population in some countries.

One of the reasons of the growing depopulation is the current trends in mortality. The World Health Organization (WHO) report (Colin et al., p. 171–177) concerning the global research of trends in mortality shows the increase of mortality connected to disease even in some technologically developed countries. At the same time, differences in the life expectancy and mortality between the developed and developing countries are increasing. Data on the average life length in the Western world are far away from such data on developing countries, mainly Africa.

4. Conclusion

The society will change in an alarming rate to an older population. In 2010 – 2050 the population in China will increase by 275 million of people older than 60 years of age. Their share on the overall population in 2050 will be 31%, while in 2010 it was 12.3%. The share of population older than 80 years of age will be 7%, while in 2010 this share was 1.4% (World population to 2030 [online], 2004).

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Road Safety and Increasing of Logistics Requirements: Case Study

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Abstract

Traffic safety is directly affected by the increasing of demand for the transport performance. Transportation rising and has a negative impact on all elements of the transport system. This paper analyzes the relationship of the transport performance and structure of transport infrastructure and its effects on accidents in road transport. The article is focused on analysis of accidents in the Czech and Slovak Republic between years 2001-2011. The part of material is the evaluation of impact of the number of transport, the transport performance and the length of highways on the number of injury accidents in road transport. The paper also outlines possible solutions in the field of logistics requirements and the transport on the business level and the regional level.

Keywords: Regression analysis, Transport performance, Transport infrastructure, Traffic safety

JEL Classification: H54, R41

1. Introduction

Entrance of the Czech Republic and Slovakia to the EU has opened to these countries benefit from the EU internal market, which is characterized by the EC Treaty in Article 14, paragraph 2 as ... an area without internal frontiers in which, in accordance with the provisions of this Treaty, is free movement of goods, persons, services and capital. It also has opened the territory of these countries to other EU countries.

The fact that these countries lie in the heart of Europe predetermines these countries to become transit countries. Traffic routes that lead through the territory of the Czech Republic and Slovakia to the neighboring countries form part of Trans-European transport network (TEN-T). EU is has engaged in its development since 1996 (Decision No 1692/96/EC and following modifications).

Transport processes are of interest of logistics management of the supply chain. Therefore, let's look at transport by tools of logistics management.

An important feature of the current logistics management is increasing of quantity and quality of relationships and constraints of all parts of the supply chain for both the local and the global level. Managers are still looking for new ways, methods and means to enable them to succeed in a highly competitive environment.

In the supply chain the primary task of transportation is the physical transfer of the product from the place of production to the place where the product is needed. Logistics benefits are named utility of place and time utility (Grant, 2006). Movement is realised in all levels of reproduction process. According to Šulgan et al. (2008) the levels are:

- transportation in manufacturing level– meets the needs associated with the production technology, the division of activities, cooperation and specialization of production among production stages to final product,
- transportation in distribution level– it is the realization of the movement of the flow of goods in the terminal areas of the reproductive process,
- transportation of consumption level – meets the needs that have exist as a result of changes in location and time due to needs and wants of the customer.

According to the document Transport Policy of the Czech Republic for 2005-2013 states that the effects of globalization lead to increasing of the distance between the place of production and consumption, and in the context shippers try to minimize logistics costs and they prefer the speed and accuracy of delivery. The result is that logistics systems are primarily focused on road transport. And these results in increasing of transport performance which is closely linked with negative effects such as increasing of congestion and accidents.

2. Importance and Role of Transportation in the Logistics Management

In the supply chain transportation has a significant impact on the creation of competitive advantages which are utility of time and place and these are involved in gaining of logistic objectives. Because the goal of logistics is to minimize total logistics costs while maintaining high level of customer service, it is necessary to make decisions using detailed analysis of information on the cost linkages among logistics activities. Authors Sixta and Mačát (2005) reported that the company should ensure each area of the logistics system and manage the linked costs. These are a management of customer service level, shipping costs, inventory management, storage costs, lot quantity costs and information system costs.

Realization of transport is an important part of the logistics strategy and transportation systems thus represent the coordination of material flow from suppliers through manufacturing and distribution organization to the final consumer. Transport provides connections among all parts of the logistics process and it supports supply chains and the contact points between the different subsystems of the logistics process. In the planning process of transport within a company, it is necessary to consider the following factors:

- availability of transport,
- transport capacity,
- transport costs,
- location of manufacturing and storage facilities,
- distribution and sale of products,

- procurement of input materials.

Managers should decide on the conditions and opportunities of the input and output transport, strategic partnerships and alliances, choosing the method of transport, setting contracts between shippers and carriers, routing and transport planning, transportation services offer.

3. Research on Transport Safety

Road accidents and congestion are the most important negative impact of increase logistics requirements on the transport safety. Authors Novák et al. (2005) define transport safety as the status of optimal functioning of the transport system without conflict situations and disturbance and traffic organization.

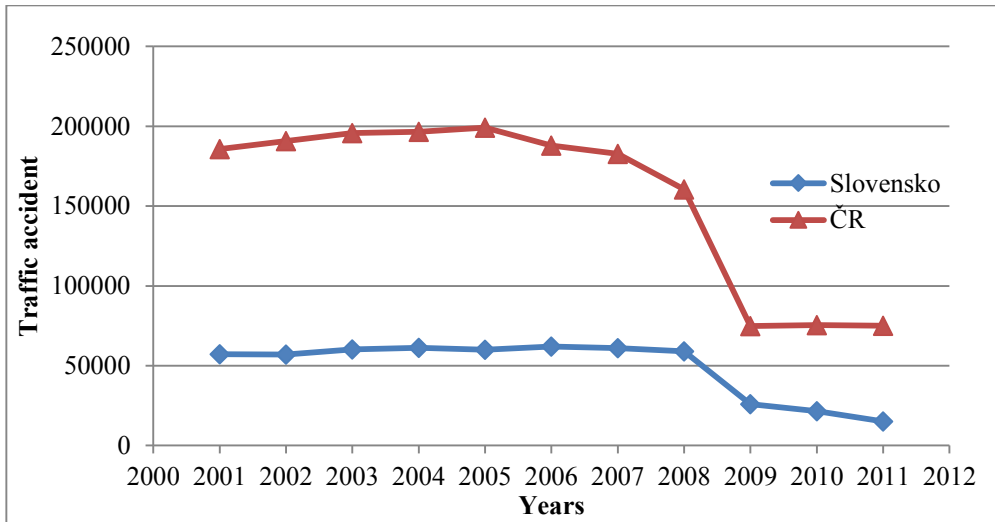
Looking at the consequences of accident rate in terms of macroeconomic, then by Budský "accident with serious injury costs the Czech Republic about 3.8 million CZK and with minor injuries 650 thousand crowns. Statistics includes direct costs such as medical care and physical damages and indirect items in the form of social losses, which reportedly make up over 90 percent of the amount. I.e. in the case of one man killed the costs exceed of 16.5 million crowns." (Budský, BESIP). Every serious car accident is for national economic policy and EU big loss.

The aim of the article is to assess the impact of the number of shipments, transport performance size and length of motorways on number of traffic accident during the reporting period in the Czech and Slovak Republic.

The graph below shows the evolution of the number of reported traffic accidents in the Czech Republic and Slovakia. The curve decline between 2008 and 2009 may mistakenly give the impression that there was a significant decline in reported accidents. But the reality is that at that time there was a change in methodology in reporting accidents. This means that the total data on accident rates in each year we will not use in further research, we focus exclusively on accidents with injuries and fatalities, the number of which is annually recorded separately and in the police report happened here during the relevant period no change.

Trend in the number of reported traffic accidents in Slovakia is analogous to the Czech Republic. Here it is apparent decline in the number of registered traffic accidents in response to change in methodology. In contrast to development in the Czech Republic in the years 2009-2011, where the number of traffic accidents was almost constant, in the Slovakia there is noticeable decline in the number of traffic accidents.

Figure 1: Traffic Accidents in the Czech and Slovak Republic in the Years 2001-2011



For the above reason, in Slovakia we will only deal with the traffic accidents with injuries and fatalities, and investigate here significance of the same factors as in the Czech Republic.

3.1 Situation in the Czech Republic

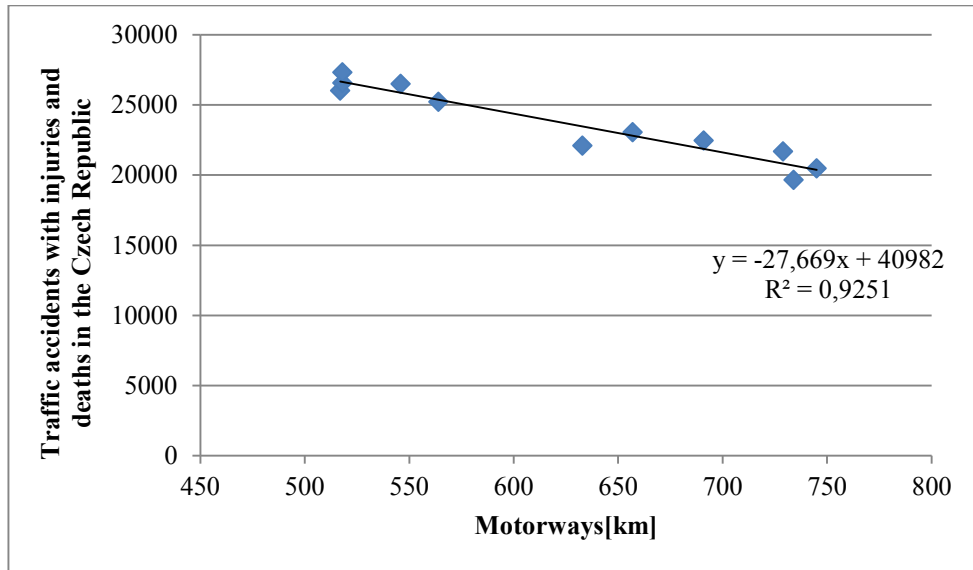
The number of traffic accidents with injuries and deaths has a decreasing trend. The question arises, what causes this, i.e. what factors affect the development of these traffic accidents. A response can be transported volume of goods in road transport, transport performance in road transport or length of motorways.

Motorway length appears as the most important factor. The relationship between the length of motorways and the number of traffic accidents with injuries and fatalities was described by linear regression. Discovered a linear regression function $Y = -27.669x + 40982$ describes consideration addiction of 92.5%. This model is very significant because of $P\text{-value} = 2.3 \cdot 10^{-6}$.

When considering separately the effects of the volume of transported goods on the number of traffic accidents with injuries and fatalities, than the linear regression function $Y = 0.0479x + 3306.7$, that describes this dependence, characterizes the dependence of 66,67%. When assessing the statistical significance of the chosen type of regression function we get in the $F\text{-test}$ $P\text{-value}$ of 0.0022.

In the case of reliance of accidents with injuries and deaths on traffic performance we obtain regression function $Y = -0.4673x + 45939$ with the coefficient of determination 0.5366 and $P\text{-value} = 0.0104$.

Figure 2: Traffic Accidents with Injuries and Deaths in the Czech Republic Depending on the Motorways Length



The question arises whether the extension of the first regression model (dependence accidents on motorways) of the above regressors (transmission power, the volume of goods transported) we can obtain a better model or not. However, it appears that by adding either of them model does not be superior, since in both cases R_{adj}^2 has a lower value than the initial coefficient of determination. In conclusion it is best explained in the Czech Republic the number of traffic accidents with injuries and deaths by the length of motorways.

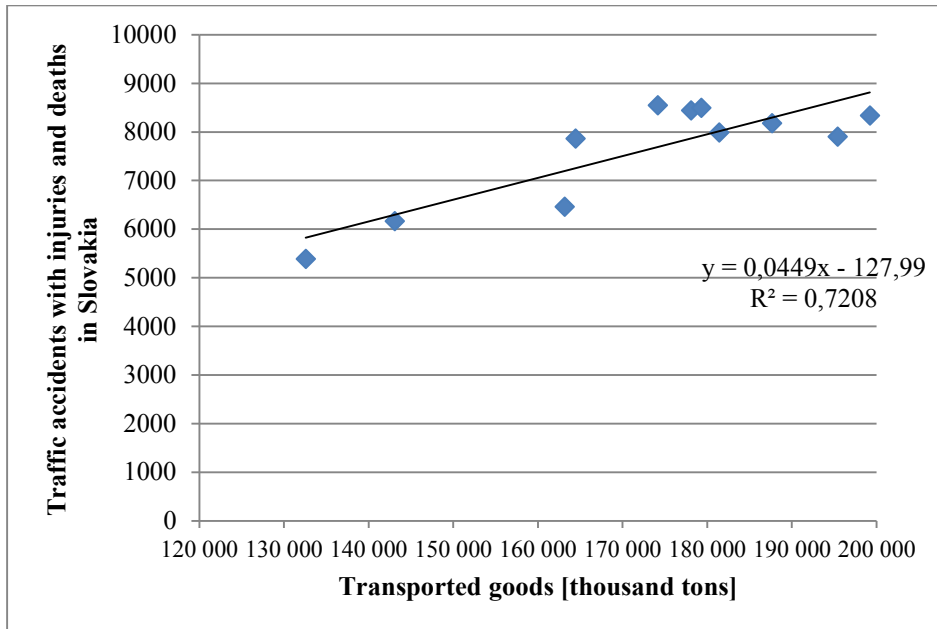
3.2 Situation in Slovakia

In Slovakia as the most important factor seems to be the amount of transported goods ($R^2 = 0.7208$, P -value = 0.00095), on the contrary, find a statistically significant regression line describing the influence of transport performance on the number of traffic accidents with injuries and fatalities cannot ($R^2 = 0.2917$).

In the case of dependence of accidents with injuries and fatalities on the length of motorways we obtain a regression function $Y = -18,145x + 13985$ with the coefficient of determination $R^2 = 0.5762$ and P -value of 0.0067.

Therefore it makes sense to engage in the multiple linear regression model with transported goods and the length of motorways as regressors. Found regression model has slightly higher coefficient of determination ($R_{adj}^2 = 0.7843$) compared to the original model, but the significance of regressor length of motorways is questionable, because of P -value corresponding individual t -test is 0.0569.

Figure 3: Traffic Accidents with Injuries and Deaths in Slovakia vs. Transport of Goods in Road Transport



3.3 Summary and Conclusions of the Analysis

1. Working with data on the total number of traffic accidents in the Czech Republic and Slovakia is possible only since 2009 due to changes in methodology.
2. In 2008 in the methodology for reporting of accidents with injuries and deaths any change did not occur, so we can work with data since 2001.
3. In the Czech Republic we found a stronger linear dependence of the number of accidents with injuries and fatalities on the length of motorways than in Slovakia.
4. In the Czech Republic in the modelling of the number of accidents with injuries and fatalities the most important regressor is length of motorways.
5. In Slovakia there is the number of traffic accidents with injuries and fatalities most affected by the amount of transport goods with the following result: You can say that if the amount of goods increases, then also the number of accidents with injuries and deaths will grow.
6. In Slovakia we can explain the number of traffic accidents with injuries and deaths by a linear regression model of 72% in the Czech Republic only 66%.
7. The relationship between the number of accidents with injuries and deaths in Slovakia and transport performance in road transport was not found.

4. Ways of Dealing with the Negative Effects the Growth of Logistics Requirements for the Road Transport Sector

Road safety has a direct impact on the overall logistics costs both within the company and at the level of the entire supply chain. For this reason, it is therefore necessary to consider how to reduce potential congestion and impact of traffic accidents.

It is clear that the mere focus on repressive means is not sufficient, and therefore it is necessary to deal with the increasingly need for preventive measures at the level of individual enterprises, but also at the level of the road transport sector.

At the level of the road transport sector is very difficult to find ways to reduce the number of transportations and thus reduce the number of traffic accidents and congestion. The solution may be to encourage shippers to use of alternative transport modes, particularly rail and river transport. The issue is discussed among experts for decades (Svoboda, 2006), the result is to increase the number of combined shipping, but it still is not enough. Within the system measures it is necessary to focus on the transfer of a specific volume of shipments from road to rail, primarily transport over long distances, transit transportation should be the primary focused on the railways.

Another important part of the measures is to provide suitable transport infrastructure. From the above analysis suggests that the length of highways has a significant impact on reducing the number of traffic accidents. For this reason, it is necessary to examine the temporal and financial possibilities of development of road transport infrastructure, especially in border areas of the Czech and Slovak Republic, who face the greatest problems.

An important aspect in ensuring road safety is adequately informing the participants of transport, that is, the use of telematics systems for better management and transportation on the road. Transport telematics (Novák et al., 2005) is not only a communication between vehicles (e.g., through mobile phones) and communication between the vehicle (his crew) with headquarters, dispatching, etc., which are often used by various satellite communication systems but especially the transmission of traffic information between the transport network and means of transport, respectively, his crew (driver) eventually dispatching or security service.

The EU is aware of the importance of traffic infrastructure quality. In 1992 the European Commission published a White Paper on a common transport policy which declares in its White Paper – competitive, efficient transport system, where among other these objectives are specified (Transport 2050):

- Objective 3: 30% of road freight over 300 km should be 2030 transferred to other modes such as rail or the shipping transport and in 2050 it should be more than 50%. Effective green corridors for haulage should help it. Achieving of this goal also requires the establishment of appropriate infrastructure.
- Objective 4: Complete the 2050 European high-speed rail network. To triple by 2030 the length of the existing high-speed rail networks and maintains

a dense railway network in all Member States. The bulk of the passenger traffic in the middle distance by 2050 should go by rail.

The Czech Republic declares in its transport policy need to build high-speed connection and also use the combined form of transport. The implementation of these ideas significantly lags. In contrast, Slovakia deals with the construction of new roads with greater vigor.

At the corporate level, this means increased attention and focusing on the condition of vehicles and qualification of staff who are responsible for them. Another possibility is the use of electronic systems allowing detection of objects on the road and it is warning drivers of vehicles.

5. Conclusion

Logistics chain, which consists of material suppliers, producers, distributors and end customers, has a large number of elements and transportation creates links among these parts. The current logistics practice is focused on complex problem solving, integration of logistics chains in order to use the synergistic effect.

The concept of integrated logistics is focused on the continuous reduction of the time delays and continual improvement of the quality of services and costs reduction. Therefore, transport security is an important part of managing supply chain logistics and all other entities involved in planning, managing and securing the transport system at the national level.

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Banking Integration in Europe: On the Road to the Banking Union

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Abstract

The banking sector is a central driver of financial integration in Europe through cross-border interbank lending and securities market, in which banks are major buyers of securities issued by other banks and governments. At the same time, the integration of retail banking is somewhat limited. The next announced step in the European Union financial integration - the creation of the banking union – would probably have a significant impact on the European banking industry. To provide a complex prognosis on the possible outcome of the decision, we analyze the current state and direction of the banking integration in Europe and summarize what we know from the literature about its effects on financial stability.

Keywords: Banking integration, Banking union, European banking, Financial stability

JEL Classification: G21, G28, G34

1. Introduction

The banking sector is a central driver of financial integration in the European Union through cross-border interbank lending and securities market, in which banks are major buyers of securities issued by other banks and governments. The existing literature generally concludes that the integration of banking systems within the euro area is apparent and enlarging. The introduction of the Single Banking License in 1989 through the Second Banking Directive was a decisive step towards a unified European banking market, which subsequently also led to a convergence in banking legislation and regulation across member countries. The introduction of the euro in 1999 eliminated currency risk and provided a further push for banking integration. The harmonization of market infrastructure (e.g. uniform cross-border wholesale payment system TARGET) has certainly also contributed, even if only through lower transaction costs.

The next announced step in the European Union financial integration - the creation of the banking union – would probably have a significant impact on the European banking industry. To provide a complex prognosis on the possible outcome of the decision, we analyze the current state and direction of the banking integration in broader Europe and summarize what we know from the literature about its effects on financial stability. The paper is an overview of the theory and state of banking integration in Europe with implication of how the banking union could change the current situation.

2. Theory of Banking Integration

In the common sense, banking integration is a process through which one country's banking markets became more closely integrated (or even merge) with those in other countries, implying intensification of the direct and indirect linkages in banking lending, equity holding, and cross-border banking services overall. However, there is no common and comprehensive academic definition of the banking integration.

It would be judicious to apply the definition of financial integration stated by the researchers of the European Central Bank (ECB). According to Baele et al. (2004), market for a given set of banking products or/and services is fully integrated if all potential market participants have the same relevant characteristics:

- They face a single set of rules when they decide to deal with those banking products and services;
- They have equal access to the banking products and services;
- They are treated equally when they are active in the market.

This definition of banking market integration contains three important features. First, it is independent of the structures of banking systems within regions. Banking system structures include all banks and other depository/credit institutions and how they relate to each other with respect to the flow of funds to and from households, governments and firms. Second, frictions in the process of intermediation – i.e. the access to or investment of capital through banks – can persist after financial integration is completed. Banking integration is concerned with the symmetric or asymmetric effects of existing shocks on different areas. Even in the presence of shocks, several banking systems can be integrated as long as shocks affect these areas symmetrically. Third, definition of banking integration separates the two constituents of a banking market, namely the supply of and the demand for banking products and services, mainly deposits and loans. Full integration requires the same access to banks and payment systems for both individual clients and firms, regardless of their region of origin.

The definition of banking integration is closely linked to the law of one price. The law of one price states that if assets have identical risks and returns, then they should be priced identically regardless of where they are transacted. In fact, if all agents face the same rules, have equal access and are treated equally, any price difference between two identical assets will be immediately arbitrated away (Persson, 2008).

To implement the above-stated theoretical concept of banking integration, the Financial Services Action Plan was launched in 1999 with three strategic objectives: (1) to establish a single market in wholesale financial services; (2) to make retail markets open and secure; and (3) to strengthen the rules on prudential supervision. With the creation of the Single Supervisory Mechanism, all forty-two measures outlined in the FSAP have been included into European Union law.

Benefits of banking integration (as any other kind of financial integration) comes with higher banking competition and better access of households and firms to banking

services and generally results in financial development and economic growth (for discussion, see Stavárek et al., 2011).

The costs of banking integration are generally revealed in the form of contagion, when credit shock is propagated to other countries and institution through direct and indirect financial linkages. For example, a shock to the capital base of parent bank will result in lower cross-border flows to its subsidiaries and lower direct lending to other banks. Degryse et al. (2010) in the empirical research of the increasing interconnectedness of global banking systems based on BIS statistics arrive to the conclusion that banking integration increased the contagion risk significantly. As they conclude, bank failures in one country can wipe out a large share of cross-border liabilities and therefore undermine capital and ultimately banking assets in other countries.

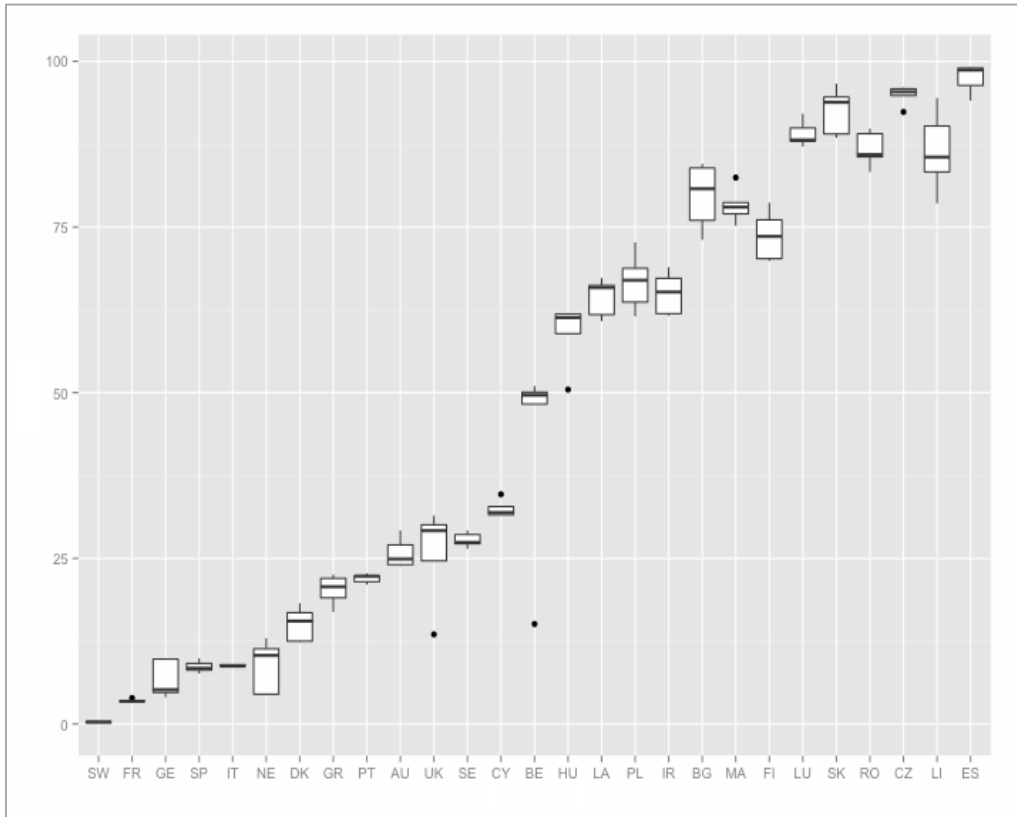
Theoretical studies that deal with the trade-off between benefits from banking integration and the expected costs from financial contagion generally focus on the integration through the interbank market. And here we could find somehow contradicting or even non-conclusive results. Gai and Kapadia (2008) support the result that higher connectivity in the financial system reduces the probability of contagion. However, they identify that the consequences of contagion are more severe as the possibility that institutions might repeatedly be affected increases. Fecht et al. (2012) show that greater need for risk sharing increases the risk of cross-border contagion and the likelihood of widespread banking crises. Haldane a May (2009) argue that connectivity is a knife-edge property. Up to a certain point, financial networks and interbank linkages serve as a mutual insurance of the financial system and thus contribute to systemic stability. Beyond this point, the same interconnections might serve as a shock-amplifier and thus increase systemic fragility.

3. State of the European Banking Integration

Quantification of the extent to which the integration of national European Union banking markets has been achieved is difficult (Baele et al., 2004). The analysis of the state of the European banking integration is usually based on the combination of several processes, such as the presence of foreign banks/subsidiaries/branches in other countries or the foreign ownership of the banking system assets, product price convergence, cross-border transactions, cross-border mergers and acquisitions.

The entry of foreign banks into the national financial system is generally considered the biggest aspect of banking integration (for the discussion of foreign banking see Claessens and van Horen, 2012). For the majority of original EU member states and euro-area states, the total assets of foreign owned branches and subsidiaries generally constitute only a small part of the total assets of the domestic banking system (see Figure 1). In contrast, the significant part of the banking system is foreign-owned in the smaller member states and the non-euro area member states of Central and Eastern Europe. The share of foreign asset ownership has somewhat reduced in the euro area, while it has increased outside the euro area.

Figure 1: Foreign Ownership of the Banking System Assets (boxplot, by country, in years 2008-2012)



Note: The total assets of foreign owned subsidiaries/branches as % of total banking system assets

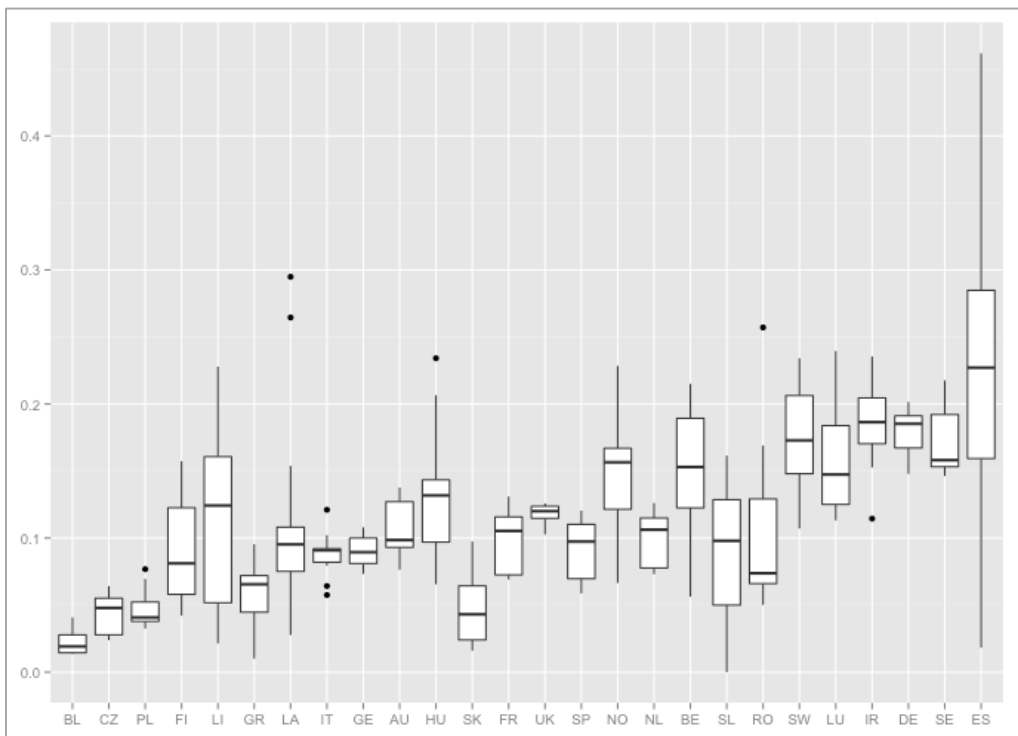
Source: Author's calculations based on ECB statistics

Banking integration has significantly transformed the balance sheets of banks in the euro area. The foreign claims on the national banking system assets corresponded up to 15% of total assets in the pre-crisis period. Cross-border penetration significantly declined during the global financial crisis. The greater reliance of European banks on short-term funding from the money markets before the crisis basically predetermined the severity of the financial turmoil. Cassola and Huetl (2010) provide evidence of the disintegration of the euro area money market, showing that a two-tier market structure was developed after the crisis with only large money-center banks active in the cross-border money market and other banks just relying on domestic counterparties. Such money-center banks pose a greater systemic risk to the European banking system. On one hand, the close connections between these banks and their respective national authorities make them act as national champions. On the other hand, a large part of their activities is abroad. As the national authorities do not take the cross-border externalities into account, this may lead to coordination failure in case of a bailout, while central banks would cling to their national champions (Schoenmaker, 2013).

It is also important to take into account the direction of the banking integration. Banks of one country may (directly or indirectly) hold claims to the assets of other countries, while banks from other countries may invest in assets of the country in question. Outward investment means that domestic banks will not only be exposed to domestic shocks but also to foreign shocks through their foreign asset claims. Inward investment implies that some domestic firms will be financed by foreign banks and domestic lending will be less sensitive to shocks that affect domestic banks. Even if these two forms of integration bring about diversification benefits of different sorts, a mismatch between them may induce costs (The balance of cross-border banking with the introduction of inward/outward integration measures is discussed in Schoenmaker and Wagner, 2011).

Even taken the modest volatility of the European interbank market, it is generally considered highly integrated (see Figure 2). Certain regional differences in the European interbank markets are deliberately discussed in Schoenmaker and Peek (2013).

Figure 2: Banking System Foreign Exposures to Other European Banks (boxplot, by country, in years 1999-2012)



Source: Author’s calculations based on BIS consolidated banking statistics

In theory, interbank integration and harmonization of financial markets should affect the integration of retail banking markets, since banks in the integrated system have an equal access to funding sources. However, retail banking remains largely fragmented along national lines, and it is problematic to undertake cross-border

activities without physical presence. Lending rates vary greatly across Europe (see Table 1). Regulation in retail banking remains predominantly country-specific, reflecting differences in tax treatment, consumer protection legislation, marketing practice, product definitions, and investor protection. Furthermore, local banks may have superior access to private information about a borrower’s creditworthiness, creating a rent that is unavailable to a competing foreign bank (Goddard et al., 2012).

Table 1: Corporate Lending Rates in Chosen Eurozone Countries

Country	2013	2012	2011	2010	2009	2008	2007	2006
Germany	2,19	2,19	3,19	3,04	2,85	4,53	5,59	4,75
France	2,33	2,3	3,29	2,66	2,54	4,65	5,14	4,45
Spain	3,34	3,35	3,81	2,98	2,69	4,67	5,59	4,57
Italy	3,47	3,65	4,18	2,79	2,17	4,52	5,48	4,68
Netherlands	2,48	2,45	3,08	2,91	2,48	4,24	5,28	4,46
Portugal	5,08	5,69	6,5	5,12	4,1	6,31	6,28	5,67
Austria	1,99	1,91	2,75	2,3	2,14	4,55	5,13	4,29
Ireland	3,48	3,13	4,01	3,29	2,7	5,12	6,37	5,46
Belgium	2,04	1,81	2,44	2,17	1,87	4,13	5,34	4,52
Finland	2,41	2,11	2,93	2,56	2,21	4,12	5,08	4,54
Cyprus	5,46	6,82	6,81	6,37	5,66	6,52	5,85	6,34
Slovakia	2,43	2,72	3,74	3,41	3,03	4,85	NA	NA
Slovenia	4,72	5,12	5,25	5,18	4,94	6,05	6,04	4,64
Estonia	3,12	3,18	4,33	4,48	3,91	6,68	6,47	5,27

Source: Bloomberg

Significant barriers to the integration of European retail banking markets creates a situation, in which firms in some countries are at a competitive disadvantage and cannot borrow at reasonable terms merely because of their location. Nevertheless, the improvements in retail banking integration will contribute greatly to financial development and economic growth in Europe.

4. European Banking Union and Its Implications for Banking Integration

The European banking union was created in a wake of the European sovereign debt crisis, which revealed the vulnerability of banking system to sovereign default risk. The lack of European banking policy integration led to a fragmentation of the Eurozone banking market. The interdependence of individual member states and their banks created a significant reliance between their respective funding conditions. Identical borrowers in different euro-area countries could not have identical access to credit, and the ECB’s single monetary policy was transmitted differently to businesses in different member states (Véron, 2013). The crisis has underlined the “impossible trinity” of simultaneously having integrated banking markets, national supervision and financial stability (Schoenmaker, 2013). In this regard, the only logical possibility to ensure both financial stability and single market of financial services is to impose consistent, competitively neutral financial supervision across the European Union.

The banking union aimed to revitalize the banking integration in Europe, would have a significant affect on the state of the European banking system. The Asset Quality Review – the main mechanism of ECB supervision – will certainly restore confidence in the biggest European banks, but only if ECB acts as tough regulator and reveals the problems previously hidden by national central banks. The disclosed true quality of bank assets would require recapitalisation of distressed banks. The only plausible source of bank recapitalisation, which will enhance financial stability by reducing the strong interconnection between banks, sovereigns and national economies, is foreign capital. Cross-border mergers should lead to the establishment of truly all-European banks providing equal loan and deposit conditions for households and firms across Europe. Only more integration in retail banking would guarantee the resilience of national banking systems to country-specific shocks and sovereign distress.

5. Conclusion

The integration of European banking markets are at different stages in wholesale and retail banking. While debt-based wholesale banking is highly integrated, cross-border retail banking is at a very low level throughout Europe. Growth of cross-border interbank activities increases vulnerability to sudden shocks and poses a significant risk to the functioning of national banking systems, when banks rely heavily on more affordable interbank funding from largest international banks. On the other hand, the integration in retail banking has minimal systemic risk and will directly affect the level of production and consumption in European countries.

The creation of banking union in Europe presumably resolves the problem of systemic risk of the biggest international banks – money-centers, moreover, in time could contribute to bigger integration of retail banking.

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Measuring Sustainable Development in the European Union Using the Adjusted Net Saving

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Abstract

Sustainable development is an overarching objective of the European Union (EU). In this Paper, the main attention is paid to the development of the Adjusted Net Saving indicator in the EU countries, which is an macroeconomic indicator of sustainable development developed by the World Bank. The progress of the EU against the challenges laid out in its long-term Sustainable Development Strategy has been monitored with the Sustainable Development Indicators (SDIs). Regarding that the analysis is completed with detecting some relations of Adjusted Net Saving with the Resource Productivity, which is one of the EU SDIs. The aim of the Paper is to critically assess the development of the Adjusted Net Saving indicator in the EU countries in terms of sustainable development and to evaluate the compliance of its development with the Resource Productivity in these countries. The Adjusted Net Saving indicates the best results in terms of sustainable development for Sweden but it cannot be said that the EU is on the sustainable development path. Moreover, the relations between Adjusted Net Saving and Resource Productivity are also not straightforward.

Keywords: *Adjusted Net Saving, Decoupling, Resource Productivity, Sustainability, Sustainable Development*

JEL Classification: *Q51, Q54, Q56*

1. Introduction

As a result of the United Nations Conference on Environment and Development in 1992, most governments world-wide have adopted sustainable development as a national goal (Hamilton et al, 1997). Sustainable development (SD) is a fundamental objective of the EU enshrined in its primary law (Treaty of Lisbon, 2007). The EU formulated its Sustainable Development Strategy (SDS), i.e. long-term strategy dovetailing the policies for economically, socially and environmentally sustainable development in 2001 (Adelle and Pallemarts, 2010). Its goal is to achieve sustainable improvement of the well-being and standard of living of current and future generations. This strategy provides an EU-wide policy framework to deliver SD, i.e. to meet the needs of the present without compromising the ability of future generations to meet their own needs (UN, 1987). It rests on four pillars such as economic, social, environmental and global governance which need to reinforce one another. The measurement of SD is not without considerable difficulties. Aspects of sustainability and SD in this Paper are examined using the indicator of the World Bank, i.e. the Adjusted Net Saving (ANS) or in other words Genuine Saving indicator.

In addition, one of the EU Sustainable Development Indicators (SDIs), i.e. Resource Productivity, is also used to extend the sustainability analysis in the EU countries. Regarding that it is necessary to mention some additional aspects. Atkinson and Hamilton (2003) point out to an important connection between recent attempts to understand the determinants of economic growth and the measurement of sustainability. This is the finding of a negative and significant relationship between natural resource abundance and economic growth, which is the so-called resource curse hypothesis. Mauerhofer (2013) provides an explanation for the likely failure in the decoupling of economic growth from environmental degradation, and also intends to offer perspectives on the new role of competition in a steady state or a degrowth economy. Regarding that the perspective is an increase of direct and indirect competition over resources.

The aim of the Paper is to critically assess the development of the Adjusted Net Saving indicator in the EU countries in terms of sustainable development and to evaluate the compliance of its development with the Resource Productivity in these countries.

2. Methodological Part – Explanation of Used Indicators

In the first subsection the Adjusted Net Saving indicator is explained. The second subsection is focused on explanation of the Resource Productivity, which is one of the EU SDIs. The main analysis of this Paper is based on examining the development of the ANS indicator and this is completed with the analysis of relations between the ANS and the Resource Productivity using mainly regression and correlation analysis.

2.1 Adjusted Net Saving as a Proxy for Sustainability

Pearce and Atkinson (1993) provided one of the earliest suggestions for an indicator of weak sustainability. Advocates of weak sustainability argue that physical and natural capital are substitutes (Anderson, 2010). So, the basis for human welfare is not only natural capital but rather the aggregate level of capital. The concept aims to provide means for tracking that the total level of capital (natural, man-made, human, moral/ethical, cultural capital) of society is non-declining. This indicator is an adjusted national savings measure that accounts for the depletion of natural resources and the environment. The human capital will not depreciate because it has public-good aspects and can be passed from one generation to another. The maintenance of the total capital stock depends on a national savings rate that is at least as great as the combined depreciation rate of natural and physical capital. The remaining forms of capital are difficult to measure. Following that an economy is sustainable if it saves more than the combined depreciation on the two forms of capital. Z is an Index of (Weak) Sustainability and the condition for sustainability is (Pearce and Atkinson, 1995):

$$Z = \frac{s}{Y} - \left[\frac{\delta_M}{Y} + \frac{\delta_N}{Y} \right] \geq 0, \quad (1)$$

where S is savings, δ_M is the value of depreciation on man-made capital, and δ_N is the value of depreciation on natural capital. All variables are divided by income Y .

In order to consider the depletion of natural capital in national income accounting, the World Bank has developed a composite indicator known as Genuine Savings or Adjusted Net Saving (ANS) which is based on the above mentioned Index of Weak Sustainability (Pillariseti, 2005). According to the World Bank, the ANS is a sustainability indicator building on the concepts of green national accounts. ANS extends the conventional net saving by adding human capital accumulation and deducting natural resources losses (Gnegne, 2009). It means that ANS measures the true rate of savings in an economy after taking into account investments in human capital, depletion of natural resources and damage caused by pollution. The derivation of ANS from standard national accounting measures of Gross National Savings by making four types of adjustments can be seen in Table 1.

Firstly, estimates of capital consumption of produced assets are deducted to obtain Net National Saving. Then Education Expenditures are added to Net National Saving as an appropriate value of investments in human capital. In standard national accounting these expenditures are treated as consumption. Thirdly, estimates of the depletion of natural resources are deducted to reflect the decline in asset values associated with their extraction and harvest. Finally, pollution damages are deducted. Many pollution damages are local in their effects, and therefore difficult to estimate without location-specific data. So, health damages due to urban air pollution are estimated. Regarding global pollution damages, the estimates include damages from carbon dioxide emissions. The ANS is an indicator of sustainability and it serves as a policy indicator as well. It reinforces the need to boost domestic savings, and hence the need for sound macroeconomic policies, as well as the need to improve the environment and resource management. In addition, it makes the growth-environment trade-off quite explicit, since those countries planning to grow recently and to protect the environment later will show lower rates of ANS (the World Bank, 2010). This is an important aspect of sustainable development. Negative values of ANS imply that total wealth of the economy is in decline and therefore policies leading to persistently negative ANS can be regarded as policies for unsustainability. Gnegne (2009) showed that positive and significant relationship exists between ANS and aggregate welfare but weak in magnitude.

Table 1: Method of Calculating the Adjusted Net Saving

Item	Definition and/or Formula	Item	Definition and/or Formula
Gross National Savings (GNS)	GNS = GNI – private consumption – public consumption + net current transfers	Mineral Depletion (MD)	Unit rent = unit price – unit cost; Exhaustion time = min (25 years, reserves/production); It covers tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate.
Depreciation	Replacement value of capital used up in the process of production (data taken directly from source or estimated)	Net Forest Depletion (NFD)	NFD = (roundwood production – increment) x average price x rental rate

Net National Savings (NNS)	NNS = GNS – Depreciation	CO₂ Damages (CO₂D)	CO ₂ D = emissions (tons) x \$20
Education Expenditure (EE)	Public current operating expenditures in education, including wages and salaries and excluding capital investments in buildings and equipment.(data taken directly from source or estimated)	PM Damages (PMD)	PMD = disability adjusted life years (DALYs) lost due to PM emissions x Willingness to pay
Energy Depletion (ED)	ED = PV(rent, 4% discount rate, exhaustion time)/exhaustion time Rent = production volume x unit resource rent; Unit rent = unit price – unit cost; Exhaustion time = min (25 years, reserves/production); It covers coal, crude oil, and natural gas.	Adjusted Net Savings (ANS)	ANS = NNS + EE – ED – MD – NFD – CO ₂ D – PMD

Source: World Bank, 2010, 2014

As it was said above the ANS is conceptually based on weak sustainability, which is premised on perfect substitutability between the types of capital including physical, natural and human capital. Thus a nation cannot be said to be sustainable if it fails to save enough to offset the depreciation of its capital assets. However, the weaker versions of sustainability are consistent with a declining level of environmental quality and natural resource availability as long as other forms of capital are substituted for natural capital (Turner, 1992). The Ecological Economics paradigm argues that natural capital should be viewed separately in terms of strong sustainability, which suggests that either natural capital or a portion of it called critical natural capital is completely non-substitutable (Pillarsetti, 2005).

2.2 Resource Productivity as a Sustainable Development Indicator

Evaluating progress towards the agreed goals is an integral part of the EU SDS. The 2006 renewed EU SDS calls for the European Commission to monitor the progress of the EU against the challenges laid out in the SDS and specifically to draw up a comprehensive set of Sustainable Development Indicators (SDIs). A first set of SDIs was adopted by the Commission in 2005 and then updated in 2007 (Adelle and Pallemarts, 2010). Monitoring reports containing SDIs are published by Eurostat every two years. The SDIs are organized in a theme-oriented framework and presented in ten themes. These themes reflect key challenges of the SDS. Of more than 100 indicators, eleven have been identified as headline indicators. They give an overall picture of whether the EU has achieved progress towards sustainable development in terms of the objectives and targets defined in this strategy (Eurostat, 2013). One of the headline indicators is the Resource productivity. It is defined as the ratio between Gross Domestic Product (GDP) and Domestic Material Consumption (DMC). The DMC indicator is based on the Economy-wide Material Flow Accounts. It is defined as the annual quantity of raw materials extracted from the domestic territory of the focal economy, plus all physical imports minus all

physical exports (Eurostat, 2014). This indicator was chosen to capture the aspects of the SD because it belongs to so called “decoupling indicators” of the SDIs. It was designed to monitor the extent of decoupling between economic growth and domestic material consumption. The term “decoupling” refers to breaking the link between two variables, often referred to as driving force (mainly economic growth expressed in terms of GDP) and environmental pressures (such as generation of waste, emission of pollutants to air or water, use of natural resources such as materials, energy or land). As such it can be understood as an instrument for approaching sustainable development.

3. Analysis of Sustainable Development in the EU

The main analysis of this Paper is based on monitoring of the Adjusted Net Saving in the EU using the data of the World Bank and subsequently the links to the Resource Productivity are detected.

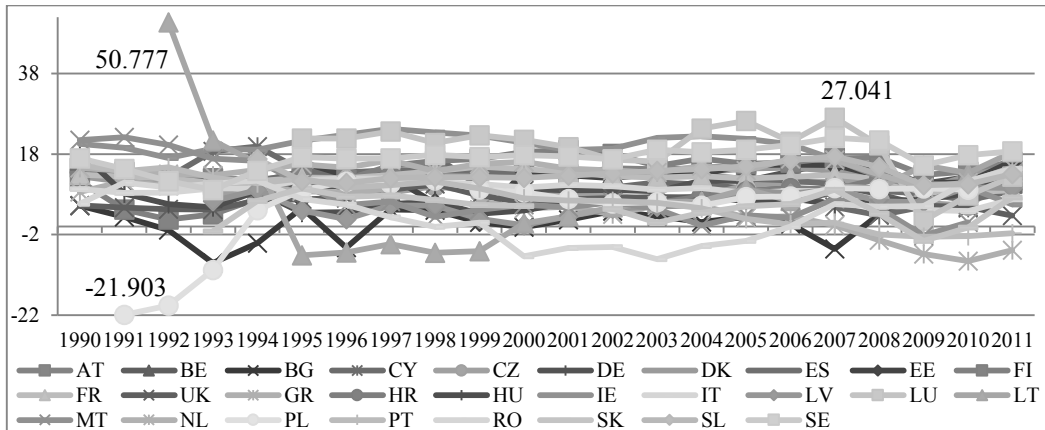
3.1 Development of the Adjusted Net Saving in the EU countries

Using the calculation of the World Bank according to the Equation (2)

$$ANS = NNS + EE - ED - MD - NFD - CO_2D - PMD, \quad (2)$$

the development of ANS indicator in 1990 – 2011 is depicted in Figure 1. Symbols used in Equation (2) were explained in Table 1. For majority of the EU countries data were available in period 1990 – 2011, for Belgium and Croatia since 2002, for Estonia and Luxembourg since 1995, for Slovenia since 1994, for the Czech Republic, Germany, Lithuania and Slovakia since 1993 and for Latvia since 1992. For Greece the figure of 1998, for Slovakia the figure of 2001 and for Cyprus and Poland the figures of 2011 are missing. For Malta this indicator was not available at all and it was computed using the partial indicators which were available. Data were not available for NFD and PMD. So it was computed without these indicators. It doesn't seem to be the significant problem because of low relative values of these indicators in the majority of the EU countries. Moreover, Malta is the economy living exclusively from tourism, without heavy industry and without significant forest cover, so these indicators seem not to be very relevant for this country and its values could be particularly very low. The average rates in the EU countries have been computed since 1995 and with taking into account the years with missing figures. All figures (rates) are expressed as a percentage of GNI. It can be seen in Figure 1 that the rates of ANS in period 1990 – 2011 mainly ranged from -10 to 30% of GNI. The extreme rates were reached by Latvia in 1992 (50.777) and Poland (-21.903) in 1991. So the development in Latvia was extraordinary because after three years (1992 – 1994) of high positive rates of the ANS indicator, its values were negative in period 1995 – 1999. These rates have been positive since 2000 again, though small at the beginning, Latvia's ANS reached the second highest rate among the EU countries in 2011 (18.471). The second highest rate (besides Latvia in 1992) in particular year was shown in Luxembourg in 2007, i.e. 27.041% of GNI (see Figure 1).

Figure 1: Adjusted Net Savings, Including Particulate Emission Damage (% of GNI) in the EU countries, 1990 – 2011



Source: World Bank, 2014

In the whole monitored period 1995 – 2011 the highest average rates of the ANS indicator were shown in Luxembourg (19.14), Ireland (18.486) and Sweden (18.243) and the lowest ones in Romania (1.33), Greece (2.27) and Bulgaria (2.786). The development of ANS was divided into two partial periods 1995 – 2002 and 2002 – 2011. In the earlier period the highest rates were achieved by the same three countries such as Ireland (21.703), Luxembourg (21.089) and Sweden (17.252) and the lowest ones by Latvia (-2.795), Romania (-0.281) and Bulgaria (1.769) again. In the period 2002 – 2011 the economies with the highest ANS rates remained the same, however, the ANS of Sweden (18.883) exceeded that of Luxembourg (17.33) and Ireland (15.997). The lowest rates of ANS in this period were typical of Greece (-0.603), Portugal (1.17) and Romania (1.975). It is also indicated in Table 2.

In the next section the development of partial indicators is indicated by using mainly average rates of these indicators in the long-term period 1995 – 2011 and two partial periods, i.e. 1995 – 2002 (the earlier period) and 2002 – 2011 (the more recent period). It is appropriate to start with the development of Education Expenditure (EE), which represents the social pillar of sustainable development. This indicator positively affects the rate of the ANS, i.e. the higher EE, the higher ANS. These expenditures have reached the highest average rates in three Northern economies, i.e. Denmark, Sweden and Finland (7.805%, 7.147%, 6.087% in period 1995 – 2011 respectively) and in more recent period also in Cyprus. The lowest rates of EE in the long term were shown in Greece, Romania, Bulgaria, Luxembourg, Croatia and Slovakia (around 3% of GNI). The remaining ANS indicators are related to the environmental pillar of sustainable development. The second partial indicator of ANS is the Energy Depletion. The countries which are worse off in this field, i.e. with the highest ED, are Romania, Estonia, Denmark, the UK and Netherlands (more than 1% of GNI in period 1995 – 2011). In majority of the EU countries the rates of ED are very low (for example Sweden: 0.00001), in some of them they are equal to zero (see Table 2).

Very unusual development of this indicator was typical of Estonia where in most of years in period 1995 – 2011 the rates of ED were lower than 1% of GNI. In 1998 and 1999 these rates significantly jumped to 8.903% and 10.967% respectively and then they dropped to 0.252% in 2000 again. In the most recent years of 2010 and 2011 they reached little above 1% of GNI. On the other hand, Romania has shown the highest rates of ED in the EU in the long term period. However, the rates have gradually been decreasing and in recent period Denmark starts showing the highest rates of Energy Depletion.

Table 2: EU Countries with the Highest and Lowest Rates of ANS Component Indicators, average rates of 1995 – 2011, 2011

95–2011	GNS	CFC	NNS	EE	ED	MD	NFD	CO ₂ D	PMD
lowest	GR, MT, CY, UK	CY, UK, IE, FR	MT, PT, LT, GR	GR, RO, BG, LU	Zero – 6 countries	Zero – 8 countries	Zero – 13 countries	SE, FR, DK, AT	SE, FR, LU, SK
highest	LU, CZ, NL, IE	SK, CZ, LT, HU	LU, IE, SE, NL	DK, SE, FI, CY	RO, EE, DK, UK	BG, PL, SE, IE	LT, EE, SK, LV	BG, EE, RO, PL	BG, GR, PL, NL
2011	GNS	CFC	NNS	EE	ED	MD	NFD	CO ₂ D	PMD
lowest	GR, CY, MT, PT	CY, RO, BG, LT	GR, PT, MT, CY	GR, RO, LU, SK	Zero – 6 countries	Zero – 8 countries	Zero – 16 countries	SE, FR, DK, AT	EE, IE, LU, LT, SK, SE
highest	LU, EE, LT, NL	LU, PT, IE, MT	LT, RO, EE, SE	DK, CY, FI, SE	DK, RO, EE, UK	BG, PL, SE, FI	LV, LT, SK, EE	BG, EE, PL, CZ	BG, GR, PL, NL

Source: the World Bank, 2014, own elaboration

Note 1: The rates in particular fields are ordered from the highest ones for the highest rates and from the lowest ones for the lowest rates.

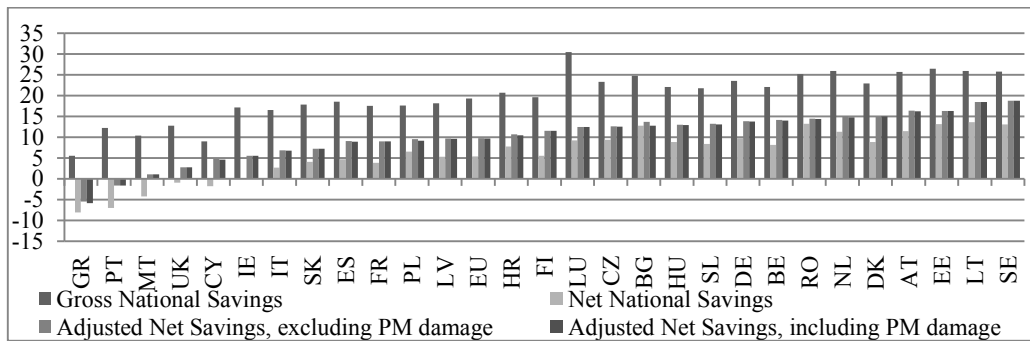
Note 2: In some countries data are not available in several years or periods. So the longest available periods are used for calculation of average rates. Instead of year 2011 the year 2010 is used if data are not available.

Note 3: The countries with zero rates of Energy Depletion in 1995 – 2011 are CY, FI, LU, LT, MT and PT and in 2011 also BE and SE). The countries with zero rates of Mineral Depletion in 1995 – 2011 are BE, CZ, EE, LV, LT, MT, NL and SL and in 2011 also in HR. For ED, MD, NFD, CO₂D data in CY and MT are not available in 2011 (for PMD and NFD data are not available in Malta at all). The six countries with the lowest PMD rate in 2011 reached the zero rate of this indicator.

In the long term the Mineral Depletion (MD) in the EU countries is on average even lower than the Energy Depletion. Bulgaria, Poland and Sweden are three countries with the highest MD in the long-term, in the earlier and more recent period as well as in the most recent year of 2011. Bulgaria is the only EU country whose MD has exceeded the rate of 1% of GNI (in 2005, then it has been declining but since 2009 it is rising again). However, as it was said above, the MD rates are close to zero

or zero in more of the EU countries (see Table 2). Regarding the next component indicator, i.e. Net Forest Depletion (NFD), its rates are on average slightly higher than those of MD, but lower than those of ED in the long term. Among the EU countries we can again find many countries with its rates of zero in the long term. Only fourteen EU countries showed the non-zero average rates in period 1995 – 2011 and the highest rates during this whole, earlier and recent period and in the most recent year of 2011 were typical of three Baltic economies and Slovakia. The development of NFD in Baltic economies showed some similar signs, especially in Latvia and Estonia. In both countries NFD was increasing, reached the peak and then it has been decreasing. The peak in Latvia occurred in 1999 (1.487) and in Estonia in 2001 (1.23). In the recent period NFD is increasing again. Lithuania reached the peak in development in 1995 (0.852), then its ANS alternately increased and decreased and since 2009 it is increasing again. In the whole EU CO₂ damages (CO₂D) have gradually been decreasing especially since 2001 after the increase in period 1999 – 2001. However, recently the slight increase is also typical of the period following 2008 which is related to the economic recovery after the economic crisis. The downward trend of CO₂D since 2001 with slight increases after 2008 has been typical of many EU countries as well. In 2011 CO₂D dropped in all EU countries again. However, positive results in this field might not only be related to the effort of the EU to meet the commitments of the Kyoto Protocol. The CO₂ emissions might copy the economic development, i.e. they are higher in the expansion and lower in the recession phase. The highest CO₂D in the long term, earlier and recent period and the most recent year of 2011 are typical of all the new Member States (see Table 2) and Greece and the lowest ones are typical of Sweden, France, Denmark and Austria.

Figure 2: Gross, Net and Adjusted Net Savings in 2011 in the EU Countries (% of GNI)



Source: World Bank, 2014

Note: in Cyprus, Malta and Poland the values of indicators in 2010 were used because of lack of data in 2011.

Moreover, we can distinguish between the ANS excluding and including PM10 damage (see Figure 2). So, the PM damages (PMD) are the last indicator included into the ANS calculation. Albeit with a downward trend, PMD rates of Bulgaria and Greece have significantly exceeded those of the other EU countries. Whereas Greece

has been close to the other Member States with its PMD rates since 2010, Bulgaria has significantly surpassed the other countries also in recent period and in 2011. On the other hand the countries such as Sweden, France, Luxembourg and Slovakia have shown very low rates of PMD. Although these rates in Slovakia were relatively higher at the beginning of 90s they gradually decreased. This downward trend is typical of all new EU Member States, where PMD have dropped since the middle of 90s as well as since 2000. However, at least two problems can be detected in relation to this indicator. Firstly, it is the method of its calculation as a willingness to pay to avoid mortality and morbidity from PM10 emissions. Secondly, it is the fact that the smaller particulates than PM10 are more dangerous than these ones, however, their monitoring is problematic.

In the previous section the component indicators of ANS related to its social (EE) and environmental pillar (ED, MD, NFD, CO₂D, PMD) of sustainable development were described. However, the saving indicators and indicator of capital depreciation are crucial because of their higher relative rates and thus higher influence on the ANS indicator. These indicators are Gross National Savings (GNS), Consumption of Fixed Capital (CFC) and their difference, i.e. Net National Savings (NNS). On average the countries with the highest GNS in the long term are Luxembourg, the Czech Republic, Netherlands and Ireland. On the contrary, the lowest rates are typical of Greece, Malta and Cyprus. The development of savings is dependent on the macroeconomic development. It can be seen that in 2008 the GNS decreased in almost all of the EU economies. This development continued in 2009 too, but with the exceptions of Baltic economies, Romania, Bulgaria, Hungary and Cyprus. Latvia even reached the extreme increase in GNS as % of GNI (8.715 p.b.) These increases can be related to the significant drops in national products in the EU countries due to the economic crisis, especially those of Baltic countries. While in majority of the EU countries and the EU as a whole the GNS decreased as well, in the above mentioned countries its relative values to GNI increased. So, the capital depreciation is an important component of the ANS, because it lowers the value of national savings of the economy. Differences among the EU countries exist with the highest average rates of CFC in Slovakia, the Czech Republic and Latvia in 1995 – 2011. However, in all three countries depreciation significantly dropped since 2000 and especially in 2011. In Latvia significant decrease in recent period, especially in 2011, is together with the increase in the GNS since 2009 also reflected in its NNS and ANS (see Figure 2).

Latvia reached the second highest rate of ANS among the EU countries in 2011 by both ANS indicators. In the long term the lowest average rates of CFC were typical of Cyprus, the UK and Ireland. Since 2010 they highest CFC rates are typical of Luxembourg. This also enhanced the significant drop in its ANS in recent period, i.e. since 2007 its CFC started to grow significantly and its ANS started to drop steeply. In the long term Ireland and Luxembourg have reached the highest NNS among the EU countries. However, in recent period savings dropped in both countries significantly. In Ireland this drop started in 2005 and in 2011 its NNS reached negative rate of -0.135% of GNI. In Luxembourg NNS started decreasing in 2007 and reached the negative value in 2009. Even since 2010 the rates are positive again,

they are far from the highest rates among the EU countries. In 2011 the highest NNS rates are typical of Latvia, Romania, Estonia and Sweden, which is significantly reflected in their ANS (see Figure 2). In Figure 2 countries are ordered according to the size of the Adjusted Net Savings, including PMD. According to the most recent data in 2011 we can see that in recent period the situation is generally better in the Northern and the most developed EU economies than in the Southern ones and the new Member States are often between these groups of countries. However, there are also exceptions. The highest rates of ANS are typical of Sweden, Latvia, Estonia, and Austria. The sequence is the same by both ANS indicators with the exceptions of reversed order of Austria and Estonia, where the ANS including PMD is lower by Austria because of relatively higher PM damage (0.196) whereas in Estonia this rate has been equal 0 since 2007. Two countries of the EU showed negative rates of both ANS indicators in 2011, i.e. Greece and Portugal (-5.908 and -1.655% of GNI respectively for ANS including PMD).

3.2 Relationship between the Adjusted Net Saving and Resource Productivity

In next section the previous analysis is completed with the simple regression analysis which shall point out to the relation between Adjusted Net Saving and Resource Productivity in the EU countries.

3.2.1 Detecting the relationship in the EU countries

For this analysis the ANS indicator, including PM10 damage available from the World Bank and Resource Productivity indicator available from Eurostat were used. Using the cross-country regression and the method of Least Squares the directly proportional relationship between the average values of these two variables in period 2000 – 2008 results from the equation (3):

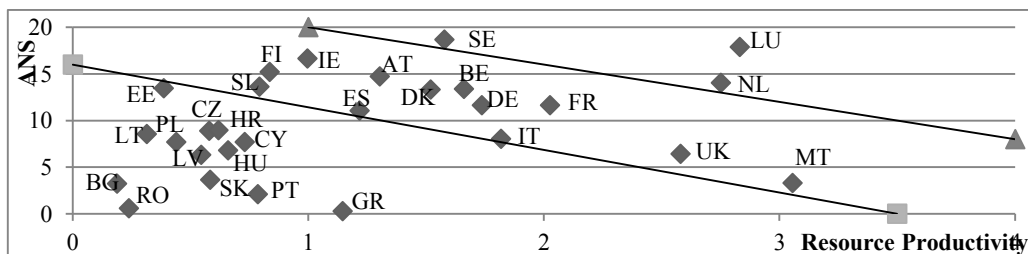
$$ADJ\ NET\ S = 6.2755 + 3.0789 \times RES\ PROD + \mu_i \quad (3)$$

$N = 27; R^2 = 0.2101; adjR^2 = 0.1785; DW = 2.28456$

The economy of Malta was excluded from the analysis, because the ANS rates were not available because of missing values of some indicators. The estimated figures (see subsection 3.1) are outliers. Inclusion in the analysis leads to the results, which are statistically insignificant. The econometric verification showed in both cases that there are no problems with meeting the assumptions of the model for the residuals. This means the absence of autocorrelation, heteroskedasticity and existence of the normal distribution of residuals. Heteroskedasticity tests, i.e. Breusch-Pagan-Godfrey, Glejser and Harvey confirmed that heteroskedasticity is not present. For verifying the autocorrelation, the Durbin-Watson test was used. The last one was verified by the Jarque-Bera test. According to the equation it can be said that positive relationship exists between the Resource Productivity and the Adjusted Net Savings in the EU. The Correlation Coefficient between these two variables is 45.837 (by excluding the economy of Malta), which reflects the medium-sized positive correlation. However, as we can see in Equation (3), the Coefficients of Determination are low and it can be supposed that the ANS indicator can be affected by more factors.

The relations between these two indicators are depicted in Figure 3. Malta was also included, although it was excluded from the regression. According to Figure 3 the relations between these indicators are not so straightforward. The cross-country regression indicated the positive relation between two indicators, however, there can be found (at least) three groups of countries and in each of them the negative correlation between the ANS indicator and the Resource Productivity is obvious.

Figure 3: Relation Between Adjusted Net Saving, Including PM10 Damage and Resource Productivity, (EUR per kg), average values 2000 – 2011



Source: Eurostat, 2013; the World Bank, 2014

Note: Resource Productivity is defined in Euro per Kilogram (Euro: chain-linked volumes, reference year 2005, at 2005 exchange rates)

The first group contains only three developed EU countries with the highest average rates of ANS as well as Resource Productivity. These countries are Sweden, Luxembourg and Netherlands, which are (together with Denmark) the countries with the highest average rates of GNI per capita (at market prices, Purchasing Power Standard). Sweden showed the highest average rate of the ANS in period 2000 – 2011 but relatively lower Resource Productivity and on the other hand Netherlands showed higher Resource Productivity but it also showed relatively high ANS rates. Luxembourg is the country with ones of the highest average rates of both indicators among the EU countries. The second group is mainly composed of the older EU Member States, Slovenia and Malta. Malta is the country which has together with Luxembourg and Netherlands shown the highest Resource Productivity among the EU countries in period 2000 – 2011. Although its ANS was computed only approximately, it is one of the lowest among the EU countries. The UK is also the country with relatively high Resource Productivity, but relatively low ANS. On the other side of this group we can find the countries such as Ireland, Finland and Slovenia with relatively high level of ANS and medium level of the Resource Productivity among the EU countries. The last groups consist of the remaining new EU Member States and two Southern economies, i.e. Greece and Portugal. Resource Productivity of these countries is medium or low. On the one side we can find the countries with very low levels of ANS, such as Greece, Romania, Portugal and Bulgaria and on the other side some countries with its relatively high/medium level such as Estonia but also Latvia, Czech Republic and Croatia. Looking at the whole Figure 3 the positive relationship between two indicators can be seen while Malta and the UK represent outliers in this analysis. It can be concluded that the relations between ANS and Resource Productivity in the EU are not so straightforward.

3.2.2 Relations of Adjusted Net Saving and Resource Productivity and Adopted Measures in the EU

Improving Resource Productivity is necessary to approach sustainable development because the Resource Productivity monitors the amount of gross value added (measured as GDP) an economy generates by using one unit of material (measured as DMC) (Eurostat, 2013). So, the more effective use of natural resources, substitution the non-renewable resources by renewable ones and similar measures can lead to decline in Energy and Mineral Depletion as well as to decline in environmental damages such as CO₂ and PM damages. For this reasons many legislative acts, strategies and programmes have been adopted in the EU. Generally, the measures are focused on the resource efficiency and move to long carbon economy as well as on the social pillar of sustainable development, i.e. education, social inclusion, employment, public health (the EU SDS) etc. Because the ANS serves as an indicator of sustainability as well as a policy indicator, it should reinforce the adoption of appropriate measures in the EU and its countries leading to accelerated move to sustainable development. However, the Resource Productivity can also be significantly affected by the actual cyclical development of economy. For example, drop in both variables, i.e. GDP and DMC with more significant decrease in DMC in recession leads to the higher Resource Productivity, which was the case of the EU in 2008 and 2009. This is obviously not the sign of decoupling and sustainable development. Moreover as it was mentioned in Introduction, the relations between economic growth and natural resources have additional aspects, for example, the so called resource curse hypothesis.

3.3 Summary of Main Facts Resulting from the Analysis

The EU consists of countries with different energy, mineral and raw-material structures and efficiency of its economies, different ways of natural resource management and environmental protection, which also lead to different levels of pollution. This corresponds with different developments of the ANS indicator. It cannot be said that the EU as whole is on the sustainable development path, many positive aspect of development are often related to the actual cyclical development of its economies. Regarding the average ANS values in the long term the highest average rates showed the economies of Luxembourg, Ireland and Sweden. However especially Ireland cannot be regarded as a sustainable economy because its ANS has almost continually been decreasing since 2004. Moreover this drop was strengthened by the economic crisis. On the other hand the economies of Luxembourg and Sweden returned to the growth trajectory of ANS (in 2010) after its decrease in 2008 and 2009. The only negative sign of the economy of Sweden is the high Mineral Depletion. This reflects the structure of the economy which is more significantly focused on mineral extraction, however, the Resource Productivity of this country has shown only medium-sized values in the EU. Negative ANS values, especially in the long term, reflect decline in total wealth of economies. The lowest average rates of ANS in the EU are typical of Romania, Greece and Bulgaria and in more recent period also of Portugal. Whereas the rates of ANS significantly increased in Bulgaria and Romania in time, the rates in Greece and Portugal have decreased and have been

negative since 2008. Even if the countries with the lowest average rates of ANS didn't show such significant decrease in ANS during the period of economic crisis, it cannot be referred to as a sustainable development because of change in development of macroeconomic indicators in recession.

To complete the assessment of sustainability several facts about the EU countries are summarized. The Northern economies have shown the best results in terms of the Education Expenditure. Baltic economies and Slovakia dominate in the highest values of Net Forest Depletion. The higher levels of the CO₂D are typical of the new EU Member States and Greece and on the other hand the lowest ones are typical of Sweden. The development of more ANS indicators in Baltic economies has often been extraordinary. Regarding the ANS component indicators in general the most positive development in the EU has been typical of the PMD indicator. The economic crisis also affected the development of the ANS component indicators in terms of ED decrease (in the majority of the EU countries in 2009), MD and NFD decrease (in many EU countries in 2008, 2009). CO₂D and PMD have shown the downward trend in the EU not only due to the economic crisis, but also in the longer term period.

4. Conclusion

The EU countries have shown different economic, social and environmental characteristics of their economies. So the values and development of the Adjusted Net Saving and its component indicators have significantly varied among the EU countries. The economy of Sweden seems to be the most sustainable EU economy and on the other hand the economies of Greece and Portugal represent the least sustainable ones. It cannot be said that the EU as a whole is on the sustainable development path according to the Adjusted Net Saving indicator. This is not only because of unfavourable development of this indicator in particular countries, but this indicator is affected by actual cyclical macroeconomic development as well. The Resource Productivity represents the decoupling indicator of the EU Sustainable Development Indicators. Decoupling can serve as an instrument of approaching sustainable development and so it can also improve development of the Adjusted Net Saving. However the Resource Productivity and its development also vary among the EU countries and the relation between these two indicators is not straightforward. Among the EU countries there are those with high levels of Resource Productivity as well as Adjusted Net Savings such as Luxembourg, low both levels such as Bulgaria and Romania and between them there are the remaining EU countries with various combinations of their levels.

The Adjusted Net Saving as an indicator of sustainable development has many lacks. It contains only limited number of component indicators which reflect economic, social and environmental aspects of sustainable development. Some of them can also be difficult to measure, especially the environmental damages. So the challenge is to improve the measurement of Adjusted Net Saving and its component indicators and to include as many economic, social and environmental aspects as possible. However the Adjusted Net Saving is also a policy indicator and thus it can guide

measures of the EU and its countries focused on approaching the sustainable development.

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Experience with the Application of Article 5(1) Of Brussels I Regulation Before Czech Courts

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Abstract

Free movement of goods, persons and services existing in the EU is mostly realized on the basis of cross-border contracts. With the number of such contracts raises also the number of possible disputes. Brussels I Regulation is the core stone of judicial cooperation in civil matters between the Member States. Czech courts are obliged to apply Brussels I Regulation from 1 May 2004. One of the most often applied provisions of Brussels I Regulation is the Article 5(1) containing the rule of jurisdiction in matters relating to contracts. This Article has been also often interpreted by the Court of Justice. The aim of this paper is to analyze selected decisions of Czech courts applying the Article 5(1). The paper tries to verify the hypothesis that in applying the Article 5(1) Czech courts largely follow the case law of the Court of Justice.

Keywords: *Brussels I Regulation, Article 5(1), Contracts, Czech courts*

JEL Classification: *K2, K4*

1. Introduction

Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (“Regulation”)⁵ unified the questions of international jurisdiction and recognition and enforcement of judgments within the EU. It represents the core stone of judicial cooperation in civil matters between the Member States (Nielsen, 2013, p. 503).

The general rule of jurisdiction under the Regulation rests in the criteria of defendant’s domicile. Article 2 states that a defendant domiciled in a Member State shall be sued in that state. In another Member State he can be sued only by virtue of the rules contained in the Regulation itself.⁶ This is the case of Article 5(1). Article 5(1) regulates the jurisdiction in matters relating to a contract. The criterion for determining jurisdiction is the place of performance. Article 5(1) is one of the most often used provisions in the Regulation and has been often interpreted by the Court of Justice (“CJEU”). This Article is also regularly applied by Czech courts. The aim of this paper is to analyse the selected case law of Czech courts applying Article 5(1). This

⁵ Recently, the Regulation has undergone the revision which has resulted in the new Brussels I Regulation. New Regulation No. 1215/2012 will be effective from 10 January 2015 and in the case of proceedings commenced after this date it will replace the present Regulation.

⁶ See Article 3.

paper tries to verify the hypothesis that Czech courts largely follow the case law of the CJEU. The paper will not analyse all the issues relating to Article 5(1) in general but will only focus on selected issues determined by the Czech courts.

2. Relation of Article 5(1) to Article 2

The prerequisite for the application of Article 5(1) is the defendant's domicile in a Member State. The relation between Article 5(1) and Article 2 was properly analysed by the Supreme Court of the Czech Republic ("Supreme Court") in the decision *No. 32 Cdo 1401/2011*.⁷ Referring to the case law of the CJEU the Supreme Court states that Article 5(1) contains the regulation of jurisdiction that constitutes for the plaintiff the alternative to the rule contained in Article 2. It is only up to the plaintiff if he uses the alternative rule or not. The defendant cannot in any way preclude this consequence. The Supreme Court rightly reversed the appellate court's ruling that the jurisdiction of the court could be based on Article 5(1) only if the defendant did not raise the objection of the jurisdiction based on his domicile.⁸

Contrary to Article 2, Article 5(1) determined not only international jurisdiction but also local jurisdiction (Mankowski, 2012, p. 107; Stone, 2010, p. 75). This was confirmed by the High Court in Prague in the decision *No. 3Cmo 37/2006*.⁹ The High Court expressly states: "*The jurisdiction of the Czech court is given where the competent court is the Regional Court in Pilsen whose local jurisdiction is based on Article 5(1)(a) of the Regulation and subject-matter jurisdiction is based on Section 9(3)(a) of the Civil Procedure Act.*" This conclusion was also confirmed by the Supreme Court.¹⁰ Unfortunately, there is also decision to the contrary. The Supreme Court rule in the decision *No. 25 Nd 194/2013*¹¹ that jurisdiction of the Czech courts is given by Article 5(1) of the Regulation, however the local jurisdiction cannot be ascertained. This conclusion seems not correct. If the court was able to determine that Czech courts have jurisdiction based on Article 5(1), it must have been able to find where the place of performance was located. Thus, also local jurisdiction could have been determined.

⁷ The subject-matter of the proceedings in this case was the payment claim of the Czech plaintiff against the defendant domiciled in Ireland. Based on the orally concluded contract the plaintiff was obliged to provide the services consisting in financial and tax audit. The defendant did not pay the contractual price.

⁸ For the same conclusion see also decision of the Supreme Court of the Czech Republic, No. 1208/2011.

⁹ The dispute in this case arose out of the licensing agreement. The defendant domiciled in Lithuania did not pay the royalties for the use of trade mark owned by the Czech plaintiff.

¹⁰ See e.g. decision of the Supreme Court of the Czech Republic, No. 4 Nd 255/2010.

¹¹ In this case the Supreme Court was asked to determine the locally competent court under Section 11(3) of Civil Procedure Act for the dispute between the Czech company as the plaintiff and the Slovak national whose domicile could not have been determined. The claim arose out of contract for carriage.

3. Scope of the Article 5(1) and Its Structure

The relation between the provisions of letter a) and b) is crucial for the application of the Article 5(1). As it is clearly stated in letter c), the provision of letter b) is special to letter a). As was ruled by the Supreme Court in decision *No. 33 Cdo 2905/2011*,¹² in the application of Article 5(1), letter b) has to be primarily applied. Only if it is not possible to apply letter b), letter a) applies.

3.1 Matters Relating to Contract

The definition of the notion “matters relating to contract” is crucial for the application of Article 5(1). Article 5(1) does not define this notion. The CJEU has not provided the general definition of this notion, either. However, the decisions of the CJEU have brought clarifications what matters can be subsumed under this notion. The notion “matters relating to contract” has to be interpreted autonomously (Case 34/82, 1983). The basic feature of “matters relating to contract” is the relation freely created between the parties (Case C-51/97, 1998). For example, based on the preliminary question raised by the City Court in Prague, the CJEU came to the conclusion that the giver of the aval, by signing the promissory note on its face under the indication “per aval” voluntarily consented to act as the guarantor of the obligations of the maker of that promissory note. His obligation was freely accepted and thus, Article 5(1) is applicable (Case C-419/11, 2013).

Most decisions of Czech courts applying Article 5(1) dealt with the claims arising out of breach of a contract, including claim for damages. In accordance with the CJEU case law (Case 9/87, 1988), such disputes clearly fall with the scope of Article 5(1). In the decision *No. 23 Cdo 4871/2008*¹³ the Supreme Court states: “*From the content of the action it is clear that the plaintiff based the action of the fact that the contract was not concluded. Therefore, Article 5(1) cannot be applied because it can be applied only to matters relating to contract.*” It should be reminded that the CJEU ruled that Article 5(1) could be applied not only to the claims arising out of the breach of the contract, but also to the dispute related to the contract whose existence is in dispute between the parties (Case 38/81, 1982). However, in the case solved by the Supreme Court there was no dispute between the parties as regards the existence of the contract.

3.2 Sale of Goods, Provision of Services

As was stated above, Article 5(1)(b) is applicable only to contracts for the sale of goods or provisions of services. Both these notions have to be interpreted autonomously. The characteristic features of the sale of goods are the exchange

¹² The dispute arose out of the contract concluded between the Czech company as the plaintiff and defendants domiciled in the Netherlands. Pursuant to the contract the plaintiff was obliged to transfer the share in the common property to the land and to grant the easement to the land. The defendants did not pay the contractual price.

¹³ The Czech company as the plaintiff claimed the respective amount as the unjust enrichment against the defendant domiciled in Slovakia. The plaintiff based the action on the fact that the contract was not concluded between the parties.

of goods for money and the obligation to transfer the property (Mankowski, 2012, p. 144). The notion of goods includes above all tangible and movable objects. It does not include money, electricity, rights, securities (Stone, 2010, p. 85) and immovables. This was also stated by the Supreme Court in the decision *No. 33 Cdo 2905/2011*. The Supreme Court holds: “*With regards to the understanding of the notion of goods within the law of the EU, it must be distinguished between the contracts whose subject-matters in the right in rem to immovable property and contracts for sale of goods (...).*”

Also the contract for supply of goods to be manufactured are to be considered sales under Article 5(1)(b). Following the case law of the CJEU (Case C-381/08, 2010) the Supreme Court in decision *No. 23 Cdo 2619/2007*¹⁴ rightly points out that if the buyer supplies all or the substantial part of the materials for the manufacture of the goods, this fact may lead to the qualification of the contract as provision of services. If the buyer did not supply such materials the contract may be qualified as the sale of goods even if the buyer specified requirements with regard to the provision, fabrication and delivery of the goods.

According to the CJEU the provision of services implies that the party who provides the services carries out a particular activity in return for remuneration (Case C-533/07, 2009). Czech courts in several decisions come to the conclusion that loan contracts represent provision of services under Article 5(1)(b). Referring to the case law of the CJEU the Supreme Court in the decision *No. 32 Cdo 1318/2011*¹⁵ rules that the provision of the loan can be considered activity in return for remuneration.¹⁶ Following the CJEU case law (Case C-204/08, 2009) the Supreme Court in decision *No. 25 Nd 106/2012* considers also the contract for carriage as the provision of services. On the other hand the High Court in Prague in the already mentioned decision *No. 3Cmo 37/2006* rightly held that the licencing agreement could not be considered contract for provision of services. This conclusion was later confirmed by the CJEU (Case C-533/07, 2009).

4. Criteria Determining Jurisdiction

4.1 Place of Delivery

In the case of a dispute relating to the sale of goods the court in place where the goods were or should have been delivered has jurisdiction. Place of delivery

¹⁴ The Czech company (plaintiff) supplied to the German company (defendant) components to cars. The particular supplies were delivered on the basis of orders that contained *inter alia* the quantity, delivery term under CPT INCOTERMS and date of delivery.

¹⁵ The dispute arose out of the loan contract between the Czech bank and the defendant domiciled in Slovakia. The court firstly analysed that the contract did not constitute the consumer contract in the sense of the Regulation. Then the court continued with the application of Article 5(1).

¹⁶ For the same conclusion see also decision of the Supreme Court of the Czech Republic, No. 32 Cdo 1826/2011; decision of the Regional Court in Hradec Králové, No. 47Co 198/2013; decision of the Regional Court in České Budějovice, No. 5Co 1547/2013.

is the specification of the place of performance for the sale of goods (Repas; Keresteš, 2012, p. 63). In accordance with the CJEU case law (Case C-381/08, 2010) the Supreme Court in the decision *No. 23 Cdo 3689/2011*¹⁷ correctly states that the criteria of place of delivery shall be used to all claims arising out of sale of goods, not only to claims relating to the obligation to deliver the goods. It is therefore applicable even if the plaintiff claims the payment of the purchase price.

In this case the Supreme Court also analyses the determination of the place of delivery following the CJEU case law (Case C-381/08, 2010; case C-87/10, 2011; Repas; Keresteš, 2012, p. 66 - 70). The Supreme Court rightly states that Article 5(1)(b) does not define this notion. The parties are free to determine the place of delivery. It is thus necessary to consider if such a determination results from the contract. If so, this place is decisive for the purpose of Article 5(1)(b). For the determination of the place of delivery the parties may also use INCOTERMS and other comparable terms. In situations where the agreement of the parties is missing, Article 5(1)(b) may be still applicable. The place of delivery has to be then determined in accordance with the principle of practical determination of the place of performance based on factual findings. The place of delivery is the place where the physical transfer of the goods took place, as a result of which the buyer obtained, or should have obtained, actual power of disposal over those goods.¹⁸

4.2 Place of Performance under Article 5(1)(a)

Czech courts have applied Article 5(1)(a) several times in disputes arising out of contracts different from the sale of goods or provision of services. In the decision of the Regional Court in České Budějovice *No. 5Co 670/2011*¹⁹ it was the payment claim from the contract under which the plaintiff was obliged to transfer the share in the common property to the land and to grant the easement to the land. The Regional Court in accordance with the CJEU case law (Case 12/76, 1976; case 14/76, 1976) rightly determined the obligation in question, in other words the contractual obligation that formed the basis of the proceedings. The court then determined the place of performance of this obligation under the law applicable to the contract ascertained on the basis of Czech conflict-of law rules.²⁰

5. Conclusion

Czech courts have applied Article 5(1) of the Regulation several times. In the above mentioned cases Czech courts mostly have faced the questions that were solved

¹⁷ In this case the plaintiff, the Czech company, supplied the ordered goods on the basis of several sales agreements to the defendant, the German company. The plaintiff handed the goods over to the first carrier or placed the goods at the buyer's disposal. The places of destination were located in Austria or in Germany.

¹⁸ For similar analysis see also decision of the Supreme Court of the Czech Republic, No. 23 Cdo 2619/2008; decision of the Supreme Court of the Czech Republic, No. 23 Cdo 1051/2012.

¹⁹ This decision was confirmed by the decision of the Supreme Court of the Czech Republic, No. 33 Cdo 2905/2011.

²⁰ See also e.g. decision of the Regional Court in České Budějovice, No. 5Co 1178/2011.

in the CJEU case law. As was continuously stated in this paper, Czech courts in their decisions followed the existing case law and applied Article 5(1) in accordance with it. It may be concluded that Czech courts are aware of the existence of Article 5(1), its correct application including the case law of the CJEU.

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Impact of Economic Crisis on the International Monetary System

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Abstract

The article is devoted to the current problems of the international monetary system with the stress on the global crisis that revealed the vulnerability of modern financial markets. The main goal of the article is to evaluate reform efforts done by the International Monetary Fund. Closer attention is focused mainly on the reform efforts that have been triggered by contemporary financial crisis. In particular, analysis included deals with Fund's credit lines that have been revised to reflect the current needs of the countries hit by the financial crisis. The EU has been affected by the reforms as well and started to use the International Monetary Fund's financial assistance to solve problems of its individual member countries.

Keywords: *Economic crisis, EU, Lending instruments, IMF*

JEL Classification: *E22, F33, F34*

1. Introduction

Undoubtedly the strongest effects of globalization can be seen in the financial system. The so-called financial globalization has undergone the greatest expansion after the Asian financial crisis. Financial globalization manifests the global placement of large amounts of capital in countries all over the world. Krugman (2009) for comparison stated that in 1996 the volume of U.S. assets located abroad was 52 % of GDP, while the volume of liabilities was 57 % of GDP. In 2007 it was 128 % in favour of the foreign assets of the USA and 145 % were foreign liabilities. Notable are thus two moments. The first one is related to the increase in the debtor position of the United States to the foreign countries. The second indicates the unprecedented increase in the volume of mutual claims. This strong link of foreign capital can be considered as origins of all currency and financial crises. While an effort to reduce risks in the domestic economy is posed by shifting a large part of capital abroad in the end it causes the interdependence of world economies in the international monetary and financial system to each other.

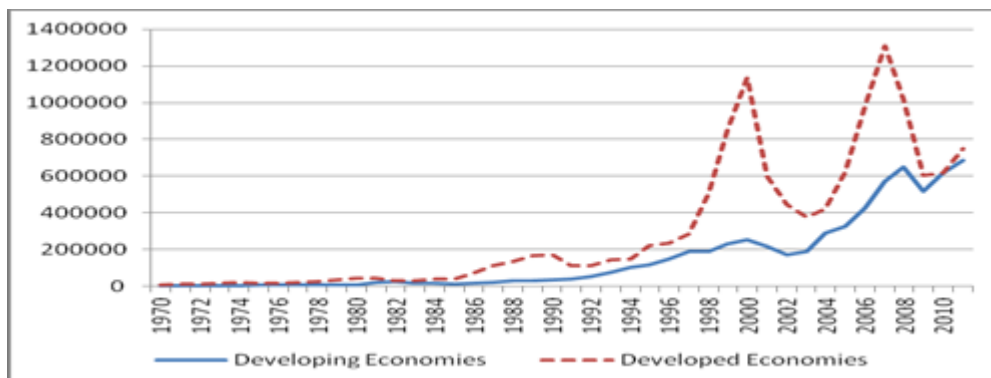
The above links demonstrate interdependence and resulting vulnerability of the contemporary global monetary system. Therefore, it is desirable to solve these issues collectively and with the transnational level of access and thus the world economies act through their representatives in the international monetary institutions, the International Monetary Fund (IMF, Fund) in particular, to respond to a variety of global crisis.

This article aims to evaluate the response of the International Monetary Fund to the current financial crisis. The reference period for analysis starts in 2007 until 2014. Nevertheless, attention to the events that have happened since the 70's of the 20th century is for a better understanding of the discussed problem paid too. In the second chapter the impact of the global crisis on the international monetary system, with emphasis on the analysis of capital flows is discussed. The third chapter is devoted to the analysis of the reform of IMF lending instruments. These innovative credit lines were utilized in times of crisis not only by EU member states, but also by low-income economies. In the final chapter main conclusions can be found.

2. Vulnerability of Modern Financial Markets

Due to global expansion of international capital in the second half of the 90s of the 20th century many countries were able to repay their loans that had been drawn from the Fund and other official creditors. This situation also helped countries to accumulate foreign exchange reserves. Unfortunately the collapse of mortgage lending in the United States in 2007 resulted in a global economic crisis that subsequently spread all over the world and in 2008 caused enormous imbalances in global capital flows and economic problems in individual economies. During the period from 1980 to 1995, global capital flows accounted for 2-6 % of world GDP. Since then, there has been an increase to 15 %. In 2006, global capital flows reached a total value of \$ 7.2 trillion, more than three times of their volume in 1995. The fastest growth was recorded in developed economies. However, emerging markets and developing economies have also started to integrate in financial way. The motive for foreign direct investment, for example, was to circumvent tariffs and restrictions on imports, that can be documented on the investments of Japanese car manufacturers in the U.S. These were not subjected to import tariffs against imports of automobiles. Individual countries were also trying to take advantage of subsidies and investment incentives offered on foreign markets. The main factor ceased to be the cost of labor and inputs, but rather it became to be issues of political and social stability and favorable business environment (see Figure 1 showing the development of the inflow of foreign direct investment in developing and developed economies), for details see Dvoroková (2014).

Figure 1: Inflow of Foreign Direct Investment in Developing and Developed Economies (1970-2010)



Source: UNCTAD [online] (2013), author's calculations

The current global crisis thus revealed the vulnerability of modern financial markets. In 2007, it started with the collapse of the real estate market in the USA. Soon after, on 15th September 2008 U.S. investment bank Lehman Brothers was forced to ask for court protection from creditors. Followed by Merrill Lynch, that agreed with the transition under the Bank of America. Financial markets were hit by mistrust that forced governments and central banks of each country to act. Policymakers of States came with the rescue in the form of various packages. Central banks²¹ then correspondingly reduced official interest rates that affected market interest rates and proceeded to supply the necessary liquidity into the banking system²². This distrust to the financial markets also affected emerging and developing economies. It could be, for example, due to a high proportion of loans to domestic residents in foreign currency (in the case of the EU, it was, e.g. the Baltic states and Hungary).

3. Impact of Reforms of the International Monetary System

The International Monetary Fund started to respond on the events in the world economy in late 2008. The IMF began to provide massive loans exceeding 1,000 % membership quotas, see **Table 1**. For more information related to the quota reform reflecting countries positions within global economy see Kudelová (2012). Such nonstandard step needed a broad support from creditor countries. It led to the tripling of the lending capacity of the Fund to approximately \$ 750 billion. The credit policy of the Fund, including the creation of the Flexible Credit Line (FCL) intended primarily for countries with strong economic fundamentals was reformed too.

²¹ The ECB cut interest rate on the main refinancing operations from 4.25 % in July 2008 to 2.5 % in December 2008. The current interest rate on the main refinancing operations came into force since November 2013 and is set on 0.25 %.

²² The ECB carried out two massive LTROs. In December 2011 received 523 banks 3-year liquidity in the total amount of 489 billion EUR. In February 2012 received 800 banks additional 3-year liquidity in the total amount of 530 billion EUR.

Table 1: Amount of Outstanding Loans as a % of Membership Quota at the IMF

Country	Loan amount (in mil. SDR)	% of quota	Term of approval
Ukraine	11,000	802	November 5, 2008
Hungary	10,537	1,015	November 6, 2008
Iceland	1,400	1,190	November 19, 2008
Pakistan	7,236	700	November 24, 2008
Latvia	1,522	1,200	December 23, 2008

Source: Procházka and Sedláček [online] (2009)

In 2012 there was a promise of 12 states and the euro area to increase the Fund resources. Among these states, for example, Czech Republic can be found. Cumulative promise of these states were additional \$430 billion of resources based upon agreements to the release from country's international reserves, for details see IMF [online] (2012).

3.1. IMF Role in the EU

As well as in other countries of the world economy the IMF provides also in Europe consultancy of a political nature, financial and technical assistance. The Fund carries out its activities both in individual EU countries and in cooperation with EU institutions, in particular with the European Commission and the European Central Bank. The EU on the other hand does not act within the IMF as a whole institution, but individually via Member States. The reason for that is the current form of the European legislation, which allows EU member states to act only if EU powers were transferred on them. On behalf of the European Commission the Commissioner for Economic and Monetary Affairs has the opportunity to participate each year at the annual meeting of the IMF. At the present time there is coordination within EU Member States and the IMF on the ground of *the Economic and Financial Committee* in Brussels also. Joint meeting of representatives of the EU and the IMF called EURIMF (EU Representatives in the IMF) is then regularly held in Washington.

Since the onset of the global financial crisis in 2008, the IMF has intensified its activity also in the EU. As a result of the debt crisis, the activities of the Fund since mid 2010 and further have strengthened. Mainly recommendations to the implementation of structural reforms to boost economic growth flowed from the side of the IMF. In the forefront the need to make changes in the labour market and to reform the pension system stands still. The EU is often criticized that it does not react unanimously to the world turbulence falling on each of its states. On this issue pointed IMF as well, that called in particular euro area Member States to work towards a collective response to the crisis. The IMF stressed especially

the need for a common position on the issue of the single banking system²³ (DW [online], 2014) and further fiscal integration.

The IMF focuses on the health of the financial sector not only because it has important implications for the individual economies of the EU, hence the Union. In 1999 he founded the so-called Financial Sector Assessment Program (further FSAP) for detailed analysis of the financial sector of each country. The outbreak of the financial crisis in the USA then confirmed the legitimacy of this Programme. But the crisis has also highlighted its weaknesses. The main drawback can be considered in voluntary character of the depth review of the financial sector. Worth noting that even in countries where there was control, sources of risk (e.g. liquidity risk) were not always identified. In contrast, in countries where the risks were clearly revealed, there has occurred a strong and clear warning. In September 2009 the program was therefore complemented by new features - transparent assessment, improved analytical tools, assessment tailored to each country (the assessment of one -size fits all was abandoned) and controls focused on standards related to the regulation of the financial sector.

Ongoing discussion regarding further modernization of the program resulted later in meeting of the Executive Board in April 2010. Assessment of the stability of the financial sector should be a mandatory part of the new bilateral surveillance conducted by the Fund. Since September 2010, a list of 25 countries that are subjected to such assessment of financial stability has been going to be compiled every 5 years. On the list there will be countries according to predetermined criteria included. These criteria contain the size and interconnection of the financial sectors across countries.

In 2011, the IMF conducted preliminary stage of the FSAP called European Financial Stability Exercise (further EFFE) in the European Union. The actual control according to the FSAP was done in the second half of 2012. IMF also warned in its Spillover reports on the five largest economies in the world that have a great impact on other countries through international trade and financial system. Among these countries the eurozone, the U.S., China, Japan and the UK were included, for more information see Spillover report from 2012 (IMF [online], 2013).

During the turbulent period of the global financial crisis, many European countries have applied for financial support from the IMF. Member countries (i.e. countries including the EU) could draw financial resources through its main lending instruments:

- Standby Arrangement (SBA),
- Flexible Credit Line (FCL),
- Precautionary and Liquidity Line (PLL),
- Rapid Financing Instrument (RFI),
- Extended Fund Facility (EFF).

²³ On 15th April, 2014 European Parliament supported another measures aimed at the creation of Banking Union. The vote was overwhelming, with 570 parliamentarians in favor and 88 against. They agreed on a 55-billion-euro (\$76-billion) fund that will allow to handle cross-border bank resolution procedures.

The most commonly used facility is the *Standby Arrangement*, which is currently drawn mainly by emerging markets. SBA was designed especially for countries with short-term problems reflecting in the balance of payments. Since its establishment, in July 1952 this credit line has been repeatedly used by Member States to overcome balance of payments difficulties. The financial resources are normally burdened with interest, however, much more favourable than the financial resources the country could receive in private markets. The interest rate is based on the SDR interest rate, which is updated weekly with regard to changes in short-term interest rates in the major international money markets. In 2009, SBA was upgraded so that it is more flexible and tailored specifically to the needs of member countries now. Borrowing limits were doubled and the conditions for obtaining it have been generally simplified (IMF [online], 2013). Member country can borrow up to 200 % annually and 600 % cumulatively of its member quota. Although, in exceptional circumstances, the loan might be much higher (e.g. Greece). During the economic crisis EU member states used this credit facility as well - Hungary, Latvia, Romania and Greece. For detailed information, see **Table 2**.

Table 2: SBA with EU Member States (in thousands of SDR ²⁴)

Country	Date of Arrangement	Date of Expiration or Cancellation	Amount Agreed	Amount Drawn	Amount Outstanding	% Quota*
Hungary	Nov 6, 2008	Oct 5, 2010	10 537 500	7 637 000	0	0
Latvia	Dec 23, 2008	Dec 22, 2011	1 521 626	982 240	0	0
Romania	Sep 27, 2013	Sep 26, 2015	1 751 340	0	0	416.99
	Mar 31, 2011	Mar 30, 2013	3 090 600	3 090 600	0	
	May 4, 2009	Mar 30, 2011	11 443 000	10 569 000	4 295 875	
Greece	May 9, 2010	Mar 14, 2012	26 432 900	17 541 800	15 469 250	1 404.00

Note: The table shows the status of outstanding credit agreements as of February 28, 2014.

* The amount of outstanding loans as a percentage of member quotas.

Source: IMF [online] (2013)

The credit line EFF was established in 1974. This line can be used not only to solve short-term but also long-term balance of payments difficulties associated with structural problems and that require fundamental economic reforms. This financial assistance program usually requires action to improve market institutions and functions, such as tax and financial sector reforms and privatization of public enterprises (IMF [online], 2013). Following EU countries currently draw resources from this credit line: Cyprus, Ireland, Portugal and Greece. For detailed information, see **Table 3**.

²⁴ SDRs per ERU for March 3, 2014 = 0.8898590000

Table 3: EFF with EU Member States (in thousands of SDR)

Country	Date of Arrangement	Date of Expiration or Cancellation	Amount Agreed	Amount Drawn	Amount Outstanding	% Quota*
Cyprus	May 15, 2013	May 14, 2016	891 000	222 750	222 750	140.80
Ireland	Dec 16, 2010	Dec 15, 2013	19 465 800	19 465 800	19 465 800	1 547.85
Portugal	May 20, 2011	May 19, 2014	23 742 000	22 182 000	22 182 000	2 154.22
Greece	Mar 15, 2012	Mar 14, 2016	23 785 300	7 210 900	7 210 900	654.47

Note: The table shows the status of outstanding credit agreements as of February 28, 2014.

* The amount of outstanding loans as a percentage of member quotas.

Source: IMF [online] (2013)

The FCL is intended for countries with strong political backgrounds. These states regularly provide information on their economic performance. This source of funding is not only a tool of crisis prevention, but serves also as one of the instruments for crisis solution. The credit granting is bound to meet the pre-qualification criteria. Access to this credit line is then evaluated for each country. Payment is carried out once (not phasing) and is not subjected to the implementation of specific economic policy measures, as the group of such countries is trustworthy and competent to do appropriate actions without their prior enforcement. From the European countries namely, financial sources can be drawn up upon the agreement in Poland, see **Table 4**.

Table 4: FCL with EU Member States (in thousands of SDR²⁵)

Country	Date of Arrangement	Date of Expiration or Cancellation	Amount Agreed	Amount Drawn	Amount Outstanding	% Quota*
Poland	Jan 18, 2013	Jan 17, 2015	22 000 000	0	0	0
	Jan 21, 2011	Jan 17, 2013	19 166 000	0	0	
	Jul 02, 2010	Jan 20, 2011	13 690 000	0	0	
	May 06, 2009	May 05, 2010	13 690 000	0	0	

Note: The table shows the status of outstanding credit agreements as of February 28, 2014.

* The amount of outstanding loans as a percentage of member quotas.

Source: IMF [online] (2013)

One of the main differences between the *Flexible Credit Line* and *Precautionary and Liquidity Line* is the length for which can be the credit line open and the allowed credit limit. While the FCL is under the qualification process available for the country for 1-2 years with no limit on access, PLL is open either 6 months or 1 to 2 years. PLL is limited by an annual ceiling up to 250 % per member country (6months duration) or up to 500 % access of the membership quota and a cumulative limit of 1,000 % membership quota (one to two-years duration). *Extended Fund Facility* can be used for the solution of medium to long-term balance of payments difficulties.

²⁵ SDRs per EUR for April 15, 2014 = 0.891645

To achieve this support it is required to perform basic economic reforms in the affected country. The agreements are therefore longer than in the case of SBA - 3 years with a maximum extension period of one year. However, this maximum length for providing EFF may be further extended. The maturity of the credit line in this case is also longer compared to the SBA (where maturity is 3 and a quarter years to 5 years from the time of payment) and is a four and a half years to 10 years. The last of the above listed credit instruments is *Rapid Financing Instrument*. It was established to provide rapid financial assistance to all member countries facing urgent balance of payments problems. The annual limit was set at 50 % of the membership quota, cumulatively can reach up to 100 % membership quota. This credit line is provided under the same conditions as the FCL, PLL and SBA, i.e. with a maturity of three and a quarter years to 5 years.

3.2. Credit Support of the IMF for Low-income Countries

IMF has also credit instruments designed for low-income countries that can draw funds on concessional terms through:

- Extended Credit Facility (ECF),
- Standby Credit Facility (SCF) and
- Rapid Credit Facility (RCF).

These subsidized loans have been provided interest-free under the instrument for poverty reduction and boosting economic growth (Poverty Reduction and Growth Trust, PRGT) from January 2010 until the end of 2014. *Extended Credit Facility* serves as a medium-term credit line that provides support for low-income countries with protracted balance of payments difficulties. The time of possible pumping of this fund is set at 5 and half years with a maturity of 10 years. *Standby Credit Facility* is designed to countries with short-term needs for the balance of payments. This credit line replaced the original credit instrument for exogenous shocks (Exogenous Shocks Facility). The loan can be provided for four years with a maturity of 8 years. The latter credit line is fast credit facility (Rapid Credit Facility). The uniqueness of this line is the minimum that a country must comply in order to obtain this type of financial assistance. At the same time, the country must be in an emergency situation that requires immediate assistance to settle the balance of payments (no account of official foreign exchange reserves).

4. Conclusion

The IMF participation in the EU has been not so common in recent decades. With the advent of the global crisis it has shown, however, that the countries that belong to the most advanced ones in the world economy, found themselves in serious problems whose solution requires the presence of supranational institutions. From this perspective the existence of the IMF can be certainly defended.

It is important to notice that the Fund's role in the international monetary system since its creation has changed considerably. The current global crisis has shifted the mandate of the IMF again a bit further. Among characteristic features of the IMF

politics reformed credit facility and increase of the credit lines to non-standard dimensions can be included. If, in response to the crisis in some cases loans were granted about 1,000 % of the membership quota, currently, for example, Portugal draw a loan of more than 2,000 % of the membership quota.

If we ask the question why there is so substantially increase in the lending capacity of the Fund, we can conclude that the traditional economic policies, especially fiscal and monetary, reached the limit for its maneuvering. In the case of fiscal policy, it is primarily the enormous national debt in individual countries where the Keynesian's approach cannot be applied. In the area of monetary policy, its creators found in a situation where traditional instruments (mainly official interest rates) has become ineffective and central institutions have started to use unconventional monetary measures (e.g. quantitative easing) instead.

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Social and Economic Effects of Special Economic Zones in Poland

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Abstract

Special economic zones (SEZs) are an institutional solution used by central or regional authorities to support the development of regions. In the EU, regions can benefit from the cohesion policy and, in an integrated way, use the strategy to their own strengths and weaknesses. This article presents the characteristics and development of special economic zones in Poland, and discusses their current functioning as well as prospects for the future. It also analyses the effectiveness of the special economic zones as measured by the size of tax exemptions, the scale of investments and the number of jobs created.

Keywords: *Efficiency of zones, Location of SEZs in Poland, Special economic zones in Poland*

JEL Classification: *G28, O38, R11*

1. Introduction

In the global economy, shaped by global processes, external conditions are important factor defining the development and internal adjustments in individual regions. A region can achieve a competitive advantage only when it seizes on its individual strengths, and adapts to the conditions and requirements of the global environment.

In the context of globalisation, special economic zones (SEZ) are one of the most important instruments of regional policy. To support the regional development - especially in the case of regions, where growth is structurally weak - actions of the government focus on providing financial incentives for entrepreneurs, with preferential terms of investment proposed to both domestic and foreign investors. The purpose of this article is to present the socio-economic effects of special economic zones in Poland, and discuss their possible development in the period 2014 -2020.

2. Legal Aspects of the Development of Special Economic Zones in the European Union

According to the EU law, granting state aid by individual Member States interferes with free competition, and this is why - as a general rule - granting state aid is prohibited. Granting state aid is possible only in cases when it does not violate

the principles of the Common Market, and when it is provided in the form of regional aid (as defined by Article 107 of the Treaty on the Functioning of the European Union).

Granting regional aid is subject to several criteria: aid must support the development of disadvantaged areas by supporting new investments and creating new jobs; aid is intended to support the economic development of areas where per capita gross domestic product is less than 75% of the EU average (this criterion is fulfilled in the case of the entire Polish territory); aid is granted for new investments and the maximum amount of regional aid depends on the level of GDP in the region (the scale of regional aid in individual Polish provinces is regulated at the national level).

The most important legal aspects governing the award of public support, also in the form of tax exemption zones, are defined by: the Treaty on the European Union and the Treaty on the Functioning of the European Union (they also include changes introduced by the Lisbon Treaty). Other acts include: The Europe 2020 Strategy, European Commission Regulation (No 800/2008) of 6 August 2008 declaring certain categories of aid as compatible with the common market principles as defined by Art. 87 and 88 of the EC Treaty (General Group Exemptions), and European Commissions' Communique to the European Parliament, European Council, European Economic and Social Committee and Committee of the Regions: Modernising the EU policy in the field of State aid (8 May 2012).

3. Special Economic Zones in Poland - Characteristics and Territorial Distribution

A Special Economic Zone (SEZ) is an ambiguous term. In legal terms it is an administratively separated part of the territory of the country, designed to attract businesses through more favorable conditions than those determined by national regulations. In economic terms, it is an economic enclave which is an instrument of economic policy - and in particular structural and localization policies - that facilitates the development of the country and supports the development of its individual regions (Bazydło, Smętkowski, 2000, pp. 17-55). For this purpose, entrepreneurs pursuing their investment projects in special economic zones are offered by the state a package of subsidized services (Liberska, 1999, pp. 35-64; Brezdeń, Spallek, 2008, pp. 217-229).

In Poland special economic zones were established on the basis of the Act on special economic zones of 20 October 1994. The purpose of their creation was to accelerate regional economic development, create new jobs, and attract foreign investors to the Polish market.

Table 1: Main Sectors in Special Economic Zones (as of 31 December 2011)

No.	Special economic zone, year of creation, location	Main sectors
1.	Kamienna Góra , 1997 (Lower Silesia, Greater Poland)	Services related to publishing, automotive industry
2.	Katowice , 1996 (Silesia, Lesser Poland, Opole)	Automotive industry, products made of non-metal mineral materials
3.	Kostrzyn-Slubice , 1997 (Lubusz, Western Pomeranian, Greater Poland)	Wood, automotive industry
4.	Krakow , 1998 (Lesser Poland, Subcarpathian)	Services related to publishing, automotive industry, mechatronics
5.	Legnica , 1997 (Lower Silesia)	Automotive, metal industries
6.	Lodz , 1997 (Łódź, Greater Poland, Masovian)	Products made of non-metal mineral materials, hardware
7.	Mielec , 1995 (Subcarpathian, Lesser Poland, Lubusz, West Pomeranian)	Wood, furniture
8.	Pomorze , 2001 (Pomeranian, Kuyavian-Pomeranian, West Pomeranian)	Electornic, paper industry
9.	Słupsk , 1997 (Pomeranian, West Pomeranian, Greater Poland)	Wood products, storage services, transport related services
10.	Starachowice , 1997 (Świętokrzyskie, Masovian, Opole, Lodz, Lublin)	Chemical products, products made of non-metal mineral materials
11.	Suwalki , 1996 (Podlaskie, Warmian-Masurian, Masovian)	Wood products, products made of non-metal mineral materials
12.	Tarnobrzeg , 1997 (Subcarpathian, Masovian, Lublin, Lower Silesia)	Electronic and optical products, machinery and equipment
13.	Walbrzych , 1997 (Lower Silesia, Opole, Greater Poland, Lubusz)	Automotive industry, food
14.	Warmia-Mazury , 1997 (Warmian-Masurian, Masovian)	Rubber and plastic products, electronic and optical products

Source: Own elaboration based on: *Informacja o realizacji ustawy o specjalnych strefach ekonomicznych* (2012) Ministry of Economy, Warsaw, p. 7.

Table 1 above lists special economic zones in Poland, along with the main sectors that represent them.

Special economic zones were created in the regions requiring a major restructuring of the industry, as well as those with low level of economic development. In the former case, special economic zones constitute an important instrument to support development of the regions; in the latter case – they help to eliminate economic problems in individual regions, and in particular the problem of unemployment.

Polish special economic zones are of specific nature - this applies specifically to how they are created. In Poland, special economic zones are a form of state intervention, realised in cooperation with local authorities. In other countries - zones are often a regional initiative.

The largest industry concentrations materialise in three zones: Legnica, Warmia - Mazury and Katowice. The automotive industry dominates Legnica and Katowice zones – with 56.8% and 52.5% share in total SEZ activity, respectively. In Warmia and Mazury 52.6% of the industry relates to rubber and plastic products. The analysis of the industry structure in different areas and their neighbourhoods indicates that existing groups of companies operating in the same and related sectors, are a natural base for the creation and development of successful clusters. Examples of cluster structures functioning within special economic zones are: the Aviation Valley in the Mielec zone, the Automotive Silesia in the Katowice zone, an ICT cluster in the Pomorze zone, and an automotive cluster in the Walbrzych zone.

The special economic zones are expected to operate until 2026. Initially, SEZs were created for a period of 20 years. In 2008 in line with an amendment to the SEZ Act, the functioning of the zones was extended to 2020. The year 2013 saw a further extension – from 2020 to 2026. The prolonged operation of the zones is of particular importance to sectors with a low rate of return, for example, the automotive sector. A decision not to extend the existence of special economic zones to 2026 would have resulted in a diminished interest in them, since the period between the initial investment and generating income that would be exempted from taxation, is long.

It is estimated that extending the functioning of SEZ until 2026 will result in an overall increase in investment by about 40 billion PLN. EY in their report indicate that a company starting operations at the beginning of 2014 would get back only 21 percent of its capital spending before 2020, before 2026 that would already be 38 percent (Poland - a true special, 2013).

The long term functioning of special economic zones creates a real chance to make a full use of the area designated to the SEZ (around 20 thousand hectares). In 2008, a set of criteria was designed to regulate the functioning of SEZ on private lands. Prior to 2008 private lands could be included in the zones only if it was dictated by "important economic considerations". In 2008 the following criteria were introduced to regulate the issue of including private lands into the special economic zones: creation of jobs or capital investment, development of innovative technologies, development of modern services (IT, BPO and R&D services); indispensability of the area - land adjustment (of no more than 2 ha) in order to complete investments developed in the zone.

The special economic zones in Poland are fragmented. They consist of several sub-zones, separate from each other, and often located in different regions (Table 1). As zones grow, they become increasingly heterogeneous and inconsistent. To solve the problem of their territorial cohesion, sub-zones are notified as entities subject to specific subsidies' sanctions. At present, every province in Poland has within its borders areas which belong to one or several SEZs. We observe effects of territorial expansion of the zones – compare Table 2.

Over the period 2005-2012 the number of municipalities, where SEZ were located, tripled and the number of cities almost doubled. In effect, foreign direct investments have declined. New areas, that are included in SEZ, are characterised by much lower levels of foreign capital, or foreign capital is nonexistent.

Table 2: SEZ Area and Location of Zones in Cities and Municipalities

SEZ	31.12. 2005	31.12. 2006	31.12. 2007	31.12. 2008	31.12. 2010	31.12. 2011	31.12. 2012
Area (ha)	7558,2	8164,3	10963,1	11845,1	14106,8	15045,7	15829,3
Number of:							
- cities	80	98	96	120	135	143	146
- municipalities	72	76	116	145	192	203	210

Source: Own calculations based on: *Informacja o realizacji ustawy o specjalnych strefach ekonomicznych* (2012) Ministry of Economy, Warsaw, *Informacja o realizacji ustawy o specjalnych strefach ekonomicznych* (2013) Ministry of Economy, Warsaw

4. Tax Preferences in Special Economic Zones - Impact on the Economy of the Region

The main benefit of investing in the special economic zone is the ability to use a tax relief, including an exemption from payment of corporate income and property tax. The current corporate income tax rate in Poland amounts to 19%. The maximum amount of tax exemption depends on the amount of state aid, which is permitted for a corporate undertaking an investment project. This amount depends on the location of the investment, the size of the company and the amount of capital expenditure (expenditures for the purchase of fixed assets or labor costs incurred over the period of two years).

The current rules for granting public aid in the SEZs are identical to the provisions of the European Commission set out in Regulation (EC) No 800/ 2008 of 6 August 2008. Until 30 June 2014 companies are entitled to the following income tax relief: a large corporate - from 30% to 50% of eligible costs; a medium enterprise - from 40% to 60% of eligible costs; a small business - from 50% to 70% of eligible costs.

From 1 July 2014 current limits regarding state aid for private enterprises will be reduced. Income tax relief will be as follows: a large corporate - from 25% to 50% of eligible costs; a medium enterprise - from 35% to 60% of eligible costs; a small business - from 45% to 70% of eligible costs.

Table 3: Regional Aid Map - Maximum Aid to Entrepreneurs Operating in the Zones, by Province

Until 30 June 2014		From 1 July 2014	
1.	50% - large corporates, 60% - medium enterprises; 70% - small businesses	1.	50% - large corporates, 60% - medium enterprises; 70% - small businesses
	Provinces: Warmian-Masurian, Podlaskie, Lublin, Subcarpathian, Lesser Poland, Świętokrzyskie, Lodz, Kuyavian-Pomeranian, Opole, Lubusz		Provinces: Warmian-Masurian, Podlaskie, Lublin, Subcarpathian
2.	40% - large corporates, 50% - medium enterprises; 60% - small businesses	2.	35% - large corporates, 45% - medium enterprises; 55% - small businesses
	Provinces: Silesia, Lower Silesia, Greater Poland, West Pomeranian, Pomeranian		Provinces: Lesser Poland, Świętokrzyskie, Lodz, Kuyavian-Pomeranian, Opole, Lubusz, West Pomeranian, Pomeranian

3.	30% - large corporates, 40% - medium enterprises; 50% - small businesses	3.	25% - large corporates, 35% - medium enterprises; 45% - small businesses
Province: Masovian		Provinces: Silesia, lower Silesia, Greater Poland	
		4.	Province: Masovian -municipalities in the eastern part of the province: 35% - 55% - municipalities in the western part of the province: 20% - 50% ; - Warsaw (until 31.12.2017) - 15% - 35%; (from 1.01.2018) - 10% - 30%

Source: Based on: *Poland – a true special economic zone* (2013), EYGM Limited, Warsaw, p. 25.

Under the current rules an investor, who has a permit, is entitled to receive a public aid in the amount which reflects the maximum permitted amount for the given province – in accordance with the so-called map of regional aid, which is in force on the date of granting of the permit - Table 3.

Starting from mid-2014 a territorial score of the tax relief will change. The maximum level of support - 50% will be maintained in only four of the 16 provinces. In nine provinces level of aid will be reduced by 15%, and in two – by 5%. The pre-conditions for the tax relief will become more demanding.

There is a positive correlation between the amount of state aid (including in the form of tax exemptions) and the size of investments in the country. The use of tax preferences triggered an increase in capital expenditure and employment in special economic zones - Table 4.

Table 4: Value of Investments and New and Retained Jobs in the SEZ (as at 30.09.2013)

Number of permits	Value of investments (mln euro)	New jobs	Retained jobs
1613	22 430	191 575	67 920

Source: Own calculations based on: *Efekty funkcjonowania specjalnych stref ekonomicznych na koniec IV kwartału 2012 r.* (2013), Ministry of Economy, Warsaw.

In 2012, the largest share in the total amount of investments accounted for the zones, which aimed at restructuring of the regional economy (Katowice - 22.8%, Wałbrzych - 17.0%, Łódź - 11.6%). Capital-intensive and modern industries dominate in the zones with the highest capital expenditure. The average capital expenditure incurred for the creation of a single job amounts to around 117 thousand euros.

Table 5 shows the effectiveness of the special economic zones measured by the share of lost budget income in total investments. Each unit of tax exemption brings more than 7.5 fold return in the form of investment.

Table 5: Effectiveness of the SEZ (as at 31.12.2011)

Cumulative value of investments (mln euro)	19 917,5
Total amount of tax exemption (lost budget income in mln euro)	2 633,47
Share of lost income in investments	13,2%

Source: Own calculations based on: *Informacja o realizacji ustawy o specjalnych strefach ekonomicznych*, (2013), Ministry of Economy, Warsaw.

The analysis carried out by the Ministry of Economy showed that without the jobs created and retained as a result of investments made in the special economic zones, the unemployment rate in Poland at the end of 2012 would be 14.7% instead of 13.4%. In 40 counties, the unemployment rate would increase from 3 to 9 percentage points, in 9 counties the unemployment rate would rise from 10 to 20 percentage points.

On the one hand, state aid granted to entrepreneurs operating in the special economic zones is a cost to the budget due to a loss of income tax. On the other hand, there are benefits from taxes such as personal income tax paid by people employed in these zones and the income tax paid by businesses with activities not covered by the permits.

5. Conclusion

The development of special economic zones in Poland can be considered fairly stable, although the global economic crisis caused a decline in employment and investment. In 2009, there was a decline in the number of new jobs; in 2010 the cumulative growth rate of investments decreased by 7.4%. European Commission called for a simple, fair and transparent transitory period of the cohesion policy after 2013, which should include previous experiences and recent trends in the social and economic development of the regions and allowed them continuation of their own path of growth and development (Resolution of the European Parliament from 7 October 2010).

Nowadays and at times of globalisation, subsidies cease to be attractive, especially for companies with a high level of innovation. We see a decline in foreign direct investment in the Polish regions. It should be emphasized that 5 of the 14 Polish special economic zones were on the international list of the top 50 special economic zones in the world, prepared by fDi Magazine of the Financial Times. The best results are achieved by Katowice Special Economic Zone, which ranks second in Europe and 11th globally.

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Foreign Trade of the Czech Republic after Ten Years of Membership in the European Union

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Abstract

The paper deals with the foreign trade of the Czech Republic after its entrance into the European Union (EU). The main intention is to find the changes that occurred in the volume and the structure of foreign trade in the period of 2004-2012. The analysis is carried out by using mathematical-statistical methods and indexes. The results of the analysis show that the membership of the Czech Republic in the EU had a positive influence on foreign trade, because the Czech Republic is a small open economy. Although some changes in the geographical composition of Czech trade in the monitored period were found, free access to the EU's internal market with about half a billion people is the most important for Czechia. The Czech comparative advantage is obvious in the export of machinery and transport equipment for the whole time, while other manufactured goods contributed to the trade balance very variably.

Keywords: Foreign trade, Trade integration, Trade balance

JEL Classification: C00, F10, F15

1. Introduction

The process of the economic transformation of the Czech economy in the 1990s that was the response to the political changes in Europe and in the world was connected with the liberalisation of foreign trade and the creation of new trade relations with the West as well as East European countries. However, the economic cooperation of the Czech Republic with the European Union (EU) member countries had the main significance for the next development of the Czech economy. In 1995, the Europe Agreement (also known as the Association Agreement) between the Czech Republic and the European Communities and their member states entered into force (Navrátil, Kaňa, Zlý, 2012). But the trade cooperation between these countries already started in 1992, when the first Interim Agreement entered into force. After the dissolution of Czechoslovakia into two independent countries, Czechia and Slovakia, the original Interim Agreement was modified. The Interim Agreement covered trade in goods (especially industrial goods and only in the limited extent of agricultural goods), without services. The main object of this agreement was to create a free trade area between the Czech Republic and the EU member states until 2001 in the area of industrial goods. The accession negotiation between the Czech Republic and the EU, opened in March 1998 and concluded in December 2002, finished with the signature of the Treaty of Accession on 16 April 2003 and was determining for the next development. On 1 May 2004, the Czech Republic became a full-fledged

member of the EU. The entrance into the EU's single market enabled free, non barrier access to the market with about half a billion people and also brought new trade opportunities for the Czech producers to expand on the markets of the third countries where the framework conditions for trade are determined by the Common Commercial Policy of the EU. Ten years have passed since the entrance of the Czech Republic into the EU. The main object of the paper is to find what influence the membership of the Czech Republic in the EU had on its foreign trade. Specifically, the analysis will be focused on the changes in the volume and structure of the Czech foreign trade in the period of 2004-2012. Firstly, the literature review about the Czech foreign trade will be done. Secondly, the methodology of the trade analysis will be performed and the results of my own analysis will be presented. Finally, the conclusion will summarise the main facts.

2. Literature Review

Foreign trade has always been a very important area of the Czech economy. From this point of view, the Czech foreign trade has been one of the most often analysed areas done by many authors, such as Benáček, Popiera, Prokop, Víšek (2003, 2005, 2006), Tomšík (2000, 2001, 2001a), Fojtíková, L. (2009, 2010), Kalínská et al. (2010), Majerová, Nezval (2011), Plchová, Gajdůšková (2013), etc.

Fojtíková (2009) described the long-term history of the Czech foreign trade and trade policy from 1945 to 2008, as well as the factors that determined the structure of the Czech foreign trade in this time. One of the results of her analysis was that the value of imported material represented almost 14 % of the value of the export of the final products and the dynamics of foreign trade reached more than six fold the effect of the transformation in 1993-2006. Because the member states of the EU were identified as the main Czech trade partner, the revealed comparative advantage of the Czech Republic in export to the EU was found out in the group of other manufactured goods (SITC 6+8) and in the group of machinery and transport equipment (SITC 7). Fojtíková (2011) also identified that the entrance of the Czech Republic had an impact on the growth of the rate of openness of the Czech economy. While the rate of openness of the economy was 72.1 % in 1995, it was 132.2 % in 2008, but in comparison with the other countries of the Visegrad group, Czechia took the third position after Slovakia and Hungary. Majerová and Nezval (2011) mention some risks that are connected with the increase of economic openness and state that the excessively high orientation of the Czech foreign trade, mainly export to the EU, and also excessively high importance of the export of machinery and transport equipment in the Czech foreign trade is not desirable.

The foreign trade of the Czech Republic before its entrance into the EU was analysed several times by Benáček et al. (2003). These authors found the determining factors of the Czech foreign trade balance and analysed the structural issues in trade creation. They indicated that the balance of trade was primarily influenced by the real exchange rate, aggregate demand and tariff changes. However, on the supply-side, characteristics such as changes in the sources of physical and human capital, the inflows of foreign direct investment and the growing competitiveness of domestic production were also important. In later analysis, Benáček et al. (2005) found that

the key determinants of the Czech trade balance with the rest of the world in 1993-2002 were domestic GDP, qualitative upgrading in the unit prices of exports, Czech domestic production prices, the stock of foreign direct investment and economies of scale. These conclusions were also confirmed in another of their analyses with new supplements – that the Czech export sector made tremendous progress in competitiveness during 1993-2001, showing high dynamics of growth, an intensive level of structural adjustments and an accelerated speed of integration with the EU (Benáček et al., 2006). Tomšík (2001a) identified the main factors of the Czech export and import in 1993-1998 and estimated the long-run equilibrium relationship of Czech foreign trade functions. He concluded that the Keynesian theory of the adjustment process applied to the balance of payments in the long-run should be complemented by the monetary approach. He came to similar conclusions in his other studies (Tomšík, 2000) (Tomšík, 2001).

3. Formulation of the Trade Analysis

The object of the analysis is to find the changes in the volume and the structure of the Czech foreign trade after its entrance into the EU. The analysis covers only trade in goods (without commercial services) in the period of 2001-2012 and 2004-2012 respectively. Trade in goods represents a decisive part of the total Czech trade that is carried out as intra-EU trade as well as extra-EU trade. Data about the European Union include 27 countries that were the members of the EU in the monitored period.

3.1 Methodology and Data

The analysis of the changes in the volume and structure of the Czech foreign trade is done by using mathematical-statistical methods. The trade analysis includes the development of the trade turnover (export + import) in 2001-2012 and the changes in the volume of the Czech foreign trade after the entrance into the EU. Another part of the trade analysis is focused on the calculation of the level of trade integration, sometimes also called the rate of economic openness. Many authors define the rate of economic openness in a different way. For example Cihelková (2003) mentions that the rate of economic openness is given by the share of exports and imports in the total aggregates of economic activity, which is for example the share of export (import, trade turnover) in GDP, the share of supplies for export in the total production, etc. According to the Eurostat methodology, the trade integration of goods and services is calculated as a percentage of gross domestic product (GDP). Practically, this means the average of imports and exports of items of goods and services of the balance of payments divided by GDP. If the index increases over time, it means that the country or zone is becoming more integrated within the international economy (Eurostat, 2014). We use these modified forms of formulas where the share of import and export in GDP is considered individually:

$$TI_t = \left(\frac{IMP_t}{GDP_t} \right) * 100 \quad (1)$$

where TI_t represents the level of trade integration in time t that is expressed in percentages, IMP_t are imports in time t and GDP_t is gross domestic product in time t in nominal value.

The second formula can be explained similarly, but with using exports (EXP_t). In this way we are able to compare which part of trade (export or import) contributes more to trade integration.

$$TI_t = \left(\frac{EXP_t}{GDP_t} \right) * 100 \quad (2)$$

The data for these parts of the analysis were obtained from Eurostat and are expressed in euros.

In the next part of the paper, the trade analysis is focused on changes in the geographical and sectorial composition of foreign trade. The trade analysis is ended by the development of the trade balance (export – import) in 2001-2012. It also includes the calculation of the coefficient of contribution to the trade balance (CTB) for the individual commodity groups of the Standard International Trade Classification, rev. 4 (SITC). The main commodity groups include:

Table 5: Standard International Trade Classification, rev. 4

SITC	Name
0-1	Food, drinks and tobacco
2	Raw materials
3-4	Mineral fuels, lubricants and related materials
5	Chemicals and related products
6-8	Other manufactured goods
7	Machinery and transport equipment
9	Commodity and transactions not classified elsewhere

Source: UN (2014)

The contributions to the trade balance were calculated as follows:

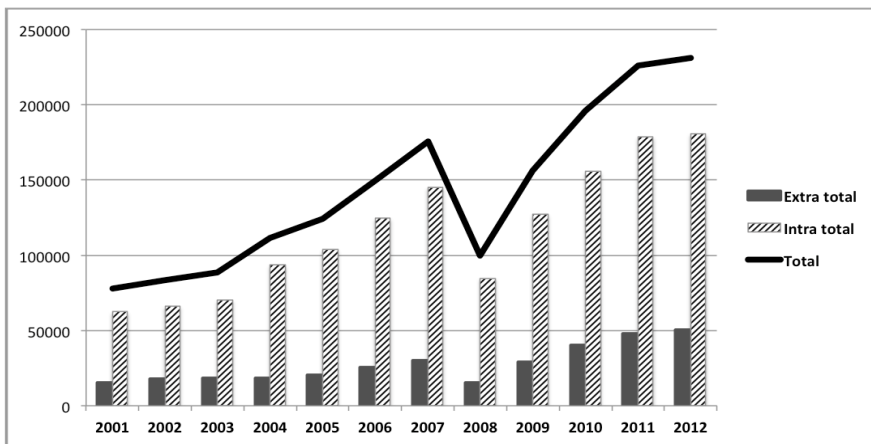
$$CTB = \left(\frac{exp-imp}{EXP+IMP} - \frac{EXP-IMP}{EXP+IMP} * \frac{exp+imp}{EXP+IMP} \right) * 1000 \quad (3)$$

where exp and imp express the export and import of the given commodity group, EXP and IMP meaning the total exports and imports of a country. This coefficient enables to express the comparative advantage of a country and in the characterisation of the position of the given branches to also consider imports. In this concept, the comparative advantage is perceived as the concept of next trade (the trade balances of the individual commodity groups). It explains the relative (better or worse) position of the branches to the total trade regardless of the fact whether the total trade records a surplus or deficit (Rojíček, 2010). The data for this part of the trade analysis were obtained from the Czech Statistical Office (CSO).

3.2 Results of the Trade Analysis

The orientation of the Czech foreign trade on West European countries, especially the EU member countries, that started in the 1990s and was motivated by the creation of a free zone in the area of industrial goods, also continued in the following years. Figure 1 shows the development of Czech trade that was carried out in the frame of intra-EU trade and with other non-EU member countries in 2001-2012. The data confirm that trade (export and import) that was carried out between the Czech Republic and the EU member states before the entrance of the Czech Republic into the EU was already about four times higher than the export and import that was done with non-EU member countries.

Figure 2: Development of the Czech trade turnover in 2001-2012 (mil. EUR)



Source: Eurostat, own data processing.

The graph in Figure 1 shows the growth of the trade turnover with the exception of 2008, but it was caused by missing data for import (extra as well as intra import) and the data in this year include only exports. However, the fall of Czech trade in 2008-2009 was influenced the financial and economic crisis that hit all countries and regions in the world, although in a different way. The changes in the volume of the Czech foreign trade are shown in Table 2. The total Czech trade increased in the monitored session by more than two times, especially thanks to the growth of export. The increase of the volume of foreign trade between 2004-2012 can also be seen in the growth of the share of Czechia in the world exports. While the share of the Czech exports in the world exports was 0.8 % and the Czech Republic took the 33rd position among the leading exporters in the world, in 2012 this share was a little higher, i.e. 0.9 %, and the Czech Republic moved to the 31st position of the leading world exporters (WTO, 2004; WTO, 2013).

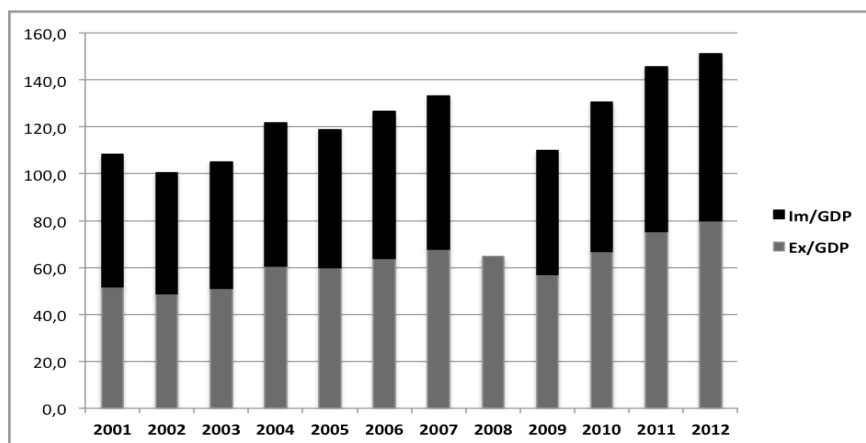
Table 6: Changes in the Volume of the Czech Foreign Trade from 2004 to 2012 (bil. of EUR and %)

	2004	2005	2006	2007	2009	2010	2011	2012	2012-2004
Export	55.5	62.8	75.6	89.4	81.0	100.3	117.1	121.9	119.7
Import	56.2	61.5	74.2	86.2	75.3	95.5	109.3	109.5	94.7
Ex+Im	111.7	124.3	149.8	175.6	156.3	195.8	226.3	231.4	107.1

Source: Eurostat, own data processing.

The higher volume of export than import is also obvious from the share of these two parts of the total trade in GDP (see Figure 2). However, the development of these shares in GDP was not the same in all years. While the share of import in GDP was higher than the share of export in GDP until 2004, since 2005 this has been different and the share of export in GDP is dominant. In both cases, the level of trade integration was higher in 2012 than in 2001. For example, the rate of the openness of the Czech economy at the entrance of Czechia into the EU was more than 60 % on the export side and more than 61 % on the import side; in 2012 it was almost 80 % and 72 % respectively. From this point of view, the integration of the Czech economy with other EU member states contributed to reaching a higher level of economy openness and confirmed that the Czech Republic is a small open economy dependent on foreign trade.

Figure 3: Level of Trade Integration in the Czech Republic in 2001-2012 (%)



Source: Eurostat, own data processing.

Developed economies with a market economy represented the main trade partners of the Czech Republic with a share of more than 80 % in the total Czech foreign trade. However, these countries recorded a decline of the share in Czech trade by 7 percentage points in 2004-2012 (see Table 3). This decline was accompanied by the increase of the share of the CIS and other countries, especially China, in Czech trade. This trend confirmed the intention of the Czech government to diversify export and import. Other factors such as distance, comparative advantages or disadvantages,

investment, trade policy, etc. also evidently influenced the geographical composition of Czech trade in 2004-2012.

Table 7: Changes in the Geographical Composition of the Czech Foreign Trade in 2004-2012 (% and percentage points)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2012-2004
DME	87.5	86.4	85.7	85.3	83.2	83.2	81.0	80.8	80.5	-7.0
DC	4.8	4.6	4.4	4.6	4.7	5.6	5.8	5.5	5.8	1.0
TE	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.1
CIS	4.1	5.5	5.8	5.1	6.5	5.0	5.7	6.2	6.9	2.8
other	3.0	2.9	3.4	4.3	4.9	5.6	6.8	6.9	6.2	3.2

Notes: DME (developed market economies) include EU countries, EFTA countries (Iceland, Liechtenstein, Norway, Switzerland) and other developed countries such as Australia, Canada, Japan, Turkey, the United States, etc. DC are developing countries from Asia, Africa, America and Oceania. TE includes countries in transition represented by Albania, Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro and Serbia. CIS (Commonwealth of Independent States) includes Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. Other countries are China, Cuba, Laos, Mongolia, North Korea and Vietnam.

Source: Ministry of Industry and Trade of the Czech Republic, CSO (2010, 2013), own data processing.

The leading positions among the main trade partners of the Czech Republic were taken by the member states of the EU. This fact confirms that intra-EU trade is more important than extra-EU trade for Czechia, which was shown in Figure 1. These countries, especially Germany, Austria and France, are also an important source of prime foreign investment in the Czech Republic. China and Russia are two non-EU member countries that belonged among the top ten Czech trade partners in 2004. In 2012, these countries increased their share in the total Czech trade to almost 6 % and 5 % respectively. It was caused especially by the growing imports of manufactures from China and the imports of mineral fuels from Russia.

Table 8: Main Trading Partners of the Czech Republic in 2004 and 2012 (%)

	2004	%		2012	%
1.	Germany	33.9	1.	Germany	28.5
2.	Slovakia	6.9	2.	Slovakia	7.6
3.	Austria	5.1	3.	Poland	6.6
4.	Poland	5.0	4.	China	5.8
5.	Italy	4.8	5.	Russia	4.7
9.	China	2.8	6.	France	4.1
10.	Russia	2.8	7.	Austria	3.9

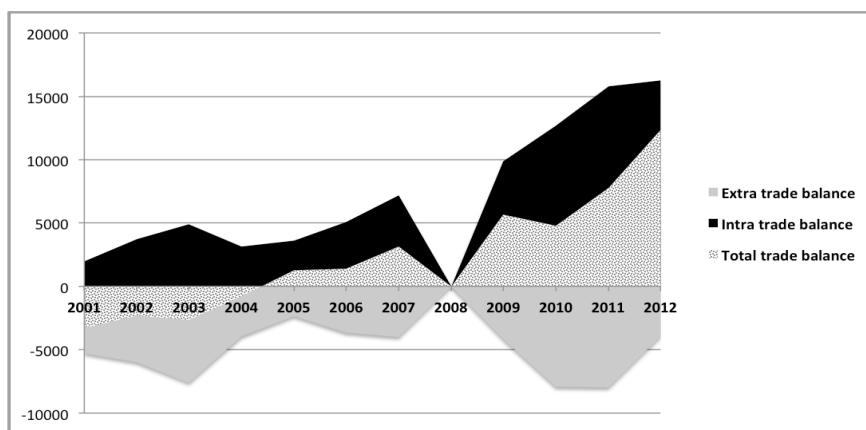
Sources: MZV ČR (2004), CSO (2012), own processing.

Though the exports of the Czech Republic to Russia were more than five times higher in 2012 than in 2004 and the imports were only 2.6 times higher at the same time, the value of imports exceeded the value of exports and the Czech Republic recorded a trade deficit with Russia during the whole monitored period. Similarly, the value of the Czech exports to China was almost six times higher in 2012 than in 2004

and the value of the Czech imports from China increased only four times, so the trade deficit for Czechia was obvious. However, Czechia recorded a trade deficit in this time not only with China, but also with most East Asian countries (Tseng, 2013). An increase of bilateral trade in goods was recorded not only with Czechia, but also with other EU member states. Baláž et al. (2013) mentions that the volume of trade between the EU and China increased by 400 % during the last decade. The increase of China's trade was especially influenced by continued economic reforms and also China's entrance into the WTO.

The development of the total Czech trade balance in 2001-2012 is documented in Figure 4. For 2008, the data are missing, but in the other years it is evident that the Czech Republic reached trade surpluses with the other member states of the EU and deficits in trade with non-EU countries. From 2005 to 2012, trade surpluses created in intra-EU trade were higher than trade deficits in extra-EU trade, which led to the fact that the total trade balance of the Czech Republic was positive.

Figure 4: Development of the Czech Trade Balance in 2001-2012 (mil. EUR)



Source: Eurostat, own data processing.

The Czech trade balance is influenced, among other things, by the competitiveness of its products on the world market. According to Staníčková (2012), competitiveness is one of the fundamental criteria for evaluating economic performance of area (country/region) and also reflects the success in wider (international/interregional) comparison. Table 5 shows in which products the Czech Republic was more or less competitive. In other words, in 2004-2012 the Czech Republic reached a comparative advantage in SITC 7, i.e. in the export of machinery and transport equipment. The results of the trade analysis confirmed that other commodity groups contributed to the Czech trade balance predominantly negatively. The biggest differences in CTB were recorded in SITC 6-8 in the monitored time, especially between 2005 and 2006, but also between 2008-2009.

Table 9: Contribution to the Trade Balance of the Czech Republic in 2004-2012

SITC	2004	2005	2006	2007	2008	2009	2010	2011	2012
0-1	-7.3	-4.1	-9.9	-7.4	-6.9	-9.2	-7.9	-7.7	-7.2
2	-1.4	0	-2.3	0.9	-1.1	2.2	1.6	-1.2	-0.3
3-4	-21.3	-29.1	-39.0	-26.6	-38.5	-28.8	-29.4	-24.9	-35.7
5	-25.5	-19.6	-27.3	-22.9	-24.6	-24.0	-20.9	-24.5	-24.6
6-8	12.7	-28.4	41.9	0.2	21.5	-1.4	0.8	-0.9	4.5
7	42.8	81.3	36.6	55.9	49.7	61.3	56.0	59.5	63.9
9	0	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.5	-0.6

Source: own calculation.

5. Conclusion

It is possible to evaluate the development of the Czech foreign trade after the entrance into the EU positively. The results of my own analysis confirmed that the value of trade in goods was higher in 2012 than in 2004 and that the Czech Republic recorded an increasing rate of economic openness, especially thanks to export. The increasing trade was caused mainly by intra-EU trade in which the Czech Republic carried out a predominant part of its “foreign trade”. In the period of 2004-2012, some changes in foreign trade occurred. Specifically, the Czech trade balance changed from negative values to positive values and a small movement was recorded in the geographical orientation of trade where China and Russia strengthened their position in the Czech market. The Czech Republic’s main comparative advantage was recorded in machinery and transport equipment. This commodity group contributed to a positive trade balance by the biggest extent during all years. On the whole, the entrance of the Czech Republic into the EU internal market and carrying out the Common Commercial Policy of the EU had a positive impact on the competitiveness of the Czech Republic in the world market.

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Institutional and Economic Aspects of Deeper Integration of the Eurozone

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Abstract

The contribution builds on interdisciplinary research. It focuses on two aspects of changes linked to the deeper integration of the eurozone. The first part analyzes economic development of the eurozone and non-eurozone Member States. The second part describes the institutional changes that materialized in the creation of new institutions of the eurozone. Finally, the main tendencies in the economic development as well as institutional setting are discussed. The concluding synthesis summarizes key findings that open new perspectives on the future of the EU integration project (questions linked to structural reforms, ex-ante coordination of European policies and potential creation of fiscal capacity). The article aims to draw attention to the current debate on the future of the European Union in the context of the economic crisis and its consequences.

Keywords: *EU integration process, Economic and Monetary Union, Eurozone, Institutional and economic aspects of EU integration*

JEL Classification: *F00, F02, F15, F50*

1. Introduction

The establishment of the monetary union in 1999 was one of the most daring steps taken during the history of the European integration process. Nevertheless, the economic crisis revealed not only the deficiencies in the euro area governance but also different requirements for policy coordination among eurozone and non-eurozone Member States. Therefore, the search for remedies to the failures of eurozone governance could result in deepening the cleavage between the euro area and the rest of the EU Member States. As we will see in the following chapter, the economic factors and mechanisms drive the need for further coordination among the euro area Member States and this tendency results in the institutional moves of the eurozone away from the original setting as enshrined in the primary law.

2. Economic Aspects of Deeper Cooperation among Eurozone Member States

The initial success of the European Monetary Union project, hailed for removing transaction costs and exchange rate risks, thus facilitating and increasing the volume of mutual trade, faded with the outbreak of financial crisis in 2008. The way the crisis has played out over the last six years has revealed structural weaknesses

in the monetary union which are very closely related to the governance setting of the euro-area, especially to the fact that, unlike the centralization of monetary policy, economic policy has remained in the hands of national governments. The conduct of different economic policies at national level has resulted in a variety of asymmetric macroeconomic shocks in the economies of the Member States. Heterogeneous functioning of the individual economies had already reflected in their pre-crisis growth momentum particularly in the varied development of competitiveness among individual members within the monetary union. At the beginning of the new millennium, for example, Germany carried out extensive reforms in the functioning of the labour market. Nowadays, relatively flexible labour market is a result of the Hartz reforms implemented between 2003 and 2005. Moreover, a reduction in wages, a reduction in relative unit labour costs, and, indirectly, a rise in competitiveness took place. In comparison, the majority of other Member States involved in the monetary union experienced a gradual increase in relative unit labour costs. The changes in the way the labour market functions helped not only to stabilize the German economy in 2009–10, they also diverted the development of German competitiveness away from the trajectory followed by some other Member States, whose relative competitiveness (with the odd exception) gradually contracted (De Grauwe, 2011, p.5-7).

When the national monetary authorities of the euro area Member States surrendered their monetary-policy powers in the 1990s and the ECB assumed responsibility for the single currency, the euro area Member States lost the opportunity to influence their exchange rate, i.e. one of the important channels enabling the balance of payments adjustment mechanisms to work. After delegating the monetary and exchange rate policy to the ECB, the peripheral economies became unable to use the exchange rate to rebalance the current account of the balance of payments (i.e. to devalue/depreciate their currency). When the financial and then the economic crisis triggered the outflow of cheap capital from countries with high balance of payments deficits and high levels of foreign debt, these countries' were left with more painful and protracted options in order to restore their competitiveness (which entails improved labour productivity, or reduction in relative unit labour costs), which could contribute to the narrowing of the current account deficit. (Frankel, 2013, p. 4-7) This path of real devaluation (i.e. wage and price cuts), however, requires painful structural reforms which, evidently much like the Hartz reforms in Germany, will be accompanied by intense public disapproval, perhaps amplified by the current economic situation in the peripheral economies. Another option is inflating the core. (Sinn, 2014, p. 8-11) This would entail the move, when countries experiencing current account surpluses and enjoying a positive investment position, such as Germany, would accept a more relaxed monetary policy, higher inflation and higher wage growth in their economies. As with the first option, if this method is to be fruitful there is a long and dubious road ahead.

Since the outbreak of the financial crisis in the United States in 2007, five countries (Ireland, Portugal, Greece, Cyprus and Spain) using the euro as their currency have had to ask international financial institutions and other EU Member States for the funds they have been unable to obtain on the financial markets. Although

the causes and triggers of the economic downturn differed from one affected Member State to another, a lack of competitiveness due to the unwillingness to embark on painful structural reforms can be singled out as a common denominator. (Sinn, 2014, p.5) The loss of competitiveness of these Member States was also reflected in the long-term current account deficit of their balance of payments; this was offset between 1998 and 2008 by the inflow of cheap capital from abroad, manifested as a surplus of the balance of payments financial account. When the financial markets hit the buffers and confidence in the single currency project faded, cheap foreign capital disappeared, domestic capital took flight amid concerns that savings would be lost, and the monetary union project found itself with long-term imbalances accumulated in the centre (Sipko, 2012, p. 1022-1031).

Primarily, the eurozone tried to solve the acute threat to the single currency by strengthening two pillars of newly enhanced economic governance a) in the field of the reinforced coordination of budgetary/fiscal policies, b) in the field of risk-sharing. Both tendencies entailed gradual strengthening of cooperation between states of the so-called eurozone as well as growing influence of this group of states within the EU. As regards the development of risk-sharing mechanisms, it is evident that the results of the actions taken by the states whose currency is the euro are likely to determine not only the way how the crisis is being solved, but also the future shape of economic cooperation within the European Union.

The author of the economic theory of optimal currency areas, Robert Mundell is often called the “spiritual father” of the euro as his work provided the main fundamentals for the establishment of the Monetary Union in Europe. The theoretical base was also enriched by the conclusions drawn by McKinnon and Kenen. Essential prerequisites for ensuring the sustainable functioning of the monetary union as stemming from their theories are: a) symmetry, b) flexibility, c) integration. In summary, if the Member States are supposed to benefit from the introduction of a common currency, the following should be ensured: a) similar response to the symmetric macroeconomic shocks; b) sufficient flexibility of the labour markets; and c) sufficient integration of trade (De Grauwe, 2009, p. 4-7).

If associated with the theoretical framework of the optimum currency area, the crisis experience of the eurozone suggests that partial fulfilment of the criteria derived by the optimum currency theory is not sufficient and the current form of integration is not sustainable. The literature argues that the criteria linked to trade (trade openness, diversification, dissimilarity, integration) are met (Baldwin, Wyplosz, 2012, p. 417-425). It is the limited labour mobility and labour market inflexibility that is perceived as a main stumbling block. Several analyses of the statistical data reflecting the economic situation of the eurozone Member States suggest not only the imbalances accumulated over time, during the existence of the single currency, but also their correlations. As an example may serve the analysis of the IMF (Berger, Nitsch, online, 2010) stating, that bilateral intra-euro area trade imbalances have become more noticeable with the introduction of the euro and can be partly attributed to the persistent labour market inflexibility. It also denotes that the countries with relatively less flexible product and labour markets display lower trade surpluses.

Some studies also underline the importance of real-exchange rate oriented wage setting as was for example the case of Germany (Carlin, 2013, p. 489-513). These facts confirm the opinion of some authors, who see one of the potential ways out of the euro area crisis in increasing the competitiveness by increasing the labour market flexibility (Baldwin, Wyplosz, 2012, p. 426).

Some authors also concentrate on the role of “private insurance channel”. This idea presumes that financial market integration could result in the provision market based risk-sharing mechanisms. Such market mechanisms may attenuate the potential effect of asymmetric shock. If they are lacking, system of interregional transfers shall be developed. (Bordo, Jonung, Markiewicz, 2013, p. 454-455) Despite its operational simplicity, such a scheme is highly contentious idea that has difficult time to gain wider political support. (Baldwin, Wyplosz, 2012, Chapter 15 and 19)

Although the European Monetary Union fulfils the criteria of the optimum currency theory in terms of trade (Baldwin, Wyplosz, 2012: 419-425), the key criterion in facing the asymmetric shocks, the level of labour mobility (and labour market flexibility), is unsatisfactory and undermines the desirability of the currency union. This problem is deeply rooted in the European Monetary Union and will be difficult to surmount mainly due to its complex nature. Such shortcomings will potentially give rise to the creation of new, alternative instruments helping the Member States of the eurozone and especially of the periphery to overcome the current economic distress, mainly with the aim to increase their competitiveness. Thus, some experts suggest that the EU and primarily the eurozone is confronted with the need for a rapid transition to the next phase of the integration process, and that some form of fiscal union will be established (Bordo, Jonung, Markiewicz, 2013, p. 482-483). This move is confirmed by the documents published by the European institutions (see for instance European Commission, 2012).

3. Arising Gap between the Policy Coordination Needs of the Eurozone and Non-Eurozone Member States

Since the crisis began, the EU Member States as well as the EU institutions faced the need to address a critical economic situation by using extraordinary measures. Their preparation required special meetings among the states that were primarily concerned with the single currency sustainability, i.e. the eurozone members. Thus, an informal introduction of the euro area meetings apart from the institutional framework of the EU has taken place at the highest level. This move could serve as a starting point for the introduction of a similar practice, e.g. in the case of the European Parliament and its committee sessions. The newly set practice could also contribute to the “behind-the-scenes” tension between the euro area members participating in the Euro Summit and not participating non-eurozone members.

Initially, in 1997, the Eurogroup was founded on the basis of a French proposal, in parallel with the adoption of the Stability and Growth Pact. It was an informal consultative body of finance ministers of the euro area countries, who were meeting regularly at the eve of the meeting of the Council for Economic and Financial Affairs

(Ecofin). The aim was to allow an open discussion between the Member States adopting the single currency and allow the ECB to frankly express its opinion, which was supposed not to be possible within the framework of the Ecofin Council meeting. The original proposal for its establishment was rejected not only because of concerns of a potential threat to the independence of the ECB, but also due to the reservations of the non-members fearing the possible establishment of a “strong single currency core” that would negotiate about important economic matters including issues relevant to the non-eurozone members. Finally, the proposal for the establishment of the Eurogroup was adopted under two conditions: a) all decisions will continue to be taken within the Ecofin involving all Member States and b) technical preparation of the Eurogroup meetings will take place in the framework of the Economic and Financial Committee and will also include all the Member States²⁶ (Bini Smaghi, Guido Tabellini, online, 2003, p. 3).

The importance of the Eurogroup was strengthened by the adoption of the Lisbon Treaty. The new Protocol (No 14) on the Eurogroup includes a special provision concerning the meetings of finance ministers of the Member States that have adopted the single currency, the euro. The protocol also allows for an enhanced dialogue among the euro area members. Although the Eurogroup is enshrined in the primary law, it remains an informal group that prepares the meetings of the Ecofin Council, with the participation of the Commission and the ECB (not the European Parliament). The Eurogroup is a Council formation. The provisions of the Lisbon Treaty allow the euro area to create its own economic governance, stronger than the one in the case of countries outside the euro area. It is based on a Lisbon Treaty provision stating that if the voting on matters relating to the euro takes place, only the euro area Members vote. Before the Lisbon Treaty, the Ecofin dealt with the coordination of economic policies in the case of all the Member States (Snyder, 2011, p.704-5).

Further consolidation of the discussions within the euro area took place with the outbreak of the financial crisis in October 2008 under the French Presidency of the EU Council, when the practice of informal meeting of Heads of State and Government of the euro area was launched. Nicolas Sarkozy provided the highest representatives of the Member States with the opportunity to openly discuss difficult and sensitive issues linked to the functioning of the common currency. Afterwards, meetings were held in Brussels in May 2010, March 2011, July 2011 and October 2012. During 2012, the euro area issues were discussed at meetings of the European Council (Eurozone, online, 2013).

At the meeting of Heads of State and Government of the euro area in October 2011, in Brussels, ten measures aimed at streamlining the economic governance in the euro area and not menacing the integrity of the EU were agreed. Such measures included regular meetings of the Euro Summit bringing together the heads of state or government of European Union countries that share the euro as their currency, the President of the Euro Summit and the President of the European Commission.

²⁶ Currently the so called Euro Working Group (EWG) prepares the Eurogroup meetings. (Euro Summit Statement, October 2011, p. 9-15)

It was decided that meetings will be held at least twice a year at key moments of the annual economic governance cycle known as the European Semester. If possible, they should be held after the meetings of the European Council. The President of the ECB should be invited to attend the meetings. The preparation of the Euro Summit agenda should be entrusted to the Eurogroup. Finally, an agreement was reached on the need for a President of the Euro Summit who will be elected at the same time as the European Council elects its President. The President of the Euro Summit will inform the European Parliament and non-eurozone countries about the results of the summit. The main task of the Euro Summit was to set strategic directions for the implementation of economic and fiscal policies (Euro Summit Statement, online, 2011, p. 9-15). Thus, a new discussion forum going beyond the primary law was established based on a political agreement of the euro area Member States.

The Euro Summits are also mentioned in the Fiscal Compact. The Contracting Parties express their intention to discuss all major economic policy reforms *ex-ante* and coordinate them in appropriate cases. The Fiscal Compact, however, does not mention what reform measures are considered as essential. It further confirms an earlier commitment regarding the frequency of the Euro Summit (Fiscal Compact, online, 2012, Article 11 and 12).

In addition, the representatives of the signatories of the Compact other than those whose currency is the euro, shall participate in discussions of Euro Summit meetings concerning competitiveness of the Contracting Parties, the modification of the global architecture of the euro area and the fundamental rules that will apply to it in the future, as well as, when appropriate and at least once a year, in discussions on specific issues of implementation of this Treaty." (Fiscal Compact, online, 2012, Article 12, paragraph 3).

A debate about the need for formalization of the status of the Euro Summit was highlighted in the conclusions of the European Council of October 2012 mentioning that the governance of the euro area should be reinforced. These conclusions also indicate that the Heads of State and Government of the eurozone countries should adopt rules of procedure for its meetings. This document was adopted on 14 March 2013 at the first meeting of the Euro Summit after the entry into force of the Fiscal Compact.

During the crisis a new discussion forum with its own rules of procedure emerged under the auspices of political agreement. *De facto* a new institution has been created without being properly enshrined in the primary law. The role of the Euro Summit or the Eurogroup respectively should have been primarily consultative as these institutions cannot adopt a new legislation or take decisions. However, the role they have played during the crisis and during the formulation of strategic guidelines for the economic policy cannot be overlooked. This important body is (i.e. Euro Summit) composed only of the representatives of the Member States whose currency is the euro, of the President of the Commission and the permanent President of the European Council. The latter two are elected by the representatives of the Member States with whom they meet at the Euro Summit.

Thus, when addressing the crisis, a key role was played by an intergovernmental authority which cannot be influenced by other institutions and that is not enshrined in the primary law (Chiti, Teixeira, 2013, p. 685-6).

In addition, a change of the voting procedure in the Council that in fact occurs in 2017 at the latest could further contribute to the feeling of estrangement between the euro area Member States (EU 18) and those not participating in this project. As, the euro area countries alone will have the necessary qualified majority within the Council enabling them to reject or adopt the Commission's proposals adopted under ordinary legislative procedure (Open Europe, online, 2012, p. 5).

4. Conclusions

The crisis have uncovered major problems in the setup of the European Monetary Union, which has fallen short of the basic conditions necessary for the sustainable operation of an optimal currency area. Although it has delivered many benefits, the EU labour market's lack of flexibility and inadequate workforce mobility have been unable to absorb sufficiently the asymmetric macroeconomic shocks caused by the poor coordination of the economic policies pursued by Member States. The discussion about the future of the European integration currently taking place at EU level suggests that effort is made to overcome the inefficiencies of the eurozone by deepening the integration project and taking steps towards "full banking, economic, fiscal and political union". The solution is seen mainly in extensive ex ante coordination of structural reforms, creating special fiscal capacities (funds) in order to motivate Member States to conduct painful reforms (European Commission, 2012) and creation of common regulatory framework for financial markets and their supervision (so-called banking union concept). The endeavour to create flexible labour markets follows shortly on the EU agenda. Deepening the cooperation within the eurozone will take its costs mainly during political discussions about sensitive political topics at national level.

The economic turmoil also pointed out the problematic nature of the assumption that the EU may exist as a unified and inclusive project even if some Member States decide to move at a higher "stage" of integration process, i.e. monetary union. It is expected that as a result of the deepening of the economic policy coordination, the euro area will gradually become integrated more deeply than the remaining Member States, especially in the area of risk sharing (Chiti, Teixeira, 2013, p. 691-2). As the reform proposals suggest, the current design of these mechanisms is not a final one. After the forthcoming elections to the European Parliament a very intense debate on further institutional changes is likely to be launched. However, if the EU is to "survive" the move towards deeper cooperation in the eurozone, the risk of fragmentation of the EU institutions has to be accommodated.

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Analysis of the Czech-Polish Border: Focused on the Economy in Selected Regions

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Abstract

The aim of this paper is determining of the state of the economy and the business environment in the borderland through the use of analysis. In this paper there are analysed selected indicators such as gross domestic product and number of local business units. It is focused on the selected regions of the Czech-Polish borderland. In this paper there were also identified barriers of cross-border cooperation between enterprises on the basis of scientific investigation and exploration. Specifically, there are the barriers in the whole Czech-Polish border. Currently, border areas and the situation in the border regions get to the forefront of attention. This area is gaining interest both national and at EU level. There are efforts to improve the situation in the border regions and that is in many ways, an example may be to promote cooperation between enterprises across state lines.

Keywords: *Barriers, Czech-Polish Border, Gross Domestic Product*

JEL Classification: *D21, E23, R11*

1. Introduction

In this paper there is solved Czech-Polish border area. This area has business and labour market huge economic potential, as both countries together many common areas, including in particular the similarity of language, cultural and historical heritage, competitive industrial sectors (timber, construction) and more. Both countries are currently making great efforts to strengthen mutual business and trade ties, which would contribute significantly to economic development in the region.

State borders, long considered peripheral in every sense, have now become a major concern due to globalization and the ongoing construction of the European Union. Cross-border cooperation and governance are central to its continuing integration and enlargement. There is increasing awareness that we have to understand the nature of borders and how they are changing in order to appreciate the need and the opportunities for cooperation across them (Anderson, Wilson, 2004).

Cross border cooperation is an important priority of European territorial cooperation within the EU cohesion policy. The general aim of cohesion policy is in accordance Article 174 of the Lisbon Treaty reducing disparities between the levels of development, the backwardness of the least favored regions and strengthening economic, social and territorial cohesion purpose harmonious development of the European Union (Blom-Hansen, 2003). Cohesion policy meets with different

opinions. It is a lot of critical views, but also has lot of supporters. In more recent discussions on the future of Cohesion policy, however, both critics and supporters have tended to agree on the need for a “modernisation” of the policy, in recognition of existing weakness in the current approach and of the emerging challenges faced by the European economy, society and broader integration process (Manzella, Mendez, 2009).

In the first part of this paper there is analysis of selected indicators. In the second part of this paper there is presented barriers of cooperation among border regions in the Czech-Polish borderland. These barriers are determined based on expert interviews, which is made by Czech company called “PROCES – Centrum pro rozvoj obcí a regionů, s. r. o.”.

2. Data and Methodology

Within the solution of issue is an analysis of selected indicators and interviews with experts. Data for this analysis are taken from Eurostat. There are monitored indicators as GDP (Gross domestic product) and number of companies.

In terms of regional comparison is a very important indicator appears to the *Gross domestic product in PPS per inhabitant*. The gross domestic product is the total monetary value of goods and services produced in monitored period in specific territory. With this indicator we have worked on and we examined them in detail through the basic analytical calculations.

It has been calculated annual changes in selected indicators in the regions. The change in the selected indicators expresses the % change in the indicator in the monitored period compared to the same period last year.

$$g_{x;n} = \frac{e_{x;t} - e_{x;t-1}}{e_{x;t-1}} * 100 \quad (1)$$

where: g = growth, annual changes.

Subsequently, it was calculated the average growth rate of selected indicator. We measure the average rate of growth by the geometric average of annual growth rates.

$$G(g_{x;1}, g_{x;2}, \dots, g_{x;n}) = \sqrt[n]{g_{x;1} \cdot g_{x;2} \cdot \dots \cdot g_{x;n}} = \left(\prod_{i=1}^n g_{x;i} \right)^{\frac{1}{n}} \quad (2)$$

where: G = average growth rate of selected indicator.

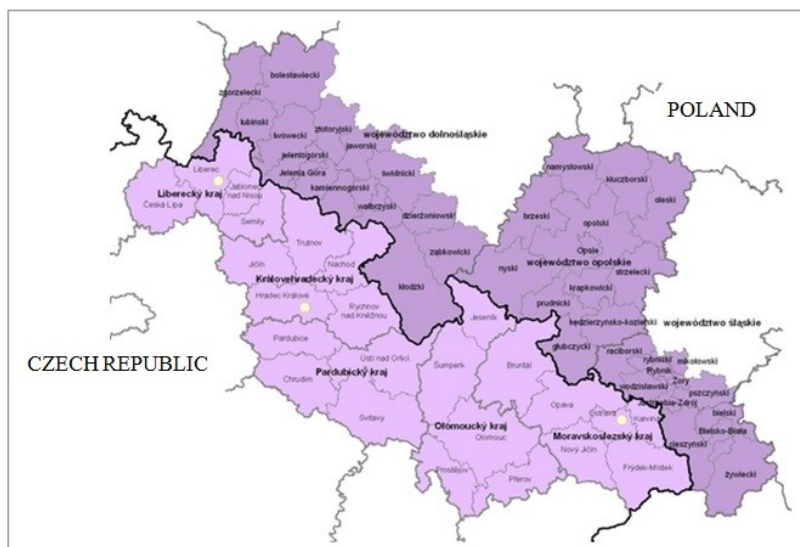
Next, there is determination of number of business units in selected regions according to NACE. There is used data by Structural business statistics. SBS cover industry, construction, trade and services. SBS does not cover agriculture, forestry and fishing, nor public administration and (largely) non-market services such as education and health. For information on these areas of the economy, refer to national accounts by branch or other sector specific statistics.

2.1 Regions

At present, the border areas and the situation in the border regions come to the forefront of attention, both nationally and transnationally (Majerova, 2012). There are efforts to improve the situation in the border regions and that is in many ways, an example may be to promote cooperation between enterprises across state lines.

The border areas of the Czech-Polish border is covered with several regions, either partially or the whole region. These are the regions: Moravian-Silesian region (Moravskoslezsko at the NUTS 2), Olomouc, Pardubice Region, Hradec Kralove Region and Liberec (Czech Republic side) and Dolnoslezskie, Opolskie and Slezski (on the side of the Republic of Poland). It is visible in the following figure (Figure 1), where is map of Czech-Polish border.

Figure 1: Map of Border Regions



Source: Euroregion Silesia (2014). *Map* [online] [cit.2014-01-09]. Available: http://www.euroregion-silesia.cz/show_text.php?id=programy-EU.

For our analysis we selected 2 regions. These are Region Opolskie Voivodship and Region Moravskoslezsko. These regions are on NUTS 2 level. This level was chosen because of better availability of data. To NUTS 3 level data are available in more limited extent.

3. Analysis of Border Regions

For the analysis of border regions, it is possible to use a lot of indicators. We seemed to be the most suitable for this article analyze the basic indicators such as gross domestic product. Gross domestic product is influenced by several components.

Among them are the companies. And since we focus mainly on business so in this article we further analyzed the number of enterprises in these areas.

3.1 Gross Domestic Product

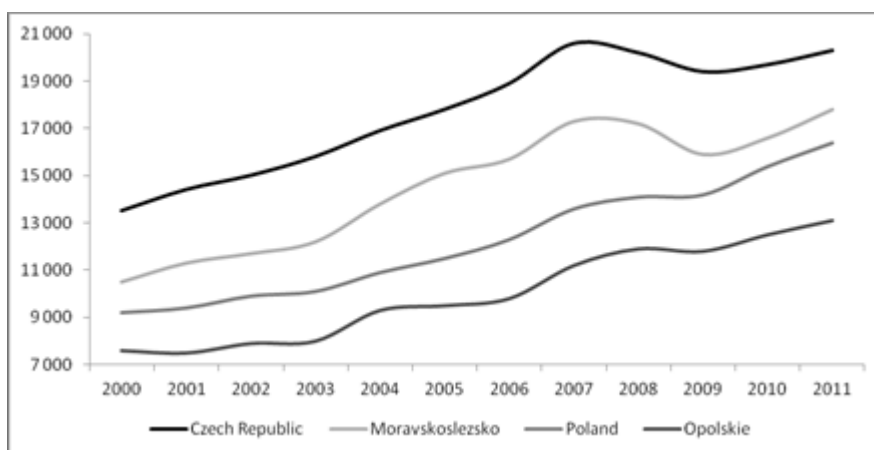
First we wanted to look analytically at the macroeconomic indicator. Regional GDP is calculated in the local currency of the region and can be converted to a common currency. In this case it is the Euro. Exchange rates do not reflect any differences in price levels among countries. Within the settlement of GDP can be converted using the conversion rates, it is called purchasing power parity (PPP), a common artificial currency unit called Purchasing Power Standard (PPS). It allows you to compare the purchasing power of different national currencies. Even within the monetary union such as the euro area, the single currency has a different purchasing power in different countries, depending on national price levels. Generally speaking, the use of series in PPS, unlike the series based on the euro larger buffer effect, since regions with very high GDP per capita expressed in euro may also have a fairly high price levels. Even in our comparative analysis we have used it this way.

We focused mainly on the development of this indicator in selected regions. Monitored period is from 2000 to 2011. It is visible in Figure 2 there is increase. But this increase is with fluctuations. Most fluctuating it is in Region Opolskie.

Overall GDP in each region is at different levels. The highest values are in the Czech Republic and in Region Moravskoslezsko (Fojtikova, Tuleja, 2013). The value in Region Moravskoslezsko is at higher level than the value in Poland. In Region Moravskoslezsko it is from value 10500 to 17800 (values are in PPS per inhabitant). And in Region Opolskie it is from value 7600 to 13100.

By the total values it seems that the situation in Poland is not favorable in terms of gross domestic product. But when we look at average rate of growth it is not so.

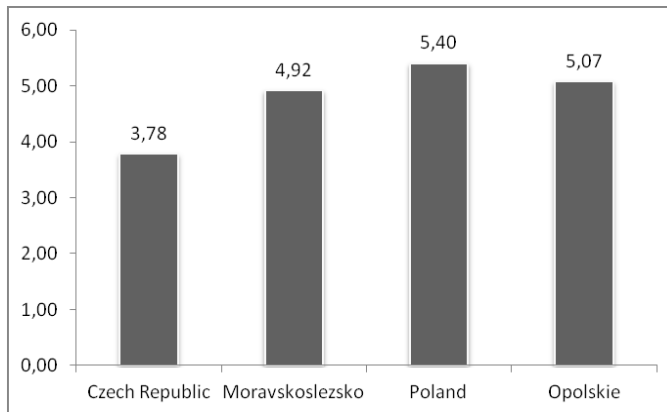
Figure 2: Development of Gross Domestic Product (PPS per inhabitant)



Source: own processing, data by Eurostat, 2014

When we look at the average rate of growth of these indicators we can see the best situation is in Poland and the worst situation is in Czech Republic. Even the situation in Region Moravskoslezsko is more favorable than in the whole Czech Republic (Gajdova, Cieslarova, 2012). Average growth rate of gross domestic product is for comparison in Figure 3. While in Poland is value 5,40% so in the Czech Republic it is only 3,78%. And in Region Opolskie there is average growth rate 5,07% and in Region Moravskoslezsko it is 4,92%.

Figure 3: Average Growth Rate of Gross Domestic Product (%)



Source: own processing, data by Eurostat, 2014

So in terms of development of gross domestic product the situation in Poland and in selected region (Region Opolskie) is better than situation in the Czech Republic and Region Moravskoslezsko.

3.2 Local business units

In this section we analyze the number of business units divided according to NACE. In following table (Table 1) there are selected branch. There were selected sectors in which there is significant number of businesses in these regions. It was therefore selected sectors of Manufacturing (C), Construction (F), Wholesale and retail trade and repair of motor vehicles and motorcycles (G), Accommodation and food service activities (I) and Professional, scientific and technical activities (M). In following table there are numbers of units in throughout the countries (Czech Republic and Poland) and in monitored regions (Moravskoslezsko and Opolskie).

The Statistical classification of economic activities in the European Community, (Eurostat [online], 2014) abbreviated as NACE, is the nomenclature of economic activities in the European Union. NACE is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics. NACE Rev. 2, a revised classification, was adopted at the end of 2006 and, in 2007, its implementation

was began. The first reference year for NACE Rev. 2 compatible statistics is 2008. It is reason for it that in our table there are data from 2008.

In the last column there is calculating where is monitored change from year 2008 to year 2011 (exception section F, see note). There is 2008 = 100%. Column 2011/2008 is in percentage.

In the Czech republic there is the most companies in branch of wholesale and retail trade; repair of motor vehicles and motorcycles. In the Poland there are the most companies in the same branch. The same situation is in region Moravskoslezsko and in region Opolskie.

When we look at the development of individual sectors in terms of number of companies we can see various developments. Number of companies increase mainly in the Czech Republic. The increase is evident in all sectors. The largest increase is in sector of *wholesale and retail trade; repair of motor vehicles and motorcycles*. There is increase 17% from year 2008. In Poland there it is not so clear. The increase is in sector of *construction* and in *sector of professional, scientific and technical activities*. It seems like positive, mainly in sector of professional, scientific and technical activities.

Now we look at the development of regions NUTS 2, thus region Moravskoslezsko and region Opolskie. Number of companies in Region Moravskoslezsko increases in all monitored sectors. The largest increase from year 2008 is in sector of wholesale and retail trade and repair of motor vehicles and motorcycles and in sector of Manufacturing. It is positive development because *Manufacturing* is in region Moravskoslezsko very important. And we can assume that with increase of number of companies employment in this sector increases too. When we look at Manufacturing in Opolskie there is decrease. Overall in Region Opolskie there is decreasing number of companies in most sectors. Except is sector of *Construction*.

Table 1: Number of Local Units – SBS data by NACE

NACE	Region	2008	2009	2010	2011	2011/2008 (%)
C	Czech Republic	157 163	161 888	174 665	179 021	113,9
	Moravskoslezsko	14 658	14 903	16 280	16 487	112,5
	Poland	198 076	183 314	183 326	185 607	93,7
	Opolskie	4 689	4 335	4 368	4 307	91,5
F	Czech Republic	158 989	164 599	169 078	177 839	108,0*
	Moravskoslezsko	14 021	14 364	14 903	15 377	107,0*
	Poland	x	227 335	233 980	240 174	105,6*
	Opolskie	x	6 479	6 610	6 522	100,7*

G	Czech Republic	225 699	239 064	251 842	265 509	117,6
	Moravskoslezsko	22 345	23 426	24 519	25 074	112,2
	Poland	635 093	562 808	581 073	583 281	91,8
	Opolskie	15 006	12 892	13 275	12 504	83,3
I	Czech Republic	59 183	61 947	60 867	62 304	105,3
	Moravskoslezsko	5 199	5 404	5 263	5 378	103,4
	Poland	65 433	59 902	52 329	50 192	76,7
	Opolskie	1 560	1 342	1 185	1 169	74,9
M	Czech Republic	165 297	171 910	165 110	172 042	104,1
	Moravskoslezsko	14 961	15 439	14 872	15 133	101,1
	Poland	185 905	182 870	186 723	201 132	108,2
	Opolskie	4 565	4 043	4 129	4 213	92,3

Source: own processing, data by Eurostat, 2014.

Note: x – not available data; C – Manufacturing; F – Construction; G - Wholesale and retail trade and repair of motor vehicles and motorcycles; I - Accommodation and food service activities; M - Professional, scientific and technical activities. * - Calculating in the last column in the section F is performed with 2009 = 100%.

When we look at number of companies in monitored sectors (by NACE) we can see for region Moravskoslezsko is the most important sector of wholesale and retail trade and repair of motor vehicles and motorcycles and sector of manufacturing. And for region Opolskie is the most important sector of Construction. One might say it is good assumption for cooperation between companies in these regions.

This cooperation is supported by the public administration, but there are still a lot of barriers in cooperation. These barriers were determined. See another chapter.

4. Barriers to Cross-border Cooperation

The expert interviews identified some important reports in the problems areas of cross-border cooperation on the Czech-Polish border. Problems areas are divided into the areas of trade and transport (this also significantly affects the area of trade). In this paper here are only defined problems in the areas of trade.

The problem is *the lack of exemptions for companies and entrepreneurs from the border area to permit crossing*. There is a limit passage of borders for local businesses and entrepreneurs, resulting in restrictions on the exchange of goods and services in border areas, where these restrictions apply. Road exists, but the passage of trucks not allowed. In the event that there was an agreement between Poland and the Czech Republic on the granting of exemptions for companies and entrepreneurs from the border area would increase the competitiveness of companies.

There is *substantial disparity of legislation in the field of trade*. Entrepreneurs (traders) do not have confidence that permits valid in one country, is valid in another country. Sometimes it happens that in the Czech Republic there is a trade without a license, but in Poland the license is required. Or on the contrary in Poland there it can be performed without a business license, but in the Czech Republic is a license required. This problem is identified as most important and the need for its solution and unification of legislation. There are restrictions and barriers in legislation, i.e. issues related to international conventions between the two countries. These international conventions often prevent to greater cross-border cooperation.

There is diversity of legislation in the area of services. If the payer or non payer of VAT from one country provides a service to another state, you need to log in VAT in Prague (if it is a Polish payer / non VAT) or Warsaw (if it is the Czech payer / non VAT). It would be appropriate to abolish the obligation for VAT registration service and replace similar conditions, such as for the sale of goods.

Another problem is *the lack of financing*, whereby it is not possible realization of certain projects. Most of the projects must be pre-financed to a large extent, co-financed from municipal budgets. There is little support for organizations supporting entrepreneurship. For larger projects, it is a problem, because municipalities do not have enough funds for the launch of the project, so they take loans and must calculate whether they can repay. This is a very serious problem, which dramatically reduces the number of candidates on cross-border cooperation, the Polish- Czech projects. In case it would be possible to obtain a financial deposit, it would be best implemented more projects.

There is inconsistencies of assessment of expenditure on Czech and Polish side. There is some decommissioning expenditure on one side (the side of the Czech Republic), but on the other hand are approved as justified (on the part of Poland).

Projects are subject to *considerable administration*. In some projects it is necessary to demonstrate a lot of mandatory attachments, even if the information is otherwise available (e.g. ID of entrepreneurs).

There is a *different approach to the industry in both countries*. The Czech Republic is a significant industry downturn, are high investment requirements in the field of environmental protection. On the other hand, in Poland a great struggle for the preservation industry, the struggle for working town. This creates the danger of moving beyond large enterprises.

There is *lack of available databases*, which would result in a list of potential partners for cross-border projects. Looking for partners from the other state is very difficult and time consuming.

5. Conclusion

In this article there is an analysis of selected indicators. The analysis showed that the situation in the Polish region of Opole probably develop and will develop better than in the Czech region Moravskoslezsko. It is proved by calculating of the average

growth rate of gross domestic product and also the analysis of the structure and development of a number of companies in the regions on the basis of the NACE classification. In addition business environment of the two regions complement each other. It would therefore be advantageous to promote mutual business cooperation across borders.

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CSR and the European Integration Process: the Italian Case

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Abstract

The paper emphasizes the Corporate Social Responsibility (CSR) and its development strategies in the European Union (EU). The aim is to understand how the European Union integration impacts on the concrete CSR practices of companies. CSR has gained an increasingly high profile in recent years. The Commission defines corporate social responsibility as “the responsibility of enterprises for their impacts on society”. The integration of the European Union (EU) is a complex and ongoing socio-economic and political process which has the aim of creating an ever closer union among the people of Europe. Along with the adoption of the EU’s body of common rights and obligations, the accession countries were called upon to introduce policies on CSR. The paper shows how EU integration affects and interacts with the practice of CSR in the EU Member States using the example of Italy.

Keywords: *Corporate Social Responsibility (CSR), European integration, Social cohesion*

JEL Classification: *M14, M41, Q01*

1. Introduction: Evolution of CSR in European Union

The process of European Union integration affects and interacts with the practice of CSR in the EU member states (Palvolgyi et al., 2009). With article 3 of the Treaty, the EU “shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment” (European Union, 2012).

The EU, with the adoption of the Lisbon Strategy in the march 2000, planned to become the “most dynamic and competitive knowledge-based economy in the world” able to maintain a sustainable economic growth providing more and better jobs with “greater social cohesion and respect for the environment” (European Council, 2000). At the end of 2000 in the European Union was established a High-Level Group of National Representatives on CSR. The aim was to maintain a continuous dialogue between Member States on the most appropriate and effective practices of CSR and to develop and implement a harmonized strategy in the EU countries (Iamandi and Cosmin, 2009).

In 2001, the European Commission, upon request of the European Parliament and the Council, launched a policy of promoting CSR as something companies do “on a voluntary basis” (EU COM, 2001: 1) and inserted CSR into European

policies since the 2001 Green Paper and then developed with the 2006 Communication.

The renewed European strategy is grounded on the information contained in several Europe 2020 flagship initiatives and aims to create favorable conditions for sustainable growth and businesses responsible behavior and a sustainable employment in the medium and long term.

In October 2011 the European Commission published a new policy on corporate social responsibility and defines CSR as “the responsibility of enterprises for their impacts on society” (European Commission 25/10/2011). To fully meet their social responsibility, enterprises “should have in place a process to integrate social, environmental, ethical human rights and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders” ((EU COM 2011: 6). The aim is to: maximizing the creation of shared value (Porter and Kramer, 2011) for their owners/shareholders and for their other stakeholders and society at large; identifying, preventing and mitigating the possible adverse impacts of enterprise action on society. This reflects a transformation of CSR from a form of voluntary private philanthropy, to an integral part of corporate citizenship. Later in the Communication, the Commission stresses that “Enterprises must be given the flexibility to innovate and to develop an approach to CSR that is appropriate to their circumstances.” The balance between minimizing risks through accountability and maximizing opportunities through transparency and social innovation lies at the very heart of the Enterprise 2020 initiative.

2. Methodology

For the research the author use some of the basic methods of the scientific research to obtain the information necessary to the complex systemic processing of the issue. The methods usually complement each other and, in consequence, overlap. The authors predominantly use methods of qualitative research.

The first part is about the empirical research. The authors describe and synthesize, with the use of statistical data, the dynamics and the evolution of the CSR in the European Union and the importance of its communication. In the research the National Italian Action Plan on CSR is presented. At the conclusion of the previous observation the research moves to the discussion, supporting it with the Italian case.

We use the case study methodology which has developed within the social sciences. Such methodology is applied not only in the social sciences, such as psychology, sociology, anthropology, and economics, but also in practice-oriented fields such as environmental studies, social work, education, and business studies. Case study research excels at bringing us to an understanding of a complex issue or object and can extend experience and add strength to what is already known through previous research. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships.

The main contribution of this line of research is to explain the important relation between the CSR, its perception and its communication.

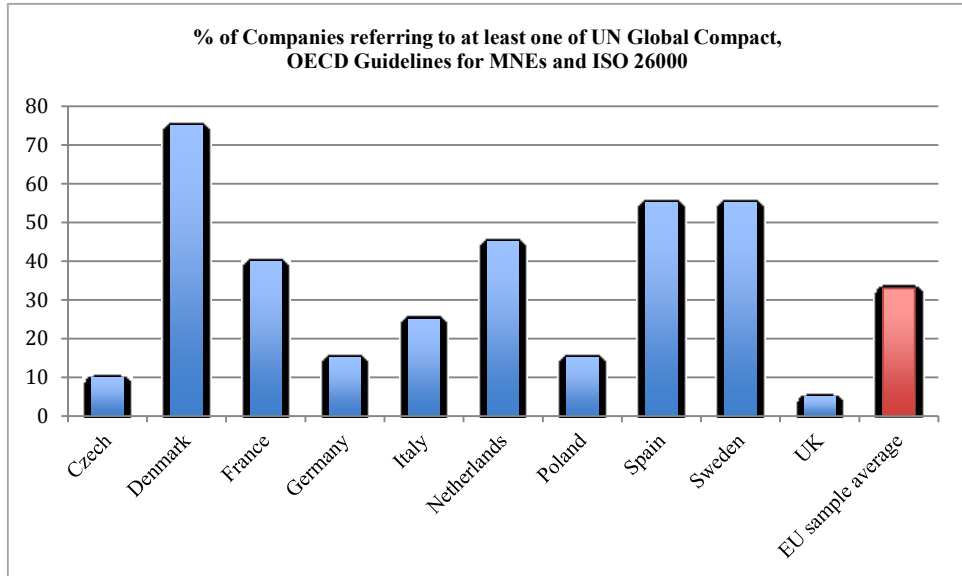
3. Perception of CSR and Challenges

The perception of CSR towards society and the environment determines how the global challenges are tackled globally such as the financial crisis, global warming, or human rights enforcement. The changes in the economic and social context mean that a greater attention to the satisfaction of the expectations of the stakeholders will impact the success of the firm in dealing with new challenges: the globalization process places new responsibilities on firms regarding the evolution of the economies of poor countries; the reputation of the firm is inextricably linked to its environmental policy; the social sensitivity of consumers has grown, and is increasingly more attentive to the behaviors and to the ethical values promised by the firms; the weight assumed by the respect of human rights and the rights of workers imposes new constraints on the management of the human resources of the entire supply chain; the growth of human capital underscores the need for personnel policies that productively employ staff; the unification of financial markets calls for growing levels of correctness in behavior and transparency (Molteni, 2003).

Companies should recognize the importance and need to consider concepts like: moral and ethical programs, ethical behavior, social responsibility, equity and also try to implement these concepts in their organizational culture. (Nunes and Simescu, 2010). To integrate the CSR in the EU companies members states, the EU CSR policy covers 8 areas: enhancing the visibility of CSR and disseminating good practices; improving and tracking levels of trust in business; improving self- and co-regulation processes; enhancing market reward for CSR; improving company disclosure of social and environmental information; further integrating CSR into education, training and research; emphasizing the importance of national and sub-national CSR policies; better aligning European and global approaches to CSR.

In 2011 communication on corporate social responsibility, the European Commission invited "all large European enterprises to make a commitment by 2014 to take account of at least one of the following sets of principles and guidelines when developing their approach to CSR: the United Nations (UN) Global Compact, the Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises, or the ISO 26000 Guidance Standard on Social Responsibility" (fig. 1). An analysis of policy references made in 2013 by large EU companies to internationally recognized CSR guidelines and principles shows that 33% of the EU sample companies make reference to at least one of the UN Global Compact, the OECD Guidelines or ISO 26000. 75% of the Danish companies in the sample, and more than half of the Swedish and Spanish companies in the sample, refer to at least one of the instruments in question. In the case of Czech, German, Polish and UK companies, the proportion is less than 15%.

Figure 1: Companies and the Approach to CSR



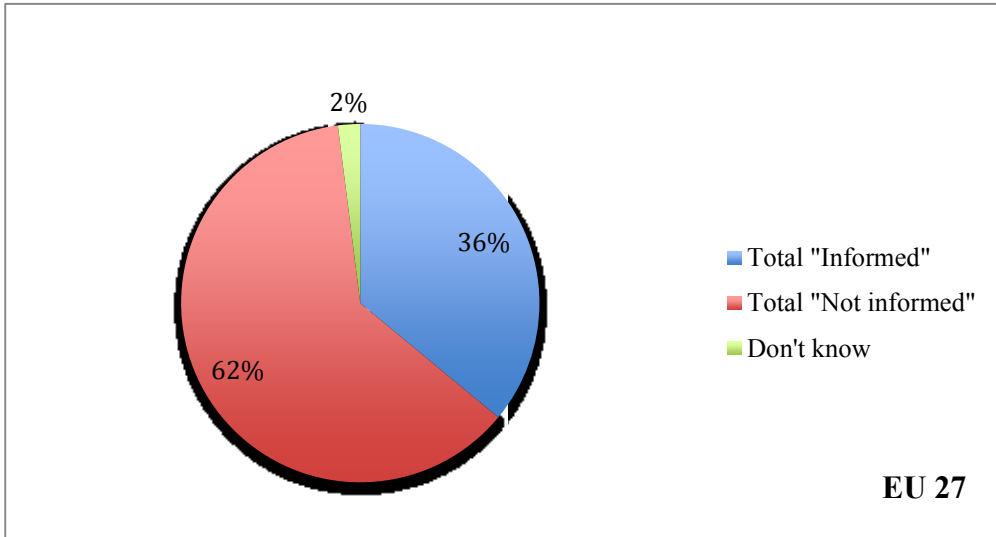
Source: Schimanski, 2013

4. Integration of CSR into Business and Its Communication

In October 2011, to further the integration of CSR into business practice across the European Union, the Commission published a policy on CSR. This policy aims to enhance the positive impacts of companies on society, and to prevent or minimize possible negative impacts. The policy also sets out a plan of actions for the period 2011-2014 which includes: Raising the profile of CSR within the EU and within Member States, and promoting and rewarding responsible business conduct; tracking the level of trust citizens have in business; improving regulation mechanisms, and working towards new legislation around CSR; aligning EU and global approaches to CSR.

One of the key aspects of good corporate responsibility practice involves transparent communication (Gazzola and Colombo, 2013). Reporting, as a part of communication efforts, presents proof of a company's commitment to sustainable social development. If well contextualized and authentic, the socially responsible program of one company can initiate a wider dialogue and unite many institutions, corporations and individuals on the same issue, thus multiplying the impact. In a survey the EU investigates the views of Europeans about the influence companies have on society. They analyzed the level of information people feel they have about what companies do to behave in a responsible way towards society, as well as how interested they are in this information. The research shows that just over one third of Europeans (36%) say they feel informed about what companies do to behave in a responsible way towards society, and 62% say they do not feel informed (fig. 2).

Figure 2: Level of Information



Source: European Commission, 2013

5. Italy and the National Action Plan on CSR

The Italian Government, as well as any EU Member State, on a proposal of the Commission, to describe the priority actions and projects on which it intends to rely for the realization of the “Renewed EU Strategy 2011-2014 on Corporate Social Responsibility” has the National Action Plan on Corporate Social Responsibility 2012-2014 with the objective to increase the culture of responsibility among enterprises, citizens and local communities.








Italy plan to increase the level of knowledge and awareness about CSR, to promoting the creation of a shared and participative culture in answer to the needs of the different actors involved, in particular: to disseminate the conviction among enterprises and young people of the importance of a “strategic” and competitive approach to CSR in company management; to render citizens and consumers aware about the responsible practices of enterprises, to avoid unfair conducts from the latter (e.g. green and social washing) and to reinforce the relationship of trust between Public Administration, enterprises and citizens.

Objectives, priorities and interventions presented in the document are: increasing the culture of responsibility among enterprises, citizens and local communities, supporting CSR-adopting enterprises, contributing to the enhancement of "market rewards" for CSR, promoting initiatives of social enterprises and third sector, active citizenship and civil society organizations, encouraging transparency and disclosure of economic, financial, social and environmental information, promoting CSR through internationally recognized instruments and international cooperation.

6. Italian Case

In Italy several initiatives on CSR have been promoted to face the rising attention paid by public opinion and by Italian Government to environmental protection, product safety and the respect of human and workers' rights. The future of CSR will be integrated communication of report and digitalization. Future corporate disclosures will be distinguished by an even greater transparency. It's interesting assess how the Italian company communicate CSR to a vast pool of stakeholders through the its corporate website and promote more widespread use and effective Internet for sustainable development. The top 100 Italian companies listed and unlisted who published CSR report, reveals a lack of opening by companies in the use of digital channels for the involvement of its stakeholders on issues social and environmental (Lundquist, 2012). Considering the top 3 companies of the list: Hera group, Telecom Italia and ENI (Table 1), it's possible to understand their CSR and communication policy and use these best practices for others companies.

Table 1: Top 10 for the Communication of CSR

Rank 2012	Rank 2011	Variation (2011-2012)	Name of the company
1	3		Gruppo Hera
2	1		Telecom Italia
3	3	-	Eni
4	2		Fiat
5	5	-	UniCredit
6	8		Enova
7	-	-	Fiat Industrial*
7	5		Terna
9	7		Enel
10	12		Edison

* The sustainability sector of Fiat was renew during the year

Source: Lundquist, 2012

The first place is of Hera that acts to develop and promote corporate policies with a view to adopting a corporate model that is capable of meeting the needs of the various stakeholders in a balanced manner. Hera has published the Sustainability Report since its establishment and added Corporate Social Responsibility to its strategy. Hera considers CSR a valid instrument for increasing competitiveness and a key element in reaching sustainable development for the company and the local area in which it operates. This virtuous cycle of social responsibility within Hera is characterized by numerous initiatives of stakeholder involvement that allow for the examination of legitimate claims and their opportune insertion as part of the corporate policies and the relative implementation instruments.

The second place is for Telecom Italia. In confirmation of its commitment to promote and implement the ten basic principles of the Global Compact established by the UN, which relate to respect for human rights and labor standards, the protection of the environment and the fight against corruption, Telecom Italia Media is constantly committed to implementing corporate social responsibility policies to ensure compliance with the legislative framework of reference and internal procedures, by undertaking all those initiatives necessary to achieving its goals in the areas of integrity, transparency and the protection of workers.

The third place is for Eni. Corporate social responsibility is an integral part of Eni's way of doing business. The goal of the Company has always been to combine competitiveness with sustainability. The concept of sustainable development occupies a central position in the debate concerning the scenarios and in the definition of growth models for the coming decades. The evolution of the society, of lifestyles and individual behavior needs to take into account a series of issues: the protection of the environment, the creation and preservation of wealth, social equity, in a manner that includes and integrates also the rights of future generations.

The 3 cases show how the European Union integration impacts on the National Action Plan and on the concrete CSR practices of companies and how to integrate the CSR into the business model of the company creates good practices.

7. Conclusion

In answer to the crisis, at European and international level, Governments have valorized and re-introduced initiatives and tools favoring CSR, ranging from the renewed European Strategy for CSR to UN and the OECD orientations.

European enterprises should, in the EU Commission's view, have a process in place to integrate social, environmental, ethical human rights and consumer concerns into their business operations and core strategy in close cooperation with their stakeholders (Gazzola, 2012). Europe's leading companies are risking a widening of the divide between themselves and online audiences interested in their CSR performance, with negative consequences for trust and engagement. While reporting on social, environmental and governance issues is becoming standard practice, online CSR communications in general remains static and disclosure-driven: many websites are difficult to navigate, overburdened with text and tables. Effective use of social media, video and interactivity is slowly becoming more common but remains the preserve of a minority of companies.

The Italian companies understand that the CSR philosophy presents an opportunity to build its reputation and differentiate them from competition, but without a clear communication strategy, no one really knows. It is not enough to present CSR from a traditional point of view but to integrate sustainability into all business strategies and throughout the entire value chain, including sustainable consumption, in order to ensure that this growth is perennial, responsible and solidary. CSR has become more and more well-known term among people living in European Union, in order to make the CSR more well-known it can be important to use such CSR communication tools which are currently not or less used by companies.

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Ten Years of Membership in the EU - Quality of Education and Employability of University Graduates on the Labour Market

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Abstract

If Europe wants to compete with emerging economies, there is a need to create new jobs for the dynamic knowledge-based society. This will require investments in education, science, and also in employment policy, which must keep pace with the development. The aim of European cooperation in the field of education and training cannot be just the achieving a certain percentage of people with higher education, but it has to focus its attention on ensuring the adequate quality of education and applicability of graduates in the labour market. At the same time it is necessary to find ways for interaction between fields of study and demand of the labour market, for example through the cooperation between employers and educational institutions. Part of the study is the presentation of possible solution supported by a research focused on linking theory and practice, which is one of the priority objectives of the Europe 2020 strategy.

Keywords: *Applicability on labour market, Employment, Employability, Higher education*

JEL Classification: *I21, I25, H52, A23*

1. Introduction

Processes of European economic integration play the key role in the development of all member states and affect the activities of all institutions and firms in both public and private sectors. (Skokan, 2012, p. 296). The topic *Ten Years of Czech Membership in the EU* provides us with great opportunities, both from the viewpoint of gained experience and the possibilities of future perspectives. It helped for example to achieve higher economic growth, settle in the environment of long-term democratic stability, creates new jobs as well as to develop local markets which became the fundamentals of European economic cooperation. Not only does the Czech Republic support maximal cooperation in the area of coordination of economic policies but also in the areas of research, development and education. The government's objective is to encourage those steps of the EU leading to higher interaction and extended partnership between the private and public sectors in the above mentioned areas. The priority is to establish real cooperation among the parties of "knowledge triangle" represented by universities, important institutions and innovative industry. The level of education, quality and efficiency of the education system and especially the level how the society is able to use its creative potential became the element determining further development of society and

economy. The aim now is to ensure such education system that will react to the market's needs, specifically then in periods of economic recession (Strategie působení ČR v EU, [online], 2013).

1.1 Education System in the Czech Republic

The development of the education system has been influenced by the ongoing changes. Among the most important of them belongs e.g. the termination of state monopoly over education services, elaboration of new rules regarding the funding of education, possibility of state schools to gain a legal status or the emergence of new schools and methods of educations. The aforementioned facts enabled a rapid growth of provided educational services, bigger range of new possibilities regarding the ways of education as well as extended choice of individual types of schools. The times when the demand for educational services was far higher than the supply definitely came to an end. This, together with the decreasing demographic curve, leads to fierce competition among individual educational institutions.

1.2 Tertiary Education

The importance of tertiary education plays a vital role within national prosperity. With the accession to the EU, the basic strategy for the development of higher education was established: the focus is on expansion, diversification and higher quality of universities, as well as on close interaction of higher education with research institutions and economic practice.

1.2.1 Expansion of Higher Education

The greatest expansion of the university sector occurred before 2010. Since then, we witness a slight decrease; yet, the requirements for this indicator are regularly fully achieved. An important aspect was especially the new opened space for the development of private higher education. In 2012, there were 26 public, 45 private and 2 state higher education institutions (The University of Defence in Brno governed by the Ministry of Defence and the Police Academy of the Czech Republic in Prague, governed by the Ministry of the Interior). 24 public schools, 3 private schools (the Jan Amos Komenský University, Metropolitan University Prague and the University of Finance and Administration) and both state schools are institutions of university type, providing bachelor, master and doctoral programmes. Other institutions (2 public and 40 private) offer only bachelor and master programmes. The institutions saw a total of 381.397 students, 87,5% of which (i.e. 333.501 students) gained their degree at public schools. 24% studied economic sciences, 21,9% technical sciences and 17,3% were in humanities and social sciences. Czech higher education also saw a higher number of foreign students – from 2,5% (12.637 students) in 2007 to 10,4% (39.696 students) in 2012 (Výroční zpráva o stavu a rozvoji vzdělávání v České republice v roce 2012, [online], 2013).

1.2.2 Diversification of Higher Education

Current economic development together with the increasing standard of living reflect higher more complex and differentiated consumption. The subsequent higher demand

calls for wider and more complex supply which results in the need for quick reactions from the side of educational institutions, i.e. the need to be flexible and offer new products, such as educational programmes or further activities and service which may fill the market gaps. The Czech Republic has been participated since 2004 in the integration processes that had been taking place in Europe since the 50th of the 20th century. (Dvorokova, 2012, p. 48) The key factor here was the so-called 2005 Bologna Process which set up the model of structured studies and separated bachelor, master and doctoral studies, thus enabling a significant growth in the offer of university education.

1.2.3 Improving Quality of Higher Education

Although the dynamics of quantitative development of Czech higher education has been perceived positively within the past few years, we need to focus on improving its quality in order to achieve the EU standards. To build the common European space for higher education, it is vital to ensure the quality at individual schools and establish a sophisticated system of internal evaluation, interconnected with the system of external evaluation. It is important that the Czech higher education as a whole (not only its individual institutions) is able to succeed in the fierce international competition and at the same time to define and defend its specific features. Significant impact on the success on the international stage have international rankings assessing the quality of universities (Bastedo, Bowman, 2011).

1.2.4 Connection with Scientific Research and Economic Practice

Quality improvement is closely linked both with the areas of scientific research and economic practice. Examples of best practices may be found in the models implemented in countries which regularly rank as the most competitive. These are e.g. “academic sciences” – the German model of interconnecting university education with research, the post-academic model of “industrial science” (the Anglo-Saxon model of linking industry and science) or establishing trilateral cooperation in research and development among universities, industries and governments (triple helix). The latter presents a highly effective principle of providing scientific, professional and party material-technical funding by universities, while the industry becomes the main financial guarantor and simultaneously becomes a “customer” of universities. The government is in charge of establishing the necessary conditions (especially legislative) for such kind of cooperation and eliminates possible obstacles regarding the cooperation among universities and companies. The Czech Republic, however, still mostly operates in the system of production and transfer of knowledge which is based on the old-fashioned industries model with a relatively high level of separation of individual partners. This results in the inability to intensively connect university research with the needs of industrial companies. The lack of constructive communication has a negative impact on the effectiveness of the whole system of research and development (Göttlichová, [online], 2010).

2. Need to Increase the Competitiveness of University Graduates on the European Labour Market

Although the situation has improved significantly after Czech accession to the EU, there is still high separation of individual partners (universities vs companies) which is at many universities also continually reflected in the current relationship “theory vs practice”. We have to realize that it is cooperation with the economic sphere resulting from constructive communication of all parties which belongs to the primary factors greatly influencing the competitiveness of the educational institution and provides the university with the possibility to gain principal competitive references. This is the element of the so-called university’s asset which enables the educational institution to create curricula of higher quality that reflect the needs of the economy, thus providing the students to receive the required information applicable within the educational process.

2.1 Problem Specifics

The results of many realized research (carried out both by universities and economic subjects) refer to the inevitable interconnection of schools and practice as a form of higher efficiency of the educational process. They specifically highlight the necessity to sufficiently and practically prepare university students for employment and to develop the skills leading to adequate orientation in company processes. Another significant aspect is the balance of offer of graduates with the demands on labour markets. This is connected with the diversification of study offer directing, among others, to the development of professional studies at universities as well as the development of practical education. The training for employment must take into consideration the increasing demands of employers and education should act as a tool for its sustainability, e.g. to participate in the development of competencies in specific areas, knowledge and skills offering the chance to succeed on the labour market.

2.2 Employability and Employment

The objective of employment policies is to achieve and maintain the balance between the offer of labour force and demand for it, to productively use the sources of labour force and ensure the citizens’ rights for jobs. Each student should realize the responsibility for their own future employment as what is now perceived as a strength to freely choose a study programme may turn out to be a weakness in terms of oversaturation in some areas and eventually lead to low employability caused by increasing supply. It goes without doubt that those who will be able to prove higher qualification, i.e. **the development of abilities, knowledge, skills and experience** will have a huge advantage on the labour market.

2.3 Labour Market

The labour market sees a confrontation of demand for labour force with its supply. The initial quality of emerging labour force is significantly determined by the educational system; this quality lies especially in graduates with the necessary

knowledge, skills and abilities as well as in their readiness to become a part of the labour process. To make this transition easier, it is vital that graduates' skills and abilities correspond with the requirements of employers. The educational system also plays a role of a factor determining graduates' future employability and therefore it is essential to swiftly react to current and future needs on the labour market.

If we observe the share of university graduates in total economy in time, we can see an increasing trend, although the Czech Republic does not rank on top positions within the EU countries: 1995/14,20%; 2000/15,52%; 2005/17,80%; 2010/20,62%. Regarding the requirements of tertiary education for job positions, the situation is as follows: in the year 2000, 24% of jobs on the Czech labour market required a university degree, in 2010 it was 28% and in 2020 the number is estimated to reach about one third of all job positions (Lepič, M. and Koucký, J., [online], 2013).

3. Problem Solution

Since 2007, the Education Policy Centre of the Faculty of Education at Charles University in Prague has been developing a new concept of qualification profiles which represents a comprehensive and standardised method of describing the requirements for a specific job (or a group of jobs, industry or a whole economy).

The qualification profile of job positions summarizes the basic characteristics required for a given job: level of education and practice (as well as the job complexity); area of study; other job requirements such as knowledge, skills, competences, personal interests, abilities, attitudes and work values. It is in maximum compliance with the terms and classifications used in Europe, specifically then with the European Qualifications Framework (EQF). It enables an analysis and projection of qualification requirements for establishing and measuring the compliances and discrepancies of educational and qualification structures in various countries, professions and industries. Furthermore, it enables the monitoring of changes occurring in time and the identification of past and expected future trends; at the same time, it may be used for the elaboration of educational and training programmes both at schools and in companies or educational institutions. One of the significant data sources is the employer survey, since employers' opinions with respect to the quality of labour force and requirements for university graduates contribute to the identification of problem areas which the educational sphere should draw its attention to (Kvalifikační potřeby práce, [online], 2013).

3.1 Research Objectives and Methodology

With regards to our objective, the development of employers' requirements may be monitored in comparison of research results carried out in 2004 (accession to the EU) and 2012 (latest published data). The research was realized by the National Institute for Education and was confronted with the survey results carried out by the Tomas Bata University in Zlín. The key aim of the research was to gather sufficiently reliable information about employers' opinions as to what knowledge, skills and competencies they consider important, what is their attitude towards

graduates and to identify employers' expectations in relation to the educational system and define the basic problem areas.

3.2 Research Results – National

Within the period May and June 2004, more than 700 organizations were addressed with an electronic questionnaire, of which 275 (39%) returned back. In November and December 2012, 8.300 organizations were addressed, 543 (6,5%) questionnaires returned back, of which 333 were fully completely filled. A useful indicator is the development of competencies perceived by employers as “absolutely necessary”.

If we focus on changes in the preference of required categories, it is obvious that employers both in 2004 and 2012 see the following competencies as “absolutely necessary”: *problem-solving ability* (84%; 90,5%), *bearing responsibility* (79%; 91,6%) and *decision-making ability* (74%; 85, 7%). The greatest difference may be detected within the competencies *reading and understanding work instructions* (66% x 90,2%), an interesting finding is the requirement for *proficiency in foreign languages* (60% vs 54,9%), which may result from the viewpoint of job classification of graduates. Another notable indicator is the extension of the requirements matrix in 2012 with the necessity of *verbal and written communication skills* (88,2%), *presentation skills and expressing own opinions* (78,6%) and *stressful situations management* (75,2%). These new requirements helped create new educational courses focusing on higher effectiveness of communication and presentation skills.

The resulting values have become an incentive to specify the key competencies universities ought to focus on. In 2004, the requirements highlighted: *proficiency in foreign languages* (58,5%), which was considered as a “very important” competence, then *problem-solving skills* (51,3%) and *taking on responsibility* (48%). *Taking on responsibility* ranked high on the list also in 2012 (40,3%), followed by *ability to deal with people* (39,2%) and *proficiency in foreign languages* (37%). Among others belonged the new competencies, *stressful situations management* (36,1%) or *leadership skills* (33,9%). The competence which ranked the lowest in both years was *reading and understanding work instructions* (10,9%; 18,6%). In addition, a low ranking in both years saw the competencies *IT skills* (22,2%; 22,7%) and *adaptability and flexibility* (26,2%; 26,9%).

The research also aimed to identify the requirements companies pose on university graduates. The ranking in 2004 was as follows (the ranking of requirements in 2012 is shown in brackets): 1. (3.) *required education*, 2. (9.) *knowledge of languages*, 3. (2.) *willingness to further education*, 4. (-) *IT skills*, 5. (6.) *professional knowledge/qualifications*, 6. (4.) *flexibility*, 7. (1.) *interest in work*, 8. (11.) *work experience during studies*, 9. (7.) *self-reliance*, 10. (10.) *good study results/references*. Similarly to the year 2012 when the requirements for university educated employees were extended, adequate extension was carried out regarding company criteria for employing university graduates. Based on the percentage share of companies with this requirement, 4th position saw the requirement *communication and consistency*, 2nd position was taken by *diligence*, 5th place *team working skills* and 8th *willingness to take on responsibility*. IT skills were not included among

the criteria in 2012 since this requirement towards university graduates was taken as granted. On the other hand, it is again the skill of *communication*, which is a significant factor for employability (Lepič, M. and Koucký, J., [online], 2013).

3.3 Research Results – TBU Zlín

Getting feedback from realized work experience of university students and graduates is currently in the centre of interest of universities. Also the TBU carried out research of requirements for the competencies of TBU students and graduates ranked by their importance and quality/readiness. In 2004 the research focused only on graduates since the realization and extent did not allow together relevant data. However, now the attention concentrates on the feedback from realized work experience of Masters students (6 weeks), and for example starting this year, based on employer's requirements, we introduced 4-week long work experience also within Bachelor studies (see table 1).

Table 1: Competencies of TBU Graduates Ranked by Importance and Quality/Readiness - 2004

	Importance	Quality/ Readiness
Personal Negotiating Skills	1.	3.
Team Work	2.	2.
Communication in Czech	3.	1.
IT Skills	4.	6.
Professional Knowledge / Qualifications	5.	4.
Knowledge of English	6.	5.
Other Skills	7.	7.
Second Foreign Language	8.	-

Source: Světlík, J., Gregarová, M.: Závěrečná zpráva a z projektu FRVŠ/č. 1406/2004, Inovace bakalářského studijního programu Mediální a komunikační studia.

If we compare the results of the realized research in 2004 and 2012 (graduates of the Faculty of Multimedia Communications, see table 2), we can see obvious significant changes in employers' preferences of required competencies of the university's graduates and students. In 2012, the most important is proactive approach, whereas communication in a foreign language ranks very low (6th position). Although foreign languages are beginning to be taken for granted, this skill is still very problematic and a similar situation can be seen on the nationwide level. Also IT skills are considered to be perfectly normal (the same situation was regarding employers' criteria on the national level from the year 2012), when in 2004 this competence was considered as problematic since from the viewpoint of importance it ranked on 4th position (similarly to 2004), yet it ranked 6th with respect to readiness. The problematic area still remains the professional qualifications where, based on the evaluation of students' readiness, we again see the lower edge of the chart. A solution to this then may be the already mentioned extension of work experience to the Bachelor studies.

Table 2: Competencies of TBU Students Ranked by Importance and Quality/Readiness - 2012

	Importance	Quality/ Readiness
Personal Negotiating Skills / Effective Communication	3.	2.
Team Working Skills	4.	2.
Communication in Foreign Language	6.	6.
IT Skills	normal	normal
Professional Knowledge / Qualifications	3.	5.
Interest in New Information / Further Education	2.	3.
Self-reliance / Own Ideas	5.	4.
Proactive Approach	1.	1.

Source: own

4. Conclusion

As it has been mentioned, the area of education belongs among the main objectives of the strategy Europe 2020. Ten years of membership in the EU has taught us that European cooperation in the area of education and professional training must not focus only on reaching a certain percentage of people with university education but must lead to ensuring the sufficient quality of education and employability of graduates on the labour market. At the same time, it is vital to find ways for interaction among study programmes and the demand on labour markets, e.g. through cooperation of employers and educational institutions. The constructive cooperation and communication of universities with the economic sphere may be a reflection of high quality curricula resulting from professional requirements (e.g. employers' feedback regarding requirements and criteria). Students thus gain the necessary information applicable within the educational process. This essentially needs to be reflected to innovative education and enriched educational programmes leading to increasing (so problematic) quality of professional education, whether it takes form of controlled professional work experience or practice directly in companies (public institutions), or more and more often applied form of participation of professionals within lessons. An increasingly important option is also direct participation of students in real projects where they can demonstrate their complex project management skills.

The realization of professional work experience aims to enable students to see real conditions of a job which may in the future present the basis for their professional career, i.e. to provide them with complex theoretical and practical knowledge and skills. In addition, its objective is to give economic subjects (both profit and non-profit) an option to verify the level of students' knowledge, abilities and skills and thus raise their awareness of students' work attitude. Based on the gathered information they may present university graduates with an offer of employment which is beneficial for both parties. Mutual cooperation does not lead to universities being inferior to politics and employers' interests. On the contrary, it represents a highly beneficial open position of higher education institutions towards employers, general public and regions. A substantial factor thus becomes the interconnection

of customers' needs and wishes with the needs and interest of the society, with its long-term economic, social and ethical interests. This leads to creating the necessary conditions for closer cooperation of school and work experts while maintaining the balance of three key factors – school's objective, satisfaction of customers' needs and wishes and public interest.

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Cooperation between Czech Courts and the Court of Justice of the European Union Ten Years On

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Abstract

Given the very limited direct access of individuals to EU courts, the reference for preliminary ruling defined in Article 267 of the Treaty on the Functioning of the European Union is crucial for enforcing the rights of individuals based on EU law before national courts. This paper aims at examining the practice of Czech courts in making preliminary references to Luxembourg. It also analyses the possible consequences of a failure to make a preliminary reference by a last instance court where such a referral is mandatory, both from the point of view of the affected individual and from the point of view of the Member State whose law courts may breach EU law by consistently failing to make preliminary references. In order to achieve the above objectives, the author will also discuss the conditions for making a mandatory preliminary reference and the conditions set by the CILFIT judgment of the Court of Justice of the EU which states the reasons for a justified non-referral to Luxembourg by national courts.

Keywords: *Breach of EU law, Court of Justice of the European Union, Czech courts, Preliminary reference, Remedies*

JEL Classification: *K41, K42, K43*

1. Introduction

The reference for preliminary ruling is defined in Article 267 of the Treaty on the Functioning of the European Union as follows: “The Court of Justice of the European Union shall have jurisdiction to give preliminary rulings concerning: (a) the interpretation of the Treaties; (b) the validity and interpretation of acts of the institutions, bodies, offices or agencies of the Union.” In the following subparagraphs this article makes a distinction between an optional preliminary reference for first instance courts and an obligatory preliminary reference for courts against whose decisions there is no judicial remedy under national law should such courts consider that a decision on the question is necessary to enable them to give judgment.

The aim of this procedure is to ensure a uniform application of EU law in all Member States. The reference for preliminary ruling is based on cooperation between the courts of the Member States and the Court of Justice of the European Union, which does not act as a superior court with respect to the national ones. As Weiler stresses “[l]ower courts, for the most part, have embraced the system with gusto. This is understandable. By “playing the game” they [...] enjoy a huge judicial empowerment

boost. [...] The Odd Men Out have been Member State Constitutional Courts. [...] For them, alone, the Preliminary Reference/Preliminary Ruling would not represent empowerment. [...] For, in matters involving the interpretation of validity of European Union law every court within their jurisdiction has become a constitutional court on matters European.” (2011). Also researchers from the University of Gothenburg have arrived at the conclusion that “Constitutional courts are highly underrepresented” when it comes to making a preliminary reference to Luxembourg (Naurin et al., 2013). This paper will thus examine whether the general trend of ordinary courts being more willing to make preliminary references also applies to the Czech Republic, while the Constitutional Court is more reluctant to follow track.

2. Preliminary References Made by Czech Ordinary Courts

Czech ordinary courts (i.e. any and all courts except for the Constitutional Court) made a total of 27 preliminary references to the Court of Justice of the European Union in the time span between 2004 and 2012. Compared to Hungarian ordinary courts who asked Luxembourg for the interpretation of EU law in 64 instances, this number is rather low, given approximately the same size of population of both countries and the same date of joining the European Union. On the other hand, compared to Polish ordinary courts, which have to serve almost four times the number of citizens, with only 49 preliminary references in the covered period, the Czech courts seem rather cooperative. For a better comparative overview of the willingness of national courts of the ten “new” Member States who have joined the EU on 1 May 2004 see the table below:

Table 1: Number of preliminary references made by the courts of the Member States which joined the EU on 1 May 2004

	CZ	CY	EE	LV	LT	HU	MT	PL	SI	SK
2004						2				
2005	1					3		1		
2006	3				1	4		2		1
2007	2		2		1	2		7		1
2008	1	1	2	3	3	6		4		
2009	5	1	2	4	3	10	1	10	2	1
2010	3			3	2	6		8	1	5
2011	5		1	10	1	13		11	1	3
2012	7		5	5	2	18		6		9
Total	27		12	25	13	64		49	4	20

Source: Own compilation of data based on the Annual Reports of the Court of Justice covering the period between 2004 and 2012.

Given the limited extension of this paper, the author cannot analyse in further detail all Czech preliminary references, but will focus on generalising their topics and outcome. Only one single preliminary reference made by Czech ordinary courts was included in the “Proceedings of the Court of Justice” between 2004 and 2012 and can thus be considered in a way a “star case”.

This preliminary reference was included in the 2007 Proceedings of the Court of Justice (CJEU, 2008) and refers to the interpretation of the Common Customs Tariff. In its judgment of 16 December 2010, C-161/06 *Skoma-Lux*, the Court of Justice decided that a Member State cannot force an individual (a Czech based business corporation importing Moldavian wine to the Czech Republic) to be bound by EU legislation which had not been published in a special edition of the Official Journal of the EU in the official language of the Czech Republic, even though, a Czech electronic version of the Official Journal was available at the time when the dispute on the correct tariff classification of wine arose (Bobek, 2007). The future impact of this judgment, however, seems to be rather short-lived due to the recognition of legal force of the electronic version of the Official Journal of the EU as of 1 July 2013.

By the end of 2013 the number of preliminary references made by Czech ordinary courts rose to 34. In general, we can split them into three branches of law, Civil Law, Criminal Law and Administrative Law. Whereas only one preliminary reference concerned Criminal Law issues, eleven of them dealt with Civil Law (including consumer protection), and the highest number of interpretation problems was associated with the field of Administrative Law, comprising particularly taxes and social security legislation. Not all the preliminary references concerned substantive law, also questions arising from the application of procedural rules (in particular the Brussels I Regulation) had to be interpreted by the Luxembourg court (Supreme Court of the Czech Republic, 2013).

3. Preliminary References before the Czech Constitutional Court

Whenever an ordinary court fails to make a preliminary reference even though the Treaty provisions oblige it to do so, the right to a fair trial and/or the right to a lawful judge may be violated under Czech Constitutional Law. In that case, individuals seek a remedy with the Czech Constitutional Court by means of a constitutional complaint. In three instances complainants were successful when alleging the breach of their right to a lawful judge and/or the breach of their right to a fair trial before the Czech Constitutional Court in relation to a failure to make a preliminary reference or to justify why a preliminary reference was not made.

A national court against whose decision no judicial remedy is available under national law is obliged to make preliminary reference to Luxembourg while at doubt about the meaning of EU law to be applied unless it justifies its decision not to do so based on the criteria of the CILFIT judgement (case 283/81) of the Court of Justice (CJEU, 1982). This judgment established the doctrine of *acte clair* and *acte éclairé*. The term *acte clair* means as the Court of Justice puts it “that the correct application of Community law is so obvious as to leave no scope for any reasonable doubt,” whereas *acte éclairé* requires that „[the national court] has established that the Community provision in question has already been interpreted by the Court of Justice”.

When assessing whether the right to a lawful judge has been breached, the Czech Constitutional Court examines if the ordinary court met the criteria defined in the CILFIT judgment referred to above. In its justification of the first case in which it dealt with a possible breach of the right to a lawful judge (File No. II ÚS 1009/08) due to a failure to make a preliminary reference by the Supreme Administrative Court, the second chamber of the Czech Constitutional Court follows the German interpretation of arbitrariness (“Willkür”) saying that it is arbitrary not to take into consideration the mandatory rule embodied in Article 234 of the EC Treaty (nowadays Article 267 of the Treaty on the Functioning of the European Union). The Constitutional Court has not accepted the Administrative Supreme Court’s reasoning that the interpretation of the examined legal problem is obvious without justifying this in any further detail, even though one of the parties to the proceedings disagreed with this opinion of the Supreme Administrative Court. In this decision, the Czech Constitutional Court also criticized the Supreme Administrative Court for not having done any research whatsoever as to the existing relevant case-law of the Court of Justice of the European Union, especially under the circumstances of the case, in which the plaintiff alleged that the provision in question is being interpreted differently in other Member States.

In its second decision concerning a failure to make a preliminary reference, this time by a Regional Court (File No. II. ÚS 1658/11), the Czech Constitutional Court held that the right to a fair trial was breached since the national court granted rights to a party which were based on a national provision contrary to EU law. The Czech Constitutional Court also recalled that such a procedure by the Regional Court gives rise to a right to compensation of damages caused by an incorrect application of EU law in line with the Köbler judgment of the Court of Justice (CJEU, 2003).

Finally, the last decision by the Czech Constitutional Court dealt with a failure to make a preliminary reference with respect to the application of Brussels I Regulation. In this case (File No. II. ÚS 2504/10) the defendant alleged missing jurisdiction of the Czech courts and the first instance court decided to apply a different provision of the Brussels I Regulation than the appeals court, yet both of them establishing jurisdiction of Czech courts under circumstances which could not be labeled as “obvious”. The appeals court failed to justify its failure to make a preliminary reference and based its jurisdiction on Czech national Private International Law rather than on the Brussels I Regulation which takes precedence over national law. At the same time, the Constitutional Court while repealing the judgment taken by the appeals court reiterated that its legal opinion is by no means binding for the appeals court, since it is not in position to invade into the jurisdiction of ordinary courts and to interpret EU law.

4. Czech Constitutional Court Breaching the Right to a Fair Trial – Who Can Help?

As shown above, the Czech Constitutional Court has already ruled on the breach of the right to a fair trial or the right to a lawful judge when ordinary courts breached their obligation of making a preliminary reference. It has never made a preliminary

reference, itself, but compared to other Member States who have joined the EU on 1 May 2004 this is fairly common, the only exception so far being the Lithuanian Constitutional Court, which made one single preliminary ruling to Luxembourg (CJEU [online], 2012).

However, what remedies are available to individuals seeking a preliminary reference, if the Czech Constitutional Court breaches their right to a fair trial by failing to reverse the judgement of an ordinary court which has arbitrarily breached EU law by not making an obligatory preliminary reference? This is not merely a theoretical issue, since instances of violating the right to a fair trial by the Czech Constitutional Court have already been documented. In its decision in case File No. I. ÚS 1883/13 the Czech Constitutional Court ruled that there is no reason for making a preliminary reference on the compatibility of the provisions on interim measures in the Czech Code on Civil Procedure with EU law since this Code makes no express reference to EU law! (Grmelová, Vavrečka, 2014).

The Czech Constitutional Court has also demonstrated a very militant position against the judgment of the Court of Justice in case *Landtová* (C-399/09) concerning the interpretation of Annex III(A) to Regulation (EEC) No 1408/71 of the Council of 14 June 1971 on the application of social security schemes to employed persons and their families moving within the Community, as amended. The Czech guardian of the Constitution stated that the decision of the Luxembourg court was taken *ultra vires*, since the Court of Justice did not have sufficient knowledge of the specific circumstances under which Czechoslovakia was separated into two independent states (Komárek, 2012).

Since the right to a fair trial is also protected by the European Convention on Human Rights and Fundamental Freedoms of the Council of Europe and this Convention is binding on all EU Member States, including the Czech Republic, applicants who have not been successful with the Czech Constitutional Court may lodge a complaint with the Strasbourg European Court for the Protection of Human Rights alleging the breach of Article 6 (1) of that Convention. The Czech Republic, including its Constitutional Court, have already been condemned by this court on a number of instances for the breach of the right to a fair trial and there is no reason why an applicant should not be successful if the right to a fair trial has been breached due to a failure to make a preliminary reference by Czech courts. Unfortunately, the time the Strasbourg court requires to adopt its judgment often exceeds a period of five years and can itself constitute a breach of a right to a fair trial.

Also, an individual whose right to a fair trial has been breached due to an unwillingness of Czech courts to make a preliminary reference can notify the European Commission about this fact since the Commission is entitled to initiate an infringement procedure against a Member State for the breach of the duty of loyal cooperation embodied in Article 4 of the Treaty on the European Union. However, so far the Commission has never initiated the infringement procedure only due to a single failure of a national court to make a preliminary reference. Bobek believes that starting such a procedure would be more likely if this type of breach proves to be consistent and lasting over a longer period of time, making reference to a reply made

by the Commission to a written question of a Member of European Parliament in this context (Bobek, 2004).

5. Ubi Ius, Ibi Remedium?

The Court of Justice of the European Union recognized the principle of *ubi ius, ibi remedium* in its famous *Francoovich* judgment, in which it established liability of the Member States for breaching law and an obligation of the Member States to compensate individuals for damages they incurred due to such a violation of EU law. However, as Craig remarks, “despite the importance of the principle established, [...] *Francoovich* gave only minimum guidance for the future” (Craig, 2011). Yet, the action for damages based on this judgment can undoubtedly be used also when a national court has failed to make a preliminary reference without justifying the exceptions defined in the *CILFIT* judgement referred to above.

The Czech Republic has not adopted any specific act governing the compensation procedure for its own breaches of EU law and the existing case-law demonstrates that much more effort needs to be made by national courts to start awarding damages in these situations without establishing excessive procedural obstacles. The very fact that state liability can only be enforced by means of national procedural rules constitutes one of its major shortcomings (Říčka, 2013).

In the Czech legal order, there is a special Act (Act No. 82/1998 Coll.) applicable to state liability when applying Czech law which enables individuals to claim damages in case of an unlawful judgment or in the event of maladministration. This act does not, in principle, cover the liability of Czech Republic for the (in)activity of the legislative power which can cause harm to individuals in the event of wrongly transposed directives giving rise to possible preliminary references. The possibility of applying this Act to state liability for breaching EU has been examined in an individual dispute by a chain of four successive courts, without awarding the plaintiff who had suffered harm due to EU inconsistent legislative activity a single penny in damages after many years of litigation and/or without making a preliminary reference concerning the compatibility of EU law and Czech law.

The facts of the case can be summarized as follows. The plaintiff (a midwife) alleged that she suffered harm due to an incorrect transposition of an EU directive (Directive 80/155/EEC) by the Czech legislative power. Both, the first and the second instance courts believed that there was no interpretation of EU law involved in the case and turned down the application. The Supreme Court decided about her extraordinary remedy in very formalistic terms, fully disregarding the principle of *effet utile* of EU law. In its judgment No. 25 Cdo 2064/2005 the Czech Supreme Court holds that “since the legislative (in)activity cannot be considered part of maladministration, no state liability based on the *Francoovich* judgment can be assessed under the Act No. 82/1998 Coll. At the same time, the Czech Supreme Court failed to indicate any other procedural means to be used by the plaintiff to enforce her rights resulting from EU law.

The plaintiff lodged a constitutional complaint with the Czech Constitutional Court alleging a breach of her right to a fair trial. In its judgment of 9 February 2011 (File No. IV. ÚS 1521/10) the Czech Constitutional Court decided that the Czech Republic is accountable for the harm caused by breaching EU law and recalled that there is no specific Act in the Czech legal order which governs state liability in cases similar to the *Francovich* judgment. The Czech Constitutional Court, however, instructs the ordinary courts as well as the Supreme Court to interpret the Act on State Liability using the method of analogy, where necessary, in order to comply with EU law. The Constitutional Court repealed the original judgment adopted by the Supreme Court since it breached the plaintiff's right to a fair trial.

Unfortunately, the formalistic approach to applying Czech legislation inconsistently with EU law does not constitute an exception in the way Czech ordinary courts decide. A similar setting with the same deplorable results can also be traced in another judgment of the Supreme Court, File No. 25 Cdo 3556/2007 and the judgment of the Czech Constitutional Court, File No. II ÚS 1518/10, repealing the Supreme Court's decision due to a violation of the right to a fair trial.

Given the unwillingness of Czech courts to award damages based on the *Francovich* judgment and an inexistence of a special Act governing state liability for the breach of EU law, it appears almost impossible to implement the principle of *ubi ius, ibi remedium* before Czech courts. However, the same problem seems to persist in Member States having a much longer judicial experience of applying EU law. This is, for instance, the case of two German preliminary references C-190/94 *Dillenkofer* and C-424/97 *Haim II* (Říčka, 2013).

6. Conclusion

The Lisbon Treaty has formally reinforced the right of individuals to a fair trial having granted binding nature to the Charter of Fundamental Rights of the EU, which is also applicable to Member State whenever they implement EU law. Nevertheless, the amendments made to the Treaty on the Functioning of the European Union have missed the opportunity to codify more specific conditions individuals could rely upon directly while trying to enforce their right to damages arising from state liability for the breach of EU law before national courts which often fail to make a preliminary reference. The practical impossibility to enforce *Francovich*-like damages undoubtedly constitutes a double breach of EU law. First, the violation of the right to a fair trial, and second, a breach of the Member State's obligation to cooperate loyally with EU institutions embodied in Article 4 of the Treaty on the European Union.

Having said this, the European Commission would be well advised to play its role of the Guardian of the Treaties more seriously and to report on the progress it has made in forcing Member States to consistently award damages to individuals as a result of state liability for breaching EU law. Alternatively, the European Commission may draft a proposal for a binding secondary act governing the rules for awarding damages arising from state liability for the breach of EU law. A suitable

legal basis for such a legislative activity can be found, for instance, in Article 26 of the Treaty on the Functioning of the European Union with a reference to Article 47 of the EU Charter on Fundamental Rights.

So far, the European Commission has limited itself to drafting Annual Reports on Monitoring the Application of EU law largely ignoring the (im)possibility to enforce damages based on the *Franovich* judgement (see e.g. European Commission [online], 2013a), and an *EU Justice Scoreboard* (European Commission [online], 2013b) comparing the length of proceedings in all Member States which shows that Czech Courts are not doing bad at all compared to many of their counterparts elsewhere in the EU. Yet, the present state of enforcement of EU law in the Czech Republic and the cooperation between national and Luxembourg judges is far from being ideal.

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Several Remarks on the Theory of Regionalism and Interregionalism

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Abstract

Post-industrial technologies changes currently not only societies but also international relations. Time and space are not of decisive importance. In addition to superpowers and powers and transnational corporations, international relations will be soon influenced more by regional groupings with significant potential. Interregionalization can be understood as a process in which into orderly relations enter not individual states, but regional groupings of states. Post-war regionalism and multipolar regionalism is complemented to a relatively new strategy in international relations – interregionalism. These new phenomena in international relations can be one of the answers to advancing globalization, in which supranational globalized economy takes dominance over local state politics and changes the center of gravity of international politics. A systematic approach to the theories of regionalism and interregionalism from the positions of political science may contribute to the debate on the importance of integration groupings and future of interregionalism.

Keywords: *International relationships, Interregionalism, Multilateral integrative regionalism*

JEL classification: *A12, F53, F68, H77*

1. Introduction

Technical possibilities of the information society accelerated economic globalization, and its share of world power require numerous multinational corporations with commercial objectives. The role of states in international relations is thus significantly weakened: the essence of modern international relations based on the Westphalia Treaty is so probably exhausted. In addition to superpowers and powers, as big actors, and transnational corporations, international relations will be soon influenced by regional groupings with significant potential. Post-industrial technologies changes currently not only societies but also international relations. Time and space are not of decisive importance.

International relations are transformed at present substantially. Their current entropy, however, does not allow clearly identify form of the new system as another temporary balance, which will change the traditional Westphalia system dominated the past four industrial centuries. One of possible approach to this transformation offers the theory of regionalism and interregionalism.

The system is generally a set of elements in interaction. The condition of system is characterized in particular:

- by the content and nature of elements (fundamental or peripheral for the system);
- by relations (links) between elements. If the links between elements of the system are fixed (especially between fundamental elements), then the systems exhibit temporary stability, balance. Conversely, if the elements or links between the elements (especially the fundamental, essential) get to a critical stage, started instability, uncertainty, chaos, entropy and rearrangement of elements into another system.

The system of international relations works in a similar way.

The fundamental elements (first) of the system of international relations in the modern era were - according to Westphalia Treaty - states. Some of the states were more important (as a fundamental elements of the international system), some peripheral, with less influence. With the beginning of the 20th century began play the role of fundamental element (second) also transnational corporations. Their role in international relations grew with their capacity and numbers. Today, large corporation are working with a turnover at the level of GDP of medium-size states. After the Second World War international relations gradually began to influence regional groupings as the next fundamental element (third) of international relations. Before the end of the 20th century gradually began to appear elements of interregionalism.

Relations (links) between elements of the system of international relations can express the polarity between the different elements. The polarity of the polar structure creates a system in which individual elements (actors) have different strength and ability to achieve its aims and objectives. Extreme position of the polarity is unipolarity and multipolarity.

Most stable of these conditions is bipolar system (minimum conflicts at the central level), less stable unipolar (the world's policeman) and most prone to conflict is multipolar system ('s quest for survival at the expense of others and become the hegemon itself).

Polarity in international relations does not reflect currently only relations between the states but also between the other elements of contemporary international relations: multinational organizations (corporations) and regional groupings. Relations of elements of contemporary international relations are currently in stage of entropy. System is rather multipolar, after bipolarity dominated a large part of second half of 20th century and short stage of unipolarity of USA in last decade of 20th century and on the beginning of millennium.

Globalization, generally understood as the quickening of the connections between different areas in the lives of individuals, different units (especially economic), groups and states, marginalizes the role of states and strengthens the role of transnational corporations, which mainly affects small vulnerable states. However, in addition to superpowers and multinational corporations could international relations be influenced in near future by regional groupings with significant potential? Although we can see efforts of the states to protect their exclusive position

in international relations (for example USA in the rescue of the automobile industry in the wake of the financial crisis in 2008), strengthens its position transnational corporations. The essence of modern international relations based on the sovereignty and equality of states is thus probably exhausted, as in the future states probably will no longer be the exclusive players in international relations. Moreover, post war regionalization is complemented to new regionalisation (integrative) a relatively new phenomenon in international relations – interregionalization.

2. Multipolar Integrative Regionalism

Regionalism became sporadically topic of theoretical studies after the Second World War. More frequently was the issue processed from the 70th of last century. The publications of regionalism with an economic approach became more often in the 80's of last century, probably just because of the intensity of economic globalization. Their authors were particularly Jagdish Bhagwati and Percy S. Mistry. This economic approach still prevails in Czech scientific literature, where was published in the last decade comprehensive exemplification monographs (Cihelková 2007, 2011) and articles (Kučerová, 2006) on this topic with economic approach.

From the perspective of international relations and political science was issue developed especially in the last decade (Fredrik Söderbaum, Björn Hettne from University of Göteborg and Mario Telo). Scandinavian authors, primarily Hettne and Söderbaum, in their articles and monographs, offered wider than the economic view. Regionalism is considered as one of the possible policy responses to unrestrained liberalism and rapid globalization at the turn of the millennium (Hettne, 2003, p.32).

In the scientific literature is more or less consensus in the definition of regionnes, regionalization and regionalism.

The extent of this study does not allow more detail define the concept of region. Regions are different sizes entity (micro, meso and macro: Söderbaum, 2003, pp. 6-7) in the international environment with cultural differences. Closest to the issue of regional groupings is a term macro-region.

Regionness is the internal capacity (tendency) to create regions with significant geographical factor. The intensity of regionnes depends mainly on cultural and historical factors (Hettne, 2003, pp. 33-47).

Regionalization is a natural process of regional interaction between different actors of the region. There is always the important role played by proximity, knowledge of the environment due to the frequency of contacts, cultural affinity and thus similarity of institutional environment. Other decisive determinants are the comparative benefits of natural conditions (such as access to raw materials, sea ...), different levels of technological advancement or specialization leading to the overproduction.

Globalization and regionalization processes are interactive in various conditions of regionnes. The intensity of regionalization is determined by intensity of globalization. Defence against globalization is more regionalization. At the same

time if we restrict the liberalization of regional processes (i.e. Economic protectionism within the region) it will strengthen the tendency to globalizing, to liberalize (Hettne, 2003, p. 12). Globalization and regionalization are the conditioned phenomena.

Similarly to globalization and regionalization are the conditioned phenomena regionalism and globalism. Hettne refers to them as competing approaches to the understanding of the world (Hettne, 2002, p. 24). Globalism is currently still hegemonic paradigm aimed to find the political content of globalization (Hettne, 2003, p.30), and it is usually ideology of economic liberalism in the international environment. Hettne sees new regionalism (Hettne, 2003, pp. 22-23) as a response to dysfunctional regulacionismus (mercantilism, protectionism, economic nationalism, state socialism, and others) and turbulent and rapid liberalization of recent decades. The difference between regionalism and regionalization is that regionalism is primarily political project, while regionalization is a natural process (Hettne, 2002, p. 28).

In the Czech scientific literature dominates economic approach to regionalism, which regionalism narrows on economic issues. Regionalism is e.g. defined as „Economic policy of the state, which leads to the liberalization of relations between two or more countries, thus contributing to their closer ties and mutual integration“ (Cihelková, 2007, p. 3), by other authors is interpreted not clearly (Kučerová, 2006, p. 71).

However, the difference between regionalism and regionalization is that regionalism is primarily political project and can be understood as ideas, identities, regional political - state -projects and even ideology (ideology can be understood as a theory about the world, society and man's place in them, which determines the political programs and real politic)., while regionalization is a natural process (Hettne, 2002, p.28) of regional interaction between various entities that create the regional environment (Table 1) .

Table 1: Basic Definitions

Regions, regionnes, regionalization, regionalism, interregionalization and interregionalism.
Regions - different sizes (micro, meso and macro) entity in the international environment with cultural differences.
Regionness - the internal capacity (tendency) to create regions, in which is a significant geographical factor.
Regionalization - a natural process of regional interaction between different actors of the region.
Regionalism - idea, identities, political projects, ideology, political strategy
Interregionalization - the process in which enters into organized relations rather than individual countries but regional groupings, organizations.
Interregionalism - idea, political project, ideology, another possible political strategy for international relations.

Source: Own elaboration

The term new regionalism began to be used to indicate the stage of regionalism primarily associated with globalization (Bhagwati, 1993, pp. 22-51). Bhagwati in his

studies of regionalism and multilateralism, reflecting the collapse of the bipolar world, these two are at first divided and confronted (Bhagwati, 1992), while, however, a year later, pointed to their conditional relationship (Bhagwati, 1993).

A terminological shift in recent years shows the effort use vague general term "new" regionalism less and less. There are terms referring to the chronology: the neo-regionalism (which, however, is the same thing), sometimes post-hegemonic regionalism (Fawcet, 2007), or the third generation regionalism (Söderbaum, 2003). Finding appropriate terminology is still in the process. It is clear, that term "new regionalism" will be replaced in theory by more precise term.

Basic conditions for determining the nature of regionalism in different periods generate international relations. For that reason can be the post-war phase of regionalism identified as bipolar regionalism and the phase of the "new" regionalism as multipolar regionalism.

Bipolar regionalism (cooperative, „old" regionalism, approximately 1945-1980) is therefore characterized by a bipolar (relatively transparent) world, hegemonism, and the Cold War's emphasis on safety, economy, and protectionism, formally composed above structure. It was also endogenous, closed and strictly geographical (built in contacts of neighbouring states) and mostly cooperative (Kučerová, 2006, pp.67-89).

Multipolar regionalism, the second phase of regionalism since the end of the eighties of the last century, often called new regionalism, is determined by a large number of often interrelated structural transformations of the global system. New structural elements (states and non-state actors) still looking for new links with other fundamental and supporting elements, which might create in the future new temporary stability of the international environment. Globalization changes the relationship of time and space, when space is losing crucial importance and fundamental determining factor becomes the time (Hauer, 2013). In transformation of global system the most important are probably the following: globalization, the transformation of the bipolar structure of the Cold War and the rising multi-polar structure, with a new international division of power (compared to bipolar or unipolar), the relative decline of U.S. hegemony in combination with a more friendly approach towards regionalism from the U.S., restructuring of the global political economy into three main blocks: the European Union (EU), the North American free Trade Agreement (NAFTA) and the Asia-Pacific region and other (BRICS), which are based on various forms of capitalism; the end of the concept of the Third World, changed attitudes towards the so-called developing countries, changes in international relations caused by the economic crisis (2008), erosion of the Westphalia system of nation-states (Hettne,2003, p. 32).

Globalization (Gubová, 2011, p. 77, Hauer, 2007, p. 57)) is a process, where the states (with the exception of big actors) gradually losing control over economic and politico-social mechanisms of development within their territories and growing economic, social and political transnationalism, which created a new regional patterns of interaction, both between governments and non-state actors.

Multipolar regionalism (integrative, "new" regionalism, neo-regionalism, post-hegemonic regionalism, regionalism, the third generation, after 1970th-80- till present) is characterized by multi-polar world, globalization, voluntary and exogenous processes, arising from the free cooperation, naturalness, openness, multidimensionality, participation non-state actors, different levels, creating a counterweight of globalization - is the part of the global structural transformation. This is a qualitatively different stage with regard to changes in the world economy and politics. Stage of the new regionalism from the 80th last century still persists. It develops in conditions of globalization and multipolarity, characterized by spontaneity of processes, versatility and above all of the participation of non-state actors, and in terms of quality often has integrative character (Table 2).

Table 2: Bipolar and Multipolar Regionalism

Bipolar regionalism (cooperative, „old“) 1945-1970-80th	Multipolar regionalism (integrative, „new“) from 70s of 20th century so far
<ul style="list-style-type: none"> • Bipolar world, cold war • Endogenous • Protectionist • Focused on security, economy • States as the only major actors • The above-built structures • Strictly geographical (neighboring states) 	<ul style="list-style-type: none"> • Multipolar world, globalization • Regionalization is a part and counterweight of globalization and global structural transformation • Exogenous, voluntary, natural process, resulting from the free cooperation • Multidimensional, universal • State and non-state actors, different levels • Qualitatively new stage with regard to changes in the world economy and politics • Not strictly geographic

Source: Own elaboration

The quality of regional groupings, and thus the depth of regionalism primarily reflect the degree of integration achieved and elements of its institutional structure. To describe the quality of regionalism we can find in literature expressions shallow and deep regionalism.

Shallow regionalism represents the removal of obstacles to the movement of economic factors on the borders of nation-states, in particular the liberalization of external relations, which directly intervene in the internal economic environment in the state. In terms of form it is usually a free trade area and a customs union. Deep regionalism is the removal of barriers outside shot boundaries and integration pushes into new areas: services, capital and labour. Deep regionalism has often formed a common market and a tendency to unify foreign policy also raises significant interference with the sovereignty of the state and, therefore, “more extensive and powerful institutional decision-making system of integration (Cihelková, 2011, p. 8).

For shallow and deep regionalism (Kučerová, 2006, p.71, Cihelková, 2006, 2011, p.8) could serve, with a certain tolerance, terms cooperative regionalism and integrative regionalism. Under shallow (cooperative) regionalism is usually considered the EC

in the 60th of the last century or CACM, ECOWAS and the majority of other regional groupings.

Deep (integrative) regionalism represents especially the current European Union as well as MERCOSUR and CARICOM. Particularly the European Union developing from the 90s of the last century systematically in this direction and promotes integrative (deep) regionalism. This effort is currently frozen for a effects of protracted global economic crisis and three basic tendencies may assert in the future:

- The tendency to federalization: political integration (gradual unification of foreign policy) and economic integration (monetary and fiscal policy). Eurozone will be stronger. Europe's influence in international relations will be stronger.
- The tendency to loosening: two-speed EU. A smaller Eurozone. Elements of confederations. Europe's position in international relations will not be strengthened.
- The tendency to loosening: from integration back to the cooperation of sovereign states. Trivialization of Eurozone. The weakening of international position of Europe.

3. Interregionalization and Interregionalism

Interregionalization can be understood as a process in which into orderly relations enter not individual states, but regional groupings of states and interregionalism as a political project, strategy or ideology of this process. Studies on interregionalism are not sufficiently represented in the academic debate. Hettne notes that co-existing regional groupings - transregionalism or even interregionalism - may be the world's best organization in the medium term (Hettne in Söderbaum 2003: 39). Over the long term Hettne sees the opportunity to move from transregionalism over interregionalism to multiregionalism.

Many studies on interregionalism create uncertainties and questions regarding the global order and global governance, especially the following:

- What might be the consequences for the system of international relations?
- Whether interregionalism really shift from Westphalia world system based on individual states towards a system based more on regional and interregional relations
- How does it affect bilateral relations between countries?
- Whether or not there are suitable partners for interregionalism
- Should regional groupings (EU, MERCOSUR, CARICOM, ECOWAS, CACM) build regional and interregional partnerships or seek rather for traditional bilateral partners (Söderbaum, 2011).

Reliable answer to the above questions cannot currently be expected, especially for the insufficient level of development of the issue.

Transregionalism, interregionalism and multiregionalism are the phases of development of international relations between the cooperating regions. We do not know enough about why interregionalism occurs and what actually (Söderbaum, 2006, p. 3) is. Political regionalism and interregional political dialogue (Telo, 2007), interregionalism thus presents itself as another possible political vision and strategy for international relations and became a reality due to the spread of regionalism in the last three decades.

We can therefore only assume that the process of interregionalization is another way to deal with spontaneous expansion of globalization, which can be a sinister for big actors, as it shows an example of the U.S. However, consequences are especially harmful for sovereignty of small and economically unstable countries. For example, CARICOM (Caribbean Community, Gubová, 2007, pp.73-97) acting as a subject in connection with other international actors than states, namely global, regional, universal, specialized organizations, in that case of the UN, CACM, OAS, ICJ. CARICOM integration project is capable in serious foreign policy issues, such as territorial disputes its member states Belize and Guyana with neighbouring countries. In solution of conflicts is CARICOM unequivocal, formulating uniform opinions. Interregionalization is evidenced by way of direct negotiations between the EU and CARICOM or MERCOSUR, or CARICOM and APC.

4. Conclusion

Interregionalism, new phenomenon of international relations thus can be one of the answers to advancing globalization, in which supranational globalized economy takes dominance over state politics and changes the centre of gravity of international politics. Common regional economy can facilitate the harmonization of foreign policy and regional integrations with the ability to coordinate foreign policy of member states can thus become influential players in international relations and positively reinforce the position of small states. Interregionalism could therefore be a political strategy for many states. Also for this reason scientists in the field of political science should pay more attention to the theory of interregionalism and regional groupings should preventively create for interregional partnership necessary conditions.

Although the nature of this study is mainly theoretical, it should be recalled, that the European affairs can be affected in the near future by new regional grouping - Eurasian Union (EAU). It's ideology could be euroasianism, whose spiritual father is Russian theoretician Alexander Dugin. The core of EAU should be especially Russia, Kazakhstan and Belarus, followed by Tajikistan and Kazakhstan, possibly Armenia. The creation is announced for January 2015. In this context is very important next direction of Ukraine, which Russia considers its sphere of influence. Putin's approach to the Crimea in March 2014 can be so far seen as a manifestation of power and test for the Euro-Atlantic civilization, especially the EU, with which Putin intends to compete. Putin raises the question of how the EU is willing to compromise on its founding principles, such as democracy, rule of law, freedom, equality and solidarity, for the price of uncertainty over the economic sanctions that should be the answer to a flagrant violation of international law in the Crimea

by the Russian Federation . This will set the parameters of a new interregional relation between the EU and the EAU in the future.

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First-time Adoption of International Financial Reporting Standards for Business Corporations Based in EU Member State that Are Issuers of Securities Admitted to Trading on Regulated Market

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Abstract

The world economy has been globalised for decades, which makes International Financial Reporting Standards increasingly relevant. The standards began to emerge in the early 1970's as a result of the harmonisation process, which aims to ensure the comparability of accounting information in financial statements at the international level, including EU member states. From the beginning up to the present day the standards has been undergoing a continual development, so that they are in line with the continuously evolving global economic and financial environment. This paper deals with the importance and issues of first-time adoption of IFRSs including the application in business corporations that are issuers of securities admitted to trading on a regulated market and are based in an EU member state. For the company management, the transition to IFRSs represents an opportunity to change the way how not only investors or other stakeholders, but also their competition perceive and evaluate their companies.

Keywords: *Accounting Harmonisation, First-time Adoption of International Financial Accounting Standards, Financial Statements*

JEL Classification: *M40, M41, M49*

1. Introduction

There are currently three major lines of international accounting harmonisation. This is a case of the International Financial Reporting Standards (IFRSs), Accounting Directives of the European Union and Generally Accepted Accounting Standards of the United States of America (U.S. GAAP). International Financial Reporting Standards (IFRSs) are a set of standards, which are issued by the International Accounting Standards Board, governing the compilation and presentation of all financial statements. Standards have been published since 1973 by the International Accounting Standards Committee (IASC) under the name IAS (International Accounting Standards). In 2001, the IAS committee was replaced by the IASB board, which continues to issue new and updated standards under the name IFRSs. The main objective of creating these standards is to achieve financial statements comparability on a global scale. Companies which securities are traded on a regulated public markets in the European Union has to present their consolidated financial statements in accordance with the IAS/IFRS standards. In connection with the accession

of the Czech Republic to the European Union, the International Financial Reporting Standards have to be applied by all accounting entities that are issuers of securities listed on a regulated market of securities. This move clearly contributed to the acceptance of IAS/IFRS in many parts of the world (Ding, Hope, Jenjean and Stolowy, 2007) as global standards (Redmaye and Laswad, 2013).

The regulated market in the Czech Republic means the Prague Stock Exchange (all markets) and RM-System (only official market). These accounting units have an obligation to account for and compile their financial statements, consolidated financial statements and annual reports according to the IFRSs, starting from the first accounting period after the Czech Republic joined EU, that is from 1st May 2004. The consolidating accounting entities that are not issuers of securities listed on a regulated market of securities, may choose whether they compile their consolidated financial statements and annual reports in accordance with IFRSs or under Czech accounting legislation. Among the main benefits of the harmonisation process belong comparability of financial information at the international level. The comparability eliminates current misunderstanding associated with the reliability of foreign financial statements and removes one of the most important barriers to flow of international investments. The second benefit of harmonisation is saved time and money, previously spent on consolidation of different financial information in a situation when more statements are needed to meet various national legislation or practice. The third improvement will be the tendency of global accounting standards for continual increase of their level and the pursuit of consistency with local economic, operational and social conditions. These standards are globally accepted accounting system, which aims for harmonisation of rules and procedures associated with bookkeeping. Harmonisation is a process that aims to ensure comparability of accounting information presented in the financial statements on an international scale (Mládek, 2005).

2. Obligatory Application of International Financial Reporting Standards

The IFRS accounting standards will affect all the important decisions within the company, and therefore it is essential that the management can anticipate changes in the perception of their company by a market. The European Union has initiated the harmonisation process of accounting standards of its member states, the result of which should be unification of local accounting legislation with IFRS accounting standards. Before the Czech Republic joined the EU (i.e. until 2005), only about 300 companies used International Financial Reporting Standards (IFRSs) as their basic accounting system, usually only for a few years. From 2005 onwards, their number has increased to about 7,000 companies, mostly listed issuers of securities in 25 countries of the EU. In 2009, 117 world countries already required or permitted compilation of financial statements in accordance with IFRSs, including Australia, New Zealand and Russia. At the present, other countries should join, such as Brazil, China, and later also India, Canada and South Korea. It is expected that in the future about 140 world countries should use IFRSs (Hinke, 2013).

The obligatory application of international accounting standards for bookkeeping and compilation of the financial statements is regulated in Section 19(a) of Accounting Act No. 563/1991 Sb. (for the first time in the Accounting Act since 1st May 2004). This section stipulates that accounting entities that are trading companies and issuers of securities admitted to trading on European regulated market²⁷ are required to use International Financial Reporting Standards adapted by EU law for bookkeeping and compiling of financial statements.²⁸ Furthermore, Section 23(a) of the same act came into force, which for the first time ordered consolidating accounting entities that are issuers of securities in an EU member states to use International Financial Reporting Standards for compiling consolidated financial statements and an annual report. The practical application of IFRSs is no simple matter, especially in view of significant differences between the scheme and Czech accounting standards. On the other hand application of IAS/IFRS is associated with higher accounting quality than application of domestic standards (Barth, 2005). An important standard, which underwent its own development up to the present, is IFRS 1 - First-time Adoption of International Financial Reporting Standards. The standard is essential for all companies that are first-time adopters transitioning from reporting by national accounting legislation to international financial reporting standards. This is an essential tool for bookkeeping in accordance with IFRSs since the IFRS 1 standard represents a guide for solving problems the accounting entity may meet during the first transition to IFRSs. It is important to point out that the standard is based on the assumption of detailed knowledge of other standards. As such, it is very specific because it cannot be studied as a separate standard. IFRS 1 was published in 2003 and came into force on 1st January 2004. During its validity, the standard had been constantly developed and changed; and so far has been amended several times.

Standard sets out:

- definition of basic terms associated with the transition to IFRSs,
- a procedure for bookkeeping, evaluation and determination of accounting policies,
- presentation (the standard aims to ensure comparability of financial accounts of an accounting entity that will for the first time apply IFRSs for all periods published in the first IFRS financial statements).

The main objective of this standard is to ensure that IFRS financial statements compiled for the first time are for their users easily readable and comparable within all reported accounting periods. The statement should contain comparative information for the reported periods and be an appropriate starting point for bookkeeping in accordance with IFRSs. All rules applied are subject to publication in the annex to financial statements. In the annex, it is necessary to specify comparative information on the equity and comprehensive income before using IFRS 1 and after its

²⁷ Section 55 (2) Act No. 256/2004 Sb., on business in the capital market

²⁸ Regulation of the European Parliament and of the Council (EC) No. 1606/2002, Commission Regulation (EC) No. 1126/2008 of 3 November 2008 adopting certain international accounting standards in accordance with Regulation of the European Parliament and of the Council (EC) No. 1606/2002

application. In the Annex, there are described all facts and impacts that occurred as a result of applying optional exemptions. First IFRS financial statements mean the first financial statements in which the entity adopts IFRS by an explicit and unreserved statement of compliance with IFRSs. Date of transition to IFRSs means the beginning of the earliest period for which an accounting entity presents full comparative information under IFRS in its first IFRS financial statements. First IFRS reporting period is understood as latest reporting period contained in the first IFRS financial statements (Jílek, Svobodová, 2013).

2.1 Reasons for Transition to IFRSs

The accounting entity that presents its statements in accordance with IFRSs is during its foreign operations much more transparent than a company that compile its statements by national legislation. For this reason companies that intend to start a business in the foreign market are adopting IFRS. The company may also decide for the transition to IFRSs from several different reasons, based on:

- requirement to complete the transition according to the Czech legislation,
- requirement of the parent company or requirement of a customer,
- assumption of the company that it will in the near future become an issuer of securities,
- gaining a better position in international tenders and competitions,
- own motivation (Krupová, 2009).

A company that undergoes a transition mandatorily or voluntarily decides to apply IFRSs for the first time is required to comply with a number of conditions set out by IFRS 1. The company follows the standard during the compilation of its first IFRS financial statements.

2.2 Basic Aspects of First IFRS Financial Statements

The presented financial statements are in accordance with IFRSs if the entity in these financial statements adopts IFRSs based on the explicit and unreserved statement of compliance with IFRSs. The first IFRS financial statement must involve financial statements for at least two previous accounting period; for example, a company that unreservedly decided for transition to IFRSs on 31st December 2014 will have to compile an opening balance sheet in accordance with IFRSs already to 1st January 2013. Because of the frequent amendments to IFRSs, IFRS 1 requires the application of standards in force at the date of unreserved transition to IFRSs. If any amendments were made to standards during 2013, the company would have to use standards as amended to 31st December 2014 during its first-time transition to IFRSs.

2.3 Phases of First-time Transition to IFRSs

Phases of first-time transition to IFRSs can be divided into several activities:

- decision of the company about the date of first-time adoption of IFRSs,
- preparation for the first transition including training of employees workers,

- analysis of financial statements compiled in accordance with the Czech accounting legislation,
- analysis of problems which are not included in Czech financial statements in relation to the conceptual framework and individual standards,
- determination of materiality level of the first transition to IFRSs,
- detailed analysis (detection) of cash amounts for transitioned items,
- choice of measurement bases, accounting methods and policies,
- transition of individual items of financial statements according to applicable standards,
- compilation of the financial statements including the annex (notes) to financial statements in accordance with IFRSs and presentation of financial statements compiled in accordance with IFRSs.

2.3.1 Preparation for the First Transition

At the beginning of transition to IFRSs, it is important for the management of accounting entity to familiarise as many employees of the company with the transition to IFRSs as possible. The employees should, prior to the initiation of the transition to IFRSs, undergo an in-depth training related to the issue, which is a problem for small and medium-sized companies. Employees and other workers engaged in the transition of accounting statements should receive all relevant information, which omission during the transition would have an impact on the final presentation of IFRS accounting statements. A practical example may be issues concerning the different perspective of IFRS on assets in terms of its future intention. It follows that the entity working on the transition must have comprehensive information about the company's future intention with a certain type of assets from the company management. Unconditional acceptance of IFRS concept is obviously a big intervention into well-established and standardized working processes and methods. However, experience shows that during the transition very useful revision of current rules and procedures is happening, which by the transition to IFRSs may acquire higher quality parameters.

2.3.2 Analysis of Financial Statements Compiled in Accordance with the Czech Accounting Legislation

The process of first transition from the Czech accounting legislation to the International Financial Reporting Standards begins with a thorough analysis of existing accounting statements compiled in accordance with Czech accounting legislation. The company conducting the transition must submit all items of financial statements to comprehensive analysis. The analysis also involves an analysis of problems which are not part of the Czech accounting legislation. The company carrying out the transition should, upon completion of the comprehensive analysis of financial statements, have a clear conception of which items reported under Czech accounting legislation will be affected by the transition to IFRS. This statement implies that there will occur considerable differences between the accounting statements compiled in accordance with Czech accounting legislation and IFRSs.

2.3.3 Determination of Materiality Level of the First Transition to IFRSs

Determination of materiality level for the first transition is usually fully under the direction of the accounting entity carrying out the transition of its financial statements. But there is a condition which must be met during the first transition so that the transition is in compliance with IFRS rules. Costs associated with the first transition may not be higher than the value obtained from the transfer to IFRSs. The official language of IFRSs is English where this situation is referred to as "cost over benefit".

2.3.4 Analysis of Cash Amounts

At this phase, cash amounts related to the transition must be precisely determined. Most attention is paid to items, certain part of which does not meet the definition for reporting according to International Financial Reporting Standards. For that reason the whole amount of item listed under the Czech accounting legislation will not be recognized in the opening IFRS balance sheet, but only its part complying with the definition of assets by IFRSs. It is, for example, costs related to research and development.

2.3.5 Choice of Measurement Bases, Accounting Methods and Policies

During the preparatory phases of transition to IFRSs, the management of accounting entity makes decisions about accounting methods and measurement bases that will be used in the future. This phase is of great importance because IASs/IFRSs allow change in accounting methods only retrospectively. This means that if the company after five years decides to change previously used accounting method, this would mean for the company new processing of all financial statements compiled in accordance with the previous accounting method so that these financial statements were in line with the newly adopted accounting method.

2.3.6 Transition of Financial Statements

In this phase, individual items of financial statements are transitioned while applying individual standards according to previous analyses and defined accounting policies and methods.

2.3.7 Compilation of Financial Statements Including Annex to IFRS Financial Statements

The last phase involves the compilation of financial statements including the annex to IFRS financial statements. According to IAS 1 - Presentation of Financial Statements, financial statements comprises of a statement of financial position, a statement of comprehensive income, a statement of changes in equity, a statement of cash flows and notes.

3. Exceptions to Other Standards and Parameters of Actual Mechanism of First-time Transition to IFRSs

If the accounting entity decides to apply IFRSs to its financial statements for the first time, it is vital, for one thing, to declare full and unreserved compliance with IFRSs and it is also necessary to present the statements both to owners and external users. Therefore, it is vital to distinguish those cases when the accounting entity initiates the adoption of IFRS concept only for internal purposes. Furthermore, we can encounter different level of initialization of conversion to IFRSs in ownership structures, and the rule of retrospective applications also has its exceptions.

3.1 IFRS Financial Statements Only for Internal Purposes of Accounting Entity

In practice you can meet with cases when the accounting entity that presents its statements in accordance with IFRSs declares full compliance with the concept, but the presentation is intended only to internal users and not the external ones. In this case the statement of full and unreserved compliance with IFRSs is not sufficient, since the basic attribute of first-time adoption of IFRSs is not fulfilled, that is presentation to external users. This approach does not possess parameters of full adoption of IFRSs and therefore cannot be considered as one. It is worth mentioning that the internal adoption of IFRSs is usually applied in cases when the unreserved application of IFRSs is considered and the initial phase of actual first-time adoption of IFRSs is performed for company management to assess potential impact of IFRS full adoption on the structure and information value of the financial statements.

3.2 Differences in Synchronization of First-time Adoption of IFRSs with Corporate Combinations

It is generally assumed that the parent company usually is the primary initiator of transition to IFRSs, as they often dominantly determine business and accounting policies of subsidiaries, associates and joint ventures (hereinafter referred to as subsidiary). In such a case the subsidiary is often forced to draw up financial statements in two ways. For one thing in accordance with own, local accounting rules, and also, for the needs of group reporting, in accordance with IFRSs, that is based on the date to which the parent company declared full compliance with IFRSs. With regard to the measurement of assets and liabilities in separate financial statements of the subsidiary that adopts the IFRS concept later than the parent company, there are basically two approaches:

- either the book value is applied that is included in consolidated financial statements of the parent company with respect to the date of transition to IFRSs in the parent company,
- or the book value determined in accordance with IFRS 1 is applied, with regard to the transition date of the subsidiary to IFRSs.

If the later conversion to IFRSs is, on the contrary, implemented by the parent company, the option of assets and liabilities measurement is excluded. In consolidated financial statements, assets and liabilities of a subsidiary are measured at the same

value as in its separate financial statements. In other words, the fact that the parent company processes its opening balance sheet under different rules does not change the measurement of assets and liabilities in a subsidiary.

3.3 Mandatory Exceptions to Other Standards during First Application of IFRSs

During the preparatory phases of transition to IFRSs, the management of accounting entity makes decisions about accounting methods and measurement bases that will be used in the future. This phase is of great importance because IASs/IFRSs allow change in accounting methods only retrospectively. Of course, there are exceptions when, on the other hand, IFRS 1 excludes the retrospective application.

3.3.1 Estimates

If an accounting entity is, in connection with the transition to IFRSs, required to make estimates that were not necessary according to the previous rules, these estimates must take into account information and circumstances that existed on the balance sheet date. If the accounting entity uses the same estimation method even on the date of transition to IFRSs, then accuracy improvement of the estimation that occurred after the balance sheet date is considered to be an event not adjusting financial statements under IAS 10 - Events after the Reporting Period.

3.3.2 Financial Assets and Liabilities

Reverse application of IAS 39 - Financial instruments: Recognition and Measurement is not allowed for all financial assets and liabilities of non-derivative character. On the contrary, all the derivatives held on the date of transition to IFRSs are to be recognized in the balance sheet.

3.3.3 Hedging Instruments

An accounting entity must measure all derivatives at fair value and eliminate all gains and losses arising from derivatives, previously reported as part of assets or liabilities. The opening balance sheet should not include such hedging instruments that are not consistent with the following standard: IAS 39 - Financial instruments: Recognition and Measurement.

3.4 Optional Exceptions to Other Standards during First Application of IFRSs

Apart from Conceptual Framework, IFRS 1 is a key standard for all companies for which bookkeeping under IFRS becomes legal obligation. IFRS 1 primarily requires accounting entities to compile financial statements in accordance with all applicable standards, which represents their retrospective use as currently amended in order to comply with all requirements of other standards. In the previous points, there were mentioned examples of some mandatory exceptions to retrospective application. However, there are optional exemptions, for example business combinations, non-current assets measurement, cumulative exchange differences and employee benefits.

3.4.1 Business Combinations

Business combinations (mergers, acquisitions, etc.) that were established prior to the date of first IFRS adoption do not need to be reprocessed. This option essentially eliminates the obligation of retrospective application of IFRS 3 - Business Combinations. Nevertheless, if the accounting entity decides to use IFRS 3 retrospectively, then it has to be applied in all cases related to corporate combinations. If the accounting entity uses this exemption, then the entity agrees to include in the opening balance sheet only those assets and liabilities that meet a definition of the relevant standard.

3.4.2 Non-current Assets Measurement

It is a case of fixed assets such as lands, buildings, equipment, investments in real estate and intangible assets that meet parameters of the IAS 38. The accounting entity may measure these items of property at fair value, which is then considered as the default measurement of the cost model. Another possible approach to measurement is called deemed cost, which represent a surrogate for costs or depreciations at a given date. The deemed cost represents in IFRSs a simplifying concept of fixed assets measurement during the first-time adoption of IFRSs.

3.4.3 Cumulative Exchange Differences

IAS 21 - The Effects of Changes in Foreign Exchange Rates requires that certain exchange differences are recognized as part of equity and it is on the date of disposal of the accounting entity abroad when they are transferred to the profit and loss statement. Nevertheless, the accounting entity need not quantify these differences during first-time application of IFRSs. You can do so provided that their value is zero and therefore does not affect gain or loss during eventual disposal of foreign operation.

3.4.4 Employee Benefits

As for this area, differences are allowed, or rather gains and losses in the extent of insurance recalculations, which means that they may be recognized in accordance with former regulations and not according to the IFRSs. However, when using this exemption, the approach has to be applied to all defined benefit plans.

4. Conclusion

Many accounting entities that are considering the transition to IFRSs have a misconception that the transition to IFRSs is a mere formal administrative act, which implementation does not require a great deal of time and work effort. However, the reverse is true and accounting entities that are preparing for the first transition to IFRSs must devote time and considerable financial means to this process. Companies that are obligated to adopt IFRSs for the first time, delegate this task to external company, for example, an audit firm from "the Big Four". Despite these necessarily incurred costs it is highly probable that the conversion to IFRSs will benefit the company in the future. IFRS implementation will improve competitiveness and will help companies to improve their position; for the foreign users the company

will be more transparent and comparable with other entities. It is assumed that if the global process of harmonisation continues at the current pace, its logical outcome will be an obligation of implementation even for companies that are not issuers of securities registered on a regulated market of securities in any EU member state. The question only remains in how much time this situation occurs.

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Role of Public Administration and Public Services in the European Administrative Area

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Abstract

The system of managing public administration, ways of ensuring and financing of public services varies across EU countries considerably. There are two leading tendencies and roles of public administration in ensuring public services. In particular, the first is Europeanization, i.e. a fluent transition from national frame of services in the general interest to harmonization and definition of these services in the context of common interests of the EU. The second is currently a separate organisation of services at national levels in EU countries. This paper focuses on the role of public administration in ensuring public services in EU countries and on public expenditure in accordance with the Classification of the functions of the government. The Application part provides a comparison of EU countries by means of cluster analysis in accordance with socioeconomic indicators, and public expenditure in selected areas of public services in EU countries.

Keywords: *Cluster analysis, European administrative area, European Union, Public administration, Public services*

JEL Classification: *H75, H79, H83*

1. Introduction

The European Union, being an integration grouping elevating principles of cohesion, solidarity and cooperation, determines the development of member states through various instruments of higher or lesser binding. It also grants the governments a certain deal of autonomy, which stems from the fact that it respects national specifications, associated with historical development, traditions and political background. In the European administrative area, the position of public administration is based on assumptions necessary for its proper functioning. That is the reliability of public administration systems, the accord and convergence of national and European administrative policies, contributing to the Europeanization of national public administrations of the EU member states (Borzal and Panke, 2010; Onofrei and Lupu, 2010; Rosenbloom et al., 2009; Vlček, 2010).

However, the process of globalization and international integration brings about a new view on the role of the states not only in terms of public administration, but also their responsibility for the development of the area and ensuring public services. Organisations providing services comprise around 70% of the GDP in developed

countries, and the share is constantly growing. From this perspective, services can be said to be the motor of economic growth. Services represent a significant part of modern national economics. Their division, based on the understanding stated in the Directive of the European Parliament and Council 2006/123/ES on services in internal market, differentiates between liberalized services and services in the public interest (Věstník EU [online], 2006). The essence of public services in the EU (in the public interest), which include services in both economic and non-economic interest, is a complex one, evolving constantly. Various authors deal with public services, their extent, organization and financing (Aaberge et al., 2010; Demmke, 2007; Nistor, 2011). This contribution aims to evaluate the position of public services and the role of public administration in ensuring public services in EU countries. What plays a significant role in financing public services are public expenditure. This paper focuses on comparison of public expenditure in selected areas of public services (social protection, health care, education) over the period 2007–2011 in EU countries using the method of cluster analysis.

2. EU Countries and the Role of Public Administration in Connection with Public Services

Due to reforms, services in the general economic interest undergo Europeanization, which can be observed through widening and deepening of understanding of these services. The amount of branches regarded as services of public economic interest, to which the rules of competition and internal EU market apply, thus fulfilling the targets of the EU, is rising constantly.

Two seemingly contradictory tendencies can be observed in the European administrative area. In all member states main trends and roles of public administration when ensuring public services can be traced. Gradual unification and approaching towards **Europeanization**, or globalization, take place, which can be grasped as a progressive transition from traditional national frames to harmonization of public services in economic interest (e.g. mail services, telecommunication, water supply, electricity, transportation). The second tendency is based on **maintaining traditional organization of some public services** and maintaining differences on national and/or local levels, corresponding with traditional and already existing institutions of the respective countries. This tendency is generally kept in public services in non-economic interest, such as education, culture or some elements of health care (Ceep [online], 2010; Epsu [online], 2010; Kraft and Kraftová, 2012; Oplotnik et al., 2011). These two trends are intertwined, it is, however, a gradual process in which the joint bases in the role of public administration in the respective countries at all levels (national, regional and local) have been defined only. Division of tasks and authorities between the EU and its member states leads to a common responsibility of the EU and public institutions in the member states. Nevertheless, the member states are still responsible for a detailed definition of the services to be supplied and the supplies themselves. Joint responsibility of the EU and its member states requires defining, financing and monitoring of services in public interest by national, regional and local authorities of public administration.

Approach of the EU is based on a number of principles, forming the joint frame of all member states with respect to public services (Demmke, 2007; Nistor, 2011). They are mainly concerned with: 1) **enabling institutions of public administration to work close to citizens** in order to organize and regulate public services as close to citizens as possible, abiding by the subsidiarity principle; 2) **achieving goals of public services in competitive open markets** bearing in mind that this is compatible with production of top-quality, public services, approachable and affordable. The terms and conditions also have to be attractive enough to sustain the levels of long-term investments to the providers. The quality and ensuring of services constitute economic costs for the whole society and should be thus sufficiently and adequately balanced by expected incomes; 3) **ensuring rights for consumers and users of public services**, including special programmes for individuals with low income. This principle requires public administration in each member state to ensure independent regulators with clearly defined authorities and duties (sanctions, enforcement), including monitoring of development reached in a specific service in general interest and providing data for evaluation purposes; 4) **respecting the variety of services** and situations, as differences between various services, and needs and preferences of users and consumers are a positive aspect since they stem from different economic, social, geographic or cultural situations. It is also vital to emphasize that the individual nature of some social and medical services leads to requests that are significantly different from requests for services provided by network and industrial sectors.

The extent of public services differs depending on the needs of the society in the respective countries. Ensuring public services is, at the same time, set in line with the subsidiarity principle among European, national and local levels. EU institutions have defined the basic principles of public services (in general interest) they recommend to all member states. That is mainly the principle of equality, continuity of services, universality, quality, procedure of complaints and appeals, accord with the subsidiarity principle and technological changes and new needs.

2.1 Methods

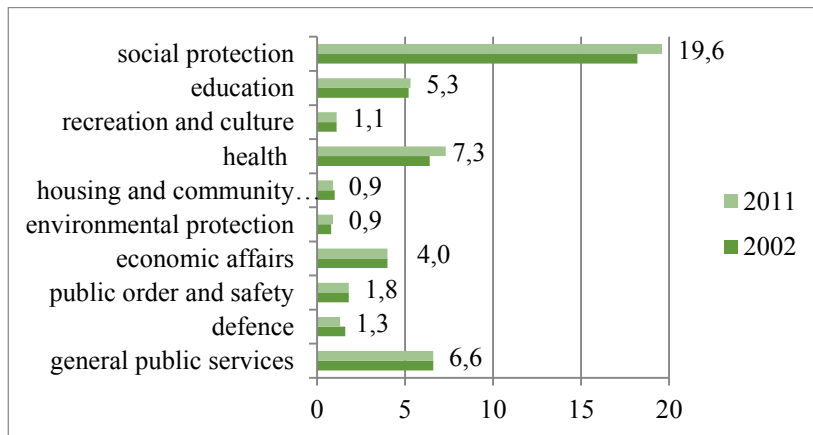
When elaborating this paper, analytical methods were applied that are used in the examination of the professional literature, of the statistical data and EU documentation focused on the structure of public expenditure in the EU. From the general scientific methods were then used method of induction and method of deduction, especially when drawing conclusions. For comparison of general government expenditure (on social protection, health and education) in EU countries for the period 2007–2011 was applied hierarchical cluster analysis where there were created three clusters of countries (27). Cluster analysis is a multidimensional statistical method used to classify the objects. Individual steps of the cluster analysis differ depending on how the “closeness” or “distance” of the units is perceived within the groups, also depending whether the set of units is gradually divided, separated or conversely composed, connected according to selected criteria (Everitt et al., 2011). A diagram used to show the individual steps of the cluster analysis is called Dendrogram. The vertical axis helps to find the required rate of clustering.

The horizontal axis represents the distance between individual clusters. Dendrogram shows in a graphic way the process of the whole analysis and thus the results can be viewed in both directions – forward and backward and thus the optimal result can be found. In this example, the method of hierarchical cluster analysis with the use of Ward’s method and of measuring distance quadrants was used. A box plot has been created to compare general government expenditure in EU countries. The upper and lower quartile defines the extent of the variables observed (general government expenditure on social protection, health and education). The median is shown in the box. The statistical data from (Eurostat [online], 2013) and (Dexia-Cemr [online], 2012) have been made use of, using the software IBM SPSS Statistics 20.

3. Comparison of General Government Expenditure in EU Countries in Selected Areas of Public Services – Output and Discussion

The extent of public services and their ensuring are closely connected with each country’s financial abilities, which are one of the main factors for their development. There is no single concept for financing public services by public administration in the EU. A significant role here is played by public expenditure. The crucial problem is defining the volume of public expenditure, their structure, what should they be expended on, on which needs with respect to available sources of financing and budgets of government levels in EU countries (Freysson and Wahrig, 2013; Halásková and Halásková, 2013). Comparison of general government expenditure in the EU according to their function in the years 2002 and 2011 (% of the GDP) are provided in Figure 1.

Figure 1: Comparison of General Government Expenditure by Function (Services) in the EU (27) (% of GDP)



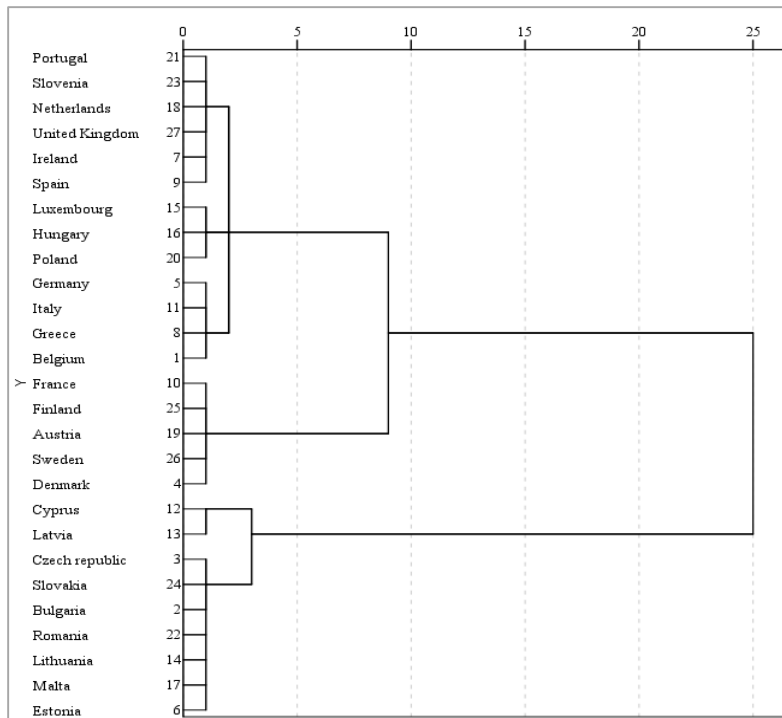
Source: own elaboration according to Eurostat [online], 2013

For a more exact classification of public expenditure from the functional point of view, the Classification of the functions of the government (COFOG), important for international comparison of policies on expenditure, which helps to overcome

organisational and methodological differences, is used. According to functional classification COFOG we can classify the public services in the form of ten categories (general public services, defence, public order and safety, environmental protection economic affairs, housing and community amenities, health, recreation, culture and religion, education, social protection) that represent the functional areas of the government (Eurostat [online], 2013).

For the sake of comparison of the EU states according to their public expenditure on national level over the years 2007–2011, general government expenditure on social protection (% of GDP), general government expenditure on health (% of GDP) and general government expenditure on education (% of GDP) have been selected (using the method of hierarchical cluster analysis). These three areas of services have play a significant role in the European administrative area and a larger share of public expenditure is allocated to these compared to other public services in the EU. The output of the hierarchical cluster analysis are three clusters of EU countries (27) which are least similar from the point of internal similarity (figure 2).

Figure 2: Dendrogram of EU Countries According to Public Expenditure on Selected Areas of Public Services



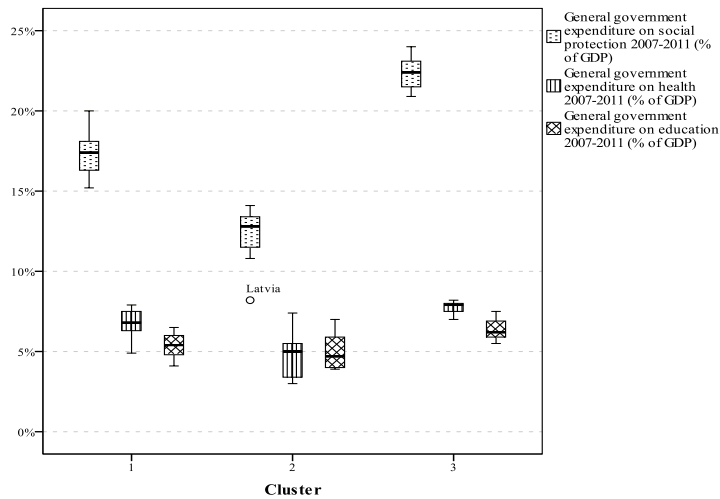
Source: own elaboration according to SPSS

The **first cluster** comprises Belgium, Germany, Ireland, Greece, Spain, Italy, Luxembourg, Hungary, Netherlands, Poland, Portugal, Slovenia, United Kingdom; **the second cluster** Bulgaria, Czech Republic, Estonia, Cyprus, Latvia, Lithuania,

Malta, Romania, Slovakia. **The third cluster** is characterized by Denmark, France, Austria, Finland, Sweden. Differences among EU countries can be traced from the dendrogram using hierarchical clustering in Figure 2. It shows that the larger average distances on the x axis are, the less similar are the countries. As can be spotted, EU countries in the first cluster are most similar in their public expenditure allocated to social protection, health care and education: Belgium, Greece, Italy and Germany; also Poland, Hungary and Luxembourg share this similarity. Next group of similar countries comprises Portugal, Slovenia, the Netherlands, the United Kingdom, Ireland and Spain. In the second cluster, the most similar countries are the Czech Republic, Slovakia, Bulgaria, Romania, Lithuania, Malta, Estonia and the pair of countries of Cyprus and Latvia. The third cluster consists of Denmark, France, Austria, Finland and Sweden. All these countries have similar general government expenditure on health care, social protection and education.

Figure 3 (a box plot) divides the results of selected general government expenditure over the years 2007–2011 in EU countries into three clusters.

Figure 3: Box Plot of EU Countries According to Selected Public Expenditure



Source: own elaboration according to SPSS

The highest median is in expenditure on social protection in all three clusters of the EU countries. In the first cluster, the median of general government expenditure on social protection is around 17% of the GDP (highest expenditure are in Belgium: 19%, lowest in Ireland: 15%). In the second cluster, the median of general government expenditure on social protection is about 12% of the GDP (the remote value is general government expenditure in Latvia, just 8.2%, as opposed to the highest expenditure in Malta: 14.1%). In the third cluster, the value of the median of general government expenditure on social protection reaches around 23% of GDP (the highest expenditure in Denmark: 24%, the lowest in Austria: 20.9%). General government expenditure on health in EU countries fails to show significant vicissitudes. The median values range from 5–7% of GDP. The highest general government expenditure on health

is observed in countries in the third cluster, the lowest in countries in the second cluster. In the first, second, and third cluster, the Netherlands, the Czech Republic and Denmark have the highest expenditure (7.9%, 7.4% and 8.2% of GDP, respectively). By contrast, the lowest expenditure is in Poland and Luxembourg, Latvia and Austria, with 4.9%, 3% and 5.5% of GDP, respectively. General government expenditures on education over the period 2007–2011 are quite balanced in across EU member states in all clusters, ranging from 5–6% of GDP. The highest expenditure is in Denmark: 7.5% of GDP (third cluster), the lowest in Romania (second cluster) and Slovenia (first cluster): around 4% of GDP. Figure 3 made it clear that from the compared general government expenditures, the most varied are present in the third cluster, with the highest general government expenditure on social protection (approximately 23% of GDP) and the lowest general government expenditure on education (approximately 6% of GDP). By contrast, the most balanced distribution of selected general government expenditures on health, social protection and education are present in countries in the second cluster.

The outcome of the hierarchical cluster analysis is that the EU countries (27) can be divided into three clusters, based on their similarity of general government expenditure on social protection, health and education over the years 2007–2011 (Eurostat [online], 2013). In the first cluster of EU countries, the highest sum of public expenditure (social protection, health and education) is in Belgium (around 32.4% of GDP), and the lowest general government expenditure on these public services is in Spain and Poland (26.6% of GDP). The highest sum of public expenditure (social protection, health and education) is in the Czech Republic (25.3% of GDP), the lowest in Latvia (15.6% of GDP). Regarding their total general government expenditure, all countries of this cluster are below the EU average, which is connected with the level of assessed categories of public expenditure on the observed public services. EU countries of the third cluster show the highest general government expenditure as the sum of all items (social protection, health and education) in comparison with other EU countries. The highest general government expenditure is in Denmark (around 40% of GDP), and the lowest general government expenditure on these services is in Austria (34.3% of GDP). Countries in the third cluster find themselves more markedly above the EU average with their total general government expenditure over the years 2007–2011 than other countries.

Based on the comparison of general government expenditure, it can be said that the representatives of the third cluster have the highest general government expenditures in EU countries (27) over the period 2007–2011, as the sum of three items of public services (social protection, health and education), i.e. Scandinavian countries and France (between 36–40% of GDP). By contrast, the lowest items of these expenditures are observed in the countries of the second cluster: Latvia (15.6% of GDP), Bulgaria and Romania (less than 20% of GDP).

A number of analyses and studies deal with public services in the EU countries and their financing (Demmke, 2007; Epsu [online], 2010; Mikušová Meričková and Nemeč, 2013; Nistor, 2011; Žárska, 2013). Some questions, however, remain opened when comparing public expenditure on public services. When it comes to the extent of

expenses on public services in EU countries, some factors need to be taken into consideration that influence their quality, extent and ways of ensuring public services on European, national and local level. What needs to be considered mainly are the differences in EU countries from the socio-economic perspective (e.g. population, area, administrative-territorial organization, GDP per capita, standards of living). This can be a topic for further research.

4. Conclusion

Shared responsibility of the EU and its member states requires that national, regional and local authorities of public administration define, finance and monitor public services (services in general interest). Ensuring public services is then accorded with the subsidiarity principle among the European, national and local levels. Two seemingly contradictory tendencies can be observed in the European administrative area. Gradual unification and approaching towards Europeanization, or globalization, take place, which can be grasped as a progressive transition from traditional national frames to harmonization of public services. The second tendency is yet separate organization of services on national, or more precisely local levels in all respective countries. The question remains, however, to what extent may Europeanization take over in public services. Coordination principles in terms of the EU are being implemented, mainly in the area of social protection, where equal conditions for ensuring this service for all individuals moving across the EU countries are being addressed. However, at the European level, there is pressure put on services in general economic interest to promote liberalization, mainly in network areas (energetics, transportation, mail, telecommunication). At the same time, a discussion arises about the optimality of the development strategy of services in general economic interest, or rather the extent and form of liberalization of these services.

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New Form of the Common Agricultural Policy of the European Union After 2014

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Abstract

The common agricultural policy of the European Union (EU CAP) currently spends nearly 50% of the budget of the European Union (EU). This is the reason for the adoption of such measures, which aim to achieve efficiency of financial instruments the EU's CAP. Another reason is the EU's CAP reform in order to meet the objectives of the CAP, which were set at the start of the CAP. The fact is that these objectives have been modified with respect to changes in political and economic conditions in Europe and the rest of the world. The new form of EU CAP should bring the following objectives with emphasis on effective use of funds from the EU budget. The aim of this paper is to analyze financial instruments and measures of the new form of EU CAP for 2014 - 2020. The contribution is focused mainly on measures against young farmers intended to increase their financial support. The contribution is focused on further measures in relation to the new EU member countries, including Slovakia, which were removed prior discriminatory measures against them.

Keywords: *Common Agricultural Policy, European Union budget, Financial support, Funding, Young farmers*

JEL Classification: *J43, Q10, Q12, Q14, Q18*

1. Introduction

With high expectations the European Union Member States were watching the development of ongoing discussions, intensive negotiations and subsequent final shape of so called the new Common Agricultural Policy of the European Union (EU CAP), which lasted almost three years. As Kordoš (2012) argues the EU CAP along with the EU Common Trade policy plays very important role in the EU-US economic relations in terms of Free trade and investment partnership in such problems like banana war and other agricultural issues (Kordoš, 2012). The main discussed topics, lasting in the period from April 2010, were the questions whether the Common Agricultural Policy is even necessary and what the European Union citizens can expect from its existence. Other traditional topics were such as the high financial demand of the EU CAP on the EU budget along with the need to reform the instruments giving effect to EU CAP (Lipkova, 2011). Some economic analysts argue that the financial support for European farmers through the financial instruments should be restricted and should be terminated in some time (Kapsdorfer, 2014). They further argue that the subsidizing of agricultural and food products producers is against the idea of a single market and free movement of goods. The fact is that since the creation of the EU's CAP the initiators has been promoting its "non-market

instruments” support for farmers, with respect to the specific nature of agriculture and the low elasticity of agricultural and food commodities consumption.

The manifested solidarity of discussing experts, professional associations, stakeholders as well as ordinary citizens with the farmers of member states has been the surprising and accompanying feature. Despite this fact, the young people do not feel a connection to rural area as a source of their food and they are not aware of the wider role of farmers in society. The part of a new EU CAP shape is a project named “We care about our roots”, which explains to young people the irreplaceable role of agriculture in the context of the new CAP long-term challenges - food safety and self-sufficiency, environmental protection and rural development along with its sustainability.

EU agriculture faces many challenges arising from the economic crisis impacts: food safety within the production and distribution, price volatility impacts on farmers' incomes and prices for consumers and generally limited budgetary resources.

2. General Conditions of New EU CAP

In the context of all previous reforms the new EU CAP shape for the period 2014 - 2020 is evaluated comprehensively in cooperation with the European Commission (EC) and the European Parliament (EP). Within the ongoing debate some themes has been shaped where the dominated issue was the reduction of funds from the EU budget for the CAP, the discriminating subsidization for farmers in the new Member States and the safety of food and agricultural products. The rural development, improving conditions and the revival of rural economic development, which should lead to stop displacing of European rural areas, particularly in the new Member States, and the way how to improve conditions for farmers living in rural areas have also been the discussed issues. In the years of 2007 – 2011, the population density in rural areas has decreased by 0.1 % across all the EU Member States.(European Commission, Agricultural and rural development, 2014 [online]) In addition to discussing whether the original CAP objectives are being executed by means of the challenges of a new CAP shape, the questions such as the food safety and food availability for all of more than 500 million EU citizens, the competitiveness of European farmers, environmental health, relationships between all the food chain actors and maintaining of the European countryside diversity, have arisen.

The main CAP objective, at its inception in 1958, was to assure people of war-shattered Europe affordable food. This goal was already achieved in the 80's of the last century, when the then EU countries have become self-sufficient in most agricultural commodities (e.g. wheat, sugar, butter, meat). In the course of events the CAP, due to agricultural production intensification, has brought up the debate on the issues such as whether these foods are meeting the health requirements. Therefore, in new CAP the increasing reliable and wholesome food safety is emphasized. From this perspective, the redistribution of funds between farmers will be on fairer basis; this will involve especially the direct payments when the current system was considered as discriminatory. The new redistribution system takes into

account the various European traditions, farming practices, rural regions and economies. The CAP considers farmers to be the most important food chain element which is necessary to ensure the most favorable market prices for their production. By supporting the retail chains²⁹, there are created conditions for direct sale of agricultural production to the final consumer. By creating an emergency reserve, the farmers will be provided with protection against volatility - volatility of agricultural products trading prices affected by economic crisis, climate and weather changes and other unforeseen impacts.

2.1 EU CAP Challenges for Years of 2014 – 2020

The new form of CAP has been identified in three long-term challenges - **economic, environmental and territorial**. (European Commission, Overview of CAP reform 2014-2020, 2014, [online]) Economic challenge calls for achieving the food safety in terms of world agriculture globalization, ceasing of the agricultural productivity pace, reducing the impact of price fluctuations of agricultural products on world markets on farmers' incomes and increasing consumer prices, than reducing pressure on input prices of agricultural production and finally improving the farmers' position in food chain. Environmental challenge is supposed to protect water resources, soil and prevent habitats and biodiversity threats. Territorial challenge seeks to support rural areas facing economic, social and demographic problems as a result of rural depopulation and relocation or disturbance of enterprises in rural areas. To meet these challenges is possible through the CAP instruments restructuring by means of ensuring the agriculture competitiveness and sustainability in the long term prospective.

Within the long-term challenges, the EU will try to increase the competitiveness of agriculture the way that farmers by themselves should respond to the market changes in order to set their production decisions as a response to the market needs and not to which commodities are subsidized by CAP instruments. In the near future all restrictive production measures will be eliminated³⁰; some will be reformed. It is necessary to reduce the initial costs of agricultural production in order to ensure easier access to credits, to build up the cross-sector communities of manufacturers and their trade associations for the intention of contractual relations promotion as well as some exceptional measures such as exemption from the competition rules (to withdraw some commodities from the market). This should create the tools to form common organizations and associations on the market, a joint team of producers, which would establish their stronger position in the food chain. Clear product differentiation, their identification on market, high-quality marketing projects and their executing on farms - are the examples of tools that will be supported by the new CAP.

The agriculture sustainability - is one of the new EU CAP form challenges. In terms of this approach the agricultural production methods should improve

²⁹ read: commercial structures of producer organizations

³⁰ In 2015 so called milk quotas will be abolished, in 2018 the quotas for sugar production will be abolished.

the environmental impact. The accountability is partly transferred to the farmers in the way that they should adopt a set of solutions designed to be able to protect the production from weather extremes, greater resistance against floods, drought and fire.

Within this group of measures the EU will spend additional funds on the research in this area, which should result in higher food production at lower production costs, however all organic production processes must be met. The link between educational and scientific-research establishments on one hand and agro-food producers and the farmers on the other hand is supposed to be strengthened by those implemented measures.

3. EU CAP Financial Tools for Years 2014 – 2020

3.1 I. and II. Pillars of EU CAP Financing

The fundamental structure of financial support under the EU CAP will again consist of I. and II. Pillars. Financial supports for the agricultural production and markets organization of agricultural commodities will be provided by means of the I. pillar. Rural development will be supported through the II. pillar. The radical change in the next CAP direction will be demonstrated in the expenditure reduction on its implementation, which has been the most radical step since 1992, within the support orientation to producers and environmental protection. While in 1992 financial support for the markets organization consisted of more than 90% for export promotion and interventionist purchases, in 2013 it was only 5%. Direct payments, making the 94%, will become the main source of support. (European Commission, Overview of CAP reform 2014-2020 2014, [online]) Also, the allocation for the support linked to production, for the direct supporting, support for young or small farmers will depend on decisions made by Member States.

After the year of 2013 the new model will support greater flexibility between the two pillars, which in practice means the possibility of transferring the unspent funds from one pillar to another one. The proportion between pillars may be changed in the way that up to 15 % of national expenditure may be moved from one pillar to another, it means that 10 % of funds for direct payments can be transferred from the first Pillar to the second one. On the other hand from the second Pillar can be moved 5 % of funds, if the direct support of the Member State is amounted to less than 90 % of the EU-28 average. (European Commission, Agricultural statistics and indicators, 2014[online]) These alternatives allow particular Member States to direct supports at their specific national priorities. Overall, there is EUR 362787 bill. EUR allocated from the EU budget for agriculture in the financial framework for the years of 2014 - 2020. From that sum of money the 277851 bill. EUR is intended for the first Pillar as direct payments and market supports and 84936 bill. ³¹EUR is intended for the second Pillar. These costs are the total of 37.8 % of the total EU budget

³¹ based on the prices in 2011

for the years of 2014 -2020, which implies that an ambitious plan should succeed - namely to reduce the relative costs of the EU CAP. The costs reduction within the I. Pillar was executed about 1,8 % and under the II. Pillar about 7,6 %. (European Commission, Overview of CAP reform 2014-2020, 2014, [online]) The new CAP emphasizes the common delivery principle of the public and private goods, which will become the heart of the policy. Farmers should be remunerated for the services they provide to the vast population for the care of the landscape, soil, biodiversity and the environment, even if they have no market value. Both Pillars are designed to offer integrated, targeted, effective as well as additional financial support to the EU Member States farmers. The I. Pillar measures should be more forthright and along with the support of the II. Pillar they should be directed regionally to meet all the three CAP challenges after the year of 2013. Within them, there are recognized regional, geographical, environmental, socio-economic opportunities and needs for the EU farmers. This internal flexibility within the first and second pillars must be expressly limited by external regulatory and budgetary measures of the EU Member States national governments. They are not only clearly responsible for the compliance with support principles for their farmers, but also for institutional and administrative burden of the future beneficiaries while applying these measures.

Within the II. Pillar, the competitiveness of agriculture should be achieved by means of the supporting measures for young farmers, science and practice cooperation measures, projects innovation and highly developed advisory system for farmers. Particularly innovation should have the impact on the primary cost reduction regarding the food production.

3.2 Direct Payments New Design

In direct payments the discrimination of the new Member States against the EU-15 has been eliminated by reducing disparities, which will increase the legitimacy and credibility of the direct payments system. By progressive elimination of historical principle regarding the direct payments amount determination, the minimum national direct payments per hectare in all Member States will be established by 2020. The historical principle that established the levels of direct payments for new Member States has always had from the beginning the implemented discriminatory approach regarding the inappropriateness of the reference period establishment. Thus in the future national governments will be able to subsidize their farmers without compromising, so called capping, of their national budgets. This restriction will not be removed immediately, but gradually, this limitation will be decreasing. It is in the most buzzed topic - so called capping – where the new Member States were successful when the ceiling support for farmers in their own national budgets was increased from projected 3,5% to the current 6 %. Preserving the digressive direct payments for large companies has remained unchanged, which is criticized by those Member States where there are the large long-term agricultural and food units.

The specific part of the new EU CAP are the measures designed to increase the number of farmers in Europe, especially young farmers, i.e. young people at the age of 40 years. Because of the nearly 25% youth unemployment in most EU Member States, this measure may be considered as a measure to facilitate social

inclusion of young people not only farmers, but generally young unemployed. These measures will be directed to young novice farmers, who may request the particular support increase by up to 25%. (European Commission, Multiannual financial framework 2014-2020 and the financing the CAP, 2014 [online]) These helping tools will be set by a number of conditions, beside the physical age of 40 years, such as: the applicants may just be the one who make the agriculture business for the first time, a business plan submission and the education or experience in the industry evidence.

Attention will also be drawn to other agriculture functions in rural areas, such as the agriculture multi-functionality recovery - particularly tourism and other non-productive farming areas like traditional methods food processing. The new CAP will also provide increased support forthrightness, that means the financial support will be given directly to farmers and not, for example, to lessee of land, which was one of the most discussing issues. The support for small producers will be also increased, which should remove the very disputable issue that 80% of aid is directed only to 20% of farmers. These measures are necessary to protect farmers and boost rural areas. The new CAP measures are positive for "small" farmers, because the direct payments may be increased by up to 10%, maximally 1 250 EUR per hectare of cultivated land (European Commission, Legal proposals for the CAP after 2013, 2014[online]).

All these measures are part of the direct payments new design, which includes mandatory instruments and voluntary instruments. The required ones are designed for all the EU countries, the voluntary ones are intended for selected EU countries, for example measures focused on disadvantaged areas, small farms are mandatory for all EU countries, but the farmer can choose by what means he wants to be subsidized.

3.3 Green EU CAP New Architecture

Each farmer must meet the primary environmental requirements and obligations (cross-compliance) to be able to apply for additional financial support instruments. Since 2015, a new tool under the I. Pillar "Green direct payments" has been introduced. It represents 30% of direct payments to EU Member States, which are intended to maintain permanent grassland, organic farming and crops diversification. Within the II. Pillar, it is possible to route 30% of funding for measures relating to climate protection and other beneficial measures to protect the environment, those are the optional measures. (European Commission, Agricultural and Rural development,2014,[online])They can be implemented to support areas with natural constraints areas designated as Natura 2000, in forest areas and investments that will be used to maintain and strengthen the environmental measures.

This whole set to promote the compliance with environmental requirements is completed by the financial instruments designated for education and innovation activities and applied research. The Green CAP complex architecture is based on the optional compliance with environmental measures; where farmer can obtain cumulative environmental benefits. It is imperative that the system operates under the supervision of the farm advisory system. As a follow-up to the primary new CAP objective – the self-sufficiency achieving in the production of affordable and healthy

food – a new form of CAP will bring up the green agriculture, while maintaining a healthy life climate through increased financial support under direct payments.

The long-term problem for the EU Member States farmers was their lack of protection from the crisis situation consequences - the economic or the climate ones. The current CAP system provides measures that create a safety net for potential threats associated with market distortions, through the measures being financed by the I. and II. Pillars. Crisis management in the CAP expenditure earmarked 400 million EUR per year (European Commission, Overview of CAP reform 2014-2020, 2014[online]). Those resources will consist of unused direct payments from the Pillar I. The II. Pillar offers a set of tools for risk management, crop and livestock insurance and tools for income stabilization.

4. Conclusion

Inasmuch as the spending on the CAP has been reduced, it is necessary to head the individual aid in the way to be ensured that they will be implied directly, fairly and efficiently. Farmers actively involved in agricultural production, farmers respecting agro-environmental measures through direct green payments will be fully supported will be encouraged. Member States will be able to guide direct payments according to their specific needs and then it could be possible that the proportion of funding for individual programs can vary.

The Member States will keep carrying out the rural development through their rural development plans to be established for a period of seven years. Support tools can be summarized in the following areas: transmission of innovation support in agriculture, forestry and rural development; improving the agricultural competitiveness by technological innovation processes; the food chain organization promotion; the renewal, promotion and preservation of ecosystems; climate protection by efficient use of resources; social inclusion promotion; poverty alleviation and improving the economic standards in rural areas. The Member States will have to arrange that the rural development support will not be executed on account of financial support shifted from the first Pillar.

The new form of the EU CAP after 2013 is potentially the first systematic reform that is fundamentally changing the structure of financial support, forms, and simultaneously allowing some kind of flexibility degree within the both Pillars of CAP financial support. Farmers are entering into this process as active participants with some kind of market perception of the market situation with agricultural commodities. EU institutions and Member State governments are a head of the important decisions related to legislative measures in order to meet the objectives and challenges that the EU CAP has set for the 2014-2020 strategy. For these authorities the situation is complicated because the new CAP is a constituent of the new systems - transfers between the I. and the II. Pillars, the national basic payment schemes, supports to young and small farmers, the application of new environmental measures - a set of new measures is a long list. The task for national governments will be to find a suitable mechanism to ensure the competitiveness of agriculture and rural

sustainability in the long term perspective while maintaining the efficiency and effectiveness regarding the funding from the common EU budget. As the new EU CAP measures and their implementation tools have come into force from 1 January 2015, the EU institutions and national governments are a head of a number of legislative tasks because the new form of EU CAP will be implemented into practice by those regulations in individual member countries. It will be necessary that the entire implementation mechanism is to be prepared with care and with respect to a number of complicated mutual interconnections among the various regulations in order to achieve the efficiency in funding.

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Dromology and Globalization Antinomy

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Abstract

Post-industrial technologies changes currently not only societies but also international relations. Time and pace are not of decisive importance. Nowadays, modernization, development and adaptation in society are more and more linked mainly to dromocratic teletopy, i.e. the ability and readiness to get connected to networks. The process of modernization got a new and powerful impetus over the last decade. This impetus is increasing the speed of information translation (transfer). In short - speed. However inseparable from networks and metanetworks speed is that it can be studied relatively independently in a given context, as indicated by P. Virilio in his dromologic research. Dromologic research of "man's status in the world" shows that man – his perception, his language as well as his thinking is substantially changed by the speed of information translation. Virilio devoted a considerable part of his work to the changes of perception of reality. The following text aims at showing that economic and political dilemmas and conflicts overnight end up in a new element created by the speed of information transfer in networks.

Keywords: *Dromology, Logistic of perception, Speed, Technological devices, Teletopy*

JEL Classification: *A12*

1. Introduction

Man is constantly exposed to attacks of two dominant forces of the contemporary world, which organize and structure its logistic of perception: speed and technological devices. „The development of high technical speeds would thus result in the disappearance of consciousness as the direct perception of phenomena that inform us of our own existence. Cinema is not a seventh art but an art that combines all of the others: drawing, painting, architecture, music, but also mechanical, electrical works, etc. “(Virilio, 1991, p. 104). Dromological research by Paul Virilio present a critical analysis of the consequences for our perception and logistics caused by polar inertia, inertia of absolute speed. Speed changes the field of our perception because it transforms the habitual understanding of ontological characteristic of reality, i.e. time and space. „Speed treats vision like its basic element; with acceleration, to travel is like filming, not so much producing images as new mnemonic traces, unlikely, supernatural. In such a context death it can no longer be felt as mortal; it becomes, as in William Burroughs, a simple technical accident, the final separation of the sound from the picture track“(Virilio, 1991, p. 60). What is much more important for Virilio's concept of aesthetics of disappearance is the role of unconscious disappearing of objects from our field of perception, aesthetics of disappearing, one of the consequences of *dromology*, is based on studying cinematographic effects

coming from the area of art, film, television and video. „What is given to see is due to the phenomena of acceleration and deceleration in every respect identifiable with intensities of light“ (Virilio, 1991, p. 19).

Philosophic background of Virilio's theory is neither G. Marcel's French existentialism, nor postmodernism, which is unequivocally refused by Virilio, mainly as far as architecture is concerned; surprisingly it is phenomenology in M. Merleau-Ponty's interpretation. „Postmodernism is a notion that makes sense in architecture, through the work of Robert Venturi and so on. Since I am teaching architecture, to me, postmodernism is a suitcase word, a syncretism (Armitage, 2000, p. 25). Virilio summarizes his teacher and mentor Merleau-Ponty's influence on him as follows: “First of all, I was a pupil of Merleau-Ponty, of Jean Wahl and of Vladimir Jankelevitch, to name three French philosophers who were teaching at the Sorbone at that time. The one to which I felt most attracted was quite naturally Maurice Merleau-Ponty, and his Phenomenology of Perception. (Armitage, 2000, p. 28). Since the 1960s, Virilio has been continually interested in how acceleration, speed, increasing acceleration of technological innovations have been transforming the very framework within which our experiencing space and time has been rapidly changing. (Armitage, 2001, p. 104-105).

In many of his texts Virilio emphasises that speed is not a phenomenon, but a relation between phenomena. The difference between contemporary society and societies of the past consists in the fact that earlier speed used to be mainly connected with transport, now it concerns relations within information. “The question of speed is central. Speed and wealth go hand in hand. To give a philosophical definition of speed, we can say that it is not a phenomenon, but rather the relationship between phenomena. In other words, it is relativity itself. We can go even further and say that speed is a milieu. It doesn't just involve the time between two points, but a milieu that is provoked by a vehicle. This vehicle can be either metabolic, consider the role of chivalry in history, or technical, the role of ship in maritime conquest, railroads or transatlantic planes – and it governs societies. The horse influenced history with the great conquerors, while the navy influenced colonization. The navy is a type of speed. “Thus, for me, speed is milieu” (Virilio, 1999, pp. 13-14).

In the third chapter of the book *Polar Inertia*, Virilio again presents one of variations on the topic – what is speed as follows: “For if speed is not phenomenon, but only relation between phenomena (relativity itself), we might adapt Bernard de Clairvaux by stating that light is the name for shadow of absolute speed, or to be more precise, that the speed of rays of light is the name for the shadow of the speed of light of electro-magnetic waves. We would be led to conclude that speed is useful for seeing, but above all that it makes “light” visible even before the object (or phenomena) that it illuminates. This precisely is the dromosphere. Not so much expansion of the universe brought to light by the famous red shift in the spectrum, but a purely relativistic recognition, that it is speed which enlightens the universe of perceptible and measurable phenomena” (Virilio, 2000, p. 45). Concerning speed, in the book *Pure War* Virilio claims as follows: “Speed is the unknown side of politics, and has been since the beginning, this is nothing new. The wealth aspect

in politics was spotlighted a long time ago. One usually says that power is tied in with wealth. In my opinion, it's tied and foremost with speed. Wealth comes afterward. People forget the dromological dimension of power, its ability to inveigle, whether by taxes, conquest, etc. Every society is founded on a relation of speed. Every society is dromocratic" (Virilio, 1997, p. 57).

2. Speed and Politics

Virilio's influential book - *Vitesse et politique*, (Speed and Politics), analyses new problems resulting from the fact that the development of industrial capitalism has reached the stage in which wealth and power in society have been interconnected with ever increasing speed. In view of Virilio's statement that wealth is an aspect of speed (Virilio, 1999, p. 49), it has become necessary to consider speed and all its aspects and consequences through a prism of a new discipline – dromology. In an interview with J. Armitage, Virilio comments on this: "Dromology originates from the Greek word *dromos*. Hence dromology is the science of the ride, the journey, the drive, the way. To me this means that speed and riches are totally linked concepts. And that the history of the world is not only about the political economy of riches that is, wealth, money, capital, but also about political economy of speed. If time is money, as they say, then speed is power. You see it with velocity of the predators, of the cavalry, of railways, of ships and maritime power. So all my work has been about attempting to trace the dromocratic dimension of societies from ancient Greek to our present-day societies. All societies are pyramidal in nature. The higher speed belongs to the upper reaches of society, the slower to the bottom. The wealth pyramid is the replica of the velocity pyramid" (Armitage, 2000, p. 35).

Dromologic revolutions cause artificial acceleration of speed in the form of steam or combustion engine, or, nowadays, nuclear energy and they immediately form both e.g. waging wars and kinds of communication. Vehicles of speed create new tracks and nodal points (ports, roads, airports, telecommunications etc.) through which things, goods, money, weapons, people or information will start flowing within a different structure. A territory is space across which speed, technology, politics, economy and everyday life flow by means of vehicles of speed (transport, communication, etc.). Nowadays, both politics and the city are victims to nodal points through which transport of things and transfer of information flow (Virilio, 1986, p. 7). Polar inertia is called polar because its opposite is the initial acceleration. At the dawn of modern societies, in the world of natural space and time, criterions related to physical existence, the principles of acceleration and deceleration were valid. People, things as well as information could be transferred faster or more slowly, therefore it made sense to consider terms such as acceleration or deceleration. In the era of absolute speed, these terms lose their meaning entirely. It is no longer faster or more slowly, but always and at all times – absolutely fast. We have been condemned to stay in inertia of absolute speed. The statement that we are trapped in absolute speed of transfer and transport (e.g. of digital hypertext) must be supplemented with *the substitution* or transformation of our earlier, usual – natural criteria of experiencing time and space. Those have been replaced with criteria coming

from the new world of tele-inter-activity from the area of digital hypertext. „We have touched the absolute”, observes Virilio (Virilio 1995, p. 144). We live at the time when the mankind have reached its cosmologic speed limit. „Post-industrial technologies changes currently not only societies but also international relations. Time and space are not of decisive importance“(Gubová 2011, p. 169). One of the significant consequences is the fact that the way of communication and criteria coming from the environment of inertia of absolute speed overlap time and space experienced on everyday basis in such massive way that man becomes a tele-participant, he is not found anywhere in space and his naturally experienced time is overlapped by teletopia, the time of the particular moment. Spatial determination is disappearing due to high speed of information transfer and transport of objects, the time interval has been reduced to mere “now”. “We are now in the situation of the *substitution* of the direct perception related to the body in movement by the perception coming from the world of tele-inter-activity” (Virilio, 1995, p. 49).

We live in the epoch of direct substitution of clear perception by the perception coming from the media hypertext sphere. Therefore, the term substitution in Virilio's theory works in the same way as the expression simulakrum for Baudrillard. The substitute does not hide the truth about something, but it hides the fact that there is nothing. However, above all, the basic principle of Virilio's dromologic research is inadvertent movement of objects, located out of the reach of perception; the object can only be made perceivable, apparent and comprehensible on the basis of special operations. Virilio quotes Michelangelo: "They paint in Flanders to fool our external vision... the beguilements of the world have robbed me of the time accorded me to worship God“(Virilio, 1991, p. 36). Michelangelo perceived the power and role of illusion in art, pure imitation of nature or a concrete model disquieted him. Aesthetics of disappearing changes time into sequential and information blurs. It often happens that we are absent-mindedly “staring” into space. We call it blank moments or momentary escape of mind from the current “reality”. *Piknolepsia* (from the Greek *pykno*, frequent, plentiful), is one of the main terms in Virilio's aesthetics of disappearing. In the context of medicine, *piknolepsia* is children's paroxysmal disease manifested by rhythmic electric discharge in brain and quick arrival. Clinical symptoms include sudden stopping the activity in progress, usually without losing the previous attitude. The fits are often accompanied by rhythmic motion of eyelids or lips. Usual duration is 5-10 seconds. Several fits like that can happen daily.

Virilio does not consider *Piknolepsia* a disease; on the contrary, he views it as mass phenomenon of the contemporary period, as one of the main consequences of inertia of absolute speed. Virilio defines *piknolepsia* as “mass phenomenon” and describes the present-day postmodern subject, which is in constant fit of moderate epilepsy, as *piknoleptic*. The contemporary technological prosthetic devices (television, the Internet, computers, tablets, so called smart phones, etc.) result in information transfer by the terminal velocity of light, inertia of absolute speed. Therefore, the dominant form of contact is telepresentation (from the Greek *telé*-distant, *vize*-vision). „Like the war weapon launched at full speed at the visual target it's supposed to wipe out, the aim of cinema will be to provoke an effect of vertigo in the voyeur-traveller, the end being sought now is to give him the impression of being projected

into the image“(Virilio, 1991, p. 58). According to Virilio, telematic vehicles pervading the contemporary film industry function by creating illusion, artificial reality, and artificial day thus alter our own reality and our perception of what is real. “Film what doesn't exist, the Anglo-Saxon special effects masters still say, which is basically inexact: what they are filming certainly does exist, in one manner or another. It's the speed at which they film that doesn't exist, and is the pure invention of the cinematographic motor. Melies liked to joke, “The trick, intelligently applied, today allows us to make visible the supernatural, the imaginary, even the impossible“(Virilio, 1991, p. 15). Virilio works with the term optical clones denoting a number of images of contemporary man. In this way he points out that in the present-day society, man is not only the owner of his own body, but also of his image.

After piknolepsia subsides, man subconsciously resorts to using technological prosthetic devices, which are supposed to help him see the world like in the childhood. „The film industry will enter into crisis when it ends production of the false day, when it pretends to verisimilitude“(Virilio, 1991, p. 63). For example, a lot of photographers confirm that their photographs are result of craving for re-establishment of piknolepsia. „To produce prostheses of subliminal comfort is to produce simulators of day, even of the last day, metamorphosis of the objects of industrial production where the ensemble of economic realities would be the relay for the cinematic function“(Virilio, 1991, p. 73). The arrival of speed has also brought about irretrievable change in visual aspect of women, who started to adapt to the current society demands and technical progress. „The disappearance of the woman in the fatality of the technical object creates a new mass language, a faithful reflection of the fascist language of the old futurist elite of the beginning of the century, “the heat of a piece of iron or wood is, from now on, more exciting for us than a woman's smile or tears“... (Virilio, 1991, p. 91). The first notification was manifesting masculine features in woman's clothes. The less impression of a fragile creature a woman gave, the more desirable she was considered. A typical representative of this fashion era is indisputably Marlene Dietrich. Women lost their fatality while fighting speed. Men, former hunters, nowadays collectors of luxurious vehicles, exchange their ideal of femme fatale for fatally fast means of transport. Nowadays, according to Virilio, film production is confronted with decline caused by man's constant urge to travel. Film becomes a mere stage set as a substitution for landscape. One of the crisis manifestations is banality and triviality of topics. If a film depicts the same everydayness as advertising, it acquires the same value. Aestheticizing of tragic events is another manifestation of the decline of film. Television broadcast anesthetizes its audience showing it the horrors of war, holocaust or terrorist attacks, events thus becoming mere television programme. „The cinematic motor has accustomed us to finding the mystery of movement in this transitory world natural, to no longer wonder how acceleration of amorous gesture can suddenly become murderous, how the Pavan dance of a falling or propelled body can become fatal. At the same time this vulgarized violence of movement, revealed by the distortion of vision, shows us its inconsistency; the violence of speed dominates

the technical world but remains nevertheless, as in the time of the Sphinx, the basic enigma.“ (Virilio, 1991, p. 100).

3. Speed, Globalizations and Aesthetics of Disappearance

Globalism is currently still hegemonic paradigm aimed to find the political content of globalization, and it is usually ideology of economic liberalism in the international environment (Gubová, 2013, p. 114). The world is flooded with progress and development. What is invented now, at the particular moment, is obsolete in the next one. By means of the phenomenon of speed and disappearing, Virilio explains those peculiarities and shifts in human thinking and assessment. It is the speed that he “accuses” to be the carrier of power arousing the desire in people to get this power. Virilio quotes Rilke’s idea, “what happens is so far ahead of what we think, of our intentions, that we can never catch up with it and never really know its true appearance“ (Virilio, 1991, 19). Thus the speed becomes the core of aesthetics of disappearing. According to Virilio, the first “vehicle of speed” was a woman. In this context he already mentions that tragic nature of acceleration of exaggeratedly increasing speed. „Already, in *Speed and Politics*, I demonstrated how the modulation and manipulation of vectorial speeds (logistical police) were, in diverse military and revolutionary conflicts, the surest elements of mass cohesion in Europe and America. But at the same time I showed that the goal sought by power was less the invasion of territories, their occupation, than a sort of recapitulation of the world obtained by the ubiquity, the suddenness of military presence, a pure phenomenon of speed, a phenomenon on the way to the realization of its absolute essence“ (Virilio, 1991, p. 44). Even woman’s movement is finished with an inevitable integral accident. Virilio considers orgasm to be that fault/accident. Another vehicle of speed, immediately after woman, is a donkey, and later a car – due to its fast movement.

However, the reality gradually contracts and it is replaced by virtuality, which, however, expands at the expense of reality. It is life in virtual reality, movement in static vehicles that completely hinders the development of communication potential. Total energy of man and his natural quality to develop personality owing to personal contact is so limited that man finds himself in the state of inertia. „The to conquer is to advance of Frederick II. Alexander's great haste in plunging ahead, thinking only of finding a limit to the indefinite expansion of his force of penetration, but also the driver's glance thrown at the speedometer of a racing car or military vehicle, as an existential measure of the being of the warrior, the vertiginous flow of time — perpetual assaults on distance also endlessly reproduce the original rite-of-passage, a resume of the universe realized by the speed of the assault“ (Virilio, 1991, p. 87). In modern society, moral values, aesthetic standpoints and substantiations solving various social dilemmas and conflicts were linked both to real space and historical time. Space and time are basic ontological categories. Dromologic analysis considerably changes its content. It discovers their new dimension emerging thanks to the absolute speed of information translation. In other words, continuing modernization, which is according to Virilio one of the consequences of speed, constructs its new dimensions of space and time: dromologic teletopy and

dromospheric chronology. Surprisingly, it is possible to live, communicate, do business, become rich, love, acquire higher share in power and even wage war in these new dimensions of time and space. Another floor of society's life emerges. Nowadays, speed of development in society is more and more linked mainly to dromocratic teletopy, i.e. the ability and readiness to get connected. As Jean Baudrillard observed, the classical *esse est percipi* has been replaced by *to be is to be connected*. Not from a historically determined territory, but from anywhere wheresoever – and the last two expressions cannot be further specified. It is a new floor in what the Greek called *oikos*. Old floors have not disappeared, they are only inhabited in a different way and mainly – they will be inhabited in a different way and life will be different there. Wealth and power are an aspect of speed. The distribution of wealth and power, which, to a large extent, unfortunately also means the distribution of happiness and health, is increasingly subjected to chronopolitics based in dromocratic teletopy of networks. "

Virilio considers human body a "machine". „We haven't pondered enough on the basic causes of the generalized evolution of technology: miniaturization, reducing to nothing or next-to-nothing the size of every machine, is not only to furnish replacement parts to the organism by placing them on the scale of the human body, it is also to create inside the person a parasensory competition, a duplication of being in the world“(Virilio, 1994, p. 67). It is necessary to implant various programmes to man so that he could cope with this constant frustration. These include e.g. prepared “scientific” or “professional” programmes, fitness centres, books, magazines, etc. Completely natural thinking has been replaced by this programmed thinking. It is a case of certain “instant wisdom”. Only those who are able to resist “programmed” thinking can retain natural perceptiveness.

With the arrival of mass industrial production of speed (means of transport, the media...) we move more and more in the virtual world, thus moving away from the real world. Virilio puts it simply that “collective thinking established by various telematic vehicles aimed at destructing original perceptions”. „In 1934 Walter Benjamin interrogates this photographic object, incapable of registering a barracks or a pile of garbage without transforming them. Transforming everything objects about poverty, it's transformed it also into an object of pleasure" (Virilio, 1991, p. 47). In the world of mediated images heralded in the media, the original model loses its trustworthiness. Virilio thus points out frequently less visible negative impacts of the virtual sphere expansion. Loss of trust in “eye reality”, i.e. in what we can see with our own eyes and ever higher dependence on illusory view constructed by means of technological devices. As the author states, to hypnotize the masses, it is necessary to speak mainly to eyes. „Abel Gance loved quoting Napoleon: To magnetize masses, you must above all talk to their eyes," and he affirms that the future of the movies is a sun in each image“(Virilio, 1991, pp. 54-55). Virilio also ponders on how technology affects human conscience and sensory experience when conscience as direct perception of phenomena disappears due to high technical speed which destroys time and space. „We loved then those cartoons showing gracious little mythical characters, tearing themselves like cuttings from the paper sheet of the draftsman who created them, to haunt his apartment and perturb his work table, messing around in

their turn with his pens and pencils. This congruence of eye and motor controlled everything from then on, right up to the very d6"coupage of the script; a new truth of vision metamorphosed the rhythms of life itself"(Virilio, 1991, p. 59).

We find ourselves in a situation comparable to the time of our ancestors, when new railways tracks were built and railways were extended, when the migration routes were changing according to new diggings of fossil fuels and other raw materials, when urban agglomerations emerged around coking plants and ironworks. Nowadays, networks are extended and handling information is getting faster. Undoubtedly, it will have epoch-making importance for the process of transferring ethical standpoints, like the events of that time. Virilio's dromologic analyses need attentive and slow reading. The author's strong point is the ability to find relations among phenomena that are not seemingly related, Even if not all these connections can be considered relevant and convincing. Metaphors and discursive strategies presented by Virilio are indisputably elaborated and original. They reveal interesting parallels, thus enriching our social imagination. „In the last century we had already become aware of the paradox of speed. The train doesn't make voyagers of us but packages that are expedited... remarked Tolstoy. The hurried man of Morand ruminates. We need to find something even more idiotic to block the course of time completely, total abstention from all action. To say today that speed is obsolete is an untruth as obvious as that which consists in praising slowness"(Virilio, 1991, p. 104). Speed, we are still captured by speed.

4. Conclusion

At the beginning of human history, there was only slowness – slowness of life of agricultural society. Speed was created by people - merchants, soldiers, industrialists, scientists, engineers, computer scientists, bankers, etc. The present-day Identification with the speed may lead us to many different conclusions. The speed of our world is full of contradictions, the accelerated world conceals quite a few paradoxes. Most speed phenomena seem reasonable at first glance and usually it is actually the case. This applies particularly to those devices and equipment that we use every day - from cars and Velcro over Fast Food and email, to our computer and particle accelerators. Their formation is understood as a response to the clearly defined need, their further development as a useful improvement. In today's life, it is only speed that counts, and nothing else. The question how much speed one needs and what rate of acceleration is tolerable for the economy, society and environment, remains unanswered. Speed began to gain positive value in the late 19th century. Dromology by P. Virilio seeks to analyze the ways that were crucial for the development of speed. He asks how the principle of acceleration in Central and Western Europe arose and explains the origin and method of spreading "various triggers of speed". Virilio's theory shows the far-reaching extent to which the speed conquered all and everything over the centuries: transportation and production, peace and war, men and women, urban and rural areas, work and leisure time, arts and commerce. Virilio clearly shows us how the principle of acceleration of the word has taken root in professional and private

lives of individuals and societies in both good and bad sense, and how it has changed and continues changing our standards, values, perceptions and mentality.

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Convergence of the Slovak Republic Regions

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Abstract

The issue of regional disparities regarding their measurement and detection of regional competitiveness in the Slovak Republic has become an important topic in relation to process of economic transformation which also included European Union accession. The main aim of the paper is a contribution to the examination of convergence among regions in the Slovak Republic using different approaches and methodologies. To measure of convergence are selected data in years 2001, 2004, 2008, 2009 and 2012 (or 2010). Those years are selected with respect to the period of pre-accession negotiations with the EU, period of the EU accession, launching the currency – EURO and the last reporting period in the registers of the Statistical Office of the Slovak Republic. Following indicators will be analyzed: GDP, net money income of private households, number of enterprises, unemployment, employment, educational institutions infrastructure and expenditure on R&D. In this paper we use the application of the Gini coefficient, Coefficient of variation and Sigma convergence.

Keywords: *Coefficient of variation, Disparities, Gini coefficient, Region, Sigma convergence*

JEL Classification: *R11, O18, I20*

1. Introduction

The problem of regional economic convergence in the Slovak republic (SR) is dealt with academic, scientists and policy makers at national and regional level mainly in relation to accession to the European Union. While in European countries have regional research and regional policy long tradition (from the end of the 50th years of last century), in the SR are opportunities to build on previous achievements in the field of application of regional policy severely limited. This is given by historical evolution. As Kordoš (2012) stated the motor of European prosperity is trade. Europe is the world's largest exporter of manufactured goods and services which are produced in European regions. It is one of relevant reasons, why it is important to know the regional convergence and disparities. To know and make research of regional convergence is an essential for the promotion of regional development policies that would ensure harmonious economic development and competitiveness of regions, because the economic level of individual territorial administrative units – regions determines the economic level of the whole country. The main aim of this paper is twofold. On one hand, the paper conducts an assessment of regional convergence in Slovak regions. On the other hand, the paper has scientific contribution in the way that clarifies the concept frequently used methods for measuring of regional disparities need for the determination of regional convergence. The paper builds on a literature review of main theoretical and methodological concepts and original calculations.

2. Theoretical Background and Methodology

A large number of studies of the regional convergence were made in the EU already at the end of 50th year of last century: the relation between economic growth and convergence examined Solow (1956), convergence and divergence of homogeneous and heterogeneous countries examined Baumol (1986), the convergence hypothesis presented Barro, Sala i Martin (1991) and many others authors dealt with the issue of convergence. In the EU it was mainly in the context of enlargement - Armstrong (1995). Experts on regional development in the SR mainly focus on the measurement of regional disparities. According to Ivanová (2011) the issue of regional disparities is analysed by M. Buček, E. Žárska, M. Hamalová, J. Tvrdoň, P. Korec, V. Lauko, O. Bašovský, E. Rajčáková, Matlovič and many more. The issue of regional convergence in the SR was elaborated only by Gerulova, Kovac, Bucek (2010).

By the term “**convergence**” we understand region approximation over time in the value of a particular indicator. The opposite of convergence is divergence (drifting apart). This applies to a pair of regions. For more than two regions is more of a prevailing trend as a convergence (divergence). In cases the significantly seems out of the general trends, we talk as the disparities. Minařík, Borůvková, Vystrčil (2013)

Masárová and Koišová (2012) the concept of **regional disparities** construed as measurable differences in the development of bounded regions (units) characterized by a set of pre or later determined indicators of various types (social, economic, ecological), and it is possible to have data for a longer period of time.

For measuring of regional disparities a lot of methods exist that present interesting properties. Most of them used OECD, World Bank, EU and other institutions. Frequently used is Beta-convergence, Sigma-convergence, Gini index, the Coefficient of variation, Atkinson index, Theil index and many more. The choice of method depends on the purpose and scope of the examination. We can divide these methods into two groups: first methods (indices) for measuring of inequalities (concentration) between regions: Gini index, Theil index, Atkinson index and second - for measuring of convergence (Beta convergence, Sigma-convergence, Coefficient of variation). An evaluation of regional convergence level lies in the assessment of evolution of regional indicators that characterize disparities and subsequently determining whether these differences are reducing (convergence) or increasing (divergence). This paper examines convergence and disparities among regions of the Slovak republic using different approaches and methodologies. The calculation's part of the paper is based on methodologies used by: Habanik, Hostak, Kutik (2013), Monfort (2008) who used for assessing the degree of regional inequalities the Gini index, Kulháněk (2012), Minařík, Borůvková, Vystrčil (2013) who used for assessing the degree of regional disparities the measure of convergence (Sigma convergence), Huang and Leung (2009), who used for measure of inequalities the Coefficient of variation. In the analysis of regional disparities Grmanová (2012) points out the necessity of using the indicators that are measurable; they characteristics are uniform and represent the studied phenomenon. In this paper was selected indicators GDP, net money income of households, number of enterprises, unemployment and employment, educational institutions infrastructure and expenditure on R&D. The analysis through Gini

coefficient is used only for indicators: regional GDP per capita and net money income of households, from the reason, that Gini index is a numerical characteristic of concentration. Sigma convergence and Coefficient of variation in this article is used for the rest of indicators.

Gini index is one of the widely used measures of regional disparities. Consistent with the Habanik, Hostak, Kutik (2013) who used the OECD methodology unweighted Gini index is defined as:

$$\text{GINI} = \frac{2}{N-1} \sum_{i=1}^{N-1} |Fi - Qi| = \frac{2}{N-1} \sum_{i=1}^{N-1} \left| \left(\frac{i}{N} \right) - \left(\sum_{j=1}^i y_j / \sum_{i=1}^n y_i \right) \right| \quad (1)$$

Where: N is the number of regions, y_i is the value of variable y in region j . The index ranges between 0 (perfect equality: y is the same in all regions) and 1 (perfect inequality: y is nil in all region except one).

Sigma-convergence (SD) simply refers to a reduction of disparities among regions in time. (Monfort, 2008) The methodical procedure for calculation of sigma convergence is: a) the data collection from different regions and time periods and calculation of their logarithm, b) calculation the standard deviation from logarithmic data, c) conclusion. Conclusion includes three possibilities: 1. if the standard deviation of the logarithms of the values decreases, there is the convergence between regions in the values of the evaluated variables, 2. if the standard deviation over time shows an upward trend, the divergence occurs, 3. if the standard deviation oscillates around a constant value – variability is approximately constant in time, there is no convergence or divergence. The formula of standard deviation according to Grmanová (2006):

$$SD = \sqrt{\left(\sum_{k=1}^m (x_k - \bar{x})^2 n_k \right) / (n-1)} \quad (2)$$

Where: k is value from 1,2,..., m ; x_k is frequency of variations, m is number of variation, \bar{x} is an arithmetic average of the n values of the statistical character x .

Coefficient of variation (CV) is adopted to measure the degree of regional inequality. Huang and Leung (2009). As stated Kulhánek (2012) CV is given by formula:

$$\text{CV} = (\text{standard deviation}) / (\text{mean of value of the set}) \quad (3)$$

3. Problem Solution

The Slovak republic comprises the area of 49035.56 km² and consists of 8 self-governing regions (Bratislava, Trnava, Trenčín, Žilina, Banská Bystrica, Nitra, Prešov, Košice) divided into 79 districts which comprise 138 towns and 2890 villages. The population in 2012 was 5410836 inhabitants and a population of density was 110.3 inhabitants per km². In Slovakia there are several industries with long traditions, such as engineering, chemical, electrotechnical engineering, wood processing and food industry. There are 164771 enterprises, of which around 99% are small and medium sized enterprises. According to data of Statistical office of the Slovak republic

(SOSR in text) in 2013, the GDP growth rate (constant prices, year on year change) was 1.5% (72134 mil. Euro) and unemployment was 14.2 % (386 thousands persons).

3.1 Analyses Based on Gini Index

Table 1 shows the evolution of Gini index for two selected indicators in observed period. The calculation is performed in two versions, when calculation includes Bratislava region and when not. Bratislava region is the most developed region in the SR, therefore the inclusion the data of this region may bring misleading results. This fact is affected by that in the capital of Slovakia and its surroundings are concentrated universities, science and research, services, there are headquarters of companies operating across Slovakia and there is developed infrastructure.

Table 1: Gini index for regional GDP per capita (at current prices) PPS and net money income of households (Eur)

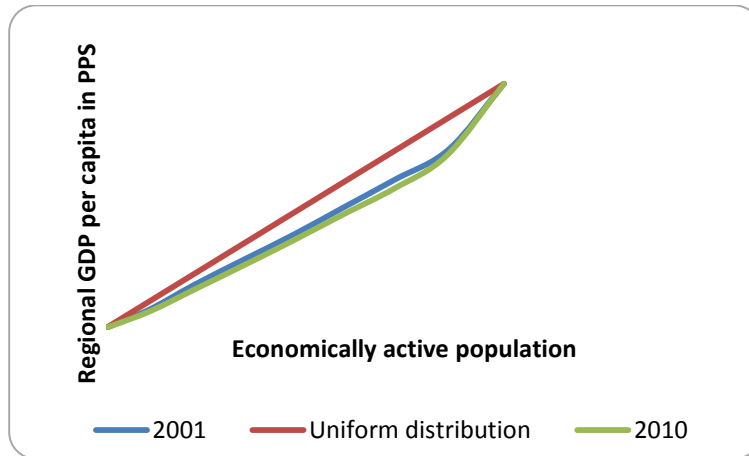
Indicator	2001	2004	2008	2009	2010
Regional GDP per capita (at current prices) PPS	0.217	0.228	0.247	0.264	0.263
Regional GDP per capita (at current prices) PPS without Bratislava region	0.069	0.063	0.045	0.045	0.042
Net money income of households (Eur)	0.052	0.044	0.066	0.052	0.063
Net money income of households (Eur) without Bratislava region	0.128	0.159	0.117	0.124	0.113

Source: author's calculations based on data from regional databases of SOSR

In period 2001 – 2010 in the SR occurred to the overall **GDP** growth at regional and national level (72.30%). The evolution of Gini index confirmed the increasing of inequalities in regional GDP in Slovakia (around 26%) between years 2001-2009. On the other hand, between regions were not confirmed significant differences in convergence to the national level. This is documented by Lorenz curve, which is a graphical representation of the cumulative distribution function of a probability distribution. The results of Gini index calculated without data of Bratislava region show a decline of regional disparities evolution and also indicate the lower inequality between regions.

Gini index demonstrates low inequality among **regional Net money income of households**, but only if the calculation included the Bratislava region. In calculation of Gini index without Bratislava region, the disparities between regions are higher. The evolution of Gini points on variable trend, the highest level reached in 2008 (0.066) with Bratislava region and in 2004 (0.159) without Bratislava region. It is given by the number of the population by age groups 15-64 years old and 65 years old and more. Bratislava region in this category ranks on the 6th place (11.45%).

Figure 1: Lorenz Curves of Regional Disparities in 2001 and 2010 (GDP per capita c.p. PPS)



Source: author's calculations based on data from regional databases of SOSR

3.2 Analyses Based on Sigma Convergence and Coefficient of Variation

The results of regional convergence analysis of the various indicators in the Slovak republic calculated through Sigma convergence and Coefficient of variation presents Table 2. The evolution regional convergence and inequalities presented by calculation of SD and CV in observed period was influenced by several factors: the economic recession in 1999-2001 as a result of transformation actions from 1988, the preparation for EU accession in 2002-2004, the action in connection with the accession process: adjustment of regulated prices and the indirect taxes, the process of fiscal consolidation. In 2004 were implemented many reforms: tax reform, the reforms of social security and pension system, health care reform, reform of justice and education and reform of public administration. In 2007 Parliament passed a number of legislative measures, for example the Amendment of Labour Code and strategic documents in relation of programme period 2007-2013. In 2008 - 2013 economic policy was influenced by several factors: preparation for the adoption and changeover (2009) of the currency Euro, the building a welfare state and solving the problems and consequences of the global recession.

The evaluation of the result of SD and CV: Enterprises: From 2001 to 2012 the evolution of number of enterprises shows upward trend (162.09%), the number of SMEs increased by 163.59%. Due to the result of SD we can argue, that there is a divergence trend between Slovak regions. **Unemployment:** In the period 2001-2002, the Slovak republic marked one of the highest rate of unemployment between EU countries. The evolution of this indicator has variable trend. Between years 2001 – 2008 the rate of unemployment decreased from 18.63% in 2001 to 8.39% in 2008, this evolution was associated mainly with systematic action of Government. This trend is replicated the results of analysis of SD and CV which indicate the regional divergence in period 2001 - 2008. Since 2008 it can be observed the convergence between analysed regions. **Number of employees:** This indicator shows registered employed

person in enterprises with more than 20 and more employers. The computed SD point out that the standard deviation oscillates around the constant value and indicates that the variability of regions is constant over time. Regional disparities in Number of employees measured by CV declined faster only from 0.57647 in 2008 to 0.30656 in 2009.

Table 2: Regional Convergence and Inequalities Based on SD and SV

Indicator	SD/CV	2001	2004	2008	2009	2010
Enterprises	SD	0.18802	0.17498	0.18995	0.19711	0.21055
	CV	0.61064	0.57518	0.65500	0.68904	0.74428
Unemployment	SD	0.21646	0.25683	0.28204	0.21432	0.19545
	CV	0.37759	0.45619	0.56724	0.41950	0.39531
Number of employees	SD	0.16464	0.16109	0.17449	0.10861	0.11593
	CV	0.49945	0.50674	0.57647	0.30656	0.33769
Secondary vocational school	SD	0.09813	0.16095	0.08211	0.08437	0.07639
	CV	0.20413	0.31492	0.18580	0.18863	0.17385
Universities and colleges	SD	0.20205	0.25639	0.21704	0.21704	0.23788
	CV	0.47809	0.71270	0.69102	0.69102	0.77891
Gross domestic expenditures on R&D	SD	0.29510	0.35551	0.39180	0.37351	0.40507
	CV	0.90970	1.20679	1.24237	1.28767	1.37724

Source: author's calculations based on data from regional databases of SOSR

Secondary vocational school: In terms of the competitiveness of regions is becoming an important part the questions of education and training already at secondary schools. For this reason, it is necessary to monitor the infrastructure of secondary vocational schools. From year 2004 the values of calculated SD and CV pointed on the regional convergence. For Sigma convergence the value of standard deviation in 2004 was 0.160954 decreased on value 0.07639 in 2012. The value of CV in 2004 was 0.31492 with decreasing trend to the value of 0.17385. **Universities and colleges:** The high level of increase can be seen in the case of universities and colleague. There were 36 universities and colleagues in the regions in the Slovak republic in 2012. CV points on growing regional disparities between years of 2001 and 2004. The values of SD don't suggest either divergence or convergence of regions. Regional differentiation is predominant only in Bratislava region, which, like other indicators differs significantly from other regions of the Slovak republic. **Gross domestic expenditures on R&D:** The competitive advantages of many firms depend on the level of expenditures on R&D. The increasing of investment in R&D is an important part of strategies of the EU (Lisbon strategy, Europe 2020 strategy and many more). In Slovakia the gross domestic expenditures on R&D increased in observed period by 172.63%, mostly in Košice region (383.02%) and Bratislava region (274.44%). In each region the process of growth presents significant local differences. This confirmed by calculations performed for this indicator.

4. Conclusion

The main aim of this paper was to produce the analysis of the convergence process among regions of Slovakia through the using the techniques for regional analyses. This paper has reviewed the using of Gini index, Sigma convergence and Coefficient of variation for analysis of social, economic and infrastructure inequalities and disparities among regions of the Slovak republic. Paper presents a part of an assessment of number aspects that can be critical when it comes to assessing convergence among regions. The results underline that the analysis of convergence cannot be based on a single measure but rather on a several methods. The analysis of regional disparities and convergence through selected indicators at the level of Slovak regions pointed out on a differentiated development as confirmed the calculated values of indices. Results depend on used indicator and the analysis without Bratislava region. The resulting value of the Gini coefficient confirmed, that significant economic core of the Slovak republic is formed by the Bratislava region. Based on the results of SD and CV we observe mostly increasing regional disparities and divergence of regions when the indicators of Enterprises, and Gross domestic expenditures on R&D were evaluated. In the period 2008 – 2010 the convergence between regions occurs in view of indicators: Unemployment and Universities and colleges. The overall trend in the rest of indicators is variable.

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Russian Gas Policy Impacts on Selected European Countries

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Abstract

Current paper has focused on the Russian monopoly gas seller's price policy and the possible influence to price policies of the both, its subscribers and gas sellers from Europe. The aim of the study is to examine, if there are some causality relations between revenues from commercial gas' selling in Russia and selected European countries. For the analysis it is obtained annual data from Helgi Library statistical database for the period 1992 – 2011. It is used Fisher (combined Johansen) tests for the cointegration analysis within pooled sample data. In September 2012, the European Commission mandated the Directorate-General for Competition launching investigations into the Russian gas company for abuse of its dominant market position. Results of this article have clearly proved causality relations between Russian commercial gas revenues and commercial gas revenues of five European countries (Austria, Italy, Netherlands, Poland and Norway). Based on these results it is made some policy implications as well as recommendations for the future research in that area.

Keywords: *EU, Panel cointegration. Revenues from commercial gas, Russia*

JEL Classification: *C33, C58, F38, G15, G18*

1. Introduction

The aim of the paper is to examine, if there are some causality relations between revenues from commercial gas' selling in Russia and selected European countries. As one of the world's largest energy suppliers, transporters and consumers, the Russian Federation is an important energy actor, but also an energy factor, whose choices and policies affect other countries (Kropatcheva, 2014).

Natural gas is a naturally occurring hydrocarbon gas mixture consisting primarily of methane, with other hydrocarbons, carbon dioxide, nitrogen and hydrogen sulphide. Natural gas is an important energy source to provide heating and electricity. It is also used as fuel for vehicles and as a chemical feedstock in the manufacture of plastics and other commercially important organic chemicals. Before natural gas can be used as a fuel, it must undergo processing to clean the gas and remove impurities, including water, to meet the specifications of marketable natural gas. Marketed production is gross withdrawals less gas used for repressuring, quantities vented and flared, and non-hydrocarbon gases removed in treating or processing operations. It includes all quantities of gas used in field and processing plant operations.³²

³² URL: <http://www.helgilibrary.com/indicators/index/gross-natural-gas-production>.

Kratochvíl and Tichý (2013) defined the possible approaches to the European Union and Russian energy discourses dealing with their mutual energy relations and they also analysed and interpreted the various discourses. Inter alia they reported how Putin talked in 2006 about a rather asymmetrical interdependence or even Russia's dependence on the EU in the same place: "I said to our colleagues, 44 % of the EU's gas imports come from Russia, then 67 % of Russia's gas exports go to Europe. This means that in actual fact Russia today depends even more on European consumers than they depend on their suppliers". Although they have not found any depictions of Russia as a "threat" or an "enemy" in the examined documents (though such depictions are otherwise widely used), a certain change can be detected in the perception of Russia by the EU representatives. This change was predominantly caused by several previous disputes between the Russian Federation and Ukraine on gas pricing. As they also reported, e.g. Barroso in 2009 said: "it was utterly unacceptable that European gas consumers were held hostage to this dispute between Russia and Ukraine".³³ All these issues motivates the current study.

2. Problem Formulation

Paltsev (2014) argues, Russia tries to find a way of reducing reliance on transit countries as disputes with them hurt stable gas supplies. Europe, as the largest importer of Russian gas, tries to find a way of reducing reliance on Russia by moving to liquefied natural gas imports by tankers from Africa, the Middle East, and America. The development of shale gas in USA has resulted in a substantial price differential between North American and European (and Asian) natural gas markets. This price differential creates a potential for gas exports from USA with the first U.S. gas export facility expected to be online in 2016. Future gas development and emergence of shale gas pose questions about the ability of Russia to keep gas exports to Europe at the recent levels, when at its peak at 2007-2008 about 25 % out of a production of about 21 trillion cubic feet (Tcf) were destined to European markets.

Stern (2014) argues that international gas prices reflect the market fundamentals of the 1970's – 1990's when gas was replacing oil products and crude oil in energy balances. By the end of the 2000's, fundamentals in both these regions had changed significantly, but gas price formation mechanisms had not. This created major problems for buyers locked into long term contracts indexed to crude oil and oil product prices, which had risen to levels far above gas market fundamentals. Kropatcheva (2014) proved that in order to understand Russia's energy power, even in the regional context of its relations with the EU, it is necessary to consider the impact of international changes in the energy sector. The oil and gas shale "revolutions" represent such a global factor of influence. She argues that even if their consequences are not yet clear, they have already become an important challenge for Russian energy policy and power.

³³ In December 2013 Russia reduced the purchase price of its natural gas by one-third and free up 15 billion USD for the benefit of Ukraine from Russian foreign exchange reserves.

Harsem and Claes (2013) explain the Russia–EU energy relationship as a concept of asymmetric interdependence. Russia exports about 50 percent of its gas to Europe, with currently no opportunity to diversify its gas export. EU countries on the other hand imports about the same percent of their total gas consumption from Russia, thus making both parties dependent on each other and their relationship one of interdependence. However, even though Russia is dependent on the income from gas exports to the European market, the European gas consumers seems relatively more dependent on Russian gas supplies.

Nevertheless, Russia is also a large oil exporter to the EU. For instance, in 2010, Russia accounted about 35 % of crude oil imports in the EU. However, just as the demand for Russian gas is declining in the EU market, by the same token, the demand for Russian oil in the EU is declining as well, states Kropatcheva (2014).

2.1 Model

We will not see any cointegration equation in our panel estimation, just maximum eigenvalue and trace statistic from zero up to two cointegration vectors between pairs of our panel time series variables. If the hypothesis verifications of the both tests bring the same results, we can verify number of cointegration vectors. To test the hypothesis that there are r cointegration vectors against the alternative of $(r+1)$ cointegration vectors, there is the following maximum eigenvalue statistic within equation (1):

$$\lambda_{max} = -T \ln(1 - \hat{\lambda}_{r+1}), \quad (1)$$

where $\hat{\lambda}_r$ is the eigenvalue corresponding to r cointegration vectors and T is the number of observations. The trace statistic is calculated as follows (2):

$$\lambda_{trace} = -T \sum_{i=r+1}^k \ln(1 - \hat{\lambda}_i). \quad (2)$$

The trace statistic for the existence of r cointegration vectors is the sum of the maximum eigenvalue statistics for from zero up to r cointegration vectors.³⁴

Wang (2009) argues that panel unit root tests for testing the stationarity provide an overall aggregate statistic to examine whether there is a unit root in the pooled cross-section time series data and judge the time series property of the data accordingly. He marked that it can avoid obtaining contradictory results in individual to which no satisfactory explanations can be offered, on the one hand. However, there can be reached good asymptotic properties with relatively small samples in individual time series that are sometimes too small to be effectively estimated. Appendix part contains results of panel stationarity tests for time series used in the current paper. For the stationary process testing of the pooled cross-section time series it is used four different tests, concretely developed by Levin and Lin (1992, 1993), Im et al. (1995), Dickey and Fuller (1979, 1981), and Phillips and Perron (1988).³⁵

³⁴ Statistic equations the both are according Wang (2009). *Financial Econometrics*. Chap. 4, Unit roots, cointegration and other comovements in time series, p. 51.

³⁵ All tests' characteristics in Baltagi (2002). *Econometric Analysis of Panel Data*. Chap. 12, Nonstationary Panels, pp. 233-256.

2.2 Data

It is obtained marketed natural gas production's annual frequency data from Helgi Library international statistical database. Such macro economy revenues, it is used for period covered 1992 – 2011 from Russia as well as from 15 European countries (Norway, Austria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Romania, Slovakia, United Kingdom), and even the whole European Union's gas revenues. Only the data of these 15 countries can be obtained from this international database, not from all European countries.

3. Discussion on Empirical Results

On Table 1 we can see that cointegration relationships were estimated just between five selected European countries within pane cross section. These countries are Norway, Austria, Italy, Netherlands, and Poland. It is estimated just one cointegration, because it is rejected only null hypothesis of “none” cointegration and accepted next null hypothesis of “at most one” cointegration relationship. Through that test it is proved that gas revenues of Russia impact on gas revenues of these European countries (results for all 15 selected European countries we can see in Appendix part also together with stationarity tests).

Firstly, in comparison, results of this study are very similar to Harsem and Claes (2013) results. They proved Russian trade dependency on European countries within just selected EU countries, as Austria, Italy, Netherlands, and Poland. It suggests highly important price policy relationship and impact from the Russia on price policies of these countries.

Secondly, very interesting is also the relationship between gas revenues of Russia and Norway. However, there is very weak investigation and existing research about energy relations between Norway and Russia. It is also contribution of this study, even whether Norway is not a part of EU. As the second largest gas supplier to the EU after Russia, Norway and its examined cointegration relationship by Russia have to be highlighted. If it is possible that Russia affect even Norwegian gas prices, its impacts to the European market should be much bigger.

Finally, a potential good possibility means future greater competition and an end of Gazprom monopoly market position. Lunden et al. (2013) argue, the non-Gazprom gas producers doubled their share of the Russian domestic gas market between 2000 and 2010 and have continued growing since then. Due to their opinion Gazprom competitors are ready to fill the gap, maybe allowed to do so and are already increasing their market share in an increasingly competitive market.

Table 10: Gas Revenues' Relations between Russia and Five European Countries

Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Fisher Stat. λ_{trace}	Prob.	Fisher Stat. λ_{max}	Prob.
None	43,17	0,0000	46,95	0,0000
At most 1	8,265	0,6029	8,265	0,6029
Individual cross section results				
Cross Section	λ_{trace} Statistics	Prob.	λ_{max} Statistics	Prob.
Hypothesis of no cointegration				
Austria	21,4370	0,0343	18,1849	0,0215
Italy	31,7025	0,0009	25,2496	0,0013
Netherlands	21,2569	0,0364	18,5111	0,0190
Norway	25,4905	0,0086	22,3593	0,0042
Poland	20,5892	0,0451	17,3694	0,0291
Hypothesis of at most 1 cointegration relationship				
Austria	3,2522	0,5346	3,2522	0,5346
Italy	6,4529	0,1585	6,4529	0,1585
Netherlands	2,7458	0,6292	2,7458	0,6292
Norway	3,1312	0,5565	3,1312	0,5565
Poland	3,2198	0,5405	3,2198	0,5405

Note: All pooled data were stationary at first differences and non-stationary at level. For estimating causality relations through cointegration tests it is used Johansen Fisher Panel Cointegration Test with No deterministic trend (restricted constant) and Lags interval 1_2 (in first differences), due to results of Lag Length Criteria Test in VAR.

Source: Author's calculations

Non existing causality relations between revenues from commercial gas revenues of Russia and the whole EU could be predictable. It is due to the fact that Russia determined another gas prices in contracts with each company. Very good example can be average prices of Russian commercial gas for selected EU countries. While in Germany for example, 1 000 m³ of Russian gas will cost an average of 380 USD, in Slovakia 330 USD and 320 USD in Italy, the contract price for Russian gas to the Polish border is even between 420 and 500 USD.

As Paltsev (2014) concludes, Russia and the EU still will be important natural gas trading partners for decades to come. Potentially, shale gas can play a role in Europe, and especially in China, thereby reducing the need for imports from Russia and other countries. Currently, however, the pace of shale gas development outside the North America is extremely speculative. The energy system requires long-term capital intensive investments. Therefore, it is important to highlight a need of EU's interventions against Russian monopoly gas pricing policy.

4. Conclusion

The aim of the current study was to examine, if there are some causality relations between revenues from commercial gas' selling in Russia and selected European countries. It was proved that Russia can affect gas revenues of five European countries, Norway, Austria, Italy, Netherlands, and Poland. In according to this result there is an argument that Russia affect gas prices in these countries. Russia still binds up gas prices to oil prices. Nevertheless, it is proved that due to the global financial crisis for the first time in 30 years, the prices of these commodities have not been significantly correlated anymore from 2008. Gas price is on the lower level than the oil price in the world. Therefore, Russian gas policy may ultimately adversely harm European consumers.

Even weather the current paper does not proved any other relationships between gas revenues of Russia and other European countries, it is insufficient argument that Russia does not affect the others. Binhack and Tichý (2012) argues that even the energy policy of the Czech Republic is influenced by the European Union and its focus on the liberalization of the energy market, diversification of the currently existing transportation routes and legislative proposals aimed at strengthening the EU's own energy security. It should be paid more attention to the problematic of energy relations between Norway and Russia in future research, too.

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Appendix

Panel unit root test: Summary

Series: Pooled data at level

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic European	Prob.**	Statistic Russia	Prob.**
<i>Null: Unit root (assumes common unit root process)</i>				
Levin, Lin & Chu t*	-0,70090	0,2417	-0,42312	0,3361
<i>Null: Unit root (assumes individual unit root process)</i>				
Im, Pesaran and Shin				
W-stat	0,10526	0,5419	0,03847	0,5153
ADF - Fisher Chi-square	6,57776	0,7646	6,66324	0,7568
PP - Fisher Chi-square	11,6246	0,3110	12,8063	0,2347

Panel unit root test: Summary

Series: Pooled data in first differences

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic European	Prob.**	Statistic Russia	Prob.**
<i>Null: Unit root (assumes common unit root process)</i>				
Levin, Lin & Chu t*	-6,18581	0,0000	-6,54306	0,0000
<i>Null: Unit root (assumes individual unit root process)</i>				
Im, Pesaran and Shin				
W-stat	-5,57213	0,0000	-5,38256	0,0000
ADF - Fisher Chi-square	47,6131	0,0000	45,9600	0,0000
PP - Fisher Chi-square	79,5407	0,0000	75,9074	0,0000

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)

Hypothesized No. of CE(s)	Fisher Stat.* λ_{trace}	Prob.	Fisher Stat.* λ_{max}	Prob.
None	71.92	0.0000	69.49	0.0001
At most 1	29.61	0.4856	29.61	0.4856

* Probabilities are computed using asymptotic Chi-square distribution.

Individual cross section results

Cross Section	λ_{trace} Statistics	Prob.**	λ_{max} Statistics	Prob.**
Hypothesis of no cointegration				
Austria	21,4370	0,0343	18,1849	0,0215
Czech Republic	15,6027	0,1938	10,8661	0,2619
Denmark	12,1885	0,4321	7,3414	0,6277
Whole EU	20,9935	0,0396	13,8434	0,1021
France	11,4890	0,4956	8,1849	0,5258
Germany	24,1645	0,0138	13,5444	0,1129
Greece	17,6671	0,1095	14,7346	0,0753
Hungary	7,0029	0,8970	4,8317	0,9024
Ireland	7,0809	0,8920	4,2280	0,9448
Italy	31,7025	0,0009	25,2496	0,0013
Netherlands	21,2569	0,0364	18,5111	0,0190
Norway	25,4905	0,0086	22,3593	0,0042
Poland	20,5892	0,0451	17,3694	0,0291
Romania	11,8944	0,4583	9,3791	0,3942
Slovakia	10,1093	0,6291	8,3605	0,5053
United Kingdom	13,3934	0,3332	8,4974	0,4895
Hypothesis of at most 1 cointegration relationship				
Austria	3,2522	0,5346	3,2522	0,5346
Czech Republic	4,7366	0,3135	4,7366	0,3135
Denmark	4,8471	0,3006	4,8471	0,3006
Whole EU	7,1501	0,1187	7,1501	0,1187
France	3,3041	0,5254	3,3041	0,5254
Germany	10,6201	0,0263	10,6201	0,0263
Greece	2,9325	0,5934	2,9325	0,5934
Hungary	2,1712	0,7434	2,1712	0,7434
Ireland	2,8530	0,6086	2,8530	0,6086
Italy	6,4529	0,1585	6,4529	0,1585
Netherlands	2,7458	0,6292	2,7458	0,6292
Norway	3,1312	0,5565	3,1312	0,5565
Poland	3,2198	0,5405	3,2198	0,5405
Romania	2,5153	0,6745	2,5153	0,6745
Slovakia	1,7489	0,8270	1,7489	0,8270
United Kingdom	4,8960	0,2950	4,8960	0,2950

**MacKinnon-Haug-Michelis (1999) p-values

On the Mechanics of European Banks Bailout under Banking Union Conditions: Cost-benefit Analysis

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Abstract

Consider financial stability as a public good. Producer cannot exclude anybody from consumption and consumption by one does not affect the other. The question today is whether the governments are still able to provide this public good on their national level. Eurozone decided to foster its financial stability by creating a system under which financial regulation and supervision is moved from national to supranational level. This paper provides an evaluation of potential bailout case under the supranational solution compared to home country resolution in form of a cost-benefit analysis. The analysis is carried out for two time periods with different economic performance (boom vs recession) for 30 largest European banks by their equity. Results show that supranational solution works better for majority of banks in the sample and allow us to deduce general conclusions.

Keywords: *Banking union, Cost-benefit analysis, Eurozone, Financial stability*

JEL Classification: *E42, G21, G28*

1. Introduction

When the world was hit by the financial crisis in 2008, some estimates put it as eighty-fifth international banking crisis the world has seen. Although the number might not be accurate it seems reasonable to reconsider if the regulation and supervision over banking system in its current state is properly set up. And this means for the policymakers not just to double-up already existing measures but maybe to create a different ones. This goes in hand with our perception of a term public good. When we use it to describe a financial stability we find out that it perfectly fits. A public good is not just any product. It is a product that is both non-excludable and non-rivalrous in a sense that individuals cannot be effectively excluded from its use and where use by one individual does not reduce its availability to others. So the question today is whether the governments are still able to provide this public good on their national levels.

Often discussed when speaking about recent financial crisis is the existence of what someone calls the financial trilemma. Financial trilemma states that (1) financial stability, (2) financial integration and (3) national financial policies are incompatible (see Schoenmaker, 2011) and cannot be achieved at the same time. Claessens et al. (2010) states as an example of the existence of financial trilemma the Lehman Brothers and AIG situation in the US between years 2007-2009. The US government acted unilaterally and in case of AIG provided an orderly resolution. Since AIG had

a large share in CDS market, the US government agreed on helping the company assuring the objectives (1) and (3) to be compatible. But there was zero cooperation in the resolution of the Lehman Brothers and more importantly of their international subsidiaries failing to accomplish objective (2). Another example is from Europe when the Benelux countries tried to save the Fortis which was hugely active cross-border with huge share of assets in the three Benelux states. The conditions were almost ideal to accomplish the three objectives since the long-standing relationship between Benelux countries. But even they failed and Fortis ended up split along national lines and then resolved by the national authorities.

The logic behind financial trilemma is lucid. As financial integration (2) progresses, the national supervisor (3) has control over much narrower domain. That is because the domestic bank is becoming more internationally active, cross border banking enhances therefore endangering the domestic financial stability (1) by being involved in foreign state financial market.

There is a vast set of literature trying to resolve the financial trilemma. Put all down we can name three main strands. The first is the idea from Rogoff (1999) who argues that public intervention increases moral hazard and should be therefore restrict to ensure financial stability. The second is to segment national markets through restrictions on cross-border flows (Eichengreen, 1999). By this case there is no concept of any financial integration and all of banks subsidiaries would have to be absolutely self-sufficient. The third is a supranational solution (Schoemaker and Siegmann, 2013) which presents supranational approach to banks recapitalization and financial regulation and supervision.

Europe decided to move towards a third solution and presented a project of a banking union to assured financial stability. Because of the diabolic loop existing between national governments and bank the financial stability cannot be achieved at a national level. The interdependence between government and bank credit risk was proved right by Alter and Schüler (2012) when they analysed daily credit default swaps (CDS) for several European countries between 2007-2010. The question now would be if a truly integrated banking union can be of some benefit? Maybe even to solve the financial trilemma and break the diabolic loop.

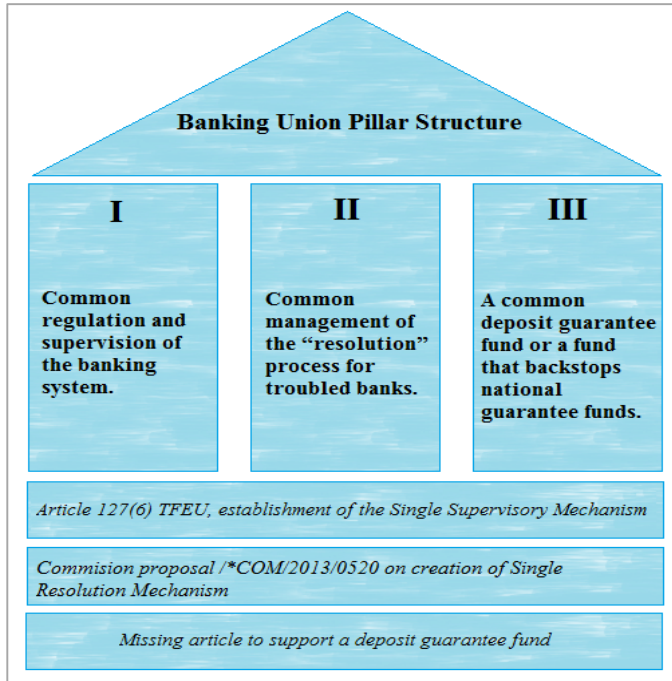
This paper would like to offer an evaluation of potential bailout situation under the supranational solution. First the efficiency improvement is calculated for top 30 European banks by their equity to show the potential of a common approach to recapitalization and then a cost-benefit analysis is conducted to assess the long-term benefits and costs of joining the Banking Union.

1.1 Current State of a European Banking Union

Uncoordinated national responses to the failure of a single or a group of financial institutions have reinforced the harmful link between banks and sovereigns. This has led to a loose of faith and fragmentation of a Single Market in lending and funding. A banking union is supposed to restore faith in a financial system and assure efficient lending to the real economy and thus growth. The concept of a banking union lies upon three pillars: centralized regulation and supervision of a banking system,

management of the resolution and restructuring process and a common deposit guarantee fund (see Figure 1).

Figure 1: Banking Union Pillar Structure



Source: Hodula (2013), updated

As seen from the Figure 1 the legislative supporting basic functions of the banking union is still missing. European leaders have already decided to establish a Single Supervisory Mechanism (SSM) which will be operational under the responsibility of the ECB; however, the legislative necessary for the pillar II. and III. has not been approved yet. The SSM will be fully operational in November 2014 and its regulatory and supervisory framework is aiming to enhance banks safety. For now the SSM consists of the ECB and the supervisory authorities of all participating member states. The ECB remains responsible for the SSM functioning and directly supervises the largest "significant" credit institutions (the regulation defines an institution as significant if its total assets exceed 30 billion EUR or 20 % of the home country GDP). The less significant institutions will fall under the supervision of the national authorities. Since the SSM is built on Article 127(6) TFEU it is clear that it will be the ECB (Governing Council) who will be responsible for the decisions. The question lies in the cooperation of the SSM with non-Euro Area member states. Because of the fact that the outs cannot be present by the negotiations under the ECB Governing Council, their options how to participate are very limited. That is why the SSM offers a potential participant from non-Euro Area member states a chance to stay out of some decisions.

Since the risk of a bank failure can never be absolutely excluded, the supervision and resolution provided by the SSM must be backed up by adequate funding. That is why European Commission has already proposed a Single Resolution Mechanism (SRM) to complement the SSM. The SRM should apply the rules presented in Bank Recovery and Resolution Directive (draft version proposed in June 2012 by European Commission) and in a coherent and centralized way ensure if a bank subject to the Single Supervisory Mechanism faces serious difficulties, its resolution can be managed efficiently. In case of cross-border failures, it will be much more efficient than a network of national resolution authorities trying to avoid risks of contagion.

The question regarding the need of a common deposit guarantee fund is resolved in a way, that draft proposal should only ensure that every Member State has a deposit guarantee fund which is properly funded, *ex ante*.

2. Efficiency Model Settings

The efficiency model is built on Freixas (2003) and Schoenmaker and Siegmann (2013). The choice whether to save or close the bank is a given variable x of values $\{0,1\}$. In the model B denotes social benefits of recapitalization, C its costs. $B > C$ means the benefits of recapitalization exceeds the total cost and therefore a bank should be saved. In a reverse manner, if the bank failure does not mean a systemic problem, the bank should be closed because $B < C$. An essential condition for the model is an assumption that each of the chosen banks can in some point need to be recapitalized and the probability of failure is equal among the banks (the veil of ignorance). Assuming there are only two solutions when a bank is in distress.

Today's, the current situation is called a home country solution because only home country solidly decides about bank recapitalization and no cross-border interest are taken into account. The condition for a bailout is:

$$\alpha_{home} \cdot B > C \quad (1)$$

where α_{home} represents the benefits only for the home country. When considering an internationally active bank, e.g. British Standard Chartered Group, the home country resolution does not seem efficient, because large share of benefits would be lost to banks cross-border activities. In other words, the benefits are shared but the costs are not – a free-rider problem. That is why the supranational solution would be much more efficient, we write:

$$\sum_i^n \alpha_i \cdot B > C \quad (2)$$

where α_i denotes benefits from a bailout to country i , the sum from i to n countries represents the group of countries which fall under the supranational jurisdiction. To analyze these solutions in the European setting, we denote all future European banking union countries as EBU and countries non-participating as OUTS. The total share of benefits of recapitalization is $\alpha_{home} + \alpha_{EBU} + \alpha_{OUTS} = 1$. In the EU condition, the supranational body maximizes the net benefits, so that a bank is rescued only when $\alpha_{EBU} \cdot B > C$. The decision x to rescue a bank is now modified as follows:

$$x = \begin{cases} 1 & \text{if } \alpha_{EBU} \cdot B - C \geq 0 \\ 0 & \text{if } \alpha_{EBU} \cdot B - C < 0 \end{cases} \quad (3)$$

As seen from the Equation (3), the supranational approach appears to be useful when bank's cross-border interests are significant within the EU. Supranational resolution has the potential to improve total benefits and to assure efficient bailout. A problem might appear with truly international banks with huge amount of assets outside the EU: $\alpha_{EBU} \ll 1$. In this case a share of bailout benefits would be "lost" to the non-EU countries while the cost would be borne only by the supranational authority.

Consider β to be the benefit parameter, total benefits of restructuring bank j is $B_j = \beta \cdot E_j$, where E_j is banks equity. The efficient benchmark is then $\beta = 1$. For home country resolution a bank j in home country h is saved if:

$$\alpha_{j,h} \cdot B_j \geq C_j \quad (4)$$

After modifying the equation, the benchmark is written as $\beta_{home} = 1/\alpha_h$. Using similar approach a supranational benchmark is $\beta_{EBU} = 1/\alpha_{EBU}$ when:

$$\sum_i^n \alpha_{j,h} \cdot B_j \geq C_j \quad (5)$$

The distance between home country and supranational approach is defined as a distance between their efficient benchmark: $D_j^{home} = \frac{1}{\alpha_h} - 1$ for home country and $D_j^{EBU} = \frac{1}{\alpha_{EBU}} - 1$ for supranational approach. So the improvement in efficiency is as follows:

$$IMP_{i,j} = \frac{D_j^{home} - D_j^{EBU}}{D_j^{home}} \quad (6)$$

the indicator will have range from 0 to 100 %. Zero for domestic bank and for foreign banks with no interest abroad. The absolute efficiency improvement for bank j is measured:

$$IMP_{i,j}^{ABS} = (D_j^{home} - D_j^{EBU}) \cdot E_j \quad (7)$$

where E_j is banks' equity value. This absolute indicator allows us to calculate the efficiency improvement in euros.

2.1 Cost-Benefit Analysis

The banks' equity (E) is considered as a basic unit of calculation. For each bank j in the sample we consider a loss $L_j > E_j$, making the bank insolvent. If the bank is recapitalized, 100% of equity becomes a new value of a bank. Thus, the net cost of a banks' recapitalization is equal to its original capital value (see Goodhart and Schoenmaker, 2009). The assumption of restoring 100% of banks equity after the recapitalization can be backed up by results of Brei, Gambacorta and Von Peter (2013), who found evidence that banks during crisis period turn additional capital into greater lending (as they are sure they exceeds the capital threshold level). This is another view over moral hazard.

The value of equity plays a major role even in current Basel rules when banks must plan their capital level large enough to cover unexpected losses. Although it is not

a perfect indicator, as some banks might choose to be more conservative, the value of equity (Tier 1 capital) can provide robust information on the relative size of bank risk.

The benefits are calculated using the Equation (7) which incorporates the size and distribution of bank assets. This is in compliance with the credit view on the impact of bank failures on the economy (see Bernanke, 1993). The costs are estimated through ESM capital key values for EBU countries.

2.2 Input Data

The analysis is focused only on large banks, as small and medium-sized banks are largely domestically oriented. The sample contains 30 largest European banks by their level of equity (as published by The Banker, 2012). The data on assets segmentation, which are used when calculation efficiency improvement, are taken from Annual Reports of particular banks for years 2007 and 2012 to cover times of different economic performance. Data represented total costs of a bailout the ESM capital keys are taken from ESM (2013). The top 30 banks represents over half of total EU banking assets and total capital volume of € 1 139 billion (about € 40 billion in average) in 2012. The banks are on average by 60 % focused on domestic markets, 23 % of their assets go to another EU country and the rest outside of the EU area (2012 data).

3. Results

The analysis results suggest significant improvement in absolute terms for several European countries. It is also important to stress out that all EU countries benefit from fostered financial stability under supranational approach. Home countries benefit from the improved efficiency of their banks bailouts. Host countries drain benefits by the fact that parent banks become more stable and therefore there is a significant risk reduction of spill-over effects.

As seen from results of C-B analysis presented in Table 1, the costs of establishing a supranational supervisor are shared and collectively paid by the participating countries (the model works with a presumption that all EU countries would participate). The model enables us to calculate the benefits and costs in absolute values for each country (by summing the absolute efficiency improvement for particular banks in home country $\sum_j IMP_{i,j}^{ABS}$). As seen only 12 countries of EU27 have banks among the TOP30. This is resulting in a situation that countries without any bank covered in the sample appears to have only costs shared and no benefits. Vast majority of those are countries which banking system is dependent on banking services from other European countries.

Table 1: Cost-Benefit Analysis on a Country Level in 2007 and 2012

2007/2012								
Country	IMP ^{ABS}		Benefits		Costs		Total effect	
	EUR billion		%		%		%	
Euro area								
Austria	29,23	63,47	5,3	6,8	2,0	2	3,3	4,8
Belgium	21,91	34,27	4,0	3,7	2,5	2,5	1,5	1,2
Cyprus					0,1	0,2	-0,1	-0,2
Estonia**					0,2	0,2	-0,2	-0,2
Finland**					1,2	1,3	-1,2	-1,3
France	70,49	98,74	12,8	10,6	14,8	14,2	-2,0	-3,6
Germany	52,03	112,75	9,4	12,1	20,5	17,9	-11,1	-5,8
Greece	7,77	4,24	1,4	0,5	1,8	2	-0,4	-1,5
Ireland**	9,95	3,36	1,8	0,4	0,9	1,2	0,9	-0,8
Italy	54,46	69,71	9,9	7,5	12,5	12,3	-2,7	-4,8
Latvia**					0,3	0,3	-0,3	-0,3
Luxembourg**					0,2	0,2	-0,2	-0,2
Malta**					0,1	0,1	-0,1	-0,1
Netherlands	60,34	54,65	10,9	5,9	3,9	4	7,0	1,9
Portugal	1,95	2,41	0,4	0,3	1,7	1,7	-1,4	-1,4
Slovakia**					0,7	0,8	-0,7	-0,8
Slovenia					0,3	0,4	-0,3	-0,4
Spain	43,27	150,78	7,8	16,2	7,6	8,8	0,3	7,4
Non-euro area								
Bulgaria**					0,9	0,9	-0,9	-0,9
Czech republic**					1,4	1,6	-1,4	-1,6
Denmark					1,5	1,5	-1,5	-1,5
Hungary**					1,3	1,4	-1,3	-1,4
Lithuania**					0,4	0,4	-0,4	-0,4
Poland**					4,9	5,1	-4,9	-5,1
Romania**					2,5	2,6	-2,5	-2,6
Sweden	37,85	75,01	6,9	8,1	2,3	2,3	4,5	5,8
United Kingdom	162,97	259,48	29,5	27,9	13,9	13,7	15,6	14,2
	552,23	928,86	8,3	8,3	3,7	3,7		

Source: own calculations

Table 1 presents results of the C-B analysis for two separate years 2007 and 2012. When concentrate on the second column calculated absolute improvement values (IMP^{ABS}), the total value for the EU is € 552,23 billion in 2007 and € 928,86 billion in 2012. This suggests us the on-going concentration of the EU financial market in the after-crisis period with the TOP30 banks having their equity values even bigger now than on the top of the boom period in 2007. The only countries by which the IMP value dropped are Greece, Ireland and Netherlands. The fact that their banking sectors were already recapitalized during the crisis and the chosen banks are now still struggling is to blame.

The third column shows the total benefits calculated as a country share on total IMP value. The results between two years are mixed depending on in which state of recapitalization the banking sectors are. It is interesting to point out that both the UK and Sweden are evincing large share of the total benefits. Again it is confirmed that the choice to stay out of the banking union is more political than economic decision (Hodula, 2013).

On the cost side (fourth column) the model follows the ESM Treaty, which makes the cost share based on the ECB capital key (average of the relative GDP and relative population).

Finally, the net effect is projected in fifth column. The net benefiter for both analysed years are Austria (with 1 bank in the sample), Belgium (2), Netherlands (3), Spain (4), Sweden (1) and the UK (5). These countries are characteristic with a vast majority of their banks being cross-border oriented and therefore can gain a lot from establishing a common financial regulation and supervision. On the other hand, the net contributors (besides countries not having any bank in the sample of TOP30) are France, Germany and Italy.

We could argue that if all of the SIBI's (systematically important banking institutions identified in particular EU countries by their regulators) would be captured in the model, their benefits would be bigger than zero and therefore the net effect would be mostly positive.

4. Conclusion

In the paper we have analysed the absolute benefits and costs of potential bailout situation under the banking union conditions. The calculations show that the benefits of establishing a system under common regulation and supervision can be large. In absolute values the total improvement in efficiency of bailout was € 928,86 billion in 2012. The analysis has also showed when comparing the IMP values in 2007 and 2012 that the values almost doubled in this time period. This suggests the on-going concentration of the EU financial market in the after-crisis period within the TOP30 banks.

The analysis has also identified the net benefiter and contributors of the banking union. The most significant net benefiter are Austria, Belgium, Netherlands, Spain, Sweden and the UK. On the other side, the net contributors (besides countries not having any bank in the sample of TOP30) are France, Germany and Italy.

The current ESM shares were used as a cost values and it raised a question if this key is the most appropriate. It is based on ECB capital key which uses countries GDP and population as a key measure. For example Italy is having a large share of the potential benefits (7,5 % in 2012) but also a large share of the total costs (12,3 %) making it a net contributor. The same issue is observed by France and Germany. Instead of ECB capital key the ESM Treaty could use a mix of country's GDP and total banking assets.

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Competitiveness Indices Methodology and Its Impact on Ranking of Selected EU Countries

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Abstract

The paper deals with competitiveness and its evaluation by multi-criteria competitiveness indexes. It concentrates on the creation of indices, data sources, methodology, etc. The analysis is applied to the selected EU member states – Visegrad countries – the Czech Republic, Poland, Hungary and the Slovak Republic. The main discussion is about using soft data in the competitiveness indexes/rankings. Their inaccurate interpretation can lead to misunderstandings and bad reflections of the governments, which adjust their economic and social policies to fulfil the competitiveness criteria and obtain better position in the rankings. The aim of this article is to point out the risk of lower explanatory value of rankings of competitiveness, focussing on the example of one of the most well-known Global Competitiveness Index published by the World Economic Forum in Global Competitiveness Reports.

Keywords: *Competitiveness, Global Competitiveness Index, Global Competitiveness Report, methodology, Visegrad countries*

JEL Classification: *B41, C43, C80, O10, O57*

1. Introduction

When the Czech Republic and other Central European Countries (CEE) countries joined the European Union (EU) ten years ago, the expectations prevailing were that joined Europe is the area of common solidarity. During the time it has appeared that even though the European Union shares common ideas and values, the member states still compete among themselves. One of the areas, where this competition is being shown, is the localization of firms' investments. The investors when concerning the localization of their investments can decide, among other things, according to competitiveness indices of member states and regions that are being published by various international organizations.

The member states' governments are thus motivated to implement such an economic policy that would lead to better score in the competitiveness scoreboards. Recently, there is a growing interest of professional and general public (mass media, etc.) in the position and its changes in these scoreboards/rankings.

The governments are mainly only recipients of competitiveness multi-criteria evaluations. Because of high impact of competitiveness scoreboards on the public opinion the governments have no other choice than to react and to reflect the position in the scoreboard with the aim to improve it. This confirms the weak position

of national states/governments and leads to creating the internally contradictory and inconsistent economic policies. The example of wrong implementation of economic policies and its possible impact on economy and society are obvious (Hon, Honová, 2012). For example the most competitive is the country which has well educated labour force but low wages, low social protection and social cohesion at the same time, low tax rates but high government expenditures to infrastructure, education and research and development, and balanced public budgets (Malý, 2011).

The aim of this article is to point out the risk of lower explanatory value of rankings of competitiveness that needs to be taken into consideration in the decision-making processes on both sides – companies as well as governments/policymakers. The article focuses on the example of one of the most well-known Global Competitiveness Index (GCI) published by the World Economic Forum (WEF) in Global Competitiveness Reports (GCRs).

2. Global Competitiveness Index

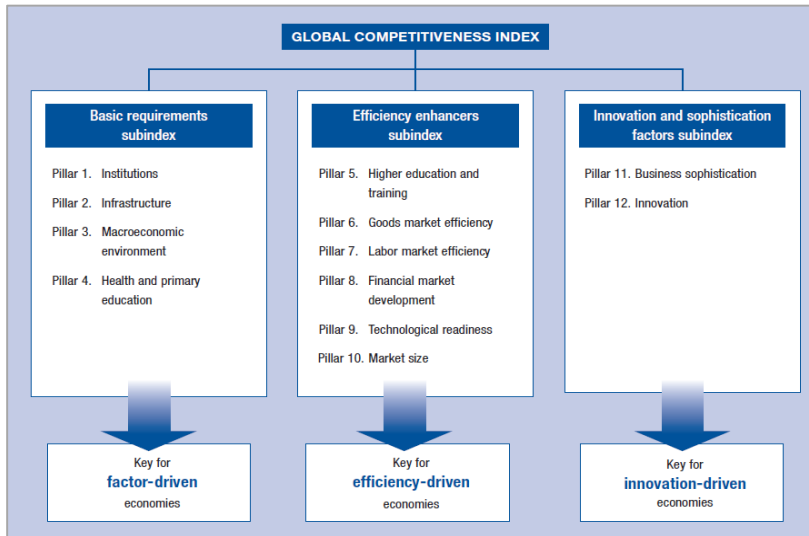
The World Economic Forum's annual Global Competitiveness Reports have studied and benchmarked many factors underpinning national competitiveness for more than three decades already. From the onset, the goal has been to provide insight and stimulate discussion among all stakeholders about the best strategies and policies to help countries to overcome the obstacles to improved competitiveness, sound structural economic fundamentals for sustained growth. Since 2005, the World Economic Forum has based its competitiveness analysis on the Global Competitiveness Index (GCI), a comprehensive tool that measures the microeconomic and macroeconomic foundations of national competitiveness (WEF, 2013).

The WEF defines competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be reached by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. In other words, a more competitive economy is one that is likely to grow faster over time. The concept of competitiveness thus involves static and dynamic components. Although the productivity of a country determines its ability to sustain a high level of income, it is also one of the central determinants of its returns on investment, which is one of the key factors explaining an economy's growth potential (WEF, 2013).

In all multi-criteria evaluation of competitiveness the competitiveness is defined as the country's attractiveness for globally operating investors and companies. The choice of indicators/criteria and the way of their fulfilling reflect the ideas and requirements of business community (Klvačová, 2008).

The GCI is consisted of a weighted average of many different components, each measuring a different aspect of competitiveness. These components are grouped into 12 pillars of competitiveness – see Figure 1.

Figure 1: Global Competitiveness Index Structure



Source: WEF, 2013

All of the pillars matter to a certain extent for all economies, but they affect them in different ways: the best way for one economy to improve its competitiveness may not be the same the best way for another – it depends on different stages of development of the countries. As countries move along the development path, wages tend to increase and, in order to sustain this higher income, labour productivity must be improved.

The main criterion is being used to allocate countries into stages of development – the level of GDP per capita at market exchange rates. This widely available measure is used as a proxy for wages because internationally comparable data on wages are not available for all countries covered. The World Economic Forum distinguishes three main stages of development of economies – see Table 1.

Table 1: Stages of Development of the Economy

	Stage 1: Factor-driven	Transition from stage 1 to stage 2	Stage 2: Efficiency-driven	Transition from stage 2 to stage 3	Stage 3: Innovation-driven
GDP per capita (US\$) thresholds*	<2,000	2,000–2,999	3,000–8,999	9,000–17,000	>17,000
Weight for basic requirements subindex	60%	40–60%	40%	20–40%	20%
Weight for efficiency enhancers subindex	35%	35–50%	50%	50%	50%
Weight for innovation and sophistication factors	5%	5–10%	10%	10–30%	30%

Source: WEF, 2013

Ranking of a country into particular stage of the development (mainly according to the GDP per capita) is crucial for the weight of each pillar in the composition of the GCI for the country. As Table 1 shows, for the economic development and growth of countries with lower GDP per capita is the situation in pillars 1 to 4

(*Basic requirements subindex*) most important. These economies are called “factor-driven” (Stage 1) and for them the weight of *Basic requirements subindex* is 60% of GCI in comparison to only 5% of *Innovation and sophistication factors subindex* of GCI.

The GCI assumes that, in the Stage 1, the economy is factor-driven and countries compete based on their factor endowments - primarily unskilled labour and natural resources. Companies compete on the basis of price and sell basic products or commodities, with their low productivity reflected in low wages (GDP per capita less than 2000 USD). Maintaining competitiveness at this stage of development depends primarily on well-functioning public and private institutions (pillar 1), a well-developed infrastructure (pillar 2), a stable macroeconomic environment (pillar 3), and a healthy workforce that has received at least a basic education (pillar 4).

As a country becomes more competitive, the productivity will increase and wages will rise with advancing development. Countries will then move into the “efficiency-driven” (Stage 2) stage of development, when they must begin to develop more efficient production processes and increase product quality because wages have risen (reflecting in the GDP per capita 3000 – 8999 USD). The WEF adjusts the weight of subindexes as it is shown in Table 1, it means the weight of *Basic requirements subindex* is reduced to 40% and the two others subindexes increase their proportion – *Efficiency enhancers subindex* to 50% and *Innovation and sophistication factors subindex* to 10%.

Competitiveness in efficiency-driven economies is determined by higher education and training (pillar 5), efficient goods markets (pillar 6), well-functioning labour markets (pillar 7), developed financial markets (pillar 8), the ability to harness the benefits of existing technologies (pillar 9), and a large domestic or foreign market (pillar 10).

As countries move into the “innovation-driven” stage (Stage 3), wages will have risen by so much (reflected in more than 17000 USD GDP per capita) that they are able to sustain those higher wages and the associated standard of living only if their businesses are able to compete with new and unique products. This reflects in another change in relative weights of subindexes in GCI – the first one drops to only 20% share and the third one grows to 30% of GCI.

At this stage, companies must compete by producing new and different goods using the most sophisticated production processes (pillar 11) and by innovating new ones (pillar 12).

Beside the three main stages of development of the economies the WEF distinguishes two more “transition stages” (Transition from stage 1 to stage 2 and Transition from stage 2 to stage 3) to better show the progress of the economies. The weights of each subindex in these transition stages are set individually for every state in transition, according to the structure of their economy (the level of GDP per capita) (WEF, 2013).

To complete GCI, the WEF uses the combination of statistical “hard” data for quantitative assessment obtained from internationally recognized agencies (World

Bank - WB, International Monetary Fund - IMF, United Nations Educational, Scientific and Cultural Organization - UNESCO, World Health Organization - WHO) and “soft” data from WEF’s Executive Opinion Survey for qualitative assessment (explained in detail in Chapter 3).

3. Methodological Problems

There might be two main problems when using GCI to evaluate the country’s competitiveness development in time series.

First, the number of countries being evaluated in the GCI varies during the time, there are more and more countries evaluated every year in report. Second, not only the amount of monitored indicators has changed over time, but also their content and changes across pillars have been observed. This demonstrates Table 2.

Table 2: Number of Monitored Countries and Indicators in GCRs

GCR	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14
No. of countries	134	133	139	142	144	148
No. of indicators	110	110	111	111	111	114
Total positive change in No. of indicators in pillars (P) y/y	-	+1 in P1	+2 in P1 +1 in P2 +1 in P3	+1 in P6	+1 in P1	+2 in P7 +2 in P10
Total negative change in No. of indicators in pillars (P) y/y	-	-1 in P7	-1 in P4 -2 in P9	-1 in P8	-1 in P3	-1 in P1

Source: WEF, 2008, 2009, 2010, 2011, 2012, 2013, own calculations

Illustrative example of the second statement is the case of the change in the ninth pillar between the GCR 2009-10 and 2010-11, as well as inter-pillar changes. In the newer report, the number of *Personal computers* and *Laws relating to ICT* has disappeared from monitoring in the ninth pillar. Number of *Mobile telephone subscriptions* has moved from the ninth to the second pillar. New item - *Internet bandwidth* - has been more added to the ninth pillar.

The computer disappearance from statistics is logical for developed countries where approach to computer is now being standard of living, but that is not the case for underdeveloped economies. The shift of Mobile phones from Technological readiness (pillar 9) to Infrastructure (pillar 2) reflects technological changes in the world economy, where mobile phones are no more considered to be high-tech but only technological standard. The change among pillars has different impact on countries depending on their stage of development and thus on the different

weights of subindexes (see Table 1) and makes the comparison of countries competitiveness more complicated during various years.

Another problem in evaluation country's competitiveness in GCRs comes from the source and type of data. In the last decade the more and more have been used so called "soft" data. Taking into consideration for example the last report (GCR 2013-14), there are used 114 indicators, but only 34 of them are so called "hard" data, which is 29,8%. Similar proportion can be found in previous reports as well.

Term hard data reflects exactly measured reality, are quantifiable, exact, testable, objective numbers and facts that can be proved. Their advantage is that they can be expressed easily by precise numbers or units.

Soft data can be defined as a group of subjectively perceived data, information that are difficult to measure by standard statistical methods, such as people's opinions or feelings. Soft data usually better reflect qualitative parameters in comparison to quantitative ones. Their first problem is that soft data can be distorted easily especially by mass media – the common example is the corruption perception – when you hear a lot about it, you perceive it much more intensive.

The second problem, there is usually no common methodology or definition of soft indicator. The evaluation is made by experts on their own view, experience and knowledge. More to this, every country is usually evaluated by different team of experts also with different cultural background. Respondents decide in a subjective way without having to study the topic into details. Questionnaires are used to get the data and the range of questions is usually very wide, especially in CGRs, while the time for filling in the questionnaire is limited, giving the answers on a scale. The sequence of answers and structure of the questionnaire can predetermine the result also (Vymětal, 2009).

4. Case Study

To demonstrate the problem described in the previous Chapter 3, the cases of "new" EU member states, Visegrad Four Countries, are used (see also Melecký, Staničková, 2011). Visegrad countries have been chosen for analysis because they have similar characteristics as geographical, historical and economic background. The Table 3 shows the absolute rank of Visegrad countries in the CGR with the value of their Global Competitiveness Index (score 1-7, the best is 7). Even a small difference in GCI leads to relatively big differences in absolute rank of a country. These changes can be caused even by the choice of the quantity of decimal numbers.

Table 3: Czech Republic and Other Visegrad Countries GCRs

GCR/Country	2008-9		2009-10		2010-11		2011-12		2012-13		2013-14	
	Rank / Score											
Czech Rep.	33	4.62	31	4.67	36	4.57	38	4.52	39	4.51	46	4.43
Poland	53	4.28	46	4.33	39	4.51	41	4.46	41	4.46	42	4.46
Hungary	62	4.22	58	4.22	52	4.33	48	4.36	60	4.30	63	4.25
Slovak Rep.	46	4.40	47	4.31	60	4.25	69	4.19	71	4.14	78	4.10

Source: WEF, 2008, 2009, 2010, 2011, 2012, 2013, own elaboration

It is clear from the Table 3 that the most competitive Visegrad country is Poland today, taking into consideration the latest GCR, even till last year the most competitive used to be the Czech Republic. Was this change in rank caused by the change of real economic factors or only by the perception of reality?

What is behind the GCI number? The closer look to concrete indicators (114 in the latest report) reveals that the subjective perception of the interviewed experts can significantly influence the final results of the CGI. In some cases of indicators there is a possibility to compare the results of soft and hard data.

One of the examples is the indicator *4.03 Business Impact of Tuberculosis* and *4.04 Tuberculosis Cases/100,000 pop.* In the GCR 2012-13 the Czech Republic refers hard data (*4.04*) 6.8 tuberculosis cases/100,000 inhabitants with ranking 19 versus soft data (*4.03*) 5.8 points with ranking 48. In the latest report GCR 2013-14 the Czech Republic refers only 6.0 cases ranking 16, but subjective perception is 5.4 points ranking 77. This documents the widening of the gap between hard and soft data.

The situation is even more interesting if we have a closer look at the same variables for Poland in GCR 2013-14: 23 cases of tuberculosis/100,000 pop. with ranking 51, subjective perception 6.0 points with ranking 47. It is obvious that Poland, as an objectively worse country than the Czech Republic, proved by hard indicator (23 vs. 6 cases), looks better due to soft data from questionnaires (6.0 vs. 5.4 points, ranking 47 vs. 77 – the difference is 30 places!).

Soft data from questionnaires allows also more ways of interpretations. The example is again the Czech Republic and Poland (GCR 2013-14). Considering the indicators, the comparison will be among *5.03 Quality of the educational system* and *5.04 Quality of math and science education*. For the Czech Republic the value is 3.7 (for *5.03*) and 4.0 (for *5.04*). For Poland values are 3.4 (for *5.03*) and 4.1 (for *5.04*). One of the possible explanations is that Poland education system specializes in teaching technical subjects (difference among indicators in Poland is 0.7). Another possible explanation is that the Czech Republic is traditionally industrial country (with the highest automotive industry per capita in the world). That is why the requirements of employers are more technical/math demanding than in Poland. Because the mass media refer very often about the insufficiency of properly math/science educated labour force/labour supply, the perception in the Czech Republic in comparison to one in Poland is worse. This reflects in lower level/score in perception of quality of math and science education in the Czech Republic in comparison to Poland. None of values of indicators can properly measure and compare the quality of educational system in both countries in an objective way.

Last example of risk of using soft data is connected to the situation when the same thing is evaluated by two different experts. If we compare indicators *8.01 Availability of Financial Services* and *8.02 Affordability of Financial Services* between the two similar countries – the Czech Republic and the Slovak Republic – it is obvious that perceived differences are too high in comparison to economic reality. The values and rankings are very different: value 4.7/ranking 59 (*8.01*) and value 4.0/ranking 86 (*8.02*) for the Czech Republic in comparison to value 5.0/ranking 41 (*8.01*) and

value 4.8/ranking 37 (8.02) for the Slovak Republic. The differences 18 places, respectively 49! places is too much and does not reflect economic reality. If both countries were evaluated by one expert, the differences in ranking of the countries in financial services would not be that big.

The given examples show that more popular soft data and their rising share in some competitiveness scoreboards/rankings (GCI in our case), can mislead the evaluation of competitiveness and thus real situation in states considering their economic, social, environmental and other indicators.

5. Conclusion

It is obvious that the competitiveness among states even in such a strongly integrated grouping as the European Union can be observed. The aim of each state is to attract and retain maximum investments. One of the indicators important for decision-making of investors is the competitiveness scoreboards/rankings. The aim of this article was to point out that the explanatory capability of the competitiveness rankings is questionable. The comparisons over time are affected by the changing structure of questionnaires and indexes. The increased popularity of using soft data to better explain the qualitative parameters of economies has its own limits. Surveys based on the opinion of experts by filling in questionnaires with scales (here 1 to 7) are burdened with the problem of the subjective perception of reality.

As the Chapter 4 shows on the examples of Visegrad countries even minor changes in values of indicators have major impact on countries' ranking in GCI. On specific examples it was shown that the subjective perceptions (soft data) may not always reflect objective reality (hard data). The experts' evaluations can be affected by different cultural environment, mass media, etc. This especially comes to the fore when countries are evaluated by different experts. When using soft data (in comparison to hard data) that there may occur also another problem coming from the possible different interpretation of the same values of indicators.

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Economic Development of Montenegro and Its Progress Towards EU Membership

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Abstract

Montenegro is a small, open economy that even though it is among the latest European countries, it has made a big progress on its path towards the European Union. Currently, Montenegro is a candidate country for membership in the EU and the accession negotiations have begun in 2012. This paper deals with general information about Montenegro, its relationship with the European Union, and the substantial part of the paper is devoted to the analysis of selected determinants of economic development of this country in the context of the ongoing process of its integration into the European Union and economic convergence to the EU, what is the aim of this paper. Within the framework of this analysis, the selected macroeconomic indicators will be analyzed and compared with the development of the EU28 since the Montenegro's declaration of independence in 2006 to 2012.

Keywords: *Economic Development, European Union, Montenegro, Real Convergence, Western Balkans*

JEL Classification: *F15, F43, O11, O57*

1. Introduction

The European Union is a unique economic and political union among twenty-eight member countries where all those countries are committed to promote peace, democracy, freedom and many other values set out in Article 2 of the Treaty on Europe Union, on which the Union is founded. The EU was initially formed by the six countries and over time, more and more countries decided to join the Union.

Integration of the Western Balkans into the EU structures is a priority of the EU enlargement policy, especially in terms of promoting peace and stability, freedom and economic prosperity. The Western Balkan region located in southeast Europe consists of six countries, namely Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Montenegro and Serbia, and all these countries have been offered Stabilisation and Association Agreements (SAAs) and have a clear EU perspective. Actually, there is only one country in this region that has already begun negotiation process, what moved the country a step closer to membership of the EU, and it is Montenegro.

Montenegro's progress towards EU membership is noticeable in all areas of Copenhagen Criteria. Montenegro sufficiently meets the area of political criteria. As regards the economic criteria, the country has made some further progress towards a functioning market economy and should be able to cope with competitive pressures and market forces within the Union over the medium term. In the scope of legislative

alignment, Montenegro should be able to take on the obligations of EU membership even at varying degrees of alignment (European Commission [online], 2014).

This paper aims to evaluate the degree of economic development of Montenegro with regards to the European Union as an important condition for smooth integration of Montenegrin economy into the economic structures of the EU. Within the framework of this analysis, the selected macroeconomic indicators will be analysed and compared with the development of the EU28 since Montenegro's declaration of independence in 2006 to 2012.

2. Importance of Economic Development in the Context of Economic Convergence with the European Union

The economic development plays also an important role in the context of economic convergence that is one of the few key concepts underlying the process of European integration and it can be interpreted as a process of approaching similar or approximate macroeconomic indicators of a country or group of countries, in our case a group of countries – the EU-28 (Zahradnik, 2003).

The economic development means a change in the scope and quality of the country's wealth. Development is represented by the complex processes that take place within the economy and mainly contribute to positive changes in the socio-economic situation of the economy. That changes can be qualitative as well as quantitative. From the theoretical point of view, the economic development refers to the application of general developmental theories in the area of economic life (Varadzin, 2004), where these areas include development of human capital, regional competitiveness, health, safety and many other initiatives. To sum up, the economic development aims to promote the economic and social well being of people and consists of economic growth and many other aspects that can be quantified by using a wide range of statistical indicators, for instance, greenhouse gas emission, motorisation rate, final energy consumption, duration of working life, public expenditure on education, life expectancy, fertility rate, inequality of income distribution, final consumption expenditure of households, people at risk of poverty or social exclusion, etc. As regards the aim of this paper, our attention will be paid only to selected macroeconomic indicators important for the measuring of economic convergence that are closely related to the economic development where all those indicators will be explained below.

An important element of the economic development is the economic growth. Therefore, the concept of economic development and growth cannot be in any way equated.

The economic growth is an integral part of economic development and economic it deals with monitoring of quantitative aspects of the economic system and refers to the increase in the capacity of an economy to produce goods and services indicated by increasing gross domestic product, the economic development is much broader (Varadzin, 2004). The economic growth binds to an economic level that is very important for integration of the given country in the EU structures. The process of

approaching the EU level used to be called as a process of real convergence, which includes some determinants as an economic growth, labour productivity, employment, structural changes, etc. The key indicator of economic growth which reflects to the health of an economy is Gross Domestic Product (GDP) per capita and for the purpose of international comparison is that indicator expressed in Purchasing Power Parity (PPP), because it not only take into account the total value of all goods and services produced by a nation in a given period, but it also takes into consideration population growth and inflation rate. Since the Eurostat uses the Purchasing Power Standards (PPS), what is theoretically an artificial currency unit when the purchasing power of 1 PPS is the average purchasing power of one euro in the European Union (EU28), eliminates the differences in price levels between countries and allows a meaningful comparison of GDP among comparing countries, the economic performance will be expressed in PPS. The GDP per capita, among others, testifies to the international competitiveness of the country, which Margan (2012) considers as the as an indicator of the attractiveness of the country whereas the real GDP growth shows the real change in economy out-put in time.

Labour productivity is another determinant of the economic development and real convergence that is closely related to the economic level, since it reflects the use of human resources and it is considered for the key element of economic growth. Other labour market indicators used in the analysis of economic development are unemployment and employment. Whereas employment is very closely related to the overall dynamics of economy, its economic performance and it is also used as one of the most important indicator of competitiveness at the national economic level, unemployment that refers to the equilibrium in the labour market and is one of the macroeconomic indicators that express the internal economic stability. Another indicator that is closely related to the standard of living in the country and the competitiveness of the economy is the level of wages in country. Labour costs are often the largest cost item in the total costs of businesses, thus they significantly affect not only the competitiveness of businesses within the region or state, but also affect a creating of a competitive environment and the intensity of competition in these countries or regions and this is ale one of the most important factor for foreign investors in their decisions on allocating their investments.

Given that in the integration based on the single internal market prices converge to the relatively similar prices, it is necessary to consider also the comparative price level (CPL) that is related to price (nominal) convergence in the economy. Nominal convergence is often understood as the process of bringing the overall price level relative to a certain country, in our case to the group of countries – EU-28 (Žďárek, 2006).

The last indicator, which will be paid attention to, is the structure of the economy. The main reason why this indicator was included in the analysis is the fact that the sectorial composition of production indicates the nature of the economy of each country. It is also indicator, which may reveal whether the country is exposed to asymmetric shocks or not. It is assumed that countries with similar sectorial

structure will be less affected by asymmetric shocks than country where significant differences persist (Lebiedzik, 2006).

3. General Information about Montenegro and Its Relationship with the European Union

In 2006, Montenegro's parliament declared independence from the State Union of Serbia and Montenegro and the country became an independent country and in the same year, EU recognized its independence. Montenegro is among the latest European countries and even though it is still consider being a transition country it has made a great progress on its way to be a market economy and EU member.

As regards to population, Montenegro belongs to the one of the smallest states in Europe and it is also the smallest country by population in the region (620 thousand inhabitants, according census in 2011). By total area, Montenegro is the second smallest state in the region (13 812 square km) (Businessinfo.cz [online], 2013). Capital city of this country is Podgorica, which is also the largest city in the country. There are many ethic groups living in Montenegro where the major ethic groups are Montenegrins (45 % of total population), Serbs (29 %) and Bosnians (9 %). This also reflects the structure of the religious population, where 76 % of population adhere to Christianity and 19 % adhere to Islam (according census in 2011) (Businessinfo.cz [online], 2013).

3.1 Montenegro's Relations with the European Union

Montenegro has already made a big progress on its path towards the EU. The Stabilization and Association Agreement (SAA), the essence of the Stabilization and Association Process (SAP), between Montenegro and the EU was signed in October 2007 and the country continued to implement its obligations under the SAA smoothly (European Commission [online], 2012). At the beginning of 2008, agreements between the EU and Montenegro on Visa Facilitation and Readmission took effect and in December of that year, Montenegro submitted an application for EU membership. In April 2009, Montenegro requested the European Commission to prepare an opinion upon the merits of the application. In December 2010, after the SAA entered into force (May 2010), Montenegro became a candidate country what enables it to have access to the Instrument for Pre-Accession Assistance (IPA). IPA offered assistance to the countries in the accession process to the EU for the period 2007-2013. After fulfilling of 7 key priorities given by the Council, the Council launched the accession process and the accession negotiations started on 29 June 2012.

Regarding the negotiation chapters, Montenegro has already opened seven from 35 chapters – negotiation chapter 5 – public procurement, 6 – company law, 20 – enterprise and industrial policy, 23 – judiciary and fundamental rights, 24 – justice, freedom and security, 25 science and research and 26 – education and culture. Except negotiation chapter 25 that was opened in 2012, all the remaining chapters were opened in 2013 and just two of them were temporarily closed – chapter 25 and 26. *“The launch of accession negotiations last year marked the opening of a new stage for*

*Montenegro on its path to the EU*⁹ (European Union – Delegation of the European Union to Montenegro [online], 2014).

4. Evaluation of Selected Indicators of Economic Development of Montenegro

Since the Montenegro is a transition country and pursuing its economic policy independently of Belgrade since 1997 when the country began to use its own currency (at the beginning the Deutsche Mark, then the euro), own customs and tax tariffs (BusinessInfo.cz [online], 2013), its economy is characterized by non-standard macroeconomic and microeconomic environment, a relatively short time series of compared indicators and often by unavailability of macroeconomic indicators. Given that problem, only selected indicators will be analysed. Montenegro statistics will be compared with the statistics of the EU-28 in the period 2006-2012.

The Montenegrin economy was, as most of the countries, hit by the global economic crisis, which has hampered its rapid economic growth in the pre-crisis period and during that time this economy recorded a deterioration of almost all economic indicators. Overall, the Montenegrin economy recorded some improvement, but its economic performance remains weak. The economy finally came out of recession in 2013 driven by external demand (European Commission [online], 2013).

Montenegro's GDP per capita in PPS is not high and even though the value of GDP is growing, the Montenegrin economy in comparison with the EU average is apparently not powerful enough (see table 1). Significantly lower economic level could pose a risk when entering the EU, but Montenegro would not be the first country with a low economic level, which entered the EU. Montenegro would face strong competition within the internal market, but on the other side, this country has a comparative advantage, which is a cheap labour force that is, among others, young and highly qualified (Horúcková, 2013). Development of GDP per capita is similar to the case of Bulgaria, which reached at the time of its accession to the EU-25 only around 10 000 PPS. Currently Bulgaria reaches 12 000 PPS and even though the growing trend is observed also in Montenegro, the country is still far from the EU average and its value is almost three times lower. The same pattern shows GDP as a share of GDP in the total EU-28, which confirms that Montenegro is actually reaching the level of Bulgaria and Romania at the time of their accession. In terms of average growth rate of GDP in the period 2006-2012, Montenegro's GDP has been growing on average almost four times more than in the EU. Whereas the average GDP growth rate in Montenegro was 3,7 per cent, in the EU-28 it was only 0,8 per cent. Even though the Montenegro's average GDP growth was higher than in the EU and thus, the country should converge to the EU level, but due to lower level of GDP per capita than the EU, this growth is insufficient to considerable convergence at EU level.

The last factor affecting GDP is a price level, which is reflected in the calculation of the GDP in the parity ratio of price levels. When the price level in a given country is growing, it eliminates the positive impact of GDP growth on GDP per capita. Comparative price levels shows the price level of the country relative to the EU

average and as is shown in table 3, price level in Montenegro in comparison with the EU average remains over 50 % and in pre-crisis period even reached 60 %. The comparative price level of Montenegro has not changed significantly over time and is more or less comparable with current price levels in Bulgaria, Romania, Poland, Lithuania and Hungary. Montenegro's price level could be also compared with price levels of many countries that entered the EU within the historical EU enlargement in 2004 at the time of their accession, for instance, the Czech Republic and Slovakia, or above-mentioned Poland, Hungary and Lithuania. All those countries remain around 50 % and do not converge to the price level of the EU-28 in long-terms and some of those countries, especially the Czech Republic or Slovakia recorded the rapid increase of price levels. For example, the Czech price level reached 55,5 % of the EU average in 2004. Over time, the price level of the Czech Republic has been increasing and in 2012, the price level in this country amounted to 72,2 % what is a considerable change. This area is currently characterized by considerable divergence among the most of EU member countries, where on the one hand, there are countries whose price levels reach over 100 % of the EU average, for instance, Nordic countries as Denmark, Sweden or Finland, and on the other hand, there are countries whose price levels are less than 50 % on EU average, like Bulgaria or Romania. Given the fact that Montenegro uses the Euro as a de facto domestic currency even if they have no agreements with the EU and euroisation of the country was unilateral, country cannot use the exchange rate to influence the convergence of price levels. Given the relatively low price level, there is a risk of a price jump for inclusion in the internal market relatively high.

Table 1: Development of Selected Indicators of Gross Domestic Product and Comparative Price Levels

	2006	2007	2008	2009	2010	2011	2012
Total population (thousands)							
Montenegro	624	625	628	630	616	618	621
EU-28	497 319	499 317	501 398	503 183	504 558	506 275	504 631
GDP per capita in PPS							
Montenegro	8 469	9 990	10 700	9 685	10 143	10 546	10 863
EU-28	23 600	24 900	25 000	23 400	24 400	25 100	25 500
GDP as a percentage of EU-28 (based on PPS per inhabitant)							
Montenegro	36	40	43	41	42	42	41
EU-28	100	100	100	100	100	100	100
Real GDP growth (%)							
Montenegro	8,6	10,7	6,9	-5,7	2,5	3,2	0,5
EU-28	3,4	3,2	0,4	-4,5	2,0	1,6	-0,4
Comparative price levels							
Montenegro	56	56	60	60	57	56	56
EU-28	100	100	100	100	100	100	100

Source: Eurostat (2014). *Statistics* [online]. [cit.2014-02-26]. Available: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

Development in the labour market plays an important role in the maintenance and growth of competitiveness of any economy. Labour productivity, a measurement of economic growth of a country, is increasing both in the EU and Montenegro (see table 4). Montenegro's labour productivity measured as real output per worker is twice lower, than in EU average. There is an important link between productivity and employment, which is a key social indicator for analysis when examining the development of the labour market. High employment is one of several aspects that are crucial in economic growth and assessing the degree of real convergence to the EU (Borys et al, 2008). The employment rate was growing until 2008, when this economy was hit by the crisis. Even though the similar trend occurred in the EU-28, Montenegro is throughout the period far from the level of employment in the EU and does not exceed 50 %. Montenegro's employment rate is at a similar level as countries from group of so-called PIGS that are Greece, Spain, Ireland and another country achieving very similar level of employment is the latest EU member and that is Croatia. Anyway, all Western Balkan countries are facing with a low employment. But a serious problem in all Western Balkan countries is high unemployment (Gabrielová, 2012). Montenegrin economy is saddled with a sustained unemployment problem, which remains very high and practically unchanged since 2010 at nearly 20%. Montenegro's unemployment rate is almost double than unemployment in EU-28. The highest unemployment in EU-28 face Spain (21,7 %) and Greece (17,7 %). Average nominal monthly wages and salaries pointing out the significant differences between the EU average wages and salaries and the Montenegro's one. Montenegro's average nominal monthly wages and salaries have recorded a growing trend from 282 euros in 2006 to 487 euros in 2012, what is very significant change. However, the average of nominal monthly wages and salaries also grow well in the EU-28.

Table 2: Selected Labour Market Indicators

	2006	2007	2008	2009	2010	2011	2012
Labor productivity (productivity per person employed per year, in PPS)							
Montenegro	29 525	28 671	30 221	28 554	30 086	33 648	32 019
EU-28	54 397	56 586	56 287	53 933	56 753	58 344	59 632
Unemployment rate (%)							
Montenegro	n/a	19,4	16,8	19,1	19,7	19,7	19,6
EU-28	8,3	7,2	7,1	9,0	9,7	9,7	10,5
Employment rate (15-64 years) (%)							
Montenegro	41,0	49,2	50,8	48,8	47,6	45,9	47,0
EU-28	64,3	65,3	65,7	64,5	64,0	64,1	64,1
Average nominal monthly wages and salaries							
Montenegro	282	338	416	463	479	484	487
EU-28	433	497	609	543	715	722	727

Source: Eurostat (2014). *Statistics* [online]. [cit.2014-02-26]. Available: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database; Central Bank of Montenegro (2014). *Real sector development* [online]. [cit.2014-02-26]. Available: http://www.cb-mn.org/eng/index.php?mn1=statistics&mn2=real_sector_developments, author's calculations

Another important indicator that can tell a lot about the economic development of the country as well as about risks of adverse asymmetric shocks after the country's entry into the zone based on the internal market or even on the monetary union, is the structure of the economy. The sectorial structure of Montenegrin GDP captured in table 3 may be considered as relatively meeting the needs of the economic development of small economies integrating into a much larger economic unit, such as the European Union. Given the fact that the modern sectorial structure of developed market economies is based on services, where agriculture occupies only a very small part, Montenegro should promote a tendency to reduce share of agricultural production in a favour of a rising share of services. The structure of Montenegrin GDP is more or less similar to the structure of the Romanian, Bulgarian and Croatian economy, but any of those countries do not reach such a high share of agriculture. The most important export commodities are non-ferrous metals, electrical energy, metal ores and scrap, iron and steel. Tourism remains to be a generator of growth of the Montenegrin economy.

Table 3: GDP Sector Composition (Share of Gross Value Added, %)

	2006	2007	2008	2009	2010	2011	2012
Montenegro							
<i>Agriculture</i>	10,1	9,1	9,3	10,0	9,3	9,5	8,8
<i>Industry</i>	20,4	20,9	21,2	20,1	20,6	19,5	17,9
<i>Services</i>	69,5	70,0	69,5	69,9	70,1	71,0	73,3
EU-28							
<i>Agriculture</i>	1,7	1,7	1,7	1,6	1,7	1,7	1,7
<i>Industry</i>	26,8	26,8	26,5	24,8	25,2	25,3	25,0
<i>Services</i>	71,5	71,5	71,8	73,6	73,1	73,0	73,3

Source: Eurostat (2014). *Statistics* [online]. [cit.2014-02-26]. Available: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

5. Conclusion

Montenegro has already made a big progress on its path towards the EU. In terms of the accession negotiation, the progress is evident and opening and temporarily closure of some chapters moved country a step closer to the EU membership.

As regards the economic development, Montenegrin economy recorded a certain improvement (except drop in caused by the financial economic crisis). However, it is not significant and Montenegro is considerably behind the EU. The economic growth of this economy is not high and average GDP growth in the period 2006-2012 reached on average 3,7 %. Since this growth led to a lower economic level in comparison with the EU-28, this growth is evidently insufficient for a significant convergence at EU level. If Montenegro will want to eliminate the gap in economic level in the coming years, it has to achieve a higher growth rate – probably about 6-7 %. As regards the price levels, after the experience of countries that joined the EU in 2004 and had the same price level as Montenegro, for instance the Czech Republic or Slovakia, it is expected a noticeable increase in the price level. In the area of labour market,

Montenegro remains weak and in terms of the achieved degree of economic development, at this time, Montenegro is more or less comparable with the member states as Bulgaria or Romania. However, neither Bulgaria nor Romania showed at the time of their accession satisfactory results and joined the EU (Stojarová, 2007).

The process of Montenegro's convergence to the EU in the given period was very slow and it is important to be launched in a more intense form. Otherwise, there are considerable risks in the form of asymmetric shocks and negative impacts on the Montenegrin economy after its accession to the EU. Convergence to the EU-28 average will be a long-term process.

Acknowledgements

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Convergence of the Bond Yields in Dependence on the EU Accession and Financial Crisis: The Case of Visegrad Group

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Abstract

The aim of this paper is to analyse the influence of the EU accession and financial crisis to convergence and integration of the bond yields and bond markets. The results show the deepening of bond market convergence after the EU accession and the integration has continued until the end of the observed period. The chosen indicators are monthly mid-term bond yields (10-year bond yields). The period of 1/2000 to 2/2014 was chosen in order to show the impacts of the changes. The time period was divided into periods 1/2000 - 4/2004 (before the EU accession), 5/2004 - 7/2007 (after the accession and before financial crisis), 8/2007 - 3/2009 (period of the deepest financial crisis), 4/2009 - 2/2014 (period after financial crisis). Used methods are 1) spread between the 10-year bond yields of countries V4 (Czech Republic, Slovakia, Poland and Hungary) and German 10-year bond yield, 2) analysis of alignment, 3) β -convergence.

Keywords: β -convergence, Bond yields, Integration of bond markets

JEL Classification: E43, G01, G15

1. Introduction

The financial turmoil during 2007-2009 affected the euro area financial sector in ways that differ considerably across market segments and countries. A consequence was a temporary reduction of market activity within national borders. The impact was felt most strongly in the money markets, and relatively less in bond activities. However, economic growth stopped and still many countries are not able to follow Maastricht Convergence Criteria.

On one hand, the integrated financial markets and the common currency may help protect the countries from the negative impacts of a financial crisis, because the countries are part of a large, stable economic unit. On the other hand – financial instability may spread easily from country to country, since barriers to the capital movements have been reduced.

Across the economic literature, there is a range of acceptable definition of financial integration. In a broader sense, it is possible to achieve financial integration when all the conditions necessary for the continuous implementation of financial transactions and market functioning are met.

Commonly-used definition of financial integration is expressed by (Baele et al., 2004). The market for a given set of financial instruments and services is fully integrated

if all potential market participants with the same relevant characteristics (1) face a single set of rules when they decide to deal with those financial instruments and services; (2) have equal access to the above-mentioned set of financial instruments and services; and (3) are treated equally when they are active in the market.

Financial markets are integrated when the law of one price holds (Adam et al., 2002). This states that assets generating identical cash flows command the same return, regardless of the domicile of the issuer and of the asset holder. Given this definition, financial market integration can be measured by comparing the returns of assets that are issued in different countries and generate identical cash flows.

(Czech National Bank, 2011) states that it is possible to speak about the achievement of full integration of financial markets only if financial assets with comparable risk factors and yields are evaluated by the markets in the same way, regardless of the country where the assets are traded. Fully integrated markets without any barriers permit to use an arbitrage opportunities which lower the importance of local factors characteristic for given countries and enable direct comparison of the prices of financial assets in individual markets.

The aim of this paper is to analyse the influence of the EU accession and financial crisis to convergence and integration of the bond yields and bond markets.

2. Theoretical Concepts

In general, the convergence of government bond yields to a stable level with reduced risk aids the overall economy, by allowing cheaper access to debt financing with less uncertainty regarding the value of such funds over time. This, in turn, stimulates investment and output within converging countries.

2.1 Measuring of Financial Integration of Bond Markets

The methods described below are used for measuring of bond market integration.

2.1.1. Spread between Yield on a Local Asset and a Well-Chosen Benchmark Asset

Germany is the biggest and most solid economy within the EU. For that reason it can be chosen as the benchmark asset for the countries of European Union. The smaller the spread is the bigger the integration is.

Formally we can write the convergence in time t and $t + 1$ as (1):

$$|y_{1,t} - y_{2,t}| > |y_{1,t+1} - y_{2,t+1}| \quad (1)$$

where $y_{1,t}$ and $y_{2,t}$ are relevant economic variables of two countries in time t .

The case with opposite sign is called divergence. This is a situation when the countries in terms of economic maturity are moving away.

2.1.2 Analysis of Alignment

Analysis of alignment is the first step of the concept of financial integration. It is based on the correlation analysis in standard or rollover form. This analysis indicates the strength of a linear relationship between two variables. Its value may not be sufficient for the evaluation of this relationship, particularly in those cases where the assumption of normality is incorrect. The correlation coefficients, being aggregated statistics, cannot substitute for individual evaluation of the data (Babecký et al., 2007).

2.1.3 Concept of β -convergence

β -convergence (2) is used to determine the approximation rate of asset returns in financial markets. It was first used by (Adam et al., 2002). In order to quantify β -convergence, it is possible to apply regression according to the following formula:

$$\Delta R_{i,t} = \alpha_i + \beta R_{i,t-1} + \sum_{l=1}^L \gamma_l \Delta R_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where $R_{i,t}$ represents the distribution rate of specific assets between a country i in time t with respect to the reference territory, Δ is the reference operator, α_i is a specific constant for the given country, $\varepsilon_{i,t}$ is white noise disturbance. Lag length L is based on Schwarz Criterion, maximal length is set to 1, because monthly data are applied and financial market memory is relatively short. β coefficient is a direct criterion of the rate of global market convergence.

The concept of beta-convergence enables identification of the speed with which eliminated differences in yields on individual financial markets. If the beta coefficient is negative, then signals the existence of convergence and the amount of beta coefficient expresses the convergence rate, i.e. the rate of elimination of shocks to the yield differential pricing of individual assets to the euro area. The closer beta coefficient is to -1, the greater the speed of convergence is.

3. Methodology and Data

The selected countries are the countries of Visegrad group – Czech Republic, Slovakia, Poland and Hungary.

As a measure of the yield was used 10-year government bond yield in all countries mentioned above and Germany (monthly basis). Germany is the biggest and most solid economy within the EU. For that reason it can be chosen as the benchmark asset for the countries of Visegrad group (and whole European Union). The data of 10-year sovereign bonds of the selected countries were taken from Bloomberg.

The sample period starts from 1/2000 and ends on 2/2014. This time range covers the period before the accession of the countries to European Union (1/2000 – 4/2004), after the accession (5/2004 – 7/2007), period of financial crisis (8/2007 – 3/2009) and period after financial crisis (4/2009 – 2/2014). The beginning of the pre-crisis period (or the period of spectacular growth) coincides with an accession of the countries studied to the European Union. We decided to start the crisis period with a different

date than that of the Lehman Brothers bankruptcy and major panic in the markets. We wanted to capture an earlier market, which was when the 2007 banking crisis changed from high expectations to the fear of a looming sovereign debt crisis. The pre-crisis period depicts a long run-up in prices followed by a significant price drop during the crisis period.

The used methods are: spread between the yield on a local asset and a benchmark asset, analysis of alignment and concept of β -convergence.

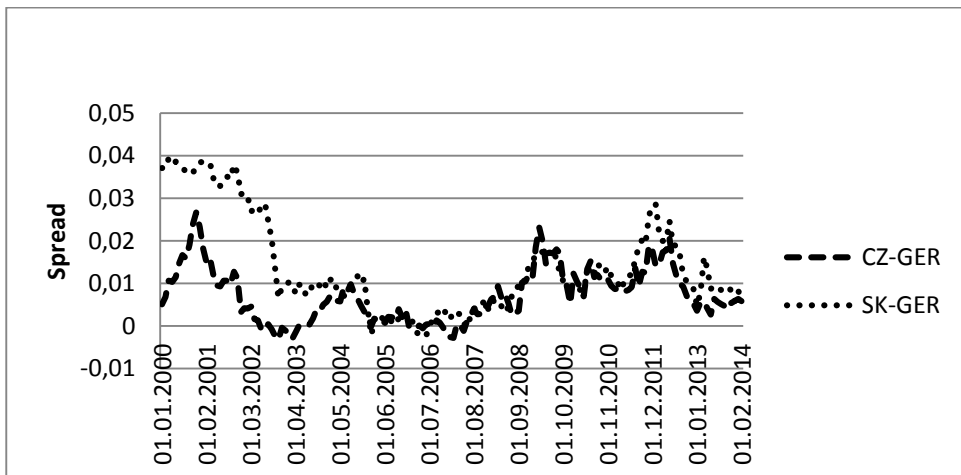
4. Empirical Results

We used the methods described above to measure the bond market integration.

4.1 Spread between Yield on a Local Asset and a Well-Chosen Benchmark Asset

As we mentioned above, the benchmark asset is German 10-year government bond yield. The spreads between Czech Republic and Germany and Slovakia and Germany are possible to see in Figure 1. Spreads of Poland and Hungary are in Figure 2.

Figure 1: Spread of Czech Republic and Slovakia

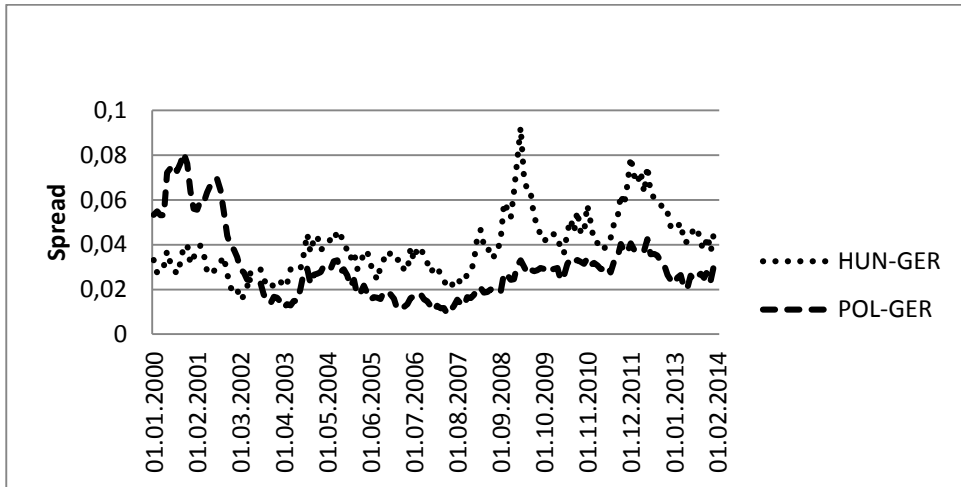


Source: author's calculations

The closer the spread is to zero the bigger the convergence is. It is clearly visible that regarding to the Czech Republic and Slovakia the spreads are the closest to zero between the years 2002 and 2007. Poland has quite stable spread without big turbulences from 2003 to 2014. However the biggest spreads has Hungary – in 2008 and 2011 the spreads are bigger than 7 %. The financial crisis and later on debt crisis had the biggest impact on Hungary (because of the highest spreads).

It is possible to say that according to this criterion, the most integrated country is the Czech Republic, the least Hungary.

Figure 2: Spread of Poland and Hungary



Source: author's calculations

4.2 Analysis of Alignment

Simple period average correlations of 10-year bond yields, shown in Table 1, show that Czech, Slovakian and Polish markets are strongly linked (in whole period) among themselves (correlations between 0.55 and 0.90), on the other hand with the Germany as well (correlations between 0.71 and 0.85). Bold numbers indicate strong and significant correlation coefficients. The results are the worst for Hungary.

Table 1: Correlations during 1/2000 – 2/2014

1/00-2/14	CZ	SK	HUN	POL	GER
CZ	1				
SK	0.904431	1			
HUN	0.55622	0.406213	1		
POL	0.893083	0.932567	0.448558	1	
GER	0.857484	0.814697	0.228382	0.711383	1

Source: author's calculations

Table 2 shows the time period with the lowest correlation coefficient. It is the period of financial crisis. In this case it is possible to see that only Polish 10-year bond yields are strongly correlated to Czech, Slovakian and Hungarian (0.51 – 0.74). No country is correlated to Germany. Table 3 shows the best results – time period from April 2009 to February 2014. It is the period after financial crisis and it was expected that the government bond yields should show the highest correlations.

Table 2: Correlations during 8/2007 – 3/2009

8/07-3/09	CZ	SK	HUN	POL	GER
CZ	1				
SK	0.31033	1			
HUN	0.46646	0.113614	1		
POL	0.749345	0.541197	0.510134	1	
GER	0.17006	0.420882	-0.69072	0.206783	1

Source: author’s calculations

Table 3: Correlations during 4/2009 – 2/2014

4/09-2/14	CZ	SK	HUN	POL	GER
CZ	1				
SK	0.933352	1			
HUN	0.709393	0.805027	1		
POL	0.928255	0.91984	0.711728	1	
GER	0.891152	0.776893	0.404878	0.825406	1

Source: author’s calculations

4.3 Concept of β -convergence

The results of β -convergence are in Table 4. All the values in the table are negative. It means that there is a convergence in the bond markets of the selected countries. The p-values are mainly less than chosen significance level of $\alpha = 0.01$, therefore we can contribute the models as significant.

Table 4: β coefficients

	1/00 – 4/04		5/04 – 7/07		8/07 – 3/09		4/09 – 2/14	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
CZ	-0.658	1.71e-022 ***	-0.814	1.65e-06 ***	-0.787	0.0866 *	-1.241	2.67e-09 ***
SK	-0.595	1.59e-041 ***	-0.797	1.58e-08 ***	-0.746	0.9308	-1.21	2.34e-05 ***
PL	-0.797	4.42e-046 ***	-0.859	9.81e-013 ***	-0.832	0.0720 *	-1.053	7.44e-05 ***
HU	-0.717	5.80e-013 ***	-0.813	1.74e-011 ***	-0.582	4.47e-014 ***	-0.966	1.11e-012 ***

Source: author’s calculations

The only exception is in the Czech Republic, Slovakia and Poland in period the period of financial crisis (8/07-3/09).

However the p-values in the Czech Republic and Poland are under the significance level of 0.1, therefore we can contribute the models as significant on the level of $\alpha = 0.1$. Relatively high values of β coefficient indicate that individual financial markets of observed economics integrated relatively easily with the German market. The β

coefficient was relatively low in Hungary during the financial crisis. It means that Hungary started to diverge and in the period after financial crisis started quickly converge to benchmark. The divergence may be caused by increased nervousness of financial market participants and the associated increase in the volatility of market assets. Both investors and investment services providers in fear of their liquidity position restricted their market activities, including cross-border activities and integration process more or less weakened.

The absolute values of the β coefficients are close to one for all the countries in the period after financial crisis. It means that the levelling of newly arising differences between the chosen country and the Germany is fast.

The tests of normality and homoscedasticity are shown in the Table 5. For the evaluation of the normality test is probably the easiest to observe the result from graph of the assumed normal distribution in comparison to the actual distribution of residues and analyse p-values of Chi-square test. We test the hypothesis H0: Residuals are normally distributed, against the hypothesis H1: Residuals are not normally distributed, the significance level of α was chosen as 0,01. If the p-value is greater than α then we cannot reject the H0, therefore the residuals are normally distributed.

For the testing of heteroscedasticity we chose the White's test. We test the hypothesis H0: Constant variances of residuals – homoscedasticity, against H1: Heteroscedasticity. The significance level of α was chosen as 0.01. If the p-value is greater than α then we cannot reject H0, therefore it contributes homoscedasticity.

Table 5: Tests of Normality and Homoscedasticity

	1/00-4/04		5/04-7/07		8/07-3/09		4/09-2/14	
	P-value norm.	P-value heteros.	P-value norm.	P-value heteros.	P-value norm.	P-value heteros.	P-value norm.	P-value heteros.
CZ	0.347	0.287	0.130	0.433	0.168	0.375	0.113	0.329
SK	0.427	0.397	0.5492	0.248	0.257	0.426	0.247	0.123
PL	0.0104	0.147	0.428	0.260	0.167	0.773	0.193	0.149
HU	0.599	0.756	0.0339	0.107	0.267	0.269	0.569	0.245

Source: author's calculations

5. Conclusion

In this paper we have discussed the selected aspects of bond integration of Czech Republic, Slovakia, Poland and Hungary. The aim of this paper was to analyse the influence of the EU accession and financial crisis to convergence and integration of the bond yields and bond markets of selected countries.

Are the bond markets of the countries of Visegrad group convergent? Answering this question requires a surprising amount of preliminary work. According to all used methods the markets converge more after the financial crisis then before, however they converge for the whole observed period of time. Surprisingly all methods showed

and confirmed lower pace of integration in Hungary in the period of financial crisis, which rose in the period after the financial crisis. The divergence in the period of financial crisis may be caused by increased nervousness of financial market participants and the associated increase in the volatility of market assets.

Future research could be extended to a wider examination of integration of the stock markets. It would be interesting to test if there would be a change in results when using data of EU15 as an average of the oldest members of European Union instead of Germany as the most stable economy.

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Greenland Towards Independence and Its Eventual EU Membership

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Abstract

Greenland - territorial part of Denmark withdrew from the EU. Opinions of experts and inhabitants on European integration vary. After the discovery of deposits of minerals, greater efforts on the independence from Denmark appeared. If Greenland is independent in the future, closer cooperation with the EU can be expected. Eventual EU membership is also not excluded. The article will focus on special status of Greenland as one of Nordic countries and its relationship to the European Union.

Keywords: *European integration, European Union, Greenland, independence, Kingdom of Denmark, Withdrawal from the EU*

JEL Classification: *F5, H7, N4*

1. Introduction

Northern Europe countries have their own regional identity and characteristics specific for northern region; therefore they differ from rest of the Europe. Their attitude towards the European Union is different and more distant. This is the reason why these countries are more eurosceptic, than the other European countries in relation to European integration. (Archer, 2000)

None of the Northern Europe countries belong to the European Union founding members group. Currently, these countries have a various relations with European Union. They share the status of members, non-members and accessing countries. Despite the unity of the region, attitude of both - political leaders and citizens, is different.

Large Nordic countries (Sweden, Denmark, and Finland) often forget about their autonomy regions when they negotiate with the European Union. This fact deepens the euroscepticism in these regions and strengthens separatist movements. It is crucial to point out that most of these autonomous regions use the European Union as an excuse for increasing their own independence and higher rate of their subjectivity.

The Kingdom of Denmark and its territories are used as an example to show the heterogeneity of the relationships between the parts of the northern region and European Union. Accordingly, their reciprocal relations have various intensity and they differ in reciprocal cooperation either.

Greenland and Faroe Islands are not members of the Union. Despite that, both cooperate at some level with the European Union. A status of Greenland is nowadays legally redefined as it quit the European Union.

2. Problem Formulation

The aim of the authors is to characterize special status of Greenland as one of the Nordic countries and its relationship to the European Union.

Subsequently are specified and analyzed the principal reasons which result the Greenland's exit of the European Union and that formed the euroscepticism.

To specify these reasons, the article reflects the integration theory of constructivism, which is based on irrational principals. Irrational factors such as national identity, history, culture, language, tradition, law, political leaders as well as rational factor, such as fishing policy, which is crucial determinant of Greenland's economy, will be specified. The paper points out that all the mentioned factors have some impact on euroscepticism in Greenland, too. In the end, the paper considers about a possibility of Greenland's reintegration to the European Union in the future.

3. Problem Solution

3.1 Greenland and European Integration

Greenland, as the largest island of the world, located in geopolitical area of Northern Europe, has recently become more important in regards to the growing interests in the Arctic. From the political, historic and economic point of view Greenland has its roots in Europe; however, geopolitically it is a part of North America. Because of this, it is not possible to identify Greenland as part of the Europe clearly. This position influences the Greenland's society opinions about the relation with the European Union.

Considering the principals of the modern theory of constructivism, the paper attempts to define main causes of Greenland's withdraw. Constructivists distinguish three basic types of identities:

- Potential „European identity“, which is a result of identification with the European Union (This identity is absent in Greenland, because geopolitically it belongs to North America – authors' note).
- National identities that are changed under the influence of the integration process (During its historic development, Greenland has never existed as an independent state. From 1721 Greenland was Denmark's colony. In 1953 it became an integral part of the Kingdom of Denmark. This is the reason why for a long time has Greenland tried to have a higher level of autonomy from the Kingdom of Denmark - autonomy that would ensure maintaining national identity, original language, culture and traditions – authors' note).

- The third identity is based on the results of above stated identities and presumes that a plurality of the national identities and cultures exists. (Christiansen, Jorgensen, Wiener, 1999)

3.1.1 Fisheries Policy as a Rational Factor Influencing the European Integration

In a centre of Greenland's economy is the fisheries policy and it is the main source of the most people's livelihood in Greenland. Simultaneously, fishery belongs to the traditions of original inhabitants, who consider fishes as their national heritage and the most important commodity for export. The fishery restrictions were the main source of disagreements and Greenland's withdraw from the European Communities. After its accession to the European Communities, Greenland had a privilege of fishing only 12 sea miles from sea coast. Other states of the Union were given a right of entry to Greenland's waters in distance of about 200 miles from its coast. Regarding this, opponents of integration thought that if Greenland withdraws Union, a privilege to solely control fishing area of 200 miles from its coast lines will be returned. Additionally, Greenland could sell the rights to fish in its waters, what would decrease its dependence on Denmark, as well as on the Communities.

Since 1980, Greenland was receiving grant from Denmark for direct expenditures. Amount of the grant was conditioned by amount of expenditures on Greenland's functioning in the previous year. Level of Denmark's GDP³⁶ was also taken into a consideration. The European Communities gave Greenland 84 million DKK every year. It was about 8% of Denmark's donation -1 billion DKK in 1980s (Sørensen [online], 2006).

Greenland society is still highly dependent on Denmark's subsidies as well as on financial compensation from the EU³⁷. In the future, it is necessary for Greenland to diversify its economy and to be less dependent on the fish's exports and its prices determined by global markets. The EU attempts to expand mutual cooperation with Greenland in wide range of areas such as education, research and development. The aim is to modernize Greenland's society.

As it was shown above, the fishing was one of the main reasons of Greenland's withdraw from the Communities. But only if Greenland's economy is diversified due to discovery of wide range of natural resources, and a total independence is granted, fishing will no longer be a defining factor in decision making about possible accession to the EU structures.

3.1.2 Irrational Factors and Its Impact on European Integration

A northern region lives and evolves isolated from the rest of Europe. It has got its own characteristics, culture, history and distinct itself with own regional identity. Greenland fought to be granted higher level of autonomy from the Kingdom of Denmark for a very long time, therefore its accession to the Union was considered to

³⁶ From 2009 is the sum from Denmark decreasing. In 2009 it was one third of Greenland's GDP.

³⁷ New protocol for 2013 – 2015 defines amount of 17, 85 million EUR every year.

outline its “relative” independence. The integration processes were perceived by its own citizens, as restrictions of sovereignty and independence, which would lead to elimination of original inhabitants’ culture and values. Any level of restriction of its sovereignty is considered to be very dangerous as number of citizens living on the island is low (about 55 000). For above reason, the number of original inhabitants could diminish and also their culture, values and tradition are threatened.

Greenland’s inhabitants consider themselves as rather specific nation, which is not a part of Europe. “We do not feel to be a part of Europe – we are the people of Arctic – our way of life is changing though.” (Severské listy [online], 2009).

The question of strengthening Greenland’s independence has been discussed for a long time. Most of the inhabitants have attempted for higher level of autonomy, which would enable preservation of the original language, culture and tradition. Inuits were considered as one of many ethnic groups living in the Kingdom of Denmark until 2009. Greenland’s citizens were officially accepted as a nation after passing an act of autonomy. Above mentioned act gives the citizens of Greenland right to a self-determination, Greenland’s language becomes an official language equal to Danish language. The Act gives wider competences to Greenland’s political bodies and gives a right to control over natural resources.

Native language of Greenland belongs to the family of languages, which include Inuit’s branch of Eskimo language. Besides from the native language, English and Danish are commonly used. Nowadays, they are more common in public than the native one, which is predominantly used by the elderly.

Particularly inhospitable natural conditions have contributed to distinctive nature of Greenland’s Inuits. To understand the identity of Greenland it is necessary to realize that ethnic characteristics of the aboriginals are very close to North American tribes. A connection with nature and traditional way of life is very typical for Inuits. The difference between Greenland’s national identity and European identity contributes to euroscepticism. Political leaders also play an important role. They have an ability to influence public opinions and enforce their thoughts and attitudes towards a certain issue. This was in the case of Greenland’s integration, when most of the political leaders were not sure, whether the integration to European structures is a right thing to do.

The relationship of citizens and politicians is different than in Europe, since most of the population is located in the capital of Greenland - Nuuk. It can be described as open and friendly. It also has an influence on engagement of people on politics. Nowadays, most of the political parties have independence issues in their political programs. They believe that if Greenland was granted the independence from Denmark, they would be more able to develop Greenland’s unique culture and national identity, what is an incredible importance for the natives. Based on the changes of international political reality, interest of involved subjects, and also a character of integration itself, it can be assumed that classic rational factors such as economy (fishery policy), politics, geopolitics, etc. defer and they are replaced by more of irrational factors. It does not mean that the importance of rational factors is irrelevant (compare: Grančay, 2009).

4. Greenland's Way to the European Communities

The beginning of colonial era can be dated back to 18th century. Since that time, Greenland was a part of Denmark monarchy as its colony. Only in 1953, the Greenland became an integral part of the Kingdom of Denmark as overseas land, and it was equalized with the other parts of the monarchy. This status was also enshrined in the Danish Constitution. The Constitution ensured, that Greenland will have the equal status and that it will have two representatives in Denmark's parliament (World Intellectual Property Organization [online], 2009).

Greenland entered the European Communities as a part of the Kingdom of Denmark in 1973. Before the Greenland has joined the Community, a referendum about the accession took a place, on October 2, 1972; – one in Denmark and one in Greenland. Overall results of Denmark's referendum were fairly straightforward. 89.5% of eligible voters participated and 63% of them approved the accession of Denmark to the European Communities. The results in Greenland were quite an opposite. 70.2% voters were against (Sokol [online], 2007).

However the results of Greenland's referendum were not decisive. In its essence it did not have any impact on the position of Greenland in the Communities. The results were part of the results of the national referendum. Subsequently, overall results were in favour of accession to the European Communities. Considering the results, this referendum can be marked to be wholly "Danish". Unsuccessful results of Greenland's referendum could be assigned to poor knowledge and lack of information about the Communities among the citizens of the island. "European union was known very poorly in Greenland. We needed more time for discussions about positives and negatives of the Union membership", one of the Greenland's officials said that time about the referendum (Rasmunssen, 2005). Greenland felt to be offended by the way of the joining the European Communities. People thought that their vote was not well received and respected at all. Because of that, people were thinking about the Greenland's withdrawal since they have joined the Communities. A growing pressure on independence and autonomy from the Kingdom of Denmark was visible³⁸. One seat in Europarliament was assigned to Greenland. At the same time, the Greenland's representatives were entitled to participate on discussions at Council of Ministers, if the discussed issue could affect interests of Greenland.

Forced entry of Greenland to the European Communities as part of the Kingdom of Denmark had contributed to the particular activities of local political structures, which tried to decentralize power and establish an autonomy of Greenland in certain areas. In 1975, this process led to establishing of a mutual Denmark – Greenland commission, which prepared a proposal of a new status of Greenland within the Kingdom of Denmark. The proposal of the act was approved by Denmark's parliament and ratified in referendum, which took a place in Greenland. In 1979, the Greenland's efforts of independence led to a successful referendum, in which the inhabitants of Greenland supported the notion of autonomy. The 73% of them voted for the autonomy (Fiala,

³⁸ Faroe Islands could freely decide and not enter the Communities. It results from its autonomous status.

Pinková, 2005). By the act of 1979, Greenland obtained a specific form of the regional autonomy with the system of shared competences (The Greenland Home Rule Act [online], 1978).

Shortly after the autonomy was granted, Greenland declared its interests to withdraw the European Communities. After 1982 referendum about it took a place. The results were tight. 12 615 voters wanted to withdraw the Communities, and 11 180 voters wanted to remain (53.01% to 46.99%) The results were surprising even for the organizers of the referendum (Sokol [online], 2007). Greenland's government asked the citizens to vote to withdraw the European Union. One of the main reasons of Greenland's withdraw was the Common Fisheries Policy.

In 1983, Moses Olsen³⁹ commented Greenland's withdraw from the European Communities as follows: "we confirm our relations with Denmark as well as Europe; however, we also realize that our full membership in European Union is inadequate and can hardly be in line with our status of autonomy. Our climate, norms, culture, ethnicity, social structure, industry, infrastructure and principals are fundamentally different from Europe, so we cannot be ever equal to the other European countries and regions. In the words of politician, the withdraw from European Union is a step back from all of that, what made us to think that we are not capable of administering our own country for centuries." (Loukacheva, 2007, p. 115).

Based on the referendum, Denmark proposed changes in treaties. The treaty about the exit from March 13, 1984, called "The Treaty about Greenland" became effective on February 1, 1985. It guarantees a status of Overseas Countries and Territories (OCT) associated with the Union to Greenland (Komisia Európskych Spoločenstiev, 2006).

Greenland's withdrawal from the European Communities was an unprecedented act in two ways:

- There was no legally regulated procedure of withdrawal the Communities.
- The status of Greenland was rather specific, as it was not an independent state.

Greenland's autonomous government introduced its demands to Denmark's government. They had not only a binding character. Denmark's government forwarded the demands to the European authorities and negotiated the conditions of Greenland's withdrawal.

An important turning point for Greenland's history was year 2009, when Danish parliament approved an Act of autonomy for Greenland. The act was prepared by Greenland – Denmark commission in 2004 – 2008. This Act replaced the original Act called Home Rule Act, which was effective from 1979. According to this new act, Greenland became an integral part of the Kingdom of Denmark and was granted wider autonomy in internal affairs. According to international law, Greenland's people were officially recognised as a nation. Before it was approved in Denmark's parliament, a referendum took a place in Greenland on November 25, 2008. In that referendum, 75% of citizens voted for the wider autonomy. The results of the referendum were not

³⁹ Moses Olsen is former Secretary of Social Affairs of Greenland.

obliged for Greenland's nor for Denmark's government. In spite of that, Act of Autonomy was approved immediately after the referendum. It granted broader competencies for Greenland. New status of Greenland became effective on June 21, 2009.

Current relations of Greenland as an overseas region with the European Union are conditioned by number of treaties. One of the most important is the Treaty about fishery from 1985. It was signed for 10 years and it was prolonged for another 6 years. Current cooperation between Greenland and the European Union is more intensive than it used to be. The goal is to widen and strengthen future relations between the EU and Greenland (Úradný vestník Európskej únie [online], 2014).

5. Conclusion

Greenland is still dependent on external financing. Due to higher level of autonomy and discovery of natural minerals resources, it can be assumed assume that Greenland will aim to decrease their economic dependence on others. Intensification of reciprocal relations between Greenland and EU in several areas is expected. The European Union is an important market for Greenland's export and it is also a source of Greenland's income. The importance of Greenland for the European Union cannot be neglected either. Greenland's geopolitical and strategic location in the Arctic and possesses of vast natural resources and drinking water should be also mentioned. Current status of Greenland could lead to its independence on Kingdom of Denmark, subsequently to the declaration of their sovereignty. In the case of sovereignty declaration, it can be also assumed that Greenland would join European Union in future. At present, this assumption is only theoretical alternative.

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SEPA – Integration in Payments - New Opportunity for Corporations

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Abstract

The basic objective of SEPA is to remove barriers to cross-border European payments integration. This paper deals with the development of SEPA, the legislation and institutions involved, analysis of means of payment, which are used in SEPA, and also analyzing the benefits that SEPA brings especially for corporations. From 1st of February 2014 the SEPA project came to its final stage or maybe better is to tell that this is the starting point for new era in payments not only for Eurozone or Europe but also for the rest of the world. At the beginning of this project the main focus was on small retail payments for citizens and small and medium enterprises closer to final implementation it was obvious that large international corporations can profit the most. This paper brings the first experience with SEPA in Slovak republic.

Keywords: *Credit, Direct debit, Payment cards, Payment system, Single Euro Payment Area*

JEL Classification: *G21, L14, L15*

1. Introduction

SEPA is a bank program designed to create an integrated and harmonized European payments infrastructure with uniform conditions for cross-border payments in euro - Single Euro Payments Area.

The main objective of SEPA is to dismantle the payments barriers to trading across Europe by harmonizing all retail payments realized in euro. The direct consequence of the introduction of SEPA is to replace domestic payment instruments such as credit transfers, direct debits or credit cards by SEPA effective tools which allow executing any payment easily, efficiently, safely and at the same price.

Within SEPA, consumers, enterprises and other economic entities can send and receive payments in euro, whether within the country or between countries under the same basic conditions, rights and obligations, regardless of where they are located.

The basic elements of SEPA can be summarized as follows: a single currency (Euro), a single set of payment instruments - credit transfers, direct debits and payment cards, effective infrastructure for processing payments, uniform technical standards, common operating procedures, harmonized legal basis and development of new customer-oriented services.

This paper deals with the development of SEPA, the legislation which governs it, institutional security, analysis of means of payment, which are used in SEPA, and also analyzing the benefits that SEPA brings especially for corporations. From 1 February 2014 the Eurozone countries use payment Instruments defined in SEPA in their mutual euro settlements. In this paper we would like to concentrate on advantages of SEPA for corporations and also to bring first experiences with SEPA in Slovak republic.

1.1 Legal and Institutional Framework for SEPA

The SEPA project is an initiative of the European banking industry managed by the European Payments Council (EPC). The aim of SEPA is to eliminate the differences in the ways of realization of domestic and cross-border bulk payment transactions within the Automated Clearing House (ACH) in order to increase efficiency and reduce costs for all parties involved. Among other things SEPA has to create a competitive environment for the banking sector and also reasonably overcomes the benefits of having the U.S. in its clearing system, which allows them to settle payments across the U.S.

The European Union and the European Central Bank actively promote the development of SEPA and therefore take appropriate directives. The most important legislative steps include the adoption of the Payment Services Directive 924/2009 (PSD), which revised the Directive 2560/2001. SEPA started in Brussels in 2002 when representatives of the major European banks and banking associations met to identify how to respond to the EU Regulation (EC Regulation 2560/2001), introduced in late 2001 and forcing cash withdrawals, card payments and credit transfers to be charged equally for domestic and cross-border payments within the Eurozone. Originally, this Regulation was restricted to the Lower-sum payments to the first € 12.500 which in 2006 increased to € 50.000.

SEPA also introduced some changes in the banking systems: banks should change their national codes and account numbers for new standards - IBAN (International Bank Account Number) and BIC (Bank Identification Codes). This change represents the biggest challenge for banks within SEPA, as they were using previously different codes for bank accounts in member states.

The legal basis of SEPA is the Payment Services Directive, which has been transposed into the national legislations of EU member states. In Slovakia, it was subject to regulations transposed into Law no. 492/2009 on payment services and on amendments to certain laws of 4 November 2009.

In February 2012 the Council of Europe, representing 27 member states and the European Parliament, adopted the Directive (EU) no. 260/2012 laying down the technical and business requirements for credit transfers and direct debits in euros.

In March 2002, a SEPA workshop was held in Brussels and attended by 42 banks, the European Banking Association (EBA) and three European Credit Sector Associations (ECSA) represent all geographic areas and all relevant types of institutions.

The recommendations, adopted at the workshop were published in a White Paper entitled: "Euroland - our single payments area".

The result of the White Paper was the establishment of the European Payments Council (EPC), which formally began its work in June 2002 to facilitate the development and implementation of SEPA in accordance with the vision, as outlined in the White Paper. EPC has become a decision-making and coordination body of the European banking industry in relation to payments, with the stated purpose to support and promote the creation of SEPA.

The general objective was to create EPC architecture, tools and processes to SEPA in the extent of implementation of basic payment services in euros in Europe - euro retail payments. Means of payment, which were included in SEPA: transfers, direct debits, card, cash, and later e-payments and m-payments.

2. Basic Payment Instruments within the SEPA

SEPA is considered the key tool to achieve a wider harmonization within the euro area, which should contribute to a further increase in cross-border movement of goods and services.

In the Slovak Republic the implementation of SEPA was divided into the following phases:

- *First phase* – compliance with the requirements set by SEPA cards Framework (2011),
- *Second phase* – implementation of SEPA credit transfers for credit transfers executed via retail payment system in EURO SIPS (2012),
- *Third phase* – implementation of SEPA credit transfers and SEPA direct debits in accordance with Regulation no. 260/2012 till 1 February 2014.

2.1 SEPA Credit Transfer (SCT)

The first SEPA payment instruments that can payment service users actually use from 28 January 2008 is the SCT. The SEPA direct debit scheme started on 11 January 2009. The SCT scheme encompasses 4.491 banks involved, including 9 bank operating in SR the basic SEPA direct debit scheme (called „Core“) encompasses almost 4.000 bank, including 12 Slovak banks, and the SDD scheme for direct debit transactions between enterprises (called „B2B“) joined by at least 3.500 banks, including 2 Slovak ones.(NBS 2012)

The national payment systems vary significantly, the new harmonized technical standards and formats that are now available, allow corporates and consumers to use the SCT and realize euro transfers in Europe under the same conditions. Payment orders, formats, information identifying banks and accounts, operating rules are the same regardless of whether the payment is made within or across borders, for example between Slovakia and Austria.

The key features of SCT include:

- Maximum execution time for SEPA credit transfer from electronic ordering to credit on the beneficiary accounts is 1 business day.
- SEPA credit transfers are credited in full without deduction of fees from the principal amount.
- IBAN and BIC replace national account numbers and sort of codes.
- The length of the remittance information has been fixed at the standard length of 140 characters and banks are obliged to provide the full remittance information on account statements.
- New optional data elements.
- Non-urgent mass payments in euro.
- The SEPA XML format is binding for the exchange of payments between banks (however, banks may continue to accept other formats from clients for the instruction of SEPA payments).

2.2 SEPA Direct Debit (SDD)

SEPA Direct Debit was introduced into practice on 2 November 2009. In Slovak domestic payment the collection is systems a very common means of payment used by the population especially for monthly advance payments to large companies delivering electricity, gas, telecommunication services and insurance companies. This method is used in the business sphere too as a single payment or as repeated payments; their processing is different in both cases.

The key features of SEPA Core Direct Debits include:

- allowing domestic and cross-border direct debits,
- IBAN and BIC replacing national account numbers and sort codes,
- SEPA direct debit collections method based on the mandate signed by the debtor and presented to the creditor,
- the mandate has standardized content and must be issued in the debtor's contract language,
- new data elements,
- SEPA XML format binding for the exchange of payments between banks (however, banks may continue to accept other formats from clients for nstruction of SEPA payments)

The Execution Time:

- direct debits will have a due date to be assigned by the creditor which is the date on which the debtor is debited,
- date and amount of the direct debit is communicated to the debtor not later than 14 calendar days prior to the due date (however, other notification periods can be agreed on,
- the initial direct debit or one-off direct debit must be sent to the bank not later than 5 business days prior to the due date,
- subsequent direct debits must be sent to the bank not later than 2 business days prior to the due date,

- any returns by the debtor bank (e.g. If the account is closed) must be effected no later than 5 business days after the due date,
- debtor can return authorized direct debits for up to 8 weeks after the due date,
- unauthorized direct debits (for which the debtor has not signed a mandate) can be returned up to 13 months after the due date,
- the mandate expires 36 months after the last initiated direct debit.

The way how collection payments are processed in Slovakia do not represent any risk for the parties involved in transactions. Adaptation of existing domestic debit scheme to SEPA direct debit scheme is connected with the change of mandating the collection from existing "Debtor Mandate Flow" (mandate is given by payer to his bank) to "Creditor Mandate Flow" (debit mandate is given by payer directly to the creditor).

- The proposed solution is based on the fact that the bank gives the client the opportunity to use for his account attribute "level of protection", which can have a value of 1-3:
- Account with an attribute "unprotected", which allows the full collection based on the mandate given directly to remittent (creditor) under the conditions defined in the SDD.
- Account to the attribute "conditional collection" when the collection can be successful only if the mandate is given to the debtor's bank.
- Account with an attribute "no collection".

The key requirement of corporate user groups was the creation of a direct debit instrument more geared towards the needs of business users. As outlined below, the core SEPA direct debit places a lot of emphasis on consumer protection and it has therefore longer refund timelines. Business users have expressed the need for different rules for direct debits where both debit and credit parties are corporates. For this purpose, the EPC has created an optional SEPA direct debit scheme: the B2B SEPA Direct Debit. (NBS 2012)

Consequently, it contains few differences compared to the core SEPA Direct Debit. For example:

Returns by the debtor are not possible, i.e. B2B direct debits will not be refundable (whereas in the core scheme the debtor can request refund of a direct debit up to eight weeks after the debit date). Therefore, the debtor's bank must conduct a mandatory mandate check to verify that the direct debit is indeed valid. Also, there is a shorter collection cycle of D-1 (D being the due date) for the first and subsequent collections. All returns by banks will be settled on D+2 at the latest. The Business-to-Business SEPA Direct Debit was launched at the same time as the SEPA Core Direct Debit (November 2009). (NBS 2012)

2.3 SEPA Cards Framework (SCF)

In the area of payment cards the SEPA project covers the feature of credit cards, POS terminals and ATMs with EMV chip technology, which offers new service quality in terms of increased safety. The basic requirement is the general acceptance of credit cards and their applicability under the same conditions in all SEPA countries. According to Slovak Banking Association statistics 14 banks – issuer of payment

cards – operate in Slovakia. The number of payment cards issued in 2011 increases in comparison to the previous year by 7,6% - from 4,97 million payment cards to 5,34 million bank payment cards. By the end of 2011 bank clients could use a network of 2 404 ATMs and 37 978 POS terminals in the Slovak Republic (NBS 2012).

SCF main requirement in this regard is to provide technologically secure payments under SEPA, such as credit card equipment and POS terminals standardized EMV chip technology and security during transactions with the use of this technology by the end of 2011. In SR till 30 December 2011 100% of the ATMs, 99.65% POS terminals, 95.51% debit card and 96.76 % credit cards were converted to this technology. Another important recommendation is to allow SCF and preference for adopting SEPA compliant payment cards in accordance with the EMV standard and SCF, i.e. reading the chip and requesting that the PIN code for all POS terminals. The aim was to reach by the end of the year 2011 SCF compatible network of POS terminals at merchants and arrange the widest possible acceptance of SCF compatible payment cards within SEPA countries. Payment terminals still accept products without EMV chip technology due to the need to provide the acceptance of credit cards from outside the SEPA (NBS 2012).

3. Payment System in SR

Payments Instruments used nowadays in Slovakia are characterized by relatively high level of automation, security and efficiency. Manual interference into processing is reduced close to zero and provides the possibility of automated processing of payment transactions in the entire payment chain. In the past payment and collection orders were used most commonly. Checks were used in the domestic payment system rather exceptionally, mainly for cash withdrawals from banks. In the early nineties there was a sudden onset of the use of credit cards. Their share is still rapidly increasing, and now credit cards are involved in 30% of non-cash transactions. Credit transfers represent the largest share of payment instruments. The statistics of number of the different types of payment instruments in the Slovak Republic in 2011 is shown in Table 1.

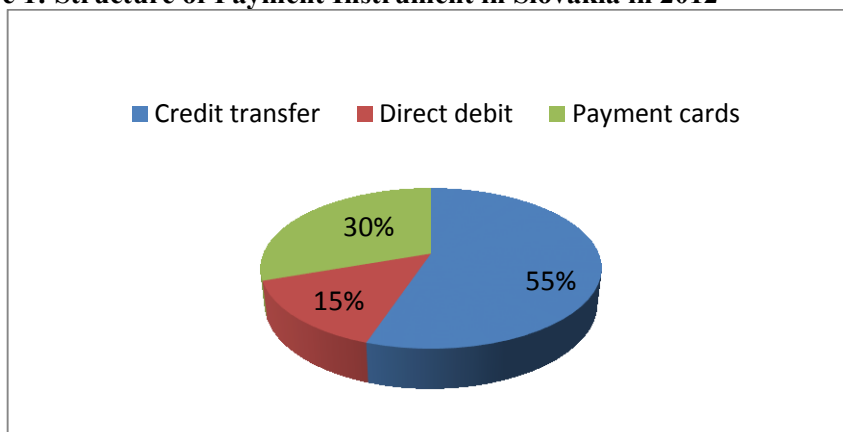
Table 1: Numbers of Different Types of Payment Instruments in the SR in 2012

TRANSACTION TYPE	NUMBER (in mill.)
CREDIT TRANSFER	278
DIRECT DEBIT	73
PAYMENT CARDS	153
TOTAL	504

Source: Based on data from ECB (ECB 2012)

Figure 1 shows the structure of payment instruments in Slovakia in 2012. This structure is essentially unchanged in recent years. It is not clear what the impact will be on the use of direct debit form as the SEPA direct debit.

Figure 1: Structure of Payment Instrument in Slovakia in 2012



Source: Based on data from ECB (ECB 2012)

4. Benefits of SEPA

First discussions on the introduction of SEPA mainly focused on the benefits that SEPA would bring in retail payments to consumers, retailers and banks. In recent years, the globalization reaches such an importance that currently multinational and transnational companies will be able to benefit from SEPA most.

According to the European Commission, SEPA will bring benefits that can be summarized as follows:

Banks: at present payment processing represents around 40% of the banks' costs, but only 20% of their revenues, therefore most banks are running payments at their loss. With SEPA, banks deal with pan-European infrastructures for the clearing and settlement of payments. This will enable Europe's banks to reach over €10 billion in savings through the rationalization, consolidation and sharing of infrastructures. Further, about € 5 billion will be saved through reduced cash as citizens move towards increasing usage of credit cards, prepaid and other electronic payment transactions. Banks can also generate new revenue streams by moving towards new products and services, such as automation of the financial supply chain, rather than to provide pure vanilla payments processing. (Skinner, 2008)

Merchants: the European Commission believes that merchants are penalized through credit and debit card fees. An example: in Belgium one PIN-based debit card payment costs merchants 5 eurocents (€ 0.05), compared to € 1 cost in Spain. The leveling of these charges will be good for merchants, as a single charging structure for acquisition fee will ensure more predictability and consistency for stores and operations. (Skinner, 2008)

Citizens: payments costs will be reduced to a standard fee structure across Europe, benefiting citizens in countries with high cost. For example: Italian banks charge € 252 yearly for consumer payments whilst Dutch banks charge only € 34. [Skinner, 2008] This disparity will (disappear and it is expected that the average cost of

payment services for citizens will be around € 100 per year. This will be the result of choice and will increase competition among providers of payments. Moreover, people who travel a lot or own property in other Member States can manage their financial needs through a single account with a standard fee structure, which can bring more interest in business and marketing in Europe.

Society: European Commission estimates that costs of inefficiencies in the current payment systems cost Europe 2% - 3% of its GDP. This equates to around € 100 billion of costs per annum that could be saved, half of these wrapped up in payments infrastructure, whilst the other half is tied up in poor working capital and corporate payments processing for account payable and receivables (Skinner, 2008).

4.1 Benefits of SEPA for Corporations

At present, most corporations have to maintain multiply bank accounts, often one for each country of operations. After the introduction of SEPA every business should theoretically be able to run one treasury operation with one bank for the whole of Europe. Eradicating the need for multiply resources, currencies, languages, banks and financial managers will generate significant savings. It is also anticipated that billions of euros can be saved through improvements to treasury operations through the automation of account payables and receivables. This will focus corporations and their banks on releasing much greater efficiencies through “supply chain automations”. (Skinner, 2008) This will bring additional strategic opportunities in the segment of large companies that enhance the current trends of centralization, standardization and automation. This will result in cost reduction on the one hand and in improving risk control on the other. In particular, centralization will go about creating a centralized financial management (treasury), payment factory and in-house bank, which can also bring billions of savings. Automation is associated with the introduction of new interfaces in information technology, with further dematerialization of paper and direct treatment. In the area of standardization SWIFT continues to play an important role - offering large companies new ways to communicate. To advance the goals of centralization helps SEPA payments that the company will be able to reduce the number of accounts needed within the EU and to facilitate the centralization of liquidity. The automation will simplify data reconciliation and use the new data elements. There will also be simpler system configurations, thanks to the elimination of domestic formats. Corporates will be able to harmonize and use one database format (XML) for the whole of Europe.

5. Conclusion

On 1 February 2014 single area for payments in euro became reality in Eurozone countries. Banking and business sector has had a very tough year in which they had to adapt their systems to the new conditions. Some countries decided to go as soon as the SEPA products are available - such as the Nordic countries, Netherlands and Slovenia. Other countries rather waited and left more tasks to the last minute.

Banks in Slovakia made active preparations for migration within an aggressive timescale. The NBS was spearheading these efforts by publishing migration guides

that enabled commercial banks to migrate processes and technology to support new instruments. Slovak republic decided to use the two years transitional period and allowed to consumers to continue in using domestic format of bank account number and to companies sending bulk payments in the same way as before. The last January weekend commercial banks in Slovakia successfully migrated to the SEPA.

Integration in the payment system is not only the last step of EMU, but it also brings new opportunities for the effective management of all cash flows of large corporates. This step is particularly significant because in recent years the internationalization of the business environment and large corporates need new products and technologies in the implementation of the payment system.

Implementation of SEPA project has been associated with high costs for banks and corporates but these costs shall be returned by allowing them to a large extent to save costs in the future and effectively manage cash flow especially in cross-border transactions.

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Incomplete EMU Integration as an Amplifier of Financial Crisis

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Abstract

The financial crisis that hit major economies in 2007–2008 and the following recession triggers several fiscal and monetary policy responses. Although there are many important differences among major economies and their financial systems, central banks reacted almost identically by waves of various easing programs. In my contribution, I will focus on the coping with the crisis by FED, BoE, and ECB. I will compare the size, composition, and development of balance sheets of these central banks as well as an institutional context of their policy operations. On the basis of these comparisons, I will claim that the half-way European integration, limited to monetary union only without banking or fiscal union, is an important factor deepening the financial crisis and postponing its solution.

Keywords: *Balance sheet, Central bank, ECB, Financial crisis, Quantitative easing*

JEL Classification: *E42, E52, E58, E63*

1. Introduction

Prior to the establishment of the common Euro currency and also prior the outbreak of financial crisis, there appeared discussions about how currency union will cope with macroeconomic and financial shocks (Lane, 2012). Given the stage of Euro area (EA) integration, with separated monetary and fiscal policy, and without banking union, a large attention was focussed on fiscal criteria for individual member states. They were claimed to be prudent in terms of deficits and debts, since they would have only their own fiscal measures to combat economic crisis.

The last financial crisis that led to the so called Great recession was very severe in its depth. It was distinguished by illiquidity and insolvency problems of many players on financial markets (Brunnermeier, 2009). Naturally, the states reacted with various economic policy responses.

In my contribution I focus on the issue of how various states characterised by different stages of integration cope with the recent financial crisis. I choose USA, UK (a European Union member) as representatives of fully integrated states, and EA. I will show that the incomplete EA integration, consisting in separation of monetary and fiscal policy and the absence of banking union amplifies the crisis. I will discuss this issue in terms of monetary policy responses of respective central banks (CBs) to financial crisis, with its relation to overall policy stimulus and multiple equilibria of bank-sovereign in/solvency.

2. Monetary Policy Response and CBs Balance Sheets

The monetary policy reaction to the financial crisis and recessions can be primarily viewed in terms of liquidity provisions and monetary stimulus. This is generally determined by two factors. The former one concerns the structure and functioning of financial intermediation. In this respect the economies of USA and UK are characterized by higher rate of non-banks intermediaries in comparison to bank-dominated EA. Although this factor gives some relevance to specific instruments used by CBs during the crisis, I will focus mainly on the second factor related to different institutional designs. By this I mean different rules for monetary policy, its relation to fiscal policy and bank resolution.

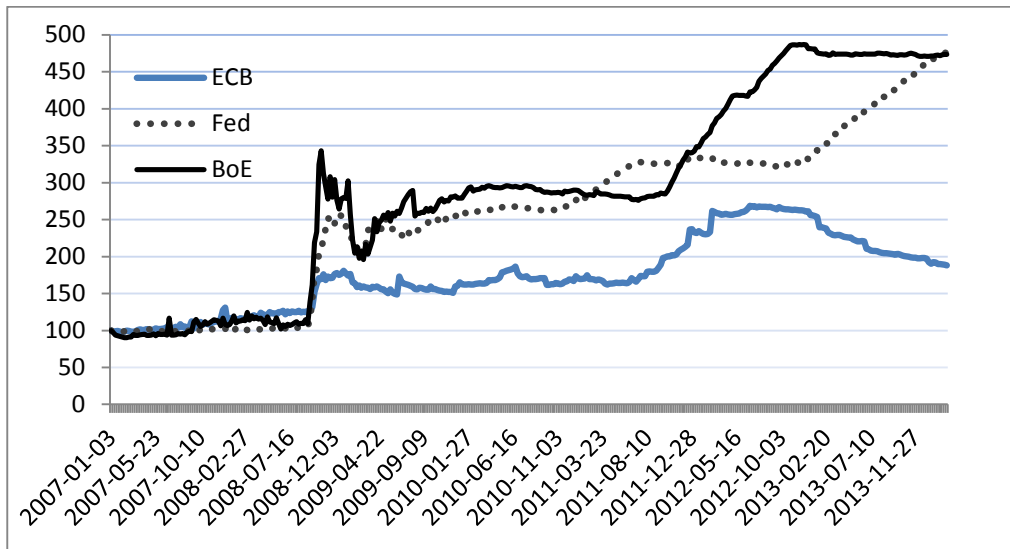
The three compared countries differ significantly in this respect. USA and UK are representatives of a complete monetary, fiscal and banking integration. Contrary to them, the EA is only incompletely integrated. Determined by historical, political and economic context of European integration (Spolaore, 2013), it is in the stage of a unique historical experiment of separated fiscal and monetary policies. Because of this incompleteness, several specific rules were imposed to sustain macroeconomic and financial shocks and to avoid moral hazard by individual EA member states. The most important of them are 1) the prohibition of monetary financing by the central bank; 2) the no-bail clause and; 3) Stability and Growth pact. The further remarkable aspect of EA institutional design is the absence of banking union, or the responsibility of supervising and rescuing of banking systems by individual states. Within this context EA members are individually responsible for fiscal response to shocks and banking sector solvency. The ECB mandate gives it the responsibility for ensuring price stability. On the contrary, Fed and BoE operate within larger mandate. In the next paragraphs I will examine the CBs responses under these different institutional designs.

2.1 Liquidity Problems Response

When the financial crisis hit the economies in 2007–2008 financial intermediaries generally faced problems with obtaining liquidity. All three compared CBs reacted in accordance with the classical Bagehotian prescriptive of lender of last resort. They initiated the process of lowering main policy rates that were successively diminished to zero levels. At the same time CBs announced various programs that should improve the liquidity conditions, that almost fully dried-up. Among them there were for example outright purchases of various assets (like asset-backed securities, covered bonds or government debt) or loosened conditions for lending reserves (like full-allotment, extended repurchased period, etc.). Each of these conventional and unconventional measures affects the CBs balance-sheets.

Figure 1 illustrates the expansions of assets by Fed, BoE, and ECB, the so called quantitative easing (QE). It is expressed in percentage increases since January 2007 in order to eliminate the differences in size of the respected economies. All three CBs, started to increase their assets in September 2008 as a response to Lehman Brothers bankruptcy. However the main reaction of ECB came only later within the context of sovereign debt crisis.

Figure 1: Total Assets of Compared CBs (2007-01-03 = 100)



Source: ECB, Federal Reserve, BoE statistics

By expanding assets the CBs expand at the same time its liabilities, which are formed mainly by currency and reserves. The results are therefore the increased amount of liquidity for banks and other financial intermediaries. These accumulated excess reserves and in this respect the CBs liquidity problems response can be assessed as accomplished.

It is important to note, that by functioning as the lender of last resort for financial intermediaries, all compared CBs also provided an indirect support for sovereigns. This goes through the allocation of a part of excess reserves to government securities. However, in case of the direct notional lender of last resort for governments the compared CBs differs. That amplifies crisis as I will discuss in the next section.

2.2 Monetary Stimulus and Solvency Issues

The second part of monetary policy response is in terms of monetary stimulus for economies in recession and related topic of solvency of financial intermediaries or sovereigns. The overall look on the assets expansion shows that Fed and BoE reacted much more strongly than ECB, when their total assets increased approximately two times. The reaction of ECB was comparatively modest and its total balance is already decreasing since January 2013. The difference in dimension is also revealed by comparing the ratio of total purchased assets on GDP. In this respect Fed gets 22.1%, BoE 26.3% and ECB 3.5% only. (Fawley, Neely, 2013).

Another important picture is provided by assets composition, which reveals differences in instruments used to challenge crisis. Generally speaking the reactions of Fed and BoE were very different from that of ECB also in this respect.

Table 1: Asset Composition of CBs Balance Sheets in 2Q2013 in %

	ECB	FED	BoE
Other assets	17	2	4
Liquidity facilities	49	0	0
Credit market intervention	22	37	4
Government securities	13	61	93

Source: Dobbs, R., Lund, S., Koller, T. and Shwayder, A. (2013)

Table 1 clearly reveals that CBs in USA and UK are pumping liquidity mainly by buying government securities. Considering the fact that the item Credit market intervention for USA contains mainly mortgage backed securities (MBS) guaranteed by government sponsored enterprises, the government-related securities represent almost hundred percent of purchased assets. On the other hand ECB is due to its mandate remarkably modest in buying government-related securities. It rather intervenes with liquidity provisions to banks by repo operations.

These differences in size and composition are largely determined by the institutional design in respective countries and reflect the CBs mandates. Next I will show the general implications of these differences on the crisis solution. First I will focus on USA and UK, than on EA.

Fed and BoE operate within a larger mandate that gives them the role for providing a monetary stimulus. As a reaction to financial crisis and Great recession they have provided several rounds of quantitative easing. For example under the so called QE3 the Fed purchased \$85 billion of long-term securities each month (\$40 billion of MBS and \$45 billion of government securities, especially longer term T-bonds). As we have seen, BoE buys almost solely government securities, so called gilts.

The purchases of government-related assets have two recognizable and interrelated effects for sovereigns and financial intermediaries.

The first one concerns the fiscal stimulus in crisis. By buying government securities the CBs are creating demand for them, therefore increasing their prices and diminishing interest rates. At the same time the willingness or readiness to buy government securities also means that USA or UK governments cannot default on its debts denominated in their own currency. In this respect USA and UK are truly sovereign states. As pointed out by Kelton and Wray (2009, p. 10) this is reflected also by rating agencies, which “clearly recognize that there is no solvency problem related to sovereign budget deficits.” All of these factors lower the cost of government spending and free the hands to government to fiscal fight against the crisis.

The second effect affects the solvency of financial intermediaries. Although lender of last resort should provide support only for illiquid banks, not for the insolvent ones, the CBs purchases of government-related securities also helps financial intermediaries in terms of solvency. The reason is that government bonds (or MBS) are typical component of their assets. When the perceived risk of their default remains low and

their price stable, the financial intermediaries do not face the thread of insolvency from this factor. The Fed and BoE actions as “dealer” of last resort on the markets with T-bonds, MBSs, and gilts, therefore helped to stabilize the solvency of financial sector. This effect lowers further the cost for government since it does not face so severe problems with financial intermediaries rescue. In other words, this stabilizing effect for prices of government securities averts the problem of multiple equilibria, where bank insolvency escalates the thread of insolvency of governments and vice versa.

Contrary to Fed and BoE, ECB approach and official proclamations do not concern the issue of monetary stimulus. It appears that its unconventional measures do not aimed at providing additional direct monetary stimulus. Rather it focuses primarily at supporting the effective transmission of its standard monetary policy (Cour-Thimann and Winkler, 2012).

It the first phase of the crisis ECB reacted primarily by extending the liquidity provisions by lending facilities. It started to satisfy demand for reserves by full allotment or lengthen the repurchased period. It also began to purchase assets, especially covered bonds, but in very limited amounts of approximately 1% of EA GDP (Fawley and Neely, 2013). Its main response came in May 2010 when Greece was cut off the financial markets. Since then ECB started to purchase government debt in secondary markets under the Securities Market Programme (SMP), in order to improve dysfunctional transmission mechanism of monetary policy and ensure price stability. However, the amounts of debt bought remains quite limited. Fawley and Neely (2013) states that total purchases under SMP were 220 bn. Euro representing 2.4% of EA GDP. Contrary to that, BoE gilts purchases were 375 bn. Sterling, representing 26.0% of UK GPD. Further response to sovereign crisis was another program called Outright monetary transactions (OMT), under which should ECB buy short-term government bonds of fiscally sound governments on secondary markets. However, this politically controversial program was never used.

The absence of monetary stimulus means that fiscal policy of individual member states bears the costs of crisis solution. This leads to increasing requirements on government finances. Since the prohibition of monetary financing by the ECB the states have to compete for funding with other players on financial markets. In the situation of lower liquidity on financial markets, the raising supply of government securities will lead to increasing interest. Furthermore, since there can come the situation that governments will not be able to roll over its debts and defaults on its liabilities, there naturally rise the required risk premiums. In order to manage the rising cost of financing and to calm investors the governments needs to concentrate on austerity rather than on fiscal stimulus. The absence of monetary stimulus therefore limits the fiscal response to the crisis and therefore amplifies it, at least in short term.

As the financial crisis hit European banks, they faced the problems with illiquidity and insolvency. Especially their assets related to real-estate sector lost value and evaporates bank's equity. This hit mainly the banks in EA periphery. Since there is no common responsibility for banks in EA, their rescue remains on individual states. These have to either recapitalize banks or guarantee their liabilities, especially to

depositors. The direct or indirect costs naturally stretch the state's deficits with the above stated consequences for their price. However, without the appropriate backstop from CB these problems led to the vicious circle. Since banks hold large parts of states debt in their assets, and especially of its own state as show Merler and Pisani-Ferry (2012), the fall of government bond prices deteriorates their solvency at the same time. The circle could repeat again. In the deep crisis the individual states are therefore impotent to effectively rescue their banks. Financial markets clearly know it and rightly penalized individual states. Let us image that the fall of Lehman Brothers should be solved on the level of State of New York in which jurisdiction it was headquartered. Therefore the absence of banking union in EA can be considered another important factor amplifying the crisis.

3. Conclusion

In my contribution I focused on the main aspects of monetary policy response to financial crisis. I chose USA, UK, and EA that similarly had to challenge the financial crisis of 2007–2008 and traced the consequences of different institutional design on the crisis solution. I showed that all three respective CBs accomplished their role of lender of last resort for financial intermediaries and provided large amounts of liquidity. The institutional setup of separated fiscal and monetary policy in EA, and the absence of banking union were however two important factors that worsened the conditions of individual EA member states, especially those on periphery.

In accordance with its mandate the ECB reacted comparatively modestly to financial crisis. Especially the absence of monetary stimulus can be considered as the main factor deepening the crisis. The reason is that it increased the cost of funds for sovereigns obtainable on financial markets and did not avoid the interconnected problem of negative multiple equilibria of bank-sovereign in/solvency when states have to rescue their banks. The higher costs of funds naturally limited the scope of fiscal stimulus and amplified crisis.

There can be raised an objection that monetary financing of government debt would lead to moral hazard. I completely agree with that. Saving the insolvent banks or governments is very problematic issue and especially relevant in politically heterogeneous EA. Since EMU is primarily political project the solutions will not be easy.

However my focus was neither the proposal of the solution nor the moral hazard issue. My point was that fiscal policy alone cannot be efficient in counter cyclic responses, especially in the short run. This is clearly evident for example in terms of real GDP growth and unemployment in USA and UK, contrary to EA. Given the institutional structure, in comparison to USA, UK, the crisis in EA was amplified.

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Determinants of iTraxx Europe Senior Financials Index Spreads

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Abstract

Credit default swap spreads are considered as a leading indicator of the future development of creditworthiness, which can point out the potential situation in a company or the economy. Therefore the attention should be paid to the factors that can affect credit default swap spreads, which can have an impact on the investors' decisions. The aim of this study is to examine the influence of CDS spread determinants on daily and weekly changes in iTraxx Europe index that includes 25 equally weighted credit default swaps on investment grade European entities. To capture the changing role of the selected determinants, a linear regression is employed in the pre-crisis, financial crisis and post-crisis period. The findings could be beneficial for the participants in the financial markets, as well as for the policy makers both at national and European level.

Keywords: Credit default swap spread, Determinant, iTraxx Europe Financial Senior index

JEL Classification: C22, C58, G01

1. Introduction

The rapid development of credit default swap (CDS) products and markets has led to the increasing attention of investors in these products. In June 2004, iTraxx CDS index was introduced. A contract on a CDS index provides credit protection on the pool of names in the index. CDS index contracts have very similar characteristics as single-name or basket contracts, however, they do not terminate when a credit event occurs to a CDS index member or if the first reference entity in the pool defaults. Another advantage of contracts on CDS indices is that they are much more liquid compared to single-name or basket contracts. It makes them an attractive instrument for financial market participants who want to sell or buy credit protection.

Therefore the attention should be paid to the factors that can affect CDS spreads, which can have an impact on the investors' decisions. The aim of this study is to examine the influence of CDS spread determinants on daily and weekly changes in iTraxx Europe Senior Financials index that includes 25 equally weighted CDSs on investment grade European entities in Europe. CDS spreads of included institutions reflect market perceptions about the financial health of credit institutions and can be used by prudential authorities to extract warning signals regarding financial stability (Annaert et al., 2013). To capture the changing role of the selected determinants, a regression is employed in the pre-crisis, financial crisis and debt crisis period.

Understanding the role of selected determinants is beneficial for investors, analysts or policy makers. Together with the growing degree of integration (financial and economic) in Europe, determinants should not be unheeded because of their role within investment or policy making decisions.

Several authors contributed to literature on the corporate level and used single-name CDS spreads in their empirical research, e. g. Blanco et al. (2005), Ericsson et al. (2009), Houweling and Vorst (2005) or Tang and Yan (2010). Only a few studies had dealt with the determinants of CDS indices' spreads before the financial crisis broke out. Byström (2005) analyses the relationship between stock returns and CDS index spread changes and Byström (2006) compares market prices of iTraxx indices with theoretical prices of a structural credit risk. Alexander and Kaeck (2008) examine the empirical influence of a wider set of theoretical determinant on daily changes in iTraxx Europe with conclusion that the most theoretical variables contribute to the exploration on CDS spread changes, but their influence depends on the prevailing market circumstances. These papers do not include period during and after the financial crisis. Together with the crisis occurrence, the determinants of CDS spreads are in the spotlight of researchers, e. g. Annaert et al. (2013) or Chan and Marsden (2014).

2. Data

The iTraxx Europe Senior Financials index consists of 25 the most liquid single-name CDSs in the European markets. It is equally weighted and every six month (in March and September) a new series for index is introduced. All data are obtained from Bloomberg database on daily and weekly frequency.

The total sample period (June 2004 – December 2013) is divided into three sub-periods according to trends in development of the Markit iTraxx Europe Senior Financial index:

- a) pre-crisis period (06/22/2004 – 05/31/2007),
- b) financial crisis period (06/01/2007 – 10/31/2009),
- c) post-crisis period (11/01/2009 – 12/31/2013).

The start point of overall period was set up as a date when iTraxx indices started to be traded. The financial crisis period is taken as a period of the biggest turmoil in financial markets. We consider that this period does not start with Lehman Brothers bankruptcy since the banking crisis started earlier. Then the crisis has been transformed into a sovereign debt crisis, although it is denoted as the post-crisis period.

We use several explanatory variables that are available on the same frequent basis as CDS index spreads. Christie (1982), Alexander and Kaeck (2008) or Annaert et al. (2013) use stock returns as a proxy for leverage, since if stock returns are positive, leverage will decrease, leading to lower credit spreads or vice versa. Asset volatility is calculated as historical volatility instead of implied volatility of individual stock options because of lack of data on options. Liquidity can be measured and assessed in various ways. We choose bid-ask spread as a measure of liquidity in our research. Our

research includes market factors as well. Following Annaert et al. (2013), it is likely that common variation is linked to the economic environment, capturing general market and economic conditions. Eurostoxx index is used as a measure of business climate and VSTOXX index as a measure of market implied volatility. Moreover we add swap 1year spreads as a proxy of risk free interest rate in Eurozone and lagged value CDS index change. The term structure slope is the change in difference between the 10year and 2year German government bonds.

3. Model

A linear regression model is conducted to find out whether the chosen determinants have an explanatory power and if the changes of selected variables have influence on CDS spread changes. The model is specified as:

$$\Delta CDS_t = \beta_0 + \beta_1 \Delta CDS_{t-1} + \beta_2 \Delta VOL_t + \beta_3 \Delta MVOL_t + \beta_4 \Delta LEV_t + \beta_5 \Delta MRET_t + \beta_6 \Delta BAS_t + \beta_7 \Delta STS_t + \beta_8 \Delta SR_t + \varepsilon_t \quad (1)$$

where CDS_{t-1} is lagged CDS index change, VOL_t is historical volatility, $MVOL_t$ is market volatility, LEV_t is leverage (stock returns), $MRET_t$ is market index return, BAS_t is bid-ask spread, STS_t is the slope of term structure, SR_t is swap rate and ε_t is error term.

Selected determinants with their indicators and expected relationship between determinants and CDS spreads based on theories are reported in Table 1.

Table 1: Observed Determinants and Expected Relationship between Determinant and CDS spread

Determinant	Indicator	Abbr.	Exp. Rel.
Asset volatility	Historical volatility	VOL	+
Leverage	Stock returns	LEV	-
Liquidity	Bid-Ask spread	BAS	+
Market return	Euro Stoxx 50	MRET	-
Market volatility	VSTOXX index	MVOL	+
Term structure	10y-2y German government bond	STS	-
Swap spread*	1y swap spreads	SR	-

* Risk free rate for Euro zone
Source: Author's construction

4. Results

The linear regression model was employed on daily and weekly data. The regression results for daily data are shown in Table 2 and for weekly data in Table 3. All statistically significant coefficients are in accordance with theoretical assumptions.

Majority of determinants are more significant on daily basis. In case of market volatility, it can be implied by assumption that volatility is much more significant in short-term. In the whole period, the selected variables were able to explain up to 37.25% of the variation in CDS spread changes. Swap rate, term structure, liquidity, market return, market volatility and lagged CDS index change were statistically significant.

Lagged CDS index change, market volatility and liquidity were statistically significant in the pre-crisis period, but the variables explained only 11.81% of the variation. Explained variation arose up to 37.66% in the crisis period. Lagged CDS index changes, market volatility, leverage, market return and swap rate were statistically significant. Explained variation was highest in the post-crisis period – 54.51%. Statistically significant variables were market volatility, leverage, liquidity, term structure and swap rate. We suppose that the lowest R² was evidenced during the pre-crisis period because the market factors did not such an explanatory power and did not influence CDS spreads in such a tranquil period.

Table 2: Linear Regression Results (Daily Data)

	Full period		Pre-crisis period		Crisis period		Post-crisis period	
	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value
Const.	0.0377	0.6728	-0.0137	0.2815	-0.1375	0.4384	0.0331	0.8247
CDS(-1)	0.0838	6.14e-06***	0.2118	1.99e-09***	0.1619	3.26e-05***	0.0575	0.9496
VOL	0.0477	0.5192	0.0247	0.0446**	-0.0872	0.3792	-0.0138	0.1891
MVOL	0.1992	0.0104**	0.1143	1.16e-05***	-0.2832	0.0066***	0.1943	0.0005***
LEV	0.1851	0.2480	-0.0378	0.2643	-0.4185	0.0418**	-1.5347	8.73e-015***
MRET	-0.8322	5.83e-034***	0.0056	0.7078	-0.4895	7.38e-07***	-1.0020	0.5844
BAS	0.2362	2.47e-016***	0.1527	0.0733*	0.1323	0.6573	0.1710	1.26e-05***
STS	-22.043	1.65e-08***	-0.9391	0.1959	0.7025	0.8598	-21.008	0.0256**
SR	-12.421	6.14e-06***	-0.6244	0.1011	-11.721	0.0006***	-8.9629	0.0458**
NO#	2476		763		626		1087	
Adj. R²	0.372537		0.118062		0.376592		0.545084	

*denotes significance at 10% level; ** denotes significance at 5% level; *** denotes significance at 1% level

means number of observations

Source: Author's calculations based on data from Bloomberg

The role of determinants was changing over time. During the whole period, almost all determinants except historical asset volatility and leverage were significant. Results show that during the pre-crisis period, the explanatory power of determinants is lower. Annaert et al. (2013) and others propose that determinants of CDS changes of highly rated companies (including banks from our sample) have limited explanatory power in

periods with hardly credit risk. Results indicate that the influence of selected determinants depends mainly on the market circumstances.

The tests for normality of residuals were employed (the results are not reported) – Doornik-Hansen test, Sharipo-Wilk test, Lilliefors test and Jarque-Bera test – to test the null hypothesis: the residuals are of normal distribution. The null was rejected in all cases.

Table 3: Linear Regression Results (Weekly Data)

	Full period		Pre-crisis period		Crisis period		Post-crisis period	
	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value
Const.	0.2306	0.6177	-0.0407	0.6047	-0.1212	0.8960	0.1073	0.8863
CDS(-1)	-10.038	0.0163**	0.1107	0.1817	0.02833	0.7386	-0.1550	0.1341
VOL	0.3258	0.0610*	0.0560	0.0905*	0.0116	0.9584	0.7947	0.1869
MVOL	0.2994	0.1438	0.0355	0.6545	-0.3518	0.2413	0.4658	0.0036***
LEV	0.2164	0.5725	-0.1317	0.0943*	0.0101	0.9838	-3.0288	0.0012***
MRET	-0.897	1.64e-08***	-0.0035	0.9206	-0.6395	0.0071***	-0.9498	0.8871
BAS	2.0783	0.0508*	-0.1797	0.6143	3.6082	0.0368**	0.2187	0.6967
STS	-20.39	0.0002***	-3.3226	0.0349**	-28.70	0.0005***	3.9005	0.9757
SR	-10.38	0.0479**	-1.5217	0.1319	-19.794	0.0202**	-0.2907	0.201**
NO#	497		151		127		218	
Adj. R²	0.346618		0.087459		0.342433		0.564767	

*denotes significance at 10% level; ** denotes significance at 5% level; *** denotes significance at 1% level

means number of observations

Source: Author's calculations based on data from Bloomberg

5. Conclusion

The aim of this study was to examine the influence of CDS spread determinants on daily and weekly changes in iTraxx Europe Senior Financials index, which includes 25 significant financial institutions in Europe. We employed a linear regression model in three sub-periods to find out if the relations between changes in selected determinants and changes in CDS spread are constant over time. Our results show that the role of determinants was changing over time and that the explanatory power of determinants is limited in tranquil periods. Moreover, the market circumstances are important factor that have an influence on the variables. Understanding the role of determinants and selection of suitable ones can be beneficial for investors, as well as for analysts. Furthermore, these findings can be useful to policy makers at national and European level.

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European Union's Contribution to Global Security

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Abstract

Present security situation in the world is different from the Cold War and itself requires another approaches to solve many problems of regional or global character. To the fact, that the EU wants to play on the world political and military scene the role that is looking for, will be forced to work hard on enhancing effective (and in the future even a single) security policy, which has to be accompanied by an adequate building of military capabilities. Common Security and Defence Policy (CSDP) is an integral part of the Common Foreign and Security Policy (CFSP), while it can be seen as a deepening of the CFSP, as well as a specific instrument of the CFSP. The article mainly focuses on the role of EU foreign operations and missions within the Common Security and Defence Policy, which is considered the most important EU instrument to guarantee its own security and contributes to the stability not only in the European region, but in the global world too.

Keywords: *Common Foreign and Security Policy, Common Security and Defence Policy, European Union, EU Missions and Operations, Global Security*

JEL Classification: *F15, F5, F52*

1. Introduction

The European continent in 20th century has become the scene of two most destructive global military conflicts in human history, despite the efforts of a number of politicians for intergovernmental (and possibly supranational) cooperation. The idea of European integration, with an emphasis on security (the beginnings of which could be found in the 15th century) got the chance after 1945, when the recovery process opened opportunities for its gradual implementation after the Second World War. Negative experiences of Europeans with militant policy leading to war, were transformed in efforts to build integration structures (and international organizations) that could ensure regional and global security. The establishment of NATO, the Western European Union, and the effort from the beginning to implement certain security features within the Community - all these led present European Union member states to create a contemporary form of a CFSP and the CSDP within its framework.

After the demise of the bipolar division of the world in the nineties of the 20th century, while minimizing the chance of a global war, no one can accept the fact that the present world situation is free of safety hazards (Eichler, 2009). The contemporary multipolarity brings new threats in the form of a series of escalation of regional conflicts, which character is not typical for standard military strategies and procedures.

In the context of this security situation (see Kaňa, Mynarzová, 2012) the European Union together with other global security actors, such as NATO and the U.S. has to assume its share of responsibility in this area. The importance of the Union on the financial, economic and trade areas is unquestionable and it certainly ranks among the world powers. With regard to this position in the world economy, comes the need to adopt an adequate role on the international political scene. Foreign and security policy, which is considered one of the fundamental attributes of sovereignty of national states, is now at the beginning of the 21st century to the forefront of a number of politicians who see it as a perspective area for the deepening of the European integration process. This article mainly focuses on the characteristics and analysis of EU missions, which significantly contribute to an increase in global security.

2. Common Foreign and Security Policy as a Pillar of EU External Relations

CFSP is very specific and original area due to the national sovereignty of EU Member States, which remains under national control⁴⁰. CFSP is formulated in the Lisbon Treaty (Treaty on European Union, Title V, Article 21). CFSP covers a range of issues related to the security of the EU, which are specified in a number of other documents too⁴¹. It should be noted that unlike the foreign policy (diplomatic activity), there is a safety aspect emphasized. An integral part of the CFSP is the CSDP⁴², which provides an operational capacity through EU civilian as well as military resources. These funds are used for foreign operations (mission) outside the territory of the Union, which focus on peace-keeping, conflict prevention and strengthening international security overall (Fiala, Pitrová, 2010; Weiss, 2014). Priming data are based mainly on sources provided by the European External Action Service (EEAS) and by the EU Council.

2.1 EU Operations and Missions as a Key Instrument of CSDP

European Union missions and operations carried out within the CSDP are considered the most important instrument of the EU to ensure its own security and contribution to the stability not only in the European region, but in the global world too. This is the present peak of the existing efforts of the Union's CSDP. All Member States are not obviously involved in foreign operations equally, it is always about the participation of individual countries under the heading of the Union.

The first of these operations (missions) has been launched in 2003. Missions take place not only in Europe but in Africa and Asia too. They include political dialogue, development and humanitarian assistance, as well as military intervention. Several

⁴⁰ Contractually is to ensure that Member States shall prohibit from any action that would be in conflict with the interests of the European Union or would reduce its effectiveness as a cohesive force in international relations (Bindi, 2010).

⁴¹ E.g. The European Security Strategy 2003 and its follow update of 2008, etc. (Kaňa, 2007).

⁴² The European Security and Defence Policy as an integral part of the Common Foreign and Security Policy has been created in June 1999. The Lisbon Treaty then changed its name to the Common Security and Defence Policy (Merlingen, 2012; Europa [online], 2010).

operations have been successfully completed, the next are still ongoing (see Table 1, Table 2). EU distinguishes three types of these operations - military, police and missions in support of the rule of law. These missions differ not only in attached personnel (troops, police officers, civil servants), but in particular features too⁴³.

Because of the multinational character of the missions, there are two basic concepts - the *framework nation* and the *lead nation*. The term lead nation means a country, which appears in a specific time period as chief of command and control of the military operation. The most used is the so-called principle of a rotating command within multinational structures. Framework nation principle (mostly used by EU), differs from the lead nation, that for the entire operation are used command, communication and control structures of only one state.

As already mentioned above, the EU holds military operations, police and civilian mission. Military operations are focused on peacekeeping or peacemaking, and are primarily focused on stabilization of the security situation in vulnerable areas. They are secured by military units of the Member States of the EU or EU troops (EU Battlegroups). Police missions are primarily aimed at training local police forces, and if necessary, to replace these forces temporarily. Just civilian (rule of law mission) have a relatively wide range - their focus is to support and consolidate the institutions of the destined countries - education and training of state employees, local governments, judges, etc. (Kaňa, 2014).

2.2 Completed EU Missions and Operations

Since 2003, when the first EU foreign mission (EUPM) was carried out, to February 2014, a total of 31 missions had been sent, 15 of which had already been completed (see Table 1). Four of these completed missions can be described as military, 9 as a civilian/police and one operation (AMIS II), had a civilian-military character.

In the Former Yugoslav Republic of Macedonia - FYROM were carried out three EU missions, which followed one another. In the case of the CONCORDIA operation the cooperation mechanism between the EU and NATO - Berlin plus has been used for the first time, followed by two police missions EUPOL PROXIMA and EUPAT FYROM which significantly have contributed to the overall stabilization of the country and its classification as the EU candidate country.

⁴³ The exact definition of operations is set out in the Treaty of Lisbon (Treaty on European Union, Article 43): *"The tasks referred to in Article 42(1), in the course of which the Union may use civilian and military means, shall include joint disarmament operations, humanitarian and rescue tasks, military advice and assistance tasks, conflict prevention and peace-keeping tasks, tasks of combat forces in crisis management, including peace-making and post-conflict stabilization. All these tasks may contribute to the fight against terrorism, including by supporting third countries in combating terrorism in their territories"*.

Table 1: Completed EU Missions and Operations

Missions	Destination	Operation years	Estimated costs
EUFOR CONCORDIA	FYROM	March - December 2003	6.2 mil EUR
EUPOL PROXIMA	FYROM	December 2003 - December 2005	15.9 mil. EUR
EUPAT FYROM	FYROM	December 2005 - June 2006	1.5 mil. EUR
EUPM	Bosnia and Herzegovina	January 2003 - June 2012	32.94 mil. EUR
ARTEMIS	DR Congo	June - September 2003	7 mil. EUR
EUPOL Kinshasa	DR Congo	April 2005 - June 2007	4.37 mil. EUR
EUFOR RD Congo	DR Congo	April - November 2006	16.7 mil. EUR
AMIS II	Sudan	July 2005 - December 2007	4.09 mil. EUR
EUAVSEC South-Sudan	South Sudan	June 2012 - January 2014	-
EUFOR Tchad RCA	Tchad	January 2008 - March 2009	119.6 mil. EUR
EUJUST THEMIS	Georgie	July 2004 - July 2005	2.05 mil. EUR
AMM	Indonesia	September 2005 - December 2006	15.3 mil. EUR
EUFOR Libya	Libya	April 2011*	-
EU SSR Guinea Bissau	Guinea Bissau	June 2008 - September 2010	7.81 mil. EUR
EUJUST LEX - Iraq	Iraq	July 2005 - December 2013	27.15 mil. EUR

Source: EEAS (2014), own processing

* This humanitarian operation took place in connection with the NATO military operations and was completed in 2011

Three important missions were completed in the Democratic Republic of Congo. ARTEMIS military operation was the first EU operation in Africa. The police mission EUPOL Kinshasa and the military operation EUFOR RD Congo, were described as successful, however, the situation in the Congo is still very unstable, as evidenced by the present simultaneous operation - EUSEC RD Congo and EUPOL RD Congo (see below).

Other countries where the EU carried out important operations are Sudan and Chad (especially the Darfur). Military-civilian mission AMIS II became known mainly because of very unsuccessful coordination between the EU and NATO. On the other hand a military operation EUFOR Tchad RCA was the largest EU military mission and a good example of cooperation between the EU and the UN. The same assistance (air support, training police officers) to Sudan from July 2005 until the end of 2007, has been provided by NATO too, and AMIS II became the target of frequent criticism regarding the alleged inability of both organizations in coordinating the actions of this type.

The groundbreaking civilian missions were carried out in Georgia and Indonesia. The case of Georgia was the first EU civilian mission (and has been reported

as successful), AMM was the first (civilian) missions in Southeast Asia and has contributed significantly to the stabilization of the situation in the Indonesian province of Aceh (EEAS [online], 2014).

2.3 Ongoing EU Missions and Operations

As of February 2014, the Union conducted a total of 16 missions (see Table 2), of which 5 is referred as a military and 11 civilian / police. The key missions can include those in Somalia (Horn of Africa) and Kosovo. The mission EU NAVFOR Somalia (Atalanta) is the most important present military (naval) EU operation ongoing at the same time with two training (security) missions. EULEX Kosovo is the largest civilian mission under the CSDP.

Table 2: Ongoing EU Missions and Operations

Missions	Destination	Starting year	Estimated costs
EUBAM Libya	Libya	2013	30.3 mil. EUR
EUTM Mali	Mali	2013	12.3 mil. EUR
EUCAP SAHEL Niger	Niger	2012	8.7 mil. EUR*
EUCAP NESTOR	Kenya, Djibouti, Somalia, Seychelles	2012	22.88 mil. EUR*
EUTM Somalia	Somalia	2010	11.6 mil. EUR
EU NAVFOR Somalia	Somali	2008	39.65 mil EUR**
EUFOR RCA	Central African Republic	2014	25.9 mil. EUR
EUSEC RD Congo	DR Congo	2005	73.5 mil. EUR
EUPOL RD Congo	DR Congo	2007	39.92 mil. EUR
ALTHEA/BiH	Bosnia and Herzegovina	2004	15 mil. EUR
EULEX Kosovo	Kosovo	2008	111 mil. EUR/year
EUPOL Afganistan	Afghanistan	2007	108 mil. EUR/2013-2014
EUMM Georgia	Georgia	2008	20.9 mil. EUR
EUBAM Rafah	Palestinian Territories	2005	0.98 mil. EUR till 30. 6. 2013
EUPOL COPPS/PT	Palestinian Territories	2006	9.33 mil. EUR/2012-2013
EUBAM Moldova and Ukraine	Moldova and Ukraine	2005	21 mil. EUR/2011-2013

* estimation for the first year, ** estimation till the end of 2014

Source: EEAS (2014), own processing

On 2nd June 2008 the UN Security Council adopted Resolution No 1816, which urged Member States to combat piracy and armed robbery on the sea. EU Council decided on 10th November 2008 to launch the operation EU NAVFOR ATALANTA. The operation was launched on 8th December 2008 and its mandate is focused on providing protection to vessels prior to pirate attacks, the prosecution of piracy and assaulting ships along the Somali coast. In March 2012, the operation has been extended to 2014 with expanding of its territorial jurisdiction. Atalanta is only one part of a comprehensive approach to the issue of piracy and security in the Horn of Africa. Training/security operations EUCAP Nestor (maritime capacity building) and the EU

Training Mission Somalia (training of Somali security forces) are two operations that assist to solve the problems of the region and are complementary to EU NAVFOR. Atalanta mission is carried out with the participation of non-EU countries (Montenegro, Serbia, Ukraine and Norway) together with 24 member countries. Military vessels are provided by Spain, Germany, the Netherlands and France. The common costs (within ATHENA mechanism) are estimated at 39.65 million EUR. Operating and personal expenses are paid from national budgets of the participating countries. Atalanta has significantly contributed to the reduction of pirate attacks in the region⁴⁴ (European Union Naval Force [online], 2014; EU NAVFOR Somalia [online], 2014).

After the unilateral declaration of Kosovo independence (2008), local authorities were not able to provide the standard functioning of public institutions and security structures. The very beginning of the mission EULEX Kosovo (originally December 2008) was indeed as problematic due to Serbian and later even Kosovo objections and concerns. Therefore, the mission was postponed to April 2009. The mission is divided into two divisions: Executive Division and the Empowering Division. Executive Division focuses on cases of war crimes, terrorism, organized crime, corruption, etc. Empowering Division supports the government and public institutions, judicial authorities and law enforcement institutions. EU experts provide advice, training, and managing of the local authorities to develop and strengthen an independent judiciary, police and customs administration. About 1200 experts from the 27 EU member states (with Croatia, without Cyprus) and 5 non-member states are involved in the mission. According to official EU sources, the mission is evaluated as successful (especially in the judiciary, customs and police), but many observers talk about the high rate of crime, corruption and slow process even due to the very high budget (EULEX Kosovo [online], 2013; EEAS [online], 2014).

3. Cooperation in the Field of CSDP, Defence Expenditure in European Union

At the end of the Cold War, European countries cut, sometimes very radically, their defence expenditures. Faced with peace on the continent, EU governments thought that they could finally benefit from “peacedividends” and could reallocate this resources to other areas of public spending. Thus, whilst on average western European countries spent 3.1% of their GDP on defence between 1985 and 1989, this figure had fallen to 1.7% in 2008⁴⁵, and this was before the budgetary crisis (Liberti [online], 2011). But the fact that 22 Member States of the European Union are members of NATO too is a reason enough for effective cooperation in the international area. The EU is currently the main partner of NATO and nothing changed on the existing views (particularly by members of the U.S. administration) on the uselessness and ineffectiveness of building its own military capabilities within the CSDP.

⁴⁴ E.g. In 2011, the total number of attacks on ships in the monitored area achieved 176 and in 2012 only 36 (European Union Naval Force [online], 2014).

⁴⁵ In 2011 the US spent 503 billion EUR on defence in 2011 compared to 193 billion EUR spent in the EU: around 2,5 times more (see Table 3).

As a best solution for a cooperation of EU/NATO in a field of global security could be enhanced coordination approach, which would accept the necessary degree of specialization, pushed the maximum possible rate of the mutual compatibility and at the same time would strengthen formal mechanisms of cooperation. Compatibility, respectively harmonization should be ensured at the level of administrative, doctrinal, and particularly in construction, training and equipping the armed forces, where the goal should be the usability of the armed forces for the needs of both organizations. But a number of capacities suitable for expeditionary operations in Europe is still very limited due to restricted defence spending (see Table 3), so any duplication, especially in this area completely is undesirable. Such expenditures do not allow member states now to optimize their spending and to improve their military capacities in a difficult budgetary climate. Continuing along the present path would, in the medium term, mean confirming the loss of influence of the EU on the international stage in as strategic area as defence (Kaňa, Mynarzová, 2012).

Table 3: Defence Expenditure in EU and US 2010-2011

Defence Expenditure	2010		2011		% change 2010-2011	
	EU	US	EU	US	EU	US
Total	194 billion EUR	520 billion EUR	193 billion EUR	503 billion EUR	-0,5%	-3,3%
As % of GDP	1,61%	4,77%	1,55%	4,66%	-3,4%	-2,3%
As % of Total Government Expenditure	3,20%	11,23%	3,17%	11,18%	-0,9%	-0,4%
Per capita	390 EUR	1 676 EUR	387 EUR	1 610 EUR	-0,7%	-3,9%

Source: EDA (2014), own processing

5. Conclusion

The above-mentioned EU missions and operations, as one of the key tools within the CSDP, are according to the official communiqué of the Council of the European Union but also in other EU institutions, considered to be successful - especially those completed. Of course, the views of independent experts may be more critical. The real success of current operations time will show. It can be said that the possibilities for EU military operations and possible use of existing EU Battle Groups are quite wide (Kaňa, 2009). Despite the gradual strengthening of the role of the Union in the field of international relations and in diplomatic activities in resolving many conflicts, its military capabilities (mainly due to limited military expenditures) are not yet able to provide, maintain and successfully solve a really large-scale operations outside the territory of the EU member states. Therefore, we would like to emphasize that in this area should primarily operate cooperation with NATO/USA to ensure adequate and mutual cooperation. This cooperation could be there for the EU and its CSDP seen as very important both in relation to the conduct of military missions, such as the potential future development of the CSDP.

CSDP played in addition to those foreign missions important role in the case of major events, known as the so-called Arab Spring that took place during the year 2011. But an inconsistent position of the EU member countries has been showed here, especially in the case of civil war in Syria (the question of unified position regarding the arms embargo). Even today, there is little clear consensus on EU sanctions against Russia in the due to the events in Ukraine. For a few strong and relatively passive activity is often criticized the High Representative of the Union for Foreign Affairs and Security Policy Catherine Ashton.

The question of present conflicts resolution, whether through military intervention or by diplomacy, confront the European Union need to strengthen its position in the field of foreign and security policy and to build the necessary capabilities that ensure this position. Building adequate tools in the form of CFSP and the CSDP framework also allows the EU face up the aforementioned challenges, due to strengthening its own military, police and civilian capabilities to ensure the future improvement of global security.

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Analysis of Regional Differences in the Visegrad Countries and Their Tendency to Migration

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Abstract

Regions are considered the driving force of economic development and growth of national economies in the global economy. The aim of regional policy is effort to balanced development of areas, so that they can achieve their potential and achieve the growth of the state. Particular states that passed the transformation process in 90s had problems with the deepening regional differences. The article deals with the analysis of regional disparities in countries of Visegrad four. The fundamental determinant of long-term success not only of regions but also state is considered competitiveness. It is important indicator tells us more about the economic and social situation in the region. The article aims is determine regions, which are more competitiveness and contribute to higher efficiency of the state. In addition it will exam whether regions that have higher competitiveness are more attractive for migrants.

Keywords: *Coefficients of efficiency, Competitiveness, Migration, Regional disparities*

JEL Classification: *R11, R23, R58*

1. Introduction

The global economy considers perceives regions as engines of economic development and growth of national economies. There is a specialization in the sector. The cooperation of firms, creation of clusters is easier in regional level than in national level. Decentralization in public sector from national level to regional level also contributed to the strengthening of the position of regions in economic development of state. (Hančlová, 2010)

The European Union is a subject who supports to solve regional problems nowadays. Already, when the European Economic Community was established, it was expected that the community will provide assistance to the regions with the old traditional industries. The aim of the measure was to minimize differences between developed and undeveloped regions. The Lisbon Strategy of the European Union shows that migration (flexible labour market) is one of the determinants of regional development and increasing competitiveness of the regional economics.

This work is focused on the analysis of regional differences in the Visegrad countries. The influences of the differences on migration will be examined. Territorial definition of the region is based on the regional policy of European Union which uses cohesion regions, so the analysis will be performed at the level of regions NUTS II. Identify regions that have effective influence on national economy and contribute to the growth of country is one of the aims of this article. After that, level of regional economic will

be compared with level of migration. The paper will test hypothesis that regions reporting a higher degree of competitiveness are more attractive for migrants and their migration balance is active. The level of economic development will be detected by method for evaluation of regional competitiveness. The attractiveness of regions for migrant will be determined by the coefficient of migration. The analysis will be carried out for year 2011 and will use data available on webs of Eurostat and OECD.

2. Migration as a Determination of Economic Growth

In the economic theory the national growth is seen to be regional growth which is the main driver of the national economy. In each state there are regions which are thriving and which have a high standard of living. Also there are regions which are struggling with high unemployment, social problems and with lack of industry. Reduction of disparities among regions to ensure a steady development in areas is the main objective of regional policy of European Union in order to regions can fully exploit of their potential. (Wokoun, 2011)

Regional policy is a young discipline (its origin is in thirties of 20th century). Therefore, there is no uniform definition of regional policy or regional development. Stejskal and Kovárník (Stejskal, Kovárník, 2009, 20s) define regional development as *“purposeful activity of organizations and representatives of state administration and local governments which leads to ensure the economic growth of the area.”*

European Union considers the competitiveness as one of the determinants of regional development. The concept of regional competitiveness is not use for very long time so there is no generally accepted definition. Paul Krugman explains the competitiveness as a method of economic evaluation and a way for regional economy comparison in time and in space. (Hančlová, 2010)

Similarly as the definition, a general approach to the evaluation of regional competitiveness has not yet been developed. The European Commission considers productivity and employment as the main indicators of competitiveness. It was specified in the sixth periodic report about social and economic situation and development in regions. Hančlová at al. point the close links between these factors and other indicators. Productivity is the result of effects of other factors. Amount of investments in the country, expansion of research and development, foreign direct investment and level of capital in the country add for its growth. Huggins invented other approach to measure of competitiveness. He constructed an index of competitiveness in the United Kingdom. The European Union further elaborated the index. (Huggins, 2003)

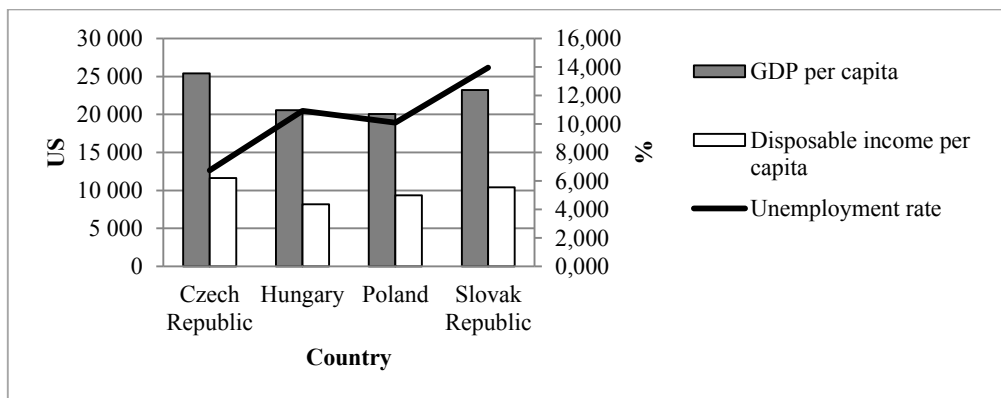
The migration is defined in literature like process when people move from one place to another. It differs from other forms of human mobility because the migration is associated with a change of residence (Roubíček, 1997). It is a complex socioeconomic phenomenon, which is, on one hand conditioned by economic and social situation in the source region and in the target region also. On the other hand, the migration is an important indicator that reflects the characteristics of the region.

The opinions about the impact of migration on economic development are not the same in history and they were significantly changed during the second half of the 20th century. The approach to migration and its relationship with region's development is closely connected with the theory of migration which was generally accepted to explain the causes of migration at the time (Stojanov, Gladišová, 2011). It was assumed in the fifties and sixties that the migration contributes to the economic development of the area. The approach was primarily established on the neoclassical theory of migration. The theory is based on the differences in wages and on migration costs. This view on migration is often indicated as the optimistic view. But this opinion did not take for long time. Already in the seventies and eighties opposing views was became dominated. According Pennix (Pennix, 1982) migration is process when active people leave backward and peripheral regions. Therefore, the regions have not sufficient potential for their development. The second major break was at the begging of 20th century. The positive impact of migration on economic development is gaining dominated opinion in this area (Haase, 2010).

3. Visegrad Countries

The Visegrad Group (an alliance of four central European states – Czech Republic, Hungary, Poland and Slovak Republic) was founded in 1991. The cooperation between countries and strengthen the identity of Central Europe in the European Union was the main aim of this alliance. These countries are similar not only by their geographic location but also by history and political situation. They represent a group of states that passed the transformation processes at the begging of nineties, which influenced their further development. The transformation processes were accompanied by sharp rising of unemployment and rising inflation. They influenced interregional migration too. Although the rate of migration is considered to be one of the ways for reducing of regional disparities, it is low in transition economies. For example Komarek or Tomšík dealt with development of economic indicators.

Figure 1: Comparison of Economic Indicators



Source: www.oecd.org

The graph in Figure 1 depicts three economic indicators of the member states of the Visegrad Four. The graph shows that they are the states with similar economic level. However, we can see small differences. The Czech Republic achieved the best rating in all indicators. The Slovak Republic had higher GDP and disposable income per capita but there is a high unemployment rate. Poland and Hungary are in terms of GDP and the unemployment rate the same.

4. Economic Level of Region and the Rate of Migration

The analysis of economic situation in the regions of the Czech Republic and their impact on the overall development will be carried out by specific coefficients of economic efficiency. The method is based on the work of Hančlová et. al. (Hančlová, 2010) where regions NUTS II of the Visegrad countries were compared in terms of competitiveness in 2006 and 2010. The coefficients are calculated for each region NUTS II these countries in 2011 and they will be completed by the unemployment rate. The coefficient of efficiency of investment projects can not be calculated for unavailability data in 2011. Member states and their regions will be compared in terms of effectiveness. The dependence of migration on the economic performance will be investigated. The following coefficients are related to the number of employed persons (E), so they indicate the level of involvement of the production factor of labour in region. The specific coefficients that will be used to determine the degree of competitiveness of regions:

The coefficient of efficiency of economic development *CED*

The indicator is defined as a share of coefficient of production and coefficient of employment. After mathematical adjustments, it can be written in the form:

$$CED = \frac{\frac{GDP_{NUTS2}}{GDP_{Czech\ Republic}}}{\frac{E_{NUTS2}}{E_{Czech\ Republic}}} \quad (1)$$

The coefficient of effective availability *CEA*

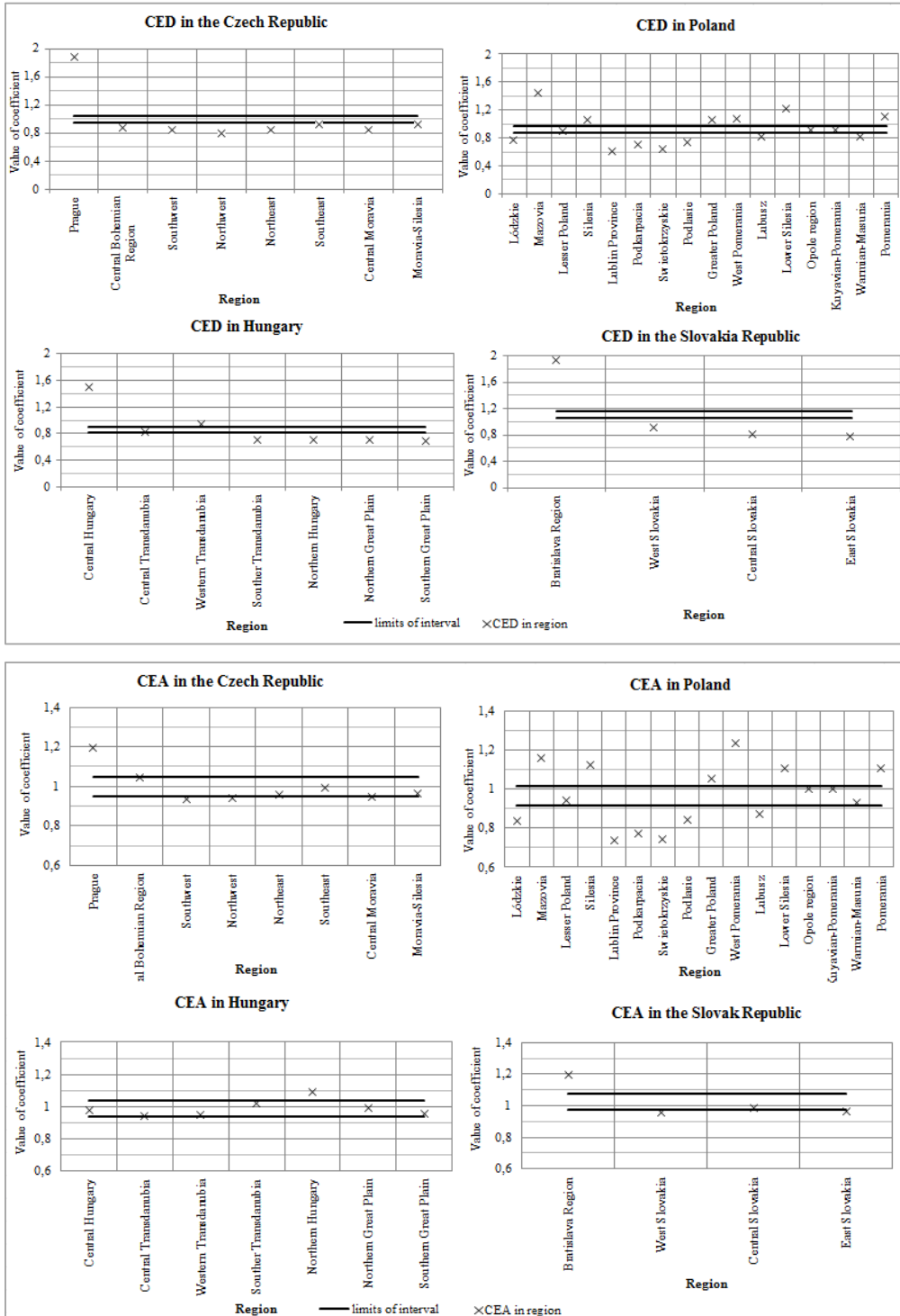
Net disposable income is an indicator, which indicates about the available financial resources of human, and it is subdivided only on consumption and saving. It says more about purchasing power of region. The coefficient is determined as a share of coefficient of availability and coefficient of employment. After mathematical modification:

$$CEA = \frac{\frac{NDI_{NUTS2}}{NDI_{Czech\ Republic}}}{\frac{E_{NUTS2}}{E_{Czech\ Republic}}} \quad (2)$$

Unemployment rate (*u*) will be used as the third indicator to measure of the level of economy.

The results of the specific coefficients for NUTS II regions in countries in Visegrad Four are shown in Figure 2.

Figure 2: Coefficients *CED* and *CEA* for the Countries



Source: www.eurostat.ec.europa.eu, www.oecd.org

Firstly, average coefficient for individual countries was detected for comparison regions. After that, differences between individual values and average value were counted. Regions were divided based on this comparison into three groups. The first group represents regions where the coefficient value exceeds the average value of all the state by more than 5 %. These areas are more efficient so they contribute to greater efficiency and higher competitiveness. In opposite, there are other regions where the coefficient is lower than 5 % than is the average. These regions are below the suitable range and have lower efficiency and weaker competitiveness. The regions which value of coefficient is in the allowed interval so their variance is not higher than ± 5 % are average regions. In the Czech Republic, Hungary and the Slovak Republic there is only one region which is over the upper limit. Mostly they are the regions of capital cities. The graphs also show the regional differences. While regions in the Czech Republic, Hungary and the Slovak Republic are in the average range or slightly below, in Poland there is the situation different. There is largest range of values. Some regions do not reach 75 % of the average value of the country. However, there are regions where the coefficients of efficiency are higher than 110 %. Regions that contribute to economic growth in the Czech Republic are regions of the Capital City Prague (both coefficients are over 1), just below this value Central Bohemia, Moravia-Silesia and South Bohemia. In Hungary, region Central Hungary is the best-ranked region in terms of the coefficient the *CE*. The best regions in Poland are Mazovia, Silesia, Greater Poland, West Pomerania, Lower Silesia and Pomerania. In the Slovak Republic there is the best-assessed region Bratislava.

The rate of migration in region will be examined using the index of migration which is given by the share of net migration and volume migration. It speaks about efficiency of migration. (Roubíček, 1997)

$$\text{Index of migration } (m) = \frac{\text{Immigrants} - \text{Emigrants}}{\text{Immigrants} + \text{Emigrants}} \quad (3)$$

The numbers of immigrants and emigrants are recorded only at the regional level NUTS III by the national statistical offices. Given this phenomenon, the values of the coefficient of migration for NUTS II were created by the weighted average from values of NUTS III. The shares of inhabitants in NUTS III on the total population in appropriate NUTS II were used as weights.

5. Influence of Level of Regional Economy on Migration

The analysis of the economic level of regions and internal migration in the member states of Visegrad group was made by correlation analysis. Statistical software Statistica 12 was use for creating the model. In the analysis, there was investigated dependence of migration on the economic efficiency in each country. The region's performance was expressed by coefficients of efficiency the *CE* and the *CEA* and by *u*. The rate of migration was determined by the coefficient of migration.

The correlation analysis allows quantifying the dependence between variables. The aim of this analysis is identification and description the relationship between variables.

The analysis emphasizes power of the relationship. Spearman’s correlation coefficient was used for measure. The coefficient examines the relationship between the characteristics based on dependence of order. Spearman’s rank correlation coefficient (Hindls, 2007):

$$r_{i_x r_{i_y}} = 1 - \frac{6 \sum (i_x - i_y)^2}{n(n^2 - 1)} \quad (4)$$

Where *i* indicates the serial number of variables arranged in a row and *n* is the number of cases. The correlation index takes values in interval from -1 to +1. Between variables, there is strong direct linear dependence and variables are correlated, if the value is +1. If the correlation coefficient takes values -1, between variables there is strong indirect linear dependence. Variables are uncorrelated or the relationship is not linear if the correlation index is equal to 0.

The results of correlation analysis in individual states are shown in the Table 1. In the Czech Republic, Hungary and Poland there were revealed the strong indirect relationship between migration and unemployment rate. The relationship between efficiency of region and migration is in Poland and Hungary. In Poland there have both factors of efficiency strong impact on migration. In Hungary, there was proven only relationship between migration and the *CED*. The dependence of migration on the level of economy was not approved in the Slovak Republic. Lack of data entered into the analysis can be the case of it.

Table 1: Results of Correlation Analysis

Czech Republic					Hungary			
	<i>m</i>	<i>CED</i>	<i>CEA</i>	<i>u</i>	<i>m</i>	<i>CED</i>	<i>CEA</i>	<i>u</i>
<i>m</i>	1,00	0,38	0,45	-0,88	1,00	0,78	-0,71	-0,96
<i>CED</i>	0,38	1,00	0,76	-0,50	0,78	1,00	-0,39	-0,75
<i>CEA</i>	0,45	0,76	1,00	-0,52	-0,71	-0,39	1,00	0,78
<i>u</i>	-0,88	-0,50	-0,52	1,00	-0,96	-0,75	0,78	1,00
Paland					Slovak Republic			
	<i>m</i>	<i>CED</i>	<i>CEA</i>	<i>u</i>	<i>m</i>	<i>CED</i>	<i>CEA</i>	<i>u</i>
<i>m</i>	1,00	0,87	0,81	-0,55	1,00	1,00	0,400	-1,00
<i>CED</i>	0,87	1,00	0,95	-0,45	1,00	1,00	0,400	-1,00
<i>CEA</i>	0,81	0,95	1,00	-0,42	0,40	0,40	1,000	-0,40
<i>u</i>	-0,55	-0,45	-0,42	1,00	-1,00	-1,00	-0,400	1,00

Source: author’s calculations

In the Czech Republic, Hungary and the Slovak Republic, the most attractive regions for migrants are regions of large industrial centres, so they are the region of capital cities and in the Czech Republic region of Central Bohemian and Southeast also. In terms of regional disparities and migration, Poland is most different from other states. Statistics of migrant includes immigration from abroad and emigration to abroad. Almost 80 % of Polish regions have negative migration balance. Only regions Mazovia, Lesser Poland and Pomerania have positive migration balance. They are the

regions, which were identified as effective in the previous analysis. Other areas that have been identified as effective recorded lower population decline in comparison with other regions in Poland, to 7,5 %.

6. Conclusion

Regional growth is very important for development of country. Competitiveness is one of the indicators of economic development of regions. It reflects economic and social conditions for living. In the article, there was tested hypothesis that regions with higher competitiveness of the region are more sought by migrants. The results of analysis show the relationship between the level of regional economic development and its attractiveness for migrants.

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Nature of Trade Growth between the People's Republic of China and the European Union

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Abstract

Economic relations between China and European Union have evolved dramatically in the last few decades. Mainly the trade volume has recorded an immense growth. In this paper we analyse the nature of this growth. We follow the methodology of Kehoe and Ruhl (2013) to assess whether the trade between People's Republic of China and European Union was growing on intensive or extensive margin. Next, we study whether the period of the most important growth on extensive margin coincides with the trade liberalisation periods or some other structural changes in these two economies. We find out that the extensive margin was gradually increasing during the observed period.

Keywords: *China, Extensive margin trade, European Union, Intensive margin*

JEL Classification: *C00, F14, F15*

1. Introduction

The global trade has experienced an important growth in the past decades and this raises questions what is behind the rapid growth of the overall trade. One of the main issues is whether the trade grows on intensive or extensive margin. The growth on intensive margin is experienced when goods already merchandized are traded in higher volumes, while the growth on extensive margin is experienced when goods which were not traded previously start to be traded. Kehoe and Ruhl (2013) associate the growth on extensive margin with periods of trade liberalisation and structural changes in examined economies.

In our paper we first describe the trade relations between China and the European Union. Second we present the data used in our analysis and the methodology used to investigate the trade relations between these two entities. When presenting our results we start with the Chinese exports to the European Union and continue with EU exports to China. After that we examine the evolution of extensive margin in time and conclude with the sensitivity analysis of our results.

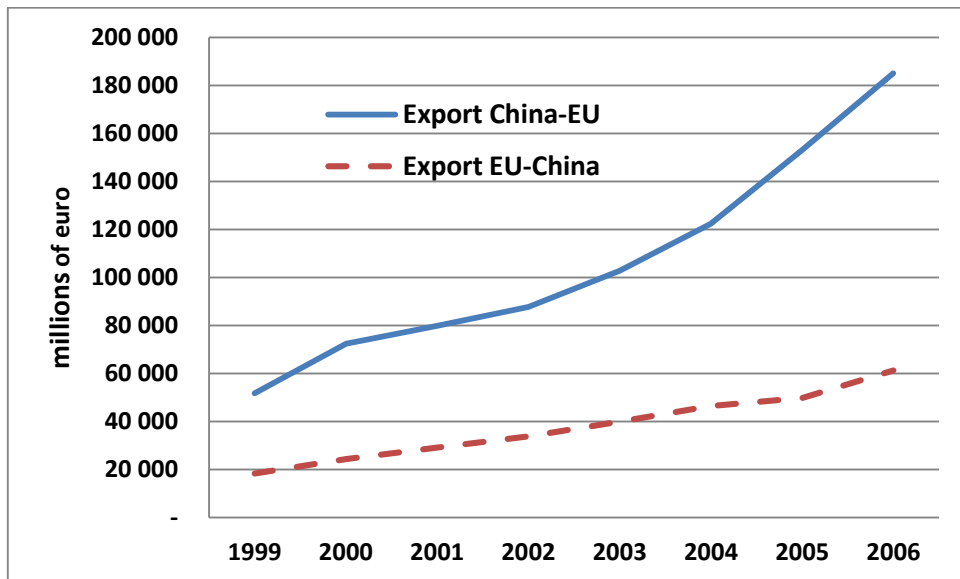
1.1 Growing Importance of China-EU Bilateral Trade

China and the EU are one of the most important trade partners for each other. China itself is the biggest exporter of goods into European Union. European Union's exports to China were also growing rapidly and China is nowadays the second most important export destination for the European Union (European Commission [online], 2014a).

European Commission ([online], 2014b) claims that the trade between the two entities is bigger than one billion euros per day. The Chinese exports to EU were worth 289.9 billion euros and EU was exporting to China goods in the value of 143.8 billion euros in year 2012 (European Commission [online], 2014b). European Union is now the most important destination for Chinese exports despite the fact that already in the nineties some of the Western European Countries have lost the relative importance for China they used to enjoy before the Chinese economic transformation started (Taube, 2002).

The growth of the trade during the years 1999 and 2006 was also vital. Figure 1 shows the evolution of EU imports and exports from China:

Figure 1: Trade Between the Czech Republic and China



Source: Data - Eurostat

We can see that Chinese exports to EU grew 3.58 times during the observed period and similarly the EU exports to China grew 3.35 times. In the next chapters we examine whether this growth was led by the extensive growth and what is the timing of the growth in extensive margin.

2. Computing Extensive Margin in Bilateral Trade

Many models have been developed to study the intensive and extensive margin in the trade growth. Most of them have their origins in the Melitz (2003) model and they use econometric methods to estimate the impact of extensive and intensive margin on the trade growth. In this paper we use methodology of Kehoe and Ruhl (2013) who have developed simple, but very effective method to analyse the importance of the

extensive growth in trade. This chapter serves to describe the data and methodology used in our paper.

2.1 Data

The data are taken from the Eurostat database. We use the Standard International Trade Classification (SITC) on the most disaggregated level which is five-digit codes. The data are available in euros but the unit is not important, as our analysis is based on the relative quantities.

The data are available for 27 EU members (Croatia is excluded from our analysis due to the lack of longer time series on Eurostat). The sample period is chosen according to the availability and usefulness for our research. First of all, the period from 1999 and 2006 covers the most important changes for the trade between China and EU. It includes China's entry to WTO in 2001 and the biggest EU enlargement in 2004. Secondly, the data previously to the 1999 are not available for all EU members and the sample period ends in 2006 because we wanted to avoid computation errors which might have occurred due to the change in methodology in the SITC system which switched from revision 3 to revision 4 in 2006. The commodities used in our analysis include all the possible commodities on the five-digit level which were traded at least once during the sample period. Confidential trade and the estimation of missing trade were not included in our analysis.

2.2 Methodology

As stated previously the methodology used here was first developed by Kehoe and Ruhl (2013) and was later widely used to assess the impact of free trade agreements on bilateral trade. For example Hloušek (2009) studies trade between EU 15 and Visegrad countries, Amarsanaa and Kurokawa (2012) study the China-Mongolian trade and Dalton (2013) studies China-Japan trade, all using the Kehoe and Ruhl (2013) methodology. We use the same approach to assess the China-EU bilateral trade. The first step is ordering of the trade in the first year from the commodities with zero values to the commodities with the biggest values. According to this ordering we divide the traded commodities into ten sets each containing goods accounting for ten percent of the overall trade in 1999. Understandably, the first set will include the biggest number of the goods while the tenth set will have the smallest number of goods.

Second, we calculate what proportion these sets account for in the last year. Each set in the last year contains the same commodities as the set in the first year, but the amount of trade experienced by each particular commodity might have changed. We compare the value in each of the sets to the total value of exports in the year 2006 and we get the proportion of the sets in the last observed period. The interpretation of the results might be as follows. If the proportions of each of the sets stay at the ten percent level, we can conclude that the entire growth between the two countries was due to the growth on intensive margin. In case the first set, containing the least-traded goods increases its share above ten percent we can claim that the increase of trade is due to the extensive margin.

In the next step we analyse the changes in extensive margin over the time. We calculate the share of the first set which includes the least-traded goods in 1999 for each year. After that we study whether these changes coincide with periods of trade liberalisation.

Finally, we focus on the sensitivity analysis where we change relative size of the sets and observe whether our results change significantly. The size of the sets chosen for the sensitivity analysis is of five and twenty percent.

3. Results

In this section we present the results obtained in our analysis. We realise that during the period studied the China-EU trade experienced quite significant growth on the extensive margin.

3.1 Extensive Margin in China-EU Trade

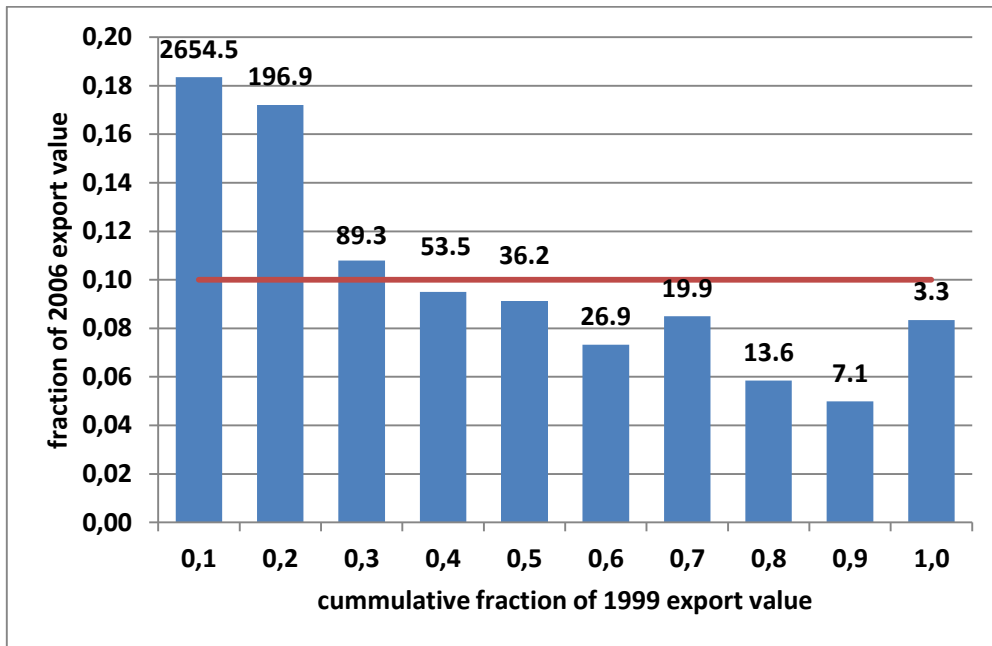
The extensive margin was found in both trade flows. We find that the extensive margin played a more important role in the EU exports to China than in the Chinese exports to EU.

3.1.1 Chinese Exports to the European Union

Figure 2 shows that the goods that were least traded in the year 1999 create the biggest proportion of the exports from China to EU in 2006. The share of the first set increased from ten percent in the base year to more than eighteen percent in the last year. It is also interesting to notice that the commodities from the second set also increased its share in the total export value. These goods which were at first traded only in relatively small quantities are now creating more than seventeen percent of the total trade in year 2006. The share of trade in the first two sets increased on the expense of the sets three to ten.

Among the ten percent of least-traded goods are products from all basic groups of SITC classification. The biggest growth in this bin is thanks to the products in the following groups: “6: Manufactured goods classified chiefly by material”, “7: Machinery and transport equipment” and “8: Miscellaneous manufactured articles”. Concretely, the biggest growth was experienced by product code “76483: Radar apparatus, radio navigational aid and radio remote control apparatus”. However, not all the growth is thanks to these three groups. An important growth among the least-traded goods experienced goods classified as crude materials or chemicals such as “28781: Molybdenum ores and concentrates” or “55320 Beauty or make-up preparations”.

Figure 2: Composition of China's Exports to the EU



Source: Data – Eurostat, authors' calculations

3.1.2 European Union Exports to China

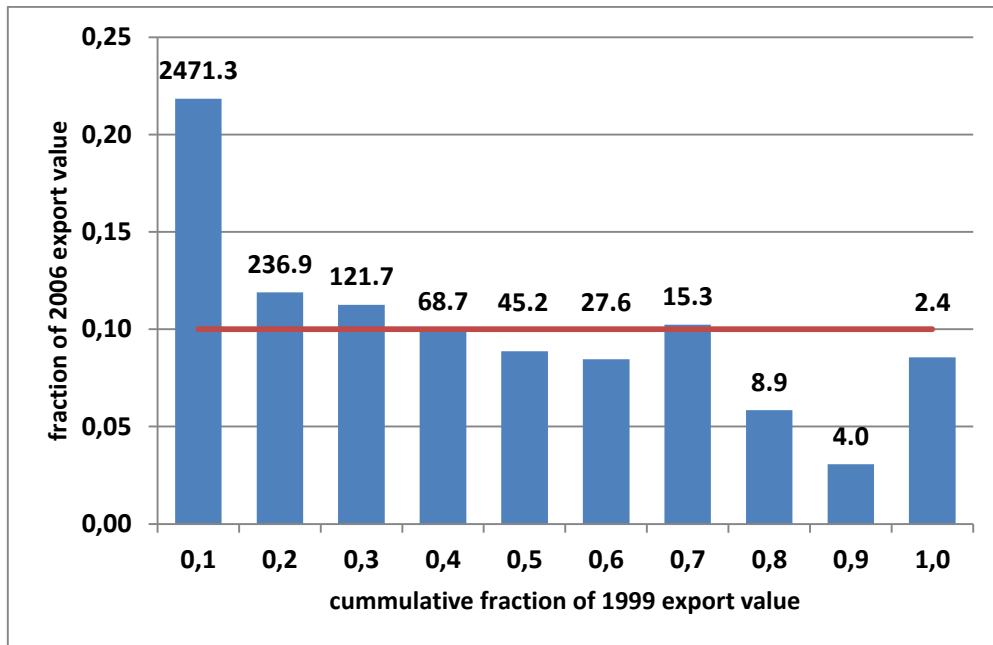
In Figure 3 we observe the changes in the least-trade goods for the EU exports to China. Interestingly, the growth in extensive margin was bigger than in the case of Chinese exports to the European Union. This might be because during the observed period China has made more important trade liberalisation steps towards EU than EU did towards China. In the next section we will try to explain what might be the engine behind the growth in extensive margin.

The set with the least-traded goods experienced the biggest growth in the relative importance in the overall trade. The least-traded goods in the year 1999 were generating 21.84% of the trade in the year 2006. The growth in the least-traded set was mainly caused by exports of goods such as “71322: Reciprocating piston engines”, “88135: Apparatus and equipment for photographic”, “68311: Nickel” or “68123: Platinum”. The immense rise of exports in the group “93140: Imported goods for the assembly of the motor vehicles” supports the theory that China is increasingly becoming the “world’s assembly line”.

Most of the other sets reminded stable over time. However, the proportion of most-traded goods in overall trade declined. In case of the last two sets this change was partly induced by the decline in the exports of the commodity with code 78439 which stands for “other parts and accessories”. This is in line with Cui and Syed (2007) finding that Chinese companies have started to rely on more domestically sourced

components. In contrast to the previous period when China was mainly focusing on the end-stage assembling operations.

Figure 3: Composition of the EU's Exports to China



Source: Data – Eurostat, authors' calculations

3.2 Time Evolution of the Least-traded Goods

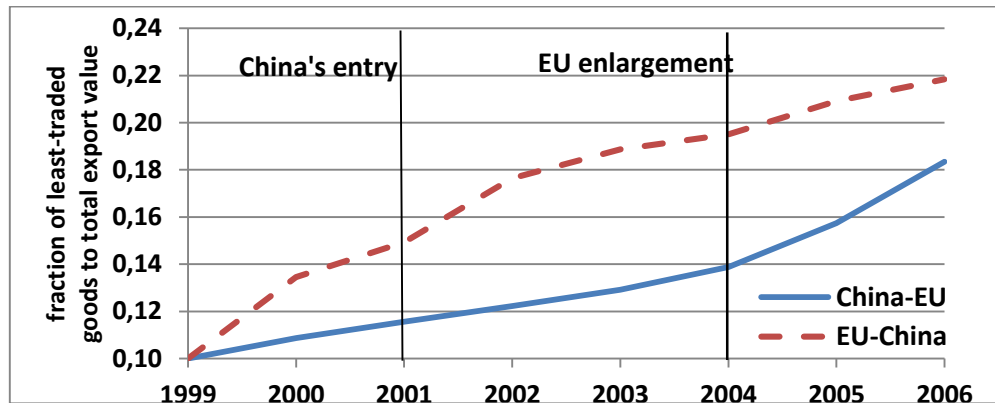
Figure 4 shows the development of the least-traded goods in time. We can see that the proportion of the least-traded goods in overall trade was growing gradually. However, we can also observe that in case of the Chinese exports to EU the changes are more significant in the period after the year 2004 when the enlargement of EU occurred. This could mean that after joining EU, these new member states became more attractive for China as export destination. Thus, China has found export markets for products which were not so attractive for the Western markets.

In case of the EU exports to China the biggest change of share of the least-traded goods can be observed in the year 1999 and after year 2001. This suggests that China, around its entry to WTO, took several liberalisation steps which enabled EU countries to export previously non-traded goods to China.

Overall, the trend in the growth on extensive margin is occurring during the entire period observed. This might be a sign of the strengthening relations between these two economic entities. First of all, the reason for the growth in trade on extensive margin can be attributed to the growing importance of China in global economy and to its shifting export structure as suggested by Rodrik (2006). It is also important to notice

that China's entry to WTO was accompanied by liberalisation steps before and several years after China entered WTO. The steady growth of the extensive growth can be therefore explained by gradual liberalisation of trade during the observed period.

Figure 4: Evolution of Least-traded Goods: EU-China Trade



Source: Data – Eurostat, authors' calculations

3.3 Sensitivity Analysis

This section deals with sensitivity analysis of our research. Our methodology consisted of dividing the trade in the benchmark year into ten set. In this analysis we show how different our results would be if the sets would be containing five or twenty percent each. Each column shows percentage trade growth for the least-traded goods for different cut-off values. We observe that smaller is the cut-off; larger is the growth of trade in the extensive margin. This finding supports the main idea in our article that the least-traded goods do play an important role in the growth of total trade volumes.

Table 1: Results under Different Cut-off Values

Direction of trade	Cut-off		
	5 %	10 %	20 %
China-EU	151.0	83.5	77.8
EU-China	145.6	118.4	68.7

Source: Data – Eurostat, authors' calculations

4. Conclusion

In this paper we analysed the nature of trade growth between European Union and the People's Republic of China focusing on the growth of trade along the extensive margin. Our results prove that the extensive growth in trade is responsible for

an important trade growth between these two economies. China is exporting to European Union goods which it didn't use to export previously and the same applies for the European Union's exports to China. This finding is further supported by the sensitivity analysis which shows that smaller the proportion of the least-traded good is, the bigger is the growth of the extensive margin.

However, it might be complicated to provide evidence that this growth along the extensive margin can be purely attributed to the trade liberalisation periods and the structural changes as all of these happen gradually.

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Role of Innovations in the EU Industrial Policy and Competitiveness Enhancement

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Abstract

This article will discuss how the innovation policy is implemented into EU industrial policy, how important role it plays within the current financial framework 2014-2020 and Europe 2020 Strategy to assure sustainable economic growth in the EU and enhance its competitiveness within the environment of the world economy triad. Innovations and innovation policies and strategies implementations are one of the most important aspects of current international economics and business development issues. It is the key not only to creating more jobs and improving quality of life, but also to maintaining companies' competitiveness on the global market and states'/economies' competitiveness enhancement within the international economics system. The main aim of this paper is to figure out how and in what way the technology and innovation implementation processes in the European Communities can affect the business environment in terms of the EU competitiveness enhancement regarding the further social and economic development.

Keywords: *Competitiveness enhancement, EU industrial policy, Europe 2020 Strategy, International economics, Technology and innovation*

JEL Classification: *F02, F59, F63, O31*

1. Introduction

Innovation provides real benefits for us as citizens, consumers, and workers. It speeds up and improves the way we conceive, develop, produce and access new products, industrial processes and services. It is the key not only to creating more jobs, building a greener society and improving our quality of life, but also to maintaining our competitiveness on the global market. Innovation policy is about helping companies to perform better and contributing to wider social objectives such as growth, jobs and sustainability.

Allen, E. Roy (2009) argues that globalization and technology make foreign sources of new ideas more accessible and have made it easier for business tap in to foreign sources through, for example, cross-border R&D partnerships. Innovations tend to be concentrated in big firms operating in the high-tech manufacturing sector. The rate of innovation varies from firm to firm, sector by sector and country to country. Companies in Japan generally spend more on R&D and take out more patents than firms based elsewhere. Firms are motivated to innovate by increasingly fierce

competition from rivals, both domestic and foreign, other elements in the supply chain, developments in the ICT sector, and the policies pursued by governments.

According to Reinert (2012) technology offers opportunities to business organizations to increase their profits and growth through the introduction of new and improved goods and services and through changes to their production processes. Technology also helps firms to restructure their global patterns of production through investment in low cost locations or by sub-contracting to cheaper suppliers. However, technology can also pose threats and challenges for firms particularly if they allow themselves to fall behind their competitors. Technological advance, because it involves change in products or production processes, is a risky business particularly for firms that do not manage change well.

This paper will discuss how the innovation policy is implemented into EU industrial policy, how important role it plays within the current financial framework 2014-2020 and Europe 2020 strategy to assure sustainable economic growth in the EU and enhance its competitiveness within the world economy triad in international economics system environment. Thus the main goal is to figure out how and in what way the technology and innovation implementation processes in the European Communities can affect the business environment in terms of the EU competitiveness enhancement regarding the further social and economic development.

2. EU Industrial Policy Features

Dunning, Lundan (2008) define industrial policy as incentives for the supply side. More precisely, it comprises all government interventions aiming specifically to influence industrial change by affecting the incentives to produce industrial goods or incentives to enter/exit specific industrial goods markets. Industrial policy is a fairly wide-ranging concept. That is why a focus on government-driven incentives is a better guide than a catalogue of policy areas falling under it. Rupert (2000) argues that industrial policy is largely a national responsibility of the member states. The Community's role is to ensure that the single market operates in accordance with the rules of an open and competitive system. The Community's industrial strategy consists of policies aimed at improving the business environment and the legal framework necessary for speeding up the structural adjustment and the competitiveness of European industry under free international trade conditions.

The EU has developed a treaty basis for industrial policies. The major thrust of the *industrial policy* since the late 1980s has been on negative policies linked to the creation of the Single European market and the development of a Common competition policy. The role of the EU in positive industrial policies has been significantly less influential. According to Hitiris (2003), industrial policy in the EU has moved away, in most sectors, from the type of interventionist policies that used to dominate in many of the member states in the 1960s and 1970s. However Fojtíková (2011) argues that, the desire of some member states to protect some of their industries, and the favored status of what are regarded as key industries, mean that state aid and/or EU help continues to play an important role in many industries.

Moreover, the increased focus on developing competitiveness has led to the emergence of a new European champions movement. Policies to help companies in specific sectors such as ICT and biotechnology also enhance the vertical dimension of the EU's industrial policy. Nevertheless, there is still a strong focus on horizontal policies that are useful in promoting competitiveness. There are also areas, such as the policy towards SMEs (small and medium enterprises), that are largely based on gathering and disseminating information and preaching good practice. As Jovanović (2005) underlines, industrial policy in the EU, like many other EU policies, reflects a multitude of interests and is driven by a complex set of economic and political factors. As such it is not easily understood by a purely economic assessment of its rationale or its performance. Nevertheless, Havierníková (2012) argues, a movement towards a negative and internal market-driven policy framework that emerged in the 1990s seems to be evolving into a more strategically driven policy area connected to a desire to promote competitiveness among European companies.

The debate over the characteristics of EU industrial policy has become an important issue due to the growth of Union policies and programs that affect industry and because of the concept of subsidiarity. According to Hamilton, Wepster (2009) four possible reasons for an EU industrial policy can be put forward - spill-over effects related to externalities, creating the conditions for 'free movement', promoting 'economic and social cohesion', and promoting the goal of political integration.

3. Impact of Innovation on EU Industrial Policy

The industrial policy of the EU stresses the importance of *promoting innovation among European companies* as one of the key objectives of policy. This has led to the development of framework policies to promote pan-EU cooperation in R & D and other areas of technological development (Mitchel, Muysken, Van Veen, 2006). The development of a knowledge-based economy lies at the heart of these framework policies. The structuring of the European research area part of the program is seeking to build a European research base and accounts for approximately 16 per cent of the budget (Eurostat [online], 2014). The framework programs are basically attempts to build pan-EU competence in major areas of research and technological developments and to promote a European ethos for such a research base. The framework programs have elements of seeking to build European champions in the area of research and technological competence (Harakal'ová, 2012). The rationale for this would seem to be closely allied to the political integration driver of policy, as it is not clear that a European research and technological development base is preferable to a global or even a US orientated base (Fojtíková, 2012). Clearly, the USA is the technological leader in most of the thematic areas in the 6th Framework, hence linking to US research bases may be a more effective policy. If the objective is to develop European political institutions that foster research and technological development then the framework programs make sense. However, thus far the EU has not developed audit systems that test for the effectiveness, in terms of output relative to the US research base, of the framework programs (Cihelková, 2009). Moreover, member states'

governments maintain their own research and technological development programs often only marginally linked to the framework programs.

3.1 Europe 2020 Strategy Incorporated into the EU Innovation Policy

Similarly to the Lisbon Strategy, the Strategy 2020 set a goal for the Union as a whole and for its individual Member States to increase funding in research and development up to 3% of GDP. We hope that the Member States will adopt the innovation policy as political priority. Through the implementation of a dynamic innovation policy, solutions to other problems may be generated and the whole European Union would shift to a qualitatively higher level (Lipková, 2012, p. 174).

Europe 2020 is the European Union's ten-year growth strategy. It is about more than just overcoming the crisis which continues to afflict many of EU economies. It is about addressing the shortcomings of EU growth model and creating the conditions for a different type of growth that is smarter, more sustainable and more inclusive. To render this more tangible, *five key targets* have been set for the EU to achieve by the end of the 2020 decade. These cover: (1) employment; (2) education; (3) research and innovation (3% of the EU's GDP to be invested in R&D); (4) social inclusion and poverty reduction; and (5) climate/energy. The strategy also includes *seven flagship initiatives* providing a framework through which the EU and national authorities mutually reinforce their efforts in areas supporting the Europe 2020 priorities such as (1) innovation, (2) the digital economy, (3) employment, (4) youth, (5) industrial policy, (6) poverty, and (7) resource efficiency (European Commission [online], 2014).

EU Innovation policy is about helping companies to perform better and contributing to wider social objectives such as growth, jobs and sustainability. The main current European Union's innovation policy is the *Innovation Union*, as one of the seven flagship initiatives of the Europe 2020 strategy for a smart, sustainable and inclusive economy. Its aim is to boost Europe's research and innovation performance by speeding up the process from ideas to markets. According to European Commission ([online], 2014), *the Innovation Union plan* will aim to do three things. Firstly to make Europe into a world-class science performer; secondly to remove obstacles to innovation like expensive patenting, market fragmentation, slow standard-setting and skills shortages – which currently prevent ideas getting quickly to market; and finally to revolutionize the way public and private sectors work together, notably through Innovation Partnerships between the European institutions, national and regional authorities and business.

3.2 Innovation Union and Its Initiatives

According to European Commission ([online], 2014), the *Innovation Union, key initiatives* are the following ones. Firstly it is about strengthening *Europe's knowledge base* - research and education nurture innovation. Europe would require at least one million more researchers in the next decade to reach the target of investing 3% of EU GDP on R&D by 2020. The Innovation Union proposes measures to complete the European Research Area by 2014. This means more coherence between European and

national research policies, cutting red tape and removing obstacles to researchers' mobility. In education, the European Commission will support business-academia collaborations to develop new curricula addressing innovation skills gaps. It will also support an independent ranking for universities.

Secondly it is focused on getting *good ideas to market*. The Innovation Union proposes to create a genuine single European market for innovation which would attract innovative companies and businesses. To achieve this, several measures are proposed in the fields of patent protection, standardization, public procurement and smart regulation. The Innovation Union also aims to stimulate private sector investment and proposes among other things to increase European venture capital investments which are currently a quarter of the level in the US.

Thirdly the issue is to maximize *regional and social benefits*. To avoid an "innovation divide" between the strongest innovating regions and the others, the Commission will assist Member States to use better the remaining part of the €86 billion of structural funds programmed for 2014-2020 for research and innovation projects (Eurostat [online], 2014). The Innovation Union aims to involve everyone in innovation. This is particularly true in terms of ensuring employees themselves can influence the way businesses and public authorities innovate and also when it comes to social innovation. In 2014, The Commission will launch a major research program on public sector and social innovation and pilot a European Public Sector Innovation Scoreboard.

Fourthly, the European *Innovation Partnerships* are a new way of bringing together public and private actors at EU, national and regional level to tackle the big challenges we face such as climate change, energy and food security, health and an ageing population. These challenges also represent opportunities for new business and the Partnerships will aim to give the EU a first-mover advantage in these markets.

Finally the fifth key initiative is an *international collaboration*. Europe needs to work better with its international partners. That means that Europe should continue to be open for access to its R&D programs, while ensuring comparable conditions abroad. That also means the European Union and its Member States should treat scientific cooperation with third countries as an issue of common concern and develop common approaches to protect our interests. In 2012, agreement was also reached with international partners on the development of research infrastructures which, given their cost/complexity, can only be developed on a global scale.

The last issue to be debated regarding the EU innovation policy is a following question. What are supposed to be the particular benefits of the Innovation Union policy for EU citizens, entrepreneurs and researchers? It will contribute to innovations and breakthroughs to improve quality of life and create jobs for *European citizens*. According to Vojtovič, Krajňáková, (2013) in this case the Innovation Union means a smarter economy to support standard of living, a better use of public money, empowering citizens thanks to social innovation, innovative solutions to live longer and healthier lives and a greener Europe. Ivanová (2013) points out that the Innovation Union will make it easier for *entrepreneurs* to commercialize their ideas and grow companies. In this case the Innovation Union means improved access to finance,

innovation-friendly rules and regulations, accelerated interoperable standard-setting, cheaper patenting, innovation supported by the public sector, innovation Partnerships to give EU businesses a competitive edge and easier participation in EU research and innovation programs. Krajňáková, Vojtovič, (2012) argue that Innovation Union will make it easier for *researchers* to conduct their research in Europe. It means attractive careers for researchers, high-standard training, improved cross-border mobility, a more open access to research results, enhanced public-private collaboration and easier participation in EU research and innovation programs.

4. Conclusions

As conclusion we can say that the innovation policy implemented into EU industrial policy plays very important role within the current financial framework 2014-2020 and Europe 2020 Strategy to assure sustainable economic growth in the EU and enhance its competitiveness within the environment of the world economy triad. Innovations and innovation policies and strategies implementations are one of the most important aspects of current international economics and business development issues. It is the key not only to creating more jobs and improving quality of life, but also to maintaining companies' competitiveness on the global market and states'/economies' competitiveness enhancement within the international economics system. In this paper we have shown how technology refers to ideas and knowledge that business can exploit commercially and assure the world economy sustainable development. The sources of new ideas on which companies can call are many and varied, ranging from universities and research institutes to competitors, customers and suppliers, and to employees.

We can highlight that the EU economies are following a long-established trend of restructuring away from the primary and secondary sectors and towards services and high value-added products. But manufacturing is still an important economic sector of the Community for production, trade and employment. In recent years the industry has operated against a background of slow growth of demand, rising unemployment, increasing international competition and rapid changes brought about by technological progress. Although these are problems which to some extent are shared by all members of the Community, industrial policy still remains largely a national responsibility. The Community has taken steps to ensure that, in accordance With a system of open and competitive markets, the conditions and the legal framework necessary for speeding up the structural adjustment and competitiveness of European industry will develop.

We have concluded that the Community's industrial strategy consists of policies aimed at improving the business environment, by working towards integrating the European market, promoting the necessary changes in industry's structure, and coordinating the activities of the member states. The single market has given a welcome boost to cross-border mergers, acquisitions and joint ventures which are shaping a new structure of production and distribution. The Community has also launched several integrated programs of research to help the EU to catch up with its rivals in the application of modern technology. In general, R&D expenditure and the rates of industrial

production and productivity achieved by most EU member states are persistently below those of its main competitors, such as the USA and Japan. An implication of these differences in performance is that in external markets the Community is rapidly losing ground in high-technology innovation and trade. We arrived at the opinion that market integration and coordination of industrial policies and research are expected to have a favorable impact on the competitiveness and performance of EU industry without the need to resort to any form of aggressive and confrontational strategic trade policy. This will contribute to the efforts to reduce unemployment and increase growth and welfare.

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Globalization and Africa: How Lost and Marginal is Africa's World Economy Region in the Period of Globalization

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Abstract

Current Africa is one of the most inconsistent world economy regions. Lots of its countries have faced rapid economic growth since the beginning of 2000s (measured with the growth of GDP). But at the same time it is region of 34 least developed countries and most of its inhabitants live in the poorest living conditions in the world. Economic studies show that present rapid economic growth is not sustainable because of many reasons, especially due to dependent on primary economic sector and insufficient structural reforms. Also political instability makes barriers for future prosperity of African region. The aim of the paper is to evaluate position of Africa in the globalized world economy in the last decade 2003-2013 with respect to its main economic and social consequences. The paper would like to say whether Africa (not only its economy but also its population) gains or losses in the process of globalization.

Keywords: *Africa, Economic growth, External economic relations, Globalization, World economy*

JEL Classification: *F62, F63, O11, O15*

1. Introduction

Africa, for economic analysis usually divided into north and sub-Saharan part, is one of the largest regions of the world economy, as well as the region most undeveloped. Its population is formed by about 1 068 million people. Most of them face poor living conditions, including lack of food and drinking water, medical care and education. Number of clans, communities, nationalities and nations is large, and as Klíma (2012) writes, they have longer history than other human groups elsewhere in the world. Understanding African history and its historical external relations (especially with Europe) is very important, because problematic history connected with colonialism is the first reason of current underdevelopment of Africa. The second reason can be found in adverse natural conditions - huge deserts, mountain blocks, primeval forests, lack of rivers, warm climate, frequent droughts and various natural disasters. The third reason can be seen in the development after decolonization and foundation of independent Africa's states.

Today Africa, as world region, has more important international impact than many people are unable to recognize or admit. As Klíma (2012) writes, current Africa is region that influences economic, political, healthy and cultural human trends in the world. Economists will complete this claim with ideas connected with rapid economic

growth (faster than in developed regions) and investment possibilities. They are right, Africa is one of the most dynamic growing world economy regions but it is also home of 34 least developed countries and the lowest income region of the world economy.

The aim of the paper is to evaluate position of Africa in the globalized world economy in the last decade 2003-2013 with respect to its main economic and social consequences. The paper would like to say whether Africa (not only its economy but also its population) gains or losses in the process of globalization. The analysis uses mainly statistical data from World Economic Outlook Database (served by International Monetary Fund, IMF) and African Economic Outlook (based on expertises of African Development Bank, OECD Development Centre and United Nations Economic Commission for Africa).

2. Globalization of World Economy

Globalization is one of the most important processes that can be recognized in present world economy. Economists have many different ideas when globalization started and how to define it. Most Czech authors, for example Zlý (2009), conceive globalization (in its economic dimension), as one of the international economic integration stages. Zlý (2009) defines it as a process of gradually connection and bounding of national economies through purposeful removal of all barriers for free movement of products and production factors. Mezřícký (2011) defines globalization as a more and more intense integration of world countries in one economic system of market economy. Next author, Lebiezík (2006) understands globalization as a development of international economic relations that causes deeper and deeper connections and mutual dependence of national economies. If economists define globalization in these consequences, they usually emphasize economic events of 1970s as the most necessary for the acceleration of globalization process or as the beginning of this process⁴⁶.

Czech author Breinek (2005) distinguishes three stages of the globalization process in the world economy:

- First stage (1870–1914): period of rapid world economy growth that was based on international trade and increased capital and labour force mobility.
- Second stage (1945–1980): period of reduction after 2WW protectionism and effort of support for international economic integration.
- Third stage – current period of globalization (1980-2005): acceleration of capital, product and labour force international mobility and the end of bipolar world economic order.

Breinek (2005) wrote his paper in 2005 so he finished his analysis in this year. But it is no doubt that current period of globalization can continue to present days although

⁴⁶ Some authors connect beginning of globalization process with the beginning of world capitalistic and colonial order (in 16th century); with the emergence of transnational corporations (at the end of 19th century) or with the cancellation of the fixed exchange rates and taxies reductions in 1970s which led to acceleration of international goods and capital flows.

recent global economic crisis slower globalization process. Globalization affects all regions of the world economy. Sometimes it is said that globalization brings opportunities for those countries which were prepared for it (for example for China). Was Africa prepared for globalization of the world economy? What is its present position in the world economy?

3. Africa's Economic Performance Analysis: International Comparison of Africa's GDP Level and Rates of Growth

Africa is the most undeveloped region of the world economy. It counts more than 1 000 million inhabitants and consists of 54 states. Current average GDP per capita of the whole region is 3 204 PPP valuation USD, according to African Economic Outlook (2014). Sub-Saharan Africa share on world GDP was over the decade 2003-2012 a little more than 2 percent and it was the lowest share of all world economy regions. But it is important to say that the share constantly grew over the period, in 2003 the share was 2.16 percent and in 2012 it was 2.52 percent. For the years 2013 and 2014 IMF expects Africa's share on world GDP around 2.60 percent⁴⁷. Historically Africa's shares on world GDP fell, as Maddison (2008) writes, whole Africa created 4.5 percent of world GDP in 1820, in 1950 3.8 percent, in 1973 3.4 percent and in 2003 it was only 3.2 percent.

Great economic differences can be found among sub-regions of Africa, especially between more developed Arab North Africa and poor and undeveloped sub-Saharan part. From World Economic Outlook is evident that sub-Saharan African part is the lowest income region of the whole world economy. Its GDP per capita (based on PPP in current international dollar) was only 1,599 USD in 2003 and 2,465 USD in 2012. North Africa (shown as one region with Middle East) has GDP per capita four times higher than sub-Saharan part. Next Table 1 shows GDP per capita ratios of selected world economy regions in comparison to Sub-Saharan Africa.

Table 1: World Economy Regions GDP per capita based on PPP in Current International Dollar in Comparison to Sub-Saharan Part of Africa (ratios)

World	2003	2012
Advanced economies	19,3	16,5
Major advanced economies (G7)	20,6	17,3
European Union	15,1	12,8
Emerging market and developing economies	2,3	2,8
Developing Asia	1,6	2,5
Latin America and the Caribbean	4,9	5,0
Middle East and North Africa	4,0	4,3
Sub-Saharan Africa	1,0	1,0

Source: World Economic Database, IMF (2013), author's own calculations

⁴⁷ North part of Africa is presented by IMF as one country group with the region of Middle East. Because of this fact statistical data do not represent real situation in North Africa and can be misleading for analysis of Africa. Therefore in some cases we will use only data of sub-Saharan part of Africa for demonstration of economic situation there.

As it can be seen from Table 1 Sub-Saharan Africa decreased GDP ratios with developed economies in 2012 compared with the year 2003. However, increased ratio with developing Asia shows that Asia's GDP per capita grew over the period 2003-2012 faster than GDP of Africa's region.

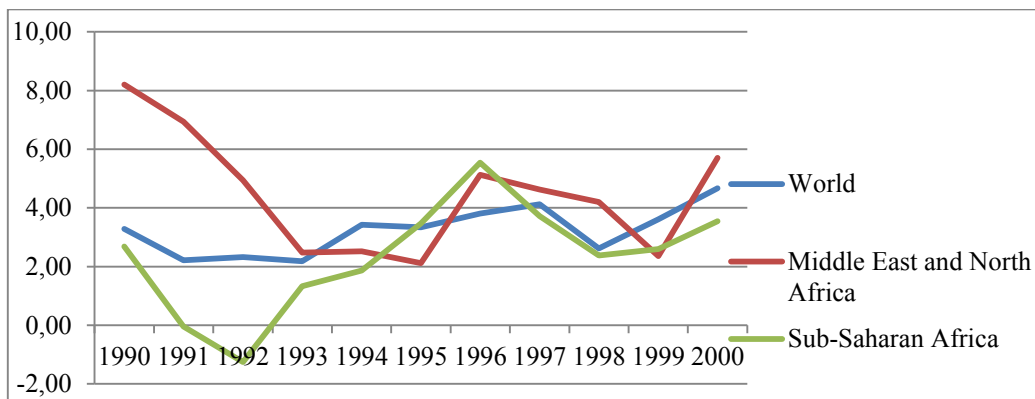
Historic background of present low economic performance of Africa can be found not only in colonial history of Africa but also in the beginnings of “independent” period. As Collier and Gunning (1999) write, in 1960s (after the creation of independent states) future of African states looked bright. Their economies grew faster than in the first half of 20th century. During 1970s economic and political situation deteriorated rapidly. Collier and Gunning (1999) connect this deterioration with entrance of autocracy and dictatorship in most Africa's states. 1980s can be easily called as lost decade in Africa's history. Collier and Gunning state that since 1980, GDP per capita in Sub-Saharan Africa declined at almost 1 percent annually and at the end of 1990s 32 African countries were poorer than in 1980. During 1980s and 1990s most of African countries suffered from very slow economic growth. Slow GDP growth was caused by several circumstances, indentified by Collier and Gunning (1999):

- Especially during 1980s, World Bank and IMF, identified exchange rates and trade policies as the main and primary causes of slow growth of African GDP.
- Poor quality of soil, semi-arid character of African continent, rainfall subject to long cycles and adverse climate are next key characteristics that may predispose slow African growth. Low quality of soil constrains African agriculture which traditionally employed majority of labour force. Adverse climate causes poor health for African population, decreases agricultural output (which has important relation to food security) and inter alia it reduces life expectancy.
- High ethno-linguistic diversity, without mingling and merging of groups, causes also slow economic growth and frequent civil wars in Africa⁴⁸.
- Concentration of African export on primary commodities, that had very volatile, prices made during the period uncertain export incomes for most Africa's states.
- High population growth was another very important reason for slow Africa's GDP growth. Most of developing regions went through demographic transition during past 40 years. However Africa has had ever very high fertility rate as well as mortality rate. Fertility rate grew and mortality rate declined and as a result, African population grew very fast in 1980s and 1990s.

Maddison (2001) stresses that Africa's economies are more volatile than most others, because of the dependence on export earnings obtaining from a few primary commodities and because of the extremes of weather. He highlights that during period of years 1820-1980 Africa's per capita income rose about 3.5 percent and started to decline in 1980s. This turnover had the consequence with the problems of “government” and also with increasing external indebtedness. In spite of international initiatives introduced by World Bank and IMF (Heavily Indebted Poor Countries Initiative) and Paris Club, external debts still make troubles to many Africa's states.

⁴⁸ As Collier and Gunning write, ethnic diversity has no effect on growth in democratic societies but in dictatorships, high level of diversity reduce growth rates by 3 percentage points.

Figure 1: GDP Growth: Comparison of Africa and World Average, Period 1990-2000 (percentage)



Source: World Economic Database, IMF (2013), author's own creation

Africa's economic situation started to change partly in mid-1990s when Africa entered new, more stabilized economic period. Stabilization was caused by internal and external factors. Firstly, number of civil wars in Africa was declined. Secondly economic conditions were better because of better world economic development and development of world resource prices. Thirdly more financial sources in a form of development aid and assistance came to Africa. Fourthly Africa's trade intensified. Very important role for boosting of Africa's trade played two initiatives, European Union trade agreement EBA ("Everything but arms") and United States African Growth and Opportunity Law, bringing preferential entrance for African goods to the EU and The United States markets. This fact increased mutual trade between Africa and EU or the United States. These days, the United States and EU are the most important trade partners for most of African states, but Chinese and Indian trades with Africa have grown since the beginning of 2000s rapidly⁴⁹.

Since the early 2000s Africa has grown fast in the sense of GDP growth. Especially over the period of years 2001-2008 Africa belonged to the fastest growing world economy regions. Most of Africa's states experienced permanent annual growth of more than 5 percent on average. As the rest of the world economy Africa was (at the end of the first decade of 2000s) affected by the global crisis remarkably but the region recovered from the crisis rapidly and today we can say that Africa catches up the rest of the world. But its economic productivity is still very low.

⁴⁹ For example Tunisia, Libya, Cape Verde and Seychelles export share to Europe amounted about 70 percent in 2011. Similar situation we can find in Algeria, Morocco, Cameroon, Ghana, Mauritius, Mozambique and Sierra Leone which exports to Europe form from 50 to 60 percent of their exports. Also for South Africa European Union is the most important trade partner. The United States are the main export partner for Chad and Lesotho; China serves as the main export market for Democratic Republic of Congo, Congo Republic, Sudan, Angola and Zambia. But for example about 90 percent of Guinea Bissau exports are orientated on India. According to data from African Economic Outlook (2013).

Table 2: Annual Percentage GDP Changes of Africa and Selected World Economy Regions

World Economy Regions	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
World	3.79	5.06	4.66	5.25	5.35	2.70	-0.38	5.19	3.91	3.18	2.87	3.59
Advanced economies	2.13	3.24	2.78	3.03	2.73	0.10	-3.43	3.04	1.69	1.47	1.17	2.03
Emerging market and developing economies	6.36	7.75	7.32	8.25	8.70	5.85	3.1	7.54	6.23	4.92	4.55	5.07
Developing Asia	8.63	8.62	9.53	10.35	11.48	7.33	7.70	9.79	7.81	6.41	6.32	6.50
Latin America and the Caribbean	2.06	6.03	4.67	5.62	5.74	4.23	-1.22	5.99	4.59	2.93	2.68	3.11
Middle East and North Africa	7.04	8.05	5.53	6.84	5.95	5.04	2.99	5.52	3.90	4.61	2.15	3.77
Sub-Saharan Africa	4.80	6.98	6.26	6.36	7.11	5.70	2.64	5.61	5.49	4.86	4.96	6.01

Source: World Economic Database, IMF (2013)

Note: Years 2013 and 2014 are only IMF forecasts.

Table 2 shows us that during last decade the fastest growing world economy region was “developing Asia”, but Africa faced very rapid growth too. According to IMF especially Sub-Saharan Africa GDP growth was very high and sustained. World Economic Outlook (2013), report of IMF, expects further acceleration of GDP growth of Sub-Saharan Africa because of strong domestic demand. Contrary slowdown of growth in North Africa caused by “Arab Spring events” continued in 2013, improvements in 2014 will be connected with better global conditions and recovery in oil production.

African Economic Outlook recognizes (2013) these engines of growth in many Africa's countries, for the beginning of second decade of 2000s:

- on demand side it was domestic demand, that was often boosted not only through public and private investment⁵⁰ but also through growing private consumption;
- on supply side, three economy sectors were responsible for the growth – agriculture (in some regions because of good weather conditions) and services; in several resource-rich countries (especially Angola and Gabon) rising production of oil and mining activity served as main engines of growth.

Evaluation of Africa's GDP growth will be not full if we do not mention intraregional differences. Analysis of country figures shows that only a few African countries gain from the globalization process. Whole Africa is one of the rapid growing world economy regions but at the same time it is home region of 34 least developed countries (LDC) that is about 70 % of all LDC⁵¹. The highest average annual growth over the period of years 2004-2012 can be found in Angola (11.6 percent), the lowest in Zimbabwe (-0.3 percent).

⁵⁰ In 2012 private investment was often related to oil production and mining and was supported by foreign direct investment inflows.

⁵¹ The present list of LDC contains 49 countries (for the year 2013).

Table 3: Countries with “Highest” and “Lowest” GDP Percentage Annual Growth on Average over Period 2004-2012

3 countries with “highest” growth		3 countries with “lowest” growth	
Angola	11.6	Zimbabwe	-0.3
Equatorial Guinea	10.9	Swaziland	2.0
Ethiopia	10.9	Eritrea	1.0

Source: African Economic Outlook (2014)

Measured with GDP per capita Africa is home region for the poorest world countries. The lowest level of this indicator can be found in Congo Dem. Rep., in PPP valuation, it is only 396 USD and in Zimbabwe 531 USD. For comparison level of the same indicator is for Equatorial Guinea 37 853 USD and for Gabon 17 080 USD.

4. Africa's External Economic Relations Analysis: Is China Really Engine of Africa's Economic Development?

Europe (European Union⁵²) and Africa relations have had long history. However they can be hardly (contrary to official declaration) called as partnership and they are quite asymmetric. Its present form has been influenced by problematic mutual history connected with colonialism, dependent and one side involvement into mutual economic relations. During colonialism Africa served as a basis for primary resources for European economic growth and Africa's socio-economic development was never neglected.

Before 1989, as Tull (2008) writes, European policies towards Africa were weak and inconsistent. European Union, as institution, reduced its relations with Africa only on development policies. EU attitude to Africa was based on promotion of democracy and human rights while, as highlights Tull (2008), Africa's socio-economic development, its trade relations with Europe were never tackled. In mid-1990s, according to Tull (2008), they underwent shift, on the background of violent conflicts in Africa, conflict prevention became main topic of European rhetoric to Africa. Also at the beginning of 2000s EU-Africa relations were influenced by growing awareness of international security challenges. As a result, between years 1985 and 2006, Sub-Saharan Africa's share on EU member states foreign trade declined from 3.2 percent to less than 1.4 percent (Tull, 2008).

As the year since which EU-Africa relations has been improved considers Michel (2008) the year 2005. Why? Firstly European Commission introduced proposal of creation of a new document with the aim to increase efficiency of providing development assistance towards Africa. Secondly, British administration tried to increase EU interests in Africa during its presidency of the Council of European Union. These two facts, together with growing China's and India's engagement in Africa, led to creation of EU-Africa relations on the better basis. Present days, especially China plays more and more important role in Africa's economies and China

⁵² Especially former colonial powers such as United Kingdom, France and Belgium.

follows its own interests in Africa, contrary to western states (EU and the United States) mainly economical.

**Table 4: Countries and Regions Shares on Africa's Merchandise Trade
(as a Percentage of Total Africa's Merchandise Import/Export)**

Country/Region	Import				Export			
	1992	2000	2005	2009	1992	2000	2005	2009
OECD-Europe total	55.1	49.9	43.9	38.5	57.3	46.6	41.4	35.3
The United States	11.2	9.0	6.5	6.9	16.0	18.6	21.1	18.2
China and Hong Kong	1.8	4.3	8.1	14.0	1.7	4.2	7.2	12.9
India	0.9	1.8	2.8	3.9	1.6	2.2	1.6	5.9
Japan	7.4	4.2	3.5	2.8	3.7	3.2	3.2	2.6
Intra-African total	4.2	11.4	10.1	9.9	2.7	8.6	9.1	8.4

Source: OECD Factbook 2011-2012 (2013)

As it can be seen from the Table 4 Europe has missed slowly its leading position in Africa's trade. Chinese entrance is rapid and China is now more important import partner for Africa than the United States. As Taylor (2006) points out, in 1999 the value of China trade with Africa was only 2 billion dollars, in 2004 it was 29.6 billion USD and in 2005 even 39.7 billion USD. According to Besada, Wang and Whalley (2008) trade between Sub-Saharan Africa and China was increased over the period of years 2000-2007 from 7 billion USD to 59 billion USD, it grew at 30 percent annually. Similar progress can be found in China-Africa investment relations. Besada, Wang and Whalley (2008) point out that China's FDI outward stock in Africa was increased to 2.56 billion USD in 2006 from 49.2 million in 1990.

Growing engagement of China in Africa, not only in trade, but also in other economic affairs, is closely connected with rapid growth of Chinese economy. China needs not only resources of every kind (oil, fuels, coal, copper, bauxite, uranium, aluminium, manganese, iron ore) and new export markets⁵³ but also tries to find new avenues to deploy large Chinese foreign exchange reserves. However, Taylor (2006) stresses that oil is the major and obvious source of growing Chinese interest in Africa. As he writes Beijing's main trade connections are with oil-producing states⁵⁴.

It is obvious that China tries to satisfy its increasing demand for natural resources in Africa. Therefore number of investments is linked to security strategic reserves of mineral resources for its industries. As Besada, Wang and Whalley (2008) write, Chinese investors have established joint ventures with local Africa's investors in number of economic sectors, such as oil, agriculture, textile and light manufacturing sectors. For most of African states Chinese investments have helped to increase GDP

⁵³ Goldman Sachs Report (2003) projecting future development of BRIC countries expects future Chinese GDP growth in spite of its slowdown. Since 2020 it should be less than 5 percent annually and in 2050 Chinese GDP should be increased by 2.9 percent.

⁵⁴ Taylor (2006) gives some examples to underlay his opinions, for example in 2002 Chinese Sinopec company signed a contract for 525 million USD to develop the Zarzaitine oilfield in Algeria; in 2004 Total Gabon signed contract with Sinopec under which Gabonese crude oil will be sold to China; in 2005 Angola was given a 2 billion loan from China in exchange for oil deals; in 2005 an 800 million USD crude oil sale deal was signed between company PetroChina and the Nigerian National Petroleum Corporation.

growth and have been important sources for positive economic development. However Chinese investors are active not only in oil sector but also in reconstruction of Africa's infrastructure. Besada, Wang and Whalley (2008) state some examples, such as reconstruction of roads in Mozambique, purchase of 70 percent stake in the Zimbabwe's electricity generation facilities and significant stake in its national railways.

Africa's economic and investment opportunities attract not only China but also other newly growing states, such as India. India is, according to Goldman Sachs Report (2003), predicted to grow above 3 percent by 2050. Now Indian economy grows by nearly 7 percent annually and has to solve similar problems as Chinese – shortage of natural resources. Pham (2007) points out especially on the lack of oil. As he writes India is the world third largest energy consumer with 3.7 percent of total world consumption; however Indian proven oil reserves are stagnant and count less than 0.5 percent of the world total. As a result of this imbalance India imports about 75 percent of its oil and it is projected that this share would rise to 90 percent in 2020. Under these circumstances it is obvious that African oil sector attracts Indian investors like Arcelor Mittal that in cooperation with two Indian state owned oil and natural gas companies invested for example in Nigeria 6 billion USD in 2005. Pham (2007) quotes that Africa's share on India's oil imports counted about 20 percent in 2007.

Generally it can be said that economic relations between Africa and developing countries or, as Schoeman (2011) writes, with global south intensify. But these intensive relations bring earnings only to resource rich countries, such as Angola, Nigeria and Sudan. Schoeman (2011) analyzed also commodity structure of Africa-global south trade and he points out that structure of Africa's export to developing countries is similar to export to developed countries. 90 percent consist of primary commodities.

Tull (2008) highlights that especially Chinese engagement is in European political and media rhetoric perceived in negative sense. The most important consequences connected with this debate are topics such as EU development assistance, bilateral character of Africa-China relations (contrary to EU multilateralism), Chinese loans given to African countries (in the light of debt relief organized by IMF and World Bank) etc. Tull (2008) states reasons why seeing China as evil for Africa is misleading (for his arguments see his paper). We can say that China can be the right stimulus for new form of EU-Africa relations. And we agree with Besada, Wang and Whalley (2008). They write that developments in Africa simply reflect growing China's engagement through the whole world economy not only in Africa. Chinese companies invest also in Latin America and even in some EU member states, such as in Ireland, Bulgaria and Romania.

5. Conclusion: Reflection on Sustainability of Africa's Economic Growth

Current Africa's rapid GDP growth is connected with very important questions: Firstly, is this growth sustainable? Economic Development in Africa Report (2013), published by UNCTAD, answer is not very optimistic and can be interpreted easily

“no”, better current pattern of Africa's growth is neither inclusive nor sustainable. Report tries to identify reasons of this pessimistic statement and finds them in these circumstances:

- heavily dependent of Africa's countries on export of natural non-renewable resources (such as fossil fuels, metallic and non-metallic minerals)⁵⁵;
- low productivity of African agriculture, agricultural output per capita is still low compared to global average⁵⁶ (this fact has serious consequences with food security and social stability);
- deindustrialization, share of manufacturing on GDP fell from 15 percent in 1990 to 10 percent in 2008;
- rapid urban growth; currently about 40 percent of inhabitants live in urban areas but it will be 60 percent in 2050.

IMF formulates in World Economic Outlook (2013) certain recommendations for the achievement of sustainable and inclusive growth. In North Africa future growth, over the medium term, depends on improvements in socio-political environment and macroeconomic stability, as well as on industry diversification and job creations. Governments in sub-Saharan part of Africa have to deepen structural reforms, give priority on infrastructure investment and on social spending.

Second important question connected with the growth of GDP is whether this growth brings better living conditions to African people. Answer of this question is not so easy as the answer of the first one because it has one very important consequence – high and rapid population growth. As Maddison (2008) shows over the period of years 1990-2003 African population grew on average 2.43 percent annually (it was the highest level of all world economy regions) contrary to 1.37 percent as world average. He supposes for the period 2003-2030 slowdown of its growth but the expected rate of growth 1.98 percent would be still the highest in the world. Rapid population growth without accompanying economic and social progress also deepens problems connected with the current social tension in most of Africa's countries and can cause similar events such as “Arab Spring” in North Africa. Current relative political and security stability is in this light more fragile than it is.

Growing population is on the one hand threat for future human development and food security but on the other hand it is opportunity in the sense of young labour force. As Economic Development in Africa report shows 29 percent of world's population aged 15-24 will live in Africa in 2050 because African working age population is growing on average by 15.3 million people every year⁵⁷. But Africa is not prepared to cope with this growth. Quality education is not available and creation of new job possibilities is insufficient. Future development will show whether young labour force is advantage or disadvantage for economic development of Africa.

⁵⁵ The Africa Competitiveness Report (2013), published by World Economic Forum and World Bank, shows that for many African economies are sources of growth insufficiently diversified, for example mineral exports make up over half of Africa's exports.

⁵⁶ Africa's per capita agriculture output is, according to the African Development Bank, only about 56 percent of global average and more than two-thirds of the labour force is employed in agricultural sector.

⁵⁷ The highest working age population growth is expected in the poorest states, such as in Democratic Republic of Congo, Ethiopia, Uganda and Tanzania.

Now we try to answer the question we stated at the beginning of our paper. Africa has been positively influenced by globalization. Globalization brings new opportunities to Africa and external economic relations (especially trade and investment) are the most important factors of current rapid economic growth. But closer analysis reveals that this growth is not sustainable and Africa's economic relations are based on business connected with raw material and natural resources especially on oil. Therefore only some Africa's countries (rich on resources) gains from globalization. As whole region Africa was not prepared for globalization. Future positive economic development should have to be connected with many economic and structural reforms and diversification of economic activities. Also future political stability and better non-corrupt public administration are critical. And we can continue with other important circumstances for future positive development, such as increasing social spending on education, health care and human development; absence of civil wars; protection of human rights etc.

Economic growth still do not increase living standard of Africa's population, from the Millennium Development Goals Report (2013) is obvious that 48 percent of Sub-Saharan Africa's inhabitants still live in absolute poverty, they live with less than 1.25 USD per day. Most of them still work in agriculture and foreign investment does not lead to sufficient creation of new working opportunities for Africa's growing population. African inhabitants have not gained better lives from globalization yet.

Based on our analysis we can say that current Africa is not marginalized or lost world economy region but its inhabitants are lost and marginalized. There are now marks that their situation will be change in near future. Insufficient Africa's human development connected with dissatisfaction of basic human needs is one of the most urgent global problems of 21st century.

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Development of Intermodal Transport in Poland and in Europe

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Abstract

Intermodal transport market in Poland is a young market, which is characterized by a small, but steady growth. An increase in this type of transport in the overall transport of goods, but the share of intermodal transport performance in freight transport performance in Poland amounts to less than 5% (the highest percentage of intermodal freight services characterized by foreign shipowners FTP sea - about 14%). The strategic objective of the development of intermodal transport in Poland is to create favorable conditions for the technical, legal, organizational, economic and financial implications for the dynamic development of the intermodal transport system, so that their share of rail transport in 2020 reached the average level of the European Union in 2000, such as 10-15% in terms of tonnage. (Strategia Rozwoju Transportu do roku 2020).

Keywords: *Classification, Intermodal transport, Transport and handling technology*

JEL Classification: *L9, L91, L92*

1. Introduction

The problem of increasing traffic congestion and improve safety on the roads for years is trying to solve by the European Commission in document which presents the development strategy of transport and logistics. One of the first ideas, published in the White Paper was to increase the share of alternatives to road freight transport modes, particularly rail. Strong emphasis was also placed on the use of intermodal transport, such as, those in which the loads are moved by a different modes of transport (Commission of the European Communities, COM 2006).

For a long time in the European Union is seen continuous growth in freight of goods by the road transport. The share of road transport in total freight transport (tkm) implemented in European countries stands at 76.9%, while the share of rail transport is only 17.6% (Mindur and Hajdul, 2007). This situation, combined with an increase in trade in goods, leading more and more roads reaches its maximum capacity and the efficient organization of transport processes is becoming increasingly difficult or almost impossible.

Intermodal transport is based on joining the various modes of transport in the same integrated unit load. Moreover, to be able to talk about intermodal transport also needs to be a single contract of carriage, and responsible for the delivery goods must be in the hands of one contractor. The condition for the operation of intermodal transport is also discretization load, which means that it is only subject to manipulation reloading the entire unit load (Nowakowski, Kwaśniewski and Zajac, 2010).

1.1 Transport and Handling

Today time of the transport and handling are most important factors. To optimize these processes developed many systems that significantly reduce the time of loading/unloading and provide the highest level of security. For modern systems include: Cargobeamer, Modalohr, Flexiwaggon, Rollende landstrasse and bimodal transport.

Cargobeamer is a fully automated, horizontal support system of intermodal rail traffic. It was designed primarily for trailers and containers transport. The system consists of three parts: Cargojet (special railway wagon), Jet (a kind of platform on which the vehicle is entering truck with trailer) and Cargogate (adapted station). At the time of loading / unloading, truck with trailer arrives at the platform on which the set is separate. Then platform trailer placed on the wagon, where it is secured and ready for departure.

Modalohr is a system which, reminds in function Cargobeamer. It is a fully automated system for horizontal loading trailers. The system's functionality requires special wagons equipped with a rotating platform, which enters the vehicle with the trailer. After that the set is disconnected, and the platform rotates with the trailer and adjusted parallel to the axis of the wagon. For a proper functioning system needs a specialized terminal for large dimensions, equipped with the necessary equipment. It is required by the carriers also use special wagons to enable loading trailers.

Flexiwaggon this is another horizontal cargo handling system. In contrast to the system can be loaded Modalohr entire sets of vehicle + trailer. This increases the mobility and does not enforce the provision of additional vehicles. A significant advantage is the fact that loading and unloading can take place wherever there is a paved surface. This involves substantial savings because it does not require the construction of specialized terminals. In this system, placed on a special platform carriage rotates relative to the axis of the wagon, and then the substrate is lowered ramp, after which the set vehicle + trailer enters the wagon and the platform is rotated to a position parallel to the axis.

Rollende landstrasse this is a kind of intermodal transport, which involves carriage by rail or truck tractor sets + sets of special wagons low-loading trailer. These wagons have a small diameter wheels (380/360/335 mm) and a flat floor suitable for the transport of vehicles and trailers.

Dissemination of rail transport, inland waterway transport and short sea shipping with the use of intermodal transport techniques is one of the tools to ensure the sustainable development of transport system (Polityka transportowa państwa na lata 2006 – 2025, 2005).

2. Chances and Barriers of Intermodal Transport Development in Poland

Poland as a member state of the European Union should fully identify with the idea of and implementation of sustainable development strategy, both in terms of macroeconomic and sectoral. The EU sustainable transport policy, the greatest

emphasis has so far been given to the reduction of emissions and noise, and the implementation of economic instruments, the impact on pollution. New elements that are, in recent years more and more exposed relate to the development of environmental technologies and eco-friendly transport infrastructure development.

A new element in the policy development of the TEN-T becomes a criterion of its logistics shaping. To enable freight logistics full use of its potential for growth, TEN-T policy needs to ensure proper base infrastructure, including in particular intermodal terminals, capacity rail and sea and river ports (including land access to seaports), parking for vehicles and intelligent both transport systems considered as components infrastructure and means of tracking and tracing of goods. It is expected that the development of green corridors within the concept of freight transport logistics will strengthen its environmental dimension and innovative.

The relative level of transport accessibility Polish regions is best illustrated by the Compound indicators of the potential availability of time, understood as the shortest time to reach these regions accessible means of air, road or rail from any other region of the European Union. On the basis of recent studies has been developed synthetic ESPON map the availability in 2006. It shows that the availability of transport most Polish regions stood at 25-75% of the average in the EU-27, with the exception of Mazowieckie is characterized by the availability of a level close to the Community average. The positive side is the high rate of improvement of the accessibility in Poland in 2001-2006, much higher than the average growth rate in the EU-27.

Bandwidth major Polish airports in the past decade has significantly increased as a result of work carried out modernization. According to estimates by the Civil Aviation Authority (CAA) in 2009 was about 32 million passengers (400 thousand starts and landings) and was used in approximately 64%. According to the CAA analysis of these numbers can be concluded that Poland even at the moment has a stockpile of passenger throughput. In general, the largest surpluses have the smallest ports. An exception is the UK Bydgoszcz, which, together with PL Krakow-Balice and PL Wrocław Strachowice uses the available bandwidth in nearly one hundred percent. However, even in the case of these three ports does not have a reason for excessive concern.

Polish road infrastructure is one of the weakest subsystems Polish economy. It is too thin compared to the intensity of the production and the exchange and mobility of residents. An additional weakness is the low quality paved road network (urban and extra-urban) (Burniewicz, 2010).

Polish network of waterways does not create a uniform system of communication but a collection of separate and qualitatively different shipping routes. Based on the basic indicators classification of inland waterways of international importance, corresponding to the parameters of class IV and above (ie, for vessels with a capacity of between 1,000 and 1,250 tonnes) is only 5.5 % of their total length. Other waterways have only regional importance. Most skilled aquatic thoroughfare in Poland 's Oder Waterway (along with channels Kędzierzyńskim and Gliwice), but the navigation conditions on the middle section of a free-flowing from the mouth of the Lower Shore Warta make the most of the period navigation is not possible to navigate

between the upper and lower section Oder River. Wisla best operating parameters have on the canalised section of the upper estuary barrage Przemsza to transportation and the lower section from Plock to Wloclawek barrage of Tczewa and down to the mouth of the Gulf of Gdansk.

Technical characteristics and condition of infrastructure ports do not correspond needs of modern means of sea and land, and technology transhipments. Particularly the condition of the airport infrastructure in Szczecin is unsatisfied, where only 5.8% of the length of quays is in very good condition. In the port of Gdansk degraded a number of under-utilized wharves and infrastructure port of Gdynia still pregnant its adaptation to the transhipment of coal, not highly processed goods. The principal problems existing, generally outdated port infrastructure include: a) too small deep basins, b) insufficient admissible load wharves, c) slim facilities quays, d) a significant recapitalization of the remaining elements of the port infrastructure. (Burniewicz, 2010).

Table 1: SWOT Analysis of the Polish System of Transport Infrastructure (2010)

	Characteristics of positive	Characteristics of negative
Current	<p style="text-align: center;">STRENGTHS:</p> <ul style="list-style-type: none"> - A large stock and the potential of existing networks, ports, terminals and nodes - The existence of a full range of branch and technical forms of infrastructure - Favorable topographical conditions (lack of major natural barriers) - Location at the crossroads of European transport corridors - Transparent system of management of various types of infrastructure 	<p style="text-align: center;">WEAKNESSES:</p> <ul style="list-style-type: none"> - A high degree of wear of many elements of linear and point - The occurrence of bottlenecks and missing links in the network - Uneven regional distribution and network availability - No network adapted to high-speed traffic - Lack of continuity of technical grade connections between and - Weakness of modules that integrate different types of networks - Nuisance multiple network elements for housing and the environment - Frail elements of intelligent and innovative network

Future	OPPORTUNITIES:	THREATS:
	<ul style="list-style-type: none"> - Creating a network of international connections that increase transport accessibility Polish - To bring good technical condition of the entire infrastructure between Polish agglomerations - Establishment of a coherent network of motorways and expressways - Establishment of an embryonic network of high-speed rail - The achievement of European integration and interoperability of intermodal network - Elimination of the missing links in the network of regional and local - Build a set of ring roads of cities and towns lying in the networks of international and domestic - Supplementing the traditional networks of intelligent and innovative transport networks - The emergence of new sources of infrastructure financing 	<ul style="list-style-type: none"> - Maintaining the existing barriers hindering the implementation of the strategy to modernize infrastructure - Increased risk of natural disasters due to climate change - The effects of the instability of the network modernization caused her premature destruction - Forcing the ecological environment of stricter disciplines in infrastructure projects - Disregard of important global trends in the construction of transport infrastructure - The establishment of modern competitive infrastructure facilities in the neighboring countries - A decrease in available EU financial assistance in the new financial perspective after 2013

Source: Burniewicz 2010

Year after year increases in Poland, the market share of intermodal transport. While other European countries have taken us away, it is already clear that there is no other transport direction development. In the first quarter of this year, the share of intermodal transport increased by 6 percent compared to the same period in 2012.

Poland as a transit country should be a transport route traffic to both North-South and East-West. Throughout our country run almost all corridors transport. The share of intermodal transport, however, is too low compared with the potential, which has Poland.

Unfortunately, despite significant development of intermodal infrastructure in Poland, the share of intermodal transport using rail vehicle estimated based on data from the Central Statistical Office, PKP Cargo and PCC Intermodal SA data is only around 2.5-3 %. Currently, most of the container traffic from Polish seaports is realize by road (about 80 %). However, this market has great development potential, and the volume of intermodal transport can in the near future rise to the level of about 10-15%. However, further development is necessary as well as modernization of both point and linear logistics infrastructure. These changes, due to its key importance for the growth of intermodal transport should be a priority for the authorities both at national, regional and local (Fechner and Krzyżaniak 2011).

The factors favoring the development of intermodal transport in Poland may include, among others:

- EU transport policy - focused on the of environmentally friendly modes of transport development and the reduction of environmental pollution and accidents (White Paper, 2011),

- favorable position of Poland - at the crossroads of major European transport corridors (east-west: the corridor I, II and III and north-south: corridor IV)
- an increase in international trade - which generates increased demand for international transport,
- an increase in the demand for transport of highly processed products with high susceptibility to combined transport technologies,
- the provision of railway transport capacity - the prospect of the railway
- freight taking over part from road transport,
- emergence of new operators - companies that have their own fleet and that develop their own network of intermodal terminals, which will lead to improving the quality of transport services (Szeptiewska and Baran, 2012).

About how we are behind compared to other countries speaks volumes. According to information from the reports of the EU Intermodal rail transport in Germany is 30 percent. Even better is the rich Norway. There intermodal transport is up 60% all rail transport.

3. Operators of Intermodal Transport in Poland and in Europe

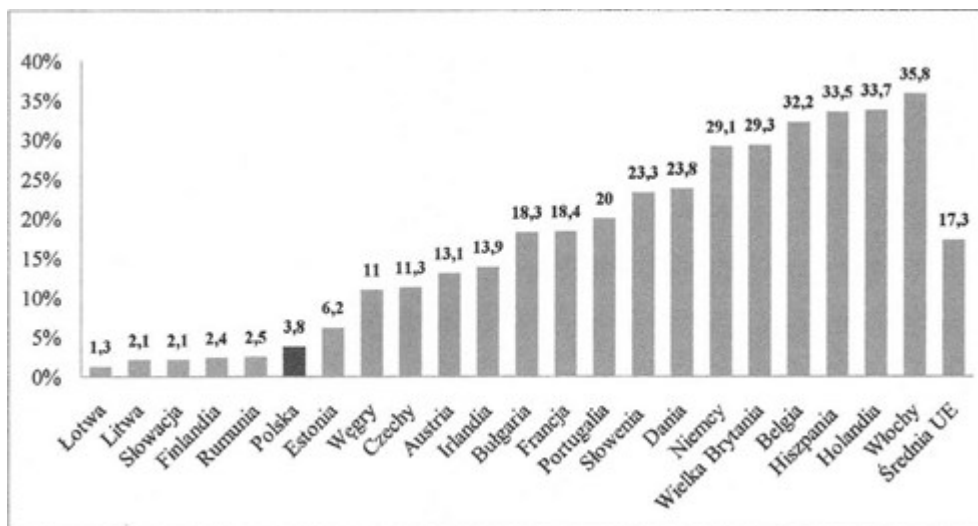
The main intermodal operator in Poland is a company which is part of a group Cargosped PKP Cargo SA. The company has a network of 6 Cargosped handling terminals acquired from the PKP group cargos. (Gliwice, Kobylnica, Mława, Małaszewicze , Żurawica , Warsaw - Prague). The largest terminal belonging to the company Cargosped is a terminal in Gliwice, its total area is 65 000 m² and a capacity of 1 400 TEUs.

The leader of the private intermodal operators in Poland is PCC Intermodal SA. The company specializes in the organization of intermodal transport using container in the "door to door" system. One of the goals of PCC Intermodal is the aspiration to increase capacity on the roads, reducing long distances road transport and transferring them from road to rail. The Company has three intermodal terminals the first was opened in Kutno and it is the largest PCC Intermodal terminal, a further two terminals in Gliwice and in Brzeg Dolny. Intermodal terminals support a year from 50 000 thousand TEUs to 200 000 thousand TEUs.

Presence of so few players on the Polish market by rail intermodal, influence on a significant reduction in price competitiveness and diversity of the selection of business partners. Ultimately, three-quarters of the market has PKP Cargo. Worth noting that the company is in second place among rail carriers of goods in the European Union, in weight and transport work volume (date from the end of 2011). The biggest competitor PKP Cargo in Europe is the German railways and French railways. The important element of development in this type of transport are reloading terminals. The way of terminals location in Europe is very uneven, the largest quantity have Germany, followed closely by Italy and France. On good position is the Czech Republic, surface attributable per one terminal is 1.23 thousand kilometers. That same ratio in Poland is 9.77 and is three times larger than Germany, Italy and France, so there is a large disparity amounts of terminals to length line railway in Poland. To

improve this situation should be build new terminals and modernize existing ones, that enabling carriers greater access to the rail network. In the European Union countries with the largest network of road-rail connections and the largest number of intermodal terminals are Germany and Italy. For this reason, intermodal transport is growing faster there than in other European countries. One of the largest intermodal transport operators in Europe is the German company Kombiverkher. The company has a network of connections across Europe. Polish railways have still a lot of work to do, a low level of punctuality lowers the quality and competitiveness of the company. The main connection between the Polish and Germany is Poznan - Duisburg, trains on this connection have often delayed up to 24 hours, however, the company Kombiverkher seeing the potential for the Polish market has changed the schedule calls and joined the network traffic Warsaw and Gliwice. Reduction and spreading the relation between the merger resulted in improving punctuality of trains. Just after the German company ranks Italian company Cemate.

Figure 1: Intermodal Transport in the Member States of the European Union in 2010



Source: Stokłosa 2011

Average Member States of the European Union amounted to 17.3% of intermodal transport in 2010. Poland fared very poorly against the background of European countries, and despite the increase in the critical year 2009 for the industry TSL in the world still ranks low (Stokłosa 2011).

However it should be noted, that the year by year increase in the share of intermodal transport in Poland is becoming more and more significant.

According to the Railway Transport Office, from January to March 2013 carriers have transported more than 165,000 pieces of units, which accounted for 266.9 thousand TEUs. Compared with the first quarter 2012 their number increased by 6.1% (by TEU by 4.7%).

The total mass of the intermodal transport in the first quarter of 2013 amounted to 2,059 million tons, and the transport performance close to 738 million tonne-kilometers. The share of intermodal transport in the rail market amounted to 3.92% (by weight) and 6.88% (according to work done). In the first quarter of 2013 rail intermodal transport carries out eight licensed operators, including: PKP Cargo S.A., PKP LHS Sp. z o.o., Lotos Kolej Sp. z o.o., DB SchenkerRail Polska S.A., CTL Logistics Sp. z o.o., Rail Polska Sp. z o.o., STK Wrocław S.A. and ITL Polska Sp.z.o.o (Modelewska, 2013).

4. Conclusion

Polish TSL industry must face the consequences of long-term stagnation in the development of rail freight, which indirectly affects the health of intermodal transport. Polish transshipment network of terminals, designed for combined transport is not sufficiently thick (three times less than in Germany), and the terminal equipment inadequate. As a result, rail transport is still too expensive, unpunctual and thereby uncompetitive for road transport.

Such solutions also favors EU policy that promotes intermodal transport. The EU recognizes the need to input transport solutions that are beneficial to the environment and improve the quality of life in big cities. According to the report of the International Union of Railways UIC, thanks to intermodal transport, external costs of transport reduce (eg accidents, air pollution, and environmental degradation). Supporters of this type of transport argue that such transport is also much cheaper (Modelewska, 2013).

Intermodal transport is the benefit of all. They bring not only benefits to business - on the way to move large amounts of cargo gains the whole country. Advantages of combined transport from the perspective of the country is to relieve the overloaded Polish roads, and much more environmentally friendly. In addition, the train can carry much greater quantity of goods at one time, which improves their liquidity. It is worth to invest. However, it is required to systematize the activities (Szmid, 2013).

The biggest problem associated with the implementation of intermodal transport in Poland may be the poor condition of the rail infrastructure and years of neglect occurring in rail transport. Poland is one of the few countries in Europe where the modern railway infrastructure is almost entirely maintained from charges for access to the tracks. Fees from carriers is not sufficient for the necessary repairs, and this in turn leads to a change by the transport organizers, from rail to road.

A serious threat to the development of intermodal transport in Poland is a small amount of intermodal terminals and logistics centers on main lines and junctions. One major problem may be also insufficient equipment and facilities in existing terminals. There is a significant lack of modern and efficient cargo handling equipment, lack of monitoring systems and the security passage of goods (Kott and Grondys, 2013).

Other limitations in the development of intermodal transport in Poland is among other things (Mindur, 2010; Stokłosa, 2011):

- limited number of specialized rolling stock to carry intermodal trailers, removable chassis or lorries,
- temporary shortages of specialized rolling stock (wagons type sgs mainly flooring);
- lack of monitoring systems travel goods that provide customers with real-time information about the status of shipment goods,
- the lack of cooperation between the parties on the intermodal transport market,
- the lack of a uniform and comprehensive information system on land and land-sea intermodal transport chains,
- lack of adequate financial support from the government for the development and promotion of intermodal transport and the lack of legal solutions in this field,
- the lack of an effective protection items system (thefts) and transport safety (damages)
- strong competition from road transport.

The experience of the European Union show that the government must promote intermodal transport until equalize the attractiveness of road and rail transport. We must hope that the intermodal transport in Poland will start to grow as rapidly as in the countries of “old EU “. Very good transit location of our country can be advantage. If we neglect transport to the north-south direction, you may find that the transport on the direction taken by our neighbours across the Odra River where infrastructure is developing very dynamically.

Development of intermodal transport depends on the appropriate legal solutions support this technology (as in Austria and Switzerland), the appropriate amount of highly efficient intermodal terminals equipped with suprastructure, or handling equipment and systems, an adequate price for access to terminals, terminal operations prices and the prices for access to linear infrastructure.

Modern transport infrastructure conducive to economic development and savings at the macro-and micro-economic status in Poland in the relatively near future a viable reality thanks to the mobilization of financial, technological, design, organizational and social. A manifestation of modernity is the emergence of linear elements and infrastructure point of the highest operating parameters, such as high speed traffic, intermodality, electronization, technical integration, new traits.

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Analysis of Foreign Direct Investment in the Industry of the Slovak Republic

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Abstract

Foreign direct investment in recent years are the one of the major factors that positively affect the performance of the Slovak economy. In the article, we focus on analysis of foreign direct investment in industry in Slovakia as well as the territorial structure foreign direct investment. In the article we follow the mutual correlations: foreign direct investment and labor productivity, foreign direct investment and gross output, value added and foreign direct investment in industry of SR, foreign direct investment and net exports. At the end paper presents possibilities to increase the attractiveness of the environment for foreign investors.

Keywords: *Foreign direct investment, Gross production, Labor productivity, Netto export, Value added*

JEL Classification: *E27, F21, O16*

1. Introduction

The membership of the Slovak Republic in the European Union positively was reflected in FDI inflows. The Slovak Republic was not attractive to foreign investors between 1993 -1998. Slovakia expressed its intention to become an EU member since 1998. This approach was reflected by a gradual increase FDI inflows into Slovakia since 2000. During the accession of Slovakia to the EU showed a positive trend in FDI. In 2003 began the construction of the PSA Peugeot and one year later has signed contract with KIA MOTORS. EU countries represent the largest share of the total FDI inflows into Slovakia from this time. Among the most significant investors include Germany, Italy, Austria and the Netherlands. The positive trend of other macroeconomic indicators shows the dependence of the Slovak economy from FDI. Especially the area of foreign trade after accession to the EU has a positive balance of foreign trade. EU countries have become major trade partners for the export of Slovak production. The aim of this paper is to analyze the dependence of macroeconomic indicators on FDI as a source of Slovakia's economic performance.

Foreign direct investment (FDI) are the active form of investment, where there is to take over direct control of the subject to which the investment was directed to foreign investors. This form of investment is the establishment of foreign affiliates, capital participation in joint ventures, or the creation of independent firms by foreign investors. "Foreign direct investment (FDI) has been one of the main drivers of economic restructuring in east central Europe (ECE) and significantly contributed to the region's integration into the European and global markets. However, in the first

decade of transition foreign capital inflows remained low in ECE. Yet, only ten years after joining the European Union (EU), the new east European members show higher levels of economic internationalization than the old ones.” (Medve-Bálint, 2014) The reason these investments will usually be higher profits, to circumvent trade barriers, cost reduction and other reasons that lead to increasing the competitiveness of the company. At present we distinguish these forms of foreign direct investments:

- the purchase of the whole existing business (acquisitions, mergers), or part of,
- construction of new plants abroad so called. "Greenfield investment", or the use of empty industrial space, so called. "Brownfield investment”,
- establishment of a joint venture with a domestic company,
- privatization.

By definition of The National Bank of Slovakia, which is based on the OECD definition, which is consistent with Eurostat and the IMF, foreign direct investment "is such expending funds or other money-value property values, or other property rights, the purpose of which is the establishment, acquisition or expansion of permanent economic relations as an investor or a resident persons acting in concert in the business of investing abroad or a non-resident or non-resident as persons acting in concert to business in this country, and any of the following forms:

- the establishment or acquisition of 100% interest in the business.
- participation in entrepreneurship, if the investor owns or acquires at least 10% of the share capital of the company or at least 10% of the net assets of the company, or at least 10% of voting rights.
- admission or a financial loans to investors on business, if the investor in this business participation under point 1 or point 2, or if the financial credit is related to impacts the company's management, which is comparable to that affecting the share under 1 or Point 2 Application revenue from existing direct investment in this investment "(Foreign Exchange Act 202/1995 Coll., NBS, 1995 § 2 point).

“The ability to establish businesses worldwide via foreign direct investment (FDI) not only helps open up markets and serve these markets in a more efficient manner but may also enable firms to arrive at better focused business strategies to meet global demand” (Baghi, 2014).

2. Problem Formulation

“The speed of economic internationalization process in last decades affects markets and hierarchies, and although the benefits among countries have not been equally distributed worldwide, we have assisted to the emergence of dynamic economies among the group of countries traditionally considered as developing.” (Alvarez, 2013) FDI has been the host economy a very diverse effects. Simple divide into direct and indirect effects must be supplemented by short-and long-term aspects. Impact of FDI on the economy can be considered particularly in terms of economic growth, employment growth and balance of payments. In the first months after the arrival of the investor can be readily observed mainly positive effects (employment growth,

investment in infrastructure etc.). Later, it will depend more on strategy and adaptability of a foreign company that has a greater impact on macroeconomic indicators and GDP growth itself. "Decisions of foreign investors on the implementation of investment projects in a country are affected by economic and political conditions of the country and the region as well as market factors. A final decision on the location of investment has an important role the volume and structure of the State aid which the investor can obtain in the form of investment stimuli." (Ivanová, 2013).

„In the first phase, until 2008, Slovakia's economy reached a relatively positive economic growth has been accompanied by a growth in employment. In structure of Slovak economy grew industry's share, while the share Agriculture. Impact of the economic recession that the indicators of economic performance and employment began to manifest at the turn of 2008/2009, there was an economic decline in almost all sectors of the economy, which was accompanied by changes in employment. The economic recession has affected most industries.“ (Habánik, 2013) The same trend can be observed also in the inflow of FDI. In this paper we focus on the impact of FDI on industrial production in the Slovak Republic. Based on data from the Statistical Office of the Slovak Republic. Watching the correlation of FDI to gross output, value added, labor productivity and export netto.

We use the following methods:

Correlation analysis - Correlation is the degree of interdependence between the two characters statistical files (X, Y) is expressed a correlation coefficient r value, and Y is the dependent variable, which we want to find dependency and X is the independent variable for which we assume, that the changes may change the variable Y.

$$r = \frac{\sum x_i y_i - \frac{1}{n} \sum x_i \sum y_i}{\sqrt{(\sum x_i^2 - \frac{1}{n} \sum^2 x_i) * (\sum^2 y_i - \frac{1}{n} \sum^2 y)}} \quad (1)$$

The correlation coefficient takes the values in the interval (-1,1), while the the value of the coefficient 1 case of a direct relation with the value -1 indirect correlation between the monitored characters.

Linear regression - This is a function, that shows the change in the dependent variable Y dependent on change in the independent variable X, which has the general shape, while b_0 is the regression constant, which indicates the value of the dependent variable Y, in the case where $b_1 = 0$ and b_1 is the regression coefficient, which determines how increase $b_1 > 1$, or loss of $b_1 < 1$ reaches the dependent variable Y. Parameter values b_0 and b_1 computed from the normal equations:

$$\sum_{j=1}^n y_j = n \cdot b_0 + b_1 \cdot \sum_{j=1}^n x_j \quad (2)$$

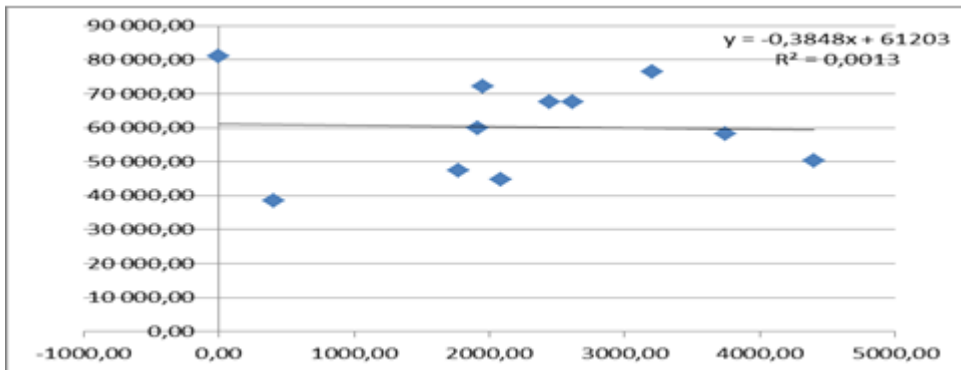
$$\sum_{j=1}^n x_j y_j = b_0 \cdot \sum_{j=1}^n x_j + b_1 \cdot \sum_{j=1}^n x_j^2 \quad (3)$$

To fulfill the main goal we use the method of correlation and linear regression.

3. Problem Solution

For expressions the relation of gross production from the inflow of FDI, we use correlation analysis and by means of linear regression shows the variation trend of development of FDI and gross output at current prices. Because we assume that FDI inflows have a delayed effect on the value of gross production, the shift time series of gross output of three years, that is, we use FDI inflows in 1999 to the formation of gross production in 2002.

Figure 1: Linear Correlation Trend of FDI Inflows and Gross Output of Industrial Production



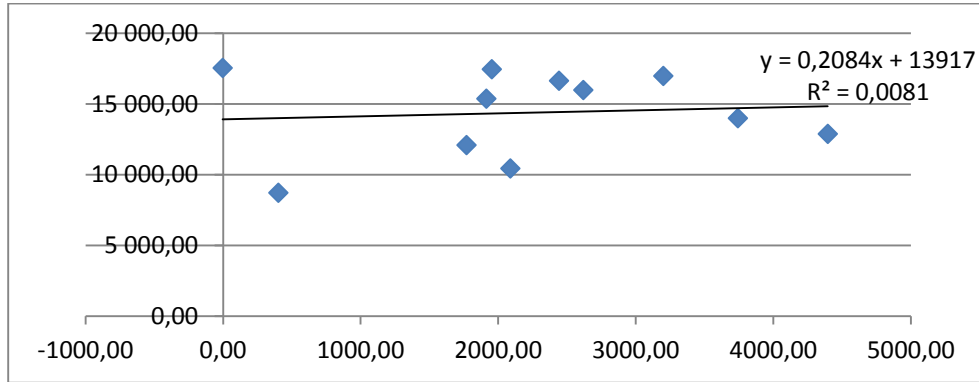
Source: www.statistics.sk, author's calculations

Value of the correlation coefficient of 0.036 indicates a minimum relationship between FDI inflows and gross production, and on the value of $r^2 = 0.0013$ shows that FDI in gross production accounted for only 0.13%. The basic equation linear trend takes the form $y = 0.3848x - 61,203$. Regression constant $a = -61203$ expresses what gross production would be achieved, if the FDI inflows equaled 0. Regression coefficient represents the value, how the gross production change, if FDI inflows increase by one million euros. Thus, if FDI grew by 1 million, based on the regression coefficients, the value of gross production growth increased by € 384,800.

As in the case of the impact of FDI on gross production was minimal dependence, even if the added value the correlation coefficient is low and points to a minimum dependence (0.09). FDI creating added value accounted for only at the level of 0.81%,

while in the case of zero inflow, according to the regression constant value added reached 13,917 and an increase in FDI by 1 million € would represent an increase in value added by 208,400€.

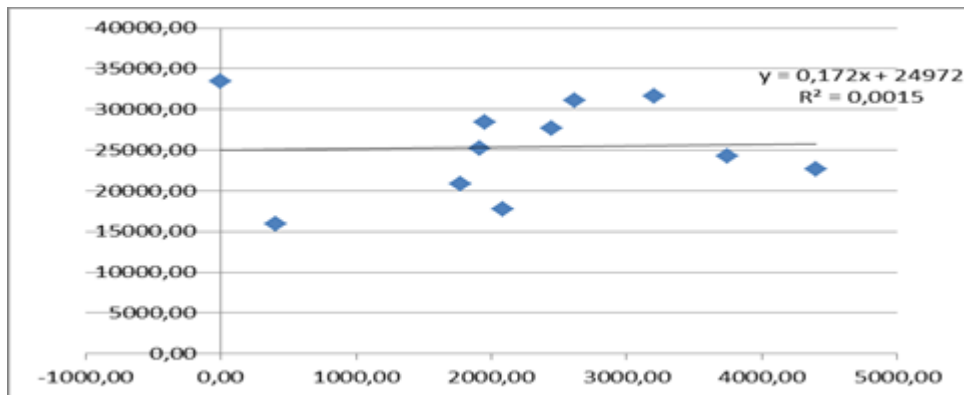
Figure 2: Linear Correlation Trend of FDI Inflows and Added Value of Industrial Production



Source: www.statistics.sk, author's calculations

In the case of labor productivity do not expect a significant impact of FDI. This is confirmed by the resulting equation of the regression line, which in this case takes the form: $y = 0,172 x + 24972$, the reliability is only at the level of 0.15 percent, and the dependence on the level of the correlation coefficient of 0.038. In the case of zero FDI inflow in a given year, the labor productivity stood at 24,972 €.

Figure 3: Linear Correlation Trend of FDI Inflows and Labor Productivity of Industrial Production

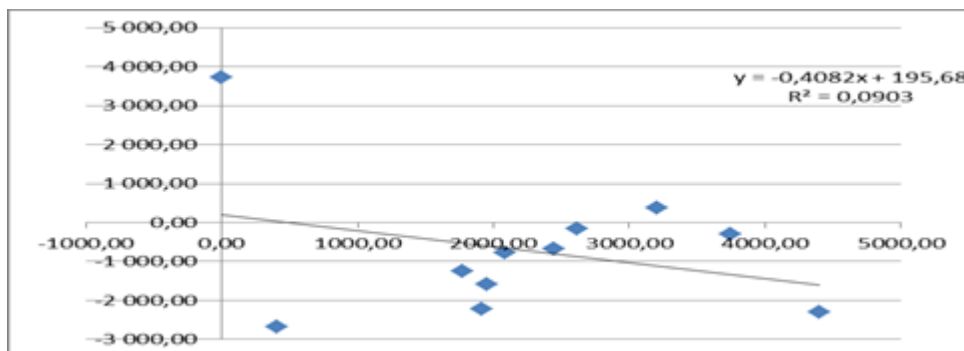


Source: www.statistics.sk, author's calculations

Last observation is dependency influence of FDI has on export neto. In this case, the correlation coefficient shows a weak dependence on the level of 0.30 but this is

the highest value depending on the monitoring indicators, the reliability is 9%. An interesting feature of this relationship is that the increased inflow of FDI causes a drop in the value of exports neto regression coefficient $b = -0.4082$.

Figure 4: Linear Correlation Trend of FDI Inflows and Neto Export of Industrial Production



Source: www.statistics.sk, author's calculations

4. Conclusion

The structure of industry in the Slovak Republic and directly indicates economic dependence on FDI, although the cross-correlation analysis did not confirm this trend. It was the FDI that started a positive trend in all the main macroeconomic indicators. The automotive industry is the most important ingredient in making final production and exports.

In the case of tracking jobs, we can see that the value of the correlation coefficient between employment growth (Y) and FDI inflows (X) is 0.61024 which means that it is a moderately strong dependence. The reliability of this statement is 37% ($r^2 = 0.37420$). Linear regression line of employment growth in% (Y) as a function of FDI inflow in millions. EUR (X) takes the form: $Y = -0.9781 + 0.00069 X$.

For these reasons, the state should continue to support and raising funds in the form of FDI. It is now possible to apply the following incentives under Law no. 561/2007 Coll, Investment Aid (<http://www.zbierka.sk/Default.aspx?sid=15&PredpisID=207842&FileName=zz07-00561-0207842&Rocnik=2007&AspxAutoDetectCookieSupport=1>):

- "Grants for acquisition of tangible assets and intangible assets,
- reductions from income tax under a special regulation,
- allowance for newly created jobs under a special regulation,
- transfer of immovable property or exchange of real property at a price lower than the market value of assets and the provisions of a special regulation".

Slovak economy since joining the EU achieves positive economic growth, except in 2008. Growth of GDP is based on the booming export production to the EU, and this production is realized through companies established by foreign investors. Significant

Factors, such as membership in the European Union (2004) and the adoption of common currency Euro (2009), an advantageous tax system and tax reductions, along with the geographical conditions make Slovakia lucrative destination for foreign investors.

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IAS/IFRS as One of the Tools of Accounting Harmonization in the European Union

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Abstract

The paper deals with possibilities of fixed assets reporting in the financial reporting of business entities. Due to a mutual interconnection of economics and a development of an internal market there is an increase of pressure on the comparability of accounting information in a multinational context. In the European Union countries the companies can prepare statements and keep the books in accordance with national legislation. However, if they want to ensure that the statements prepared under terms of the financial statements are comparable in multinational perspective, the accounting and reporting only in accordance with national regulations is insufficient. The aim of this paper is to choose such a way of accounting and reporting of fixed assets, using a multi-criteria decision, which has the highest utility. During the decision-making process the company takes into account various criteria, the weight of each is determined by Saaty's method. The methods of description, analysis, comparison, Saaty's method and the method of weighted utility are used in this paper.

Keywords: *EU directives, International accounting standards, Multi-criteria decision, Saaty's method*

JEL Classification: *C65, F60, M41*

1. Introduction

National accounting systems are diverse because of differences in legal, financial and taxation systems and in the role and influence of the accountancy profession or accounting tradition (Dewing and Peter, 2008 or Glaum, Schmidt, Street and Vogel, 2013). This is why the process of the accounting harmonization has been initiated. It is a long term process because the biggest obstacle is existence of 27 different systems of accounting within the EU (Strouhal, Bonaci and Sklenár, 2012). The perspective on international accounting is based on principles of economic rationality which are designed to achieve global harmonization (Lehman, 2005). Harmonization of accounting standards has been the subject of many initiatives in recent years (Rahman, Perera and Ganesh, 2002 or Tarca, 2004 or PWC, 1975).

2. Harmonization of Financial Reporting in the European Union

The need of harmonization and regulation not only within the European Union was emphasized by the fact that company financial statements are publicly available documents (McKeith and Collins, 2013). The initial instrument of accounting harmonization in the EU were the directives. The Fourth Directive (The Fourth

Council Directive 78/660/EEC of 25 July 1978) thematically dealt with the requirements on the financial statements of corporations, since an important part of the accountability process is the production of financial reports (Samuels, Wilkes and Brayshaw, 1999). This result of this directive was determining the binding patterns for the balance sheet and income statement. In the balance sheet the total of assets used to be shown on the one side, and the total of liabilities and equity on the other side (Leiwiy and Perks, 2013). The aim of the income statement is to provide information about the company's performance (Hakalová, 2010). The Fourth Directive introduced rules on the valuation of assets (Dewing and Russell, 2004).

Due to a development of the single internal market a consolidated financial statement has become increasingly important. The Seventh Council Directive 83/349/EEC of 13 June 1983 focused on the conditions and methods of consolidation.

Considering the fact that the directives were never developed to the level of accounting standards, a number of world markets ceased to recognize the financial statements prepared in accordance with EU directives. This led to the situation that in 2002 there was issued the Regulation of the European Parliament and Council (EC) no 1606/2002 of 19 July 2002 on the application of International Financial Reporting Standards (IAS/IFRS). As a result, many EU member states bundled IAS/IFRS adoption with changes in financial reporting enforcement (Christensen, Hail and Leuz, 2013). The EU has, since 2005, required all listed companies to use IAS/IFRS. For more information about the impact of the IAS/IFRS adoption see e.g. Ball, Kothari and Robin (2000). This move clearly contributed to the acceptance of IAS/IFRS in many parts of the world (Ding, Hope, Jenjean and Stolowy, 2007) as global standards (Redmaye and Laswad, 2013).

2.1 International Accounting Standards

IAS/IFRS are a set of financial reporting standards. Application of IAS/IFRS is associated with higher accounting quality than application of domestic standards (Barth, 2005). The Framework for Preparation and Presentation of Financial has stated that the objective of statements is to provide information about the financial position, performance and capability of an enterprise that is useful to a wide range of users in making economic decisions. (Elliott and Elliott, 2013). A task of IAS/IFRS is to ensure that the information obtained from the accounting were comparable and understandable for all of their users.

2.2 Differences in Accounting and Reporting of Fixed Assets

According to the legislation in force, a company can charge and report fixed assets in accordance with Czech accounting regulations (hereinafter CUP) or in accordance with IAS/IFRS. While respecting CUP the entities comply primarily with the provision of standard no. 013 and no. 014.

If the IAS/IFRS rules are respected, than it applies, that fixed assets, with the exception of real estate rented by a company, are governed by IAS 16, IAS 38 or IAS 40. For reporting the selected provisions of other IAS/IFRS are important, e.g. IFRS 5, IAS 36, IAS 37.

3. Multi-criteria Decision Making

Multi-criteria decision making involves determining the optimal alternative among multiple, conflicting, and interactive criteria (Yu and Tzeng, 2006). A company chooses out of the set of alternatives $A = \{A_1; A_2; \dots A_N\}$, and during the decision making process it takes into account the criteria $C = \{C_1, C_2, \dots C_M\}$. The result is a setting up of a model using a criterion matrix (A)

$$A = \begin{matrix} & A_1 & A_2 & \dots & A_N \\ \begin{matrix} C \\ C_2 \\ \vdots \\ C_M \end{matrix} & \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1j} \\ a_{21} & a_{22} & \dots & a_{2j} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \dots & a_{mn} \end{pmatrix} \end{matrix}, \quad (1)$$

where a_{ij} are the criterion values in the matrix A. For further analysis it is appropriate to ensure that all the criteria are either of maximization or minimization nature. The minimizational criteria are converted by the conversion scale to maximization ones, thus the modified criterion matrix B will be set up. For standardization of modified criterion matrix, there will be used the equation (2)

$$c_{ij} = \frac{b_j - b_i^{\min}}{b_i^{\max} - b_i^{\min}}, \quad (2)$$

where b_i^{\max} expresses the highest value of i -th criterion (relative or absolute), b_i^{\min} the lowest value of i -th criterion (relative or absolute) and b_{ij} is the relevant element of modified criterion matrix B. The result is a compilation of standardized criterion matrix C.

3.1 Determination of the Weights of Criteria

The criteria have different weights. Weight of i -th criterion is determined by Saaty's method. The author of this method recommends to use point scale (which determine a size of the preference) from 1 to 9 according to the importance of criterion. For more about Saaty's method Saathy (2006), Saathy and Vargas (2006) or Hwang and Yoon (2011).

A comparison of individual criteria leads to setting up of square Saaty's matrix S.

$$S = \begin{matrix} & k_1 & k_2 & \dots & k_j \\ \begin{matrix} k_1 \\ k_2 \\ \vdots \\ k_i \end{matrix} & \begin{pmatrix} 1 & s_{12} & \dots & s_{1j} \\ \frac{1}{s_{12}} & 1 & \dots & s_{2j} \\ \vdots & \vdots & \ddots & \vdots \\ s_{i1} & s_{i2} & \dots & 1 \end{pmatrix} \end{matrix}, \quad (3)$$

where s_{ij} is an element of Saaty's matrix represents the strength of importance/preference (Islam and Abdullah, 2005). Standardized weight of criterion v_i is determined by (4)

$$v_i = \frac{G_i}{\sum_{i=1}^n G_i}, \quad (4)$$

$$G_i = \sqrt[3]{S_{i1} \cdot S_{i2} \cdots S_{in}} \quad (5)$$

In order to gain a relevant evaluation of the criteria significance in Saaty's matrix, it will be necessary to verify its consistency using consistency coefficient (6) CR. According to Zmeškal (2012) if $CR < 0.1$, the matrix is consistent.

$$CR = \frac{CI}{RI}, \quad (6)$$

where CI is determined by (7) and RI is Random Index, whose value depends on a number of criteria.

$$CI = \frac{\lambda_{max} - k}{k - 1}, \quad (7)$$

where λ_{max} is the largest eigenvalue of the matrix and k is number of criterions.

The matrix D taking into account the weight of i -th criterion is set up by the method of weighted sum using the equation (8),

$$d_{ij} = c_{ij} \cdot v_i, \quad (8)$$

where d_{ij} is a relevant element of the matrix D , c_{ij} is an element of standardized criterion matrix C and v_i is a weight of i -th criterion.

The total utility TU of j -th variant can be calculated using equation (9). The optimum variant would be the one which has the biggest value TU ,

$$TU = \sum_{j=1}^n d_{ij}. \quad (9)$$

4. Choice of Fixed Assets Accounting and Reporting Alternative

Entities can choose options of accounting and reporting A_1 (in accordance with CUP and in accordance with IAS/IFRS), A_2 (in accordance with CUP) and A_3 (in accordance with IAS/IFRS). Within the implementation of IAS/IFRS into CUP the entity foresees the alternatives A_4 (combination of reporting in accordance with CUP assuming further implementation of the provisions IAS 36 into CUP) and A_5 (combination of reporting in accordance with CUP assuming the implementation of the provisions IAS 36 and IAS 40 into CUP) as well.

During the decision making process the criteria C_1 - C_7 are taken into account. C_1 – costs relating to the implementation of the selected alternative (in thous. CZK), C_2 – level of difficulty of understanding for external users of financial statements – user's view (points 0-10), C_3 – understanding of the financial statements by other employees of the department of finance - management view (points 0-10), C_4 – possibility of entering the world stock exchange (YES/NO), C_5 – a change in a number of the accounting department employees (number of employees), C_6 - quality and credibility of financial statements for the area of assets e.g. their classification, evaluation (points 0-10), C_7 – the extent and difficulty of work within preparing of the financial statements (points 0-10).

Criteria C_1 , C_2 and C_5 are of minimizing, the others of maximizing character. Verbally formulated criterion C_4 will be converted into quantitative one in such a way that the best expression takes 10 points, the worst expression 0 points. Data for setting up of this criterion matrix A provided were provided by department of finance of company X .

$$A = \begin{matrix} & A_1 & A_2 & A_3 & A_4 & A_5 \\ \begin{matrix} C_1 \\ C_2 \\ C_3 \\ C_4 \\ C_5 \\ C_6 \\ C_7 \end{matrix} & \begin{pmatrix} 100 & 80 & 95 & 105 & 105 \\ 6 & 5 & 10 & 7 & 8 \\ 10 & 7 & 9 & 8 & 8 \\ YES & NO & YES & NO & NO \\ 0 & -2 & -2 & -1 & -1 \\ 10 & 4 & 10 & 8 & 9 \\ 10 & 4 & 7 & 5 & 6 \end{pmatrix} \end{matrix}$$

It is important that all the criteria have the same character. Conversion of the criterion C_1 into the maximization one is carried out in such a way that the company has set the ideal value (the best) as the amount of 60 000 CZK, the worst value is 120 000 CZK. The conversion procedure is following: a criterion value is deducted from the worst value. Criterion C_2 is transformed by a maximizing manner, when the best value gains 10 points, the worst value 0 points. The company determined for criterion C_5 the best value -2, the worst value 2. For the values interval $\{-2, 2\}$ a numerical scale of 10 points is available, with the best taking 10 points, the worst 0 points.

$$B = \begin{matrix} & A_1 & A_2 & A_3 & A_4 & A_5 \\ \begin{matrix} C_1 \\ C_2 \\ C_3 \\ C_4 \\ C_5 \\ C_6 \\ C_7 \end{matrix} & \begin{pmatrix} 10 & 40 & 25 & 15 & 15 \\ 4 & 5 & 0 & 3 & 2 \\ 10 & 7 & 9 & 8 & 8 \\ 10 & 0 & 10 & 0 & 0 \\ 5 & 10 & 10 & 7.5 & 7.5 \\ 10 & 4 & 10 & 8 & 9 \\ 10 & 4 & 7 & 5 & 6 \end{pmatrix} \end{matrix}$$

To create a standardized criterion matrix C it is necessary to express the ideal (top) (b_i^{\max}) and basal (b_i^{\min}) value for i -th criterion in Table 1.

Table 1: Ideal and Basal Alternative

Criterion	C_1	C_2	C_3	C_4	C_5	C_6	C_7
b_i^{\max}	60	10	10	10	10	10	10
b_i^{\min}	0	0	0	0	0	0	0

Source: actual processing based on data provided by company X

Using equation (2) a standardized criterion matrix C is established.

$$S = C_4 \begin{pmatrix} C_1 & C_2 & C_3 & C_4 & C_5 & C_6 & C_7 \\ C_1 & 1 & 5 & 1/3 & 3 & 1 & 3 & 1 \\ C_2 & 1/5 & 1 & 1/7 & 1 & 1/7 & 1/3 & 1/3 \\ C_3 & 3 & 7 & 1 & 5 & 1 & 3 & 1 \\ C_4 & 1/3 & 1 & 1/5 & 1 & 1/5 & 1 & 1/3 \\ C_5 & 1 & 7 & 1 & 5 & 1 & 3 & 1 \\ C_6 & 1/3 & 3 & 1/3 & 1 & 1/3 & 1 & 1/3 \\ C_7 & 1 & 3 & 1 & 3 & 1 & 3 & 1 \end{pmatrix}$$

I-th criteria weight in Table 2 is calculated using (4), it is necessary to apply equation (5) to calculate a geometric mean G_i of each line of Saaty’s matrix.

The values given in Saaty’s matrix S should not be arbitrary, but, on the contrary they should have a certain degree of consistency. To verify the consistency the equation (6) is used.

To calculate the maximum eigenvalue of matrix λ_{max} , firstly the Saaty’s matrix must be standardized and a matrix S’ established. For more about matrix S’ you can see in appendix. λ_{max} in Table 2 is calculated in such a way that the values of lines are multiplied by the weight values as follows: the first value in a line is multiplied by the weight in the first line, the second value in a line of Saaty’s matrix is multiplied by the weight of the second line, etc. The sum is then divided by the criterion weight in the first line.

Table 2: Determination of the criteria weights and consistency coefficient

Criterion	G_i	v_i	λ_{max}	CI	RI	CR
C ₁	1.472	0.169	7.266	0.044	1.32	0.034
C ₂	0.333	0.038	7.309	0.051	1.32	0.039
C ₃	2.275	0.261	7.363	0.060	1.32	0.046
C ₄	0.461	0.053	7.126	0.021	1.32	0.016
C ₅	1.944	0.223	7.100	0.017	1.32	0.013
C ₆	0.624	0.072	7.231	0.038	1.32	0.029
C ₇	1.601	0.184	7.212	0.035	1.32	0.027

Source: author’s calculations

The value of coefficient *RI* is 1.32 for the 7 criteria. In calculation of coefficient *CR* is for all criteria < 0.1. It applies that the matrix is consistent.

To quantify the utility of *j*-th alternatives and selection of the most appropriate alternative the method of weighted sum will be used. The elements of the matrix D are calculated using equation (8).

$$D = \begin{matrix} & A_1 & A_2 & A_3 & A_4 & A_5 \\ \begin{matrix} C_1 \\ C_2 \\ C_3 \\ C_4 \\ C_5 \\ C_6 \\ C_7 \end{matrix} & \begin{pmatrix} 0.028 & 0.113 & 0.070 & 0.042 & 0.042 \\ 0.015 & 0.019 & 0.000 & 0.011 & 0.008 \\ 0.261 & 0.183 & 0.235 & 0.209 & 0.209 \\ 0.053 & 0.000 & 0.053 & 0.000 & 0.000 \\ 0.112 & 0.223 & 0.223 & 0.167 & 0.167 \\ 0.072 & 0.029 & 0.072 & 0.057 & 0.065 \\ 0.184 & 0.074 & 0.129 & 0.092 & 0.110 \end{pmatrix} \end{matrix}$$

The total effect was calculated using equation (9) is presented in Table 3. The highest effect is in A₃.

Table 3: Effect A₁-A₅

Alternative	A ₁	A ₂	A ₃	A ₄	A ₅
TU	0.725	0.640	0.782	0.579	0.601

Source: author's calculations

The highest effect will occur if the company practices the accounting and reporting the assets in accordance with IAS/IFRS. It ensures a high level of credibility of accounting information or the company's ability to enter the world stock exchange to gain a lacking capital.

Alternative A₁ find in itself the second highest effect. Even in this case it applies, that reports of financial statements are recognized on the world stock exchanges, moreover, accounting according to this system increases credibility and quality of accounting information. Domestic users of accounting information have no problem with understanding the information in the financial statements. The lowest effect was reported in variants whose principle is an implementation of the provisions of IAS/IFRS to Czech accounting standards. This is because the costs relating to the implementation of these variants are high, moreover, regardless of these high costs relating to the reporting the financial statements reports are not recognized by world stock exchange.

5. Conclusion

Mandatory IAS/IFRS adoption not only in the European Union has the potential to facilitate cross-border comparability, increase reporting transparency, decrease information costs, reduce information asymmetry, and thereby increase the liquidity, competitiveness, and efficiency of markets. (Ball, 2006; Choi and Meek, 2005). The system IAS/IFRS is largely focused on the output of an accounting – financial statement. However, it does not strictly regulate the accounting procedures, since each company can define its own chart of accounts and select such procedures to achieve true and fair view. Due to an acceptance of IAS/IFRS on a global scale and major potential benefit from the global move towards IAS/IFRS is an increase in accounting comparability (Horton, Serafeim and Sarafeim, 2012).

During a multi-criteria decision making, there is a need of determining the relevant criteria and alternatives, attaching numerical measures to the relative importance of the criteria and to the impacts of the alternatives in terms of these criteria and

processing the numerical values to determine a ranking of each alternative (Triantahpyllou and Sánchez 1997). By this procedure the company X was recommended to report its fixed assets in accordance with IAS/IFRS. Multi-criteria decision making and have played important roles in solving multi-dimensional and complicated problems (Ke and Chen, 2012). Respecting the rules of the multinational accounting system can be one of the sources of competitive advantage for the company itself.

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Appendix

In the matrix S' the elements s'_{ij} are set up using a quotient of matrix S element and a sum of the columns of criteria weights in the same matrix.

$$S' = \begin{matrix} & \begin{matrix} C_1 & C_2 & C_3 & C_4 & C_5 & C_6 & C_7 \end{matrix} \\ \begin{matrix} C_1 \\ C_2 \\ C_3 \\ C_4 \\ C_5 \\ C_6 \\ C_7 \end{matrix} & \begin{pmatrix} 0.146 & 0.185 & 0.083 & 0.158 & 0.214 & 0.209 & 0.200 \\ 0.029 & 0.037 & 0.036 & 0.053 & 0.031 & 0.023 & 0.067 \\ 0.437 & 0.259 & 0.249 & 0.263 & 0.214 & 0.209 & 0.200 \\ 0.049 & 0.037 & 0.050 & 0.053 & 0.043 & 0.070 & 0.067 \\ 0.146 & 0.259 & 0.249 & 0.263 & 0.214 & 0.209 & 0.200 \\ 0.049 & 0.111 & 0.083 & 0.053 & 0.071 & 0.070 & 0.067 \\ 0.146 & 0.111 & 0.249 & 0.158 & 0.214 & 0.209 & 0.200 \end{pmatrix} \end{matrix}$$

Portfolio Optimization Assuming Different EU Stock Markets

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Abstract

In this paper, we analyze the development of the European stock markets during the last decade. Considering different datasets of stock market indexes, we discuss the effects in terms of a classical risk-return efficient frontier that the European Union enlargement has produced in the portfolio selection of the financial market. Moreover, we propose a methodology to deal with the portfolio selection problem addressing two investor's risk profiles. In the methodology the copula approach and scenario simulations allow us to manage different distributional hypothesis and to discuss the results of an ex-post empirical analysis. By this methodology we study the possibilities of investors' wealth maximization in terms of investments into EU stock market indexes.

Keywords: Copula approach, Economic integration, Portfolio selection

JEL Classification: F36, G11, G17

1. Introduction

The purpose of this paper is twofold. Firstly, we discuss the effect of European Union (henceforth EU) enlargement in terms of Markowitz efficient frontier. Secondly, we propose a methodology for portfolio selection strategies with copula approach.

The European Union enlargement has the impact not only on the deepening of the economic cooperation between the (member) countries, but it also broaden the investors' possibilities. The advantages of investment into EU stock market indexes are for an investor twofold: firstly, the laws of member countries is unified to a certain extent, making the investment into these countries safer and secondly by adoption of euro currency there is no currency risk for the investment. Even if the member country does not adopt the euro currency, the foreign exchange rate between the euro and currency of that member country becomes more stable and thus less volatile (risky). In order to analyse the effect of EU enlargement from investors' point of view, we compare two datasets of investors' possibilities. First dataset is made up of the market indices of the first EU members while in the second one we tried to employ as many current members as possible.⁵⁸ The comparison is made on the data between

⁵⁸ The first dataset is made up of AEX (Holland), Euronext Bel-20 (Belgium), CAC 40 (France), DAX (Germany), FTSE MIB (Italy). LUXX (Luxembourg) is not available on the dataset yahoo.finance.com, however it is made up of only 10 stock assets and one of the most weighted asset is a Belgium company already priced on the Euronext Bel-20.

years 2010 and 2013, showing the investors possibilities (efficient frontiers) in the case that he would invest only into market indexes of the first EU members and in the case that his investment possibilities enlarge to all members' countries.

In particular, considering two different datasets, we analyse the risk-reward framework in terms of mean and variance approach pioneered by Markowitz (1952) and Tobin (1958). Several recent papers deal with the portfolio selection problem showing that it is a key point in the current financial debate. In fact, Pflug et al. (2012) recently presented the relative importance to consider a $1/N$ portfolio when the uncertainty increase, while Ortobelli et al (2011) faced with the impact of markovianity and the preselection in the portfolio problems. In this work, we analyse the improvement of investment possibilities in terms of efficient frontier given by the expansion of the European Union (henceforth EU).

Then, we propose a methodology for portfolio selection problem considering a copula approach to simulate future scenario. In fact, the last crisis showed some weak points in the current European system but on the other hand it illustrated a strong reduction of the bankruptcy risk of the sovereign states and the economic power of the European Union. In particular, this reduction of the market risk component has a consequence mainly in the stock markets, on which the analysis is based on.

We also introduce an analysis based on different performance measures that allows us to evaluate different investor's wealth paths. In particular we consider two different performance measures: the classical Sharpe ratio (Sharpe, 1994) and the Rachev ratio (Biglova et al., 2004).

We proceed as follows. In Section 2 we present the theoretical tools used for our analysis. In section 3 we present the results of an ex-post empirical analysis and in the conclusion we briefly summarize the main contributions of this work.

2. Problem Formulation

In this section, we present the methodology used to solve the European stock Indexes portfolio selection problem. We briefly introduce the optimization model of the Markowitz efficient frontier used to estimate the impact of the European enlargement and then, we describe the copula methods used to simulate future scenarios. Considering two different datasets from January 2000 to December 2013 we present the tools that allows to discuss the ex-post results of our strategies.

2.1 Markowitz

In the middle of the last century, Markowitz presented a pillar of the modern portfolio theory building the so called efficient frontier. It represents the efficient portfolio combination that for a given risk measure (the standard deviation) maximize the portfolio returns. It is the solution of the following optimization problem for different

In the second dataset, we added FTSE 100 (Great Britain), ISEQ (Ireland), ATHEN INDEX COMPOS (Greece), ATX (Austria), OMX (Sweden), OMX 20 (Denmark) and PX (Czech Rep.). These are the indexes which are available on the yahoo.finance.com dataset.

values of the parameter μ . In fact, Henry Markowitz in his relevant work (Markowitz, 1952) introduced the standard deviation of the returns as the measure of risk and formulated the portfolio optimization problem as follows:

$$\begin{cases} \min_{x_1, \dots, x_n} x' \Sigma x \\ E[z_{(k)}' x] = \mu \\ \sum_{i=1}^n x_i = 1; x_i > 0 \end{cases} \quad (1)$$

where x is the portfolio weight, Σ is the variance-covariance matrix. Moreover, z represents the vector of the gross returns⁵⁹ with observations $z_{(k)} = [z_{1,k}, \dots, z_{n,k}]$ realized at time k and μ represents a parameter that specify a given level of yield rate.

2.2 GARCH-Copula Models

In this section, we discuss the GARCH-copula models, which can be applied for portfolio return simulation, see e.g. Kresta and Tichý (2012a, b). We assume several risk factors (the indexes returns), which are modelled by GARCH model (described in subsection 2.2.1) with residuals modelled by copula functions (introduced in subsection 2.2.2). In order to model the future evolution of financial time series the following procedure should be undertaken. First, parameters of GARCH model should be estimated for each particular risk driver from past observations. When GARCH models are estimated, the residuals (observed in past) can be obtained. These are put together into a matrix and parameters of copula function are then estimated. By this way all the necessary parameters are estimated. For the simulation the sequence is inverse.

2.2.1 Volatility Models

Volatility models have become important tool in time series analysis, particularly in financial applications. Engle (1982) observed that, although the future value of many financial time series is unpredictable, there is a clustering in volatility. He proposed autoregressive conditional heteroskedasticity (ARCH) process, which has been later expanded to generalized autoregressive conditional heteroskedasticity (GARCH) model by Bollerslev (1986). Assuming conditional mean, the returns $\{x_t\}_{t=1}^N$ can be modelled according to the following model,

$$x_t = \mu_0 + \sum_{i=1}^R \mu_i \cdot x_{t-i} + \sigma_t + \tilde{\varepsilon}_t \text{ where } \tilde{\varepsilon}_t \sim t_v(0,1) \quad (2)$$

$$\sigma_t^2 = \alpha_0 + \sum_{i=1}^P \alpha_i \cdot \sigma_{t-i}^2 + \sum_{j=1}^Q \beta_j \cdot \varepsilon_{t-j}^2 \quad (3)$$

In the equations (2)-(3) the meaning of parameters is as follows: μ_0 is unconditional mean of the series, μ_i are autocorrelation coefficients for lag 1 up to R , σ_t is modelled standard deviation (volatility) by the GARCH model (3) and $\tilde{\varepsilon}_t$ is a random number from Student probability distribution (the innovation), α_0 is a constant term in volatility equation and α_i, β_j are parameters reflecting the dependency in volatility. All these parameters are needed to be estimated. If we estimate the model correctly the

⁵⁹ We define gross return $z_{i,k} = \frac{P_{i,k}}{P_{i,k-1}}$ where $P_{i,k}$ is the price of i -th asset at time k .

time series of innovations is supposed to be homoscedastic (i.e. with constant volatility). However there still can be some dependence among innovations' time series. A useful tool for dependence modelling are the copula functions

2.2.2 Copula Functions

The copula functions are the projection of the dependency among particular distribution functions into $[0,1]$,

$$C: [0,1]^n \rightarrow [0,1] \text{ on } \mathbb{R}^n, n \in \{2,3, \dots\} \quad (4)$$

Basic reference for the theory of copula functions is Nelsen (2006), Rank (2007) or Cherubini et al. (2004). For simplicity, assume two potentially dependent random variables with marginal distribution functions F_X, F_Y and joint distribution function $F_{X,Y}$. Then, following the Sklar's theorem (Sklar, 1959):

$$F_{X,Y}(x,y) = C(F_X(x), F_Y(y)) \quad (5)$$

i.e. the joint distribution function $F_{X,Y}$ can be decomposed into two independent components: (i) marginal distributions of random variables, (ii) dependency function of distributions. Student copula function is the mostly utilized copula function in finance, it is based on the joint Student t distribution,

$$C_{R,v}^{St}(u,v) = \int_{-\infty}^{t_v^{-1}(u)} \int_{-\infty}^{t_v^{-1}(v)} \frac{1}{2\pi\sqrt{1-R^2}} \left[1 + \frac{s^2+t^2-2Rst}{v(1-R^2)} \right]^{-\frac{v+2}{2}} ds dt \quad (6)$$

where R is the correlation coefficient and v stands for degrees of freedom of the Student t-distribution.

2.2 Portfolio Selection Problem

The optimization process have the objective to optimize the selected performance ratio of portfolio of European stock Indexes. Therefore we want to find the optimal composition of portfolio $x = [x_1, \dots, x_n]$, with the meaning of relative amount of money invested in each asset, i.e. to solve the classical portfolio problem:

$$\begin{cases} \max_{x_1, \dots, x_n} PR \\ PR = f(z_{(k)}; p_k; x) \\ \sum_{i=1}^n x_i = 1; 0 \leq x_i \leq \xi \end{cases} \quad (7)$$

where PR is a performance ratio applied to the gross returns whose observation at time k are represented by the vector $z_{(k)} = [z_{1,k}, \dots, z_{n,k}]$ that is realized with probability p_k . In this paper we suppose that short selling is not allowed (i.e. $x_i \geq 0$) and that it is not possible to invest more than ξ of the global wealth in a specific stock index (where $\xi = 0.15$ in the case of dataset composed from 12 assets and $\xi = 0.3$ when we analyse the dataset with 5 assets). The Rachev ratio (Biglova et al., 2004) of a portfolio of gross returns $x'z$ is defined as follows:

$$RR_{\alpha,\beta}(x'z) = \frac{CVaR_{\beta}(-x'z + r_b)}{CVaR_{\alpha}(x'z - r_b)} \quad (8)$$

where r_b is a benchmark gross return which we assume to be equal to 1,

$$CVaR_{\beta}(X) = \frac{1}{\beta} \int_0^{\beta} VaR_u(X) du \quad (9)$$

is the conditional value at risk of random variable X and $VaR_u(X) = -F_X^{-1}(u) = -\inf\{x | P(X \leq x) \geq u\}$ is the value at risk of the random variable X . The conditional value at risk $CVaR_{\beta}(x'z - 1)$ is a coherent risk measure (Rockafellar and Uryasev, 2002) and it is the mean portfolio return, when it is lower than given percentile of its distribution. The second performance ratio, the Sharpe ratio (Sharpe, 1994), is characterized by the main elements of mean and variance. Therefore it is defined as the ratio between expected value of gross return and its volatility which defines the profile of an investor. The Sharpe ratio is measured as follows:

$$SR(x'z) = \frac{E(x'z - r_b)}{\sigma_{x'z}} \quad (10)$$

3. Problem Solution

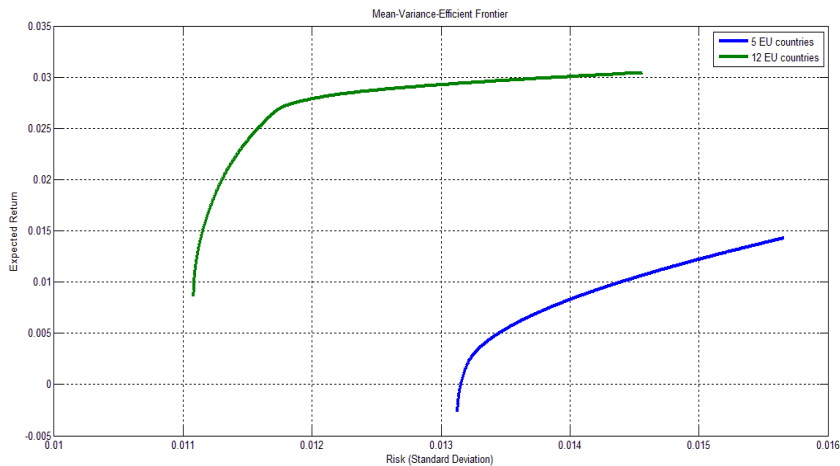
The European enlargement represents an important opportunity for the investor who wants to select a portfolio composed by European stock Indexes. In our analysis we consider two different datasets of indexes in the period between January 2000 and December 2013 in relation to the investment possibilities assuming the structure of EU when it was formed and the its state nowadays when the EU is enlarged. The aim is to evaluate how a European enlargement could increase the diversification opportunities during a crisis period. In this section, we discuss the results of the Markowitz efficient frontier and the wealth path of a portfolio selection approach. In general, we notice how the new European composition allows to reduce not only the credit risk but also the downside risk. In particular the increment of the number of assets allows us to better diversify our portfolio and the introduction of new developing countries lead to a new possibilities to reach higher returns in the optimization problem while keeping the risk at the same level.

3.1 Markowitz Efficient Frontier

In this section, we discuss the results of the Markowitz efficient frontier obtained solving the optimization problem (1) for different values of the parameter μ . Figure 1 shows the benefits of an European enlargement in the Markowitz efficient frontier. In fact, taking into account only the first 5 founding members, the portfolio with the minimum risk presents a negative expected return. If it is right considering the crisis that characterize the entire period, it does not justify the high level of risk that presents the portfolio with the maximum return on the efficient frontier. The importance to consider a strategy with 12 assets is overemphasized not only for the higher expected return that are more than twice the previous ones in the entire curve, but also for risk values that are less or equal the values of the efficient frontiers with only 5 stock Indexes. To recap, the results of a classical Markowitz analysis show the dominance of the dataset with 12 stock Indexes with respect to the dataset composed by the first 5 founding members. This portfolios are dominated in mean-variance sense.

Henceforth, the enlargement of EU increases the investments possibilities. We can conclude, that for euro-investor it is definitely beneficial as for the risk averse investor (minimizing the risk) the difference between these two states means the difference between positive and negative return of portfolio. Also for investors prone to risk (to a certain extent) the increase in return while keeping the same level of risk is significant (e.g. 0.8% against 3% return while keeping the risk to the 1.4%).

Figure 1: Markowitz Efficient Frontier



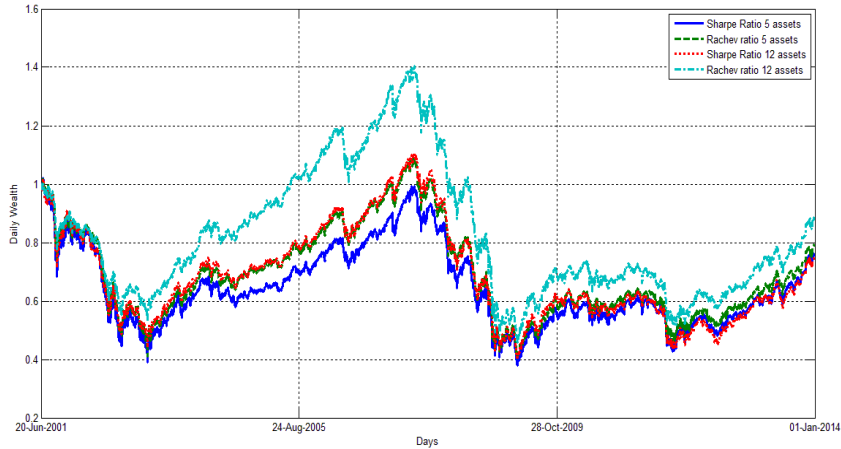
Source: Author's calculation using data from Yahoo Finance

3.2 GARCH Copula Portfolio Selection

The second step of this work concerned a dynamic portfolio strategy selection that analyses the wealth path during the entire period. We consider a moving time window of 375 return observations to estimate the copula parameters and we simulate and optimize weekly our portfolio. Solving the optimization problem (7) for different performance measures we obtain different wealth paths shown in Figure 2. We observe that the overall trend is similar but we can analyse some important differences. In particular, we notice that the strategies with the dataset composed by 12 assets dominates in term of ex-post wealth path the others. However, the maximization of the Rachev ratio capture the features of the financial times series data thank to the GARCH-copula model and it creates an extra-performance with respect to the other strategies. In fact, starting from 2003 all the wealth paths steadily increase while the portfolio composed by the maximization of the Rachev ratio capture market opportunity and show better results in term of wealth. Contrary, during crisis period its value decrease forcefully and the wealth reach the same wealth value as the other strategies. Moreover, every strategy showed relevant performance during the period of economic expansion but they accumulate significant losses during crisis. This stress the high correlation between different stock Indexes and the inefficient of the financial system.

It is apparent from the Fig. 2 that assuming more indexes (i.e. the enlarged EU) the investors achieve higher returns during the tested period (both at the end and also at the peak of economic cycle in mid-2008). The difference is apparent for portfolio strategy of Rachev ratio optimization. On the other hand, maximizing Sharpe ratio there is no significant difference between the results.

Figure 2: Wealth Path in Portfolio Selection



Source: Author's calculation using data from Yahoo Finance

4. Conclusion

In this work, we discuss the benefits of a European Union enlargement. In particular, considering two different datasets we illustrate how both mean-variance analysis and portfolio selection strategies can take benefits of the expansion of the European stock market indexes. New investment possibilities are introduced and also different sources of risk are reduced assuming not only Markowitz efficient frontier but also in a dynamic portfolio selection strategy. We conclude stressing the idea that an additional expansion of states composing the European Union could create some other benefits for the general economic. Moreover, it is evident how the inefficiency of the markets during the crisis period is a constant problem to solve. The union is surely an important feature to solve the crisis periods but the contagion risk and the strong dependency are not irrelevant factor.

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Road Toll as a Tool for Implementing Environmental Policy in Relation to Transport in Poland

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Abstract

In this paper an attempt is made to evaluate the road toll collected on Polish roads as a tool for implementing the assumptions of environment protection concept. The ViaToll electronic road toll collection system for using national roads has been in operation in Poland since 2011. Similar systems operate in almost all member states of the European Union. The road toll fares collected through these systems are used to finance construction and maintenance of the road infrastructure. The toll is also an important tool for implementation of the environment policy. Appropriately structured toll tariff may be used to promote pro-environmental behavior or discourage such behavior. In this paper an attempt is made to address the question whether the system introduced in Poland has contributed to reducing the threat which transport poses to the environment and how the system has influenced the actions of the main players on the road transport services market in Poland in terms of environment protection.

Keywords: *Motorways in Poland, Road toll, Transport and environment, Via-TOLL*

JEL Classification: *R41, R 48*

1. Introduction

The issue of road transport is connected with the problem of environment pollution. Of all kinds of transport it is the one that puts the greatest strain on the environment and generates high external costs. The European Union is aware of the problem and treats it with utmost care by providing the Member States with directives which are to offer opportunities and tools for environment protection policy within the area of transport. One of the most common instruments includes road user charges. This case study attempts to present the system of road charges in Poland and its evaluation in terms of the effectiveness of environment protection policy implementation. The authors' have assumed that the foundations of the system are correct; however, in practice the environmental effect achieved proves to be a side effect of rather than result from the system of road user charges, which as such actually ought to be improved.

2. Road User Charges in the European Union and the Environment

A toll road, also known as a turnpike or toll way, is a public or private road for which a fee is charged for passage. The idea of toll as such is thousands of years old. Toll roads, and thus tolls in some form, have existed since antiquity. In ancient times road

fees were collected from travelers passing on foot, wagon or horseback, but their prominence increased with the invention of the automobile. Today toll systems collect fees from motor vehicles only to help recover the money invested in road construction and maintenance.

Currently, tolls and road user charges in many countries are primarily a tool for implementing transport policy. The appropriate level of tolls can encourage certain behavior, e.g. promote the use of public transport. Tolls can also be an instrument of traffic management: introducing various toll rates for different times of the day or the week can decrease or increase traffic volume. Appropriate development of the toll system can also play a significant role in environment protection by promoting vehicles with lower exhaust and noise emissions.(Krzak, 2012, p. 125) In the European Union their potential in this respect is being exploited more and more intensely as transportation is considered one of the greatest burdens to the environment.

Using tolls or/and road user charges as a tool affecting road environment in the European Union has its roots in the EU directives. In the early stages of implementation, road charges were not whatsoever related to environmental protection. The first document to mention user charges was the Council Directive 93/89/EEC, which was annulled in 1995. Later, it was replaced by Directive 1999/62/EC of the European Parliament and of the Council of 17 June 1999 on the charging of heavy goods vehicles for the use of certain infrastructures, which was based on the principle that the “user pays”. At that time two types of fees were defined: tolls which meant a specified amount for the distance travelled by a car, and user charges which meant a specified amount for using certain infrastructures for a given period. In 2006 the Directive was replaced by Directive 2006/38EC of the European Parliament and of the Council which for the first time attempted to combine the toll rate with the vehicle’s impact on the environment. This was expressed in the “polluter pays” principle. Since that time the toll has been calculated to comprise not only the cost of using the road infrastructure, but also environmental costs (the costs of impact of individual vehicles on the environment). Another step to connect tolls with environment protection was taken in 2008. Since that time toll rates can include so-called external costs, i.e. the costs incurred by the society and environment, due to two additional factors: noise and congestion caused by a given vehicle. The most recent directive was implemented in 2011. It is Directive 2011/76/EU of the European Parliament and of the Council, which includes issues concerning external costs and methods of their calculation for the purpose of applying tolls or user charge rates (Rozporządzenie Rady Ministrów, 2009).

3. Motorways in Poland - Their Short History and Present Condition

The construction of the first motorway in the history of Poland started shortly before the outbreak of World War II. By the first of September 1939 only 20 km of what is now a regional road were completed. After World War II Poland’s borders were redrawn. The “recovered territories” inherited from the Third Reich some unfinished and partially war-damaged roads. A professional motorway construction plan was

developed in the late 1990s and despite numerous modifications is still being implemented. The plan specifies a target motorway and expressway network. Pursuant to the Regulation of the Council of Ministers dated 20 October 2009 the total network of motorways and expressways in Poland will include ca. 7480km, with 1990km of motorways (Rozporządzenie Rady Ministrów, 2009).

As of today (23 December 2013) **1494.45 km** of motorways and **1335.55 km** of expressways are completed. The map below presents a planned motorway network in Poland.

Figure 1: Planned Motorway Network in Poland



Source: GDDKiA (2014)

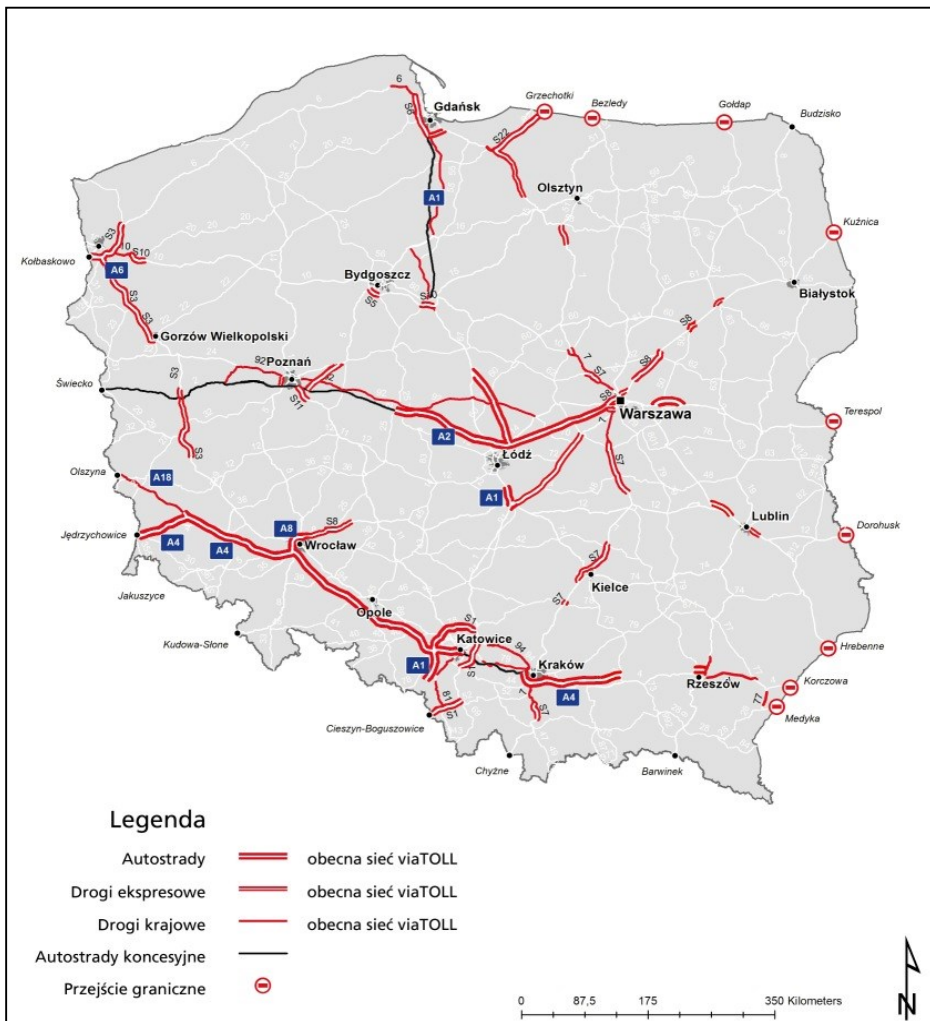
Poland comes 13th in terms of the total network length of all motorways in the European Union with Spain being the first, Germany – second, and France – third. Poland, however, together with Ireland and Romania, forms the group of countries that reported the largest growth of motorway length in the years 2006–2011. (Energy, transport, 2013, p. 138) The network of motorways and expressways is currently expanding rapidly due to considerable interest in this issue, financial contributions of the Cohesion Fund and EU funding. An extra impulse

for the government institutions to accelerate work on the network was the fact of selecting Poland and Ukraine to host the UEFA European Championships in 2012.

4. Road User Charges in Poland

Under the binding law all sections of the motorways and expressways in Poland in the future are going to be priced. The motorways in Poland are managed by two different entities and both entities collect toll. The first entity is the General Directorate for National Roads and Motorways, usually referred to as the GDDKiA, which represents the State Treasury. The other entity comprises concessionaires. This is shown on the map below.

Figure 2: Paid Sections of Motorways and Expressways in Poland



Source: Viabox (2014)

4.1 GDDKiA-Managed Motorways

The majority of motorways are managed by the GDDKiA. It is a central government body in Poland established to manage national roads and implement the state budget within this area. The income from the toll collected for using the sections of motorways and expressways managed by the GDDKiA is forwarded to the National Road Fund, which, in turn, uses the money to prepare, construct, modernize, repair, maintain and protect motorways, expressways and other national roads.

The paid sections of motorways, expressways and national roads managed by the GDDKiA are monitored by the viaTOLL electronic toll collection system. The viaTOLL system is obligatory for every driver travelling on the indicated toll road network by a motor vehicle or a combination of vehicles with a maximum permissible weight (MPW) of over 3.5 tonnes and also buses in which the number of seats is more than 9 (including the driver) regardless of their maximum permissible weight. Vehicles exempted from the electronic toll payment include those belonging to military forces, the customs, border guard and police units. Since 1 July 2011 each vehicle with a maximum permissible weight of over 3.5 tonnes must be equipped with a special device called viaBOX. On the selected road sections toll gantries with antennas and transceivers have been built. Using wireless technology they communicate with the viaBOX device and charge the toll for traveling on a particular section of toll road. Drivers can top up the funds on their pre-paid accounts at selected filling stations, CPs (Customer Points) and DPs (Distribution Points). When traveling on a selected road without the viaTOLL the driver will have to pay a fine in the amount of PLN 3,000.00. Electronic toll rates depend on:

- road class,
- maximum permissible weight of a vehicle,
- Euro emission class of a given vehicle.

Drivers of vehicles with a maximum permissible weight ≤ 3.5 tonnes must also pay the toll for traveling on the selected sections of motorways managed by the GDDKiA. They can pay the toll in two ways – either manually or electronically.

Table 1: Electronic Toll Rates for Class A and Class S National Roads or Their Sections, Where Electronic Toll is Collected

MOTORWAYS (A) AND EXPRESSWAYS (S)				
Vehicle category	EURO class in relation to exhaust emission limit			
	2	3	4	5
Vehicles with 3.5t < MPW <12t	0.40 PLN/km	0.35 PLN/km	0.28 PLN/km	0.20 PLN/km
Vehicles with MPW >12t	0.53 PLN/km	0.46 PLN/km	0.37 PLN/km	0.27 PLN/km

NATIONAL ROADS (DK)				
Vehicle category	EURO class in relation to exhaust emission limit			
	2	3	4	5
Vehicles with 3.5t < MPW <12t	0,32 PLN/km	0,28 PLN/km	0,22 PLN/km	0,16 PLN/km
Vehicles with MPW >12t	0,42 PLN/km	0,37 PLN/km	0,29 PLN/km	0,21 PLN/km

Source: GDDKiA (2014)

Table 2: ViaTOLL Manual Road Toll Collection System. Toll Rates for Vehicles with MPW below 3.5 t on the Paid Sections of Roads Included in the viaTOLL System

Motorway sections included in the viaTOLL manual toll collection system	
Vehicle category/Kategoria pojazdu (with MPW<3.5t)	Toll rate PLN/km
Motocycles	0.10 PLN/km
Cars	0.20 PLN/km
Vans	0.20 PLN/km
Minibuses	0.20 PLN/km

Source: GDDKiA (2014)

4.2 Concession Motorways

The length of the concession motorways in Poland amounts to 460 km. The idea to build motorways in the concession system (based on a build-operate-transfer agreement/BOT project) was introduced in connection with shortages in funding needed for motorway design, construction and operation. In this case a concession is an exclusive right to manage and operate a road (usually a motorway) granted to a private concessionaire by the State for a period of 30–40 years. In return for being able to collect the toll from road users and lease fees from those operating rest or service areas (which are oil and gas companies, usually chosen through public procurement, locating their filling stations and other structures e.g. restaurants and hotels in the near vicinity of the road), a concessionaire designs and constructs the road (i.e. a greenfield project) or undertakes rehabilitation of an existing road to a much higher standard by adjusting the road to motorway standards and construction of additional infrastructure (i.e. a brownfield project). Then, by paying an annual lease fee to the state budget for using a section of a road, the concessionaire holds a position of the road manager and must use some of the proceeds to pay for on-going and winter maintenance costs, necessary repairs (including periodic road re-paving) and also cover financial and operating costs of the investment project. (Wnuk, 2011, p. 8) At present there are three motorways concessionaires: Autostrada Wielkopolska (AW SA), Gdańsk Transport Company SA, Stalexport Autostrada Małopolska SA. Toll rates (for travelling on concession motorways) are calculated taking into account the number of axles and maximum permissible weight. Moreover, toll rates collected on a given section of a concession motorway managed by the same concessionaire may vary for different segments of a given section, which actually results from different bases for financial settlements with the government for different road segments. (Autostrada A2, 2014) Examples of toll amount collected:

Table 3: Example Toll Paid for Travelling on Concession Motorways in Poland

A1 MOTORWAY					
LOCATION/ TOLL PLAZA	LOCATION/ TOLL PLAZA	SECTION LENGTH	TOLL	AVERAGE TOLL FOR 1km	Example of viaTOLL charge – EURO 5 0.27PLN/1km
NOWA WIEŚ	RUSOCIN	152 KM	PLN 71.00	PLN 0.4671	PLN 41.04
A2 MOTORWAY					
LOCATION/ TOLL PLAZA	LOCATION/ TOLL PLAZA	SECTION LENGTH	TOLL	AVERAGE TOLL FOR 1km	Example of viaTOLL charge – EURO 5 0.27PLN/1km
RZEPIN	KONIN	255 KM	PLN 229.00	PLN 0.8980	PLN 68.85
A4 MOTORWAY					
LOCATION/ TOLL PLAZA	LOCATION/ TOLL PLAZA	SECTION LENGTH	TOLL	AVERAGE TOLL FOR 1km	Example of viaTOLL charge – EURO 5 0.27PLN/1km
MYSŁOWICE	BALICE	53km	PLN 49.00	PLN 0.9245	PLN 14.31

Source: prepared by the authors on the basis of Autostrada A1 (2014), Autostrada A2 (2014), Autostrada A4 (2014)

5. Problem Solution - Tolls in Poland and the Issue of Environmental Protection

As the data presented above shows, toll rates in Poland are set by applying two calculation methods. On the GDDKiA-managed roads (i.e. “state-owned” roads), the rate is based on the road class, vehicle MPW and its EURO class. Toll rates are the same for all road sections managed by the GDDKiA. On certain sections of those roads, vehicles with MPW up to 3.5 tonnes are charged the same toll, which is not related in any way to the impact the vehicle has on the environment. On road sections managed by the concessionaires the rates are set on the basis of vehicle category. Such rates are relatively high when compared with those applied on the GDDKiA-managed roads and they also do not account for the negative impact of the vehicle on environment.

Hence, only the first system, i.e. viaTOLL, or more precisely its part relating to vehicles with a maximum permissible weight of up to 3.5 tonnes, connects the toll rate with the vehicle’s EURO class and thus with its ecological characteristics and impact on natural environment. The more stringent emission standards a vehicle meets, the lower the toll. Thus, the toll comprises one element of the so-called external costs of transportation. The term external costs of transportation means any costs of the means used to provide transport services which are not incurred by the purchaser and service

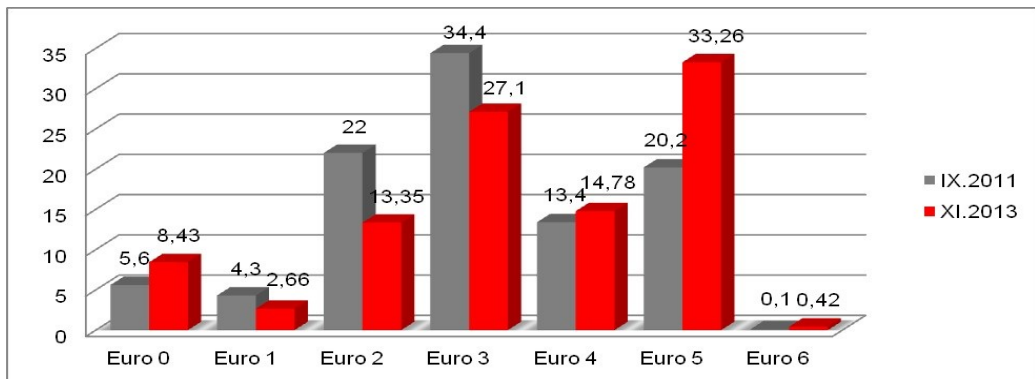
provider, but by a third party, i.e. the society. External costs include costs relating to the negative impact of transportation on natural environment and human life (Paradowska, 2006, p. 45):

- (a) air, water and soil pollution;
- (b) noise emission;
- (c) traffic accidents;
- (d) occupation of land.

The said Directive 2011/76/EU provides that the use of electronic toll systems is subject to the agreement of individual Member States. By adopting the criterion of the EURO emission class Poland assumed that the most important external cost of transportation is air pollution by motor vehicles. Therefore, while setting toll rates, other factors of environmental impact were not considered. It should be noted, however, that the internalisation of external costs of transport is very complex and the solution adopted in Poland in this respect is one of the most effective tools.

The viaTOLL system is therefore considered an effective tool for implementing environmental policy with regard to transport. The lowest electronic toll charges are levied on modern vehicles complying with the most stringent emission standards (Euro 5 and Euro 6). At the same time for many years Poland has reported an increasing number of Euro 4, Euro 5 and Euro 6 vehicles while the number of older vehicles has decreased. For example, in November 2011 Euro 3 class vehicles had the largest share in the number of registered vehicle (34.4%) and Euro 5 vehicles came second (20.2%). Recently this has changed and now Euro class 5 vehicles (33.26%) and Euro 3 vehicles (27.1%) are among the ones most frequently registered. Then come Euro class 4 (14.78%), Euro class 2 (13.35%), Euro class 0 (8.43%), Euro class 1 (2.66%) and Euro class 6 (0.42%) vehicles (viaTOLL, 2014). (Viatoll, 2014) This is illustrated by Fig. 3.

Figure 3: Volume of Various Euro Emission Class Vehicles in Poland in 2011 and 2013



Source: Viatoll (2014)

These figures are presented as evidence that the viaToll system is an effective tool in implementing environmental policy with regard to transport (viaTOLL, 2014). (Viatoll 2014) The authors agree with this statement, while being at the same time aware of certain deficiencies of the Polish system.

First of all, combining toll charges with emission classes can have influence on the environment, especially air, but to be able to talk of considerable effects a system needs to operate for a longer period. Also, in Poland the number of vehicles which meet the more and more stringent standards is rising, but the changes so far have been too subtle to be able to talk of the cause and effect chain: lower toll = increased demand for more environmentally friendly vehicles = less air pollution. The changes have been the following (viaTOLL, 2014):

- Euro 6 – 0.23% (0.23%) – no change
- Euro 5 – 27.15% (26.70%) – an increase by 0.45%
- Euro 4 – 15.00% (14.89%) – an increase by 0.11%
- Euro 3 – 31.30% (31.54%) – a decrease by 0.24%
- Euro 2 – 17.24% (17.47%) – a decrease by 0.23%
- Euro 1 – 3.50% (3.55%) – a decrease by 0.05%
- Euro 0 – 5.55% (5.58%) – a decrease by 0.03%.

The differences shown above are not evidence that transport service providers and other companies involved in transporting goods with vehicles with a maximum permissible weight of over 3.5 tonnes have been motivated by toll charges to purchase higher Euro class vehicles. Prices of new vehicles, e.g. those of Euro 5 and Euro 6 class are so high that the expenditures relating to the purchase of such vehicles do not correspond to the benefits resulting from lower toll rates applicable for those vehicles. This is illustrated in Table 4 which presents toll rates that would have to be paid over a year for individual Euro class vehicles, with the assumed annual mileage of 120,000 km. Those figures have been compared with the prices of new vehicles in individual emission classes.

Table 4: Comparison of Goods Vehicle Prices and Approximate Costs of viaTOLL

Emission class	Year of manufacture	Gross market value of vehicle ^a	viaTOLL rate PLN/€ ^b	Annual charges with 120,000 km travelled on toll roads ^c
EURO 3	2001	€ 14,300	PLN 0.46 - € 0.11 /1km	13,143 €
EURO 4	2006	€ 28,570	PLN 0.37- € 0.09 /1km	10,571 €
EURO 5	2010	€ 57,142	PLN 0.27 - € 0.064 /1km	7,714 €
EURO 6	2014	€ 107,142	PLN 0.27 - € 0.064 /1km	7,714 €
^a estimated market value of a vehicle by a renowned German or Swedish manufacturer				
^b average EURO buying rate of 4.20PLN/1€				
^c estimated annual mileage of the vehicle				

Source: prepared by the authors

The table shows that e.g. for a vehicle meeting Euro 5 and Euro 4 emission standards the difference in toll charges will amount to € 2,875 while the difference in the purchase price of both vehicles is € 28,572. The price of vehicle meeting the higher EURO class standards is almost twice as high as that of the lower class vehicle while the higher class vehicle savings on toll charges are merely € 2,875 per year. This means that the difference in price would pay off after about 10 years. This, however, is the value calculated for the purpose of this article while vehicles travel also on toll-free roads and their market value decreases with time. For a user, the Euro vehicle class and the resulting toll rate is not motivating enough to purchase a vehicle that would meet the more stringent Euro standards. The authors of the present paper think that the number of highest Euro class vehicles is rising because such vehicles have better technical parameters (fuel economy, better technical solutions, etc.), and not because this is encouraged by lower toll rates. Additionally, this is proved by a research study conducted by the authors: the analysis of 204 vehicle sale advertisements on popular trade internet portals for vehicles with MPW of over 3.5 tonnes has shown that only 5% of the advertisements stated the Euro class in the vehicle technical specification. This proves that the Euro class does not play a significant role in the decision whether to buy a new vehicle, and road users do not aim to pay lower tolls through a higher Euro class.

It should also be noted that the first effect of introducing tolls in almost every country is the diversion of traffic to toll-free roads, i.e. local roads in fact. The experience of other countries which introduced electronic toll system shows that the greatest diversion of heavy traffic takes place within the first few months of the system operation. Then the vehicles return to roads which ensure fast interregional transport and timely deliveries. This does not change the fact that alternative routes are burdened with traffic, and the reason for that is the introduction of road tolls.

6. Conclusion

It can be concluded that not all tolls and user charges in Poland account for the criterion related to environmental protection. Those that do depend on the EURO class (in the viaTOLL electronic system) were introduced with the intention to alleviate the environmental damage, but the improvement has occurred as a side effect of general improvement in the condition of vehicles and successive replacement of old vehicles with new ones. Moreover, after the introduction of new toll rates in 2011 Poland has recorded heavy goods traffic diversion to other routes.

The authors of the present paper are convinced that the solution could be the introduction of mixed rates, i.e. based on the distance travelled and the Euro class, independent of the road class. The system could cover all or almost all types of roads, which would eliminate traffic diversion. It seems that the toll rates for vehicles of up to 3.5 tonnes should not depend on the vehicles' impact on the environment. Such solution, which is currently applied to vehicles with a maximum permissible weight of over 3.5 tonnes, would mean a higher toll for older cars which are in poor condition. Owners of new cars, usually more affluent, would pay less than owners of old vehicles, which would render the system unfair. Generally, the system should be

maintained in its current form in terms of vehicle classes and rates, but it should be extended to cover possibly the highest number of roads irrespective of their category. Only in such form would it be a direct tool for implementing environment protection policy in Poland with regard to transport.

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Debt Crisis and Convergence in the European Union

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Abstract

Central and Eastern European EU Member States which joined the European Union have made considerable progress in the economic transition and integration into the European Union. Nevertheless, the challenges of both nominal and real convergences will remain relevant for these countries in the medium and long term. The purpose of this paper is to assess real economic convergence within the countries. The empirical results, concerning the EU-28 countries for the period of 1995-2012, are based on the gross domestic product per capita and gross national income per capita. We have analysed both beta convergence and sigma convergence. The five Central European EU countries (CEC-5) are well positioned to catch up with the EU-15 average, however, the experience of the EU-15 countries shows that convergence cannot be taken for granted.

Keywords: *Beta-convergence, European Union, Real convergence, Sigma-convergence*

JEL Classification: *E31, F43, O11, O52*

1. Introduction

Before the enlargement in 2004, the widest in EU's history, European Union was relatively homogeneous group of countries. However, with enlargements of 2004, 2007 and 2013, contemporary European Union consists of 28 member countries, whose economies are very dissimilar both in terms of their size and in terms of their performance. Some new EU Member States have already entered the euro area and 18 members of the European Union use the euro in 2014.

The varying size of individual economies such as these is illustrated by these facts, based on Eurostat (2014): In the three largest EU member states being involved in 41,6 % of the total population of the European Union, 51,1 % of the European Union's gross domestic product (GDP) at market prices was created in 2013, correspondingly, more than 47 % of the European Union's GDP adjusted by purchasing power standard. In a similar way, in the five largest EU member states being involved in 62,6 % of the total population of the European Union, 71,1 % of the European Union's GDP at market prices was created in 2013, correspondingly, more than 67 % of the European Union's GDP adjusted by purchasing power standard. In contrast, in the smallest seven EU member states, in which 2,02 % of EU citizens dwell, only 1,33 % of the European Union's GDP was generated, or 1,71 % of the European Union's GDP adjusted by purchasing power standard.

Moreover, the different performance of economies can be assessed by comparison of the most frequently used economic indicators, such as GDP per capita levels

or Gross National Income (GNI) per capita levels converted into purchasing power parity. In terms of the economic performance expressed by these indicators, EU member countries still show significant differences. For the EU as a whole, three last enlargements are of course related to the enlargements to new countries with a much lower GDP per capita. In 2012 GDP per capita in purchasing power standard EU-28 was in the most developed EU economy (Luxembourg) more than 5,6 times higher than in the economy with the lowest value of this indicator (Bulgaria). GNI per capita (based on purchasing power parity in current international dollars) was 3,9 times higher. But generally, the poorer new EU member countries grew faster than the richer, highly developed EU-15 economies.

Not only for these reasons the economic convergence EU member states is constantly at the forefront of intense interest by representatives of economic theories and economic policy makers. The final goals of the EU include, as specified in article 3 of the Consolidated Version of the Treaty on European Union, convergence of economic performance and economic and social cohesion. But an important question arises relative to the current and future trends concerning nominal both real convergence under recent debt crisis circumstance.

In the second paragraph we will delineate the sigma and beta convergence approaches as well as the development of GDP per capita in EU Member States in the observed period 1995-2013. In the third paragraph empirical findings of sigma and beta convergences analysis of per capita GDP in EU countries will be presented. In the fourth paragraph conclusions are drawn.

2. Economic Convergence and Development of GDP per capita

The term economic convergence means a process in which economies of different countries or regions become more similar to each other. If differences of economic variables among the countries or regions are diminishing, economies tend to reach a similar level of development and wealth. Studies about convergence of the nominal variables used mainly the four Maastricht parameters (inflation rate, long-term interest rates, deficit/GDP ratio, and public debt/GDP ratio). The literature on real convergence comprehends such different aspects as long run convergence in per capita/per employee incomes and productivity, convergence in unemployment rates, convergence in economic structures and synchronization of business cycles. Nominal convergence, however, will not be subject to an analysis in this paper. We will attach our attention to real convergence in per capita incomes. Although in practice it is necessary to monitor the interdependence of real and nominal convergence, because the links between real convergence and nominal convergence are rather complex, can go in both directions, and may be different in the short run and long run.

Being aware of some limited power of expression, the indicators of GDP per capita in purchasing power standard (PPS EU28) and GNI per capita in purchasing power parity (PPP in current international dollars) will be applied in this paper. Thence for the conversion of GDP per capita from local currency into a common unit, the conversion with exchange rates, which does not take into account the purchasing

power of different national currency units, is not used. Consequently for international comparisons the artificial currency unit PPS is used, which reflects purchasing power parity and eliminates price level differences between countries.

2.1 Sigma and Beta Convergence Approaches

A long-run view of real convergence implies the narrowing of differences in real variables among the different countries (or regions), thus allowing the achievement of similar performances of real variables, or a catching-up of less developed countries, in terms of income per capita, product per employee, etc. The basic model which explains convergence among countries is neoclassical theory of economic growth (Solow, 1956). Sigma and beta convergence approaches was developed and popularised by Barro and Sala-I-Martin (1992, 2003) and Mankiw et. al. (1992).

Sigma convergence assumes that all countries converge to the same level of economic performance. Sigma convergence thus occurs when the dispersion of GDP per capita diminishes over time. It is therefore defined as a reduction of variance (or the coefficient of variation) of the logarithm of real GDP per capita among countries over time. Once we have measured by means of standard deviations of the natural logarithms of indices used in Figures 2 and 3, then the EU15 average GDP per capita is determined as the 100. Coefficient of variation is given by:

$$CV = (\text{standard deviation}) / (\text{mean value of the set}) \quad (1)$$

Beta convergence is based on the idea that the initially poorer (less developed) countries have a higher growth rate than developed countries, since there is a gradual convergence between countries and differences in their maturity are shrinking. In this concept, the GDP growth is negatively dependent on the initial economic level. In order to verify β convergence hypothesis, the equation to be estimated is the following:

$$1/T \ln(y_{i,T}/y_{i,0}) = \alpha_0 + \alpha_1 \ln y_{i,0} + \varepsilon_t \quad (2)$$

where $y_{i,T}$ and $y_{i,0}$ are GDP per capita at PPS in country i in the last year and the first year of the analysed period.

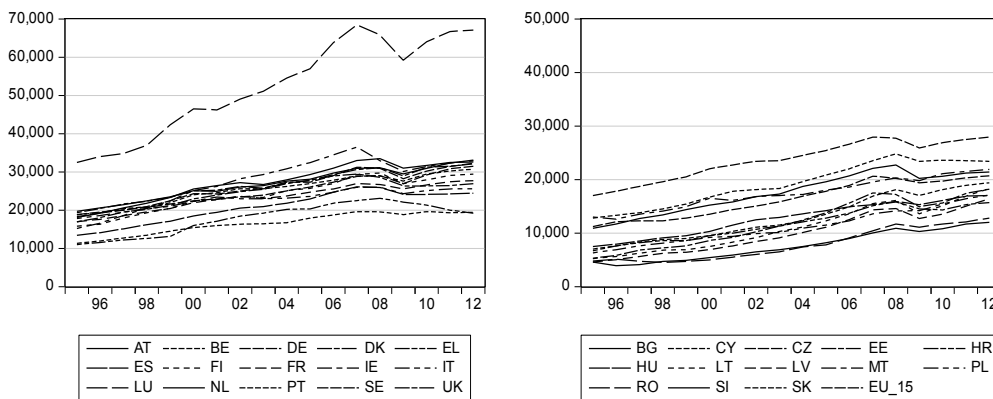
Assuming the usual definition by means of relative distances sigma and beta convergence are equivalent, which means that in the circumstances of a faster economic growth in countries with lower initial GDP per capita levels, the coefficient of variation of GDP per capita among countries surveyed will reduce over time.

2.2 Development of GDP per capita

Figure 1 depicts the development of GDP per capita in purchasing power standard (PPS EU28) in EU-15 countries both in 13 new EU member states (NMS-13) in years 1995-2012. From the figure it is obvious that differences between countries with the highest and lowest GDP per capita in absolute terms increased (from 21500 PPS to 47900 PPS in EU-15 and from 8400 PPS to 11400 PPS in NMS-13 between 1995 and 2012). In contrast, differences between countries in relative terms decreased, although

in some cases did not change. This fact shows also Figure 2, which shows trends in relation to the EU-15 average.

Figure 1: Development of GDP per capita in the EU-15 and NMS-13 Countries (PPS EU28, 1995-2012)

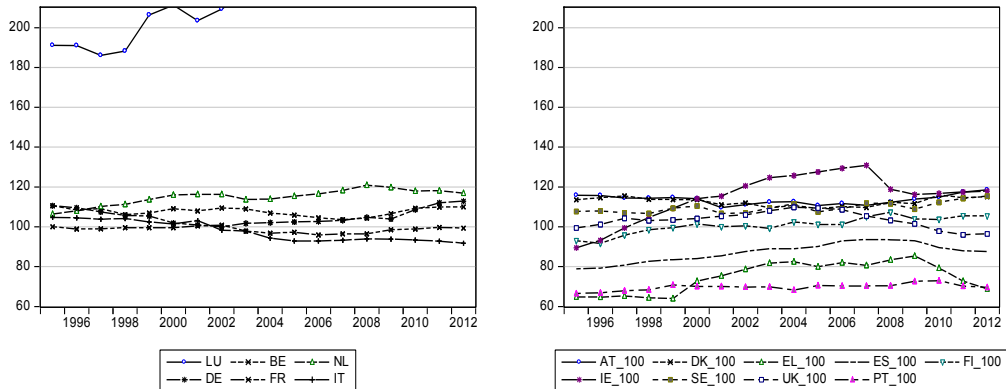


Source: Eurostat (2014).

If we in EU-15 do not take into account Luxembourg with the highest GDP per capita, the difference between the highest and lowest GDP per capita was in 1995 8700 PPS and 13900 PPS in 2012. In relative terms, however, it remained stable, or decreased slightly from 1,79 times to 1,72 times. When including Luxembourg differences are of course much higher. In NMS-13 difference between countries in relative terms decreased from 3,4 times to 1,95 times. Development of differences in terms of GNI per capita in purchasing power parity (not reported here) is similar.

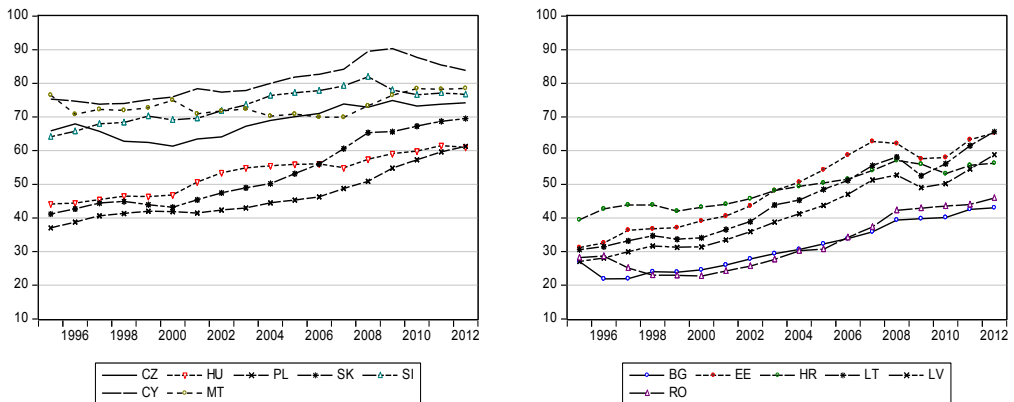
Figure 2 proves also evident divergence in the level of GDP per capita between the original six founding members of the EU, which started to appear after 2002. If we draw our attention to the catching-up and most indebted countries in the EU-15, an extremely high growth rate of GDP per capita was shown by Ireland. The level of 89% reached by the EU-15 in 1995 was outdone in 2007 at the level of 131% above the EU-15 average, but then there was a reduction to values of around 117% of the EU-15, where it is at today. But in terms of GNI per capita Ireland reached only the level 106 % of EU-15 average and after 2007 was a reduction to values around 92 % of the EU-15 average. Spain demonstrated also a successful development of GDP per capita up to 2007 and it reached a level of 93,5 % of the EU-15. In the case of Greece the only successful development was recorded in the period 2000-2004 and Portugal came very slightly closer to a level of the EU-15 during the reporting period 1995-2010. Since 2009, the level of GDP per capita in the latter three countries in relation to the EU-15 average has been decreasing and these economies are diverging.

Figure 2: GDP per capita in EU-15 Countries Towards EU-15 Level (EU-15=100, 1995-2012)



Source: Own calculations based on Eurostat (2014).

Figure 3: GDP per capita in EU New Member Countries Towards EU-15 Level (EU-15=100, 1995-2012)



Source: Own calculation based on Eurostat (2014).

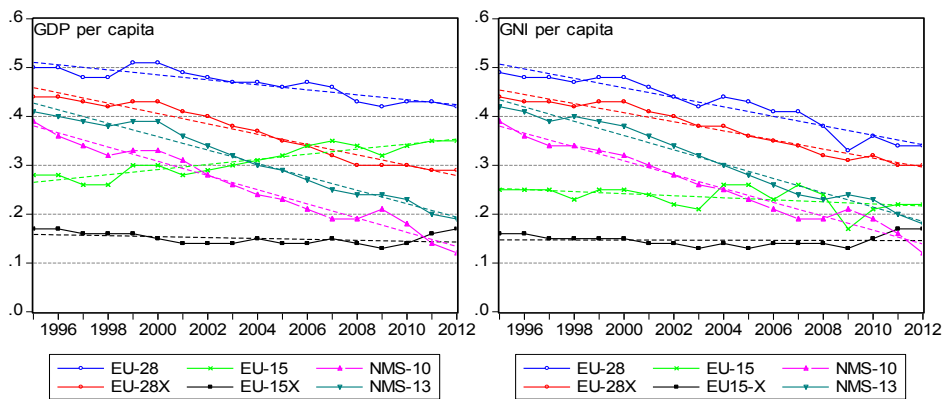
New EU member states show a much lower GDP per capita in purchasing power standard. Figure 3 depicts the development of GDP per capita both in five Central European EU Countries (CEC-5) and other eight new member states towards EU-15 average. Generally what is valid is that they get closer from below to the level of the EU-15 average. As noted Sopek (2013), in the whole period 1995-2010 all New Member States and Croatia were below the all 27 EU Member States average, but they recorded GDP per capita growth comparable to the EU-27 average. The possibilities of convergence from below are considerable for these countries. At present, they are gradually beginning to approach the level of Portugal or Greece, which these countries demonstrated in 1995. The exceptions among the new EU member states are Cyprus, Malta, Slovenia and the Czech Republic, whose initial level of GDP per capita was higher.

Among the analyzed CEC-5 only countries with the lowest baseline level of GDP per capita (i.e. Poland, Slovakia, and Hungary) converge towards the EU-15 GDP per capita level throughout the period 1995-2011. The Czech Republic diverged slightly in the late 90s and again after 2009, Slovenia shows a slight divergence from 2008.

3. Empirical Findings

Sigma convergence simply refers to a reduction of disparities among countries in time. Development of the coefficients of variation GDP per capita in the European Union is portrayed on the left side of the Figure 4, development of the coefficients of variation GNI per capita is shown on the right side of the Figure 4. Sigma convergence of the EU countries is shown in more variants. As GDP/GNI per capita of Luxembourg began rising rapidly in the 80's and from 1995 it reached 191% of the EU-15 average GDP per capita (in PPS_EU28), sigma convergence (coefficients of variation of the real variables per capita) is assessed both for the whole EU-28/EU-15, and for the EU-28x/EU-15x excluding divergent Luxembourg. The figure shows that before 2000 convergence of the EU-15x (excl. LUX) almost stopped, and then continued up to 2003. The following stagnation was replaced by a sharp sigma divergence that returned the EU-15 back to the level achieved in the past in 1997. What is also depicted are the lines for the both 10 and 13 EU-New member countries (NMS-10, NMS-13), whose downward trend shows the acceleration of sigma convergence after 2000, which lasted up to 2009.

Figure 4: Coefficient of Variation: GDP per capita, GNI per capita (1995-2012)



Source: Own calculations.

In order to verify the sigma convergence hypothesis, we estimate the linear trends of the coefficients of variation development for the period 1995-2012 (also displayed in Figure 4). Results of linear trend regressions (using the method least squares) are presented in Table 1. In all cases except EU-15 is parameter of trend line slope negative (but for EU-15 insignificant), thus sigma convergence exists or more precisely the hypothesis is verified. The development of sigma convergence measured in terms of the GNI per capita (on the right side of the Figure 4) demonstrates very

similar features to development of sigma convergence measured in the GDP per capita. Sigma convergence exists or more precisely the hypothesis is verified only for EU-28, EU-28x, NMS-10, and NMS-13. What clearly follows from the comparison of sigma convergence of GDP per capita and GNI per capita is that the economic cycles in EU-15 are not synchronized and from 2001 we can a divergence trends observed. Therefore, it is advisable to monitor both short-term and long-term development trends.

Table 1: Trend Lines for the Coefficients of Variation of the GDP per capita

Dependent Var.		Parameter	Std. Error	t-Stat.	Prob.	R2	Adj. R2
EU28	Interc.	0,5106	0,0061	83,58	0,0000	0,81	0,80
	Slope	-0,0051	0,0006	-8,33	0,0000		
EU28x	Interc.	0,4589	0,0058	78,66	0,0000	0,95	0,95
	Slope	-0,0106	0,0006	-18,08	0,0000		
EU15	Interc.	0,2651	0,0061	43,27	0,0000	0,82	0,81
	Slope	0,0052	0,0006	8,47	0,0000		
EU15x	Interc.	0,1585	0,0054	29,44	0,0000	0,26	0,11
	Slope	-0,0009	0,0005	-1,74	0,1017		
NMS13	Interc.	0,4273	0,0059	72,94	0,0000	0,97	0,97
	Slope	-0,0137	0,0006	-23,35	0,0000		
NMS10	Interc.	0,3808	0,0067	56,74	0,0000	0,97	0,96
	Slope	-0,0145	0,0007	-21,57	0,0000		

Source: Own calculations.

Beta convergence occurs when less developed countries grow faster than more developed countries, meaning that there is a negative relationship between initial GDP (or GNI) per capita level and its growth rate. In order to verify beta convergence hypothesis, regression equation (2) was estimated by using the method least squares. Estimates were again performed alternatively for six groups of EU member states: the EU-28, the EU-28 excluding Luxemburg, EU-15, EU-15 excluding Luxemburg, ten and thirteen EU-New member states (NMS-10, NMS-13). The results of equation (2) estimations for both beta convergence of GDP per capita and beta convergence of GNI per capita in the European Union for the period 1995-2012 are shown in Table 2 and Figure 5. For detailed results see Appendix.

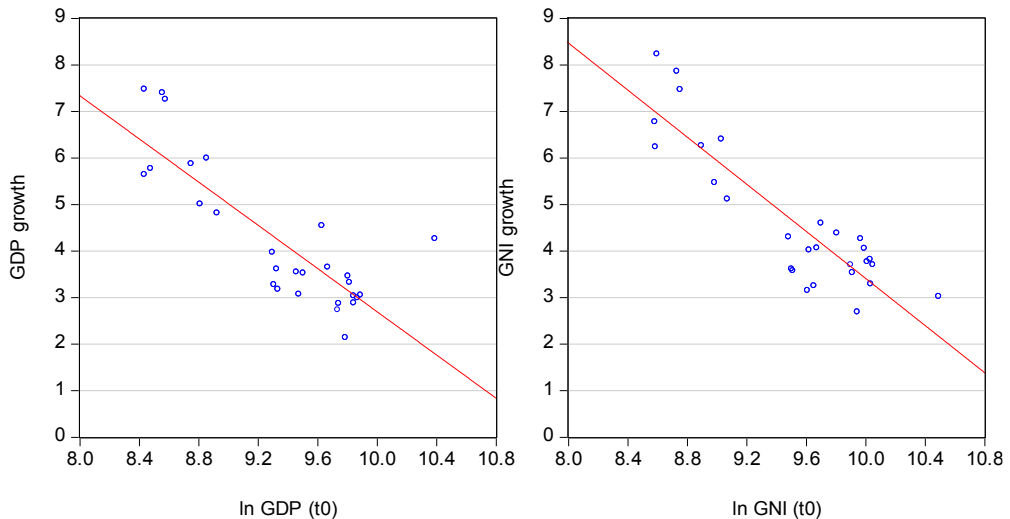
The fourth column in Table 2 shows the estimates of the regression equation. The β coefficients are negative, which indicates beta convergence for both the GDP per capita and GNI per capita in the EU-28 or in the EU-28X (excluding Luxembourg). Results of the empirical analyse of beta convergence in Table 2 also shows that the exclusion of Luxembourg from the convergence analysis affects the results. The beta coefficient in absolute value increases and the speed of convergence increases. The coefficient of determination increased to 81 %, which means that the initial level of income in this model can account for 81 % variation in GDP growth rates between countries and 78 % variation in GNI growth rates respectively. Slavík (2007) came to similar results, too.

Table 2: Beta Convergence in the European Union, 1995-2011

	Adj.R2		Parameter	t-Statistic	Probab.
GDP EU-28	0,68	Slope	-2,3212	-7,7082	0,0000
		Interc.	25,9069	9,1962	0,0000
GDP EU-28X	0,81	Slope	-2,7124	-10,4810	0,0000
		Interc.	29,4539	12,2188	0,0000
GNI EU-28	0,77	Slope	-2,5294	-9,6638	0,0000
		Interc.	28,7035	11,5212	0,0000
GNI EU-28X	0,78	Slope	-2,6547	-9,5919	0,0000
		Interc.	29,8581	11,3794	0,0000

Source: Own calculations.

Figure 5: Beta Convergence Among the EU-28 Countries (GDP per capita, GNI per capita, 1995-2012)



Source: Own calculations.

These calculations of beta convergence also shows, that the speed of beta convergence obtained in analyse without Luxembourg is higher.

4. Conclusion

Based on the analysis, we can state that the EU-New member countries (NMS-10, NMS-13) converge to the EU-15 average. Convergence rate of the CEC-5 is somewhat lower than the speed of convergence of the new EU member states as whole. This is probably due to a higher initial level of GDP per capita in PPS in CEC-5 countries. The speed of convergence and difference in GDP per capita as compared with the EU-15 imply that convergence to the EU-15 average will be a long-term process. From the analysis of convergence of the EU-15 countries we can draw conclusions about some divergence tendencies. These are smaller, once the outlying observations (Luxembourg) have been excluded from the analysis. In our opinion,

we can only proceed in this way in the case of relatively small economies, whose share of GDP across the whole EU is very small.

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Appendix

Statistics for used beta convergence models				
	EU-28	EU-28X	EU-28	EU-28X
Dependent Variable:	GDP GROWTH	GDP GROWTH	GNI GROWTH	GNI GROWTH
Method:	Least Squares	Least Squares	Least Squares	Least Squares
R-squared	0,6956	0,8146	0,7822	0,7863
Adjusted R-squared	0,6839	0,8072	0,7738	0,7778
S.E. of regression	0,8529	0,6788	0,7401	0,7315
Sum squared resid	18,9113	11,5176	14,2431	13,3760
Log likelihood	-34,2360	-26,8099	-30,2673	-28,8293
F-statistic	59,4159	109,8506	93,3888	92,0048
Prob(F-statistic)	0,0000	0,0000	0,0000	0,0000
Mean dependent var	4,2276	4,2262	4,6655	4,7264
S.D. dependent var	1,5169	1,5458	1,5564	1,5517
Akaike info criterion	2,5883	2,1341	2,3048	2,2836
Schwarz criterion	2,6834	2,2301	2,4000	2,3796
Hannan-Quinn criter.	2,6174	2,1626	2,3339	2,3122
Durbin-Watson stat	1,3678	1,4706	1,5230	1,5220

Source: Own calculations using EViews.

Potential Threats to Slovak Economy Resulting from the EU Economic Sanctions Against Russian Federation

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Abstract

This article is about potential threats to Slovak economy resulting from economic sanctions European Union against Russian Federation. The fact is, that Slovakia as a member of the European Union has a strong dependence on import of raw materials from Russia. Author discusses about foreign trade between Slovakia and Russia, the export and import of various goods and services to the basic classification SITC. Subsequently, author will focus on the most important group of mineral fuels, where are commodities like natural gas and mineral fuels. It is examined cohesion and restrictions of this supplies commodities and it is briefly assessed the possibilities of diversifying these energy sources. At the end is summarizing of the possibilities of further trade with Russia as a partner with enormous potential.

Keywords: *Export, Foreign trade Import, Mineral fuels, SITC*

JEL Classification: *F14, F16, M21*

1. Introduction

Slovakia is a member of the European Union and is well known that this economy is heavily dependent on Russian import of raw materials. Since the European Union has been imposing sanctions on Russia, this paper aims to analyze potential threats to Slovak economy resulting from these economic sanctions. The paper deals with the foreign trade between Russia and Slovakia, and thus imports and exports of various goods and services based on the Standard International Trade Classification (SITC). The considerable attention will be paid to one of the most imported commodities – mineral fuels and the possibilities of diversification of these energy supplies will be assessed as well as the other possibilities of trade cooperation between these economies.

One of the main EU policies is the common commercial policy, which governs the trade the EU, representing by its 28 members states, with the non-member countries. Currently, the EU sanctions against the Russian Federation are very discussed topic related to this policy. These sanctions would not be unilateral and we can expect similar retaliation from Russia. The beginning of the crisis between the EU and Russia have been launched at the end of 2013, when Ukraine have not signed Association Agreement with the European Union. This act caused many demonstrations throughout Ukraine, which led to fall of the government. Ukraine people have not unified opinion on this issue and conflicts arose between the east and the west of Ukraine. This caused annex of the Crimea by Russian army and consecutive there was

voted in the referendum about separation from Ukraine and connected to the Russian Federation. Since March EU have started to apply sanctions against Russia. These sanctions will be three-stage. When If Russia continue offensive in the east of Ukraine, the last step will be restriction on energy, trade and financial relations with Russia.

2. Russia as an Important Foreign Partner

The Russian Federation is one of the main economic partners of Slovakia. After Germany is this country the second largest importer and in the third is the Czech Republic. The share of Russian imports of total imports of Slovakia represent 9.76 %.

Table1: Total Import of Slovakia by Countries in billions EUR

	2005	2006	2007	2008	2009	2010	2011	2012	2013*
Total Import	35320	43667	48076	50280	38775	47494	55768	58588	60077
1. Germany	7281,3	9052,7	8929,5	9267,1	5911,1	7519,9	8977,8	9851	9336,7
2. Russian Federation	3792	5009,8	4495,1	5442,3	3466,9	4658,9	6183,2	5933	6147,7
3. Czech Rep.	4507,1	5443,7	5191	5330,7	4318,8	4862,6	5661,4	5724	6225,4

Source: Statistical Office of the Slovak Republic - own processing (expressed in current prices, in order of 2012, year 2013 pre-amounts)

Regarding export destinations, prim are European Union countries. As is shown in table 2, the share of Russian exports has an increasing character in 2012, the share of total export is 4,22 %. For this growing trend of trade stood over years 2010 - 2012 support Eximbank of Slovak Republic, when encouraged Slovak exports with almost 955 mil. Eur. After that, was signed a contract between Eximbank SR and Russian Sberbank in 2013. The contract worth \$ 1 billion and will be using another company for orienting the markets of Russia and the Commonwealth of Independent States.

Table 2: Total Export of Slovakia by Countries in billions EUR

	2005	2006	2007	2008	2009	2010	2011	2012	2013*
Total Export	32864	40916	47351	49522	39721	48272	56783	62144	64361
1. Germany	8475,9	9700	9990,8	9785,4	7855,4	9291,3	11479	13274	13577
2. Czech Rep.	4664,5	5756,4	6133,7	6702,1	5277,2	6612,2	8181,2	8707	8752,1
3. Poland	2064,5	2540,3	2934,1	3223,2	2788,2	3526,8	4134,5	5003	2827,5
...
9. Russian fed.	510,4	675,9	1067,7	1870,2	1413,7	1921	2070,5	2620	2547,2

Source: Statistical Office of the Slovak Republic - own processing (expressed in current prices, in order of 2012, year 2013 pre-amounts)

Whereas import constantly prevails over export, foreign balance of Russian Federation is passive and a relatively large. This is mainly of the composition of commodity structure.

Table 3: Trade Balance with Russian Federation in billions EUR

	2005	2006	2007	2008	2009	2010	2011	2012	2013*
Export	510,4	675,9	1067,7	1870,2	1413,7	1921,4	2070,5	2619,8	2547,2
Import	3792	5009,8	4495,1	5442,3	3466,9	4658,9	6183,2	5933,1	6147,7
Balance	-3281,6	-4333,9	-3427,4	-3572,1	-2053,2	-2737,5	-4112,7	-3313,3	-3600,5

Source: Statistical Office of the Slovak Republic - own processing (expressed in current prices)

Regarding commodity structure, it is used tariff nomenclature SITC (Standard International Trade Classification). SITC is a classification of goods used to classify the exports and imports of a country to enable comparing different countries and years. The classification system is maintained by the United Nations. The SITC classification is currently at revision four, which was promulgated in 2006 and divides goods and services into this groups:

- 0 Food and live animals
- 1 Beverages and tobacco
- 2 Crude materials
- 3 Minerals fuels
- 4 Oils and fats
- 5 Chemicals
- 6 Manufactures by material
- 7 Machinery and equipment
- 8 Miscellaneous manufactures

Table 4: Slovak Trade with Russian Federation by SITC Rev. 4 in mil. Eur

Import	0	1	2	3	4	5	6	7	8	Total import
2008	1	0	220	4879	0	93	170	74	6	5442
2009	0	0	142	3173	0	39	48	61	4	3467
2010	1	0	303	4156	-	59	62	69	8	4659
2011	2	0	303	5625	0	74	73	101	6	6183
2012	1	0	242	5386	3	73	66	153	9	5933
Export	0	1	2	3	4	5	6	7	8	Total export
2008	8	1	13	1	1	84	164	1464	136	1870
2009	14	0	8	0	0	85	119	1087	99	1414
2010	13	1	10	0	0	78	142	1559	118	1921
2011	18	1	11	0	1	89	136	1668	146	2071
2012	28	1	9	1	1	71	140	2176	193	2620

Source: Statistical Office of the Slovak Republic (expressed in current prices)

Minerals fuels clearly dominate between imported groups, which advised oil and gas, with 5 386 mil. Eur, what is nearly 91 % share of the Russian import. Crude materials has minimum share with 242 mil. Eur (4 %) and Machinery and equipment with 153 mil. Eur (2.5 %). Other import groups have a negligible percentage. Most export

commodity is Machinery and equipment with 2 176 mil. Eur, that takes more than 83 % of total Slovak export to Russian Federation (2012). For other groups it is 193 mil. Eur of Miscellaneous manufactures (7 %) and Manufactures by material with 140 mil. Eur (5 %). Other groups represent a negligible amount.

3. Dependence on Mineral Fuels

The subject of interest is an energy sector of any economy not only the state but also the private sector. The effort of each economy is to diversify the sources of these raw materials, which we are not self-sufficient. From the previous section we see that here we advise oil and gas, which are almost exclusively supplied Russian Federation. The question is whether there are alternative sources of these important commodities.

3.1 Oil and Petroleum Products

The Slovak Republic is connected to the pipeline Družba, namely the southern branch, which was built in the sixties and the seventies last century and in the nineties was renovated and modernized. It is beginning in the Samara region of the Russian Federation. It makes one of the longest pipeline in the world with it is total length of over 5,000 km. Only operator of the pipeline system in the Slovak Republic is TRANSPETROL, (which belongs to the company of strategic national economy). Operational capacity of the Slovak section is 20 mil. tons of oil per year.

Table 5: Import of Oil and Petroleum Products (in mil. ton)

Customer	2008	2009	2010	2011	2012
Refinery Slovnaft	5817	5674	5462	6009	5367
Refineries in the Czech Republic	4811	5008	4532	3910	2990
Other customers	29	109	81	0	60
Total import of oil and petroleum	10657	10791	10075	9920	8418
Utilization of transport capacity (max. capacity 20 mil. ton) in %	53,29	53,96	50,38	49,60	42,09

Source: Statistical Office of the Slovak Republic, Transpetrol

From the table is clear that we are penultimate stop on the southern branch of the pipeline Družba. Overall, the greatest part of transported oil is treated at a single refinery in Slovak – Slovnaft. A further decline is also visible in export to the Czech Republic. It's caused of beginning to use in the Czech Republic the pipeline IKL, which is connected to the pipeline TAL.

In the case of the absolute loss of oil supplies through the pipeline Družba, Slovakia does not have a full-fledged alternative yet. In 2012, was created a plan on the basis of the strategy to modernize and expand pipeline Friendship1, which connects Družba and Adria pipelines. Transpetrol and MOL Group signed together under the memorandum, where they agreed with the reconstruction of 130 km long pipeline Friendship1. Pipeline Adria was built because of a possible diversification of oil and was put into operation in 1980. It starts in the Croatian port Omišalj continues through

Croatia and Hungary, and after overcoming 606 km passing through the territory of Slovakia, as pipeline Friendship1. This is connected to the pipeline Družba in Šahy. MOL Group will reconstruct nearly 120 kilometres stretch on the Hungarian side, Transpetrol undertook to modernize nearly 10 kilometres long pipeline in Slovakia. After completion of this connection, which would cost the Slovak side about 4-5 million Euros and Hungarian side 50 to 70 million Euros, would be capable of supplying Slovakia. This southern route by oil volume of about 6,5 million ton of oil. This would prove sufficient to replace the pipeline Družba. This volume would be, in case of crisis, able to cover operating needs of the refinery Slovnaft, however would not become a full-fledged replacement supplies from Russia. The end of modernization and interconnection Družba and Adria pipelines is expected for year 2014. Other government and the state projects of the carrier oil include the planned interconnection Bratislava - Schwechat Pipeline. The European Commission assessed this connection as a strategic project. In the case of security threats of supplies, Slovakia can also rely on emergency oil stocks. Based on the requirements of the European Union must be kept at least 90 days.

3.2 Natural Gas

The annual capacity of the transmission system operated by Eustream is about 90 billion m³ of natural gas, equivalent to 15 times the domestic gas consumption in Slovakia. Eustream is subsidiary of Slovak Gas Industry, which is the main connection to central and the western Europe.

Table 6: Import of Natural Gas (in billion m³)

	2008	2009	2010	2011	2012
Gas transport	76,2	66,4	71,4	74	56,5
Capacity utilization (max. 90 mld.) in %	84,67	73,78	79,33	82,22	62,78
SR consumption	5,9	5	5,7	5,4	5,2

Source: Statistical Office of the Slovak Republic, Eustream

In 2012, compared to other years, is a significant reduction in the volume of gas transported. This is due to a fall in export of Russian gas and also with finish Nordstream pipeline. Average consumption of gas in Slovak market in recent years oscillates around 5.5 billion m³/year.

Slovakia has experienced a gas crisis in early 2009. Russia suspended gas transit through Ukraine and to limit its supply to Europe. Complete halt gas supplies to Slovakia from Russia via Ukraine took about two weeks. After this experience Slovakia in 2009 and 2010 implemented technical measures into technical devices that allow the transmission network reverse flow within the transmission system. From the Czech Republic is the capacity of gas transmission 36 million m³ per day and interconnection capacity from Austria is 17 million m³ per day, which together exceed the total daily consumption of Slovakia. Tensions about the gas reigned between Russia and Ukraine in November 2013. Then the Ukrainian gas company Naftogaz stopped exporting to other countries to recover price reductions. Finally, after

negotiations the export of gas gets started again. Now, Slovakia is in the case of gas crisis better prepared and has the necessary measures. First, security of supply is ensured through the natural gas storage, which is stored about 3 billion m³ of gas storage and better connection the transport network. There are also possibilities for reverse flow of gas from the Czech Republic and Austria, as well as diversification of the treaty on additional gas supplies. The Slovak gas industry as the biggest gas supplier in 2009 signed a several contracts. The first was signed for 10 years with E.ON Ruhrgas for the supply of gas in the event of a crisis of its western funds up to the total amount of 500 million m³ of gas per year. The second was signed for 5 years with GDF SUEZ gas supply in case of failure also to 500 million m³ per year. Both of these treaties guarantee the supply of gas from independent gas transportation through the territory of Ukraine.

With the need for diversification of natural gas is currently a lot of mentions the use of shale gas by fracking, which is new method popular in the United States. In European countries, there are quite a lot of such bearings, but the strong risk of mining - contamination of environment, microearthquakes. Anyway, it is an alternative to the Russian gas. Better alternative represented construction of the pipeline Nabucco, which supplied gas from Central and Southwest Asia (Azerbaijan, Turkmenistan) through the Balkans. However, this option will not be performed because the competing South Stream pipeline has already 4-yearhead start, and it is expected to start next year. This pipeline is kept from Russia via the Black Sea on the Balkan Peninsula.

4. Conclusion

Energy connection Slovakia with Russia is now more than vital. Oil and natural gas are the main commodities where the addiction has been felt. As regards the supply of oil, there is a presumption that during 2014 we will be able to adequately replace potential supply disruptions oil from the pipeline Družba using the Adria pipeline. But worse situation occurs in the case of prolonged failure of gas from Russia. Short failures of our economy are able to survive thanks to gas storage and reverse flow of gas from the Czech Republic and Austria. However, the most of Central, Eastern and Southeastern Europe is currently supplied with gas from Russia, and there is no adequate substitute these resources.

Another phenomenon which characterizes the present situation is to reduce the supply of oil and gas via Ukraine and Slovakia and to the other European countries. The fact, that the gas supply started via Nord Stream and will start shortly also via South Stream, Slovakia is losing a part from the direct strategic approach to energy resources and also economically (transfer fees). As regards trade with Russia, this market with about 4% is the negligible. But this market has enormous potential for further expansion of Slovak companies and shortly will become even more significant trading partner. Sanctions between the European Union and Russian Federation will be rather in ballast. It would be wiser for both sides in the negotiations maintain good relations not only in the economic sphere.

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Regional Disparities and Cohesion in the EU

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Abstract

The contribution is focused on key factors of socio-economic development of the regions in the Czech Republic and Central Europe on which we can observe the economic, social and territorial cohesion. The author deals with the theoretical bases of three levels of cohesion. The author focuses on the classification of disparities based on different levels of cohesion. The author classifies the regional structures in EU and presents concrete indicators of cohesion in Central Europe. Explanation of basic terms this field to help create a theoretical view on the issue. The aim of comparison individual factors of socio-economic development of regions is to gain a practical perspective on the issue. The contribution should extend knowledge about the processes of territorial development and European cohesion.

Keywords: *Economic cohesion, Economic disparity, Regional structure, Social cohesion, Social disparity, Territorial cohesion, Territorial disparity*

JEL Classification: *A10, G10, H00, H30*

1. Introduction

With the creation of a European space was needed to solve the differences between member countries. One of the objectives of the EU is its balanced development that is connected with a reduction of the structural differences (disparities) between the regions known as cohesion. We distinguish three types of cohesion - economic, social and territorial cohesion that reflects differences (disparity) formed between EU regions.

The aim of this paper is to present the basic theoretical background associated with cohesion and disparities. The author deals with factors of economic development of regions in Central Europe. The author describes options on which we can observe regional disparities and compare them mutually.

2. Regional Disparities and Cohesion

The differences between countries and regions have increased with the gradual expansion of the European Union. One of the main goals from the beginning of integration is promoting cohesion policy that should lead to convergence between rich and poor. While an economic and a social cohesion was commonly used during the fifty-year history of the European Community, the third dimension of cohesion - territorial cohesion has appeared in the last decade. Cohesion can be express as the level of differences between countries, regions or groups that are politically and

socially tolerable. Lower differentiation means a higher level of cohesion. We can define three levels of cohesion: economic, social and territorial currently.

Cohesion policy supports territorial, economic and social cohesion in the whole EU and its individual regions, in the countries' in macro-economic and micro-economic levels. Structural policy covers all EU countries and regions, all areas and sectors related to microeconomics. In our opinion, the cohesion policy is in a sense a broader concept for structural policy (Rakauskienė, Kozlovskij, 2014).

2.1 Economic, Social and Territorial Cohesion

The economic, social and territorial cohesion expresses solidarity between Member States and the regions of the European Union. The aim of cohesion is a balanced and sustainable development of the European Union, which involves reduction of structural differences (disparities) between regions and to promote equal opportunities for all individuals.

The economic cohesion assesses the economic convergence and can be expressed by reducing disparities between the levels of development of the various regions (states) with economic indicators such as gross domestic product, GDP per capita, employment, productivity, etc.

The social cohesion is focused on achieving the objectives of unemployment, level of education, social exclusion of various groups in demographic trends in the European Union. The operational indicators are unemployment or employment rate which are most commonly used for identification of social problems. It also includes access to employment, quality of employment and also workforce skills and level of education. In contradistinction to economic cohesion we can not specify only with one integrating indicator.

The territorial cohesion means a balanced distribution of human activities in the Union and it complements the economic and the social cohesion.

2.2 Economic, Social and Territorial Disparities

If we assume that the disparities are an expression of the degree of cohesion, then we can say that there are economic, social and territorial disparities (Kutscherauer and collective, 2010).

The economic disparities are a reflection of the level of economic cohesion. The economic disparities are related with economic performance, its structure as well as development potential and human potential. The economic cohesion increases respectively improves when are reducing disparities in the factors of competitiveness. In other words, in case when the weakest regions are able to catch up the more advanced regions. The main indicator of economic cohesion is gross domestic product respectively GDP per capita.

The social disparities are related to how the population perceives territorially differentiated quality of life, standard of living, social inequality and social pathology. Questions and problems of social cohesion are related with balanced participation

in social life. Social cohesion is often related to the existence of harmonious relations between social groups. Social cohesion prevails if the disparities are politically sustainable in a range of social indicators. It focuses on the achieving the objectives in unemployment rate, level of education, social exclusion of different groups of individuals, demographic trends in the EU.

The territorial disparities are associated with positional conditions in a broader context and geographical, natural, transport and technical conditions. The territorial disparities are often a reflection of strong inequalities in the equipment of factors of competitiveness in some regions that lead to the asymmetric distribution of physical and human capital. There are differences between the periphery and the centre in terms of population, wealth, access to services of general interest, transport, energy, telecommunications and the information society or in terms of research and innovation capacities. These differences cannot be ignored because they affect the overall competitiveness of the EU economy.

The territorial disparities may lead to connectivity of region to the main transport networks (road, rail, airports, etc.) or to intensity of research and development of region expressed by the number and structure of science and research and higher education institutions, as well as by number of outputs of science and research (publications, patents, etc.). Another source of evaluation the territorial disparities is the level of services of general interest in economic and social terms.

3. Classification of Regions in the EU

For evaluating disparities in the EU is using well-known classification of territorial units - NUTS (Nomenclature of Territorial Units for Statistics) at lower territorial levels. For comparison of statistical units in European Union are for each level of NUTS system determined limits in number of inhabitants. Whole state consists of one NUTS territorial unit if the population of a whole Member State is below the minimum limit for the level of NUTS.

The NUTS system divides each Member State on the number of regions classified as NUTS 1. Each of them is subsequently divided into NUTS 2 regions and those are divided on the level of NUTS 3. NUTS levels we can observe the following table.

Table 1: Number of Inhabitants for NUTS

Statistical unit	Highest population	Lowest population
NUTS1	7 000 000	3 000 000
NUTS2	3 000 000	800 000
NUTS3	800 000	150 000

Source: own processing (according the Eurostat)

4. Comparison of Factors of Social-economic Development of Regions

The above levels of cohesion (economic, social and territorial) reflect the different indicators that define the level of development each territory and region.

4.1 Regional Disparities in the Economic Sphere

The economy determines the dynamics of the development of the region. It also determines the weight respectively position of economic area in identification and evaluation of regional disparities. However, it is clear that the individual areas influences to each other and therefore is very problematic to determine limit between the different areas. This also applies to the relationship between economic area and the social and territorial areas. The main indicator of economic cohesion is regarded gross domestic product. GDP is a synthetic indicator that influenced to change of various components (economic factors) that determine competitiveness. Competitiveness is commonly measured by levels of productivity with which the economy uses its resources. At the same time productivity forms a major part of GDP per capita.

The following table provide information about the economic disparities in Central Europe. The best results according GDP factor from 6 chosen states achieves Austria, followed by Germany. The last positions have Hungary and Poland where GDP is very similar. Czech Republic is in this indicator before Slovakia.

The largest regional differences we can found in Germany where the difference in GDP between Hamburg region and Mecklenburg-Vorpommern region is 30 700 euro. A big difference is also in Slovakia between the Bratislava Region and Eastern Slovakia (€ 22,800). Also in case of Czech Republic is difference between region around the capital and other parts.

Table 2: GDP at Current Market Prices by NUTS 2 Regions in Central European Area (Euro per inhabitant)

	2011		2011		2011
Czech Republic	14 800	Germany	30 500	Hungary	9 900
Praha	31 200	Baden-Württemberg	35 800	Közép-Magyarország	16 200
Střední Čechy	13 200	Stuttgart	39 300	Dunántúl	8 500
Jihozápad	12 900	Karlsruhe	35 200	Közép-Dunántúl	8 700
Severozápad	11 500	Freiburg	31 300	Nyugat-Dunántúl	10 100
Severovýchod	12 200	Tübingen	34 400	Dél-Dunántúl	6 600
Jihovýchod	13 400	Bayern	36 600	Alföld és Észak	6 300
Střední Morava	12 000	Oberbayern	43 700	Észak-Magyarország	5 900
Moravskoslezsko	12 900	Niederbayern	32 500	Észak-Alföld	6 300
		Oberpfalz	33 600	Dél-Alföld	6 500
Poland	9 600	Oberfranken	30 000		
Region Centralny	13 500	Mittelfranken	34 500	Austria	35 700
Lódzkie	8 900	Unterfranken	32 500	Ostösterreich	36 600
Mazowieckie	15 700	Schwaben	32 400	Burgenland (AT)	24 000
Region Południowy	9 500	Berlin	29 300	Niederösterreich	29 400
Malopolskie	8 300	Brandenburg	22 800	Wien	45 600
Slaskie	10 400	Bremen	41 100	Südösterreich	30 800
Region Wschodni	6 700	Hamburg	52 500	Kärnten	30 400
Lubelskie	6 500	Hessen	37 500	Steiermark	31 000
Podkarpackie	6 500	Darmstadt	42 000	Westösterreich	37 300

Swietokrzyskie	7 200	Gießen	29 000	Oberösterreich	35 900
Podlaskie	6 900	Kassel	30 600	Salzburg	41 300
Region Północno-Zachodni	9 200	Mecklenburg-Vorpommern	21 800	Tirol	36 800
Wielkopolskie	10 000	Niedersachsen	28 500		
Zachodniopomorskie	8 100	Braunschweig	32 400		
Lubuskie	8 000	Hannover	31 000		
Region Południowo-Zachodni	10 100	Lüneburg	22 000		
Dolnośląskie	10 900	Weser-Ems	28 300		
Opolskie	7 700	Nordrhein-Westfalen	32 300		
Region Północny	8 200	Düsseldorf	35 600		
Kujawsko-Pomorskie	7 900	Köln	33 500		
Warmińsko-Mazurskie	6 900	Münster	28 800		
Pomorskie	9 200	Detmold	31 300		
		Arnsberg	29 300		
Slovakia	12 800	Rheinland-Pfalz	28 900		
Bratislavský kraj	31 500	Koblenz	27 800		
Západné Slovensko	12 200	Trier	26 100		
Stredné Slovensko	10 000	Rheinhessen-Pfalz	30 500		
Východné Slovensko	8 700	Saarland	31 200		
		Sachsen	23 200		

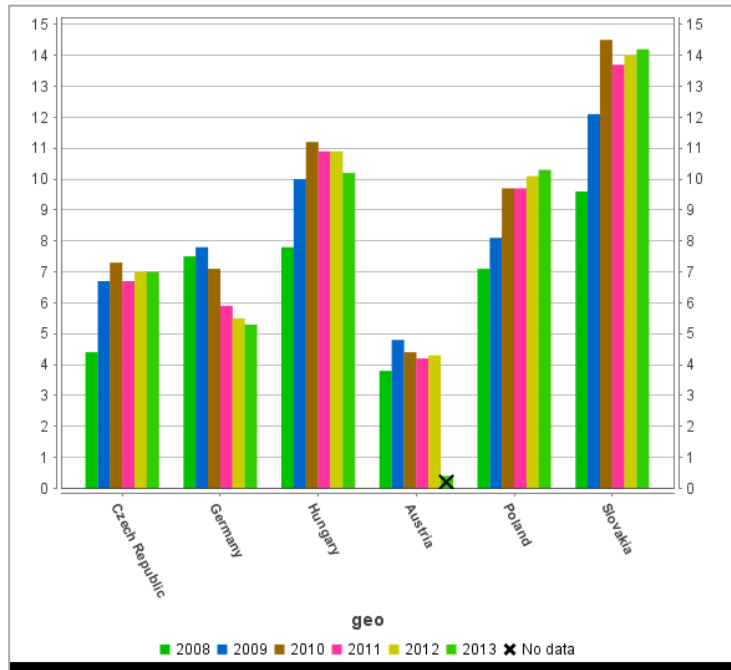
Source: own processing (according the Eurostat)

4.2 Regional Disparities in the Social Field

Quality of life in the regions is influenced by many factors that are mutually dependent. Separation economic and social factors are very difficult in theory but also in practice. Each factor includes both of these dimensions and depending on your point of view that factor is more important for the purpose. An important prerequisite for social and economic development of the region are a quality of social and other support systems. Adequate, functioning social and technical infrastructure (housing, schools, transport infrastructure, etc.) creates favourable conditions for business and effective functioning of the economy. Good social and economic conditions have a positive effect on the overall social climate that supports the development of the economy and contributes to the development of the region.

Social disparity we can observe on the phenomena of social pathology such as unemployment, poverty, crime. Graph 1 shows the trend in unemployment rate from 2008 to the present in six selected countries of Central Europe. The biggest problem with unemployment has Slovakia. The lowest unemployment rate is in Austria where the rate is the most balanced in selected period. The decreasing trend is reflected in Germany.

Figure 1: Unemployment Rate in Central European Area During 2008-2013



Source: Eurostat

In the table below we can observe evolution of crimes recorded by the police as another case of social disparity. This indicator is highest in Germany although is gradually decreases during the period. The decreasing trend is apparent in the Czech Republic and Slovakia. Slovakia has the best position in this indicator. Hungary recorded an increasing trend.

Table 3: Crimes Recorded by the Police in Central European Area (2008-2012)

	2008	2009	2010	2011	2012
Czech Republic	343 799	332 829	313 387	317 177	304 528
Germany	6 114 128	6 054 330	5 933 278	5 990 679	5 997 040
Hungary	408 407	394 034	447 186	451 371	472 236
Austria	572 695	591 597	535 745	540 007	548 027
Poland	1 082 057	1 129 577	1 151 157	1 159 554	1 119 803
Slovakia	104 758	104 905	95 252	92 873	90 351

Source: own processing (according the Eurostat)

4.3 Regional Disparities in Territorial Field

Theoretical approaches to territoriality are still not standardized and they are based on different views. We can join the territoriality with institutional barriers resulting from spatial boundaries. Some authors lean to the geographical characteristics or to the disadvantages resulting from the fragmentation of space as mountain areas or the periphery. These factors are associated with higher difficulty in accessibility to markets and resources in areas closer to the centre. In the regional analysis depends mainly on the subject of measurement for which is relevant to accept the selected spatial description.

Territorial disparities can be defined based on several factors such as physical-geographical potential of region, environment, equipment and technical structure or tourism potential. We can see for example on the transport infrastructure in the six chosen countries. Based on the selected factors, we can say that Germany has the best position from these countries - in terms of airport, railway and motor transport. However, it is important to consider also its size.

Table 4: Selected Factor of Transport Infrastructure in Central European Area (2011)

	Number of airports	Railway transport - Length of tracks (km)	Length of motorways (km)
Czech Republic	5	15 656	745
Germany	78	41 876	12 845
Hungary	5	9 208	1 273
Austria	6	8 334	1 719
Poland	10	38 053	1 070
Slovakia	6	3 624	419,2

Source: own processing (according the Eurostat)

5. Conclusion

The aim of this paper was to introduce the theoretical background associated with cohesion and disparities, describe the basic factor of regional development and on specific indicators to present and compare the issue of disparities in the countries of Central Europe.

The author has dealt with specific factors on that we can observe regional disparity. The author compared NUTS 2 regions in Central Europe by GDP indicator in economic sphere because GDP is main indicator of economic cohesion. She solved disparities in the social area that arise under different unemployment rate and crimes recorded by the police. She decided for these factors because we can see on them periods of economy and effect on economic system. The author decided to choose some factors of transport infrastructure for the territorial sector with aim to compare development of each country.

On base of the selected factors of economic development we cannot define clear and demonstrable conclusions. Economic, social and territorial sphere is influencing to each other. There is always a need to evaluate the development of region by several indicators.

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Recognition and Enforcement of Judgments under the Brussels I Regulation in the Czech Republic

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Abstract

Since becoming one of the Member States of the European Union, the Czech Republic is bound by the Brussels I Regulation (Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters). Brussels I Regulation is an important cornerstone of the European Judicial Area. It sets rules for the free movement of judgments in civil and commercial matters within the Member States of the EU. This free movement of judgments is one of the prerequisites necessary for the development of the internal market. This article deals with the Brussels I Regulation provisions on recognition and enforcement of judgments in civil and commercial matters and analyses, how these rules are applied by the Czech courts. This article by examining the relevant case law of the Czech higher courts answers a question, whether the Czech Republic during its ten years of membership in the EU has endorsed and promoted the free movement of judgments in civil and commercial matters.

Keywords: *Czech Republic, Enforcement, European Judicial Area, Judgments, Regulation Brussels I, Recognition*

JEL Classification: *K40, K41, K49*

1. Introduction

As Member State of the European Union (EU), the Czech Republic is bound by the Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (hereinafter referred to as Brussels I Regulation).

Brussels I Regulation governs international jurisdiction and the recognition and enforcement of judgments in civil and commercial matters in the EU. It is a cornerstone within the European Judicial Area. It has harmonized the rules of international jurisdiction and allowed the free movement of judgments issued within the EU. The Member States apply their national procedural rules and law in respect of recognition and enforcement of judgments from non-Member States. Brussels I Regulation is applicable in all Member States; including the United Kingdom, Ireland and Denmark (more to the applicability of Brussels I Regulation see e.g. Drličková, Kyselovská, 2011; Rozehnalová et al., 2013).

This paper examines the application of the Regulation by the courts in the Czech Republic during the last ten years of our membership in the EU. It is not possible

to examine every judicial decision. Therefore, this paper analyses the most important or interesting ones.

2. Recognition and Enforcement of Judgments under the Brussels I Regulation

The Czech courts have applied the Brussels I Regulation for almost ten years now. There is a considerable amount of case-law regarding its application.

In most cases, the Czech courts dealt mainly with following issues: the scope of application of Brussels I Regulation (Arts. 1 and 2); international jurisdiction in contractual and non-contractual relationships (Arts. 5/1 and 5/3); its relationship to other sources for recognition and enforcement of foreign judgments (bilateral and multilateral conventions and treaties as well as rules of national origin, Arts. 69 and following); recognition and enforcement of judgments (Arts. 32 – 56).

2.1 Scope of Application of Brussels I Regulation (with Regards to the Recognition and Enforcement)

As the Brussels I Regulation provides for rules on 1) jurisdiction and 2) recognition and enforcement of judgments, its scope of application can be examined from these two legal areas. This paper is focused on the scope of application for recognition and enforcement.

The Brussels I Regulation is applicable only to legal proceedings instituted and to documents formally drawn up or registered as authentic instruments after the entry into force, i.e. 1.3.2002. In the Czech Republic, the Brussels I Regulation is applicable from May 1, 2004. Both the legal proceedings and the documents shall be issued after the entry into force in both respective countries, i.e. both in the State, where the judgment was issued and in the State where recognition and enforcement is sought (Decision of the Supreme court, October 31, 2007, No 20 Cdo 2327/2006; Decision of the Supreme court, July 7, 2010, No 31 Cdo 2325/2008; Decision of the Supreme Court, March 3, 2007, No 20 Cdo 3102/2005; Decision of the Supreme Court, July 14, 2008, No 31 Cdo 2325/2008).

The Brussels I Regulation provides for recognition and enforcement of foreign judgments in civil and commercial matters. Its applicability is limited by virtue of Art. 1.

The nationality or domicile of the parties is of no importance. The relevant factor is the “nationality” of the judgment, which recognition and enforcement is sought. The Regulation only applies to judgments issued by courts of Member States (Magnus, Mankowski, 2007, p. 538). A judgment means “any judgment given by a court or tribunal of a Member State, whatever the judgment may be called, including a decree, order, decision or writ of execution, as well as the determination of costs or expenses by an officer of the court” (Art. 32).

2.2 Recognition and Enforcement of Judgments under the Brussels I Regulation

The process of recognition and enforcement of judgments consists of three steps: recognition; exequatur (*declaration of enforceability*); and enforcement.

2.1.1 Recognition of Judgments under the Brussels I Regulation

Under the Art. 33 of the Brussels I Regulation, “a judgment given in a Member State shall be recognized in the other Member State without any special procedure being required”. The recognition under Brussels I Regulation is a formal process, no additional conditions shall not be imposed on the parties.

2.1.2 Exequatur

Under Art. 38/1 of the Brussels I Regulation, “a judgment given a Member State and enforceable in the State shall be enforced in another Member State when, on the application of any interested party, it has been declared enforceable there.” The declaration of enforceability (exequatur) should ensure, that the judgment meets all the formal requirements provided for by the Brussels I Regulation.

“The judgment shall be declared enforceable immediately on completion of the formalities in Article 53 (production of the judgment and a form) without any review under Articles 34 and 35” (Art. 41). The party against whom enforcement is sought is not entitled to make any submissions on the application at this stage of proceedings. The exequatur is automatically granted. However, it may be appealed on the same grounds as for refusal of recognition and enforcement of a judgment.

Under the § 68c/1 Czech Act on Private International and Procedural Law, it is possible to file together with the application for exequatur also the application for enforcement of the judgment under a special act. In this case, the court will issue a single decision on both applications with separate reasoning. The court’s decision shall contain a legal reasoning, even if the decision decides only on one of the applications. According to paragraph 4 of this provision, decision shall not enter into force in the question of enforcement before the decision on exequatur.

“The judgment shall be declared enforceable immediately on completion of the formalities in Article 53 without any review under Articles 34 and 35. The party against whom enforcement is sought shall not at this stage of the proceedings be entitled to make any submissions to the application (Art. 41 of the Brussels I Regulation). If the claimant submits documents as required by Art. 53, 54 a 58 of the Brussels I Regulation and the judgment is enforceable in the country, where it was issued, the judgment will be enforced in the Czech Republic. The debtor of the judgment may appeal the enforceability of the judgment at the court that issued the decision. To file the appeal the debtor may use any appellate means allowed by the national law (Decision of the Supreme Court, March 24, 2011, No. 5180/2008; Decision of the Supreme Court February 7, 2011, No Cdo 4154/2008). According to the Supreme Court, this principle stems from the principle of mutual trust in the administration of justice (Recitals 16 and 17 of the Preamble to the Brussels I Regulation). The national enforcement court trust the accuracy of the data as stated

in the certificate issued by the first national court (Decision of the Supreme Court, October 27, 2011, No 20 Cdo 1722/2010).

Under Art. 44 of the Brussels I Regulation, “the judgment given on the appeal may be contested only by the appeal referred to in Annex IV.” Under the Czech law this appeal may be “dovolání” and “žaloba pro zmatečnost”.

“The court with which an appeal is lodged under Article 43 or Article 44 shall refuse or revoke a declaration of enforceability only on one of the grounds specified in Articles 34 and 35. It shall give its decision without delay” (Art. 45/1 Brussels I Regulation). The foreign judgment shall not be review on the merits (Art 45/2 Brussels I Regulation).

2.1.3 Enforcement of judgments under the Brussels I Regulation

Brussels I Regulation in Arts 34 a 35 provides for grounds for refusal of recognition.

Under Art 34/1 of the Brussels I Regulation “a judgment shall not be recognized if such recognition is manifestly contrary to public policy in the Member State in which recognition is sought.” This ground shall be used only in exceptional cases (Magnus, Mankowski, 2007, p. 568). In one case the Czech Supreme Court dealt with the issue of serving documents on the debtor of the judgment as contrary to public policy. Nevertheless, the court of the Member State, where enforcement is sought, is not entitled to challenge the enforceability of the underlying decision. Therefore, the possible inaccuracy in the delivery of documents cannot be considered as breach of public policy (Decision of the Supreme Court, March 24, 2011, No 20 Cdo 5180/2008).

Under Art. 34/2, „a judgment shall not be recognized where it was given in default of appearance, if the defendant was not served with the document which instituted the proceedings or with an equivalent document in sufficient time and in such a way as to enable him to arrange for his defense, unless the defendant failed to commence proceedings to challenge the judgment when it was possible for him to do so.“ This “possibility” of the defendant shall be interpreted as “possible... to bring proceedings to challenge a default judgment against him only if he was in fact acquainted with its contents, because it was served on him in sufficient time to enable him to arrange for his defense before the courts of the State in which the judgment was given” (Judgment of the European Court of Justice, ASML Netherlands BV v. Semiconductor Industry Services GmbH, Case C-283/05; Decision of the Supreme Court, July 2, 2011, No 20 Cdo 4154/2008).

This ground also shall not be examined by the national court ex offio, but only on the request of the party (Decision of the Supreme Court, October 27, 2011, No 20 Cdo 1722/2010; Decision of the Constitutional Court, April 25, 2006, No I ÚS/709/05).

In a recent decision, the Supreme Court dealt with a following case. Although the debtor of the judgment argued that the application for payment order and other documents to the given dispute had been delivered to a nonexistent address, respectively that these documents have been delivered late, and that consequently he could not properly defend himself, at the same time the debtor in the appellate

proceedings did not use any procedural defense. The appellate court therefore was not able to decide, whether there the conditions for refusal of recognition and enforcement are met (Decision of the Supreme Court, October 27, 2011, No 20 Cdo 1722/2010). Art. 34/2 does not necessarily require the receipt of the documents, but the actual observance of the rights of the defendant (Decision of the Supreme Court, July 14, 2008, No 20 Cdo 1747/2008).

3. Recognition and Enforcement of Judgments under the Brussels I Regulation Recast

The recognition and enforcement of judgments under the Brussels I Regulation is quite non-problematic. Nowadays, there is an extensive case-law of the Court of Justice of the European Union. Nevertheless, the EU has adopted yet another step towards more simpler and closer judicial cooperation and movement of judgments within the EU.

3.1 The Brussels I Recast

On 12 December 2012, the new Brussels I Regulation (Brussels I Regulation Recast) was adopted. It followed extensive negotiations during 2011 and 2012 on the current Brussels I Regulation. The Brussels I Regulation Recast will be applicable from 10 January 2015.

In summary, four most important amendments were adopted in the Brussels I Regulation Recast. They concern: arbitration; application to non-Member States (external situations); prorogation clauses and the abolition of exequatur.

This section deals with the amendments in the recognition and enforcement process.

3.2 Recognition and Enforcement of Judgments under the Brussels I Regulation Recast

The abolition of exequatur is considered to be the most important result of the whole recast. It was supported by all the Member States (Nielsen, p. 525).

Art. 36/1 of the Brussels I Regulation Recast provides that “a judgment given in a Member State shall be recognized in the other Member States without any special procedure being required.” Furthermore, the Brussels I Regulation Recast in the new Art. 39 states that “a judgment given in a Member State which is enforceable in that Member State shall be enforceable in the other Member States without any declaration of enforceability being required.” If any interested party requests it, the court of origin shall issue a certificate using the form set out in Annex I (see Art. 53 of the Brussels I Regulation Recast).

The abolition of exequatur means that the grounds for refusal of recognition and enforcement will be examined at the enforcement stage. As provided for by Art. 46 of the Brussels I Regulation Recast, “on the application of the person against whom enforcement is sought, the enforcement of a judgment shall be refused where one of the grounds referred to in Article 45 is found to exist.”

The automatic recognition of judgment may be contested by the judgment debtor. Art. 45/1 provides that on the application of any interested party, the recognition of a judgment shall be refused, if one or more grounds in Art. 45/1 is present. The procedure for refusal of recognition is the same as for refusal of enforcement (Art. 45/4 directly refers to Arts. 46 to 51 of the Brussels I Regulation Recast).

The judgment debtor is informed about the enforcement under Art. 43/1 that provides “where enforcement is sought of a judgment given in another Member State, the certificate issued pursuant to Article 53 shall be served on the person against whom the enforcement is sought prior to the first enforcement measure. The certificate shall be accompanied by the judgment, if not already served on that person.” The goal of this provision is to “inform the person against whom enforcement is sought of the enforcement of a judgment given in another Member State” (see Recital 32 of the Brussels I Regulation Recast). Furthermore, the same Recital provides that “certificate, if necessary accompanied by the judgment, should be served on that person in reasonable time before the first enforcement measure...” To assess, if the certificate should be accompanied by the judgment, depends on whether the judgment and its translation has been served on the debtor prior to the enforcement proceedings or not. If not, the debtor may request a translation of the judgment to fully exercise his rights. “This right may prolong the enforcement proceedings considerably” (Nielsen, 2013).

While the *exequatur* was abolished, the grounds for refusal of recognition and enforcement were maintained. Their structure, however, was slightly changed.

The grounds for refusal of recognition and enforcement are now to be found in Arts. 45 and 52 of the Brussels I Regulation Recast. The grounds for refusal of recognition and enforcement remained the same. The present Art. 35/1 (refusal of recognition and enforcement in case of non-compliance with the rules for exclusive jurisdiction) is now placed in Art. 45/1/e/i. This provision limits its application to cases where the defendant is the policyholder, the insured, a beneficiary of the insurance contract, the injured party, the consumer or the employee, which is in line with the purpose of the provision.

The Brussels I Regulation, however, does not provide for any time limits on the procedures. It is therefore possible for the debtor to prolong the procedure and by that impede in fact the aim of the Recast.

4. Conclusion

The Czech courts have been applying the Brussels I Regulation for almost ten years. As seen above, the application is according to the case-law and interpretation of relevant provisions of the Brussels I Regulation. But one can ask what does the future holds. The Brussels I Regulation Recast will have an important impact on the process of recognition and enforcement of foreign judgments within the EU Member States. The abolition of the *exequatur* should be welcomed as it makes recognition automatic. On the other hand, the Brussels I Regulation Recast by omission of time limits and providing for rather more complicated process for recognition and enforcement may

represent quite a challenge to the judicial cooperation and promoting of mutual trust among Member States.

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Crisis in the Eurozone – Case of Portugal

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Abstract

Article deals with the role of Portugal in the European Union and comparison of selected indicators of Portugal's economy to other countries of the European Union during the period of the accession of Portugal in 1986 to the present. We analyze the causes of the debt crisis in the Portuguese economy; ways of solving the crisis through provision of loans from the ECB, the IMF and the EU; anti-crisis measures; and the need to restructure the economy. Article also outlines the future of the Portuguese economy.

Keywords: *Causes, Consequences, Debt crisis, Position of Portugal in the European Union Solutions*

JEL Classification: *E20, H50, H62*

1. Introduction

This article deals with the role of Portugal in the European Union, namely with the causes of the debt crisis in the Portuguese economy.

Portugal joined the European Communities on 1 January 1986 under the so-called second southern enlargement. At the time of its accession, Portugal was one of the poorest Member States (Table 1). GDP p. c. amounted to only 3,713 USD. In terms of purchasing power with a value of 7,563 USD, Portugal was the poorest Member State of the European Communities. The difference between then richest country, Luxembourg, with GDP p. c. of 18,021 USD and Portugal was 4.85 times. The amount of GDP p. c. in 2013 was 106,406 USD in Luxembourg and 20,038 USD in Portugal (IMF [online], 2014). The difference between the richest and the poorest economies for the past nearly thirty years stayed almost unchanged, even slightly deteriorated. It is now 5.3 times, despite the fact that Portugal benefited during years of membership in the EC from many programs provided for poorer countries (Cohesion Fund) and poorer regions (Structural Funds).

During twenty-five years of membership in the European Communities, Portugal had benefited due to spending of almost 81 billion euros from the Cohesion Fund and the Structural Funds. 9,468 km of new highways were built, increasing the length of all the roads in Portugal 14-fold. In addition, 2,356 km of new railway lines, five football stadiums, 248 sewage disposal plants, 622 schools, etc. were built (Portocommerce [online], 2014).

Table 1: Nominal GDP per capita in U.S. dollars, data for 2013 = estimate

	Member State	1986	2013		Member State	1986	2013
1.	Belgium	14,561	43,618	15.	Luxembourg	18,021	106,406
2.	Bulgaria	-	7,006	16.	Malta	-	20,998
3.	Cyprus	-	26,389	17.	Hungary	-	12,652
4.	Czech Rep.	-	18,624	18.	Germany	14,912	41,866
5.	Denmark	16,881	56,426	19.	Poland	-	12,709
6.	Estonia	-	16,720	20.	Portugal	3,713	20,038
						7,563*	
7.	Finland	-	45,635	21.	Austria	-	46,643
8.	France	14,202	41,223	22.	Romania	-	7,939
9.	Greece	5,325	22,072	23.	Slovak Rep.	-	17,008
		11,056*					
10.	Netherlands	12,736	46,011	24.	Slovenia		20,100
11.	Croatia	-	12,829	25.	Spain	6,343	27,670
						10,355*	
12.	Ireland	7,826	45,984	26.	Sweden	-	54,815
		9,209*					
13.	Lithuania	-	14,009	27.	Italy	11,162	33,115
14.	Latvia	-	13,900	28.	United Kingdom	10,071	39,161

* GDP p. c. purchasing power parity

Source: www.imf.com

Use of funds from the European Union, however, did not lead to structural changes in the economy and ensuring a permanent economic growth. Portugal economy was heavily dependent on foreign markets, with a chronic deficit in the current account. This situation has not changed with no increase competitiveness in world markets.

Significant differences were maintained between coastal and inland regions, between urban and rural areas, between rich and poor citizens. Two poorest regions of Portugal hardly achieve half the average level of GDP p.c. of the European Union – Norte (15,800 euros - 49.9%) and Centro (16,300 euros - 50.9%). Lisbon, the richest region, with a GDP p.c. in PPP of 27,400 euros reaches 107% and Madeira with 25,500 euros reaches 100% of the EU average (Eurostat [online], 2014).

A large part of the funds received from the EU budget was used inefficiently. From 2014 to 2020, Portugal should receive 27.8 billion euros, which is 2.9% of the EU budget expenditure in this seven-year period (MZVaEZ [online], 2014).

According to Prof. Ricardo Reis of Columbia University, Portuguese economy shows several negative characteristics, which resulted in a crisis. These include low education levels, low labor productivity compared to more developed EU members,

enormous state apparatus, and complex mechanism of the functioning of the labor market heavy on the dismissal costs, inefficient legal system and low competitiveness in world markets (FINWEB [online], 2014).

2. General Causes of Crisis in the Eurozone

Global economic growth in the beginning of the first decade of the 21st century was accompanied by high economic growth in the southern periphery of the Eurozone. There was a differentiation in achieved macroeconomic indicators in the two groups of the Eurozone countries – namely the so-called developed core and the periphery of the Eurozone. Optimistic expectations of consumers and investors led to a willingness to take risks and to increase indebtedness. Wages grew faster in the periphery. For comparison, we provide examples of Germany and Portugal. Unit labor costs for the period 1995-2010 in Portugal increased by almost 50%, while in the same period in Germany by only 6% (FINMAG [online], 2014). Labor productivity growth in Portugal did not correspond to the increase in wages. Competitiveness of the Portuguese economy in the world markets began to decline. In "periphery" states, deficits grew and inflation increased. The real value of interest rates in the countries of the periphery was higher due to higher inflation, than for example in Germany, even though the nominal values were almost the same. This situation on the financial market attracted investors from countries with lower real interest rates to invest in countries of the periphery. Capital inflows to the states of "periphery" increased demand and inflation. Public finance deficit also increased. In Portugal, the budget deficit reached 10% of GDP in 2008 (Webeconomy [online], 2014). Deficits in peripheral countries were financed by capital flows from "rich" Eurozone countries, especially from Germany.

3. Debt of Portugal

Portugal belongs, along with Greece and Spain, among the most heavily indebted Eurozone states. It was the third Eurozone country affected by the debt crisis. The debt crisis in some euro area countries was triggered by excessive credit growth and large inefficient investments mainly in construction. The case of Portugal differs from the crisis factors of other indebted Eurozone countries.

According to Prof. Ricardo Reis of Columbia University, there are two causes that led to the crisis in Portugal. The first was the shock of large capital inflows and integration of markets after joining the euro area. Insufficiently developed financial market inefficiently used finance that promoted non-productive sectors and did not lead to increase in labor productivity. The second was a one-time tax increase caused by earlier government commitment to increase pensions. The increase in taxes (such as electricity and gas) had a negative impact on economic activity and consequently on employment and living standards (FINWEB [online], 2014). Table 2 shows the unemployment rate in Portugal, which reached relatively low values at the end of the last decade of the last century. A massive funding from the Cohesion Fund and the Structural Funds generating new jobs triggered this low unemployment rate.

Following the EU enlargement in 2004 and 2007, the funds decreased and unemployment increased. This was, however, only one of the factors increasing respectively reducing unemployment in Portugal.

Table 2: Unemployment Rate in Portugal, in percent

1999	2000	2002	2003	2004	2005	2006
4.6	4.3	4.7	6.4	6.5	7.6	7.6
2007	2008	2009	2010	2011	2012	2013
8.0	8.1	9.5	10.7	12.7	15.7	17.3

Source: www.mundi.com

As we analyze the crisis in Portugal, one of the causes was the decline in foreign trade, which in 2011 showed a deficit of 8.75% of GDP. Another reason for the crisis in Portugal has been a chronic deficit in the current account (Table 3) due to its low competitiveness in world markets (FINMAG [online], 2014). In early 2008, the trade balance showed a deficit of 1,400 million euros. By early 2010, the deficit increased to 2,400 million euros. Then it began to consolidate. In the beginning of 2014, trade balance deficit reached 926 million euros (Tradingeconomics [online], 2014).

Table 3: Current Account Deficit as Percent of GDP

2005	2006	2007	2008	2009	2010	2011	2012
-10.3	-10.7	-10.1	-12.6	-10.9	-9.9	-7.0	-1.5

Source: www.oecd-library.org

Since 2005, the government deficit increased (Table 5). Actual consolidated budget deficit of Portugal was much higher than the official one. Since 2005, the government set up several companies whose purpose was to move out the state budget deficit (Table 4) from national accounts. For example Refer, CP, Metro de Lisboa, and others (Penize [online], 2014).

Table 4: Budget Deficit as percent of GDP

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
-4.8	-3.4	-3.7	-4.0	-6.5	-4.6	-3.1	-3.6	-10.2	-9.8	-4.2	-6.4

Source: www.oecd-library.org

Table 5: General Government Debt as percent of GDP

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
53.8	56.8	59.4	61.9	67.7	69.4	68.4	71.7	83.7	94.0	108.2	124.1

Source: www.eurostat.eu

Portugal borrowed on international markets for 10% interest rates. This situation was unbearable for the Portuguese government; therefore, it requested the financial assistance from the European Central Bank, the European Commission, and the International Monetary Fund – so-called Troika – in April 2011. In May, the Portuguese government signed a Memorandum of Understanding under which Portugal was granted aid amounting to 78 billion euros (26 billion euros from

the European Financial Stability Facility for the years 2011 to 2014, 26 billion euros from the European Financial Stability Facility, and 26 billion from the IMF) (MZVaEZ [online], 2014). These sources were obtained on considerably more favorable financial terms (3.25% interest rate for the first years with increase to 4.25% in case of default) (Euractiv [online], 2014).

Portugal was eligible for the aid only in case of adopting strict austerity measures. The country significantly reduced government spending and undertook further austerity measures. For example, four out of fourteen holidays were canceled. Portugal must reform the public sector to ensure its long-term sustainability. Social spending was significantly reduced which subsequently saw the protests of citizens. Minister of finance, who prepared strict anti-crisis actions to stimulate economic growth, while policy at issue did not bear the expected results, resigned from office and admitted that the measures do not have systematic character. Instead, they solve only short-term deficit financing. To protest against austerity measures also foreign minister Paolo Portas, leader of the People's Party, which formed a governing coalition with the Social-Democratic party, resigned from his office. This situation triggered a political crisis in Portugal.

Portugal has adopted other measures for improving the economic situation and decreasing deficit financing. In 2012, amendments were made to the law on immigration. The First Amendment concerned the introduction of so-called blue card of the European Union, under which foreign highly qualified professionals may obtain a permission to stay longer than three months. The Second Amendment was to attract foreign investors and to simplify the procedure for them to obtain permanent residence in Portugal, which is bound to investing the amount of at least 1 million euros, creating at least 30 new jobs, or real estate purchasing worth at least 500,000 euros over five years (Gaiphera [online], 2014).

Portugal would like to return to economic stability. Devastated labor market is one of the main causes of the crisis. Five years of crisis and austerity regime left their consequences that will have to be dealt with in the long run. In 2000, unemployment in Portugal stood at 4%. In 2008, it increased to 7.7%. In 2013, unemployment reached 17% (Newsland [online], 2014).

Lower private consumption due to austerity measures and lower export growth pose risks for further growth in Portugal. Lower economic growth may impair compliance with the budgetary targets.

4. Conclusion

In recent years, that is since the beginning of the debt crisis, "periphery" states embarked on structural changes, especially in the public sector and the labor market. These reforms will assist in the future to change the economic structure of these countries. The positive results of this process, however, can be expected only in the medium term. Although Portugal exhibits the highest growth in the European Union in the end of 2013 and in first months of 2014, the fundamental structural change has not yet occurred. Solving the crisis only through spending cuts does not solve the long-

term problems of the economy. Therefore, not only Portugal but also other Eurozone countries affected by the crisis will have to deal with the strategic objectives of their economic policy more seriously than ever before.

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Export Performance and Transformational Performance as Measurable Indicators of Macroeconomic Competitiveness Regarding Selected EU Countries and Switzerland

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Abstract

Export performance and transformational performance are indicators for measuring outputs through which (among others) macroeconomic competitiveness is reported. Currently, macroeconomic competitiveness is understood not only as export performance of countries associated with their ability to produce goods and services that succeed in international markets, but also as the ability to maintain and enhance a high and sustainable level of economies. This paper aims to determine the macroeconomic competitiveness of selected EU economies, namely the Czech Republic, Poland, Austria and Germany and one non-EU country – Switzerland, by the use of comparative method. This paper also analyses above-mentioned competitiveness indicators between 2001 and 2009 and aims to determine a relationship between those indicators by using correlation analysis.

Keywords: *Comparison, Correlation, Economic competitiveness, Export performance, Transformative performance*

JEL Classification: *F14, O11, O57*

1. Introduction

Competitiveness of the economy has been a widely discussed topic in the last few decades. The ability to compete means to succeed in the market with other entities. Competitiveness can be applied to the economy as a whole, but also to the region (see Kiszová and Nevima, 2012, Heijman et al., 2012 or Boháčková and Svatošová, 2012) or the company. The first named level of competitiveness will be analysed in this paper, and so macroeconomic competitiveness, through selected measurable aggregates, which are export performance and transformational performance. This competitiveness is a relative value, and therefore must be constantly compared with other economies and regions (Margan, 2012). Within the comparison the aggregates of the Czech Republic, Germany, Poland, Austria and Switzerland will be compared in the paper, in the years 2001 to 2009. The selection of these economies was not random, because it was necessary to select the correct appropriate sample of countries. The selection was of small economies (in terms of competitiveness, one high level, one middle level and one lower level), one medium and one large economy. The selected countries meet these criteria and thus form a corresponding group of countries. Data have been used from the databases of Eurostat (2013) and the OECD (2008, 2010, 2011) in this paper.

Macroeconomic competitiveness was initially synonymous with export performance, and its evaluation and testing was also performed on that basis. Over time, this narrower concept has been replaced by a broader concept that includes the concept of competitiveness as the ability not only to produce goods and services that will succeed in the international market, but also the ability to maintain and enhance a high and sustainable level of economies (Outrata, 2012). According to Hindls et al. (2003), if the economy is able to penetrate foreign markets and international trade to gain comparative advantages, it is competitive. The second concept is referred to according to Slaný et al. (2006) as aggregate competitiveness, which is based on the growth of productivity through the growth of macroeconomic indicators, living standards and employment, but where all of these variables must have a sustainable basis.

International competitiveness is measured by two kinds of indicators, both those measurable, quantitative, to which we rank the indicators of inputs (costs) and outputs (measure results) as well as non-measurable, in other words, qualitative. Measurable data include only part of competitiveness and are calculated on the basis of hard data. Non-measurable indicators, respectively those difficult to measure, include comprehensive competitiveness of the economy and use both hard data and soft data (questionnaire surveys to capture indicators that can not be measured with hard data), which may be on the basis of subjective views of correspondents misrepresented.

The aim of this paper is to confirm or refute the hypothesis of the existence of a positive correlation between selected "output" indicators, namely between export performance and transformational performance. In addition to the comparative method, the methods of correlation and regression analysis are used.

2. Problem Formulation

As mentioned above, the measurable indicators of competitiveness are the "input" indicators, to which we rank analysis of unit labour costs, labour productivity, relative prices and the real effective exchange rate. This group is not to dealing, selected "output" indicators will be analysed among which we rank:

- the degree of openness of the economy and the export performance of the economy
- intensity and structure through specialisation indicator of relative specialisation
- value-added exports through transformational effect per unit (kilogram) export prices.

2.1 Export Performance of Economy

Export Performance (EP) is the productivity of the economy in foreign trade. Higher values of EP correlated with greater competitiveness of the economy (Plchová, 2011 or Slaný, 2006) and their share of the world market (Cheptea et al., 2012). According to Rojíček (2010), successful export performance is vital for some economies (e.g. Czech Republic).

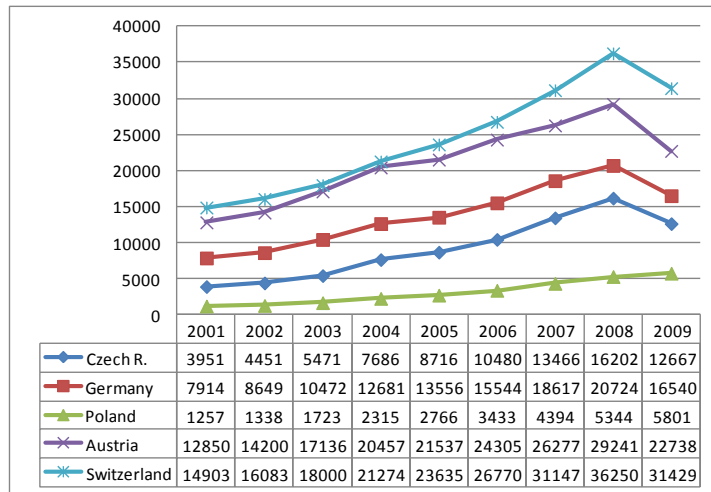
Export performance is measured by the volume of exports per capita (see equation 1). This indicator should grow in every country, and differences in this indicator demonstrate the ability of countries to participate in international division of labour and benefit from it.

$$EP = \frac{EX}{C} \tag{1}$$

where *EX* is the value of exports and *C* is the number of inhabitants.

It is generally assumed that the values of indicators of export performance are dependent on the size of the economy, meaning namely that the smaller the economy is, the higher the level of export performance should be achieved compared to a large economy. As we can see from Figure 1, this assumption is valid in these economies, as the smallest performance is achieved by the second largest monitored economy (Poland) and the highest performance is achieved by the smallest economies (Switzerland). Among them are the Czech Republic, Germany and Austria. There is widening of the gap in this expression of competitiveness. Poland has stagnated, Switzerland and Austria showed substantial progression (the lagged impact of the economic crisis of the developed world).

Figure 1: Development of Export Performance of the Compared Economies



Source: Source: author’s calculations according to Nezval and Majerová (2013)

2.2 Added Value of Exports

In addition to the productivity of exports, an analysis of its effectiveness will also be subjected. This efficiency is expressed by a transformational performance indicator that represents added value with processing of imports and reflects the ability of the extent of their appreciation. The same rule is applied as for the previous indicator - the higher the indicator, the higher value added exports per capita, the higher the efficiency and competitiveness. Like the indicator of export performance,

this relationship is expressed though the difference of manufactured products' exports and the import of primary production per capita:

$$TP = \frac{X_z - I_p}{C} \quad (2)$$

where X_z is export of manufactured products (SITC 5-8) and I_p represents the import of primary production, C is number of inhabitants.

As Table 1 shows, the added value of exports per capita is the highest in Switzerland, in comparison with other economies by almost half, and in the case of Poland consists nearly ten times the added value. The second economy in the order is Austria, followed by Germany, the Czech Republic and Poland. The most improvement was in the Czech Republic, whose added value more than doubled in the period, and other formerly centrally planned economies also achieved similar improvements, but their level is still low.

Table 1: Transformational Performance in Euros

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czech Rep.	2,800	3,187	3,356	4,439	4,799	5,789	7,007	7,432	6,046
Germany	6,163	6,359	6,387	7,032	7,264	8,045	9,018	8,708	7,394
Poland	688	782	867	1,083	1,250	1,582	1,854	2,015	1,809
Austria	7,751	8,054	8,164	8,821	8,641	9,607	10,501	10,326	8,358
Switzerland	11,057	11,285	10,677	11,332	11,846	12,922	13,899	14,539	13,336

Source: author's calculations according to Eurostat (2013)

3. Problem Solution

Now, a correlation has been made of mutual linkages of measurable aggregates of macroeconomic competitiveness both in individual years for all economies together, as well as in individual economies for the period 2001-2009. The export performance and transformational performance are correlated, and the information is supposed to show the relationship between the intensity of foreign trade and value-added exports.

Correlations were performed using Pearson's correlation coefficient (see equation 3), on two levels of significance $\alpha = 0,05$ and $\alpha = 0,01$. By using the Pearson correlation coefficient r the assumption should be fulfilled that both variables are random variables and have a common two-dimensional normal distribution - then a correlation coefficient of zero means that the variables are independent, with a value of one factor shows the absolute dependence of the monitored variables.

$$r_{xy} = \frac{\sum_i (x_i - \bar{x})(y_i - \bar{y})}{(n-1)s_x s_y} \quad (3)$$

where n is the number of measurement, i is 1, ..., n , x_i , y_i are normally distributed random variables X and Y , \bar{x} , \bar{y} are average values and s_x , s_y are standard deviations.

A correlation of all economies in each year was made as a first, as is shown in Table 2. Here it applies that $0.71 < r \leq 0.799$ for the level of significance of $\alpha = 0.05$ and the value of $r > 0.8$ corresponds to a significance level of $\alpha = 0.01$. Between the exports of high-technology products and value-added exports, there is a positive correlation, in all the years at a significance level of $\alpha = 0.01$.

Table 2: Coefficients of Correlation and Determination in All Economies in the Years 2001-2009

	r	α	R²
2001	0.982158	**	0.9646
2002	0.980284	**	0.961
2003	0.977955	**	0.9564
2004	0.975301	**	0.9512
2005	0.970512	**	0.9419
2006	0.971781	**	0.9444
2007	0.983579	**	0.9674
2008	0.983869	**	0.968
2009	0.981738	**	0.9638

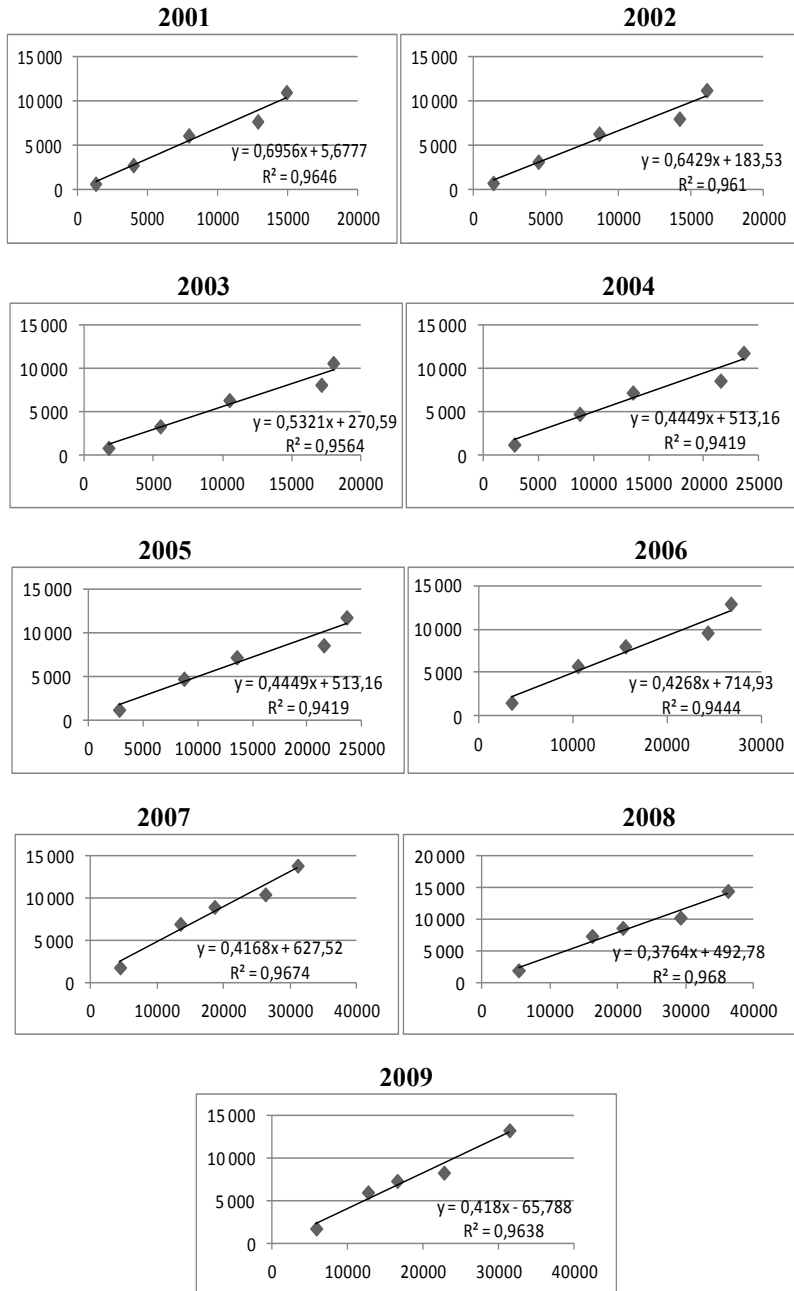
*for $\alpha=0,05$, **for $\alpha=0,01$

Source: author's calculations

Although the time series is shorter, it can show us tightness of linkages and a certain linear trend. The coefficients of determination R^2 which are used for numerical expression of depending tightness should exceed the value of 0.75 so that such tightness has been statistically proven. If we look in Table 2, the relationship between export performance and transformation efficiency complies with this requirement.

After the calculation of regression coefficients it was verified whether the calculated linear trend model shows the data through graphical illustration (Figure 2) that shows only links with high tightness. The figure shows the trend and the dependence of export performance, which appears on the axis X and transformational performance that appears on the axis Y. As we can see, the strong bilateral dependence exists between the intensity of foreign trade and the added value of exports. The increase in the export performance of the unit would cause a halved increase of transformation efficiency. Something very interesting is the downward trend through the years. Ever since 2001, this mutual marginal linkage (expressed as a variable b in these function) has been gradually decreasing – the lowest was in the crisis years, but in 2009 a rising trend is again apparent. The cause we can see in sensitivity of the analyzed variables to fluctuations in the world economy, in this case the decline in the value of international trade, which itself reacts very intensively and in advance to such situations, such crises are.

Figure 2: Regression Analysis of Export Performance and Transformational Performance of Economies in Individual Years



Source: author's calculations

As the above analyzed variables showed in each year a close relationship arose option to examine whether this linkage is significant in the observed economies in each year from 2001 to 2009 as well as. Therefore, in the next step reciprocal linkages were analysed of the whole monitoring period in the Czech Republic, Germany, Poland,

Austria and Switzerland in particular. The results were similar. Here it applies that $0.85 < r \leq 0.93$ for the level of significance $\alpha = 0.05$ and $r > 0.93$ corresponds to a significance level of $\alpha = 0.01$. Table 3 presents the coefficients of correlation and determination for reciprocal linkages of export and transformational performance. Results of dependence of competitiveness indicators are statistically significant, ranging at the significance level of $\alpha = 0.01$, with the exception of Austria. Austria's linkages are surprising and show that the results cannot confirm the view that the mutual relations of measurable indicators are affected by, for example, the political climate in the past or the size of the economy.

Table 3: Coefficients of Correlation and Determination in the Monitored Period in Individual Economies

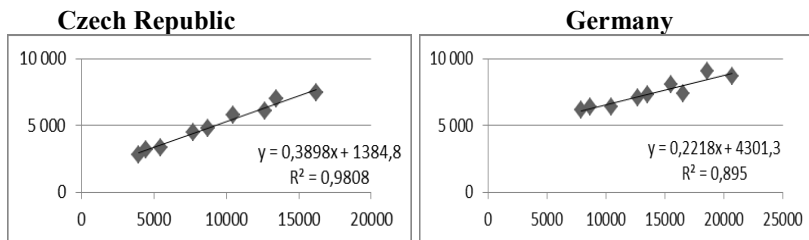
	r	α	R ²
Czech Rep.	0.990337	**	0.9808
Germany	0.946043	**	0.895
Poland	0.961468	**	0.9244
Austria	0.90241	**	0.8143
Switzerland	0.960947	**	0.9234

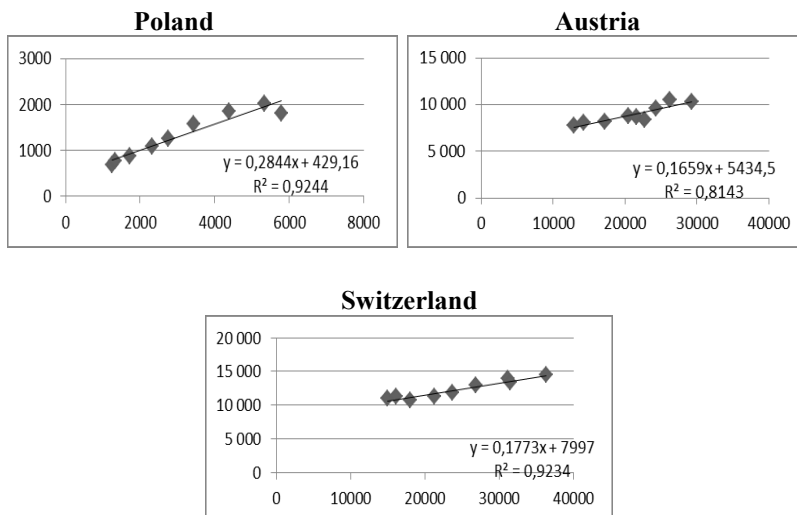
*for $\alpha=0,05$, **for $\alpha=0,01$

Source: author's calculations

Export performance (X axis) and the transformational performance (Y axis) represent the correlated linkages shown in Figure 3. The intensity of foreign trade affects the value-added exports, although not so significantly. The increase in the export performance of one unit would result in an average increase of about 25% of transformational performance (the highest in the Czech Republic, the lowest in Austria). Low value-added export value can also be traced from the linear function in the event that the intensity of foreign trade was at low levels.

Figure 3: Correlation of Export Performance and Transformational Performance of the Economies





Source: author's calculations

4. Conclusion

Economic competitiveness was initially synonymous with export performance, and its evaluation and testing was also performed on that basis. Over time, this narrower concept has been replaced by a broader concept that includes the concept of competitiveness as the ability not only to produce goods and services that will succeed in the international market, but also the ability to maintain and enhance a high level of sustainable economies.

In terms of monitoring these two output indicators, the best results were achieved by Switzerland, followed by Austria and Germany. The Czech Republic ranked fourth place, and Poland ranked in last place. The order of economies does not correspond with the generally perceived rule: "The larger the economy the more competitive it is."

Regarding the hypothesis of the interdependence of measurable output indicators of competitiveness, a strong linkage was found between export performance, which reflects the productivity of foreign trade, and transformation performance, which reflects the value-added exports, as in the analysis of each year, so in the analysis of individual economies. The estimated hypothesis was thus confirmed.

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What Is the Perspective Eurozone and Why Is Important Bank Union

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Abstract

After all those problems about an increase EFSF can be expected to write off the debt of other troubled countries could come as early 2014/15 year. This fact may contribute to the need for further capital injections into European Banks, increasing the debt of the European Financial Stability Fund (EFSF) and other loans from the IMF. Europe would have had to become the Union's stability and the condition that they have must to deal with debt and low competitiveness in the Eurozone. It will be very important functioning of Banking Union across the EU. The partial revision of the Lisbon Constitution, the strong and tremendously ECB, and the establishment of a joint Ministry of Finance to carry out the necessary economic - financial reform they can reach prosperity.

Keywords: *Banking Union, Financial crisis, EU, Eurozone, Perspectives*

JEL Classification: *E51, G21, G28*

1. Introduction

Stability, growth and prosperity in Europe is the slogan of the EU. The basis of the EU economy is, creates growth, well-functioning economic, monetary union and a strong and stable euro (*EC, GD, 2013*). And what happened today? According to the latest Eurostat data, the economic crisis in the EU Eurozone and improved. The deficit cannot press the desired maximum 3% of GDP and public debt continues to grow (*Česká spořitelna, 2013, www: europa.eu., a www:euractiv.cz.,2013*). Unfortunately, in all the economies in which the European Commission, ECB and IMF cuts of strict public debt grew very rapidly (*except Greece, which private creditors write off part of the debt*).

According to estimates EC has in EU the GDP of the euro area in 2014, an increase of 1.1% and 1.7% in 2015, (*EK, Prognóza, 2014*). In 2015 it had all the Member States under the EC should have positive growth (*excluding Cyprus and Slovenia*). The driving force of growth should be mainly increasing domestic demand. The recovery of the economy should be reflected also in the future reduce unemployment, which will result in a delay in the growth of GDP. Year 2014/15 will be marked by the strengthening of world economic growth, which will also affect the investment. From traditional global economies are best poised USA and Great Britain.

Growth in the euro area for them then you probably also in 2014/15 significantly lag more (*www:ihned.cz, www:steresources.worldbank.org, www:worldbank.org, www:patria.cz, www:novinky.cz*). Eurozone economy in the last quarter of renewed

annual growth rate of 0.5% and its growth over the previous quarter accelerated to 0.3%. For the full year 2013, but ended in a decline in the euro area by 0.4% (*Eurostat, 2014, www:novinky.cz*). Japan will be another year of economic stagnation (*Vojtěch Benda, 2014, www: ekonom.ihned.cz*).

The main risks for the future development of the world economy by banks represent the economic situation in the euro area and fiscal uncertainty in the U.S. (*World Bank, 2013, www.worldbank.org*). We expect in the near future, that the EU and Eurozone got out of the economic - financial crisis? The prospect of the EU has never before been so no chance as in recent years. I ask myself, what is with the integrative power of the states that developed into increasingly less modernizing, more time in the new blocking system and no system based on solidarity and on myself sometimes skeptical guarded 28 countries Member states. Also, Euro which in one side is bigger and stronger (*example for Germany, Austria, Netherlands*) and in other side he is the latter unable competition and unstable in some countries (*Spain, Portugal, Slovenia, Greece, etc.*). Personally, I see no signs of equal living and working conditions, social systems that show how perspective in the global competition and prospects for its citizens especially young people.

Not only the population of Greece, Spain, Slovenia, Czech and longer state of the EU is experiencing in recent years problem in Europe because is radically different social system, wages, pensions and people often take a poor quality job. Lose much of their young citizens who see no other prospect than going for it end take any job, if at all! I have experienced that the main obstacle to job ignorance of the rules or a lack of understanding of the complexity of the rules that apply for example in Germany. Newly arrived workers do not know who to turn to problems. The problem is that, as Germany has its own rules regarding work for workers with other EU States in Germany. EC prepared some suggestions, in my opinion, insufficient (*www:europa.eu. 2013, www.euroactiv.cz*). If today someone has the lion's share of the deterioration of relations between the peoples of Europe, it is the Eurozone and its euro held, whether it is worth what it costs, and enforcement to further integration into centralized federal structure of the United States of Europe. He dreamed about them Napoleon Bonaparte (*Pavel Páral, 2012*).

However, the same truth is that the founding fathers and since the Treaty of Rome has always been the idea that economic integration will result in political integration and the creation of a European super-state, which is equivalent to counterbalance both the U.S. and the Soviet Union. And in this super recover lost international influence especially French, hand in hand with the Germans. For me, Euro meanwhile destabilized in the first crisis that has befallen the whole of Europe, and leads, in contrast to the earlier system of nation-states, the divergence of national economies, and the deterioration of relations between nations.

Financial crises tend to start suddenly and surprisingly end. The euro crisis broke out three years ago when Greece became a cause of concern among politicians and cause for excitement among financial managers.

This means that the crisis is over? The usual ratio of the financial crisis is about three years long. A year after the collapse of Lehman Brothers in September 2008 was able

to restore confidence in the financial system of the United States and began to recover. A little more than a year after the debacle of the exchange rate in 1997 caused the worst recession Asian economies over the last few decades, have said the economy is prospering (*Jean Pisani, 2013*). Reached, thus the Eurozone finally inflection point? Maybe yes maybe not. The current changes in market sentiments also motivate two significant policy decisions and to:

a) European leaders in June 2012 agreed on a major renovation Eurozone. Running the Banking Union, where transferred to the European level responsibility for supervising banks and ultimately for solutions to their problems and recapitalization have expressed readiness to address systemic weakness in the construction of EMU.

b) ECB adopted starting your new plan "direct monetary transactions" (Outright Monetary Transactions - OMT) in September 2012 the responsibility for maintaining the integrity of the euro area. Program OMT was a serious commitment and it also markets so interpretation interaction for, especially when it despite the opposition of the Bundesbank supported by German Chancellor Angela Merkel (*J. Pisani Ferry: HN, 2013*). In addition, € 55.0 billion to the store will carry up to 10 years, which is a long time!

2. Relations between Nations in Europe and Maybe Collapse of Eurozone?

Historically see the path to political union across the monetary union. In 1950, French economist Jacques Rueff, advisor to Charles de Gaulle, says: "L'Europe is fera par la monnaie, ou is not fera." (*Europe is done by money, or is not done.*). In addition, the momentum for economic reform does not come from the EU, rather than national governments, which is one of the most successful examples of "Agenda 2010", which was launched ten years ago, which sought German Chancellor Gerhard Schröder.

A number of academic studies that are based on the work of American economic historian Douglass North, support the idea that the basis for technological progress and economic growth is also important competition between countries and regions. Weakness centralized approach was confirmed by the complete failure of the Lisbon Treaty in March 2000, which should make the EU "the most competitive and dynamic knowledge-based economy and research base in the world" (*Otmar Issing, 2013*).

The crisis, in which "Europe" is, is not so much the result of political union, but rather a result of European economic and monetary union. Many European leaders believe that the Eurozone crisis shows the need for "more Europe" and the ultimate goal is to be a complete political union. According to the history of wars and ideological differences, taking into account the challenges of today's globalization is the importance of tranquility, prosperous and united Europe with an authoritative influence in international politics very desirable. However, the EU is unfortunately wide disagreement on how to achieve this. Respect for the rights and the legality of the law is a fundamental pillar of successful functioning of European civilization.

Officials say that even if some countries receiving bailout loan not part of the borrowed money back returns to the Eurozone. Another alternative - a breakup of the Eurozone - would be much more expensive than any loss of conservation

programs. The study, commissioned by the German Bertelsmann Stiftung Foundation, showed that if Germany should return to DM, he would have his annual GDP between 2013 and 2025 by 0.5% points lower.

It would be during these 13 years has meant a loss of € 1.2 billion - half the size of the German economy in 2012 and caused the loss of 200.000 jobs. Germany would lose its international competitiveness (*www:bertelsmann-stiftung.de., 2013, www:ec.europa.eu, 2013*). In the longer study German insurance giant Allianz has calculated that Berlin in 2010-2012 saved € 10.2 billion thanks to cheaper credit costs. The yield of ten-year government bond yield is decreased from 3.39% to 1.18% today. "If we add the benefits of the interest rates of the period 2010-2012 and those which will benefit Germany in the coming years, we will get in terms of estimated accrued interest to the amount of € 67 billion, which will be a relief for the German budget," said Allianz in report in September 2012. But another study by Jens Boysen - Hogrefea of economic IFW Institute suggests that the German federal budget in 2011 saved € 8.6 billion due to lower interest rates, ECB and investors in Germany, considered a safe place to put their money. These savings increased in 2012 to € 9.6 billion and a pure effect "safe harbor" will have this value of 2 billion €, says IFW (*Tomáš Prouza, 2013*). In 2012, a British research institute, National Institute of Economic and Social Research very interesting analysis. Compared to the economic development during the great crisis of the thirties years with the development of the crisis 2008. And the result was certainly not flattering for today's politics - Britain, Spain and Italy in the thirties showed a much faster recovery than the current crisis.

The reasons are obviously more, but mainly was (*and still is*) senseless policy "- policy of responsibility" at a time when the economy needed to start and rolling needs structural changes. It was (*and still is*) a special watch as politicians pushed his unsubstantiated plans regardless of the obvious economic analysis demonstrating the harmfulness of this policy. It was while on a "leftist" analysis, which would be off the table waved a contemptuous phrase of outdated ideology, but the results of the work of a number of recognized institutions including the IMF (*www.novinky.cz, 2013*).

Politics is lagging behind the economy and lags behind the development of the markets. The economic and social situation in Southern Europe is bad, either way will remain bleak for several years. In early situation faced by southern European countries a real threat of lost decade: according to the IMF that the GDP per capita in 2013 was lower than in 2007. And if there is no lasting economic improvement, remains ever-present as well as political risk. Political unrest in any southern European country would yet be sufficient to re-fuel the doubts about the future of the Eurozone. Competitiveness of France and the gap between the economic performance and the performance of Germany is also a growing cause for concern.

The fact is that in Europe there is only limited consensus on the question of exactly what it takes to make the monetary union to be more flexible and prosperous. Union Bank is a positive development, but there is no agreement on other reforms, such as joint or common fiscal policy of the Ministry of Finance. In particular, northern Europe on crisis reinterpreted primarily as a result of inability to enforce existing rules, in particular the criteria for EU fiscal stability. Southern Europe has tended to be

contrary to the crisis rather as the result of systemic defects. Northern Europe in addition considers tightening of all reforms, while southern Europe is concerned that the government may not have enough political capital to be able to do all time.

To economies Union managed the crisis as quickly as possible to recover, the EU must respond flexibly to new situations (*for example, the relative loss of competitiveness within the euro area*). Otherwise there is a gradual decline in the region between the countries of the second order. Europe is also characterized by very high taxation and generous social welfare system hampering growth rate of (*Xavier Sala – Martin, 2013*). More about this, show data on the internet (*www.imd.org., 2012*).

What is needed is to me prepare for radical reform of the Eurozone where a monetary union should yield (give up) a significant part of its budgetary sovereignty Brussels and the euro area should be own parliament. This is one of the possible ways to address the financial crisis in Eurozone.

The core of the reform is to be change in fiscal policy. Governments have suggestions of their domestic budgets first to submit Brussels for approval. If there were excessive deficit, the Commission may apply against such a veto (*Handelsblatt, 2012*).

In the direction of "muddling through" the policy continues to attempt to avert the impending collapse, while financial markets will subside primarily ECB intervention, without, however, held diverted from real economic saving rate. This direction precipitating Eurozone recession in 2012, which due to ever new austerity measures and adverse developments in the global economy (*a drop in the U.S., problems in developing countries*) it will be probably continue in 2014/15. Will the policy of the ruling circumnavigate all the pitfalls leading to a collapse in the euro area could be from the 2014/2015 budgets in the southern countries consolidate. Based on the decline in interest rates, improved economic competitive conditions outside and the consolidated public budgets could then occur in southern Europe, a new phase of economic growth.

Short-term stabilization of financial markets, at this rate combined with a decline in the real economy in 2014/15. The governing policy is at this acrobatic act several times threatened collapse. Of the various economic, social and political reasons, this can be path fail. If it can be, however, to avoid all these pitfalls could be stabilizing since 2014/15 fait accompli. At this time could be public budgets in the southern states largely consolidated, so that phase throttling public demand was terminated. Massive reduction in real wages could the international competitiveness of these countries until considerably increase. Finally, could also reduce medium and long-term interest contribute to a substantial improvement of investment conditions (*Platzer Hans, 2012*).

3. Collapse Eurozone? Or need Eurozone Banking Union?

Indeed imminent collapse of the Eurozone? Although they are already in the prevailing economic development direction confused collapse (*muddling through*) the consequences for the European social model very negative, there would be a collapse

of the euro zone directly catastrophic. This catastrophic scenario is not just, it's an evolutionary perspective, the probability is from spring 2012 month after month increases. In case the result of the collapse of the euro can be described.

Breaking (collapse) the euro area countries with currency appreciation Germany, the Netherlands and Austria led to a drop in exports, as well as a decline in employment growth. In southern countries would be depreciated currency due to an exploding national debt and rising interest burden on state bankruptcy could no longer be avoided. Access to international financial markets would remain closed to these countries. Income and employment would dramatically dropped. As a result of growing economic problems in the north and south countries would be most likely occurred as a new protectionism and thus to split the single market. EU would be end. That would also be the end of the European social model, national levels end prosperous country as we know it?

What is needed is a paradigm shift. Finally, it is also conceivable that the EU out of the crisis instruct you give up the policy of austerity and fill the gaps of the Maastricht Treaty. This third way cannot be excluded from the policy. The concept of the President of the European Council, Herman van Rompuy, who was re-established at the June 2013 summit, this trend suggests at least in terms of institutional reforms (*Platzer: 2012*).

Measures to stabilize the economic situation in Germany, could be strengthened calls for the release of austerity policies in southern Europe and a major paradigm go shift in Europe. It is high time to break the logic of the Maastricht Treaty and stabilize a radical change of policy in Europe. In addition to re-regulate the financial markets are important elements of such an alternative *program's (Dullien Sebastian, 2011)*. European strategy for qualitative growth and reduce unemployment, European debt management, Pan-European coordination of wage, social and tax policy, and Transnational European Economic Government. It is necessary:

- First of all new European strategy of qualitative growth and jobs, which recognizes that the national debt cannot permanently reduce savings, but only increase (*Dauderstädt Michael, Schulmeister Stephen, 2011*).
- The second element of the alternative program would be a common European debt management. Joint issue of euro loans would be achieved in strongly indebted countries improve the creditworthiness of government bonds and thus a significant reduction in interest (*Delpla, Jacques von Welzacker, Jakob, 2011*).
- The third paradigm shift in Europe must be to overcome the competing countries, and that will wage, social and tax policies of the European coordination. The introduction of European coordination rules in these areas need to be curbed processes payroll, social and tax dumping and thereby compensate for imbalances in the balance.
- Quarters, that should be all planned banking union created once: co-regulation on common rules for troubled banks, the common European deposit insurance. Investors and savers should then make sure that the problems of the European economy cannot compromise.

Eurozone and his Banking Union (BU), according to me must have been mandatory for States that do not apply the euro. When in the next few years to BU will not want to go quite economically strong country with good growth potential, such as Poland (*approx. 2.5 % of GDP in 2015*), Czech Republic (2.3%), Lithuania (3.9 %) further Hungary, Estonia, Romania, Bulgaria, etc. will be at the end of the project for BU problem! Economic growth will be in this part of Europe a bit better than in recent years. But it's not enough growth of around 2% of GDP is low. We need to get at least 4% GDP.

Only then fully restore confidence in the economy, companies begin to invest again, banks lend more and people spend. This means that Europe needs to re-open the doors of the banking system that was free to pour capital and cash between countries and within the EU banking groups. As it turned out, that the difficulties of banks and states (*Slovenia, Cyprus*) are connected and without joint guarantees system does not work. This is the question of the future of Europe. It's about whether the EU marry through deeper integration, or fall apart. BU leads to a Fiscal union, which represents a strong commitment that its members will support future joint economic development of Europe. Countries that are not part of, will develop a completely different direction, away from Europe. But we want to be part of Europe, which compete with India, China and the United States, or not? I think yes, and we're gonna finally share some costs even with Spain or Italy. It is a matter of long-term political developments in Europe. Provided that you do not have anything in common, it may eventually lead to the disintegration of the EU.

ECB is doing everything possible to mitigate that risk. Finally, it can actually eliminate a political decision when countries are reforming European institutions and strengthen European integration. But we need economic growth. If economic growth returns, over-indebted states will be able to reduce its debts. Increase the trust economy strong countries in that weak are unable to solve their problems. Individual economies will converge to each other and the states are likely to be reluctant to give up part of their sovereignty and move towards a fiscal union. On the way to her there will always be a risk of collapse of the Eurozone and the EU.

4. Conclusion

Europe shows that a strong sense of survival, but in today totally inadequate for a common goal. Another alternative is a chaotic collapse: reforms will put off a strong economy will send money to the weaker until themselves they do not come on the edge of the cliff. Sooner or later, all rescues ends either when the states run out of money or patience to voters. Then run away from the markets of large euro economies and Europe sweeps tsunami of bankruptcies and banking crises. Sooner or later Europe will have to stop pouring piles of euros into the black hole. Perhaps it will lead to an orderly fashion, in the form of debt restructuring, large long-term plans for debt reduction and pro-growth reforms. **When Europe will not more interconnected and will not create a collective fund to help the weaker, does not hold together.**

I can say that Europe faces a number of long-term challenges that will have a profound impact on the process of European integration in the coming years and decades. Global economic integration and interdependence, the rise of China, India and Brazil as economic powerhouses and competition in the knowledge economy, for European companies will be the big test. At the same time the need to incur high investment spending to combat climate change, diversification of energy sources and supply, increase energy efficiency, demographic changes and their impact on public finances and growth potential to tackle rising unemployment and the risk of poverty and social exclusion will still be increasing extent, shape the policy agenda. Fiscal pact and banking union (*such program Horizon 2020*) are important for Eurozone.

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Investigation of European Union Economic Cohesion by Cluster Analysis

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Abstract

The aim of the paper is to examine a cohesion of European Union (plus Norway and Iceland) in terms of an economic development of its members from the 1st January 2008 to the 31st December 2012. For the study five economic indicators were selected: real GDP growth, unemployment, inflation, labour productivity and government debt. Annual data from Eurostat databases were averaged over the whole period and then used as an input for a cluster analysis. It was found out that EU countries were divided into six different clusters. The most populated cluster with 14 countries covered Western, Central and Northern Europe and reflected relative homogeneity of this part of Europe. Countries of Southern Europe (Greece, Portugal and Spain) shared their own cluster of the most affected countries by the recent crisis as well as the Baltics and the Balkans states in another cluster. On the other hand Slovakia and Poland, the only two countries that escaped a recession, were classified in their own cluster of the most successful countries.

Keywords: *Cluster analysis, Cohesion, Economics, European Union*

JEL classification: *C38, O11, O52, O57*

1. Introduction

From the start of the global financial crisis in 2007 in the USA European countries experienced a difficult period of time both from economic and social point of view. However, crisis impacts were not spread uniformly across the continent, as some countries were able to overcome negative global economic trends (Slovakia or Poland), while other countries experienced the deepest economic downturns in their modern history (Baltics states, Greece, Ireland, Portugal, etc.), especially in the Southern wing of EU and on European periphery, see e.g. Aiginger (2011, 2013), Mian and Sufi (2010), Verick and Islam (2010), Mazurek and Mielcová (2013) or Mazurek (2013).

The aim of this paper is to examine European Union economic cohesion in the recent five years (from the 1st January 2008 to the 31st December 2012), where a term 'cohesion' is used thereafter as a synonym of 'compactness' or 'homogeneity' among countries. As a method of the study a cluster analysis was chosen. For the clustering the following five economic indicators were selected: real GDP PPP growth rate, inflation rate, unemployment rate, labour productivity per person employed and the difference between government net borrowing and net lending. All of these indicators belong among the most important in economics and also they are easily

available for all EU (27) countries. The data were obtained from Eurostat databases. Because the data were available also for Iceland and Norway, these two countries of the Northern Europe were included in the study as well.

2. Data and Method

2.1 Data

The data for the were retrieved from Eurostat economic databases, see Eurostat (2013). The data for each of 29 countries (EU27+Norway and Iceland) include:

- Real GDP growth rates (volumes) – percentage change on previous year, abbreviated as GDP thereafter, source: Eurostat (2013a),
- Unemployment rate – annual average, (in %), not seasonally adjusted, (UNEMP), Eurostat (2013b),
- HICP Inflation rate– annual average rate (in %), (INFL), Eurostat (2013c),
- Labour productivity per person employed (EU27 = 100%) , (PROD), Eurostat (2013d),
- Net lending (+)/Net borrowing (-) under the EDP (Excessive Deficit Procedure) as a percentage of GDP (DEBT), Eurostat (2013e).

For all countries annual data from the 1st January 2008 to the 31st December 2012 were obtained and averaged for the whole period, see Table 1.

Table 1: Average Values of Selected Economic Indicators: EU Countries, Iceland and Norway from the 1st of January 2008 to the 31st of December 2012

Country	Real GDP PPP (%)	UNEMP (%)	INFL (%)	PROD (EU=100%)	DEBT (%)
Belgium	0.44	7.6	2.56	127.46	-3.6
Bulgaria	0.74	9.26	4.66	41.4	-1.7
Czech Republic	0.38	6.42	2.74	73.88	-4.06
Denmark	-0.88	6.42	2.4	109.74	-1.58
Germany	0.8	6.76	1.76	106.24	-1.62
Estonia	-0.44	11.78	4.56	67.56	-0.76
Ireland	-1.46	12.34	0.58	136.52	-14.6
Greece	-4.34	14.36	2.86	93.78	-10.94
Spain	-0.92	19.22	2.28	107.22	-9.08
France	0.1	9.36	1.9	116.04	-5.6
Italy	-1.4	8.4	2.42	110.26	-3.9
Cyprus	0.2	7.04	2.76	91.26	-4.64
Latvia	-2.26	15.18	4.78	56.86	-5.4
Lithuania	-0.12	13.14	4.76	66.1	-5.72
Luxembourg	-0.3	4.9	2.7	163.9	0.24
Hungary	-0.98	10.16	4.86	70.7	-2.06
Malta	1.4	6.54	2.84	95.58	-3.58
Netherlands	-0.14	4.2	1.88	111.88	-3.72
Austria	0.62	4.3	2.3	115.82	-2.9
Poland	3.4	8.94	3.7	67.22	-5.6
Portugal	-1.1	11.98	1.92	75.38	-6.86

Romania	0.5	6.88	5.76	49.26	-6.02
Slovenia	-1	6.94	2.68	80.36	-4.84
Slovakia	2.02	12.78	2.66	80.26	-5.48
Finland	-0.58	7.7	2.74	109.58	-0.62
Sweden	0.96	7.78	1.88	114.28	0.36
United Kingdom	-0.62	7.38	3.28	106.66	-8.06
Iceland	-1.08	6.18	9.36	97	-8.58
Norway	0.64	3.16	1.92	154.76	13.44

Source: own calculations from Eurostat (2013) data

2.2 Method

For the clustering analysis k-means clustering method was selected, see e.g. Hartigan (1975), Meloun and Militký (2006) or Chiang and Mirkin (2009). The method divides a set of n observations into K clusters so that observations in each cluster are similar (close) to each other. The method requires variables that are (preferably) continuous with no outliers, as discrete data may cause problems. Each observation j is an m -dimensional vector x_{ij} , $i = 1$ to m . Let's assume k -th cluster contains n_k objects. Then the clustering aims to partition n observations into K sets ($K < n$) so as to minimize the within-cluster sum of squares for K clusters (WSS_K), see Meloun and Militký (2006):

$$WSS_K = \frac{mn}{mn - m} \cdot \sum_{k=1}^K \sum_{i=1}^m \sum_{j=1}^{n_k} (1 - \delta_{ijk}) (z_{ij} - c_{ik})^2, \quad (1)$$

where c_{ik} is an average of i -th variable in k -th cluster, δ_{ijk} denotes (eventual) missing value of i -th variable in j -th object for k -th cluster, and z_{ij} is a standardized value of x_{ij} . The clustering algorithm can be found in Hartigan and Wong (1979) or Lloyd (1982). Goodness-of-fit of k-means clusterign is given by percent of variation PV_K see Meloun and Militký (2006):

$$PV_K = \frac{WSS_K}{WSS_1} \cdot 100, \quad (2)$$

where index K is a number of clusters. PV_K gives the within-sum of squares for K clusters (WSS_K) as a percentage of within sum of squares without clustering (WSS_1).

Advantage of the method is its simplicity, speed and possibility of running algorithm on large databases. However, algorithm solution depends on the initial random assignment of cluster centres, number of clusters and number of iteration, and it finds only a local minimum. To eliminate both problems repeated clustering is necessary (typically 25 runs are used).

The most suitable number of clusters can be determined by various criteria such as elbow (bend) rule, Hartigan index, Gap statistics, average silhouette, Aikake information criterion, etc., see e.g. Chiang and Mirkin (2009).

3. Results

From the data shown in Table 1 correlation matrix of all indicators were computed, see Table 2, to ascertain how much are the indicators independent. The highest absolute value of Pearson's correlation coefficient $r = -0.539$ was found for the pair UNEMP-DEBT, other pairs of indicators were less correlated, hence all indicators can be considered rather low linearly dependent and suitable for further cluster analysis.

For k-means clustering the statistical software NCSS2000 was employed (see NCSS home page). In the presented study the most suitable number of clusters was selected by the elbow rule. According to this simple rule the optimal number of clusters was six ($k = 6$), so examined countries should be divided into six clusters. From the NCSS2000 programme menu 6 clusters, 5 to 15 random starts and 10 to 20 iterations were chosen for each run. The programme was run 25 times. Tables 3 and 4 show the best result with the lowest percent of variation $PV_6 = 27.42$ of all runs.

The results are shown in Table 3. Numbers in brackets following country code correspond to countries' numbers in Figures 2a)-d). Geographical distribution of clusters is provided in Figure 1.

- Cluster 1 containing Luxembourg and Norway is characterized by a slight GDP growth over examined period, low unemployment, medium inflation, high productivity and high debt.
- Cluster 2 contains only Iceland. This country experienced negative economic growth, rather low unemployment, but high inflation, under average productivity and above average debt.
- Cluster 3 includes three Baltics states, two Balkans states and Hungary. Countries associated in this cluster are characterized by an economic decline, above average unemployment and inflation, very low productivity and under average debt.
- Cluster 4 groups together Greece, Spain, Portugal and Ireland. These countries suffered the highest economic decline, the highest unemployment and also the highest deficit in the examined period.
- Cluster 5 includes Poland and Slovakia, two countries that escaped a recession and were able to grow despite global crisis. From Table 3 it can be seen they also share some problems, namely relatively high unemployment and the second lowest productivity among all clusters.
- Cluster 6 is the most populated cluster with 14 countries mainly from the West and Central Europe. Average values of all five economic indicators in this cluster are close to global average, hence this cluster can be considered a compact 'core' of European Union countries with rather homogenous economic development during examined period.

Generally clusters 2, 3 and 4 contain countries the most affected by the crisis, while in clusters 1 and 5 the most successful countries were grouped together. In Cluster 3 transition economies of the former Soviet-bloc from the Baltics and the Balkans were placed together. Problems of these countries were already examined thoroughly in the literature, see e.g. Kajaks (2013) or Kattel and Raudla (2013). In general, these

countries are open and vulnerable economies strongly dependent on foreign investment and demand from their more developed counterparts on the West. In times of economic boom they grow more swiftly than the rest of Europe (as observed until 2008), but in times of economic crisis they decline more rapidly as well. Cluster 4 was formed by three South European (along with Ireland) countries with long-term economic problems caused mainly by large budget deficits and low productivity and competitiveness leading to deep declines in real GDP and record high unemployment rates in times of the global crisis.

Furthermore, the value of PV_6 in 2008 was 29.02, while in 2012 PV_6 was 23.99. Hence, in 2012 examined countries in clusters were closer to each other than in 2008, which means that the cohesion of European union (plus Norway and Iceland) increased in the last 5 years.

Table 2: Correlation Matrix of All Indicators

Indicator	GDP	UNEMP	INFL	PROD	DEBT
GDP	1	-0.379	-0.068	-0.062	0.356
UNEMP		1	0.034	-0.370	-0.539
INFL			1	-0.518	-0.113
PROD				1	0.271
DEBT					1

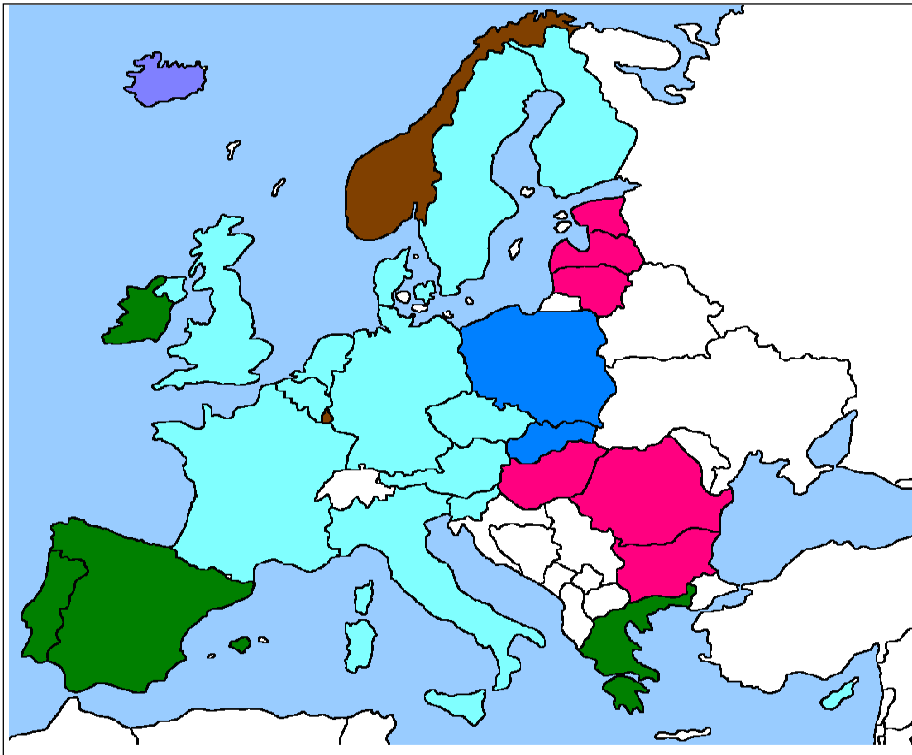
Source: Own calculation and elaboration

Table 3: Partition of All Countries into Clusters with Average Cluster Values of All Indicators (Numbers in brackets correspond to countries' numbers in Figures 2a)-d).

Cluster No.	Countries	GDP (%)	UNEMP (%)	INFL (%)	PROD (%)	DEBT (%)
1	LUX (15), NOR (29)	0.17	4.03	2.31	159.33	6.84
2	ISL (28)	-1.08	6.18	9.36	97.00	-8.58
3	BUL (2), EST (6), LAT (13), LTU (14), HUN (16), ROU (22)	-0.43	11.07	4.90	58.65	-3.61
4	IRL (7), GRE (8), ESP (9), POR (21)	-1.96	14.48	1.91	103.23	-10.37
5	POL (20), SVK (24)	2.71	10.86	3.18	73.74	-5.54
6	BEL (1), CZE (3), DEN (4), GER (5), FRA (10), ITA (11), CYP (12), MLT (17), NED (18), AUT (19), SLO (23), FIN (25), SWE (26), GBR (27)	0.02	6.92	2.44	104.93	-3.45

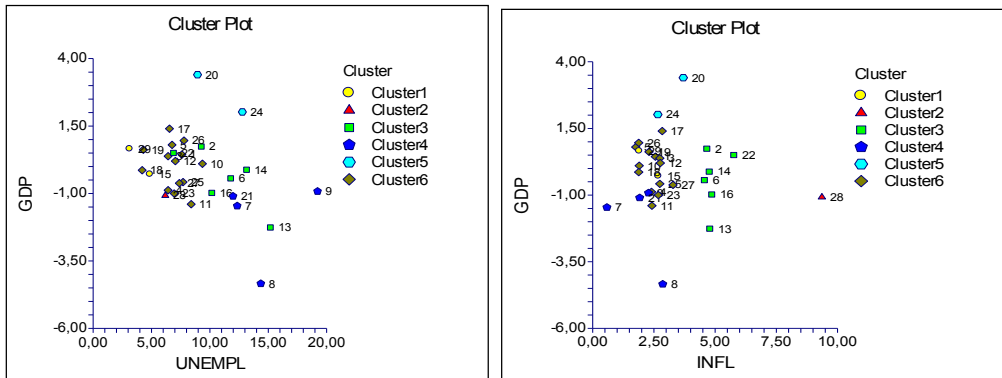
Source: Own calculation and elaboration

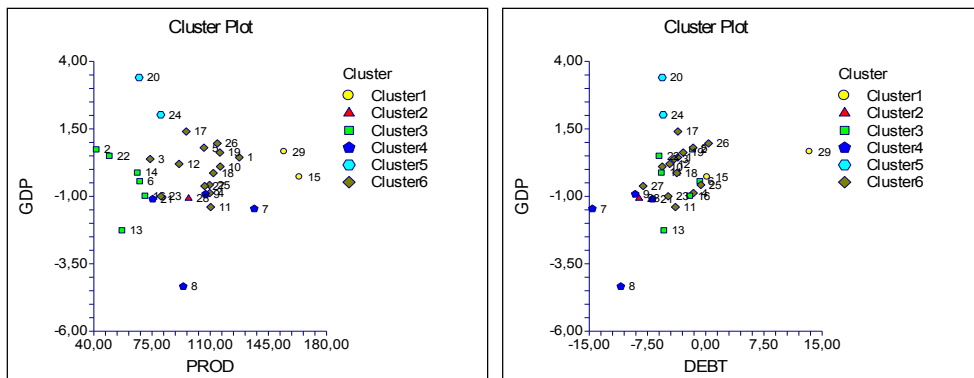
Figure 1: Geographical Distribution of Clusters



Source: Own calculation and elaboration

Figures 2a)-d): Selected Scatter Plots of Economic Indicators





Source: Own calculation and elaboration

5. Conclusions

In this study a cohesion of European Union countries (plus Norway and Iceland) during 2008-2012 was examined by a cluster analysis. The study confirmed the similar development of European ‘Southern wing’ of Greece, Spain, and Portugal which occupied the same cluster. In another cluster countries of European ‘Periphery’ of the Balkans and the Baltics were grouped together as these post-transition economies belonged among the most suffering countries by the Great Recession. The most populous cluster (14 countries) included countries of West, Central and Northern Europe, which might be considered a compact ‘core’ of the European Union.

Further research might focus for example on examination of a dynamics of a cohesion to find out year-to-year changes. Also, other indicators or more indicators can be used for the evaluation, as well it is possible to use other clustering methods such as dendrograms or fuzzy clustering as economic data are rather imprecise due to their nature.

Acknowledgements

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Regional Efficiency Evaluation by DEA Approach: Comparison of Selected EU15 and EU13 Countries

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Abstract

The paper deals with an application of Data Envelopment Analysis method to multi-criteria efficiency evaluation in NUTS 2 regions in the Visegrad Four countries in comparison with selected advanced European Union countries – Austria and Germany. The aim of the paper is to analyse a degree of efficiency achieved in individual NUTS 2 region which is perceived as a reflection of competitive potential level in the reference period 2000 – 2012. The theoretical part of the paper is devoted to the fundamental bases of performance and efficiency and methodology of DEA method. The empirical part is aimed at measuring the efficiency of evaluated NUTS 2 regions by selected DEA models – basic CCR and BCC models and advanced SBM, FDH and FRH models. When applying DEA, we used indicators, which are part of the Regional Competitiveness Index. The final part of the paper offers a comprehensive comparison of results obtained by using of all calculated DEA models.

Keywords: *Competitiveness, DEA method, Efficiency, EU countries, Model BCC/CCR/FDH/FRH/SBM, NUTS 2 region*

JEL Classification: *C67, C82, R11, Y10*

1. Introduction

European Union (EU) is a heterogeneous unit with significant disparities between its Member States and especially their regions. The support of cohesion and balanced development together with increasing level of EU competitiveness belong to the temporary EU's key development objectives. The process of European integration is thus guided by striving for two different objectives: to foster economic competitiveness and to reduce territorial differences (Molle, 2007). Although the EU is one of the most developed world integration with high living standards, there exist huge economic, social and territorial disparities having a negative impact on the balanced development across Member States and their regions, and thus weaken EU's performance in a global context. In relation to competitiveness objective, performance and efficiency are complementary objectives, which determine the long-term development of countries and regions. Measurement, analysis and evaluation of productivity changes, efficiency and competitiveness are controversial topics acquire great interest among researchers (Khan and Soverall, 2007).

The aim of the paper is to measure, evaluate and compare the efficiency level of NUTS 2 regions within the group of Visegrad Four (V4), i.e. Czech Republic,

Hungary, Poland and Slovakia, in comparison with NUTS 2 region of Austria and Germany by application of Data Envelopment Analysis (DEA) models. The performance analysis is used for evaluating regional development quality and potential with respect to factors endowment. Application of DEA is based on assumption that efficiency of evaluated regions calculated by DEA can be seen as the source of competitiveness (competitive potential); see e.g. (Staničková and Melecký, 2012).

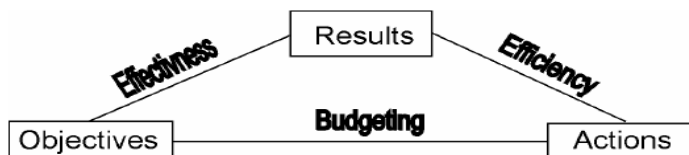
2. Framework of Efficiency Analysis in the Context of Performance

In the EU, the process of achieving an increasing trend of performance and a higher level of competitiveness is significantly difficult by the heterogeneity of countries and especially regions in many areas as e.g. Melecký and Poledníková (2012) or Tvrdoň and Skokan (2011) confirmed through empirical analysis. The concept of competitiveness in the EU is specific regarding the inclusion of elements of European integration that goes beyond the purely economic parameters. The economy may be competitive but if the society and the environment suffer too much the country will face major difficulties, and vice versa. Governments in the long run period cannot focus alone on the economic competitiveness; instead they need an integrated approach focused on the broadest aspects affecting competitiveness and thus efficiency (Barrell, Mason and O'Mahony, 2000).

2.1 Concepts of Performance and Efficiency

Performance management is one of the major sources of sustainable national (and subsequent regional) effectiveness and a systematic understanding of the factors that affect productivity, and subsequently also competitiveness, is very important, see Figure 1. In recent years, the topics about measuring and evaluating of performance acquire economic interest, because performance remains one of the basic standards of efficiency evaluation and it is also seen as a reflection of success of area in a wider comparison. Performance is also highly important for many economic subjects as a whole and for the individuals involving in it. Performance comprises both a behavioural and an outcome aspect. It is a multi-dimensional and dynamic concept as well as competitiveness. Despite the great relevance of performance and widespread use of this term as an outcome measure in empirical research, relatively little effort has been spent on clarifying the performance concept.

Figure 1: Triangle of the Performance Source



Source: Barrell, Mason and O'Mahony, 2000

In relation to competitiveness and performance, efficiency is a term that recently has come to the forefront of the scientific world. As the world struggles to accommodate the enormous growth in population and to manage the distribution of resources, to

reach higher competitive potential, the effort to make things more efficient has become increasingly more relevant. Efficiency is a central issue in broader analyses of economic growth, effects of fiscal policies, pricing of capital assets, level of investments, technology changes and production technology, and other economic topics and indicators. In a competitive economy, therefore, the issue of efficiency, resp. dynamic efficiency, can be resolved by comparing these economic issues.

2.1 Approaches to Efficiency Evaluation

Evaluating of efficiency belongs to main issues of economic research, which also lacks a mainstream approach. Efficiency evaluation in terms of differences between countries and regions should be measured through complex of economic, social and environmental criteria identifying imbalance areas that cause main disparities. Currently not only quantitative but also qualitative development at national level, and especially at regional level, increase socio-economic attraction and create new opportunities that are fundamentals for subsequent overcoming disparities and increasing the performance of territory, and thus competitiveness.

Measurement and evaluation of performance, efficiency and productivity is an important issue for at least two reasons. One is that in a group of units where only limited number of candidates can be selected, the performance of each must be evaluated in a fair and consistent manner. The other is that as time progresses, better performance is expected. Hence, the units with declining performance must be identified in order to make the necessary improvements). The performance of countries and regions can be evaluated in either a cross-sectional or a time-series manner, and the DEA is a useful method for both types of efficiency evaluation (Mohammadi and Ranaei, 2011; Staníčková, 2012).

3. Measuring of Regional Efficiency and Competitive Potential by DEA

The EU makes an effort to restore the foundations of its competitiveness and economic performance through increasing its growth potential and its productivity. The performance analysis provided by DEA can be used for evaluating development efficiency with respect to the territorial factor endowment of evaluated areas.

3.1 Theoretical Background of DEA Method

Since DEA was first introduced in 1978, researchers in a number of fields have quickly recognized that it is an excellent and easily used methodology for modelling operational processes for performance evaluations. This has been accompanied by other developments. DEA is based on simple Farrell model from 1957 for measuring the effectiveness of units with one input and one output. Farrell model has been initially expanded in 1978 by A. Charnes, W.W. Cooper and E. Rhodes (CCR model) and later modified in 1984 by R. A. Banker, A. Charnes and W. W. Cooper (BCC model). DEA methods also include advanced additive models, such as Slack-Based Model (SBM) performed by K. Tone in 2002 or Free Disposal Hull (FDH) and Free Replicability Hull (FRH) models that have been firstly formulated in 1984 by D. Deprins, D. Simar and H. Tulkens (Cook and Zhu, 2008).

DEA is data oriented approach for providing a relative efficiency assessment (DEA efficient) and evaluating the performance of a set of peer entities called Decision Making Units (DMUs) which convert multiple inputs into multiple outputs. DEA is thus a multicriteria decision making method for evaluating effectiveness, efficiency and productivity of homogenous group (DMUs). The definition of a DMU is generic and flexible. DEA is convenient to determine efficiency of DMU which are mutually comparable – using same inputs, producing same outputs, but their performances are different. The efficiency score of DMU of multiple input and output factors is defined as follows (1) (Cook and Zhu, 2008):

$$\text{Efficiency} = \frac{\text{weighted_sum_of_outputs}}{\text{weighted_sum_of_inputs}} \quad (1)$$

3.2 Fundamental Characteristics of Empirical Analysis

Based on the facts above, it is possible to determine the initial hypothesis based on the assumption that regions achieving best results in efficiency are advanced selected regions (i.e. Austria and Germany regions) with best using of competitive advantages and therefore having the greatest performance and productive potential.

DEA is in following analysis applied to 83 NUTS 2 regions within the group of V4 and regions of advanced EU countries – Austria and Germany. The efficiency analysis starts from building database of indicators that are part of Regional Competitiveness Index (RCI). RCI identifies the key factors which drive the low competitiveness performance of some regions. RCI pillars are grouped according to the different dimensions (input versus output aspects) of competitiveness they describe. The terms ‘inputs’ and ‘outputs’ are meant to classify pillars into those which describe driving forces of competitiveness, also in terms of long-term potentiality, and those which are direct or indirect outcomes of a competitive society and economy. From this point of view, methodology of RCI is suitable for measuring regional competitiveness by DEA (Annoni, Kozovska, 2010). The indicators selected for RCI framework are all of quantitative type (hard data) and the preferred source has been the European Statistical Office (Eurostat). Whenever information has been unavailable or inappropriate at the required territorial level, other data sources have been explored such as the World Bank, Euro barometer, the Organisation for Economic Co-operation and Development (OECD) and the European Cluster Observatory (Annoni, Kozovska, 2010).

In our research, database analysis consists of 26 selected indicators – 13 of them are inputs and 13 outputs. The reference period started from 2000 to 2012. We do not use all indicators included in RCI because all indicators were not available for the whole period in regional level. The pillars and used indicators are listed in Table 1.

Table 1: Indicators for Data Envelopment Analysis

Indicators of Inputs	Indicators of Outputs
<ol style="list-style-type: none"> 1. Total Intramural R&D Expenditure, 2. Labor Productivity per Person Employed, 3. Gross Fixed Capital Formation, 4. Motorway Transport - Length of Motorways, 5. Railway Transport - Length of Tracks, 6. Hospital Beds, 7. Road Fatalities, 8. Total Public Expenditure at Education, 9. Participants in Education, 10. Collective Tourist Accommodation Establishments, 11. Tourism Intensity, 12. Crude Death Rate, 13. Victims in Road Accident. 	<ol style="list-style-type: none"> 1. Gross Domestic Product, 2. Disposable Income, 3. Human Resources in Science and Technology, 4. Patent Applications to the European Patent Office, 5. Employment in technology and knowledge-intensive sectors, 6. Employment Rate (15 to 64 years), 7. Employment Rate (55 to 64 years), 8. Unemployment Rate (15 to 64 years), 9. Unemployment Rate of Young (15 to 24 years), 10. Long-Term Unemployment, 11. Compensation of Employees, 12. Venture Capital, 13. Gross Value Added in Sophisticated Sectors.

Source: Own elaboration, 2014

Ten selected DEA models with multiple inputs and outputs are used for analysis:

1. CCR input oriented model assuming constant returns to scale (CRS),
2. CCR output oriented model assuming CRS,
3. BCC input oriented model assuming variable returns to scale (VRS),
4. BCC output oriented model assuming VRS,
5. SBM additive model not-focusing on input and output assuming CRS,
6. SBM additive model not-focusing on input and output assuming VRS,
7. FDH input oriented model,
8. FDH output oriented model,
9. FRH input oriented model,
10. FRH output oriented model.

Basic DEA models, primary CCR input/output oriented models (with multiple inputs and outputs), assuming constant returns to scale (CRS). In 1984, Banker, Charnes and Cooper suggested a modification of CCR model considering variable returns to scale (VRS) (decreasing, increasing, and constant) – BCC input/output oriented models (with multiple inputs and outputs). VRS enable identify more efficient units. The assumption of VRS provides a more realistic expression of economic reality and factual relations, events and activities existing in regions. In DEA models aimed at inputs the efficiency coefficient of efficient countries (located on the efficient frontier package) always equals 1, while the efficiency coefficient of inefficient countries is less than 1. In DEA models aimed at outputs the efficiency coefficient of efficient regions (located on the efficient frontier package) always equals 1, but the efficiency coefficient of inefficient regions is greater than 1. DEA also allows for computing the necessary improvements required in the inefficient region’s inputs and outputs to

make it more efficient. This is case of BCC, CCR, FDH, and FRH. In SBM models, the efficiency coefficient of efficient units always equals 0, because it is the sum of additional variables for inputs and outputs (s^+ and s^-), which express the distance from the efficient frontier. The sum of additional variables for inputs and outputs is lower, evaluated unit (in our case regions) is closer to the efficient frontier package and thus has a higher degree of efficiency, and otherwise (Cook, Zhu, 2008).

Assuming 83 NUTS 2 regions within evaluated countries, each with m inputs and r outputs, the relatively efficiency score of a tested region q is obtained by solving equations (2)–(3) (Cook and Zhu, 2008). Given the extensive equations of each model, only equations modifications of basic CCR model are shown for illustrative purposes. CCR input oriented model (with multiple inputs and outputs), assuming constant returns to scale (CRS), can be defined as follows (2):

$$\max z = \sum_i^r u_i y_{iq}, \tag{2}$$

on conditions:

$$\begin{aligned} \sum_i^r u_i y_{ik} &\leq \sum_j^m v_j x_{jk}, k = 1, 2, \dots, n, \\ \sum_j^m v_j x_{jq} &= 1, \\ u_i &\geq \varepsilon, i = 1, 2, \dots, r, \\ v_j &\geq \varepsilon, j = 1, 2, \dots, m. \end{aligned}$$

Where z is the coefficient of efficiency of unit U_q ; u_i weights assigned to the i -th output; v_j weights assigned to j -th input; ε represent an infinitesimal constant; x_{jk} is value of j -th input of unit U_k ; x_{jq} is value of j -th input of unit U_q ; y_{ik} is value of i -th output of unit U_k ; y_{iq} is value of i -th output of unit U_q ; m represent inputs; r represent outputs.

For CCR output oriented model (with multiple inputs and outputs), assuming constant returns to scale (CRS), can be defined as follows (3):

$$\min g = \sum_j^m v_j x_{jq}, \tag{3}$$

on conditions:

$$\begin{aligned} \sum_i^r u_i y_{ik} &\leq \sum_j^m v_j x_{jk}, k = 1, 2, \dots, n, \\ \sum_i^r u_i y_{iq} &= 1, \\ u_i &\geq \varepsilon, i = 1, 2, \dots, r, \\ v_j &\geq \varepsilon, j = 1, 2, \dots, m, \end{aligned}$$

where g is the coefficient of efficiency of unit U_q . All of the variables in equation (3) have the same meaning as equation (2). For solution of DEA we used software tools based on solving linear programming problems, e.g. Solver in MS Excel – the DEA Frontier.

4. Evaluation of Regional Efficiency in V4 Countries, Austria and Germany by selected DEA Models

The initial assumption that areas achieving best results in efficiency are areas best at converting inputs into outputs and therefore having the greatest performance and productive potential was partly confirmed by analysis as follows. The best results are traditionally achieved by economically powerful regions (in most cases) which were efficient during the whole referred period, so the resulting efficiency index is equal to 1 in CCR, BCC, FDH and FRH models or sum of values of additional variables is equal to 0 in SBM models. This means that the outputs achieved were greater than those incurred inputs. Efficient V4, Austria and Germany NUTS 2 regions are mentioned by dark grey colour and bold font in Table 2. Group of efficient regions includes the regions of the capital cities of the Czech Republic (Prague), Slovakia (Bratislava Region), Poland (Warszawa), Austria (Wien) and Germany (Berlin). The socio-economic situation of these regions is significant different from other regions, this fact confirms the combination of the regions to one homogeneous group. This homogenous group of efficient regions includes the regions of capital city Prague, Bratislava Region, Wien and Berlin, and after 10 years the capital cities have separated from other regions, this confirms the persistent disparities between metropolitan areas and the rest of regions. There are also other cohesion regions in the Czech Republic – CZ01 (Prague) and CZ02 (Central Bohemia). In Poland, the one effective province is region PL12 (Mazowieckie). In Slovakia there is an effective region SK01 (Bratislava Region). In Austria, we have found out three effective regions – AT13 (Wien), AT21 (Kärnten) and AT33 (Tirol). In Germany, the group of effective regions confirm of DE11 (Stuttgart), DE12 (Karlsruhe), DE30 (Berlin), DE50 (Bremen), DE60 (Hamburg), DE71 (Darmstadt), DE80 (Mecklenburg-Vorpommern), DE92 (Hannover), DEA1 (Düsseldorf), DEA2 (Köln), DED2 (Dresden) and DEF0 (Schleswig-Holstein). The best final position is thus reached by performance of regions with agglomerations of major cities and regions in their surroundings, and big industry cities. These regions, in the frame of our hypothesis, could be regions with the best competitive potential and perspective to further development. Regional analysis also showed that in Hungary we find no region, which would be classified as an effective during the referred period. To the group of effective regions it is possible include also regions which were not efficient during the whole referred period, but the resulting efficiency index was equal to 1 in CCR, BCC, FDH and FRH models or sum of values of additional variables is equal to 0 in SBM model in several years in the reference period. These regions are DE22 (Niederbayern) in Germany and AT11 (Burgenland) in Austria. These regions are mentioned by light grey colour and italics font in Table 2. The efficient regions are followed by a group of regions which are slightly inefficient. These regions do not achieved efficiency equal to 1 in CCR, BCC, FDH and FRH models or low sum of values of additional variables in SBM models, but their efficiency indices reached consistently highly effective values close during the referred period (coloured by light grey colour in Table 2). There are NUTS 2 regions in Poland PL43 (Lubuskie) and PL52 (Opolskie), in Austria AT22 (Steiermark) at 32 (Salzburg). In Germany, DE13 (Freiburg), DE14 (Tübingen), DE21 (Oberbayern), DE23 (Oberpfalz), DE24 (Oberfranken), DE25

(Mittelfranken), DE26 (Unterfranken), DE91 (Braunschweig), DE93 (Lüneburg), DE94 (Weser-Ems), DEA3 (Münster), DEA4 (Detmold) and DEA5 (Arnsberg) belong to the group of slightly efficient regions. Other regions are classified as ineffective in CCR, BCC, FDH, FRH and SBM models, i.e. these regions are considered as non-competitive. Most inefficient regions are highlighted by ultra-light grey colour and italics font in Table 2. There is the least efficient NUTS 2 region in Poland, there are the least efficient NUTS 2 provinces PL21 (Malopolskie), PL31 (Lubelskie) and PL32 (Podkarpackie).

Table 2 also shows position of individual V4, Austria and NUTS 2 regions within selected models in terms of the order of achieved average values of coefficients of efficiency (CE) in CCR, BCC, FDH and FRH models, or sum of values of additional variables in SBM models, over the period 2000–2010. The overall evaluation of individual V4 regions shows that the best results, in terms of efficiency in all used DEA models, have reached effective regions. These regions: in the Czech Republic CZ01 (Prague) and CZ02 (Central Bohemia), in Poland PL12 (Mazowieckie), in Slovakia SK01 (Bratislava Region), in Austria, AT13 (Wien), AT21 (Kärnten) and AT33 (Tirol) and in Germany DE11 (Stuttgart), DE12 (Karlsruhe), DE30 (Berlin), DE50 (Bremen), DE60 (Hamburg), DE71 (Darmstadt), DE80 (Mecklenburg-Vorpommern), DE92 (Hannover), DEA1 (Düsseldorf), DEA2 (Köln), DED2 (Dresden) and DEF0 (Schleswig-Holstein); have thus ranked first positions among all evaluated regions during reference period. In second place, there is German region DE22 (Niederbayern). In third place was Austrian AT11 (Burgenland). Polish region PL52 (Opolskie). Table 2 shows also position of regions that have ranked in last places in overall order and have achieved the worst results in DEA models. At 53th place, thus the third worst place in final order is placed polish region PL21 (Malopolskie). At 54th place is again polish region PL31 (Lubelskie). The least efficient region (placed at 55th place) is polish region PL32 (Podkarpackie).

The best results and also first positions, in the Czech Republic have reached regions CZ01 (Prague) and CZ02 (Central Bohemia). The worst results and also last position, in the Czech Republic has reached region CZ04 (Northwest). In Hungary, the best results and also first position, region HU31 (Észak-Magyarország-Northern Hungary) has reached. The worst results and also last position, in Hungary has reached region HU33 (Dél-Alföld- Southern Great Plain). The best results and also first position, in Poland has reached region PL12 (Mazowieckie). The worst results and also last position, in Poland has reached region PL32 (Podkarpackie). In Slovakia, the best results and also first position, region SK01 (Bratislava Region) has reached. The worst results and also last position, in Slovakia has reached region SK04 (East Slovakia). In Austria, the best results and also first positions have reached regions AT13 (Wien), AT21 (Kärnten) and AT33 (Tirol). The worst results and also last position, region AT12 (Niederösterreich) has reached in Austria. The best results and also first positions have reached regions DE11 (Stuttgart), DE12 (Karlsruhe), DE30 (Berlin), DE50 (Bremen), DE60 (Hamburg), DE71 (Darmstadt), DE80 (Mecklenburg-Vorpommern), DE92 (Hannover), DEA1 (Düsseldorf), DEA2 (Köln), DED2 (Dresden) and DEF0 (Schleswig-Holstein) in Germany. The worst results and also last position, region DED3 (Leipzig) has reached in Germany.

Table 2: Comparison of Regional Efficiency in DEA Models

Region	DEA MODELS										Rank **
	CCR IO	CCR OO	BCC IO	BCC OO	SBM CRS	SBM VRS	FDH IO	FDH OO	FRH IO	FRH OO	
	CE*	CE*	CE*	CE*	CE*	CE*	CE*	CE*	CE*	CE*	
CZ01	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
CZ02	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
CZ03	0,850	1.224	0.889	1.263	17,180	16,193	0,850	1.244	0.853	1.236	27.
CZ04	0.571	1.705	0.829	1.575	37,810	30,654	0.671	1.625	0.929	1.545	42.
CZ05	0.867	1.201	0.908	1.248	16,299	16,011	0.867	1.299	0.978	1.218	26.
CZ06	0.696	1.713	0.735	1.665	25,406	18,260	0.756	1.653	0.835	1.545	35.
CZ07	0.864	1.190	0.914	1.246	16,129	11,233	0.898	1.247	0.964	1.203	22.
CZ08	0.760	1.249	0.928	1.209	20,742	15,720	0.860	1.214	0.978	1.187	31.
HU10	0.841	1.148	0.889	1.127	18,090	17,360	0.866	1.137	0.892	1.118	28.
HU21	0.756	1.254	0.858	1.231	31,366	27,356	0.765	1.242	0.873	1.221	38.
HU22	0.814	1.181	0.865	1.186	19,022	17,176	0.834	1.175	0.875	1.148	30.
HU23	0.666	1.334	0.769	1.301	45,971	31,696	0.701	1.329	0.882	1.267	44.
HU31	0.820	1.176	0.996	1.072	19,759	11,121	0.868	1.157	0.998	1.059	24.
HU32	0.642	1.477	0.976	1.082	24,746	18,349	0.673	1.435	0.984	1.077	34.
HU33	0.611	1.550	0.911	1.361	45,753	39,540	0.634	1.527	0.923	1.299	45.
PL11	0.544	1.690	0.885	1.689	123,986	112,113	0.664	1.668	0.891	1.623	51.
PL12	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
<i>PL21</i>	<i>0.489</i>	<i>1.827</i>	<i>0.853</i>	<i>1.894</i>	<i>139,856</i>	<i>120,728</i>	<i>0.591</i>	<i>1.856</i>	<i>0.889</i>	<i>1.826</i>	<i>53.</i>
PL22	0.562	1.537	0.763	1.564	113,971	94,457	0.681	1.401	0.890	1.414	50.
<i>PL31</i>	<i>0.442</i>	<i>2.082</i>	<i>0.848</i>	<i>2.254</i>	<i>141,554</i>	<i>129,136</i>	<i>0.467</i>	<i>1.989</i>	<i>0.875</i>	<i>2.228</i>	<i>54.</i>
<i>PL32</i>	<i>0.560</i>	<i>1.650</i>	<i>0.880</i>	<i>1.786</i>	<i>155,891</i>	<i>122,667</i>	<i>0.576</i>	<i>1.635</i>	<i>0.895</i>	<i>1.732</i>	<i>55.</i>
PL33	0.495	1.699	0.736	1.598	133,971	104,457	0.681	1.421	0.875	1.452	52.
PL34	0.662	1.437	0.863	1.464	103,971	95,457	0.679	1.426	0.884	1.445	49.
PL41	0.732	1.298	0.896	1.330	57,843	48,898	0.775	1.274	0.905	1.315	47.
PL42	0.811	1.168	0.933	1.189	64,149	41,274	0.836	1.149	0.948	1.168	46.
PL43	0.997	1.003	1.000	1.000	0,984	0	0.999	1.001	1.000	1.000	4.
PL51	0.866	1.118	0.980	1.080	25,797	16,279	0.889	1.098	0.996	1.023	32.
PL52	0.951	1.059	0.977	1.048	5,489	4,212	0.973	1.041	0.985	1.032	9.
PL61	0.814	1.212	0.949	1.193	65,744	50,638	0.838	1.199	0.952	1.174	48.
PL62	0.789	1.240	0.974	1.229	43,072	26,810	0.801	1.227	0.981	1.211	43.
PL63	0.827	1.158	0.946	1.154	31,255	28,873	0.842	1.145	0.959	1.136	39.
SK01	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
SK02	0.834	1.110	0.876	1.072	13,476	8,622	0.855	1.089	0.887	1.562	20.
SK03	0.789	1.146	0.812	1.186	26,928	17,908	0.813	1.113	0.828	1.099	36.
SK04	0.676	1.184	0.699	1.219	34,955	32,634	0.701	1.168	0.723	1.147	41.
AT11	0.997	1.003	1.000	1.000	0,961	0	0.999	1.001	1.000	1.000	3.
AT12	0.914	1.081	0.965	1.086	9,022	7,176	0.934	1.075	0.975	1.048	18.
AT13	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
AT21	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
AT22	0.951	1.059	0.977	1.048	3,489	2,212	0.973	1.041	0.985	1.032	6.
AT31	0.934	1.030	0.976	1.022	3,476	1,622	0.955	1.025	0.987	1.002	5.
AT32	0.967	1.101	0.988	1.048	6,299	5,011	0.987	1.089	0.995	1.023	12.
AT33	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
AT34	0.941	1.048	0.989	1.027	6,090	5,360	0.966	1.037	0.992	1.018	13.
DE11	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE12	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE13	0.969	1.099	0.991	1.035	5,999	5,017	0.989	1.075	0.997	1.019	10.
DE14	0.968	1.102	0.989	1.041	6,032	5,991	0.982	1.087	0.996	1.020	16.
DE21	0.960	1.103	0.980	1.084	6,199	5,081	0.972	1.099	0.984	1.069	12.

DE22	0.998	1.002	1.000	1.000	0,764	0	0.999	1.001	1.000	1.000	2.
DE23	0.951	1.059	0.977	1.048	5,099	4,105	0.973	1.041	0.985	1.032	8.
DE24	0.967	1.101	0.988	1.048	6,242	5,009	0.987	1.089	0.995	1.023	11.
DE25	0.953	1.055	0.980	1.045	5,075	4,071	0.978	1.039	0.989	1.027	7.
DE26	0.964	1.105	0.984	1.054	6,329	5,233	0.978	1.099	0.980	1.051	14.
DE27	0.864	1.190	0.914	1.246	16,129	15,233	0.898	1.247	0.964	1.203	25.
DE30	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE41	0.867	1.201	0.908	1.248	16,299	16,011	0.867	1.299	0.978	1.218	26.
DE42	0.834	1.210	0.876	1.272	23,476	18,622	0.855	1.389	0.887	1.362	33.
DE50	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE60	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE71	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE72	0.914	1.081	0.965	1.086	9,222	8,176	0.934	1.075	0.975	1.076	19.
DE73	0.922	1.079	0.971	1.070	8,992	7,089	0.942	1.069	0.981	1.079	17.
DE80	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE91	0.989	1.026	0.992	1.016	6,928	4,908	0.993	1.013	0.995	1.009	15.
DE92	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DE93	0.953	1.055	0.980	1.045	5,075	4071	0.978	1.039	0.989	1.027	7.
DE94	0.964	1.105	0.984	1.054	6,329	5,233	0.978	1.099	0.980	1.051	13.
DEA1	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DEA2	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DEA3	0.989	1.026	0.992	1.016	6,928	4,908	0.993	1.013	0.995	1.009	15.
DEA4	0.953	1.055	0.980	1.045	5,075	4,071	0.978	1.039	0.989	1.027	7.
DEA5	0.964	1.105	0.984	1.054	6,329	5,233	0.978	1.099	0.980	1.051	14.
DEB1	0.934	1.130	0.976	1.112	13,476	11,622	0.955	1.115	0.987	1.092	21.
DEB2	0.914	1.081	0.965	1.086	29,022	27,176	0.934	1.075	0.975	1.048	37.
DEB3	0.922	1.079	0.971	1.070	18,992	17,089	0.942	1.069	0.981	1.039	29.
DEC0	0.964	1.105	0.984	1.054	6,329	5,233	0.978	1.099	0.980	1.051	14.
DED1	0.820	1.176	0.896	1.072	19,759	11,121	0.868	1.157	0.898	1.149	22.
DED2	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DED3	0.864	1.190	0.914	1.246	36,129	25,233	0.898	1.247	0.964	1.203	40.
DEE0	0.914	1.081	0.965	1.086	29,022	27,176	0.934	1.075	0.975	1.048	37.
DEF0	1.000	1.000	1.000	1.000	0	0	1.000	1.000	1.000	1.000	1.
DEG0	0.934	1.130	0.976	1.112	13,476	11,622	0.955	1.115	0.987	1.092	21.

Note: * Coefficient of efficiency = average efficiency rate of country in period 2000-2012

** Absolute ranking of NUTS 2 regions is based on their rank in DEA models in period 2000-2012

Source: Own elaboration, 2014

5. Conclusion

The initial assumption has been confirmed through empirical analysis at regional level. At regional level, NUTS 2 regions with capital cities (Prague, Warszawa, Bratislava Region, Wien and Berlin) have had significant and different socio-economic position from the rest of selected regions. Therefore, these regions have tended to be naturally grouped into one homogeneous group of efficient regions that has separated from the other regions. At the end of reference period can be monitored the increasing of the similarity (reducing the disparities) of less and more developed regions within level of efficiency. Development in regions of V4 countries has a trend towards regions of Austria and Germany. Despite of this fact, the significant disparities has persisted between the regions in V4 countries compared to Austria and Germany regions. Based on DEA analysis has been found out that in evaluated regions there is a distinct gap between economic and social standards, so differences still

remain. According to DEA, it is necessary to note that in all evaluated regions was mostly achieved noticeable efficiency and productivity increases and thus performance strengthening during reference period. Most regions experienced decline in their performance as a result of economic crisis. The economic crisis has seriously threatened the achievement of sustainable development in the field of competitiveness and has underscored its importance, supporting economic environment to enable economies to better absorb shocks and ensure solid performance going into the future.

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Influence of Unemployment Rate on Aggregate Income Uncertainty in Selected EU Countries

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Abstract

The main aim of this article is to study mutual relationship between unemployment rate and an aggregate income uncertainty in selected European countries. As a measure of income uncertainty, the consumption of durable goods – in this case the index of new-registered motor vehicles – was used. Results of this analysis are partially in accord with conclusions of the analysis of Malley and Moutos (1996), who have tested the assumption that the aggregate unemployment rate is a valuable measure of aggregate income uncertainty, appearing as a decrease in the consumption of durable goods. This analysis, based on the selected EU members data, supports the assumption, that increase in index of new-registered motor vehicles is bound with decreased unemployment rate.

Keywords: *Consumption of durable goods, Income uncertainty, Unemployment rate*

JEL Classification: *J640, E210, D120*

1. Introduction

During the economic recession in the European Union (2008-2012) the unemployment rate in most countries has increased and has reached new high numbers. As the unemployment rate increased, income of newly unemployed people has decreased. Moreover, the negative expectations of still employed inhabitants about their future income should have changed consumer behavior to caution in money spending. In the economic theory, the income uncertainty can be viewed as higher propensity to save as well as smaller willingness to spend money on durables.

The main aim of this article is to study mutual relationship between unemployment rate and an aggregate income uncertainty in selected European countries – Germany, Austria, Czech Republic, Slovakia, and Poland. The analysis is based on the study of Malley and Moutos (1996), who tested the assumption that the aggregate unemployment rate is the valuable measure of aggregate income uncertainty. In their article, Malley and Moutos tried to find the evidence of the fact that under assumption of changing unemployment rates the consumer spending changes, as well. The main impact of these changes can be viewed as the change of durable goods consumption, in Malley and Moutos' analysis new car registrations. They have argued that usually durables are associated with high transaction costs, indivisibilities and their non-liquidity. Therefore, the decreased spending on durables can be viewed as increased

savings. Similarly, according to the work of Wilcox (1992) motor vehicles can be viewed as true durables.

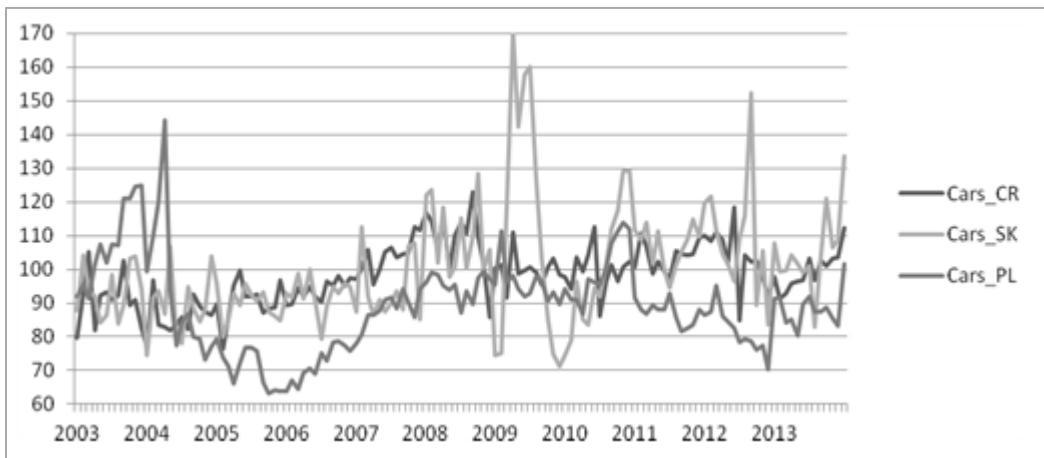
This analysis is based on the monthly data of unemployment rate and new car registrations in 2003-2013 time period. The main aim of this paper is to test if the unemployment rate has a significant influence on consumption spending, represented by the index of new cars registrations.

The rest of the paper is organized as follows. The next part covers overview over the theoretical model, data and econometric tools used in the analysis. The third part covers the estimation results, and discussion. The conclusion followed by references ends the paper.

2. Data, Problem formulation and Econometric Tools

This analysis is based on monthly data of five EU countries – Germany, Austria, the Czech Republic, Slovakia, and Poland. There are two data sets for each country, namely data of the passenger car registrations volume (2010=100), adjusted for seasonal variations for years 2003-2013 based on the official OECD statistics (OECD [online], 2014), and data of harmonized unemployment rates (in per cent) for years 2003-2009, adjusted for seasonal variations from Eurostat (Eurostat [online], 2014). For illustration, all data series are depicted in Figures 1-3.

Figure 5: Monthly Data Series of Passenger Cars Registrations in the Czech Republic, Slovakia, and Poland for Years 2003-2013



Source: Data from OECD statistics (OECD [online], 2014), author's calculations.

Figure 1 indicates, that in the Czech Republic, Slovakia, and Poland there was a decrease in new car registrations in 2005-2006, followed by a slow increase in 2006-2008 period. The sudden high increase in new car registration in the first half of 2009 in Slovakia appeared as a consequence of newly introduced vehicle scrappage scheme valid from March 2009. The vehicle scrappage scheme was introduced also in

Germany and Austria, thus registration of new cars in both countries increased at the beginning of 2009 (Figure 2).

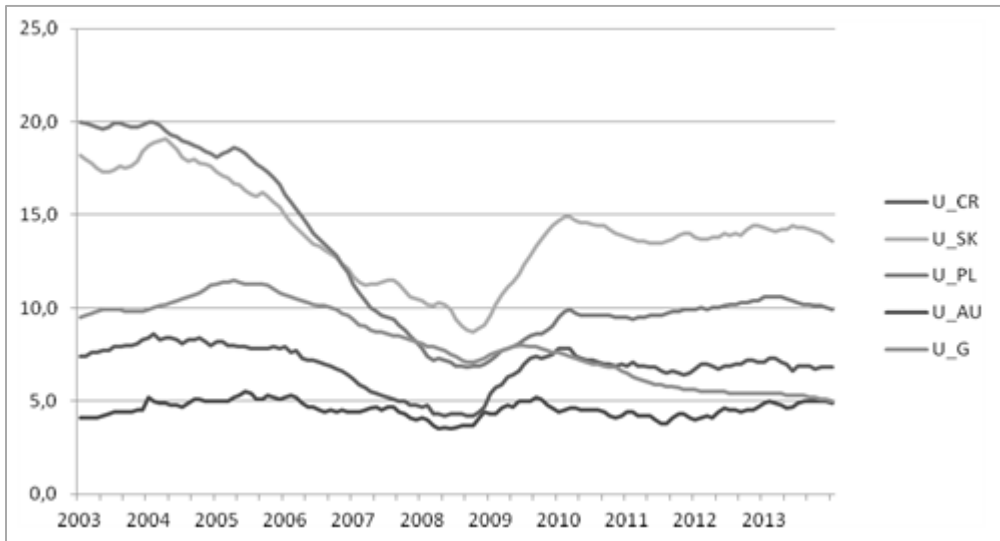
Figure 6: Monthly Data Series of Passenger Cars Registrations in Germany and Austria for years 2003-2013



Source: Data from OECD statistics (OECD [online], 2014), author's calculations.

Unemployment rate in all studied countries decreased during 2005-2008 period, then, after the start of an economic crisis quickly increased (2008-2010 period), and then stagnated (2010-2013). The only exception of the trend is the unemployment rate in Germany, which decreased during 2010-2013 time period (see Figure 3).

Figure 7: Monthly Data Series of Unemployment Rate and in the Czech Republic, Slovakia, Poland, Germany, and Austria for years 2003-2013



Source: Data from Eurostat statistics (Eurostat [online], 2014), author's calculations.

The expectations of basic model, which means the fact that the consumption on durable goods (represented by variable *Cars*) is dependent on variable representing unemployment rate (*Unempl*) is given by relation:

$$Cars = f(Unempl) \quad (1)$$

For this model, the expected linear dependence can be performed using ordinary least squares estimation. However, in the original research of Malley and Moutos (1996), the existence of serial correlation and spurious regression model has led to the error correction model.

The test of serial correlation is based on the Durbin-Watson test (Hamilton, 1994):

$$DW = \frac{\sum (\varepsilon_t - \varepsilon_{t-1})^2}{\sum \varepsilon_t^2} \quad (2)$$

Durbin-Watson statistics usually reach values from the interval $\langle 0,4 \rangle$. In general, values close to 0 or to 4 indicate problems with serial correlation. Moreover, the spurious regression is possibly present in two series when $R^2 > DW$ or, in case of negative serial correlation, $R^2 < 4 - DW$. Under the condition of spurious regression, the Cochrane-Orcutt transformation of generalized least squares gives more reasonable results.

The necessary condition for cointegration analysis requires the unit root of time series, thus the Dickey–Fuller test or augmented Dickey–Fuller test has to be performed. The long-term relationship between variables can be revealed using unit-root test on the residuals from the original ordinary least squares model.

The co-integration test – the Granger causality test (described in Arlt, 1999) – is based on comparison of unrestricted and restricted VAR model, estimated without additional explanatory variable. The Granger causality test uses an F-test conducted on the differences of a co-integrated relationship (Engle, Granger, 1987):

$$F = \frac{\frac{RSS_{restricted} - RSS_{unrestricted}}{M}}{\frac{RSS_{unrestricted}}{N - K - 1}} \approx F(M, N - K - 1) \quad (3)$$

where K is the number of unrestricted model coefficients, M the number of coefficients eliminated in the restricted equation and N is the number of observations and RSS denotes sum of squared residuals.

Estimation and results performed on the data sets from Germany, Austria, the Czech Republic, Slovakia and Poland are given in the next section of this article.

3. Results and Discussion

The first step in this analysis is to estimate the linear dependence of variable *Cars* on the unemployment rate – variable *Unempl* from the model $Cars = f(Unempl)$. Short results resume for all five studied countries is given in Table 1.

Table 1: Results of Regression Estimation $Cars = \beta_0 + \beta_1 Unempl$ (*) = 1% level of significance, **=5% level of significance)**

	Germany	Austria	Czech Republic	Slovakia	Poland
Constant	96.31	98.60	134.00	132.23	90.36
Unempl	1.74***	-0.53	-5.22***	-2.26***	-0.10
Standard error	0.43	1.65	0.53	0.54	0.27
t-ratio	4.05	-0.32	-9.85	-4.152	-0.37
p-value	8.74×10^{-5}	0.75	1.77×10^{-17}	5.9×10^{-5}	0.71
R-squared	0.11	0.01	0.42	0.11	0.01
Durbin-Watson	0.70	0.89	1.46	0.88	0.33

Source: Author’s calculations, gretl program.

This model has poor fit (small coefficient of determination for all five estimations); the Durbin-Watson value indicates problems with autocorrelation of disturbances. Even though the results support relation $R^2 < DW$; the small Durbin-Watson values indicate possible spurious regression existence.

In order to improve model, the generalized ordinary least squares were re-estimated; results of Cochrane-Orcutt AR(1) procedure are given in Table 2.

Table 2: Results of Cochrane-Orcutt Estimation (*) = 1% level of significance, **=5% level of significance)**

	Germany	Austria	Czech Republic	Slovakia	Poland
Constant	94.98	100.09	132.94	134.76	94.98
Unempl	1.889**	-0.81	-5.04***	-2.42**	-0.47
Standard error	0.92	2.67	0.67	1.05	0.97
t-ratio	2.06	-0.30	-7.56	-2.30	-0.48
p-value	0.04	0.76	6.39×10^{-12}	0.02	0.63
R-squared	0.48	0.30	0.47	0.38	0.70
Durbin-Watson	2.29	2.33	2.08	2.01	2.07

Source: Author’s calculations, gretl program.

Estimation results of the regression function $Cars = \beta_0 + \beta_1 Unempl + \varepsilon$ for the case of Austria, the Czech Republic, Slovakia, and Poland support the original assumption that the consumption of durables determined by new cars registration is negatively influenced by the unemployment rate. On contrary, this is not the case of Germany, for which the coefficient for *Unempl* variable is positive. This fact can be explained by massive state supports in favor to car producers during years of recession.

The coefficient of the *Unempl* variable is statistically significant in the case of the Czech Republic, Germany and Slovakia – surprisingly this significance is bound with car industry dependent countries (Table 2).

In order to perform the co-integration analysis, we have to test, if the time series process for all variables is stable in first differences. This stability can be tested using Dickey-Fuller test, and the stability with respect to lagged values (so-called augmentation terms) could be tested using Augmented Dickey-Fuller test.

A Dickey-Fuller test performed on the five unemployment rate data series indicates stability in first differences. However, this is not the case of new registered vehicles time series. Results of augmented Dickey-Fuller test on new car registration data series indicate, that the unit root cannot be rejected only for three countries using 6, 7 and 3 lags for the case of Czech Republic (asymptotic p-value 0.5562), Slovakia (asymptotic p-value 0,0526) and Poland (asymptotic p-value 0.272), respectively.

The Dickey-Fuller unit root test on residuals from the original OLS estimation indicates that the variables for the Czech Republic, Slovakia, and Poland have a long-run equilibrium relationship; that means that the coefficient β_1 of the estimation

$$\Delta res_t = \beta_0 + \beta_1 \cdot res_{(t-1)} \tag{4}$$

is statistically significant (respective p-values are $3,33 \cdot 10^{-5}$ for the Czech Republic, $2,75 \cdot 10^{-8}$ for Slovakia and 0,001 for Poland). The results of the respective error correction model of the form

$$\Delta Cars_t = \beta_0 + \beta_1 \Delta Unempl_t + \beta_2 res_{t-1} + \varepsilon_t \tag{5}$$

for the case of the Czech Republic, Slovakia, and Poland are given in Table 3. In the original model of Malley and Moutos (1996), this model was the one with the best fit. However, in this analysis, the estimated regression coefficients are not statistically significant (coefficients β_1 in Table 3), even though the regression coefficients in residuals' variables are negative as expected and they are statistically significant (coefficients β_2 in Table 3).

Table 3: Results of Error Correction Model (*) = 1% level of significance)**

	β_0	β_1	β_2	R-squared
Czech Republic	0.176	1.073	-0.727***	0.37
Slovakia	0.128	-3.203	-0.336***	0.21
Poland	0.000	0.671	-0.167***	0.08

Source: Author's calculations, gretl program.

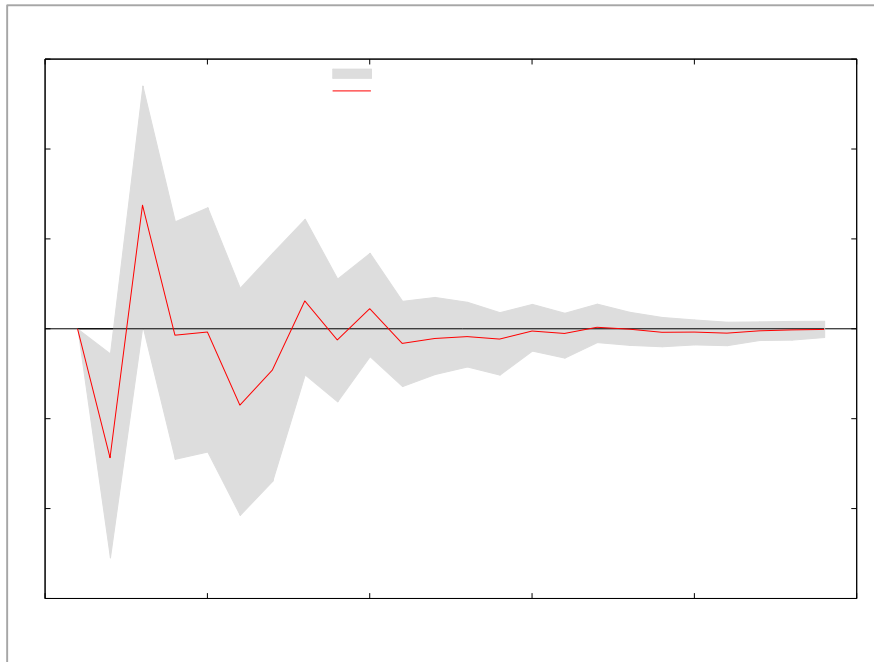
The short-run causality was done using the co-integration test – the Granger causality test. In general, the Granger causality test is constructed such that it reveals time changes more than causality; thus, the meaning of the expression “Granger cause” is equivalent to the expression “precede”. Results for pair-wise comparisons of unemployment rate changes and changes in new registered vehicles for the highest lags applicable are given in Table 4 with values of F-test and respective p-values. Tests were done for the case of the Czech Republic, Slovakia, and Poland.

Table 4: Results of Granger causality tests (last column indicates results of statements for $\alpha = 0.05$)

Statement	Lags	F test	p-value	Result for $\alpha = 0.05$
“ $\Delta u_{\text{Czech Republic}}$ Granger causes $\Delta cars_{\text{Czech Republic}}$ ”	6	3.1920	0.0062	Yes
“ $\Delta cars_{\text{Czech Republic}}$ Granger causes $\Delta u_{\text{Czech Republic}}$ ”	6	2.0626	0.0631	No
“ $\Delta u_{\text{Slovakia}}$ Granger causes $\Delta cars_{\text{Slovakia}}$ ”	2	0.1440	0.8661	No
“ $\Delta cars_{\text{Slovakia}}$ Granger causes $\Delta u_{\text{Slovakia}}$ ”	2	0.15742	0.8545	No
“ Δu_{Poland} Granger causes $\Delta cars_{\text{Poland}}$ ”	5	1.13	0.340	No
“ $\Delta cars_{\text{Poland}}$ Granger causes Δu_{Poland} ”	5	0.7844	0.5630	No

Source: Author’s calculations, gretl program.

Figure 4: Impulse-response Function of Responses of the New Car Registrations to Standard Error Shock in Unemployment Rate in the Case of the Czech Republic with Confidence Interval for $\alpha = 0,05$



Source: Author’s calculations, gretl program.

When comparing the Czech unemployment rate with the changes in new registered vehicles, the Granger causality test revealed that the change in unemployment rate precedes change in new car registrations. From the Cochrane Orcutt estimation we can see that the relation is negative. This relation is supported by the impulse-response function plot (Figure 4), which indicates that the positive shock in unemployment rate induces negative answer in durable goods consumption, and this shock is fully absorbed in six periods, that means in this studied case six months.

4. Conclusion

The main aim of this article was to study the dependence of consumption of the durable goods on unemployment rate and other factors for the case of the data from Germany, Austria, the Czech Republic, Slovakia and Poland. This analysis was based on the article of Malley and Moutos (1996), who did similar analysis based on the US data. Comparing to Malley and Moutos' analysis, the main result in both cases for the US data as well as for the case of Austria, the Czech Republic, Slovakia, and Poland is a statement, that consumption on durables (cars) is strongly negatively bound with current unemployment rate. However, this is not the case for Germany. Both analyses indicate that there exists serial correlation in time series. However, the VECM model estimated on the US data is not giving consistent results for the case of selected European countries – mainly because of weak test result for performed unit root tests. The short-run cointegration test has revealed only one causality relation, which states that the change in unemployment rate precedes change in new car registrations in the case of the Czech Republic.

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Entrepreneurial Financial Liquidity Management Experiences and Perspectives in EU and Outside EU: German, Austrian and French Data Illustration

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Abstract

There is believed that German and French economies set the tone for other EU economies. It is why we use data from German speaking countries of EU and France for illustration of our findings in context of other EU countries like Czech Republic or Poland. Effectiveness of liquid assets investments is only one from possible explanations of liquidity measures in firms. Too small liquid assets lead some firms to negative changes in their sale levels and as effect to weaker profits. Destruction of cash revenues creation possibilities is dangerous for them and is hard to rebuild possibilities to create cash revenues. Financial liquidity investment efficiency model (FLIEM) predicts that before the crisis, during the crisis and after the crisis phases are connected with higher levels of working capital in processing enterprises. Investments in liquidity are a hedging instrument against individual risk sensitivity that is higher in crisis affected times. The paper aim is to compare real economy data with FLIEM predictions. The FLIEM model expected that liquidity measures like current liquidity indicator should be treated as forecasting indicator about future risk sensitivity of the entities. It could be also suitable as forewarning impulse of future standing of whole processing part of economy.

Keywords: *Liquidity, Liquidity measures, Risk sensitivity*

JEL Classification: *D92, E44, G00, G01, Q14*

1. Introduction

In the paper, first will be analysed data for German, Austrian and French economies called sometimes: “old EU economies” and it will be compared with data from “young EU” Czech and Polish economies. As additional illustration will be used data from “outside EU” Ukrainian and Serbian economies.

Firms, if we look on them from their assets side, generate its added value thru operating cycle realization. They start with raw materials, energy, human resources and intellectual capital at the beginning of operating cycle and invert them into ready to sell services or products. Here they are in the very half of operating cycle. The rest needed to success is cash collection for sold products or services. In each part of operating cycle is risk. The strength of such risk influence dependent on risk sensitivity of the firm. One from indicators that moderate risk sensitivity is a level of trust between the firm and their co-operators. Value generated in the firm operating cycle can be lost if level of mistrust is too high. High level of mistrust and higher risk

sensitivity is a typical situation we face today in hard post-crisis times. But that is also the time of new opportunities as well. Some competitors are weaker as before the crisis. Clients have new demands not known before the crisis. That is typical turbulent environment with its surpluses and negative sides. Levels of liquidity from investment point of view are maintained in entities for hedging purposes against the risk of breaking production fluency and risk of lack final offer for the clients (Bates, Kahle, & Stulz, 2009; Faulkender, & Wang, 2006; Dluhosova, Richtarova, & Culik, 2011). Such kind of investments have also value of option of American type from holding more liquid assets near to cash and value of option of European type from holding less liquid assets near to accounts receivables and inventories components like inventories and accounts receivables (Michalski 2014; Soltes, & Rusnakova, 2013; Michalski, 2013). There is believed that, both cash and inventory levels should be as small as possible (Ferreira & Vilela, 2004; Kim, Mauer, & Sherman, 1998; Miller & Orr, 1966). Financial management decision should be done in context of future cash flows generated by the firm in the risk and uncertainty context. Truth is that the risk is higher, the liquidity levels have higher utility (Belas, J., Cipovova, E., Novak, P., & Polach, J., 2012 Polak, 2009; Zmeskal & Dluhosova, 2009; Uzik & Soltes, 2009). There exists very few firms not suffering from that risk, and they do not suffer in the same way always (Opler, Pinkowitz, Stulz, & Williamson, 1999; Pinkowitz & Williamson, 2001; Dluhosova, 2004). Firms sensitivity on risk is different, and it depend on factors connected with its business environment, including before the crisis, during the crisis and after the crisis context (Kulhanek, 2012; Ozkan & Ozkan, 2004; Hudson & Orviska, 2013). That paper uses Financial Liquidity Investment Efficiency Model (FLIEM) predictions and empirical data explanation of phenomenon of sensitivity on risk (Dluhosova, 2012; Dittmar & Mahrt-Smith, 2007). We also try to suggest that liquidity indicators serves as forecasting information and forewarning signal about whole manufacturing part of economy as firm environment (Horvatova, 2008; Kalcheva & Lins, 2007; Zmeskal & Dluhosova, 2010).

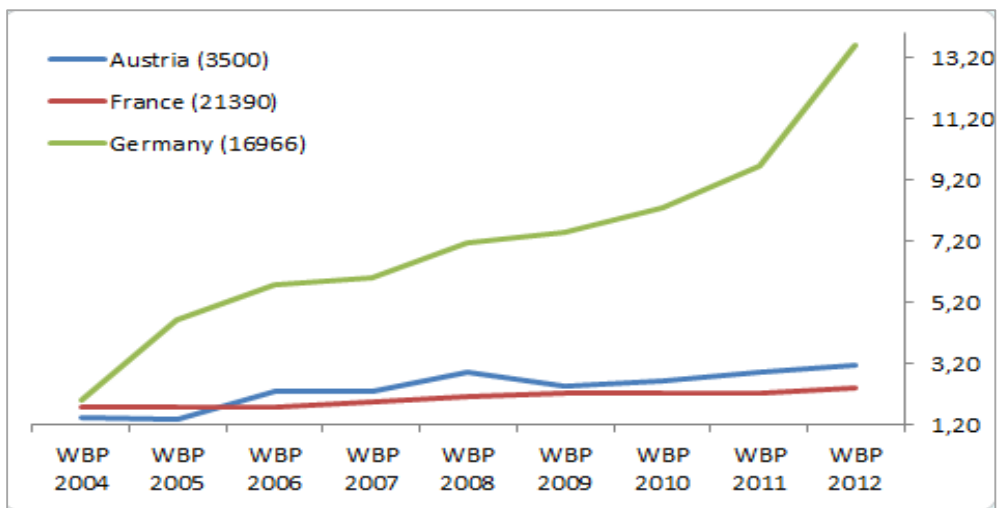
Holding of accounts receivables, inventory, cash and using accounts payable is a result of use active policy in attract the offer to clients by on time and full answer on the purchasers needs (Michalski, 2014a; Michalski, 2009). Scale of investment in working capital and capital involved in working capital levels is a result of enterprise position in economic environment (Pinkowitz, Stulz, & Williamson, 2006; Gazda, 2002; Michalski 2014b). In effect there are entities that do not hold large levels of liquidity. That strong in position firms have small financial vulnerability and lower sensitivity on risk and do not afraid of situation in which risk of too small level of liquidity occur (Michalski, 2014b). It is because the cost of too small liquidity levels for them is very small or even they have no such opportunity cost or is not linked with negative option value (Soltes, 2010; Glova & Sabol, 2011). But also, there are firms with large financial vulnerability and sensitivity on risk connected to small levels of liquidity (Michalski, 2012a). That entities need to keep larger liquidity levels to hedge against costly risk of too small liquidity levels (Michalski, 2012c). Too small liquidity leads that kind of firms to negative changes in their safety and sale levels. Destruction of cash revenues creation possibilities is dangerous for them and is hard to rebuild possibilities to create cash revenues. Free cash flows are generated in context of

uncertainty and risk and depend also on working capital management policy of the firm (Michalski 2014a; Michalski, 2012b).

2. Model and Data

The current ratio (WBP), quick ratio (WPP) and cash ratio (WSP) indices in manufacturing firms could serve as forewarning indicator about general economic condition of manufacturing part of real economy. Each firm tries to suit its liquidity levels to its business environment. Individual risk sensitivity is a result of entity answer on changes in its internal economic health but also is response on general economic changes. Here we present current ratio (WBP), quick ratio (WPP) and cash ratio (WSP) indices in Austrian, French and German manufacturing firms. That results are presented in three business environment conditions: 2004-2006 period, named by us as „before the crisis“, 2007-2009 „during the crisis“, and 2010-2012 „after the crisis“. Empirical data confirms our projections derived from theory based on FLIEM model. FLIEM model was presented by Michalski (Michalski 2014a, Michalski 2012a, Michalski 2012b, Michalski 2012c). That is useful to describe expected current ratio (WBP), quick ratio (WPP) and cash ratio (WSP) indices and it depends on firm individual risk sensitivity level. Data was collected from manufacturing firms from 1 to 32 sectors that operated in Austria, Germany and France incessantly during such 9 years period.

Figure 1: Current Ratio (WBP) Index in Manufacturing Firms Operating in Austria, Germany and France Before the Crisis (2004-2006), During the Crisis (2007-2009) and After the Crisis (2010-2012) Period



Source: own study based on data from 41856 manufacturing firms operating in Austria, Germany and France reported in Database Amadeus product of Bureau van Dijk [date: 2014 APR 04]

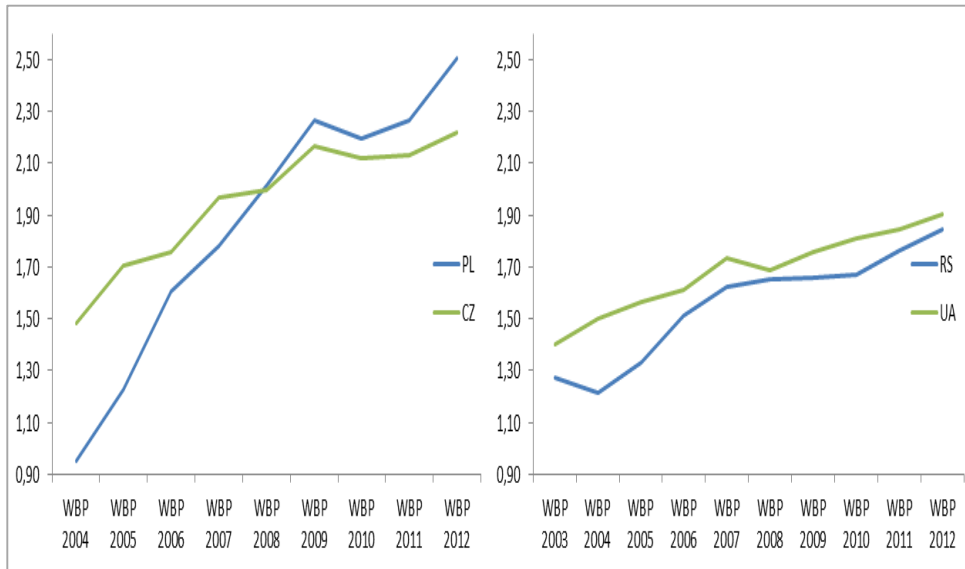
Table 1: Current Ratio (WBP) in Manufacturing Firms Operating in Austria, Germany and France Before the Crisis (2004-2006), During the Crisis (2007-2009) and After the Crisis (2010-2012) Period

	WBP 2012	WBP 2011	WBP 2010	WBP 2009	WBP 2008	WBP 2007	WBP 2006	WBP 2005	WBP 2004
Austria (3500)	3,15	2,93	2,61	2,43	2,91	2,27	2,27	1,38	1,40
France (21390)	2,38	2,23	2,24	2,22	2,08	1,91	1,77	1,75	1,75
Germany (16966)	13,63	9,65	8,29	7,51	7,17	6,03	5,78	4,60	2,01

Source: own study based on data from 41856 manufacturing firms operating in Austria, Germany and France reported in Database Amadeus product of Bureau van Dijk

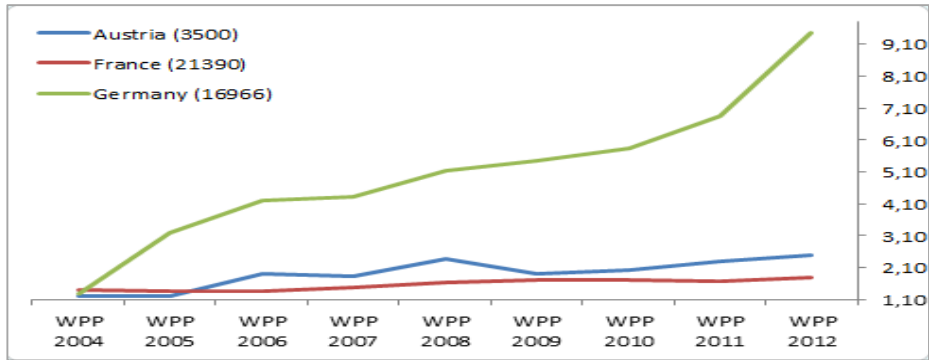
Similar growing WBP impulse was noted in Czech and Polish manufacturing firms as UE members. The same tendency was weaker for Serbian and Ukrainian manufacturing firms, as firms operating outside UE.

Figure 2: Current Ratio (WBP) Levels Before (2004–06), During (2007–09), and After (2010–2012) the Crisis in a Business Environment with Continuous Growing Risk Sensitivity in Czech (CZ, data for 1737 manufacturing firms), Polish (PL, 1516), Serbian (RS, 1578) and Ukrainian (UA, 3046) Conditions



Source: own study based on data from 7877 manufacturing firms operating in Czech Republic, Poland, Serbia and Ukraine reported in Database Amadeus product of Bureau van Dijk [date: 2014 APR 04].

Figure 3: Quick Ratio (WPP) in Manufacturing Firms Operating in Austria, Germany and France Before the Crisis (2004-2006), During the Crisis (2007-2009) and After the Crisis (2010-2012) Period



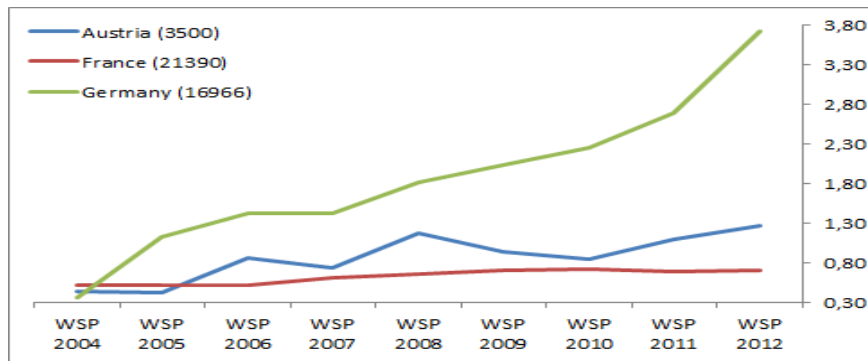
Source: own study based on data from 41856 manufacturing firms operating in Austria, Germany and France reported in Database Amadeus product of Bureau van Dijk

Table 2: Quick Ratio (WPP) in Manufacturing Firms Operating in Austria, Germany and France Before the Crisis (2004-2006), During the Crisis (2007-2009) and After the Crisis (2010-2012) Period

	WPP 2012	WPP 2011	WPP 2010	WPP 2009	WPP 2008	WPP 2007	WPP 2006	WPP 2005	WPP 2004
Austria (3500)	2,48	2,31	2,01	1,92	2,36	1,82	1,90	1,20	1,23
France (21390)	1,80	1,69	1,72	1,71	1,63	1,50	1,38	1,38	1,39
Germany (16966)	9,47	6,85	5,85	5,45	5,12	4,34	4,22	3,21	1,27

Source: own study based on data from 41856 manufacturing firms operating in Austria, Germany and France reported in Database Amadeus product of Bureau van Dijk

Figure 4: Cash Ratio (WSP) in Manufacturing Firms Operating in Austria, Germany and France Before the Crisis (2004-2006), During the Crisis (2007-2009) and After the Crisis (2010-2012) Period



Source: own study based on data from 41856 manufacturing firms operating in Austria, Germany and France reported in Database Amadeus product of Bureau van Dijk

Table 3: Cash ratio (WSP) in manufacturing firms operating in Austria, Germany and France before the crisis (2004-2006), during the crisis (2007-2009) and after the crisis (2010-2012) period

	WSP 2012	WSP 2011	WSP 2010	WSP 2009	WSP 2008	WSP 2007	WSP 2006	WSP 2005	WSP 2004
Austria (3500)	1,26	1,10	0,85	0,94	1,18	0,74	0,86	0,43	0,43
France (21390)	0,71	0,68	0,72	0,70	0,66	0,61	0,52	0,51	0,51
Germany (16966)	3,73	2,69	2,26	2,03	1,82	1,43	1,42	1,13	0,36

Source: own study based on data from 41856 manufacturing firms operating in Austria, Germany and France reported in Database Amadeus product of Bureau van Dijk

3. Conclusions

Presented data from Austrian, French and German manufacturing firms is with one accord with FLIEM model predictions. In context of UE integration issues, we can observe, that risk sensitivity changes inside UE are similar, and it was observed by similar dynamics of Polish, Czech, Austrian, German and French manufacturing firms data in comparison with outside UE Ukrainian and Serbian manufacturing firms. Of course, there is a risk, that such observation is only statistical coincidence and there is a need to make much more future research to check risk sensitivity indicators in various contexts. Forecasting of the FLIEM model is useful for make quick judgments about current and future condition of the general population of the manufacturing enterprises, that population risk sensitivity and as global effect of that. There is possible to predict future condition of the whole manufacturing part of economy as well. Next research should be concentrated on future control of overall fit of the FLIEM model and its predictions in after the crisis conditions, cross the countries and cross the sectors research, that could answer how the risk sensitivity characterize the firms from various business branches, and various countries.

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Is Human Resources Planning Influenced by Foreign Ownership? Evidence from the Slovak Republic

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Abstract

The paper investigates the differences in planning of human resources (HR) in selected enterprises in the Slovak Republic. The main factor investigated is the share of foreign capital in the enterprises' capital structure. The process of the economic integration and globalisation is taking form of foreign direct investment (FDI). This transfer of capital is usually accompanied by the transfer of technologies and knowledge. The so-called "knowledge spillover" in the area of HR planning is the phenomenon the paper focuses on. Using Kruskal-Wallis ANOVA and post-hoc tests we find the share of foreign capital is a relevant determinant of HR planning of enterprises in the Slovak Republic. The enterprises with the higher share of foreign capital are planning differently in comparison with enterprises with none or low share of foreign capital in their owner structure.

Keywords: *Foreign direct investments, Foreign ownership, Human resources planning, Knowledge spillovers*

JEL Classification: *M12, M14, M16*

1. Introduction

Since the outset of economic transition in Central and Eastern Europe, there have been widespread expectations that foreign direct investment (FDI) would play an important role in the process of convergence. FDI differs from other forms of international capital movement in the manner and duration of the commitment it involves (Banacek et al., 2000). Thanks to FDI, a superior growth performance of Central and Eastern European countries vis-à-vis Western Europe can be observed, providing evidence that a process of catching-up is underway. (Tondl, Vuksic, 2003). This is one of the reasons, why policy makers in many developing and transition economies (including those of Central and Eastern Europe countries) place attracting FDI high on their agenda, in expectation of new technologies and know-how (see Javorcik, 2004; Serenčėš et al., 2010). However, some opinions says, that the evidence, that there are indeed some positive externalities of FDI, is somewhat lacking (see Konings, 2001). On the other hand, a lot of publications is focusing on FDI spillovers in the area of human capital (see Gaumont and Leonard, 2010), technology, research and

development (see Todo, 2006), productivity (see Kathuria, 2000) and knowledge (see Girma, 2005).

We are dealing with the knowledge spillover, namely the different know-how in the area of human resources. There exist many approaches to HR – usually it is dealt with them from the point of view of competences (see Draganidis and Mentzas, 2006), talent management (Rani and Joshi, 2012) or diversity management (Eger and Egerová, 2013; Egerová et al., 2013; Senichev, 2013). In the paper, we focus on the knowledge spillover taking form of differences in the manner of human resources planning of the enterprises, which varied by the magnitude of foreign ownership.

2. Problem Formulation

This paper investigates the impact of foreign ownership on companies' planning, using a sample of 565 manufacturing and non-manufacturing enterprises (see "data" section of the paper) with focus on the area of human resources.

The main contribution of this paper is the finding, that there is indeed a significant difference in some areas of human resources planning in enterprises with high share of foreign capital in their ownership structure in comparison with enterprises without foreign ownership.

2.1 Data

Selective survey was used as a method of the data collection. According to Munk (2013), the selective survey means that the chosen data create only part of the basic file and therefore, the accuracy of the results is limited. A scaled questionnaire of own construction was used as a tool of data collection. Likert scale from 1 to 7 was used where figure 1 corresponded to the absolute consensus of the respondent with the statement in the wording of the item (formulated as a positive statement), and figure 7, on the contrary, to the absolute disagreement of the respondent. Figure 4 expressed his/her irresolute attitude and the added figure 8 enabled the respondent not to comment on a given item. All of such "answers" were excluded from further processing.

The survey was realised from early autumn 2012 to winter 2013. There were 565 participants - each representing different enterprise. The structure of enterprises, according the share of foreign capital in their ownership structure, is listed in table 1. In the majority of the enterprises (59.3%), there was no foreign capital in their ownership structure. The share of the foreign capital in 21.6% of the enterprises varied from 1% to 60%. In 19.1% of the enterprises, the share of foreign capital exceeded 60%.

Table 1: Structure of Enterprises According the Share of Foreign Capital in Their Ownership Structure

	number	in %	valid %	cumulative %
0%	335	59.3	59.3	59.3
1% - 60%	122	21.6	21.6	80.9
over 60%	108	19.1	19.1	100.0
total	565	100.0	100.0	

Source: Own processing

2.2 Methods Used

The reliability of the questionnaire was verified by means of Cronbach's alpha. The values of Cronbach's alpha 0.7 and more represent sufficient internal scale consistence (Nunnally and Bernstein, 1994). The method of the split-half measurement instrument was used as the second method of verifying the reliability. The results of questionnaire's reliability evaluation are summarized in Table 2. All values are over 0.7 which means the reliability is sufficient.

Table 2: Questionnaire Reliability

	Cronbach`s Alfa	Number of items
Total reliability	0.709	12

Source: Own processing

Due to the character of the collected data, non-parametric statistical methods were used. To verify the existence of statistically significant differences between the individual groups of enterprise (depending on a factor of foreign capital share), the Kruskal-Wallis test and Jonckheere-Terpstra test were used. If the Kruskal-Wallis test confirmed the existence of a statistically significant difference, suitable methods of "post hoc testing" were used (Tukey's HSD test).

3. Problem Solution

From the total number of 69 items 12 are dealing with human resources planning (I_1 – I_12):

- **I_1:** The HR planning respects the needed number of employees regarding the actual output capacity.
- **I_2:** There are mostly intuitive methods used when the needed number of employees assessment concerned.
- **I_3:** There are mostly quantitative methods used when the needed number of employees assessment concerned.
- **I_4:** The needed number of employees is available.
- **I_5:** The needed number of employees is due to HR planning available in time.
- **I_6:** Employees recruitment is outsourced to personnel leasing agencies.

- **I_7:** The number of employees is not unnecessary high.
- **I_8:** The vital part of HR planning is further education and training of employees.
- **I_9:** The motivation programmes are an important part of HR planning.
- **I_10:** The criteria of performance assessment are well communicated.
- **I_11:** The system of employees' evaluation and rewarding is fair.
- **I_12:** Each employee is well acquainted with the results of evaluation process.

They can be divided into three fields:

- planning methodology (I_2, I_3),
- the assessment of needed number of employees (I_1, I_4 - I_7),
- development and evaluation of employees (I_8 - I_12).

We assume that the enterprises with the higher share of foreign capital are taking different approaches to planning of human resources in comparison with the enterprises where the share of foreign capital is lower, or where there is no foreign capital at all.

Firstly, we evaluated if there are statistically significant differences between the individual groups of enterprises. The results of Kruskal-Wallis ANOVA confirmed the existence of statistically significant differences in the items 2, 3, 6, 7, 8, 9 and 11 (Table 3). However, some of the results (items 4, 5, 8 and 11) indicated marginal values of the p level. We decided to apply Jonckheere-Terpstra test as well, to further confirm or negate the results of Kruskal-Wallis ANOVA. No other statistically significant differences were confirmed and in the case of item 8 it was even negated (Table 4).

Table 3: Results of Kruskal-Wallis's ANOVA

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8	I_9	I_10	I_11	I_12
p level	0.28	0.00	0.00	0.53	0.64	0.00	0.00	0.04	0.00	0.15	0.04	0.51

Source: Own processing

Table 4: Jonckheere-Terpstra Test

	I_1	I_2	I_3	I_4	I_5	I_6	I_7	I_8	I_9	I_10	I_11	I_12
p level	0.13	0.00	0.00	0.70	0.77	0.00	0.00	0.06	0.00	0.92	0.02	0.68

Source: Own processing

In the case of items, where both tests confirmed the statistically significant differences (items 2, 3, 6, 7, 9, 11), we used Tukey's HSD test to find means of the individual groups of enterprises (Table 5) that are significantly different from each other (Table 6).

Table 5: Achieved Mean Values of Individual Groups of Enterprises

	I_2	I_3	I_6	I_7	I_9	I_11
0%	3.50	3.83	6.06	2.55	3.60	2.91
1%-60%	4.28	3.38	4.67	3.23	3.25	3.11
Over 60%	4.68	3.08	4.07	3.08	2.80	3.30
Total	3.91	3.57	5.32	2.79	3.33	3.04

Source: Own processing

Table 6: Tukey's HSD Test Results

			Mean Difference	Std. Error	p	95% Confidence Interval	
						Lower Bound	Upper Bound
I_2	over 60%	0%	1.18	0.22	0.00	0.66	1.70
		1%-60%	0.40	0.31	0.40	-0.33	1.14
I_3	over 60%	0%	-0.75	0.21	0.00	-1,25	-0.26
		1%-60%	-0.30	0.29	0.55	-0.99	0.38
I_6	over 60%	0%	-1.98	0.21	0.00	-2.50	-1.47
		1%-60%	-0.60	0.30	0.12	-1.33	0.13
I_7	over 60%	0%	0.53	0.20	0.03	0.04	1.02
		1%-60%	-0.15	0.29	0.86	-0.84	0.54
I_9	over 60%	0%	-0.80	0.22	0.00	-1.32	-0.28
		1%-60%	-0.45	0.31	0.32	-1.19	0.29
I_11	over 60%	0%	0.39	0.20	0.13	-0.09	0.87
		1%-60%	0.19	0.29	0.78	-0.49	0.87

Source: Own processing

The results of Tukey's HSD test show, that there are differences between the enterprises where there is no foreign capital and enterprises where the share of foreign capital in their ownership structure exceeds 60% (I_2, I_3, I_6, I_7 and I_9).

Very interesting is the difference in the field of HR planning methodology (I_2 and I_3). The enterprises with no foreign capital tend to use intuitive methods of planning based on experience and long-time practice (see the average scores for I_2 and I_3, table 5), while the enterprises with higher share of foreign capital use the quantitative methods more frequently.

Tukey's HSD test confirmed a different approach of enterprises with higher share of foreign capital in respect to using personnel agencies for recruitment of employees (Table 5 and 6, I_6). They are using them more frequently in comparison to enterprises without foreign capital in their ownership structure. However, respondents working in the enterprises without foreign capital in their capital structure are leaning towards agreement with the statement expressed in I_7 more frequently, than the respondents working in the enterprises, where the share of foreign capital exceeds 60%. It comes as a surprise since we assumed that the outsourcing of recruitment results in more accurate satisfaction of demand for employees in the sense of their quantity.

The last confirmed difference is connected with incorporation of motivation programmes into HR planning. According to respondents' opinions, the results of Tukey's HSD test show such incorporation is more frequently realised in enterprises with higher share of foreign capital (see Table 5).

4. Conclusion

Based on results, we conclude that the differences in HR planning occur most frequently among the enterprises where there is no foreign capital and enterprises where the share of foreign capital in their ownership structure exceeds 60%. The enterprises where there is no foreign capital tend to use intuitive methods, while enterprises with higher share of foreign capital use quantitative ones. The enterprises with higher share of foreign capital are outsourcing the employees' recruitment to personnel agencies more frequently in comparison to enterprises without foreign capital in their ownership structure, but the demand for employees is not necessarily accurately met (the number of hired employees can be higher than actually needed). The results also indicate that the incorporation of motivation programmes into HR planning is more common in enterprises with higher share of foreign capital (see also Chiu et al., 2002).

There are also some limitations to our results since we did not take the size (represented by the number of employees) of an enterprise into consideration, however, we suspect there would be a high positive correlation between their size and the share of foreign capital in their ownership structure. Another limitation is that some of the respondents may not assess the share of foreign capital in the company they are working in correctly, since they may not be privy to relevant information regarding its size due to their working position.

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Theory and Practice of Industrial Policy of the EU in the Context of Globalization Challenges

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Abstract

Increasing the competitiveness of European industry and ensuring that Europe can continue to maintain its significance as a power engine of sustainable growth and employment is the main objective of EU industrial policy. Realization of this aim is even more important in the context of globalization, in which Europe must strive to maintain its competitive advantage in competition with other developed economies and other actors play an increasingly important role. Industrial policy is one of the priority areas in Europe 2020, as evidenced by key initiative of the European Commission "Industrial Policy for the Globalization Era". A new industrial policy has started, focused on measures necessary to strengthen Europe's attractiveness as a location for investment and production. The aim of this paper is to outline the theoretical and practical opportunities and challenges for industrial policy of the European Union at the age of globalization and in the background of the economic crisis.

Keywords: *Competitiveness, Globalization, Economic Crisis, Industrial Policy*

JEL Classification: *F3, F15, L5*

1. Introduction

The global economic crisis in its scope and depth confirmed that in today's globalized world, the company development possibilities are growing and a substantial part of the variables depends on a large number of global factors and processes that act synergically. It also confirmed that the economies in the process of recovery and consecutive growth cannot rely solely on self-regulating ability of the market (Nemcová, 2010).

The economic crisis of recent years demonstrated in a European context how highly sensitive industrial sectors are (Hon, Honová, 2012). This caused a revival of discussions on industrial policy and shifted the emphasis on the importance of a strong, diversified and competitive industry needed for the competitiveness of the European Union (Mynarzová, Kaňa, 2014). It is evident that now more than ever, Europe needs industry and industry needs Europe.

Already in the period before the crisis, the declining competitiveness of EU industry, along with the consequences of its enlargement of 12 new member states pointed out the need to redefine and use more efficiently already existing instruments of economic policy. External signs of economic crisis in the form of decline in GDP, rising

unemployment and stagnation or decline in some manufacturing sectors stressed the need to design a new form of industrial policy, which would increase the competitiveness of European industry, ensuring that the industry can continue to serve as an engine of sustainable growth in Europe.

2. Theoretical Economic Arguments For and Against the Implementation of Industrial Policy

Within the European Union industrial policy⁶⁰ is one of the most "controversial" topics because there is no consensus in the economic and political concepts of the EU member states whether and how efficiently it is feasible using a targeted state activities and state interventions in the market mechanism to form a progressive structure and how important role should, on the other hand, economic competition play. Two main groups of preferences can be identified in the concept of industrial policy within the European Union - the group supporting the active state intervention in the industrial sector, stressing that the market alone is unable to provide enough impulse to objective investments (El-Agraa, 2011). The role of industrial policy is to identify and support the growth of those sectors of industry that have particular importance for the entire industry, economy and society. The ultimate effect of such aid should be to increase the prosperity of the whole society and hence welfare of individual subjects.

The economic argument of the implementation of industrial policy may be market failures, thereby restricting the economic growth and competitiveness of companies and sectors within the domestic economy or excessive adjustment costs of immobile factors of production. Generally we can distinguish a few basic types of economic arguments with certain analytical significance like company size, externalities between companies, capital market imperfections and quality reputation (Jovanović, 2005). Another economic argument in favor of industrial policy may be rigidity in the labor market, which may increase the adjustment costs of the company due to changes in the industry (Nedomlelová, 2002).

On the contrary, opponents of the above approach hold the opinion that the state should only remove barriers of free market forces, and any possible attempt to define strategically important sectors is very uncertain. Opponents of industrial policy often argue that the industry and products in which the country has comparative advantage depends on the availability of production factors⁶¹ (Krugman, Obstfeld, Melitz, 2012). The production structure of the country is objectively dependent on the structure of its production factors facilities and the state cannot ignore this dependence, cancel or replace any industrial policy. The result of implemented industrial policy in this sense

⁶⁰ EU industrial policy means the industrial policy at EU level. Industrial policy is largely not implemented at EU level, but it is up to the Member States. Member States shall consult each other in close cooperation with the Commission and, if necessary, shall coordinate. The Commission may carry out any useful suggestions in order to establish guidelines and indicators, the organization of exchange of best practice and preparation of the necessary elements for periodic monitoring and evaluation of industrial policies.

⁶¹ see Heckscher-Olin theorem

is only secession of the country's productive structure from the facilities structure, leading to inefficient integration of the country into the international division of labor. Production structure can be influenced only at the cost of violating the principle of comparative advantage and reducing allocation efficiency (Dvořáček, 2003). Despite all the arguments for and against the EU currently provides considerable space to industrial policy.

3. Key Moments in the Formation Process of Industrial Policy of the EU

Industrial policy was not clearly defined in the founding treaties. The term "industrial policy" did not figure even in the *Treaty of Rome* and the *Single European Act*. Nevertheless, we can identify *European Coal and Steel Community* for the grouping, which by their nature intervened in two major industries (Lacina, Ostřížek et al., 2011). The *Treaty Establishing the European Coal and Steel Community* contained a number of regulations that allow specific sectorial interventions, without the use of the term "industrial policy". While formulating the contract governing the *European Economic Community*, in principle, no party has thought about a comprehensive industrial policy.

In a memorandum titled *The Communities Industrial Policy* on 18 March 1970, the Commission presented its first ideas for an industrial strategy at Community level. The following Council debate on industrial policy in December 1973 set out the guideline for a European industrial policy. This became the starting point of the debate on industrial policy between Member States at Community level. However, the oil crisis and the following global recession diminished those ambitions (Yanhong, 2007). During the 70th and 80th, the industrial policy of the European Communities focused mainly on the problems of individual sectors (mainly steel, textiles and shipbuilding), which were characterized by relatively dirigiste and protectionist character. Until mid-1980s Commission's efforts in initiating an industrial policy at the Community level finally failed. Significant strengthening of industrial policy measures was taken by the completion of the single market, which was presented in the *White Paper Completing the Internal Market* (June 1985)⁶².

The first formal Communication of industrial policy of the EU was issued in November 1990. The Commission's Communication titled *Industrial Policy in an Open and Competitive Environment: Guidelines for a Community Approach* laid the foundation concept of the Community industrial policy. It was a proposal for a comprehensive industrial strategy aimed at creating general conditions in order to improve the competitiveness of EU industrial policy with the competition of Japan and USA (Dvoracek, 2003).

The Maastricht Treaty consolidated the achievement of the communication of 1990 and set up the legal basis for the industrial policy. Article 130 called "Industry" focused on the conditions necessary for the competitiveness of Community industry explicitly excluded measures that could lead to a distortion of competition,

⁶² An integrated market should provide the benefits of the single market, including opportunities for mass production, specialization, economies of scale, transnational cooperation between enterprises, etc.

emphasized consultation and coordination between Member States. The incorporation of the above article was a reflection of the debate that followed the Bangemann memorandum on industrial policy⁶³. From the ratification of the Maastricht Treaty to the end of last century the Commission published several policy communications which became the motives for further development of the policy⁶⁴. Nevertheless, during that period, changes of economic structure (decline of the share of industry and increase of service sector) and rising of “knowledge economy” caused that industrial policy was not the priority of EU economic policies.

With the advent of 21st century, the economic situation faced by the EU changed a lot and the industrial policy of the EU came back again to the policy stage. From 2002 to 2005 the Commission annually published a communication on industrial policy. In 2002, Commission in its Communication on *Industrial Policy in an Enlarged Europe* underlined the key role of knowledge, research, innovation, entrepreneurship and sustainable production in the global economy. The importance of EU industry policy was highlighted in the 2003 Communication entitled *Some Key Issues in Europe's Competitiveness – Towards an Integrated Approach*. It was followed by the 2004 Communication *Fostering Structural Change: An Industrial Policy for an Enlarged Europe*.

Communication *Implementing the Community Lisbon Programme: A Policy Framework to Strengthen EU Manufacturing - Towards a More Integrated Approach to Industrial Policy (2005)*, which was released as part of the EU Lisbon agenda should aim at strengthening the industrial sector of the European Union by creating a more integrated approach for industrial policy and to extend and complete the existing framework of EU industrial policy. *Mid-term Review of Industrial Policy: A Contribution to the EU's Growth and Jobs Strategy*, which was drawn up in 2007, notes that the measures had a positive contribution to European industries and integrated approach to industrial policy has proven its success.

4. Contemporary Aspects, Challenges and Opportunities of Integrated EU Industrial Policy for the Globalization Era

The legal basis for contemporary industrial policy of EU is Article 173 of the Treaty on the Functioning of the European Union, which provides that *"The Union and the Member States shall ensure that the conditions necessary for the competitiveness of the Union's industry exist"*. The objective of the industrial policy of the European Union, which is horizontal in nature, is securing framework conditions favorable to the competitiveness of European industry.

⁶³ In the second memorandum of Industrial Policy (1994), Commissioner BANGEMANN continued to emphasize on horizontal measures, this time with more explicit reference to promoting competitiveness in accordance with Article 130 of the Maastricht Treaty.

⁶⁴ Such as: The Commission Communication *Competitiveness of European Enterprises in the Face of Globalization* (1998) challenged the industry, trade unions and the EU institutions to define a new industrial policy and to propose steps to increase competitiveness of European companies in the global market.

The industry is also at the center of a new growth model for the economy of the European Union, as outlined in *Europe 2020 - A Strategy for Smart, Sustainable and Inclusive Growth* (March 2010). It provides a strategic framework for a new integrated industrial policy aimed at stimulating economic recovery, creating jobs and ensuring the creation of a world-class prosperous European industrial base. It introduces the annual submission of regular reports on industrial policies, performance and competitiveness of the European Union and the Member States. As many of framework conditions for competitiveness and sustainable industry adjusts to the Member States should focus not only on the monitoring results in terms of competitiveness, but also the policy of competitiveness, including factors such as the system for innovation, competition, infrastructure and progress towards energy efficiency and economical use of raw materials.

This new approach to industrial policy puts into focus the competitiveness and sustainability of the industry in the European Union. The Commission is putting forward seven flagship initiatives⁶⁵. A key initiative *An Industrial Policy for the Globalization Era* focuses on activities related to increasing the competitiveness of European industry in order to create an industrial policy that will prepare the best environment to maintain and develop a strong, diversified and competitive industrial base in Europe, capable of facing the current global challenges. It proposed a new approach to industrial policy that puts into focus the competitiveness and sustainability of the industry in the European Union. The industrial policy is an integral part of many policies that contribute to achieving these targets, such as the single market policy and trade policy, but also transport policy, energy policy, environmental policy, social policy and consumer protection policy (European Commission [on-line], 2014c).

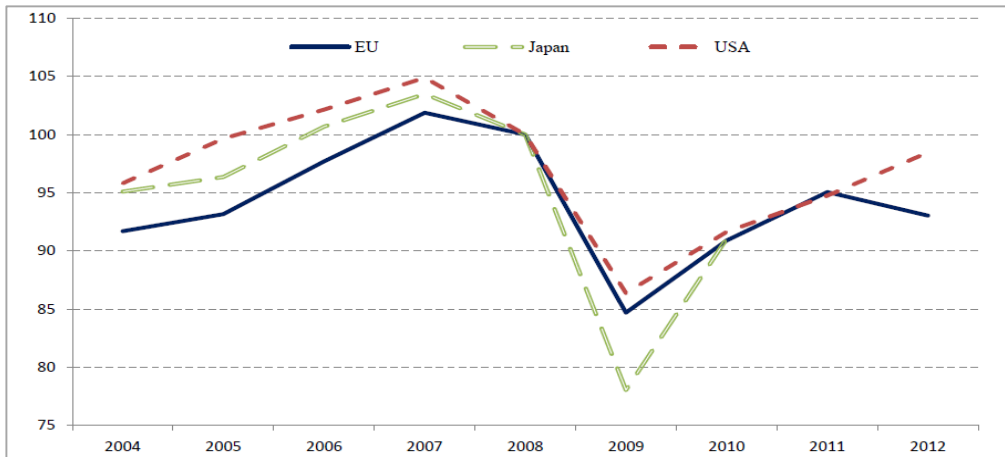
Committee on Industry, Research and Energy stresses that the industry faces a number of interrelated challenges (European Parliament [on-line], 2010):

- industry is affected by sequence changes in the development of the global economy. Differences between developed and developing countries and sectors that have traditionally dominated change due to growing competition. Demand in the global market is changing rapidly and companies must quickly reorient, restructure and re-specialize. The new international division of labor with fast growing economies (such as China, India, Brazil and Russia) raises the pressures of globalization;
- climate change is irreversible. Industry needs to move towards a carbon-free and resource-efficient production;
- demographic shifts are changing the profile of consumers and providers. The continuous rise of the average age requires new products, forms of transport and organization of labour. There will be a lack of qualified labour;
- the speedy urbanization presents new challenges to mobility, buildings and logistics, among others.

⁶⁵ Four initiatives are particularly important for increasing the competitiveness of European industry: *Innovation Union, A Digital Agenda for Europe, An Industrial Policy for the Globalization Era* and *An Agenda for New skills and Jobs*.

The need to strengthen the global competitiveness of the European industry is presented too in the Commission Communication of October 2011 *Industrial Policy: Reinforcing Competitiveness*. Industry can contribute greatly to the stabilization and start of the growth trajectory of the EU economy, which was significantly affected by the financial and economic crisis. As indicated in Figure 1, due to the worldwide economic crisis in 2009 there was a significant decline in industrial production in both the EU and the USA and Japan. Its gradual recovery is faster and more durable in the United States, while the European industry has seen the second fall since 2012 (European Commission, 2013).

Figure 1: Manufacturing Production Indexes (2008=100)



Source: European Commission (2014a), own processing

The Communication of October 2012 *Stronger European Industry for Growth and Economic Recovery* emphasizes that Europe needs to counter the depreciation of the importance of the industry in the 21st century. Currently, unsettling data show industrial production in the EU on a global scale and point out to a consistent decline in European production. The aim is to increase the share of industry in EU GDP from the current 16% to 20% by 2020 (European Commission [on-line], 2014b). The Commission proposes to establish a partnership between the EU, Member States and industry to accelerate investment into new technologies and to help Europe gain a competitive edge.

The latest Communication of the European Commission titled *For a European Industrial Renaissance* (January 2014) considers that a strong industrial base will be of key importance for Europe's economic recovery and competitiveness. This Communication stresses the significance of full and effective implementation of industrial policy in the Union and aims to facilitate this. Examples of the initiatives include investing in innovation, resource efficiency, new technologies and skills, simplifying legislation, updating the Small business act and reinforcing the Entrepreneurship action plan. The economic importance of industrial activities is much greater than suggested by the share of manufacturing in GDP. Industry accounts for over 80% of Europe's exports and 80% of private research and innovation

(European Commission [on-line], 2014d). That's why the Commission calls on Member States to recognize the central importance of industry for boosting competitiveness and sustainable growth in Europe. Finally, the objective of revitalization of the EU economy calls for the endorsement of the reindustrialization efforts in line with the Commission's aspiration of raising the contribution of industry to GDP to as much as 20% by 2020.

5. Conclusion

Based on this analysis of the theory and practice aspects of industrial policy of the EU we can say that industry is essential for Union, but its current state, the reform steps that were even more intensified by the economic crisis that hit it and shifted the emphasis to the importance of a strong and competitive European industry. The article demonstrated the importance of the industry to the EU economy, revealed that there was not enough done to support it, in a situation full of challenges its needs are comprehensively taken into account. EU industrial policy is often guided by the idea that markets should regulate themselves and this strategy was implemented through various measures without significant coordination across Member States.

The Europe 2020 strategy calls for more efficient management of industrial policy and stronger coordination and cooperation among the member countries of the European Union. The concept of national industry where only a few are involved in interactions with other sectors and the rest of the world loses its importance is not possible. Instead coordinated national policy responses must start. We would like to stress that the Commission's new approach to industrial policy is characterized by an effort to continue to use an individual approach to all sectors and at the same time carry out a coordinated European policy responses, since the concept of national sectors in the context of globalization loses importance. It takes into account the whole value and supply chain, with some parts of the chain located outside Europe, so it is important that all industries develop a "globalization reflex".

The industry is now at the center of the new growth model for the EU economy and industrial policy must in future have an important place in the Union. New industrial policy is subject to the introduction of more effective European governance, which should take two directions: a holistic and better coordinated policy development at European level to coordination and interaction of different policies affecting the competitiveness and closer cooperation with Member States and monitoring the success of policies in terms of performance and competitiveness, both at European level and at national level. Active industrial policy can improve European competitiveness and to lay the foundations for the new industrialization of Europe.

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EU Governance in the Post-Crisis Period and Its Effects

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Abstract

Economic and financial crisis in the end of '00 exacerbated the pressure on the economies of EU Member States. Since 2011 the European Union and its Member States have taken a series of important decisions that will mean stronger economic and budgetary coordination for the EU as a whole and for the euro area in particular. All Member states have committed to achieving Europe 2020 targets and have translated them into national targets and growth-enhancing policies. But only if the individual efforts of all the countries are coordinated and focused, can they result in the desired impact on growth. As a result, the interdependent EU economies will be better placed to chart a path to growth and job creation. This is supported by the European Semester with all its mechanisms, including the analysis of macroeconomic imbalances and processing of in-depth reviews. This article summarizes the results of the in-depth reviews to assess the macroeconomic situation in the EU countries during the post-crisis period (2012 – 2014).

Keywords: *Coordination and Governance in the Economic and Monetary Union, European Union, Economic Policy, Governance, In-depth Reviews, Macroeconomic Imbalance Procedure, Treaty on Stability*

JEL codes: *E63, F55, N44, O11, O43*

1. Introduction

The challenges that the EU countries face have been changing in the last five years. From the need to stabilize the banking sector in 2009 – 2010, through managing the public debt to the current need to reach more dynamic growth and to tackle the enormous unemployment. One key lesson from the crisis has been that more attention needs to be paid to macroeconomic imbalances and divergences in competitiveness between EU countries. In some cases, current account imbalances and divergences in price competitiveness have reached unprecedented and unsustainable levels. The most important part of the Macroeconomic Imbalance Procedure (MIP) which was introduced by the European Semester⁶⁶ to prevent and correct macroeconomic imbalances in the EU member countries are the alert mechanism and the in-depth reviews. They discuss relevant features of these economies especially the evolution of their external accounts, savings and investment balances, effective exchange rates, export market shares, cost- and non-cost competitiveness, productivity, private and public debt, housing prices, credit flows, financial systems, unemployment

⁶⁶ Regulation (EU) No 1176/2011 of the European Parliament and of the Council of 16 November 2011 on the prevention and correction of macroeconomic imbalances

and other variables. These assessments consider the situation of each economy and the dynamics in each of those issues.⁶⁷

2. Alert Mechanism and the In-depth Reviews 2012 - 2014

The *Macroeconomic Imbalance Procedure* enables to identify and address imbalances that represent the obstacles for functioning of the EU economies and may jeopardize the proper existence of the Economic and Monetary Union. The *In-depth Reviews* (IDR) cover Member States, which were identified in the *Alert Mechanism Reports* (AMR). The *Figure 1* displays the Macroeconomic Imbalance Procedure location in the European Semester timetable (see below). In November 2011 the Commission published the *Scoreboard for the surveillance of macroeconomic imbalances: envisaged initial design*⁶⁸ in particular to focus on the most relevant dimensions of macroeconomic imbalances and competitiveness losses.

This Macroeconomic Imbalance Procedure was firstly applied in February 2012 when the 1st Alert Mechanism Report identified potential macroeconomic imbalances in 12 Member States (BE, BG, DK, ES, FR, IT, CY, HU, SI, FI, SE, UK). After that each of the 12 In-depth Reviews⁶⁹ examines the origin, nature and severity of possible macroeconomic imbalances. They assess whether the country is affected by an imbalance, and if it is, what the nature of the imbalance is.

In the next period Malta and the Netherlands joined this group but without Cyprus which meantime has implemented special macroeconomic adjustment programme supported by financial assistance analogous to Greece, Portugal, Ireland and Romania. Accordingly the 2nd AMR 2013⁷⁰ was applied to 13 Member States. Subsequent IDR⁷¹ stated unfavorable results – all monitored countries were experiencing macroeconomic imbalances (or even excessive macroeconomic imbalances in case of Spain and Slovenia) including newly listed Malta and the Netherlands. The Netherlands because of risks mainly related to the housing market and high private household debt and Malta because of a number of indicators above their indicative thresholds, namely, private sector debt, the current account balance and government debt. In several member countries the macroeconomic imbalances identified for 2013 had to be closely monitored and tackled through a decisive commitment to structural reforms. Many of the measures which needed to be taken to ensure smooth absorption of the external and internal imbalances also promote medium-term economic growth. As such, the EU strategy to boost medium-term growth and investment includes the policy responses that should be taken in the context of the Macroeconomic Imbalance Procedure.

⁶⁷ Communication from the Commission to the European Parliament, the Council and the Eurogroup; COM (2014) 150, Brussels, 5. 3. 2014.

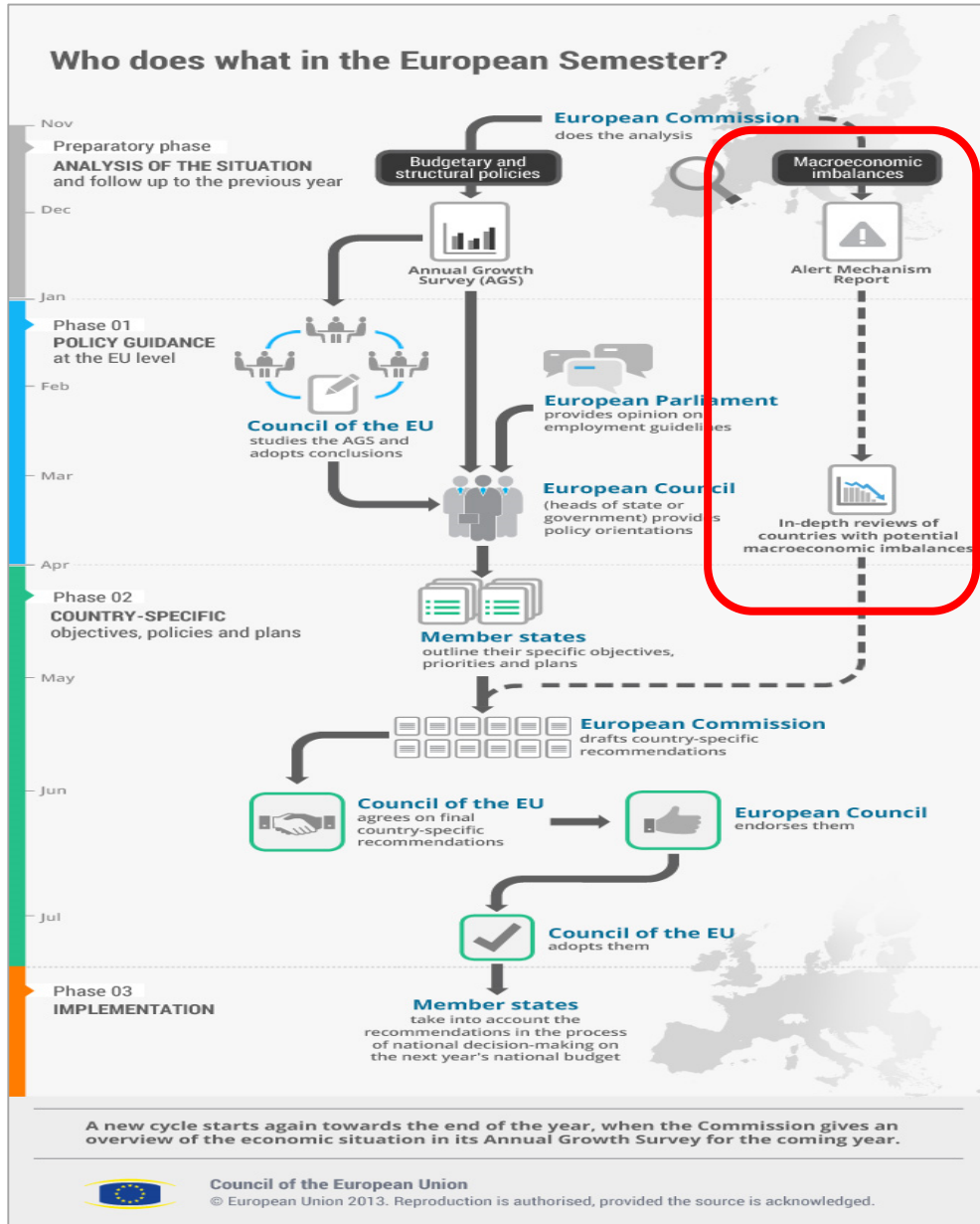
⁶⁸http://ec.europa.eu/economy_finance/economic_governance/documents/swp_scoreboard_08_11_2011_en.pdf

⁶⁹ of 30 May 2012

⁷⁰ Alert Mechanism Report 2013, 28. 11. 2012, COM(2012) 751 final

⁷¹ of 10 April 2013

Figure 1: Incorporation of the Alert Mechanism and the In-depth Reviews in the European Semester



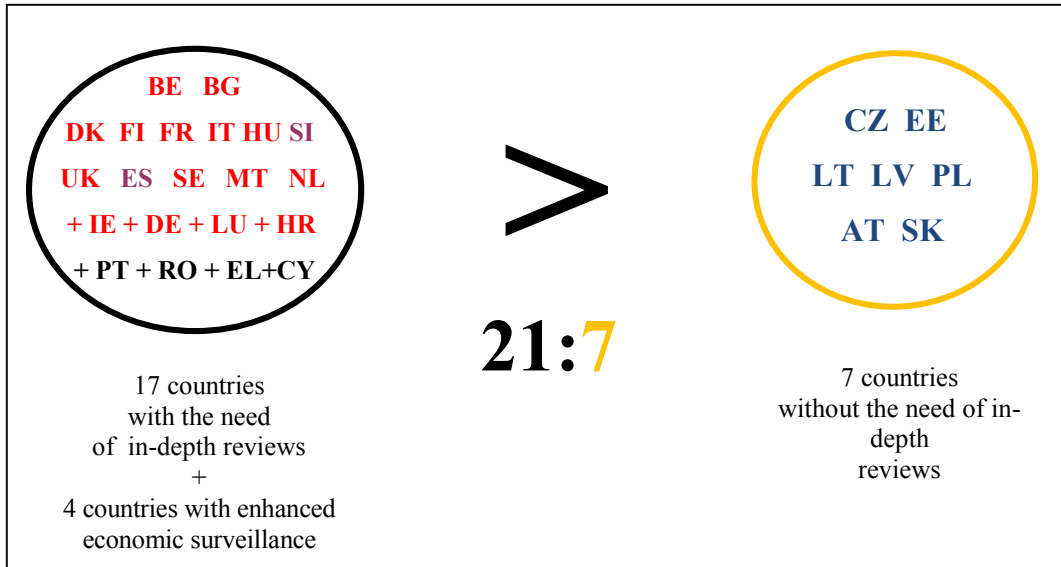
Source: Council of the European Union, 13th November 2013

For the current period (2014), the number of countries indicted of macroeconomic imbalances has widened. The 3rd Alert Mechanism Report⁷² has identified already

⁷² Alert Mechanism report 2014, 13. 11. 2013, COM(2013) 790 final

17 countries potentially affected by imbalances, and for which further analysis should be undertaken before concluding on the persistence of imbalances and their nature.

Figure 2: Member States with/without the In-depth Analysis in 2014



Source: own processing

3. Improved Macroeconomic Situation due to the EU Economic Governance

Despite of the permanently increasing number of countries requiring In-depth Review it can be concluded that the correction of imbalances in the described process leads to a remarkable improvement in many indicators and the gradual recovery of the EU' member economies.

In March 2014 the Commission has concluded on the base of the In-depth Reviews⁷³ whether imbalances or excessive imbalances exist and proposed appropriate policy recommendations. Based on these analyses the Commission consider that only 14 countries suffer from macroeconomic imbalances nowadays – Belgium, Bulgaria, Croatia, Finland, France, Germany, Hungary, Ireland, Italy, the Netherlands, Slovenia, Spain, Sweden and the United Kingdom (Croatia, Italy and Slovenia are experiencing even excessive imbalances). In case of Spain a significant adjustment has taken place and imbalances are not longer identified as excessive but the risks are still present in Spanish economy. For three Member States under In-depth Review, no macroeconomic imbalances have been identified. It concerns Denmark, Luxembourg and Malta.

Overall, the IDR analyses show that macroeconomic imbalances, which have been built up over many years, are gradually receding. In the countries with imbalances it is

⁷³ of 5 March 2014

expected that the results will be taken into account in their National Reform Programmes (in the Member States with Euro) or Stability and Convergence Programmes (in the Member States preparing for EMU). The Commission will make policy recommendations to improve economic situation and to prevent new risks.

Residual risks in many countries, however, persist:

- large external liabilities (IE, ES, HR, HU),
- deteriorations in the external flows (FR, UK),
- large current account surpluses reflecting weakened domestic demand (DE, LU, NL, SE, DK),
- cost competitiveness (BG, ES, HU, HR, IT, FI),
- non-cost competitiveness (BE, DK, IT, FR, HR, HU, FI, UK),
- high private debts,
- cumulated decline in real estate prices (DK, IE, ES, NL),
- unemployment and other social stress.

Also important is a fiscal consolidation. Some countries have acceded to it assertively and may decelerate the pace of fiscal adjustment. However on the contrary, in most of them is unavoidable this process accelerate (FR, SI, IT, HR, HU).

4. Conclusions

Olli Rehn, Commission Vice-President for Economic and Monetary Affairs and the Euro said: *"Recovery is gaining ground in Europe, following the return to growth in the middle of last year. The strengthening of domestic demand this year should help us to achieve more balanced and sustainable growth. Rebalancing of the European economy has been progressing and external competitiveness is improving, particularly in the most vulnerable countries. The worst of the crisis may now be behind us but this is not an invitation to be complacent, as the recovery is still modest. To make the recovery stronger and create more jobs, we need to stay the course of economic reform."*⁷⁴

It is possible to conclude that the risks are now in terms of new economic governance more balanced than they were in post-crisis period. However, delaying reforms at national or European level would lead to a loss of confidence. This would increase the probability of an extended period of weak growth in Europe with a negative impact on economic activity over the forecast horizon. There is on the other hand the possibility that the recovery could be stronger than expected, which could occur if further structural reforms are implemented as well as the trade and investment flows particularly with China and the USA are increased⁷⁵.

⁷⁴ Winter 2014 forecast: Recovery gaining ground European Commission - IP/14/188

⁷⁵ Fojtíková, L. China's External Trade After Its Entrance into the WTO with the Impact on the EU. In: *Proceedings of the 1st International Conference on European Integration 2012, ICEI 2012*, p. 65.

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Export Performance of Selected EU Countries and the Share of Trade in Services in Their Foreign Trade

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Abstract

This paper deals with the relationship export share of services in total exports and export performance of the economy. Author assumes that growing export performance is both a prerequisite for economic growth, a guarantee of repayment of external debt. The author shows that the export performance of small economies is larger than the economies of larger dimensions, too. The paper includes a comparison of small and large economies and export structure and export performance. The comparison shows that countries with a high share of exports in total exports of services do not reach the high export performance. Furthermore, it appears that these countries also have problems with external economic balance. The author believes that to be successful economy must increase the export of finished products and thus strengthen its manufacturing sector.

Keywords: *Comparison, EU countries, Export performance, Trade in services*

JEL Classification: *F14, F32, F41*

1. Introduction

In connection with work on textbooks, which relate, in particular, international economics and foreign trade policy (Majerová, Nezval, 2011), we examined the influence of foreign trade; it's the size and structure, on the growth of the economy. On previous essays (Nezval, 2012 and 2013), we also discussed the problem of the relationship the share of trade in services on the external economic balance. We show on a sample of small and large EU economies, the export of services is not able to provide the external economic balance. Conversely, we can sow a country, where predominant share of services in total exports, shows significant external economic imbalances.

In this paper, we show the relationship between export services and export performance. We assume that export growth pulls economic growth, but the role in the export of services is not in economies with high export performance significant.

On the other hand, the export performance of countries whose exports services are much weight is below the desired level.

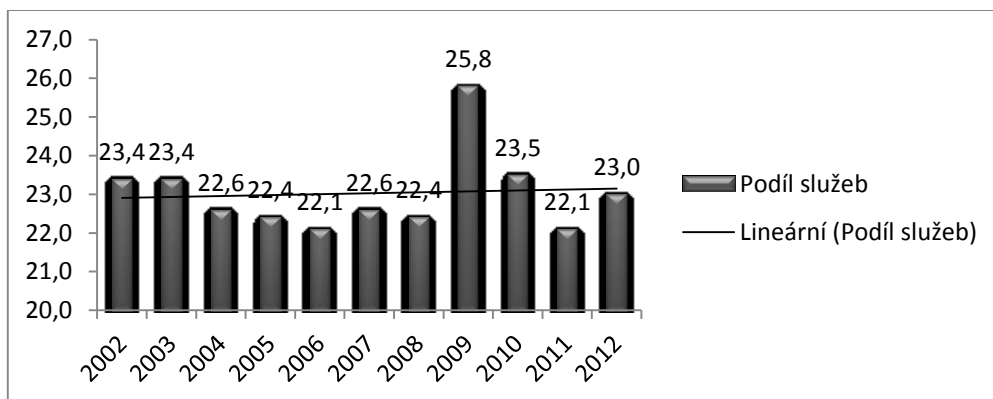
For comparison we choose Germany, France, Italy, Poland, Spain and the UK and a group of small economies and Czech Republic, Netherlands, Portugal, Greece and Switzerland (except Switzerland is a member country of the EU).

The selection of countries is determined by the requirements of the research project CZ.1.07/2.3.00/20.0016. In the paper, first we show the evolution of the share of trade in services in total in the world and then compare the selected sample of countries. In the second part of the article will be characterized and compared the export performance of countries.

2. Development of the Share of Services in Foreign Trade

Last year the world economy (roughly 80 years of the last century) is characterized as a post-industrial phase of development of the economy and also as a service economy. This is evidenced by shifting employment from the industrial sector to the service sector as well as the growing share of services in GDP and foreign trade. As shown in the graph in Figure 1, in the period under review, the share of services in foreign trade (measured by gross turnover) values around 23%, while the growth trend over the period is very indistinct.

Figure 1: Development of the Share of Trade in Services in World Trade (% of gross turnover)



Source: WTO (2014)

In Figure 1 also show a sharp fluctuation ratio of the share of services in foreign trade, which is due to a sharp decline in trade in goods as a result of the global crisis, which reached its bottom in 2009. As is well known many countries have not yet reached the development of the economy before the crisis, and therefore the development of foreign trade after 2010 yet stabilized. However, we can value the share of trade in services in total trade of around 23% considered indicative for typical advanced economy.

Differentiated view will show us the evolution of the share of trade in services in selected individual countries. Table 1 contains the value of the share of services in gross turnover of foreign trade of selected countries. As the table shows, above the selected threshold of 23% is moving among large economies, the UK, Spain and France, below this threshold then Poland, Italy and Germany. In France, this share in the period slightly increased, whereas in the UK and Spain show a slight decrease.

In the group of small economies over this limit varies Greece, which in 2012 reached 33% (but in 2009 reached up to 45%). This is followed by Switzerland and Austria. Below this threshold, just move Portugal 22% (2012) and the Netherlands, and the last are a Czech Republic with 12% (2012).

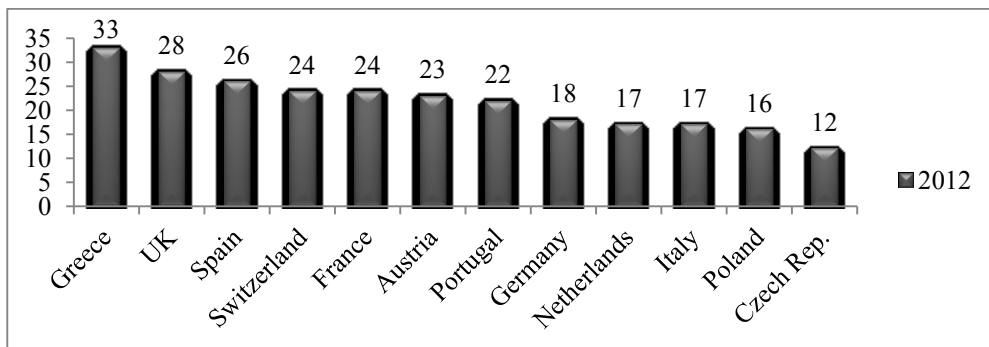
Table 1: Share of Services in Foreign Trade (% of gross turnover)

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
France	18	19	18	18	19	21	19	19	24
Germany	17	17	16	16	16	19	17	17	18
Italy	19	20	19	19	19	21	18	17	17
Poland	14	14	14	15	15	16	15	15	16
Spain	24	25	26	27	27	30	27	25	26
UK	28	28	27	31	31	32	29	28	28
Austria	29	29	29	22	22	24	23	22	23
Czech rep.	12	11	11	11	12	15	14	12	12
Greece	41	41	38	39	44	45	40	38	33
Netherlands	18	16	16	14	14	16	17	17	17
Portugal	20	20	21	22	23	29	30	23	22
Switzerland	20	21	22	22	23	24	24	24	24

Source: WTO (2014) and author's calculations

The following Figure 2 is all countries sorted by the values of the share of services in gross turnover in% for the year 2012.

Figure 2: Ranking Countries According to the Share of Services in Foreign Trade Turnover in 2012 (%)



Source: WTO (2014) and author's calculations

Table 2: Structure of the Balance of Trade - Large Economy (billion USD)

Country		2004	2005	2006	2007	2008	2009	2010	2011	2012
France	GTB	-17	-38	-45	-62	-100	-75	-85	-115	-105
	STB	13	10	6	13	21	17	14	24	39
	TB	4	-28	-39	-49	-79	-58	-71	-94	-66

Germany	GTB	195	196	203	268	258	188	202	218	240
	STB	-59	-53	-50	-45	-41	-26	-28	-36	-36
	TB	136	143	153	223	217	162	174	182	204
Italy	GTB	-2	-13	-27	-13	-17	-7	-36	-34	14
	STB	1	1	-1	-8	-10	-14	-11	-9	-2
	TB	-1	-12	-28	-21	-27	-21	-47	-43	12
Poland	GTB	-14	-12	-16	-24	-36	-13	-18	-21	-13
	STB	1	2	3	4	6	5	3	6	6
	TB	-13	-10	-13	-17	-30	-8	-15	-15	-7
Spain	GTB	-71	-92	-111	-132	-133	-69	-68	-65	-41
	STB	31	28	28	30	38	25	36	47	47
	TB	-40	-64	-83	-102	-95	-44	-32	-18	6
UK	GTB	-119	-127	-171	-182	-174	-130	-154	-165	-216
	STB	36	34	56	79	87	72	66	104	106
	TB	-83	-93	-115	-103	-87	-58	-88	-61	-110

Source: WTO (2014) and author's calculations

Notice : GTB...Goods trade balance, STB...service trade balance, TD...Trade balance

Table 3: Structure of the Balance of Trade - Small Economy (billion USD)

Country		2004	2005	2006	2007	2008	2009	2010	2011	2012
Austria	GTB	-1	-2	0	-2	-2	-5	-7	-13	-12
	STB	2	4	5	16	19	16	17	19	18
	TB	1	2	5	14	17	11	10	6	7
Czech rep.	GTB	-1	1	2	5	5	8	7	10	16
	STB	1	2	1	2	5	1	2	4	3
	TB	0	3	3	7	10	9	9	14	19
Greece	GTB	-38	-37	-43	-53	-64	-50	-42	-29	-28
	STB	20	20	20	24	26	18	18	20	20
	TB	-18	-17	-23	-29	-38	-32	-24	-9	-8
Netherlands	GTB	40	43	46	59	60	53	56	62	65
	STB	1	6	4	1	11	6	7	16	12
	TB	39	49	50	60	71	59	63	78	77
Portugal	GTB	-19	-23	-23	-27	-34	-27	-26	-21	-14
	STB	5	5	6	9	9	-1	-9	11	11
	TB	-14	-18	-17	-18	-25	-28	-35	-10	-3
Switzerland	GTB	7	4	6	11	17	17	19	26	28
	STB	16	19	22	28	39	33	40	47	43
	TB	23	23	28	39	56	50	59	73	71

Source: WTO (2014) and author's calculations

Notice : GTB...Goods trade balance, STB...service trade balance, TD...Trade balance

The first place (Figure 2) was the economy of Greece with 33 %, followed by Great Britain. Platoon concludes Poland (large economy) 16 % and Czech Republic (small economy) with 12%. These countries currently represent a catching-up economy advanced EU members, so it is obvious that their share of services in foreign trade is low and it is appropriate to increase. In the case of Greece (small economy) and Great

Britain (large economies) are sneaking doubts about the ability of the two economies keep external economic balance, the share of services in foreign trade may be too high.

Even more accurate view offers the development of structures in the trade balance, how to present the Tables 2 and 3.

Table 2 shows that with the exception of Germany, all large economies (EU member states) have a passive trade balance, which is determined by the passive balance of trade in goods. The surplus balance of trade in services is not able to override this negative balance. Italy even with the exception of 2004 and 2005 year shoves the deficit and the trade in services, too. It appears, therefore, that a high proportion of services trade in total foreign trade of the country does not unequivocally positive phenomenon, on the contrary, indicates the fact that the country has problems with the trade balance and can cause problems with external balance.

EU, in order to improve the trade balance of the EU as a whole, and especially with China, promotes the WTO liberalization of international moving services. As reported by some authors (Fojtíková, 2012), the opportunity to increase exports of services to China should help eliminate passive balance of trade between the EU and China. It can be assumed that it will not be enough. Would be preferable, as shown by some companies return production to the own country.

Table 3 shows a similar development in the group of small economies. Greece and Portugal, has a deficit balance of trade and surplus balance of trade in services. Only in the case of Austria's trade deficit with goods covered by a surplus balance of trade in services. Czech Republic, Netherlands and Switzerland have a positive balance in trade in services and products.

The relationship between trade balance and external equilibrium were devoted to previous articles (Nezval, 2012 and 2013). In them, it was shown that with the exception of Germany, the upper signed large economies have difficulties with external economic equilibrium, as their balance of payments current account balance reaches negative values. In the case of small economies show a positive value indicators Austria, the Netherlands and Switzerland. Greece and Portugal show a large external imbalance, such as when in 2008 is Greece liabilities -51.2 billion USD and then Portugal -31.9 billion USD. In the Czech Republic case, then the balance of payments current account balance recorded in the year 2008 -4.7 USD. The imbalance in the Czech Republic measured by the ratio of current account deficit to GDP percentage, just above the critical limit of -5% (Nezval,2013).

3. Export Performance, Its Measurement and Comparison

It turns out that to ensure economic growth and external equilibrium is necessary to achieve high levels of exports in relation to GDP growth. In addition to the indicators that relate directly export to GDP, the level of exports can be applied to the population. This indicator is referred to as an indicator of export performance.

In this part of the article will focus on the measurement and comparison of export performance in the above set of countries from the perspective of overall export performance and share of export services on it.

3.1 Measuring Export Performance

The problem of measuring export performance is examined in detail in the publication (Majerová, Nezval, 2011, 2013). In this paper we restrict ourselves to the fact that the calculation of overall export performance is given by the expression (1), and that is the sum of the export performance of trade in goods and the export performance of trade in services. Further, we limit ourselves to the proposition that small economically developed countries should be pursued higher levels of export performance than the economies of larger dimensions. We assume that the small size of the economy does not produce everything needed to ensure a comparable economic level compared with the economies of large and therefore it is necessary to ensure the external economic balance, increased imports covered by exports.

Applies to:

$$OEP = X / p \text{ (USD)} \tag{1}$$

Where:

OEPoverall export performance (USD)

X value of exports (goods and services)

p population.

OEP development indicators for selected countries are presented in Table 4.

3.2 Comparison of Export Performance

As is evident from Table 4, the highest overall export performance the small economies and the Netherlands, Switzerland, Austria and Czech Republic. However, if we can see, the lowest values reach small economies of Greece and Portugal and the economy in Poland. The largest export performance achieved by Germany, the other major economies of France, Britain and Italy, are lower than Czech Republic. Rank economies in 2012 shows a graph in Figure 3 Developments in time series again portrays the rise of values from 2004 to 2008 and the fall in the value due to the economic crisis. In 2012, most countries have values below the figures of 2008.

Table 4: Development of Overall Export Performance of Countries Compared (USD)

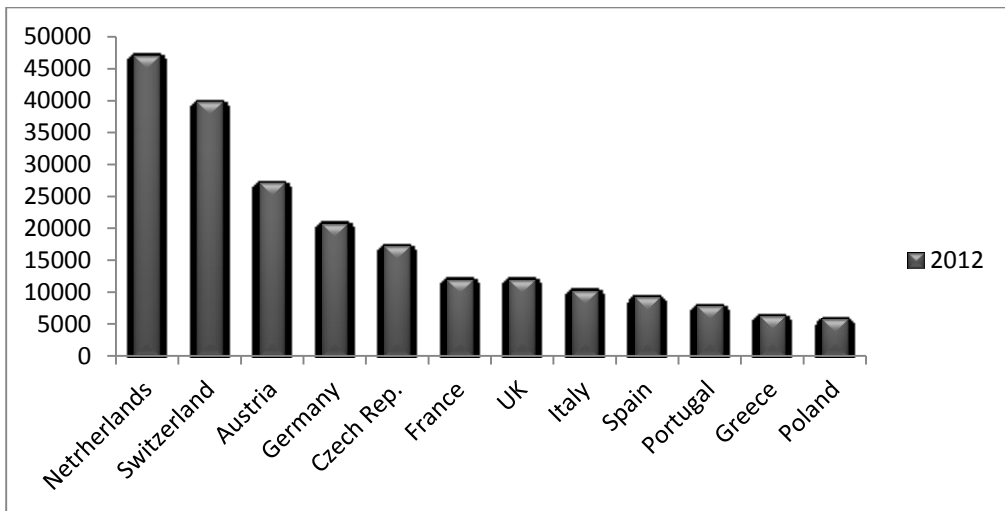
Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
France	8960	9174	9571	10851	11967	9706	10271	11740	11914
Germany	12681	13556	15544	18617	20724	16540	18349	21101	20717
Italy	7460	7889	8656	10186	11072	8408	9032	10359	10170
Poland	2315	2766	3441	4394	5344	5800	4927	5815	5736
Spain	6220	4364	7117	8318	9066	7429	7939	9623	9186
UK	8688	9525	11188	11710	12113	9497	10126	11853	11876

Austria	20457	21537	24305	26277	29241	22738	24611	28452	27024
Czech rep.	7686	8517	10480	13466	16202	12667	14814	17653	17113
Greece	4382	4609	5054	6000	5857	4239	5188	6295	6205
Netherlands	26617	29393	33429	39190	44793	35697	41400	47748	47041
Portugal	4769	5047	5800	7009	7726	6226	6126	8042	7780
Switzerland	21000	23603	26591	31105	36733	31428	35090	41677	39748

Source: WTO (2014), Eurostat (2014) and author's calculations

It turns out that partly confirms the hypothesis that small economies are higher than the export performance of large economies. The exceptions are the economies of Greece and Portugal in small economies and Poland in large economies. In the case of Poland comes to the economy, which is still catching up with the economy in its category. In the case of economies of Greece and Portugal (but also Italy and Spain with large economies) is probably a deeper problem of internal and external imbalances in these economies resulting from its structure.

Figure 3: Ranking of Countries According to Overall Export Performance in 2012 (USD per capita)



Source: WTO (2014), Eurostat (2014) and author's calculations

The Figure 3 is to be recalled that the first five countries (the Netherlands and the Czech Republic) have active trade balance. All other countries have a passive trade balance (see Tables 2 and 3). Furthermore, as Table 5 shows, the group of large economies with an export share of services in total exports in 2012, moving from 15% (Germany) to 37% (UK), a group of small economies, then from 12% (Czech Republic) to 49% (Greece). The tendency for the period shows a slight increase in the proportion or stagnation (apart from the crisis of the surge in 2009).

Table 5: Development of the Share of Exports of Services to the Export Performance of Selected Countries (%)

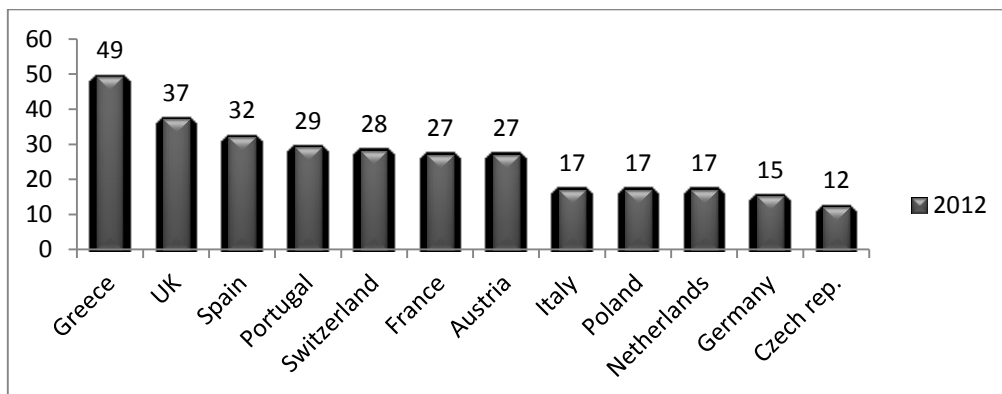
Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
France	20	20	19	20	21	23	22	22	27
Germany	13	13	13	13	14	17	16	15	15
Italy	19	20	19	18	19	20	18	17	17
Poland	15	15	16	17	18	18	17	17	17
Spain	32	33	34	35	35	36	33	31	32
UK	33	33	34	38	38	40	36	37	37
Austria	29	30	30	25	25	28	26	26	27
Czech rep.	12	12	11	12	13	15	14	12	12
Greece	69	67	64	64	77	79	64	54	49
Netherlands	17	16	15	14	14	15	17	17	17
Portugal	28	28	29	30	32	35	32	31	29
Switzerland	24	25	26	26	27	28	29	29	28

Source: WTO (2014) and author's calculations

Comparing the data from Table 1 with data from Table 5, we see that only Germany and Poland and the Czech Republic part and the Netherlands have lower export share of services in total exports than the share of services in total trade turnover. This is another way to show the importance of services in the foreign trade of the country. In The foreign trade of Germany and Netherlands services didn't play such a role as in other countries. In the case of Czech Republic and Poland again remind argument that this is about catching a transformed economy, a fact that can be expected to increase the share of services in their foreign trade.

The graph in Figure 4 shows the ranking of countries according to the values the share of services in exports in 2012. As can be seen, the first three places are the same economy as is the case in Figure 2, Greece, the United Kingdom and Spain. Last countries in order of the Czech Republic with the lowest share of exports of services, but this time together with Germany (in the case of Poland, the export of services more weight than the total volume of trade in services).

Figure 4: Ranking of Countries by Export Share of Services in Total Exports in 2012 (%)



Source: WTO (2014) and author's calculations

4. Conclusion

The following article is another in a series of studies in which the author deals with foreign trade and its impact on economic growth and the balance of the economy. It turns out that a high proportion of services trade in the country's trade is not always a clear benefit to developing countries, but rather shows its structural problems.

These problems manifest themselves in a deficit balance of trade and external economic imbalances. Examples of small economies, like Greece and Portugal, shows that too much weight in the service of their foreign trade may have long-term negative impact on developing countries. For large economies such as the UK, France and Spain then focus on the export of services is also an option. It turns out that even in these countries it is necessary "to return to the machines", thus finding another wiring economy into the international division of labor.

I'm afraid, that EU efforts to free the movement of services in world trade are not a solution that will reduce the passive trade balance of the EU. Development of services allows to some extent solve the problem of employment, but not the export and hence economic performance.

Acknowledgements

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Image of the European Union Perceived by Generation Y

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Abstract

The paper is focused on image of the European Union. The research concept of article results from Euro barometer survey. This survey measures whether Europeans trust the European Union, what is image of the European Union, what is the opinion about future of the European Union and what is the positive result of the European Union. The results from Euro barometer are compared with the results of primary research which examines image of EU among Czech respondents. This paper discusses the differences in the perception of the European Union between two age cohorts: Generation X and Generation Y. As the research methods the independence analysis and regression analysis are used. Some dependent variables were found out, but most of variables are independent on the generation profile.

Keywords: *Generation X, Generation Y, Image of the European Union, Independence analysis, Regression analysis*

JEL Classification: *A14, C10, M31*

1. Introduction

Brand image represents the impression in the consumers' mind of brands total personality (real and imaginary qualities and shortcomings). Brand image is developed over time through advertising campaigns with a consistent theme, and is authenticated through the consumers' direct experience. The brand image does not concern with products but it can be associated with institutions such as the European Union is. Therefore survey called as Standard Euro barometer was established in 1973. The aim of this survey is to find out how Europeans perceive their political institutions, how Europeans look at the main concerns at personal, national and European levels, and their expectations for the next twelve months. Reports are published twice yearly and contain public opinion in this area (European Commission [online], 2013).

2. Image of the European Union

Citizens' positive perceptions of national and personal economic conditions increased the level of support for EU integration (Llamazares and Gramacho, 2007; Hooghe and Marks, 2005). It was also found that people with human and financial capital – higher incomes, better education and higher (more marketable) occupational skills – are more supportive of integration as the market liberalization pertaining to EU integration offers more opportunities for them (Hooghe, Huo and Marks, 2007). Because younger age cohorts – also better educated and more highly paid individuals – are more post-material, Inglehart (1977) proposed that support for European integration should be

higher in younger groups. More recent studies have however reported that age has no effect and post-materialistic values no or little effect on evaluations of EU membership (Anderson and Reichert, 1996 and Gabel, 1998).

This paper discusses the differences in the perception of the European Union between Generation X and Generation Y. As was described earlier, reports of Standard Euro barometer present only public opinions about image and main concerns of the European Union. Authors of this paper have focused on this area from the different perspective. The aim of this research is finding out if there are any differences in perception of the European Union between Generation X and Generation Y. Members of Generation X can be defined such as people who were born in sixties and seventies. Members of Generation Y are people who were born in eighties and nineties. It is very important note the year of birth doesn't have to be the most important. We can consider people who belong to Generation X are people whose early age (especially childhood, adolescence and family formation period) was not influenced by modern information technologies such as mobile phones, computers and internet. Members of Generation Y were influenced by these technologies during their adolescence and later, but using these technologies during their childhood was not usual. It is very important note the year of birth doesn't have to be the most important. We can consider members of Generation X are people whose early age (especially childhood, adolescence and family formation period) was not influenced by modern information technologies such as mobile phones, computers and internet. People who belong to Generation Y were influenced by these technologies during their adolescence and later, but using these technologies during their childhood was not usual. We can expect these two generations can perceive images of brands and institutions, can have different opinion about concerns and also can have different shopping behaviour because modern information technologies influence your lives deeply (Van den Bergh and Behrer, 2011).

3. Research Method

The online questioning was conducted for the purpose of this research. All inhabitants of the Czech Republic older 18 years were included in universe. Sample structure was equally split in members of Generation X and members of Generation Y. The sample size was 104 respondents which is adequate to the research aim to compare EU image perception between Generation X and Generation Y. Standard error is 6% on the 95% confidence level. We used the Pearson's chi-square test to find out dependency of opinions about the European Union on the age categories.

3.1 Theoretical Background of Pearson's chi-square Test

The original chi-square test, often known as Pearson's chi-square, serves both as a goodness-of-fit test and as a test for the more common contingency table. Whereas in a goodness-of-fit test there are the data categorized along one dimension, there are the data categorized across two or more dimensions in a test for the contingency table (Hendl, 2006).

The Pearson chi-square statistic is defined as

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - m_{ij})^2}{m_{ij}}, \quad (1)$$

where n_{ij} is the observed frequency, m_{ij} means expected frequency, i and j index the rows and columns of the contingency table and r is number of rows and c is number of columns. The resulting test statistic from the formula is approximately distributed as χ^2 on $(r - 1)(c - 1)$ degrees of freedom (Řezánková, 2011).

The expected frequency is computed as

$$m_{ij} = \frac{n_{i+}n_{+j}}{n}, \quad (2)$$

where n_{i+} is sum of n_{ij} in the columns and n_{+j} is sum of n_{ij} in the rows, n is the sample size (Řezánková, 2011).

The null hypothesis is defined as there is independency of variables. The alternative hypothesis is defined as there is association of variables. The signification level this research was chosen 0.05. The results were computed in SPSS 21 (Hendl, 2006)

3.2 Theoretical Background of Logistic Regression

Logistic regression analysis is a mathematical modelling approach to describe the relationships between several independent variables and a dichotomous dependent variable. The dependent variable can take two values: zero (e.g., dissatisfaction, ignorance of brand, product is not purchased) or 1 (e.g., satisfaction, brand awareness, purchase of product). The model can thus predict purchase probability (Kleinbaum and Klein, 2010).

Consider a binary variable Y_i characterising the positive and negative response to the i -th respondent for $i = 1, \dots, N$, where N is the number of respondents. Each respondent is characterised by the vector $\mathbf{x}_i = (1, x_{1i}, x_{2i}, \dots, x_{ki})$ containing K elements (Pecáková, 2007).

The likelihood of a positive response of the i -th respondent $P_i = P(Y_i = 1)$ on the basis of its characteristic vector \mathbf{x}_i can be expressed as function $F(\boldsymbol{\beta}, \mathbf{x}_i)$, which is increasing and has a domain of definition $(-\infty, +\infty)$ and a range $(0, 1)$, so it is accepted that the $F(-\infty) = 0$ a $F(+\infty) = 1$ likelihood function of a response can be written as

$$P_i = F(\boldsymbol{\beta}, \mathbf{x}_i), \quad (3)$$

where $\boldsymbol{\beta}$ is vector of parameters $(\beta_0, \beta_1, \dots, \beta_k)$.

These properties are the cumulative distribution function of the logistic distribution in the shape

$$P_i = P(Y_i = 1) = F(\beta, \mathbf{x}_i) = \frac{e^{\beta \mathbf{x}_i}}{1 + e^{\beta \mathbf{x}_i}}, \quad (4)$$

which is a function of the probability of the answer. The probability of a negative response is $1 - P_i$. (Hosmer and Lemeshow, 2000).

The definition of the percentage probability of positive and negative responses (odds) is in the form (Pecáková, 2007)

$$\frac{\pi}{1 - \pi} = \frac{P(Y_i = 1)}{P(Y_i = 0)} = e^{\beta \mathbf{x}_i}. \quad (5)$$

The odds ratio for the dichotomous variable (x_j takes values 0 or 1) is (Hilbe, 2009)

$$OR(1, 0) = \frac{\pi(x_j = 1) / [1 - \pi(x_j = 1)]}{\pi(x_j = 0) / [1 - \pi(x_j = 0)]} = \exp(\beta_j). \quad (6)$$

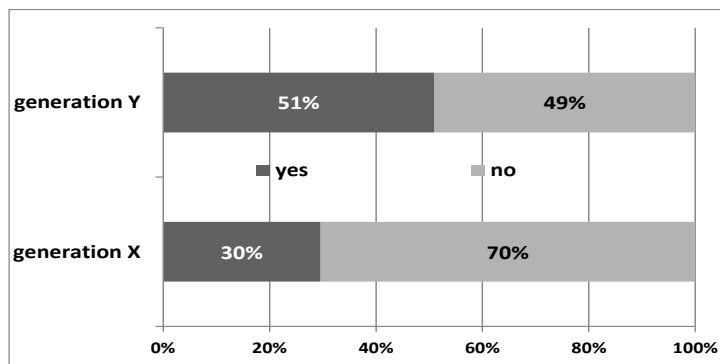
4. Independency Analysis of Perceptions of the EU on the Generation

In this part of paper there are described the main results of research and analysis of independency which has been conducted for each tested variable. Analysis is carried out using Pearson's chi-square test and logistic regression method (specifically binary logistic regression).

4.1 Trust in the European Union

Czech respondents trust in the European Union in 40.4 %, while the rest of respondents do not trust in it. It is the similar result such as result in the research of Euro barometer 80. Following Figure 1 shows the distribution of answers between Generation X and Y.

Figure 1: Czech Trust in the EU by Generations



Source: Author's calculations

As you can see in appendix, the null hypothesis about independency can be rejected at the significance level 0.05. It means the trust in the European Union is affected by generation profile.

The relation between generation type and trust in the EU is tested through logistic regression. Identification of dependence is based on statistical testing which has been carried out at the 5% significance level. Thus, the coefficients are statistically significant. The P-value for the independent variable is less than 0.05 (Figure 2). There is statistical significance between the trust in the EU and Generation X and Y.

Figure 2: Estimated of Logistic Regression for the Trust in the EU

Logistic regression		Number of obs	=	103
Log likelihood = -66.769452		LR chi2(1)	=	4.94
		Prob > chi2	=	0.0263
		Pseudo R2	=	0.0357

trust	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
generation	-.9058194	.4128952	-2.19	0.028	-1.715079	-.0965597
_cons	.9466414	.6445793	1.47	0.142	-.3167108	2.209994

Source: Author's calculations

The equation of the estimated model of logistic regression for the trust in the European Union is as follows

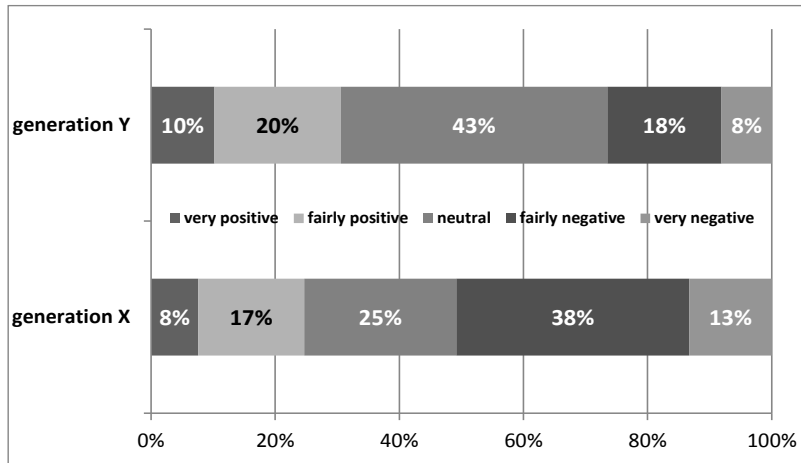
$$P_i = P(Y_i = 1) = \frac{e^{(0,9466414-0,9058194x_i)}}{1+e^{(0,9466414-0,9058194x_i)}} \quad (7)$$

where P is the probability of the trust in the EU. Probability for the trust in the European Union is 29,6 % in case the Generation X and probability for the trust in the European Union is 51 % in case the Generation Y.

4.2 Image of the European Union

In the Czech Republic, there is mainly negative image of the EU, 38.5 % of respondents have a negative image of the EU. It is more negative attitude than among Europeans (28 %). Figure 3 shows the opinions about image of EU by Generation X and Y. Image of EU perceived by Generation Y is rather balanced with moderate positivism of respondents. Respondents from to Generation X have substantially negative attitude to the EU. 38% respondents expressed fairly negative opinion and 13% very negative opinion about EU. Respondents from Generation Y are more favor EU, as they highly assess free movement people, goods and services (see figure 6) in comparison with Generation X.

Figure 3: Czech Opinions about Image of the EU by Generations



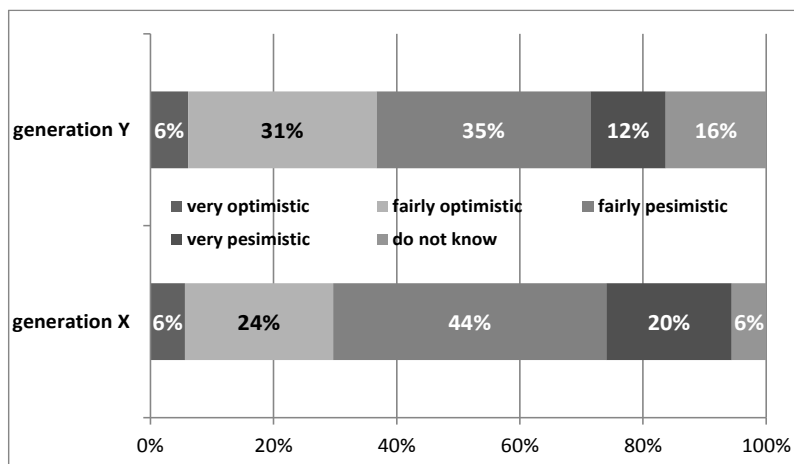
Source: Author's calculations

As you can see in appendix, the null hypothesis about independency cannot be rejected at the significance level 0.05. It means the image of the European Union is not associated with Generation X and Generation Y.

4.3 Future of the European Union

In the Czech Republic, there are mainly pessimistic expectations about future of the EU; nearly 57 % of respondents think it, while according to Euro barometer 80 the optimistic expectations predominate among Europeans. The 33 % of respondents have optimistic expectations about the EU future. The rest of respondents are unable to assess the future of the EU. Figure 4 shows the expectations about the future of EU by Generation X and Y.

Figure 4: Czech Opinions about Future of the EU by Generations



Source: Author's calculations

We confirm the null hypothesis about independency at the significance level 0.05; there is the computed value of significance in appendix. It means the expectations of the future of the European Union are not affected by generations. It is not evident that Generation Y is fairly more optimistic in this area than Generation X and conversely. Relatively high level of consensus about the future between generations is due to perceived uncertainty regarding economic development, especially due to development of GDP, employment and foreign exchange rate.

The relation between type of generation and future of the EU is tested using by logistic regression. Specification of dependence is based on statistical testing which has been carried out at the 5% significance level. Thus, the coefficients are not statistically significant. The P-value for the independent variable is greater than 0.05 (Figure 5). There is not statistical significance between the future of the EU and generation X and Y.

Figure 5: Estimated of Logistic Regression for the Future of the EU

Logistic regression		Number of obs	-	92
		LR chi2(1)	-	1.53
		Prob > chi2	-	0.2162
Log likelihood = -59.837902		Pseudo R2	-	0.0126

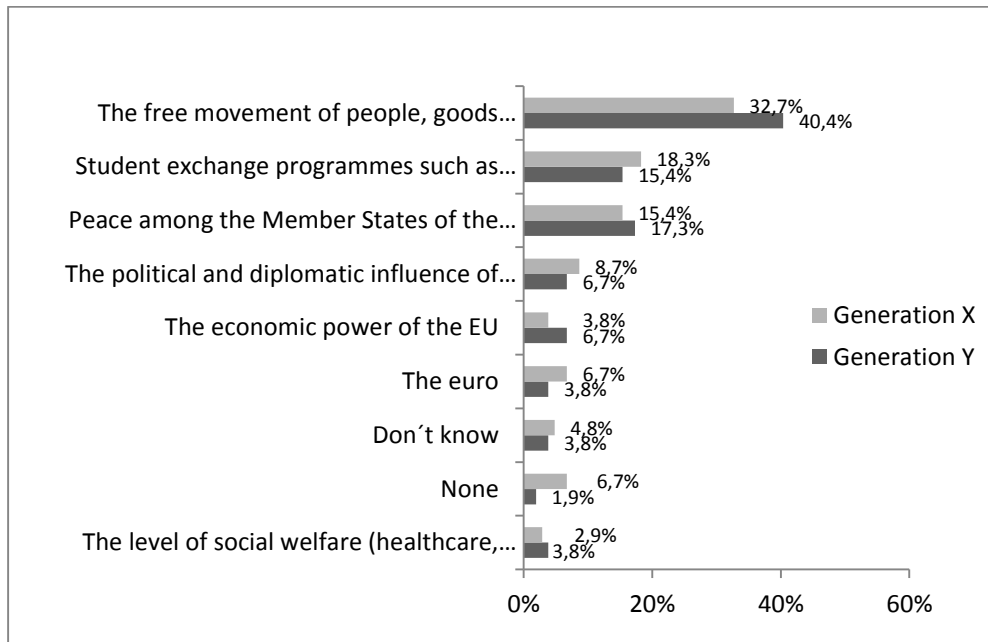
future	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
generation	-.5376369	.4360106	-1.23	0.218	-1.392202 .3169282
_cons	.2925144	.6980019	0.42	0.675	-1.075544 1.660573

Source: Author's calculations

4.4 Most Positive Results of the EU

Free movement of people, goods and services within the EU (for 36.5 % of respondents) is the most positive result. The student exchange programmes such as ERASMUS (16.8 %) and peace among the Member States of the EU (16.35 %) are also intensively perceived as positive results of EU. This result is in coincidence with findings of research Euro barometer 80. Euro is one of the most positive results for Europeans but it is not intensively welcomed by Czech inhabitants. Figure 6 shows the differences in the most positive results of the EU by Generation X and Y.

Figure 6: Most Positive Results of the EU by Generations

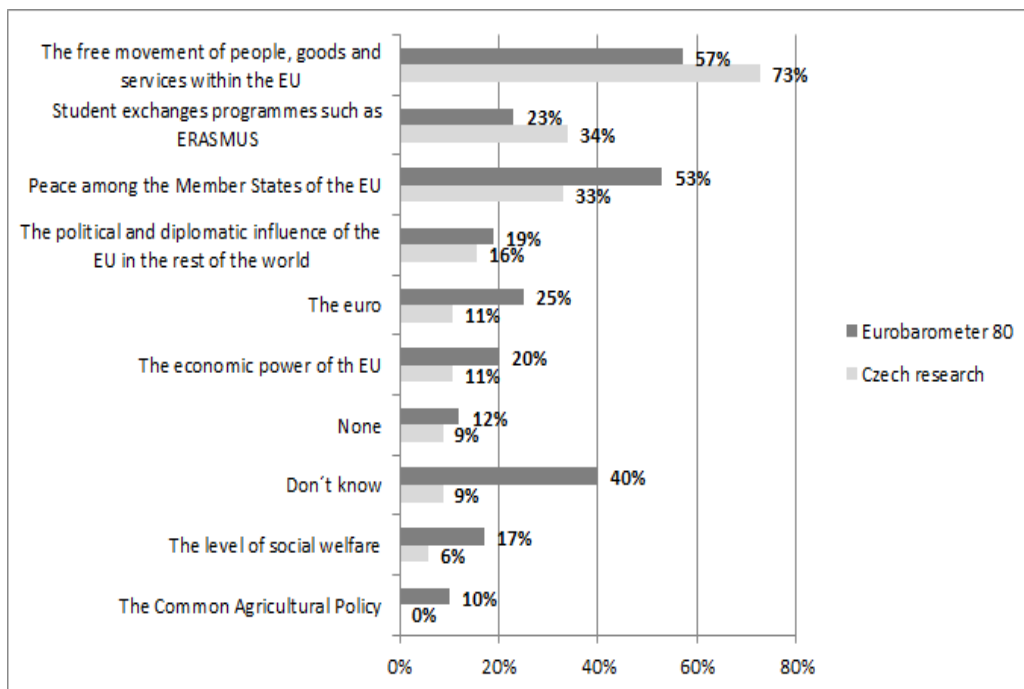


Source: Author's calculations

We confirm the null hypothesis about independency at the significance level 0.05; there is the computed value of significance in appendix. We cannot indicate differences in the perception of positive results of the European Union between Generation X and Generation Y.

Total results in perception of positive results of the European Union shows figure 7. There are differences between Czech research (date from spring 2014) and research Euro barometer 80 (date from autumn 2013). The free movement of people and goods and services within the EU is identically the most positive result for both surveys. This result has significant superiority compared to other in Czech research. This positive result is perceived by 73 % of respondents. Large difference is noticed in the case of peace among the Member States of EU. Czech respondents are less aware of EU economic benefits (euro, economic power of the EU) which has been affected namely by unfavourable economic situation and depreciation of CZK.

Figure 7: Most Positive Results of the EU – Comparison Czech Research and Euro Barometer 80



Source: Author's calculations, Standard Euro barometer 80 (Autumn 2013)

5. Conclusion

This paper discusses the differences in the image of the European Union between Generation X and Generation Y. The survey comes out from research of Euro barometer. Four variables concerning with perception of EU have been analysed. There are no significant differences in opinions focusing on future EU and most positive results of the EU. Generation Y is more positive about image and trust in the EU intensively than Generation X. The relationship between trust in the EU and type of generation is statistically significant. The attitude to the EU perceived by Generation Y is generally more positive but respondents are not practically aware of real values of EU membership.

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Appendix

Table 1: Values of Pearson Chi-Square tests

Variable	Pearson Chi-Square Asymp. Sig. (2-sided)	Dependency
Trust in the EU	0.016	YES
Image of the EU	0.052	NO
Future of the EU	0.320	NO
Most positive results of the EU	0.713	NO

Source: Author's calculations

Perception of EU Economic Situation by Generation Y

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Abstract

The article looks at respondents' perceptions of the current economic situation at personal, national and European levels. Primary survey led by authors is focused on the comparison of perception among Czech respondents and EU respondents. The methodology of project is based on research of Eurobarometer which twice a year measures attitudes of Europeans to the economic situation. The article is namely driven to find out the differences between two age categories: Generation X a Generation Y. As the research methods the independence analysis and the logistic regression were used. Most of variables were independent, but some of variables were found out as dependent on generation profile. There were found the dependences between the generation and the perception of current economic situation in the Europe, the perception of current economic situation in the Czech Republic, and the perception of current personal job situation.

Keywords: *Economic situation of the European Union, Generation X, Generation Y, Independence analysis, Logistic regression*

JEL Classification: *A14, C10, M31*

1. Introduction

The image of brand and its perception in general opinion is very important for each company. Institution such as the European Union is no exception. Therefore survey called as Standard Euro barometer was established in 1973. The particular aim of this survey is to find out how Europeans perceive current economic situation. Reports are published twice yearly and contain public opinion in this area (European Commission [online], 2013).

2. Perception of EU Economic Situation between Generations

Citizens' priorities are of two types: concerns about economic and physical security (materialist values) and concerns about human rights, the environment and quality of life issues (post materialist values) (Balestrini, 2012). The approval of materialism as an element of support for European integration orientated researchers to explore the utilitarian perspective. According to this perspective, citizens evaluate the integration process (with its economic, social and political consequences) in terms of its costs and benefits, nationally and individually (Llamazares and Gramacho, 2007). Previous research has demonstrated that citizens' positive perceptions of national and personal economic conditions increased the level of support for EU integration. (Hooghe and Marks, 2004). Some studies (De Vries and Van Kersbergen, 2007 and Garry and

Tilley, 2009) provided us with a limited snapshot of the conditional nature of determinants of public attitudes to the EU. The impact of education, occupation and financial situation of the household to affect public attitudes towards European integration was analysed.

This paper discusses the differences in the perception of the European Union between Generation X and Generation Y. As was described earlier, reports of Standard Eurobarometer present only public opinions about image and main concerns of the European Union. Author of this paper has focused on this area from the different perspective. The aim of this research is finding out if there are any differences in perception of the European Union between Generation X and Generation Y. Members of Generation X are people who were born between years 1960 and 1979. Members of Generation Y can be defined such as people who were born between years 1980 and 2000. It is very important note the year of birth doesn't have to be the most important. We can consider people who belong to Generation X are people whose early age (especially childhood, adolescence and family formation period) was not influenced by modern information technologies such as mobile phones, computers and internet. Members of Generation Y were influenced by these technologies during their adolescence and later, but using these technologies during their childhood was not usual. We can expect these two generations can perceive images of brands and institutions, can have different opinion about concerns and also can have different shopping behaviour because modern information technologies influence your lives deeply (Van den Bergh and Behrer, 2011).

3. Research Methodology

The online questioning was conducted for the purpose of this research. All inhabitants of the Czech Republic older 18 years were included in universe. The sample size was 104 respondents. Sample structure was equally split in members of Generation X and members of Generation Y. Pearson's chi-square test and logistic regression was used to identify the association between attitudes to the European Union and age categories.

The Pearson's chi-square test, the original chi-square test, serves as a goodness-of-fit test. This test can be also used as a test for the more common contingency table. In a goodness-of-fit test there are the data categorized along one dimension. There are the data categorized across two or more dimensions in a test for the contingency table (Hendl, 2006).

The Pearson chi-square statistic is calculated as

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - m_{ij})^2}{m_{ij}}, \quad (1)$$

where n_{ij} means the observed frequency, m_{ij} is expected frequency, i and j index the rows and columns of the contingency table and c is number of columns and r is number of rows. The resulting test statistic from the formula is approximately distributed as χ^2 on $(r - 1)(c - 1)$ degrees of freedom (Řezánková, 2011).

The expected frequency is given by

$$m_{ij} = \frac{n_{i+}n_{+j}}{n}, \quad (2)$$

where n_{i+} is sum of n_{ij} in the columns and n_{+j} is sum of n_{ij} in the rows, n is sample size (Řezánková, 2011).

The null hypothesis is defined as there is independence between variables. The alternative hypothesis is defined as there is association of variables. The signification level for this research was chosen 0.05. The results were computed in SPSS 21 (Hendl, 2006).

Logistic regression analysis is a mathematical modelling approach to describe the relationships between independent variables and a dichotomous dependent variable (Kleinbaum and Klein, 2010).

Consider a binary variable Y_i characterising the positive and negative response to the i -th respondent for $i = 1, \dots, N$, where N is the number of respondents. Each respondent is characterised by the vector $\mathbf{x}_i = (1, x_{1i}, x_{2i}, \dots, x_{ki})$ containing K elements (Pecáková, 2007).

The likelihood of a positive response of the i -th respondent $P_i = P(Y_i = 1)$ on the basis of its characteristic vector \mathbf{x}_i can be expressed as function $F(\boldsymbol{\beta}, \mathbf{x}_i)$, which is increasing and has a domain of definition $(-\infty, +\infty)$ and a range $(0, 1)$, so it is accepted that the $F(-\infty) = 0$ and $F(+\infty) = 1$ likelihood function of a response can be written as

$$P_i = F(\boldsymbol{\beta}, \mathbf{x}_i), \quad (3)$$

where $\boldsymbol{\beta}$ is vector of parameters $(\beta_0, \beta_1, \dots, \beta_K)$.

These properties are the cumulative distribution function of the logistic distribution in the shape

$$P_i = P(Y_i = 1) = F(\boldsymbol{\beta}, \mathbf{x}_i) = \frac{e^{\boldsymbol{\beta}'\mathbf{x}_i}}{1 + e^{\boldsymbol{\beta}'\mathbf{x}_i}}, \quad (4)$$

which is a function of the probability of the answer. The probability of a negative response is $1 - P_i$. (Hosmer and Lemeshow, 2000).

4. Independency Analysis of EU Perceptions Affected by the Generations

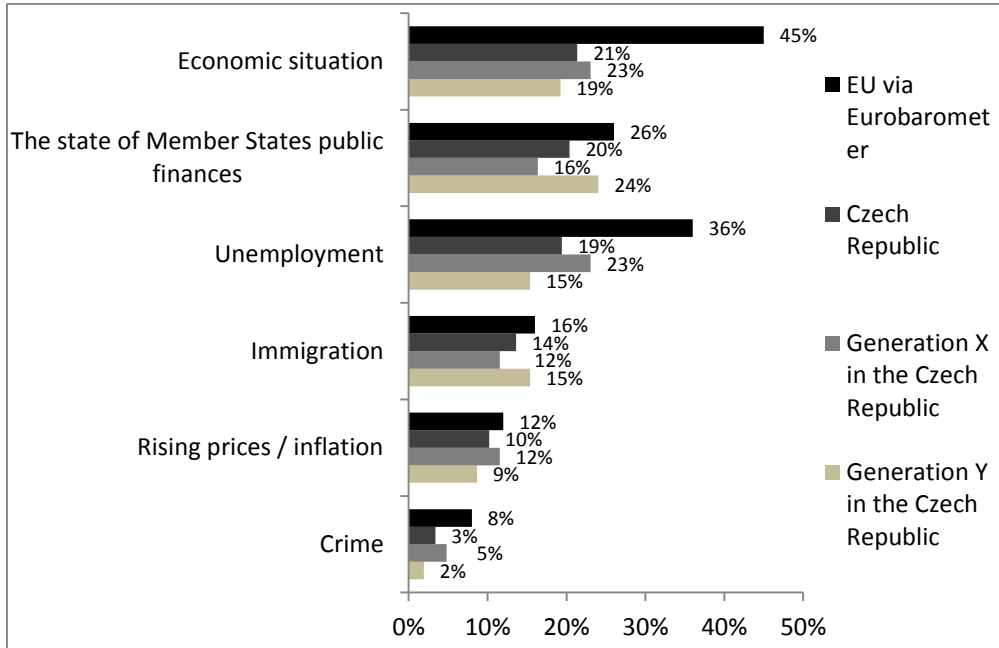
In this part of paper there are described the main results of research and analysis of independency is conducted for each tested variable. Computed values of Pearson Chi-Square test are shown in appendix.

4.1 Main Concerns at European Level

Economic situation (21 %), the state of Member States public finances (20 %) and unemployment (19 %) are among three main concerns of the EU perceived by Czech

respondents. This is similar result like in research Eurobarometer 80, but distribution of percentage was more significant. The main concerns at European level by Generation X and Y are presented in figure 1.

Figure 1: Main Concerns at European Level by Generations



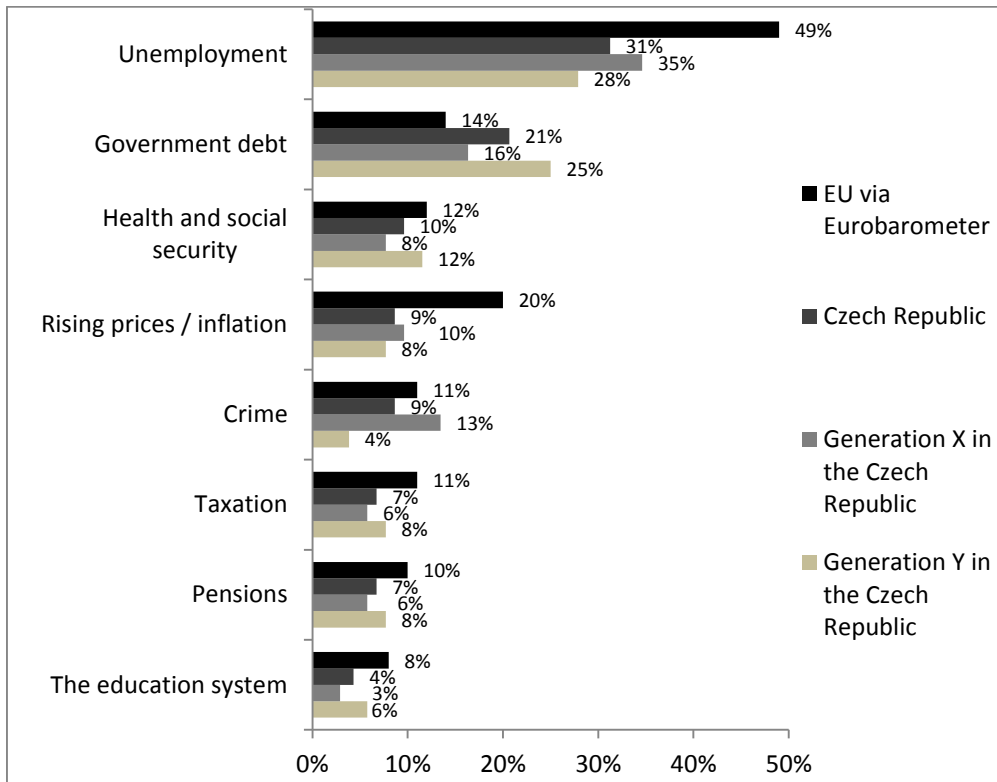
Source: Author's calculations, Standard Euro barometer 80 (Autumn 2013)

We cannot reject the null hypothesis about independency at the significance level 0.05; there is the computed value of significance in appendix. It means main concerns at European level are not affected by generation profile.

4.2 Main Concerns at National Level

Unemployment (31 %), government debt (21 %) and health and social security (10 %) are indicated as three key concerns of the Czech Republic. Unemployment is one of the most important problems for Czech inhabitants like European citizens according to the research of Eurobarometer 80, but two other problems in this research were economic situation and inflation. Differences in the main concerns at national level perceived by Generation X and Y are shown in figure 2.

Figure 2: Main Concerns at National Level by Generations



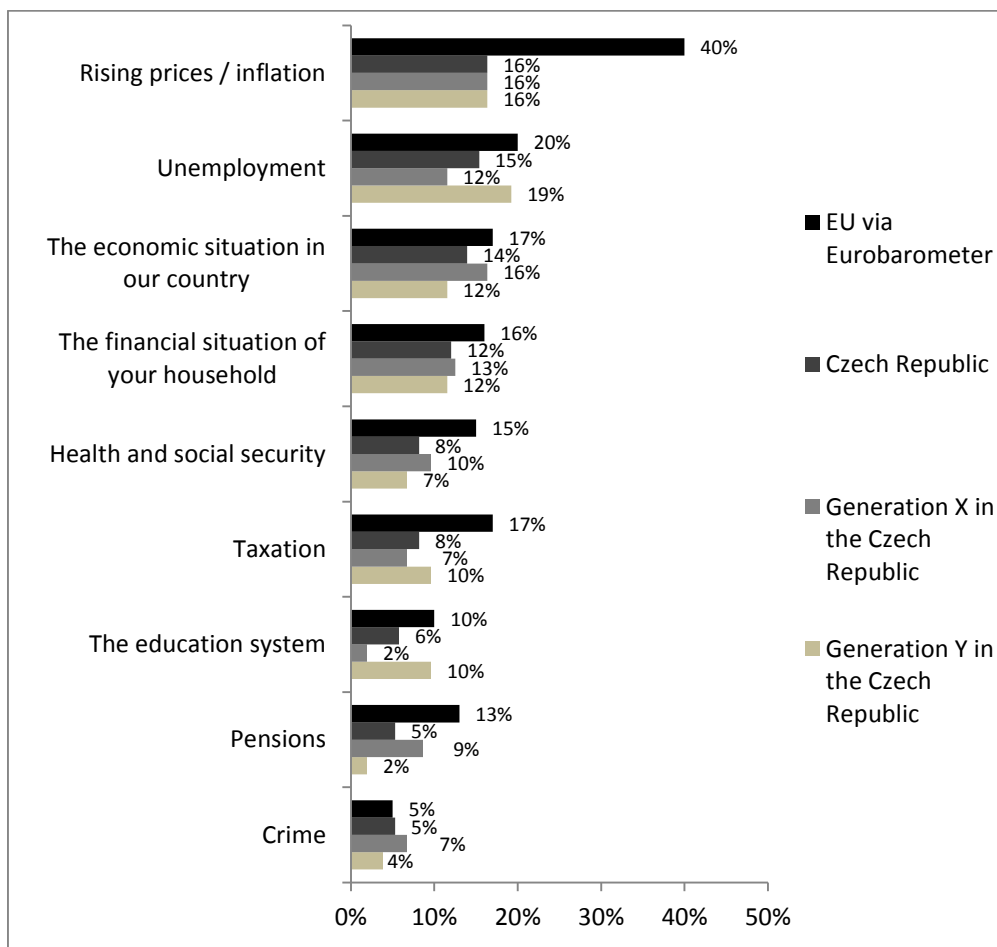
Source: Author's calculations, Standard Euro barometer 80 (Autumn 2013)

As you can see in appendix, we cannot reject the null hypothesis about independency at the significance level 0.05. It explains that main concerns at national level are not associated with generations.

4.3 Main Concerns at Personal Level

Inflation (16 %), unemployment (15 %) and the economic situation in our country (14 %) are among top three concerns of Czech households. This is very similar result observed also in research Eurobarometer 80, but inflation is more important for European respondents. The main concerns at personal level by Generation X and Y are documented in Figure 3.

Figure 3: Main Concerns at Personal Level by Generations



Source: Author's calculations, Standard Euro barometer 80 (Autumn 2013)

We cannot reject the null hypothesis about independency at the significance level 0.05 (see appendix). It means main concerns at personal level are not associated with generations.

4.4 Czech Inhabitants and the Economic Situation

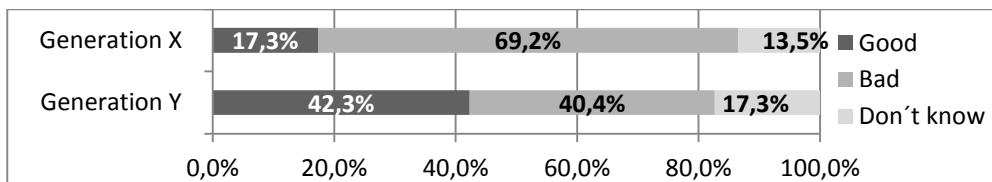
In this part there are described the main results of research in economic situation. The research is based on evaluation of economic situation on the same principle as was measured and presented in Eurobarometer. It was demanded for subsequent comparison of two surveys.

4.4.1 Current Situation of the European Economy

The majority of Czech respondents think the economic situation in the European Union is bad (55 %). This is slightly better result than in the research Eurobarometer

80. Following Figure 4 shows the opinion current European economy by Generation X and Generation Y.

Figure 4: Current Situation of the European Economy by Generations



Source: Author’s calculations

As you can see in appendix, we reject the null hypothesis about independency at the significance level 0.05. It means there are significant differences among opinions about this area by two generations. Members of Generation Y are more positive, see at Figure 4, than members of Generation X.

The relation between generation and perception of current situation of the European economy is tested in by logistic regression too. The P-value for the independent variable is less than 0.05 (Figure 5). There is statistical significance between the perception of current economic situation and Generation X and Y.

Figure 5: Estimated of Logistic Regression for the Perception of Current Economic Situation in Europe

Logistic regression Number of obs = 87
 LR chi2(1) = 10.83
 Prob > chi2 = 0.0010
 Pseudo R2 = 0.0966
 Log likelihood = -50.629508

situation_~e	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
generation	-1.540445	.4875218	-3.16	0.002	-2.49597	-.5849198
_cons	1.640528	.7337775	2.24	0.025	.202351	3.078706

The equation of the estimated model of logistic regression for the perception of current situation of the European economy is as follows

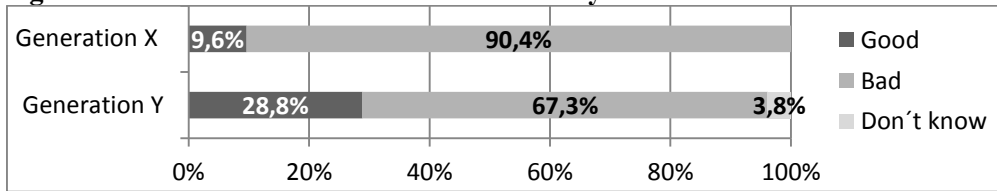
$$P_i = P(Y_i = 1) = \frac{e^{(1,640528 - 1,540445x_i)}}{1 + e^{(1,640528 - 1,540445x_i)}} \quad (5)$$

where P is the probability of perception good economic situation in the Europe. Probability of the perception good economic situation is 19,1 % in case the Generation X and probability for the Generation Y is 52,5 %.

4.4.2 Current Situation of Economy in the Czech Republic

The main of respondents think the economic situation in the Czech Republic is bad (79 %). This is very similar result like in research Eurobarometer 80. Following Figure 6 shows the opinion about it by Generation X and Y.

Figure 6: Current Czech Economic Situation by Generations



Source: Author's calculations

According to calculated Pearson Chi-Square test (see appendix), we reject the null hypothesis about independency at the significance level 0.05. It means there are differences among opinions about this area between Generation X and Generation Y. Members of Generation Y are more positive in this area than members of Generation X.

The relation between generation and perception of current economic situation in the Czech Republic is tested in the following part using by logistic regression too. Dependence is identified based on statistical testing carried out at the 5% significance level. Thus, the coefficients are statistically significant. The P-value for the independent variable is less than 0.05 (Figure 7). There is statistical significance between the perception of current economic situation and Generation X and Y.

Figure 7: Estimated of Logistic Regression for the Perception of Current Economic Situation in the Czech Republic

Logistic regression	Number of obs =	101
	LR chi2(1) =	8.34
	Prob > chi2 =	0.0039
	Pseudo R2 =	0.0830
Log likelihood = -46.09139		

situation~h	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
generation	-1.524697	.5642028	-2.70	0.007	-2.630514 - .4188795
_cons	.767011	.7823521	0.98	0.327	-.766371 2.300393

Source: Author's calculations

The equation of the estimated model of logistic regression for the perception of current economic situation in the Czech Republic is as follows

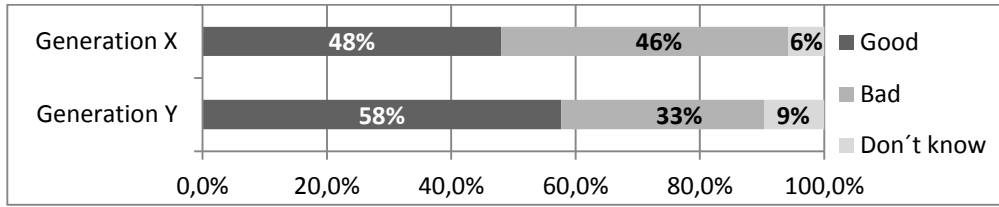
$$P_i = P(Y_i = 1) = \frac{e^{(0,767011-1,524697x_i)}}{1+ e^{(0,767011-1,524697x_i)}} \quad (6)$$

where P is the probability of perception good economic situation in the Czech Republic. Probability of the perception good economic situation is 9,2 % in case the Generation X and probability for the Generation Y is 31,9 %.

4.4.3 Current Financial Situation of Households

The main of respondents think the current financial situation of their household is good (53 %). This is very similar result like in the research Eurobarometer 80. Figure 8 shows the opinion about its household financial situation by Generation X and Y.

Figure 8: Current Financial Situation of Households by Generations



Source: Author's calculations

As you can see in appendix, we cannot reject the null hypothesis about independency at the significance level 0.05. It means there are no significant differences among opinions about this area by two generations.

Regression analysis is used to identify the relationship between perception of current financial situation of household and generation. The P-value for the independent variable is greater than 0.05 (Figure 9). There is not statistical significance between the perception of current financial situation of household and generation.

Figure 9: Estimated of Logistic Regression for the Perception of Current Financial Situation of Household

Logistic regression	Number of obs	=	95
	LR chi2(1)	=	2.77
	Prob > chi2	=	0.0962
	Pseudo R2	=	0.0213
Log likelihood = -63.572713			

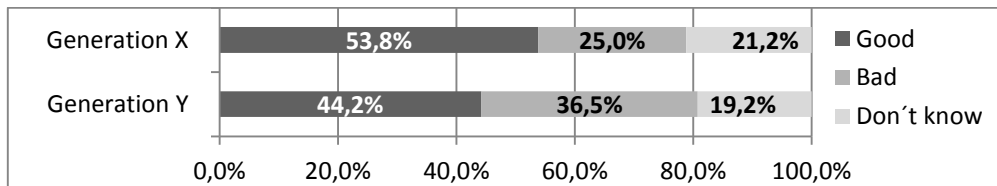
financial_~n	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
generation	-.6984663	.4238053	-1.65	0.099	-1.52911 .1321769
_cons	1.357712	.6950246	1.95	0.051	-.0045113 2.719935

Source: Author's calculations

4.4.4 Current Personal Job Situation

The main of respondents think the current financial situation of their household is good (49 %). This is very similar result than in the research Eurobarometer 80. Figure 10 shows the opinion about its personal job situation by Generation X and Y.

Figure 10: Current Personal Job Situation of Households by Generations



Source: Author's calculations

The null hypothesis about independence cannot be rejected at the significance level 0.05. It means there are no significant differences among opinions about current job situation between Generation X and Generation Y.

The differences between generation and perception of current personal job situation are tested in by logistic regression too. The P-value for the independent variable is greater than 0.05 (Figure 11). There is not statistical significance between the perception of current personal job situation and generation.

Figure 11: Estimated of Logistic Regression for the Perception of Current Personal Job Situation

Logistic regression	Number of obs	=	82
	LR chi2(1)	=	0.73
	Prob > chi2	=	0.3919
Log likelihood = -54.007779	Pseudo R2	=	0.0067

job_situat~n	Coef.	Std. Err.	z	P> z	[95% Conf. Interva]
generation	.3908663	.4576512	0.85	0.393	-.5061136 1.287846
_cons	-.0885854	.718575	-0.12	0.902	-1.496967 1.319796

Source: Author's calculations

5. Conclusion

This paper discussed the differences in the perception of the European Union between Generation X and Generation Y. The survey was based on research of Eurobarometer. Using Pearson chi-square test and logistic regression the analysis of independence was conducted.

We found out the variables current situation of the European economy and current Czech economic situation and expectations about personal job situation are dependent on generation. There are significant differences in opinions between Generation X and Generation Y. We can say Generation Y is more positive than Generation X except for current situation of their personal job situation. The other variables such as image and future of the EU, the most positive results of the EU, main concerns at European, national and personal level, current financial situation of household and personal job situation, but also variables expectations about European, Czech economic situation and expectations about financial situation of household was assessed as independent on generation.

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Appendix

Table 1: Values of Pearson Chi-Square tests

Variable	Pearson Chi-Square Asymp. Sig. (2-sided)	Dependence
Main concerns at European level	0.772	NO
Main concerns at national level	0.161	NO
Main concerns at personal level	0.125	NO
Current situation of economy in the Czech Republic	0.013	YES
Current situation of the European economy	0.008	YES
Current financial situation of household	0.341	NO
Current personal job situation	0.435	NO
Expectations about European economic situation	0.597	NO
Expectations about Czech economic situation	0.204	NO
Expectations about financial situation of household	0.154	NO
Expectations about personal job situation	0.045	YES

Source: Author's calculations

Impact of EU Membership on the Development of the Czech Agriculture

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Abstract

The aim of the paper is to assess the impact of the EU membership on the development of agricultural sector. We focus particularly on the influence of agricultural subsidies. After the accession to the EU, the Czech agricultural holdings gained the opportunity to obtain finances from Common Agricultural Policy. This financial support should have positive effect on the beneficiaries; enhance their profitability, competitiveness and overall development. However, as our results shows, the impact is ambiguous. On one hand, the subsidies helped to increase the operating surplus of the agricultural sector and profitability of agricultural holdings through increasing profitability of commodities. On the other hand, this can lead to the increased reliance of beneficiaries on external financial support. Especially in cases, when plants are not naturally profitable. Besides, the situation when the plants are profitable even without subsidies (and more profitable with them), lowers farmers' motivation for efficient production.

Keywords: *Common Agricultural Policy, Profitability, Subsidies*

JEL Classification: *H25, Q14, Q18*

1. Introduction

Agricultural sector in the Czech Republic (CR) has undergone many changes. After the Velvet revolution (since 1990), its size has been continuously adjusted to the real situation on the market. Also the production structure of Czech agriculture has changed. The decline of its share on the employment caused the increase of labour productivity, but decreased its role as an employer. Strong decline of its share on the GDP mitigated the role of the sector in the economics. Another significant change occurred after the accession of the CR to the European Union (EU). The implementation of the principles of Common Agricultural Policy (CAP) had many consequences in agricultural sector and influenced the performance, structure and size of Czech agriculture.

The changes can be observed in the legal, economic and social area. Firstly, the entrance brought the changes in legislation – for examples there had to be formed market organizations, there were introduced production quotas on commodities and set new requirements for farm management (so called cross compliance). From economical point of view, the Czech agricultural holdings had to face increased competition from “old” member states and inequality in subsidies distributions. On the other hand, this massive subsidization via CAP had positive impact on agricultural

sector. From social perspectives, a multifunctionality of agriculture was stressed in the CAP and its importance for rural development and social cohesion acknowledged.

The influence of the EU legislative requirements was assessed for example by Farmer (2007). He analysed the impacts of cross compliance regulation of the costs of the farms and their competitiveness. He stated that many EU's requirements had been already implemented in the national regulations. Hence, the introduction of cross compliance did not have such significant consequences for farmers and did not require massive investments. De Graaff et al. (2010) considered the same requirements, but assessed their impact on soil erosion control in a case study of hilly and mountainous olive groves in Trás-os-Montes in Portugal. They concluded that "cross compliance obligations could be quite effective in reducing erosion, but that they would depress income in all scenarios as a result of higher abandonment and lower percentage shifts towards intensive systems." (De Graf et al., 2008).

From economic point of view, the entrance to the EU brought the opportunity for the agricultural holdings in the CR to obtain subsidies from Common Agricultural Policy (CAP). Those financial means according to Malá et al. (2011) "has been fundamentally reflected in the economic development of the agricultural sector in the CR and in the business management of individual agricultural businesses." They concluded that direct payments have a negative effect on the production of agricultural businesses, but stimulate the demand for agricultural land. As Kroupová and Malý (2010) stated "it is necessary to continuously analyse the efficiency of spent finances in relation to the gained added value." Many surveys have been done in the area of impact of EU's subsidies on the efficiency and profitability of Czech agriculture and farms. For example Čechura (2012) analysed the technical efficiency (TE) and the total factor productivity (TFP) of Czech Agriculture right after the entrance of the CR to the EU (in the period of 2004–2007). He concluded that among important factors which influenced the TE and TFP belonged those "connected with institutional and economic changes, in particularly a dramatic increase in the imports of meat and increasing subsidies, as well as the impact of weather." (Čechura, 2012). In line with these findings, also Malá et al. (2011) found positive effect of direct payments on the increasing of the profit of agricultural producers. Doucha and Foltýn (2008) came to the similar conclusion. According to them, the EU support had positive impact on profitability of particular commodities – it increased already positive profitability or at least helped to minimize the lost.

Pělucha et al. (2013) tested and verified the influence of Agro-environmental measures (AEM) and less-favoured areas (LFA) supports on the indicators from geographical, demographical, and economical areas. Their results indicated that "AEM and LFA schemes do not benefit the underdeveloped municipalities as intended by the EU territorial cohesion objective" (Pělucha et al., 2013).

The article focuses on the consequences of the subsidization after the entrance to the EU. It simulates the effect of CAP subsidies on the agricultural sector's performance and the development of plants' profitability. It is structured as follows. Firstly, the methodology and the dataset are presented. The development of subsidization after the entrance to the EU is described in results section. Then the impact of subsidies on the

economic situation of agriculture is simulated. The results are discussed and compared to other researches in the next section. Last section concludes.

2. Methodology

The aim of the article is to assess the impact of the entrance to the EU on the development of agricultural sector. Particularly we focus on the effect of CAP subsidies on the important performance indicators. Firstly, the impact on the agricultural sector as a whole is analysed. We observe the changes of income before and after the entrance to the EU. Particularly operating surplus (mixed income) and its components are observed in time period of 1998–2012. This indicator is a standard part of the Economic Accounts for Agriculture (particularly of Generation of Income Account). It is calculated as *the net value added minus compensation of employees minus other taxes on production plus other subsidies on production*. The situation is compared before and after the accession.

On the farm level, we simulate the impact of direct payments related with the area on the profitability of the most commonly grown plants. We chose winter wheat, spring barley, rye, oat, corn for grain, pea, rape, sugar beet, ware potato, green maize, and permanent grassland. We took into account subsidies which can be calculated per hectare of a land: single area payments (SAPS), top-up subsidies (additional national payments) on agricultural land and single sugar payments (SSP). LFA subsidies are paid only on permanent grasslands according to the LFA type. We calculated average value of all rate for a given year.

The returns on sales (ROS) and on costs (ROC) for a plant were observed. Both indicators are modified on the case of one plant (normally they are used on the firms' level). We suppose all production to be sold – the revenues are equal to sales. ROS can be calculated as division of profit (P) and sales (S) multiplied by 100 (1).

$$ROS = \frac{P * 100}{S} \quad (1)$$

ROS shows how much CZK of profit fall on 1 CZK of sales. It expresses the ability of the farm to transform products in cash. It depends on the product price, profit added to this price and costs. It should be at least 10 %.

ROC are supplementary indicator to ROS. They are calculated as the division of costs (C) and sales (S). After multiplication by 100, ROC is expressed in % (2).

$$ROC = \frac{C * 100}{S} = 1 - ROS \quad (2)$$

The lower is the indicator, the better results the farm has, because 1 CZK of sales was created with lower costs. The situation is compared with and without subsidies.

The data for the agricultural sector as a whole were obtained from Czech Statistical office (CZSO). We utilized Economic Accounts for Agriculture – table for Entrepreneurial Income Account in million CZK. The influence of the subsidies on the profitability of various plants is simulated on the normative data from AGroConsult –

Normative for agricultural and food production. Recent available data were used – costs and yields for year 2011 and average farmers prices and SAPS, SSP, LFA, and Top-up subsidies rates for year 2012.

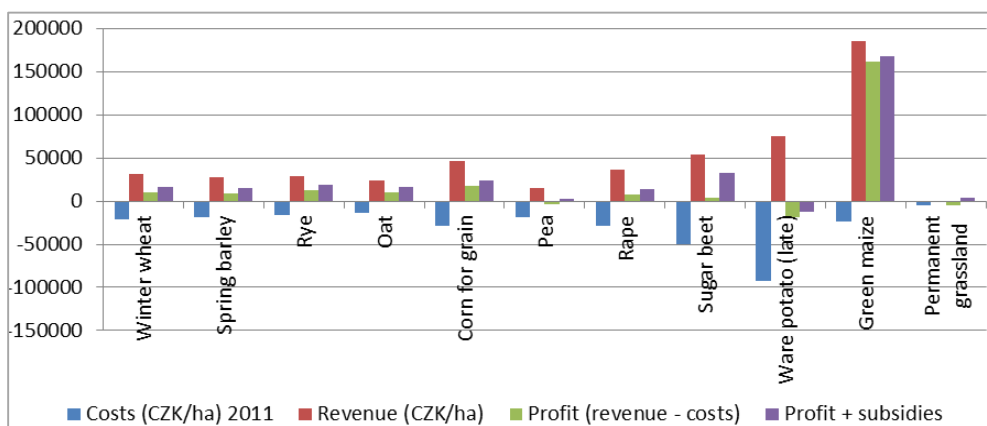
3. Results

After the entrance to the EU, new member states gained the opportunity to obtain subsidies from CAP in a form of direct payments, subvention for common market organizations, and under Rural Development Programmes. However, SAPS calculated at one hectare of the agricultural holding, were not provided at the 100 % level of the old EU member states. Their level continuously increased – so called phasing in process. SAPS could have been also increased by payments from national resources. So called Top-Up payments could have ranged from 0 to max 30 %, but could not have exceeded 100 % (MoA, 2013).

Regarding the profitability of Czech agriculture, it was negative for a long time. Operating surplus in current prices was negative until year 2000. Then it was slightly positive, but reached only 6 230 million CZK in 2001. A significant change occurred after the entrance of the CR to the EU. Since 2004, the operating surplus is strongly positive. The development is displayed at Figure 1.

The components above the *x* axis are those which contribute in a positive way to the operating surplus, while the ones below 0 are deducted from the indicator. While the compensation of employees and the taxes stays almost the same over time, the subsidies on production became more important since 2004. Without the subsidies, the operating surplus would have been negative in all years (with exception of year 2001, when it would have been 1011 million CZK).

Figure 1: Development of Operating Surplus and Its Components (mil. CZK)

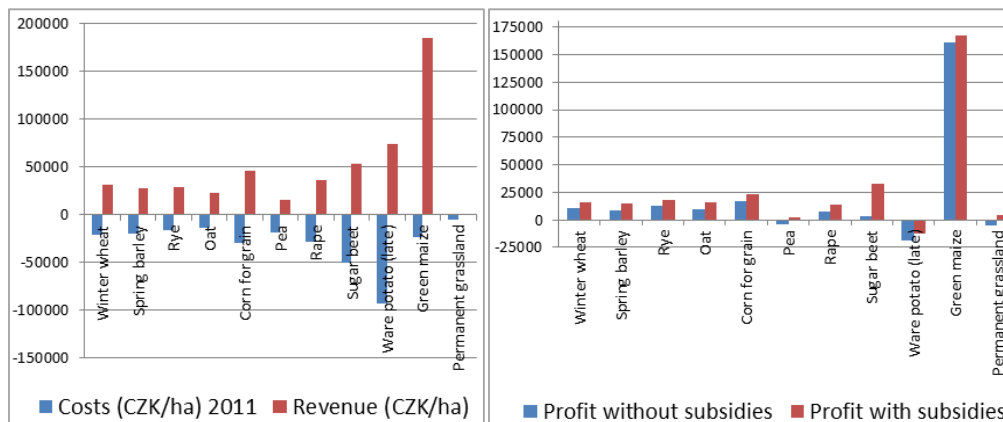


Source: own presentation of the data from CZSO (2013)

Assessing the impact of the direct payments, we focus particularly on the plant production as the subsidies can be calculated directly at the area. Firstly, a normative revenue (CZK/ha) for each commodity was derived as normative yield (t/ha) multiplied by average farmers prices (CZK/t). Then the normative costs (CZK/ha)

were deducted and profit i.e. sales (CZK/ha) was obtained. When the subsidies – SAPS, SSP⁷⁶, LFA and Top-Up (CZK/ha) were added a profit with subsidies was obtained. The costs and revenues are displayed at the left graph and profit with and without subsidies at the right graph on Figure 2.

Figure 2: Development of Costs, Revenue and Profit of Selected Plants in Year 2012 (if not stated otherwise) (mil. CZK)

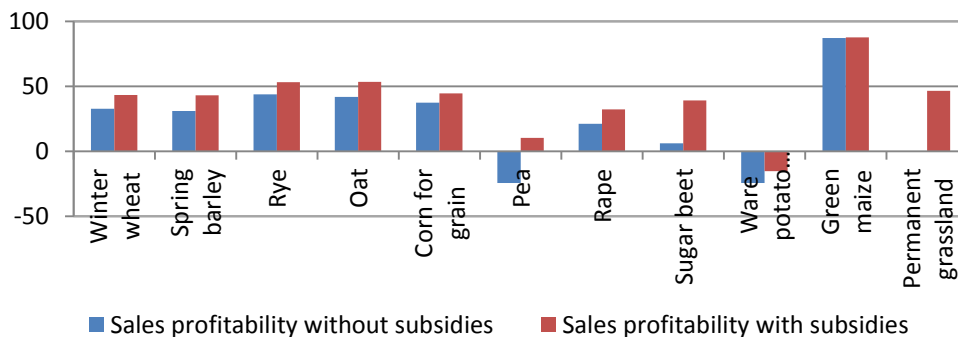


Source: own calculations on the data from AGroConsult (2012, 2013)

It can be seen that the farm is profitable in majority of commodities. It does not generate higher revenues than the costs only in case of pea, ware potato, and permanent grassland, which is a special case as the product of it is not sold on a market. However, when the subsidies are taken into account, even pea and grassland generates profit. This may increase the reliance of the farmers producing this commodity on the subsidies.

Consequently, the profitability indicators were calculated and displayed: ROS at Figure 3 and ROC at Figure 4.

Figure 3: Returns on Sales (Profitability) without and with Subsidies (%)

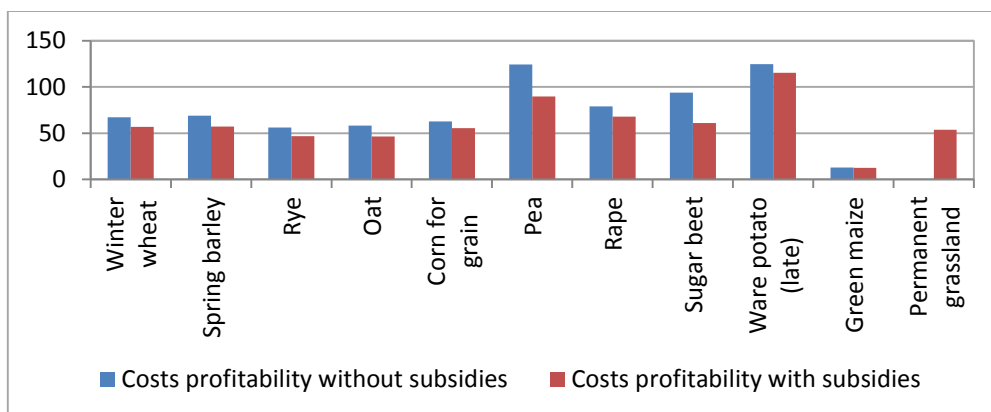


Source: own calculations on the data from AGroConsult (2012, 2013)

⁷⁶ SSP payment was set in CZK/t and had to be multiplied by yield to be obtained in CZK/ha.

ROS range from -24.5 % to 87.2 % without and -15.4 % to 87.6 % with subsidies. It is clearly visible that subsidies help to increase profitability. Majority of plants are profitable without subsidies, but in case of pea, the subsidies significantly help. On the other hand, ware potatoes are not profitable even with SAPS and Top-Up payments. The ROS increased around 11 % for spring barley, oat, and sugar beet. On the other hand, the lowest effect was for green maize, which is normally highly profitable.

Figure 4: Returns on Costs (Profitability) without and with Subsidies (%)



Source: own calculations on the data from AGroConsult (2012, 2013)

ROC are always positive and lower with subsidies. This implies that the farm is able to create one CZK of sales with lower costs when it receives financial aid. Again, the highest effect was for pea, than for ware potatoes. The lowest difference was for maize. It is not surprising as ROC can be derived from ROS. Considering the permanent grasslands, the profitability can be measured only with subsidies. ROS reaches 46.5 % and ROC 53.5 %.

4. Discussion

Our results shows that majority of plats are profitable even without subsidies. The calculations, despite being only simulated, give similar conclusions as results of Foltýn and Zedníčková (2010). They predicted profitability of agricultural commodities from years 2009–2014. As same as in our case, the profitability of plants was always higher with subsidies. Correlation coefficient was in case of plants without subsidies around 0.38 and with subsidies 0.40, which suggests middle strength of dependence. Hence, we can compare our results to their. Foltýn and Zedníčková (2010) also comment that majority of cereals are profitable without subsidies. This according to our opinion can lead farmer to produce more of these plants. Similarly a rape is very lucrative plant for Czech agricultural companies as it is profitable without subsidies. On the other hand, sugar beet and ware potatoes without subsidies would be problematic. The profitability of forage (which is grown for feed) is always zero without subsidies, but positive with them. This may stimulate the farmers to grow only products which are profitable without subsidies and utilize obtained finances for other

purposes, or when non-profitable plants are grown, to rely more on the external support.

5. Conclusion

The aim of the paper was to assess the impact of the EU's subsidies on the development of agricultural sector. Finances Common Agricultural Policy should have positive effect on the beneficiaries. Therefore, we calculated costs, revenues and returns to sales and returns to costs for selected plants from normative data for year 2012 (2011 when there were no other available). Our results show that the subsidies helped to increase the profitability of a sector as a whole as same as of particular commodities. The majority of the most commonly grown plants are profitable even without subsidies. This may lower farmers' motivation for efficient production as they would be still profitable even when their costs were higher. On the other hand, the situation when plants are not profitable without subsidies, can lead to the increased reliance of beneficiaries on external financial support.

Acknowledgements

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Changes in the Structure of Employment in Various Sectors of the Economy of the Czech Republic

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Abstract

This article describes the evolution of the structure of employment in the Czech Republic beginning with the entry of the Czech Republic into the European Union after the present day. It focuses on the characteristics of the development of employment in the various sectors of the economy. Trade and services as one of the sectors represents a major source of economic growth. The aim is to identify regional disparity in the Czech Republic and to determine the evolution of the share of the employed in terms of sectoral structures. On the basis of statistical data was detected the movement of employed between individual sectors. The largest share of employment consists of the tertiary sector, followed by secondary and primary sector. The employment share of women differs, and employment of men in each of the sectors. Women's employment is highest in the tertiary sector, but employment of men in the secondary sector.

Keywords: *Employment, Primary sector, Secondary sector, Tertiary sector*

JEL Classification: *E24, J21, J29, E29*

1. Introduction

Sectoral structure of the economy can be examined in the context of employment policy, as one of the segments of economic policy or within the structure of the economy. One of the ways to break down the economy is its employment structure. After 2004, developed more gradually than in the 90s of the 20th century. The Czech Republic is for the economy from the international perspective, characterised by an extremely high proportion of employment in the secondary sector (industry and construction) and significantly lower representation of the tertiary sector.

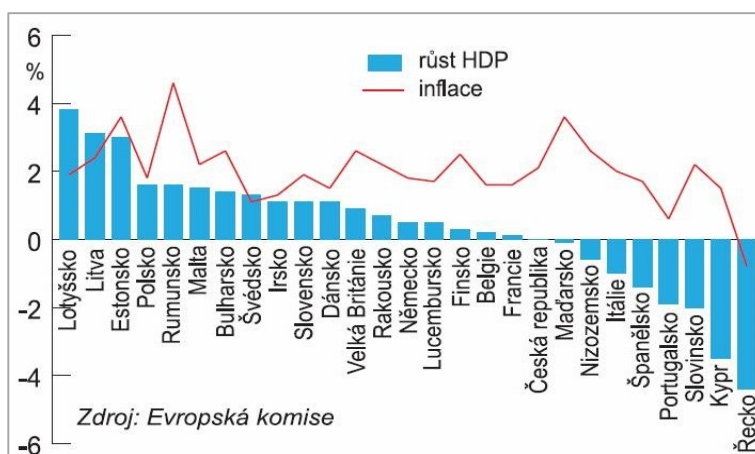
The evolution of employment during the period affected by the following factors: the high number of students in secondary schools, the growth in the number of higher education, rising the age of retirement. Other factors are favorable conditions for the employment of persons in the higher age in some professions, setting the legislative conditions for entitlement to a retirement pension, a relatively favourable development of the birth rate.

The specification of the sectoral structure of employment, the employment share of employment for women and men has been paid to attention in the framework of the project the OP VK Innovation of Educational Programs at the Silesian University, School of Business Administration in Karviná. Project registration number CZ.1.07/2.2.00/28.0017, whose results are presented in this contribution.

2. Current Situation in EU

At the beginning of year 2013 European Commission (EC) showed the economical forecast. In the last quarter of 2012, GDP in the EU declined by 0.5%, the Euro area is even more immersed into recession and the drop in GDP was 0.6%. In year 2013, the European Union had a moderate recovery, according to the EC was increasing GDP by 0.1%. Even more positive is forecast for 2014, the annual GDP growth in the EU is expected at 1.6%. Figure 1 shows that top on year 2013 to be the Baltic States; this exceeds 3% of GDP threshold. The worst situation is expected in Greece (-4.4%) and Cyprus (-3.5%). Cyprus is also the only country in the European Union, which has yet to drop, estimated for 2014.

Figure 1: GDP and Inflation in EU in 2013

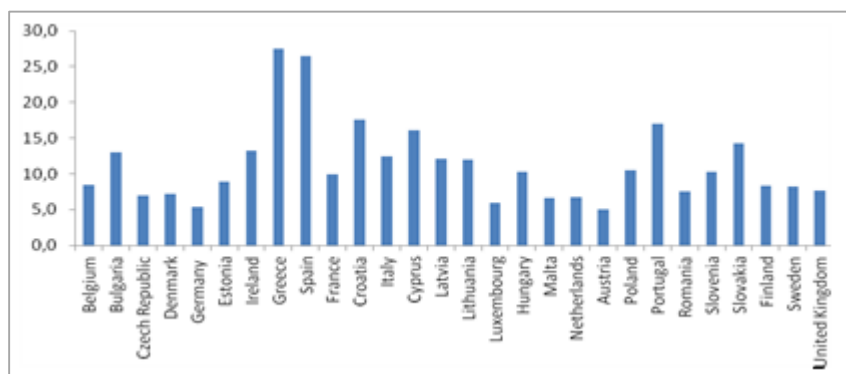


Source: European Commission

With GDP growth is closely related to unemployment in the various states of the European Union. From Figure 2 it can be seen unemployment rates in the EU countries. Figure 2 shows that the highest unemployment persists in Spain (unemployment rate 26.5%) and Greece (27.5%). In this countries, labour market misses flexibility. Economy long suffers the problem of the rigid labour market. The serious problem is unemployment of young people.

The lowest unemployment rate is in Austria (5.0%), 5.4% in Germany and Luxembourg (5.9%). Czech Republic in the EU countries is a country with an unemployment rate below ten percent. In 2013 recorded an unemployment rate of 7.0%.

Figure 2: Rate of Employment in Year 2013



Source: Own processing (data from http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/data/database)

The following chapter is devoted to the development of employment by industry in the Czech Republic.

2. Development of Employment by Sectors in the Czech Republic from Year 2004 to 2013

GDP change has an impact on unemployment. Regression analysis showed that the increase in GDP growth rate by 1%, unemployment rate is falling by 1.98 %.

$$\Delta \text{unemployment rate}_t = -1,98 * \Delta \text{real GDP}_t + 2,46 + \varepsilon.$$

That means that the development of GDP has strong influence to unemployment. Following text describes situation in the Czech republic in years 2004 – 2013 in context of employment in various sectors.

According to the results the Czech Statistical Office (CSO) within the framework of the so-called Labour force sample survey has been the growth of total employment accompanied by ongoing changes in the sectoral structure of employment. In the primary sector of the economy continued to decline in employment from 2004 to 3.3% in 2009. The number of employed since 2004 regularly quickly increased in 2008 exceeded the total employment of the border 5 million persons. With the evolution in the years 2007 and 2008, the decline in total employment in contrasts during the year 2009. During the reporting period has increased employment in the secondary sector. The economic crisis and economic problems a series of companies, organizations and individuals are in the largest annual decline in employment over the past ten years. This decline reflected the most in manufacturing; by contrast, employment in construction has risen. Total employment growth concentrated in the tertiary sector, where the number of employed grew. The real estate industry has experienced the greatest growth and the rental, business, health and social care, other public, social and personal services. A greater decrease took place in the education sector (which is

associated with low population in addition to the number of pupils at primary and secondary level).

Sectoral structure differs also in the employment of women and men. For example, in 2009, the work in the service was more than 73% of women. The increment in the number of men working in the services was lower in absolute terms (below the level of 47% of the total male employment) than the increase of women in this sector. In contrast, roughly half of men are employed in the secondary sector (industry and construction), their share of total employment amounted to 49.3% (Czech Statistical Office, [online], 2009).

In 2010, the continued decline in employment in the secondary sector to 37.0%. The share of employment in the secondary sector in the Czech Republic is the highest in the EU, only in Slovakia is similar. It is at the expense of employment in services, which is in the Czech Republic significantly undersized in particular, the scope of the health and social care.

In the year 2012 in the EU-27 share of the secondary sector fell to 22.6% in the Czech Republic decreased to 36.1% in 2. quarter of 2013 in the EU 27 decreased year on year to 22.3%, to 36.3% in the Czech Republic, yet it is still the highest value of all States of the EU of 27. The share of the tertiary sector in the EU-27 in 2012 was 72, 2% in 2. quarter of 2013 rose to 72.5%. In the Czech Republic is the representation of the sector average and 60.6% in 2012, or 60.4% in the 2. quarter of 2013. The representation of the primary sector in the Czech Republic in the year 2012, as well as in 2011, the share of the primary sector in the Czech Republic, 3,3% in the 2. quarter of 2013, the share fell slightly from 3.3% to 3.2%. In the EU-27 is the value of the share of the primary sector in 2012 unchanged (5.2%), in the 2nd quarter of 2013 amounted to 5.3%.

The labour market in the Czech Republic's entry into the EU, the year was marked by large structural movements. Among the significant loss of more entrepreneurs and was helping the family, loss of total number of employees and the extension of long-term unemployment in the age group 20-29 years. The decline in the employment rate and the unemployment rate growth occurred under the situation of economy growth, increased performance, when the rising inflation rate, and acceleration of the growth of the manufacturers' prices. The number of employed persons was lower by 0.6% and stood at 4 706.6 thous, see annex 1, table 1. The average employment rate was 54.3% and decreased by 0.5% (CSO, [online], 2004). The decline in the number of employed had a slight negative impact on the development of gross value added, production increased by increasing labour productivity performance. The biggest influence on the decline in the number and the level of employment should entrepreneurs and assisting them to family members (the State decreased by 2.4%), which was about three quarters of the total loss of employed.

From the perspective of the sectoral structure of employment, the number of employed in the primary sector fell to 4.3% in the secondary to 39.2% in the tertiary sector increased slightly by 0.1% to 56.5%. Higher employment of men in primary and tertiary sector, in turn, women at the tertiary sector dominates and makes 70.4%. Overall, the year-to increase the share of the services sector and reducing the share of

the primary sector and secondary sector to the total number of employed. The highest employment from the perspective of the sectoral structure (SIC – Sectoral Classification of economic activities) is in the manufacturing industry, followed by the sectors of trade, renovation engines, vehicles and consumer goods sector and the transport, storage and communications. The smallest of the employment is in the sector of activity of the household, forestry, fisheries, fish farming, and souv. In 2005, together with the growth of the economic performance of the basic sector employment continued to grow at 4 764 thousand persons and the structural discrepancy between higher supply and lower demand in the labour market is slightly diminished. The average number of employees was higher by 1.2% year on year. The average employment rate was 54.7%, year on year increase of 0.4% (Czech Statistical Office, [online], 2005). In the structure of employment changes occurred due to the decrease in the number of entrepreneurs Inc. helping family members. From the perspective of the sectoral structure of employment, the number of employed in the primary sector fell to 4% in the secondary, slightly increased to 39.5% in the tertiary sector remained at the same level. The share of men is higher in the primary and tertiary sector than women, in turn; women's employment in the tertiary sector dominates and makes 70.4%. From the perspective of sectoral structures form the largest share of employment again in the manufacturing industry (slightly increased to 27.2%), while in the store dropped to 12.9% and take the industry decreased transport, storage and communications at 7.5%). The smallest employment remains in the designated sectors such as in 2004, however, the decline of the mining and quarrying sector (1.0%). In 2006, the employment rate increased to 65,3%. The increment was caused by the growth of the share of entrepreneurs, which increased to 16.2%. Increase the number of entrepreneurs reported mainly service sector. From each of the sector fell the highest growth industry, real estate industry behind him and renting, bussiness activities. The biggest loss recorded the construction sector. The number of employed by the primary sector fell to 3.8%, take in the tertiary sector slightly fell to Eur 56.3% in the secondary, slightly increased to 40% (Czech Statistical Office, [online], 2006). The proportion of men in the primary sector is declining, in the secondary and tertiary rise does not change. Growing share of female employment in the secondary sector and the tertiary sector declined. From the perspective of the sectoral structure, the situation has changed to the third position, again the largest growing share of employment in manufacturing (grew 1% to 28.2%), and while in the store dropped to 12.7%. The smallest employment remains in the designated sectors such as in 2004, growth in the sector, however, mining and quarrying (1.1%). In 2007, continued favorable trend. Employment has grown for three consecutive years. In the year, employment increased by 1.9% to 4 922.0 persons, which was the maximum for the past 11 years (CSO, [on-line], 2007). The rate of total employment amounted to 66.5% and exceeded the EU-27 average. The tendency of major structural changes in the labour market does not change. Grew market share the business sector on employment at 16.2%. From the perspective of the sectoral structure of the overall employment growth occurred in the secondary sector (40.2%), where it was a decisive part of the increase in the manufacturing industry. Employment in the services sectors grew mainly real estate, renting and business activities, financial intermediation, and transport. The share of employment for men is growing only in the secondary sector

for women's employment in the tertiary sector only. Total employment (according to the classification CZ-NACE) in 2008 was on average 5 002.5 thousand persons. Employment growth decreased to 1.3% in 4. quarter. From the perspective of the sectoral structure of employment has declined in the primary sector by 0.3% to 3.3%. In the case of employment decline in men was greater than for the employment of women. In the secondary sector employment rate growth slowed down to 40.5%, from the perspective of employment of men grew more than their share of employment for women. In the tertiary sector's share has declined slightly (by 0.1%). In the services sector's share of employment of men and women has not changed. From the perspective of the sectoral structure, the situation has changed to the third position, again the largest, but stagnant share of employment in manufacturing (28.6%), on the contrary for the shop once again grew to 12.7%, as well as in the sectors of Transport, storage and communication (7.5%) (CSO, [online], 2008). The smallest employment remains in the designated sectors, however, the growth in the production and distribution of electricity, gas (1.6%).

In 2009, the negative impact of the decline in the performance of the economy at the level of total employment, which dropped to 65.3%. Total employment was on average 4 934.3 ths. persons. In each of the sectors was a different development. Employment in the primary sector decreased slightly year on year to 3.1% in the secondary sector amounted to 0.9% year on year drop in the tertiary sector employment increased by 60.8 thousand persons. Employment of women is the most increased in the services sector, and about 3% (Czech Statistical Office, [online], 2009). In the course of the year while declining weekly number of hours worked in the main job. From the perspective of the sectoral structure (according to the classification CZ-NACE) the situation has changed, reflecting the decline in the economy. Its share in the manufacturing industry is declining year on year (from 28.6% to 25.2%), the wholesale and retail. The lowest employment shows a sector of activity in the field of real estate (0.8%), with a value of 1.1% of the mining and quarrying industry and stock water; activities of the context waste management.

The uncertainty in the job market led to a reduction of employment in the 2. quarter of 2010, while the economy grew. The decline in employment began to improve until the second half. The growth in employment was involved in the leak of the unemployed into entrepreneurs. The productivity of the influence of the evolution of total employment and the gross value added in the economy against the year 2009 significantly increased (6.8%), in manufacturing industry even about one fifth (19.8%), (CSO, [online], 2010). Employment in the primary sector has stagnated, the decrease in the secondary sector grew 0.6% in the tertiary sector employment increased 0.6%. Men consistently increased employment in the primary sector and the service sector, by contrast, in the secondary sector decreased. Women's employment increased only in the services sector. From the perspective of the sectoral structure, the situation has changed, reflecting the decline in the economy. Its market share is growing slightly in the manufacturing industry (25.3%), the Wholesale sector again dropped to 12.2%, as well as in the construction sector declined by 0.6% to 9.5%. The lowest employment once again shows a sector of activity in the field of real estate

(0.8%), a slight decrease of 0.1% occurred in the mining and quarrying industry; activities of the contexts waste management.

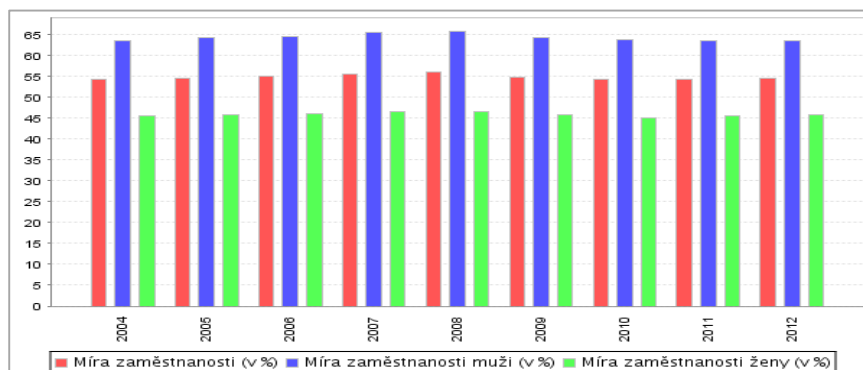
In 2011 year, the entry into force of the Europe 2020 strategy. On the labour market aims in the horizon of the Decade to increase the employment rate of persons aged 20-64 years at 75% and increase the number of university-educated population aged 30-34 years, at least 40%. (Gradually leads to the growth of the proportion of university-educated people in the Czech Republic, with shares of 24.7%, we are among the countries with the lowest level of college-educated people aged 30-34 years of age.) During the year, the employment rate increased to 71.1 bold typeface%, and to increase the employment rate of women by 0.3 p. b. 62.0% (Czech Statistical Office, [online], 2011). The employment rate for men in the reference period remained unchanged and stood at 80.0%. The labour market in the Czech Republic still has substantial reserves, in terms of its flexibility. According to Eurostat figures for the year 2011 used partial doses of 32% of employed women aged 25-54 years caring for one child, in the Czech Republic, only 11% of women (see Figure 3). Employment in the primary sector fell slightly, in the secondary sector increased 0.4%, and in the tertiary sector employment increased 0.3%. Employment of men fell in the secondary sector, in the other; women's employment grew, stagnated in the primary sector, in the secondary sector declined in the services sector grew.

From the perspective of the sectoral structure of employment situation changed, the proportion in the manufacturing industry is growing slightly (1.1 % to 26.4 %), the Wholesale sector grows slightly on the contrary, at 12.3 %, construction sector employment declined by 0.7 % to 8.8 %. The lowest employment exhibit two sectors, mining and quarrying (0.1 %) and the sector of activity in the field of real estate (0.9 %), and industry stocks. water; activities of the contexts. waste management.

The situation on the labour market in 2012, were several contradictory phenomena. The economy in GDP was in a recession, the employment rate for several quarters is growing steadily, but at the same time increased the number of registered unemployed and the unemployment rate grew. These phenomena were linked with the use of other types of jobs (partial harness work on the agreement, the bailout of the family, "švarcsystém"). To participate in employment growth group of persons without the Statute of workers, made up not only of doing business), but also to help family members, people working on the agreement for the implementation of the work and the agreement on work and the owner of the business firms. The number of employed totalled 5 091.5 thousand of people, i.e., about 0.39 % more than in the previous year (Czech Statistical Office, [online], 2011).

Employment in all sectors, in the primary sector grew slightly (0.1 %), in the secondary by 0.3 %, and the tertiary sector by 0.2 %. Employment of men grew in all sectors, in turn, women's employment in the primary sector, stagnated in the secondary and in the service sector grew.

Figure 3: Evolution of Total Employment, Employment, Employment of Women and Men



Source:

http://vdb.czso.cz/vdbvo/grafdetail.jsp?go_l_1992=1&go_h_1970=1&potvrz=Zobrazit+graf&go_h_1969=1&go_l_1997=1&cislotab=PRA1010CU&go_l_1993=1&go_l_2008=1&str=grafdetail.jsp&go_l_1995=1&kapitola_id=3&go_zobraz=1&go_h_1968=1&go_l_1996=1&go_l_1994=1&go_l_1998=1&go_l_2009=1&voa=graf

The total employment increased in 2013 and reached 68.3 %, increased by 1.2 % to 4 957.7 persons. The employment rate for men rose to 76.1 %, the employment rate for women rose to 60.2 %. The share of employment in the primary sector rose to 3.1 % in the half of 2013 (CSO, [online], 2013). In the secondary sector decreased employment by 0.8% year on year to 37.4 %. On the decline, he participated in almost as industry and construction. On employment growth mainly participated in the tertiary sector, where employment rose to 59.5 %. In terms of sectoral structures have decreased the number of employed in the industry at 29.0 %, in construction (a decrease of 0.3 %) to 8.4 %. The largest increase was in the sector of public administration and defence, administrative and support activities, information and communication activities and education. Decreased the number of hours worked in the national economy by about 1 %, primarily due to the increase in the number of jobs for shorter working time (an increase of 15 %) and the number of jobs for a specified period (an increase of 11 %).

4. Conclusion

In the primary sector of the national economy continued to decline in employment. In the years 2005 to 2008, significantly strengthen the secondary sector. The reversal in the development sectors in 2009 due to the economic crisis, when employment fell. A number of factors such as the rapid growth of the share of students in a group of up to 25 years, increasing the age limit for retirement, fluctuations in the demographic composition of the population. Developments in the individual sections of the industry, however, has not been the same, copied the economic development of the economy. The economy is in a period characterized by the lowest share of employment in the primary sector (currently at the level of about 3%), a relatively high proportion of employment in the secondary sector (approximately 38%) and

the highest share of the service sector (approximately 59%). The sectoral structure of workplaces for women is significantly different from the sectoral jurisdiction workplaces. Most women (about 75 %) currently working in services, less than a quarter in the secondary sector, and around 2 % in the primary sector. Men are more frequently employed in the secondary sector (about 49 %), closely followed by services (47 %) and least in the primary sector (approximately 4%). The increment in the number of men working in the services is lower than the increase in women.

For the year 2014 we further rationalisation of the number of employees, which should be reflected in the increase in hours worked per employee. On employment growth by 0.1 % (0.4 %), but it at least in part also participate in an approved increase in jobs in the Government sector, at the offices of labour and financial control. In the year 2015 should be a slight growth in employment.

European Commission recommendation for Czech Republic for years 2013-2014 are following: speed up the increase of the statutory retirement age and increase employability of older workers, reduce early exit pathways; take measures to strengthen the efficiency and effectiveness of the public employment service; increase the availability of childcare facilities, mainly a focus on children up to three years old.

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Appendix

Table 1: Employment in NH in 2004 – 2012

Employment in NH	2004			2005			2006			2007			2008			2009			2010			2011			2012			
	Total of %	men by%	women by %	Total of %	men by%	women by %	Total of %	men by%	women by %	Total of %	men by%	women by %	Total of %	men by%	women by %	Total of %	men by%	women by %	Total of %	men by%	women by %	Total of %	men by%	women by %	Total of %	men by%	women by %	
Total (thous. persons)	4 706,6		2 663,1	2 043,5	4 764,0		2705,5	2 058,5	4 828,1		2 741,9	2 086,1																
Agriculture	202,3	4,3	5,3	3,0	3,2	4,0	4,9	2,8	181,7	3,8	4,5	2,8																
Industry	1 844,6	39,2	48,9	26,6	0,7	39,5	49,4	26,5	1 929,4	40,0	49,8	27,0																
Services	2 658,5	56,5	45,8	70,4	1,5	56,5	45,7	70,7	2 716,0	56,3	45,7	70,2																
total (thous. persons)	4 922,0		2 806,1	2 115,9	5 002,5		2863,2	2 139,3	4 934,3		2 823,7	2 110,5																
Agriculture	176,3	3,6	4,4	2,5	165,7	3,3	4,0	2,4	153,8	3,1	3,8	2,2																
Industry	1 979,3	40,2	50,3	26,8	2 028,5	40,5	50,7	26,9	1 903,1	38,6	49,4	24,0																
Services	2 765,8	56,2	45,3	70,7	2 808,1	56,1	45,3	70,7	2 877,1	58,3	46,8	73,7																
Total (thous. persons)	4 885,2		2 798,3	2 086,9	4904,0		2794,4	2109,6	4 890,1		2 778,6	2 111,5																
Agriculture	151,2	3,1	4,0	1,9	145,8	3,0	3,8	1,9	149,2	3,1	3,9	1,9																
Industry	1 855,7	38,0	49,0	23,2	1882,8	38,4	49,3	23,9	1 864,2	38,1	49,4	23,3																
Services	2 878,1	58,9	47,0	74,9	2874,7	58,6	46,8	74,2	2 876,6	58,8	46,7	74,7																

Source: ČSÚ, Own calculations

How the Prediction of Financial Distress Changed Based on Development of Agriculture in Slovakia?

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Abstract

Slovak agriculture sector passed during the last decade a period of substantial changes and dynamics, caused by the Common Agriculture Policy assessment in 2004, new political regulations and quotas, or crisis influence in 2009. These events have been ultimately impacting economic development in this sector, as well as the financial results of individual producers. In the previous studies were constructed models especially for agriculture, evaluating and predicting financial prosperity of companies, such as G-index and CH-index. However, the current development resulted to the necessity to reconstruct the models, considering the new factors impacting agriculture companies' prosperity. Our paper compares the G-index and CH-index models with their renewed financial distress prediction model that was created in our previous study. The comparison emphasises the significant variables included in equations, as well as the accuracy of classification and predicting ability of these models.

Keywords: *Agriculture companies, Financial distress prediction, Financial ratios, G-Index, CH-index*

JEL Classification: *Q12, Q14, Q18, C35*

1. Introduction

Development of economy in the recent years has undoubtedly influenced the overall financial and economic situation of Slovak agriculture companies, as well as their ability to become profitable. The significant changes of agriculture market environment resulted mainly from the European Union (EU) assessment and Common Agriculture Policy (CAP) implementation (Serenčėš et al., 2014). In previous studies were constructed several financial distress models to predict prosperity of agriculture companies. However, the necessity for their renewal has been emphasized, taking into account new conditions of Slovak agriculture sectors.

The fundamental tool for examination the prosperity of company represents the discriminant analysis. The principles of variables selection, as well as the construction of equations and determination of evaluation criteria for company's financial situation, have been successively published in the works of Altman (1968), Altman, Haldeman, Narayanan (1977), Grice, Ingram (2001) and others. The innovator in creation the model for Slovak agro-sector, which forecasts the development of financial situation of agriculture companies, has become Chrastinová

(1998). CH-index was later added by the G-index, introduced by Gurčík (2002), which allows differentiate the agriculture companies into prosperous and unprosperous. However, it is doubtful whether the prediction ability of these models works also after the recent development in Slovak agriculture sector.

The main objective of this paper is to construct a financial distress model for agriculture companies in Slovak primary sector, which takes into account the recent state of Slovak agriculture after CAP implementation. Moreover, evaluate the change of factors, significantly impacting the prosperity of agriculture companies, comparing it to the previously created G-index and CH-index.

2. Problem Formulation

Our analysis focuses on creation of own model for evaluating the financial prosperity of agriculture firms, using multivariate discriminant analysis.

2.1 Model and Data

The data used for the analysis was obtained from the Ministry of Agriculture and Rural Development of the Slovak Republic, processed in the internal dataset of the of the Slovak Agricultural University in Nitra. The dataset consists of financial statements of all agricultural companies operating in the Slovak Republic during the period 1993 - 2012.

For constructing the classification model, using the discriminant analysis, is required to define relevant criteria of prosperous and unprosperous company. The unprosperous companies are considered to be those, generating loss in each of years 2011 - 2012, as well as companies with the value of liabilities exceeding the value of assets (negative Equity) at least one year. The negative equity criterion is stated in the legislation of the Slovak Republic (Regulation no. 7/2005 Coll. – Act on Bankruptcy and Restructuring). The prosperous companies were considered to be all generating profit during observed period, added by the positive equity criterion. Criteria were applied in the years 2011-2012, but the model was constructed from the results of ratios in 2010 to ensure its prediction ability. We used the balance sample approach, in order to select the same number of prosperous and unprosperous entities. This approach has the origin in the work of Beaver and Altman, and might be found in the research papers of Amendola (2011), Appiah (2009), and others. After the detection and removal of outliers, the sample of 80 prosperous and 80 unprosperous was generated. The 30 % randomly selected companies created validation set, which is used to evaluate the classification ability of corresponding model. The model of financial distress was developed using the stepwise discriminant analysis, to examine the ratios separately and choose those with the best discriminant ability, considering the statistically significant correlation between ratios. More detailed characteristic of method can be found in the books of Stankovičová, Vojtková (2007), Hastie et al. (2009), and Král' et al. (2009).

The inputs of discriminant analysis consist of 10 financial ratios, derived from the existing indexes that were created specifically for agriculture companies' evaluation.

The ratios X_1 - X_5 belong to the G-index model and remaining X_6 - X_{10} to the CH-index model. The overview of selected ratios and their calculation includes Table 1.

Table 1: Financial Ratios

Ratio	Calculation	Ratio	Calculation
X_1	$\frac{\text{Retained earnings}}{\text{Asset}}$	X_6	$\frac{\text{EAT}}{\text{Asset}}$
X_2	$\frac{\text{EBT}}{\text{Asset}}$	X_7	$\frac{\text{EAT}}{\text{Sales from own goods and services}}$
X_3	$\frac{\text{EBT}}{\text{Total sales}}$	X_8	$\frac{\text{Cash flow}}{\text{Current liabilities}}$
X_4	$\frac{\text{Cash flow}}{\text{Asset}}$	X_9	$\frac{\text{Current liabilities}}{\text{Cash flow}} \times 365$
X_5	$\frac{\text{Inventories}}{\text{Total sales}}$	X_{10}	$\frac{\text{Debt}}{\text{Asset}}$

Source: Authors

The validation set was examined also by the CH-index and G-index, to be able to compare their ability to correctly classify companies according to their future prosperity level.

CH-index (1), originated from the Altman Z-score and Bonity index. Its criteria of prosperous companies were constrained by more than 5 % ROS and Current ratio in the range between 1.5 and 5. The unprosperous remained those achieving negative ROS and the value of Current ratio out of the range. According to CH-index the businesses with final score from discriminant function more than 2.5 are considered to become prosperous, those in the range between 2.5 and -5 are indifferent (average), and with score lower than -5 tend to become unprosperous.

$$CH = 0.37x_1 + 0.25x_2 + 0.21x_3 - 0.10x_4 - 0.07x_5 \quad (1)$$

G-index (2) determined different criteria of prosperity, namely ROE more than 8 % and positive profit in last 3 years. Otherwise, the company with loss during 3 consecutive years is unprosperous. The critical values of final score are stated as more than 1.8 reflecting the prosperous companies, in the range between 1.8 and -0.6 presenting the average companies and lower than -0.6 distinguishing the unprosperous companies.

$$G = 3.412x_1 + 2.226x_2 + 3.277x_3 + 3.149x_4 - 2.063x_5 \quad (2)$$

The construction of our own model, so called ATT index, as well as the accuracy testing was applied in the statistical program SAS Enterprise Guide 5.1.

3. Problem Solution

In the following part is provided a summary of results, including the construction of TT prediction model, and its comparison to G-index and CH-index.

3.1 ATT Index

One of the fundamental assumptions of discriminant analysis is the homogeneity of intragroup covariance matrixes within individual groups. By testing was found out, that equal dispersion exists only by five variables X_1 , X_2 , X_3 , X_4 and X_6 . For this reason, the quadratic discriminant analysis should be used however it is more sensitive to the failure of meeting the assumption of multivariate normality. The linear discriminant analysis is resistant to this condition, when the sufficient amount of observations is used. Significance of ten financial input variables was initially evaluated using the conformity test of mean values. The results showed that on the level 0.01, between prosperous and unprosperous companies, seven variables have significantly different mean values. It can be assumed that the remaining X_5 , X_7 and X_8 are not appropriate discriminators and the stepwise method would probably exclude them from the model. However, the results of stepwise selection determined 6 variables to have significant effect in prosperity classification, including X_7 and X_8 . We assume the results of partial coefficient of determination more relevant, than test of mean values. The standardized coefficients, which show the weights in the discriminant function, are contained in Table 2.

Table 2: Standardized Canonical Coefficients

Variable	Canonical Coefficient	Variable	Canonical Coefficient
X_1	-0.291	X_8	0.259
X_3	-1.136	X_9	0.449
X_7	0.657	X_{10}	0.490

Source: Authors

To classify and evaluate the agriculture companies as prosperous or unprosperous, based on the 6 significant variables, the following linear equation (3) was created. The decision, how to classify the company into prosperous or unprosperous group depends on the high of classification score from equation.

$$ATT = 1.184x_1 + 8.736x_3 - 0.558x_7 - 0.029x_8 - 0.003x_9 - 3.35x_{10} \quad (3)$$

$$ATT \geq 1.056 \quad \text{prosperous}$$

$$ATT \in (1.056, -1.056) \quad \text{average/indifferent}$$

$$ATT \leq -1.056 \quad \text{unprosperous}$$

ATT index consists of 2 variables originating in G-index and 4 variables from CH-index. However, the significance of particular ratios, expressed by weights, much differs from the previous models. It is caused by the development influence on the preferences change and financial results of prosperous and unprosperous companies.

X_1 – *Retained earnings/Asset*, expresses cumulative profit as a portion of total asset of the company. The increase of the variable in the classification function leads to the identification of the company as prosperous businesses. However, its significance has decreased over time when comparing to the G-index weight. The ratio measures the leverage of a firm, the ability to finance the asset through retention of profits rather than debt. We assume the ever increasing indebtedness of firms have impacted the devaluation of variable's importance. The more reserves would company cumulate, the more prosperous might become in the future. The young firms can be discriminated in the analysis, because has lack time to cumulate profits and its chance of being classified as unprosperous is relatively higher than other older firm, *ceteris paribus*.

X_3 – *Earnings before taxes/Total sales*, obtained relatively high value in the index, which confirms the significant positive impact of Return on sales on the prosperity of agriculture companies. The total sales of agriculture companies consist not only of the firm's production, but the high portion (almost 40 %) is created by the subsidies and other financial supports. The increased importance of the variable might be supported by the fact, that business activities of agriculture sector are crucially dependent on the subsidies revenues from the EU (CAP) and therefore, the inclusion of ratio as a main variable of model is justified. However, the addiction of agriculture companies' existence on other financial supports indicates important future problem.

X_7 – *Earnings after taxes/Sales from own goods and services* ratio has in the constructed equation indirect impact on prosperity, what denies the basic economic assumptions. The higher value of the ratio would increase the possibility of company to become unprosperous, even if in the previously created CH-index the variable reached high positive weight. Our result supports the fact that by subtracting the value of subsidies and other financial supports from the total sales, the agriculture firms would not cover their production costs with achieved profit, and is crucially dependent on CAP support. The farmer's production is not worthy and permanently in loss, unless subsidised. The low profitability and difficulties to cover the production costs and losses existed long before, however since the CAP implementation the gap has been even deepening instead of motivating farmers to effectively increase the production.

X_8 – *Cash flow/Current liabilities*, and X_9 – *Current liabilities turnover*, both solvency ratios represent the ability of firm to generate resources to meet current liabilities. In the ATT index achieved relatively small negative impact. The higher negative ratio, the less financial flexibility the company has and the more likely that problems can arise in the future. Both variables are the CH-index origin, but only X_9 achieved the negative impact in the previous study. While the results vary radically, depending on industry, we conclude the agriculture sector to become gradually more insolvent.

X_{10} – *Debt ratio*, belongs to the most significant variables of ATT index with negative impact. It reflects the fact that increasing the debt portion in the company leads to the unprosperous classification and potential financial distress. It would be more appropriate for the agriculture companies to find other ways of raising the capital to finance the activities. The importance of the variable has been increasing when

comparing to previous studies. For this reason the low debt portion for the agriculture firms would be recommended to meet the obligations and run properly their businesses.

Table 3: Variables Comparison of Indexes

Index	X ₁	X ₃	X ₇	X ₈	X ₉	X ₁₀
ATT	1.184	8.736	-0.558	-0.029	-0.003	-3.35
G-index	3.412	3.277	-	-	-	-
CH-index	-	-	0.25	0.21	-0.10	-0.07
F-test	4.54E-12	8.98E-11	4.92E-08	9.7E-30	1.39E-62	1.78E-67
T-test	0.069488*	0.588531	0.29939	1.12E-08**	2.52E-10**	9.09E-10**

Note: statistically significant on the level $p < 0.1^*$, $p < 0.05^{**}$

Source: Authors

The statistical significant difference has not been proved for the change of variables X₃ and X₇ that indicates high probability of randomly occurred difference. For the rest of variables, we accept the assumption that the weight of variables in prediction distress models significantly changed based on the development of agriculture sector.

3.2 Comparison of Models' Efficiency

The evaluation of ATT index efficiency was compared to the models G-index and CH-index, in order to identify the most appropriate model. The evaluation was on the basis of tree performance model: accuracy, type I error and type II error. Type I error represents the percentage of the unprosperous companies that have been wrongly classified as prosperous. Conversely, type II error describes the percentage of prosperous firms, wrongly classified as average firms or unprosperous.

When examining the ability to classify the prosperous company, the most accurate model became G-index with zero wrongly classified firms. The most mistaken model is CH-index with 76 % misclassification. The ATT index classification of prosperous companies is very similar to G-index evaluation. The lowest value of misclassification in the case of unprosperous companies achieved CH-index however the result might be misleading, because CH-index considers all tested companies to be unprosperous. Therefore we do not consider meaningful to evaluate its prediction ability. ATT index was able to correctly classify 84 % of unprosperous companies and G-index only 40 %. We consider more important the correct classification of unprosperous company, in order to eliminate the risk and provide the ability for agriculture companies to undertake the necessary steps in time. For this reason ATT index represents the most appropriate model from the compared group. However, the prediction and classification ability of G-index is satisfactory in the case of prosperous companies, the shortcomings occur only in the case of ability to recognise unprosperous companies.

Table 4: Efficiency of Indexes

Index		ATT-index		G-index		CH-index	
System of classification		Number	%	Number	%	Number	%
Prosperous	Correctly classified	2	8	2	8	1	4
	Indifferent/ Average firm	22	88	23	92	5	20
	Misclassified	1	4	0	0	19	76
Unprosperous	Correctly classified	21	84	10	40	24	96
	Indifferent/ Average firm	4	16	13	52	1	4
	Misclassified	0	0	2	8	0	0
Accuracy		96 %		92 %		24 %	
Type I error		0 %		8 %		0 %	
Type II error		4 %		0 %		76 %	

Source: Authors

4. Conclusion

The prompt detection of potential financial difficulties, that would enable to provide necessary steps to improve the economic performance, belongs to the crucial point for each company management. Moreover, the importance of distress identification increases in such a low profitable sector as agriculture is. Therefore, it is essential to analysed the financial prosperity of agriculture companies, as well as to construct the suitable model for financial failure classification and prediction.

In the past two discriminant models focusing on the Slovak agriculture sector were constructed, G-Index and CH-Index. They became the background for our analysis and the choice of independent variables in the form of financial ratios. However, due to many changes impacting the development of Slovak agriculture in recent years, mainly the EU assessment and CAP implementation, we decided in this study to renew the models. ATT index was constructed with the use of stepwise discriminant analysis and consists of 2 variables of G-index origin and 4 variables from CH-index. The weights of particular variables in equation, which explain the importance by classification of the company's prosperity, are significantly different from the original models. For this reason is the creation of ATT model, which takes into account current situation of agriculture, considered as meaningful. The high impact on the prosperity of company, have mainly the Debt ratio (indirectly) and Return on sales or Cumulative profitability (directly). Unexpected is the indirect impact of variable EAT/Sales from own goods and services, which remains after adjusting the Total sales by all the financial supports and subsidies. The increase of this variable leads to increase of the possibility to become unprosperous company, in fact the higher the production the lower the prosperity. It causes the unusual situation that without subsidies the increase of own agriculture production would not cover the costs and to produce more would simply not be worthy. It indicates the extreme dependence on CAP support and simultaneously the non-effective use of subsidies for production optimization. Slovak

agriculture producer do not emphasize the production improvement, rather cover the losses by subsidies.

When evaluating and comparing the indexes we found the ATT index to be appropriate for classification the prosperous, as well as unprosperous companies. The G-index reached zero misclassification of prosperous companies, but lower is the ability of unprosperous company recognition (40 %). The CH-index determined almost all companies from testing set to be unprosperous, therefore we do not consider meaningful to evaluate its prediction ability.

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Evaluation of Czech Regional Development in the Context of the EU Cohesion

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Abstract

The paper deals with an alternative approach to quantitative evaluation of differences in the level of socio-economic development of regions. The aim of the paper is to evaluate and compare the development of regional disparities in the Czech Republic over the period from 2001 to 2011 by utilizing selected multicriteria decision-making (MCDM) methods. A sense of applying the AHP and VIKOR method is to rank and describe the changes in the Czech NUTS 2 regions reflecting their socioeconomic development in the context of the EU cohesion. Using the quantitative multidimensional characteristics can lead to more precise evaluation of the regional development than one-dimensional.

Keywords: AHP, EU cohesion policy, Evaluation, Regional disparities, VIKOR

JEL Classification: C02, O18, R11

1. Introduction

Regional development is a broad term that can be seen as a general effort to reduce regional disparities by supporting (employment- and wealth-generating) economic activities in the regions. The economic, social and territorial disparities in the level of regional performance are a major obstacle to the balanced and harmonious development of the regions, but also of each country as well as a whole EU. The quantification of regional disparities falls into important spheres of regional policy at the state and European level. There is a general belief that differences should be kept in sustainable limits especially since new member states have joined the EU in the years 2004 and 2007. The admission has been associated with an increase in regional disparities that have negatively affected the EU's competitiveness and cohesion. The elimination of disparities with the support of regional development is considered as the primary objective of the EU's development activities. In the European concept, the level of disparities⁷⁷ can be regarded as a measure of cohesion. According to Molle (2007), cohesion can be expressed as a level of differences between countries, regions or groups that are politically and socially tolerable. The main role in the support of European regional development and its funding plays the EU cohesion policy; see e.g. Molle (2007). The cohesion policy focuses on the support of regional growth,

⁷⁷ We distinguish three types of regional disparities: economic, social and territorial, see e.g. Molle (2007), Kutscherauer et al. (2010). The level of regional disparities within the EU is evaluated by the selected regional indicators in the Cohesion Reports published by the European Commission every 3 years; see European Commission (2010).

innovation and job creation through multi-annual development programmes co-financed by the EU Structural funds, Cohesion fund and national budgets.

Generally, regional development can be described from various perspectives using different criteria, often oriented in different directions. In many cases, the level of region's development is measured by the gross domestic product per capita (GDP per capita) indicator that defines the level of the living standard⁷⁸. In fact, regional development is wider and more complex concept. For this reason, the evaluation of region's development is a complicated problem to be addressed by complex approaches (Ginevičius, Podvezko, Mikelis, 2004). To create a suitable methodology that enables to identify the actual level of region's socio-economic development is the most important condition for developing effective regional policy. Therefore, the evaluation of the level of regional disparities in the EU countries are actual and important topics of many discussions and regional research studies, at the European and national level e.g. Campo, Monteiro, Soares (2008), Wishlade, Yuill (1997), Viturka, Žitek, Klímová, Tonev (2009), Staničková (2012), Ginevičius, Podvezko, Mikelis (2004), Kutscherauer et al. (2010), Matlovič, Klamár, Matlovičová (2008). Regional differences in the "new" EU countries, especially in the Czech Republic together with Poland, Slovakia and Hungary (called Visegrad Four countries) are analysed by e.g., Tvrdoň, Skokan (2011), Melecký, Poledníková (2012), Svatošová, Boháčková, (2012), Tuleja (2010). The Czech Republic belongs to the central European states where the economic development of the last 10 years has been strongly linked to European funding. From 2004–2006, the allocated EU cohesion policy investment of 2.6 billion EUR focused on helping to improve the business environment, increasing labour market flexibility and upgrading the transport infrastructure. The European development fund financed improvements in transport and broadband infrastructure, and helped develop industrial zones, science and technology parks and innovation hubs. The EU investment helped to create over 30 000 new jobs and provided support to almost 3 000 small and medium-sized enterprises. It supported over 300 information and communication technologies projects. The EU also funded environmental projects, with notable achievements including the construction of 370 km of new sewage systems (European Commission, 2013). For the period 2007–2013, the Czech Republic has been allocated 26.7 billion EUR in total. Almost 25.9 billion EUR has been focused on less prosperous regions within Convergence objective. Convergence objective covers NUTS 2 regions whose GDP per capita in PPS is less than 75 % of the average GDP of the EU-25⁷⁹. Although the regional disparities have been reduced with the contribution of the EU cohesion policy, disparities have still persisted especially between regions of capital cities and regions that are more distant from the

⁷⁸ Also within EU cohesion policy the regions' eligibility of EU funding is based on the level of their GDP.

⁷⁹ NUTS 2 regions Střední Čechy, Jihozápad, Severozápad, Severovýchod, Jihovýchod, Střední Morava, Moravskoslezsko have fallen under the Convergence objective, while the Praha region has been the only region to fall under the Regional competitiveness and employment objective.

capital city. The level of regional disparities has had a significant impact on Czech regions' eligibility of EU funding in the current period 2014–2020.

Main aim of the paper is to evaluate and compare the development of regional disparities in the Czech Republic over the period of 2001 - 2011 by utilizing the selected multicriteria decision-making (MCDM) methods. The sense of applying the MCDM methods is to rank and describe the changes in the Czech NUTS 2 regions reflecting their socioeconomic development in the context of the EU cohesion.

The rest of this paper is organized as follows. The basic concept of regional development evaluation in the context of the EU cohesion is introduced in Section 2. In Section 3, the theoretical background of Analytic Hierarchy Process (AHP) and VlseKriterijumska Optimizacija I Kompromisno Resenje (VIKOR) method are presented. Section 4 deals with the evaluation of regional development in the Czech Republic over a 10-year period. In the last Section, the conclusions and remarks are provided.

2. Methodology

The attitude of researchers towards the quantitative evaluation of regional development and disparities is not uniformed. They use several disparity indicators that are processed by different mathematical and statistical methods. From the point of view of low calculation difficulty, a high informative level and the applicability of the results in practice, traffic light method (scaling), method of average (standard) deviation, method of standardized variable, method of distance from the imaginary point are often used for measurement of disparities (Kutscherauer et al., 2010). These methods are often used in an integrated approach based on the calculation of a synthetic index of disparities; see e.g. Tuleja (2010), Svatošová, Boháčková (2012). More sophisticated methods that are very useful in the process of regional disparities evaluation are multivariate statistical methods, especially cluster analysis and factor analysis; see e.g. Melecký, Poledníková (2012), Campo, Monteiro, Soares (2008). An alternative and not broadly extended approach to regional disparities represents multicriteria decision-making methods that helps decision maker organize the problems to be solved, and carry out analysis, comparisons and rankings of the alternatives, see e.g. Opricovic, Tzeng (2004), Tzeng, Huang (2011). In this paper, multicriteria decision-making method of AHP is used to derive the weights of the regional indicator. Subsequently, VIKOR method ranks the regions according to their socio-economic development. Finally, the multicriteria evaluation of regional development is compared with one-dimensional evaluation based on the indicator GDP per capita (in PPS).

2.1 AHP Method

AHP is proposed to model subjective decision-making processes based on multiple attributes in a hierarchical system. Decision hierarchy structure and pairwise comparisons to establish relation within structure are the key elements of AHP (Saaty, Vargas, 2012). The decision hierarchy structure is created; the goal of the decision is at the top level, subcriteria at second level followed by the level of criteria (criteria on

which subsequent elements depend). The lowest level represents a set of alternatives. Having the hierarchic structure, we compare the comparative weight between the attributes of the decision elements in form of pairwise comparison matrices. The comparisons are taken from Saaty's fundamental scale that reflects the relative strength of preferences; see Saaty, Vargas (2012).

2.2 VIKOR Method

VIKOR method determines the compromise ranking-list, the compromise solution and the weight stability intervals for preference stability of the compromise solution obtained with the given weights. This method focuses on ranking and selecting from a set of alternatives in the presence of conflicting criteria. It introduces the multicriteria ranking index based on the particular measure of "closeness" to the "ideal" solution (Tzeng, Huang, p. 71). Assuming that each alternative is evaluated according to each criterion function, the compromise ranking could be performed by comparing the measure of closeness to the ideal alternative. The multicriteria measure for compromise ranking is developed from the *Lp-metric* used as an aggregating function in a compromise programming method. The various J alternatives are denoted as $a_1; a_2; \dots; a_J$. For alternative a_j , the rating of the i th aspect is denoted by f_{ij} , i.e. f_{ij} is the value of i th criterion function for the alternative a_j ; n is the number of criteria. Development of the VIKOR method started with the following form of *Lp-metric*:

$$L_{pj} = \left\{ \sum_{i=1}^n [w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-)]^p \right\}^{1/p}, \quad 1 \leq p \leq \infty, j = 1, 2, \dots, J. \quad (1)$$

Within VIKOR method, L_{1j} and $L_{\infty j}$ are used to formulate ranking measure. The solution obtained by $\min_j S_j$ is with a maximum group utility ("majority" rule), and the solution obtained by $\min_j R_j$ is with a minimum individual regret of the "opponent". The compromise solution F_c is a feasible solution that is the "closest" to the ideal F^* , and compromise means an agreement established by mutual concessions. The compromise ranking algorithm VIKOR has the following steps (Tzeng, Huang, p. 72-74). The first step is to determine the best f_i^* and the worst f_i^- values of all criterion functions, $i=1, 2, \dots, n$, that is known as positive and negative ideal solution. If the i th function represents a benefit then (Opricovic, Tzeng, 2004, p. 447-448):

$$f_i^* = \max_j f_{ij}, \quad f_i^- = \min_j f_{ij}. \quad (2)$$

Second step is to compute the values S_j and R_j , $j=1, 2, \dots, J$, by formula:

$$S_j = \sum_{i=1}^n w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-), \quad (3)$$

$$R_j = \max_i [w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-)] \quad (4)$$

where w_i are the weights of criteria. S_j is a_j with respect to all criteria calculated by the sum of the distance for best value, R_j is a_j with respect to the i th criterion, calculated by the maximum distance from the worst value.

Third step is to calculate the values $Q_j, j=1, 2, \dots, J$, by relation:

$$Q_j = v(S_j - S^*) / (S^- - S^*) + (1-v)(R_j - R^*) / (R^- - R^*) \quad (5)$$

where

$$S^* = \min_j S_j, S^- = \max_j S_j, \quad (6)$$

$$R^* = \min_j R_j, R^- = \max_j R_j. \quad (7)$$

and v is introduced as weight of the strategy of “the majority of criteria” (or “the maximum group utility”), here $v=0,5$. Index Q_j is obtained and based on the consideration of both the group utility and the individual regret of the opponent. Next step is to propose as the compromise solution the alternative (a') which is ranked the best by the measure Q if the two conditions, acceptance advantage and acceptance stability in decision making, are satisfied, see (Opricovic, Tzeng, 2004). The last step is to rank the alternatives, sorting by the values S, R and Q , in decreasing order. The best alternative $Q(a')$ is the best solution with the minimum of Q_j .

3. Application of AHP and VIKOR Method to Regional Development Evaluation

The AHP hierarchical structure is created as follows: the goal is to assess the level of regional development in the Czech Republic. The alternatives are 8 NUTS 2 regions. These alternatives are evaluated by three types of subcriteria (economic, social and territorial disparities) and eight criteria shown in table 1. These indicators are most frequently used indicators of regional disparities monitored within the Cohesion Reports and available in Eurostat database.

Table 1: Selected Indicators for Regional Development Evaluation

Subcriteria	Criteria	Abbreviation
Economic	GDP per capita (PPS)	GDP
	Disposable income of households (PPS)	DI
	Gross domestic expenditure on R&D (GERD) (% of GDP)	GERD
Social	Employment rate (%)	ER
	Unemployment rate (%)	UER
	Persons aged 30-34 with tertiary education attainment (%)	TE
Territorial	Density of motorway (km/1000km ²)	DM
	Density of railway (km/1000km ²)	DR

Source: European Commission (2010), Eurostat (2014); author’s processing (2014)

The final weights of criteria are determined by pairwise comparison in the context of AHP. The pairwise comparison matrices reflect the author’s preferences. According to final weights of the criteria shown in table 2, indicators GDP per capita, disposable income and unemployment rate have the highest importance in the level of region’s development and disparities evaluation.

Table 2: Weights of Criteria

Subcriteria	Weight	Criteria	Weight	Final weight
Economic	0.731	GDP	0.637	0.465
		DI	0.258	0.189
		GERD	0.105	0.077
Social	0.188	ER	0.279	0.053
		UER	0.649	0.122
		TE	0.072	0.014
Territorial	0.081	DM	0.750	0.061
		DR	0.250	0.020

Source: author's calculation (2014)

According to VIKOR method described above, combining with determined weight of the criteria by AHP, the VIKOR method is applied to rank Czech regions in the years 2001, 2006 and 2011 based on the level of their economic, social and territorial development. Table 3 shows and compares the final values of index Q_j in given years as well as average rank. This ranking index is an aggregation of all criteria, the relative importance of the criteria, and a balance between total and individual satisfaction.

Table 3: Comparison of Regions' Ranking in the Years 2001-2011

Year	2001		2006		2011		Average rank VIKOR
	Q_j	Rank	Q_j	Rank	Q_j	Rank	
Praha	0,000	1	0,000	1	0,000	1	1
Střední Čechy	0,751	2	0,771	2	0,786	2	2
Jihozápad	0,815	3	0,829	3	0,850	4	3
Severozápad	0,948	7	0,992	8	1,000	8	8
Severovýchod	0,846	5	0,897	5	0,908	5	5
Jihovýchod	0,827	4	0,855	4	0,826	3	4
Střední Morava	0,937	6	0,950	6	0,931	7	6
Moravskoslezsko	1,000	8	0,970	7	0,912	6	7

Source: author's calculation (2014)

The highest ranked region is the closest to ideal solution. The shortest distance to the ideal solution was achieved by Praha region followed by Střední Čechy region. These regions were ranked at the top two positions over all reference period; that implies visible differences in the Czech regional development. These regions had the highest value of the economic indicators (GDP per capita, disposable income of households) and high support of the research and development (the expenditure on R&D exceed 1 % GDP). These regions are also characterized by high quality structure of labour force (high share of human resources in science and technology and flexible labour market (low level of unemployment and high level of employment). On the other hand, Moravskoslezsko region was considered as less developed compared to others in the year 2001. Its distance to the ideal solution was getting shorter in each examined year and it was ranked at the sixth position in the year 2011. In the years 2006 and 2011, the strong weakening of Severozápad region development was recorded; it is indicated

by the farthest distance to ideal solution. Severozápad region also occupied the last position according to average rank.

The multicriteria evaluation of regional development is compared with the one-dimensional evaluation based on the indicator GDP per capita (in PPS). As table 4 shows, during the period 2000-2006 Czech regions recorded an increase in the economic performance and the convergence of GDP per capita (in PPS, EU-27=100) that was also accompanied by a decline in the inequality in the unemployment. Since 2007 the favourable trend in the reducing of disparities has been set back in most of regions due to impact of the global economic (debt) crisis. As table 4 indicates, except for Praha region, no region reached the higher GDP per capita (in PPS) than 75 % of the average EU-27 in the period 2006-2008. It means that most of NUTS 2 regions are eligible for funding as least developed regions in the period 2014-2020. For the period 2014–2020, the Czech Republic has been allocated approximately 21.9 billion EUR in total where 15.2 billion EUR has been focused on less prosperous regions.

Table 4: GDP per capita in PPS - Index (EU-27 = 100)

NUTS 2 region\Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Average rank
EU-27	100	100	100	100	100	100	100	100	100	100	100	x
Praha	149	152	161	163	167	169	177	175	176	173	171	1
Střední Čechy	69	70	72	73	72	75	77	75	74	71	73	2
Jihozápad	67	67	71	73	73	74	74	68	71	70	70	4
Severozápad	60	61	64	64	64	64	65	63	67	64	63	7
Severovýchod	65	65	65	66	67	67	68	65	67	66	67	5
Jihovýchod	66	66	69	69	70	71	74	73	75	73	73	3
Střední Morava	59	59	61	62	62	62	64	64	67	64	66	8
Moravskoslezsko	57	57	59	64	67	67	69	69	68	68	71	6

Source: Eurostat (2014); author's processing (2014)

In agreement with VIKOR method, capital city Praha and Střední Čechy region are considered as most developed regions over the period 2001-2011. The indicator of GDP represents main way how to measure the performance of the economy but it has some limitation. According to average rank⁸⁰, Moravskoslezsko region and Severozápad region achieved higher positions than Střední Morava region. However, GDP per capita does not have to reflect the real situation in the region. There were also the differences in the average ranks of the rest of the regions determined by VIKOR method and GDP per capita, e.g. Jihozápad region, Jihovýchod region.

4. Conclusion

By applying AHP and VIKOR methods we get final regions ranking based on distances to the ideal solution taking into account the relative importance of the criteria. The results showed and confirmed the fact that in the Czech Republic main regional disparities have persisted between region of capital city Praha and other regions since 2001. The dominance of capital city results from its specific character;

⁸⁰ It is based on GDP per capita (in PPS), average of years 2001, 2006, 2011.

Praha region is the main administrative centre, where great mass of public institutions and private sector is concentrated (corporate headquarters, central administrative authorities, universities, etc.). It is necessary to take into account the specific definition of NUTS 2 region Praha that influence the evaluation of the Czech regional development. The final region's ranking also indicates that Střední Čechy, region very close to Praha, differs in the level of socio-economic development in comparison with more distant regions. Although we can see the positive trend of the increase in GDP per capita, Moravskoslezsko region and Severozápad region are still considered as less developed. There are also differences in average ranks of the regions determined by MCDM methods and GDP per capita.

The advantage of AHP and VIKOR methods is that they are simple, easy to use and understand. Because when making concept of suitable evaluation tools of regional development it is necessary to suggest not only difficult but also simple methods which enable quick evaluation of regional disparities by accessible tools. In comparison with the one-dimensional evaluation, multicriteria evaluation of regional development takes into account the importance and mutual dependence of the decision-making criteria. Due to importance of the criteria we are able to determine the "distance" to the ideal solution in a more realistic way. Then the final rank of regions corresponds to the different economic, social and territorial importance of individual criteria. In the absence of the mainstream in methodological approach to regional development evaluation, the presented multicriteria evaluation can be considered as a suitable and interesting alternative of more traditional approaches. The author of the paper takes into account the disadvantages of MCDM methods. The informative level of MCDM methods can be influenced by the selected type of the indicators and their weights. The author also takes into account that the value of the index Q_j depends on the value of the v . For these reasons it seems an interesting task to conduct a sensitivity analysis to compare the impact of different indicators' weights or v on final ranking of regions.

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Is Germany Dominating Europe? The Role of the Nation State in the Euro Crisis

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Abstract

Under chancellor Angela Merkel Germany wants the member states of the Euro zone to conduct a policy of austerity. The governments and many citizens in these states regard this as a 'Diktat' stemming from a country whose wage and export policy they consider to be co-responsible for the crisis. The euro crisis has influenced the way the nations think about their own role in Europe and the future architecture of the European Union. German politicians abhor the idea that Germany would dominate Europe. The vision of the German political establishment is that the German nation state should be embedded in Europe. But as long as Europe as a political union however is not completely realized, the nation states will go on to play their role and Germany will continue to play on the European forum maybe not a completely dominating role, but at least a 'partial hegemony' through the instruments and decision mechanisms that the EU provides and of which stronger states can benefit.

Keywords: Dominance, Euro crisis, Germany, Nation-state

JEL Classification: B25, E58, F62, N44

1. Introduction

A specter is haunting Europe, but it is not the specter of communism, as Karl Marx and Friedrich Engels used to say. It is the specter of German dominance in Europe and it is there since long, since the days that Germany ceased to be a mere geographical term. Since Germany became a state in 1871, the other European powers started to develop counter-strategies against that power in the middle of the European continent. Before the First World War they did so through diplomacy and alliances, thereafter through arms limitation and reparations as fixed in the Versailles Treaty and after the Second World War through the integration of the Federal Republic of Germany into the European Community, nowadays European Union (EU), and the North Atlantic Treaty Organisation (NATO). When the German unification process could not be stopped anymore in 1990, the French president François Mitterrand and the British Prime Minister Margaret Thatcher discussed with each other about the best way to contain a larger and stronger Germany. More Germany would mean more Europe, more integration and the creation of an economic and monetary union. Germany would regain her sovereignty as a state, but waiver her monetary one. German unification in exchange for the euro was the historic deal between François Mitterrand and the German chancellor Helmut Kohl. The switch of the Deutschmark (DM) for the Euro made François Mitterrand hope to break a German dominance over Europe.

Jacques Attali, adviser to Mitterrand, once called the DM the ‘atomic bomb of Germany’ (Marsh 2009). Germany however thought that the European Central Bank (ECB) would be modeled after the independent *Bundesbank*. Kohl saw the common currency as a means to carry through reforms in order to harmonize the economies of the different member states of the European Union (EU). This would economically mean: currency stability, limitation of the debts and a forbidding of bail-outs.

Under chancellor Angela Merkel Germany wants the member states of the Euro zone to conduct a policy of austerity. The governments of and many citizens in these states regard this as a ‘Diktat’ stemming from a country whose wage and export policy they consider to be co-responsible for the crisis. Some years ago the Southern European countries spent a lot of money, also in buying German products. This enabled Germany to compensate for the weak domestic demand in the first years after the installation of the monetary union. By stressing currency stability and keeping inflation low Germany started to dominate the monetary union as the other members of the Euro zone could not compensate the German competition any longer by devaluation. Analysts recommend that Germany should take the following measures: less austerity, taking over debts, making wages and inflation rise and even risking a deficit in the balance of trade. It is however doubtful whether the Germans would be prepared to sacrifice the strong elements of their economy in order to support the weaker Southern European states. These states are complaining about German dominance, whereas the German people think that their nation is being sucked out by the transfers within the monetary union. Against this background no German politician can afford to agree with the Europeanization of national debts through Eurobonds or with money devouring programs for growth. In this sense the warning by Lord Ralf Dahrendorf, the liberal German sociologist who has been director of the London School of Economics, might come true, namely that the monetary union would rather split than unite Europe.

2. Euro Crisis and German Dominance

2.1 Fear of German Dominance

In the rest of the EU resistance had been growing against ‘the Europe as it is being dictated by Angela Merkel’, as the tenor of a statement of parliamentarians of the French *Parti Socialiste* (PS) towards their political executive sounded in April 2013. They criticized the ‘egoistic inflexibility’ of the German chancellor due to which Europe would cut down expenses in such a way that it would nearly break down. Connected to this is the ‘German Model’ which is a thorn in the side of the French socialists. Claude Bartolone (PS), the president of the French Parliament, said: ‘Almost 75 % of the German export goes to Europe, 50 % to the euro zone. Can Germany continue with ruining all its clients?’ The Greek journalist Girogos Malouchos called in *To Vima* of 3 April 2013 his country a German protectorate and his government a ‘German party’. Stefan Caldoro, president of the Italian region of Calabria, appealed to Merkel to give up her severe austerity policy because ‘Germany is taking advantage of the crisis the other countries endure’ Jean Asselborn, the

Luxembourg minister of Foreign Affairs, even alleged that Germany was striving for the hegemony in Europe.

The question arises whether it is true that Germany with its trade surplus is devastating the other members of the euro zone and that the German Model can only exist at the expense of the other economies. In the period 2002-2003 Germany itself was the 'sick man of Europe'. Its economy was suffering under the recession whereas other countries were recovering. The fiscal deficit amounted to 4 % of the GDP, more than the criteria of Maastricht allowed and unemployment was higher than the average in the euro zone. Ten years later the situation had been reversed. Unemployment decreased from 10,5 % in February 2003 to 6,9 % in February 2013. Youth unemployment in Germany with 8 % also sharply contrasts with Spain and Greece where one out of two and Portugal and Italy where one out of three youngsters is unemployed. An explanation for the German success could be the dual system with its combination of technical and vocational education and in-service training. The German budget deficit has sunk to 1 % and the government has lowered its expenditures with 5 % and fostered the competitiveness due to a policy of wage moderation and structural reforms in the labor market. The approach of the euro crisis cannot be isolated from the policy of former chancellor Helmut Kohl. During the negotiations about the stability pact it soon had become clear that most countries rejected a strict austerity policy and budgetary discipline as interference in their national sovereignty. Kohl defended himself in arguing that the stability pact never should have been undermined – and that this happened during the red-green government in 2003 – and that he himself would never had allowed Greece to enter the euro zone without structural reforms.

2.2 Tackling the Euro Crisis

The question can be put forward how Germany under Angela Merkel tackled the euro crisis. In October 2010 the chancellor obtained the involvement of the International Monetary Fund (IMF) in the rescue packages for Greece and in the European Financial Stability Facility (EFSF). She also pleaded for a dismantling of the public debts, the tightening of the Stability and Growth Pact and the introduction of the German constitution debt breaks. The German vetoing of Eurobonds and the unlimited granting of financial means through the European Central Bank (ECB) to the EFSF and the future European Stability Mechanism (ESM) caused a dam burst of anti-German feelings in Southern Europe. The acceptance of Eurobonds within a Euro zone with so many structural economic differences and heavily indebted countries could have put at risk the Triple A rating of Germany as the biggest creditor. On 7 September 2011 the German Constitutional Court judged that Eurobonds would have been contrary to the constitution and the budget rights of the Federal Parliament. At the European summit of 9 December 2011 the heads of government reached an agreement on the establishment of a fiscal union. The pact between 17 members of the euro zone embraced more coordination of the economic policy and the stabilization instruments such as a debt break, supervision of the budget of the EU member states by the European Commission and the creation of the ESM. Eight other EU member states joined the pact, the Czech Republic and Great Britain did not. The crisis

management did raise the question whether Germany had imposed its will on Europe and had the euro zone indeed made 'more German'. It is however often forgotten that the whole process until the fiscal union – with the Treaty for stability, coordination and governance in the EMU that was concluded on 30 January 2012 and came into force on 1 January 2013 – abides by proposals and agreements between the Germany of Merkel and the France of Nicolas Sarkozy. Therefore it would be better not to speak about German dominance but rather about a 'French-German directorate', as Philippe Rocard does in *Le Monde* of 16 November 2011.

The *Bundestag*, the German Federal Parliament, approved on 29 June 2012 with a big majority the fiscal pact and the ESM (respectively with 491 and 493 out of the 620 members of parliament). Yet the ESM could not enter into force as of 1 July 2012. Immediately after the vote several organizations had laid down a complaint with the Constitutional Court because the fiscal pact and the ESM would intervene in the budget right of the Federal Parliament. The complainants worried that the ESM – that exists out of a council of governors with representatives of the government – would take decisions about the money of the German tax payer without the parliament being informed or involved well enough. According to Herta Däubler-Gmelin, a former social democratic minister of Justice, the Federal Parliament would cede a lot of its budget right and sovereignty to 'Brussels'. She represented an action group 'Mehr Demokratie' (More Democracy) which knew to collect 37 000 signatures against the 'ceding of sovereignty rights' and 'incalculable budget risks'. With so many signatures this was the biggest complaint in the history of the Federal Republic of Germany. Gregor Gysi, the chair of the extreme left fraction of 'Die Linke' (The Left), used the word 'Demokratieabbau' (dismantling democracy) and Peter Gauweiler of the CSU, the Bavarian sister party of Merkels CDU, talked about an infringement of democracy. As long as the Constitutional Court had not spoken a verdict, the German president Joachim Gauck was not able to sign the law on the ESM. On 12 September 2012 the Court ruled that the Federal Republic of Germany could participate to the ESM under two conditions, namely that the limit of 190 billion €, for which Germany provides a guarantee, cannot be changed without the consent of the German representative in the ESM and that the Federal Parliament and the *Bundesrat*, the chamber of the federated entities, thoroughly must be informed by the responsible actors within the ESM.

The ideological diversity of the complainants – going from the extreme left to the conservatives – shows that there is a big discontent living in society. Angela Merkel once said on 27 February 2012 with the words 'Europa scheitert, wenn der Euro scheitert' (Europe will fail when the euro fails) that there would be no alternative for the Euro ('alternativlos'). It is exactly at this wording that the name of a new party, the euro skeptical 'Alternative für Deutschland' (AfD), also as an expression of this discontent is hinting.

3. Role of the Nation State

The euro crisis has influenced the way the nations think about their own role in Europe and the future architecture of the European Union. Incentives for this

discussion often come from the country that is not only the most important economic power on the continent, but also has a tradition of federalism and regionalism and so has experience with subsidiarity as a core principle of the EU. As soon however as Germany becomes more active in the field of European foreign policy, the discussion starts whether one is heading towards a European Germany or a German Europe. This was e.g. the case in 1994 when Christian democratic politicians like Karl Lamers and Wolfgang Schäuble wrote a note on 'Kerneuropa' (Core Europe) of which Germany, France and the Benelux states should be part. Idem when Joschka Fischer as foreign minister in 2000 and chancellor Gerhard Schröder in 2001 made a plea for a stronger Europe which in the eyes of their French critics would look like the enlargement of the federal model of Germany. The present German politicians also like to give their opinion on the relationship between the nation-state and Europe. In his 'grand speech' on 22 February 2013 the German president Mr. Joachim Gauck recognized the fear of many people in Europe towards Germany (Gauck 2013). It is a fear that the famous author Thomas Mann in a speech in 1952 tried to suppress by converting the idea of a 'German Europe' in the one of a 'European Germany'. Gauck thought this fear to be exaggerated and expressed his resistance against those forces, and not only the populist ones, in Europe who like to portray 'the German Chancellor as the representative of a state which, just like in former times, supposedly wants to enforce a German Europe and oppress other peoples.' Gauck is standing in the tradition of the European policy of Germany when he stressed that 'in Germany more Europe does not mean a German Europe. For us, more Europe means a European Germany!' For Gauck and the whole ruling political class of Germany not only 'populism' but also 'nationalism' is to be rejected. The own experiences with German nationalism – which might in fact be framed as 'imperialism' – cause German politicians to plead for more 'innere Vereinheitlichung' (inner unification) within Europe in the field of financial, economic and foreign policy, and for more 'common concepts' concerning ecology, immigration and society. Gauck did not express himself so concrete that one could have suspected him of speaking up in favor of a European State. Remaining cautious about institutional reforms he stuck to general terms by speaking of 'Europe as a political project', a 'united Europe' and a European 'res publica'. Gauck called the values of peace and freedom the 'source of identity' of Europe and although he was not speaking about a European state, he hinted at the importance of a 'single European public space which could be compared to what we regard as a public sphere at national level'. As a 'European agora' would be 'a common forum for discussion to enable us to live together in a democratic order', this might require a common language (English) and maybe even a common TV-channel. The president's speech reflected the vision of the German political establishment about the German nation state being embedded in Europe.

There are also many German academics who think this way. The sociologist Ulrich Beck does not want to leave the nation to the nationalists and sees the future of the nation only preserved in a 'cosmopolitan Germany' in a cosmopolitan Europe. That explains his skepticism towards the policy of chancellor Angela Merkel. What he calls 'Merkiavelli' (the affinity between Merkel who practices power and Machiavelli who was the theoretician of power), is the linkage between German credits and the

obligation of the debtors to fulfill the criteria of the German stability policy (Beck 2012). Beck juxtaposes in the *Frankfurter Allgemeine Zeitung* of 24 May 2013 the Merkiavelli model of a narrowly defined German ‘euro nationalism’ versus the ‘Willy-Brandt-model’ (named after the former social democrat chancellor and designer of the ‘Ostpolitik’) of ‘a cosmopolitan nationalism that redefines its national interests in a cooperative alliance with other European countries.’ Beforehand he already pleaded in *Die Zeit* of 3 July 2011 for a ‘Declaration of Independence’ in which every nation has a voice in the chapter, because only ‘with the combined force of the EU’ one can tackle the big problems and challenges of this time. Martin Schulz, the president of the European Parliament, joined this thinking by saying that the European identity should be added to the national one. In the eyes of the German historian Dominik Geppert all these statements must appear well-intentioned but voluntaristic. According to his analysis the German political class is dreaming about a European federal state which would be realized in an analogous way as the German Reich, namely after the German customs union of 1834 had laid the founding stone for the political unification in 1871. Yet present-day Germany is related to Europe in a different way as Prussia was to the German Confederation in the period 1815-1866. With 60 % of the German population and 60 % of the national income Prussia was able to achieve what the Federal Republic of Germany with 17 % of the European population and 27 % of the economic power of Europe cannot. The problem of Germany nowadays lies herein that the country is ‘too strong to insert itself into the European institutions [...] but at the same time too weak in order to push through the German policy in the rest of Europe’ (Geppert 2013:15). The ‘partial hegemony’ that Germany nowadays exerts in Europe, reminds Geppert of the position that the German Reich held after 1871: ‘too weak to dominate the continent and too strong to insert itself into the European power constellation’ (Geppert 2013:14). Geppert in his plea for a ‘Europe of the nations’ calls on the journalist Rainer Hank who sees an exit from the debt crisis in the ‘strict fiscal self-responsibility of the different states under strict exclusion of any wrongly understood and expensive solidarity between states.’ (Hank 2012:18)

4. Conclusion

Interdependence as a form of mutual dependence and cooperation are necessary, but having just ‘a voice in the European space’ (Beck) is suggesting the evaporation of the nation in a European super state for which there is no public support by the citizens of the member states of the EU. Geppert thinks that the nation state as the ‘bearer of democracy, law and social security’ will further on play a central role and considers its dissolving in a ‘realitätsloses Europäertum’ (an abstract European state of mind) together with the liberal sociologist Dahrendorf as a ‘Rückschritt der Zivilisation’ (a decrease of civilization) (Geppert 2013: 16).

Beck as well as Geppert is reflecting on the link between nation state and European Union. Their different approach in which they see this relationship however mirrors the old struggle within Europe between supranationalism and intergovernmentalism, between on the one hand transferring sovereignty to a higher level where the majority

of the representatives of the nation states will decide and on the other hand keeping the sovereignty within the nation state and the common consultation in which these same representatives will decide with unanimity. Maybe both models are too radical, the first one because it wants to dissolve the sovereignty of the nation state, the other one because it can hamper efficient cooperation and fast decision mechanisms. It requires a creative way of thinking in order to reconcile the nation and Europe. In German thinking the nation state as the baby of nationalism was thrown away with the imperialistic bathwater of National Socialism. Europe was thought to be a project to surpass nationalism, but now threatens to put on herself the dress of 'European nationalism'. As long as this kind of Europe – be it possible or wishful – is not completely realized, the national states will go on to play their role and Germany will continue to play – as Geppert believes – on the European forum a 'partial hegemony' through the instruments and decision mechanisms that the EU provides. Germany is dominating Europe in this sense that it exerts the biggest influence among all states through its economic power and the institutional frames of the EU, but this dominance is not complete and it is not something the German establishment would like to admit, as the speech of president Gauck proves.

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Ecological Insurance in Light of Environmental Investments: Polish Insight

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Abstract

The last century started the process of proving that, indeed, natural resources are limited, and human activity had been continuously affecting the environment to the point that the consequences became apparent. More awareness allowed for rethinking policies at different levels and creating official structures to support pro-ecological investment projects. In Poland, the situation seems to be alike, with funds for promotion and support of environmental investments and instruments for their implementation in the field, nonetheless, the country still lags behind in what the environment protection policy of the country should achieve. In this paper we discuss the situation of environmental investments in Poland as a foundation for creation of new instruments supporting their implementation. Our focus remains on ecological insurance as a relatively new economic and financial instrument aiming at protecting and improving the environment conditions, and enhancing the economic growth. We present legal and economic conditions underlying its adoption, and debate on its application and reception by the market. Our analysis indicates that in Poland an offer of ecological insurance is still limited as limited is interest expressed by the insurance market, however, with a potential of growth.

Keywords: *Ecological insurance, Environmental investments, Poland, EU ELD Directive*

JEL Classification: *Q01, Q24, Q28, Q56, Q58, P48*

1. Introduction

In the recent times, the complex relationship between human activities and the environment has become even more interrelated to become a source of a relevant public debate raising legal, political, economic, social concerns. Human activity has been deepening environmental degradation in the long term period, causing perceptible changes in the environment, nowadays unquestionable even for the sceptics from a few decades ago (United Nations, 2004). This fact enforces public interest into the environment making the increasing community awareness and protection of the environment one of the overarching issues of the 21st century. The key objective of the environmental protection is to preserve (if possible) or restore the natural balance indispensable for human existence and, in the ideal case, to maintain the balance of the whole ecosystem. Yet, investments cannot be denied and given up from as they constitute a driving force of the economy of the country

(Dean and McMullen, 2007). Their strategic importance boosts in critical moments for the economy, economic stagnation or crisis. Hence, the optimum should combine investments with the lowest negative impact for the eco-system and promote environmental investments as means to contribution for the environment protection.

On the other hand, another interesting phenomenon is taking place on the market. In the reality of product abundance, offering a good product, at good price, with an increased functionality may not be enough. Neither may it be commercializing a product at the right moment, or, according to the satisfaction theory, exceeding the customer's expectations. Nowadays customers request more as more is easily available, whether here whether there. A variety of factors has contributed to a picture of a contemporary customer, and, perhaps, the economic reality has made its part; what matters is that a raising interest in ecological issues has been noticed. Customers have become more conscious and expect companies to follow this demand by taking care of ecological and social aspects of the production process. 'Green' products have then, economic impact on the enterprise performance, but they also build the company image (Orsato, 2006).

By environmental investments we mean involvement of the capital in companies or indicators of companies from 'green' sectors of the economy, such as 'clean' energy, water management or recycling. For their safety and development environmental insurance become essential. This sort of insurance has already been introduced on the insurance markets of most European countries (e.g. Portugal, the Netherlands, and Finland). In Poland, insurance companies do not express much interest in environmental insurance and do not treat it as an integral part of their business management portfolio. In fact, the market of environmental insurance is growing very slowly.

2. Materials and Methods

For this study, we used a descriptive methodology. We made extensive literature review on existing legislation underlying ecological insurance in Poland; we searched publications, presentations, databases, public reports and working papers. Identified materials were screened by two authors separately seeking the most relevant information for a posterior analysis and then compared. In case of disagreement, a discussion lasted until a consensus was reached. A special attention was given to evidence on existing insurance market offer.

3. Results and Discussion

Environmental protection and water management funds constitute a primary instrument of financing environmental protection initiatives in Poland. The structure of environmental protection and water management funds functioning currently in Poland comprises one National Fund for Environmental Protection and Water Management, regional funds (sixteen), county funds and communal funds (the number of the two latter equals to the number of number of counties and communes). The funds do not depend on each other either legally or organizationally.

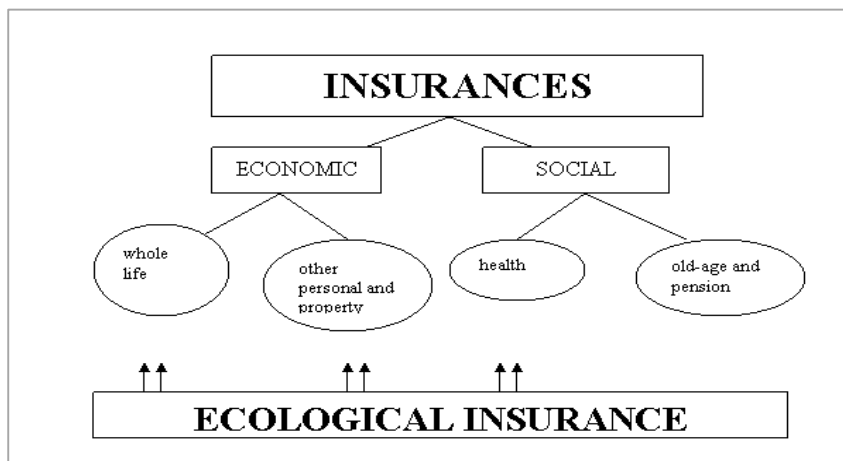
The National Fund for Environment Protection and Water Management provides financial support for pro-ecological actions on national, regional and local levels, in which the last case applies to more specific activities, crucial for the level in question. The Fund and regional funds may apply their mechanisms into both, material (investments – the prime purpose) and non-material character (such as research) activity (Małecki, 2010). The source of activity of the funds is based on ecological fees (which number has been augmented substantially, result of the governmental decision) within which natural environment fees constitute the largest part. The remaining income comes from ecological penalties, donations and income from special activities.

In a discussion on environmental investments, it turns out to be reasonable to present main economic instruments applied in their implementation. The economic instruments in use for environmental protection are classified in literature in several ways. The classification used by OECD, applied officially in the European Union member countries includes: payments, subventions, deposit systems, creating markets and enforcement incentives. Małecki (2010) focuses the general typology on fees for the use of the natural environment: (a) gas and dust emission; (b) sewage disposal; (c) water consumption; (d) placing wastes at dumping grounds. Tucker (1997, p. 136) categorizes currently applied economic instruments as:

- fees for pollutants emissions to the environment (under the Kyoto protocol, from 2012, companies operating in the European Union risk paying a 40 euro penalty for each emitted tone of carbon dioxide);
- fees for causing changes in the environment (including for the use of natural resources);
- fees of the use of nature;
- penalties for exceeding the existing requirements of environmental protection;
- subsidies for environmental projects;
- loan guarantees for environmental projects;
- environmental product charges;
- ecological insurance;
- trade of the permissions for pollutants emission.

Ecological insurance offer within the totality of the insurance system is provided in Figure 1.

Figure 1: Classification of Insurance



Source: Rutkowska and Kozyra, 2007, p. 462

Ecological insurance is therefore an important economic-financial instrument for environmental protection. It aims at improving the condition of the environment as well as impacting the economic growth of the countries. Its specificity divides the general concept of ecological insurance into two types:

- responsibility of the proven guilt – it is a responsibility resulting from regulations of the Civil Law (evidence proceedings for the existence of a causal link between environmentally adverse action of the culprit and the injury suffered by the third party). In many countries, it is the basis for establishing liability for ecological damage;
- responsibility for the (potential) threat – sometimes called responsibility for ecological risk. It is a civil liability for violations of the environment condition on a basis of a potential risk and is associated with the essential preferences and the facilitation for the parties-victims of such violations. According to this principle, civil liability may arise not only in case of the damage occurrence but also with no damage but a threat of its occurrence resulting from a hazard (Lenart and Pietrewicz, 1999). Some authors have stressed limitations of this type of instrument due to limitations of existing risk assessment models, especially in what risk of climate alterations and unpredicted events concerns.

Ecological responsibility deriving from a legal function concerns in a large scale ‘emergency’ categories, i.e. emergency situations and is linked to the principle of proven guilt. Ecological responsibility in the economic function is mainly based on encouraging owners of installations and equipment, potentially or actually harmful to the environment, to undertake a variety of preventive measures. Hence, prevention is here vital and mainly ecological responsibility as an economic instrument of environment protection (and fees and ecological penalties).

Due to the implementation of the EU ELD Directive (2004), in Poland known as the directive on liability for environmental damage, a discussion on a mandatory financial

security in the event of any environmental incident has become a burning issue for the near future policy agenda. Introduction of the financial security in the event of damage to the environment has become reasonable and justifiable, and has already been introduced in a number of the EU member countries, such as Portugal, Spain, the Czech Republic (from 1 July 2012) and Slovakia (from 1 January 2013).

In Poland, in the current legal environment, environmental insurance is not regulated in any separate way and the responsibility for possible damage is spread among many legal acts. The most important of them are:

- Decree Law from 22 May 2003 on Insurance Activity;
- Decree Law from 27 April 2001 on Environmental Protection Law;
- The Civil Code, legal regulations in art. n° 415 and n° 822.

Insurance in this case fulfils the three basic functions, namely:

1. providing benefits to the victims, even if the insured does not possess adequate resources;
2. protecting the insured entity from major commitment that could be a subject of;
3. protecting the economic balance of third parties, neither injured, nor responsible for the damage, but with economic interests with the insured or the injured.

No comprehensive regulation of the insurance scheme has been so far established in Poland. Such insurance should be extracted as a specific type and saved in a single act. Ecological insurance should embrace responsibility for all types of damage arisen in spite of normal and proper use, and maintenance of equipment and facilities. Environmental impairment liability is a special case of insurance designed for business. It is destined to enterprises who wish to protect themselves against the costs of corrective actions in case of occurrence of environmental damage (Zimoch – Tuchołka and Malinowska - Hyla, 2014, p.1 and following).

Only a few insurance companies have ecological insurance in their offer: Aviva General Insurance Company, InterRisk TU SA Vienna Insurance Group, ACE European Group Ltd. Branch in Poland (Bednarczyk and Jańska, 2013, pp. 53-55). Generally the insurance proposal relates to environmental damage insurance extended by third party liability insurance for damage to the environment.

Aviva General Insurance Company's offer embraces the 'Business Partner' product which, at the customer request, can be extended by an additional clause C06⁸¹ (Bednarczyk and Jańska, 2013, p. 53). This clause is the insurance of civil liability for environmental damage, version 72, in practice meaning that the damage must occur and appear within 72 hours of the event. The insurance is intended to protect businesses from the negative financial consequences of claims made by third parties as a result of damage caused to persons and properties in consequence of the insured's

⁸¹ Clause C06 provides protection in the event of damage caused as a consequence of business activities.

business activities as a result of which occurred the release, dispersal or escape into the ground or onto the ground, to the atmosphere, to watercourses or water reservoirs any smoke, vapour, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants, so that such release, dispersal or escape cumulatively meets all five conditions: (a) the damage: dispersal, release or escape to be physically perceptible for the insurance agency or third parties within 72 hours of the beginning; (b) the first personal or material damage resulting from the incidence to occur within 72 hours of the beginning; (c) the cause of the damage to be sudden and accidental, independent of the will of the policyholder, who was not able to predict it and maintaining appropriate diligence; (d) the beginning of the event to occur during the period of insurance; and (e) the damage to be reported no later than 30 days from the beginning of the event.

InterRisk TU SA Vienna Insurance Group offers an insurance package 'Euro 10 plus' to SMEs, which, at request can be extended by an additional clause 'liability insurance for environmental damage'. The basic package comprises coverage of sudden, accidental, unintentional and unexpected accidents caused by the insured. The additional clause includes coverage of accidents resulting in personal or material damage in a consequence of sudden and unexpected deliverance of smoke, fumes, soot, acids, toxic chemicals and waste, liquids or gases, industrial waste and other substances damaging or polluting the soil, the atmosphere, a waterway, or a surface of water. The first damage must be revealed no later than within 72 hours from the initiation of the event and the occurrence must be confirmed by a protocol of the environmental protection services, firemen or the police.

ACE European Group Ltd. Branch in Poland has introduced insurance for environmental pollution, a product taking into account the specificity of the Polish market and the legal environment. It is a separate insurance product for environmental damage called 'stand alone cover', not functioning within a general insurance agreement thus no additional agreement is required from the insured. The scope of protection covers costs of decontamination of soil and water contaminated as a result of current economic activity and the activity of the previous owner. The insurance includes some elements not accessible in the competition: claims of third parties relating to the pollution generated in the insured location, damage occurred on rented areas, damage caused by products or waste transportation, and loss of profit as a result of contamination.

4. Conclusions

General public awareness of the current ecological situation and, at the stage the society finds itself nowadays, unavoidable threats for biological equilibrium on the earth, have increased, leading to a gradual paradigm change in perceiving what individuals and organizations consider as 'ours' with a right to an unlimited and absolute use, even justifiable by a prospective for economic growth. Recognizing the power of consumer choice, the market needs to have in consideration the opinions and values as directly impacting consumer behaviour.

In Poland, the level of environmental investments, as compared to other countries is still substantially low. For the existing ecological initiatives, environmental protection and water management funds constitute the primary instrument of their financing. Ecological insurance is intended to be an incentive for economic expansion toward environmental investments. However, Polish insurance companies do not express much interest in environmental insurance and do not treat it as an integral part of their business management portfolio. In fact, the market of environmental insurance is growing deliberately. Lack of interest in environmental insurance by insurance companies may be caused by economic barriers that lie in small capital reserves at their disposal, staff and organizational difficulties and lack of conviction as to the potential of ecological insurance. Empirical evidence for environmental insurance remains scarce.

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Business Cycles Alignment of Selected CEECs and the Euro Area

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Abstract

Similarity of business cycles is one of the crucial preconditions for sharing a common currency. If business cycles of individual countries in a monetary union diverge considerably, monetary policy setting will not fit them all. This article aims to evaluate and discuss alignment of business cycles of selected Central and Eastern European countries with the euro area as a whole. The analysis is based on the correlation of deviations of real GDP levels from their trend values, output gaps synchronicity calculation, and measuring the similarity of output gaps amplitude. The results indicate a high degree of business cycles alignment between the Baltic countries and the euro area; common monetary policy setting should be, therefore, most suitable for Baltic countries. On the contrary, the highest degree of business cycle misalignment is observed in case of Hungary.

Keywords: *Business Cycle, Common Currency, Correlation, Synchronicity, Similarity*

JEL Classification: *E32, F02, F42*

1. Introduction

When joining the European Union in May 2004, the Central and Eastern European countries (CEECs) committed to adopt the euro. Slovakia (in January 2009), Estonia (in January 2011), and Latvia (in January 2014) have already fulfilled the commitment. Other CEECs are expected to join the Economic and Monetary Union (EMU) in the near future. The entry into the monetary union, however, is not just a change of legal tender. The adoption of the euro is also associated with the loss of independent monetary policy. Given that a common monetary policy setting depends on the economic situation of the euro area as a whole, it does not always correspond to the economic conditions of each individual country.

Alignment of business cycles is, therefore, one of crucial preconditions for sharing a common currency. If business cycles of individual countries in a monetary union diverge considerably, monetary policy setting will not fit them all. Monetary policy of countries in the downward phase of the cycle should be expansionary, whereas countries in the upward phase need a more restrictive policy setting. And even when all member countries of the monetary union have business cycles in the same phase, the implementation of the common monetary policy might not be optimal for every country with the respect to the amplitude of the cycles.

This article aims to evaluate and discuss the alignment of business cycles of 7 selected Central and Eastern European Countries (CEECs) - the Czech Republic (CZ), Estonia

(EE), Hungary (HU), Latvia (LV), Lithuania (LT), Poland (PL), and Slovakia (SK) – in relation to the euro area. The analysis is based on the correlation of deviations of real GDP levels from their trend values, output gaps synchronicity calculation, and measuring the similarity of output gaps magnitude.

The remainder of the paper is organized as follows. Chapter 2 provides a description of the methods and data used in the analysis. Chapter 3 presents the results. Conclusions are drawn in Chapter 4.

2. Alignment of Business Cycles

In line with existing literature – for example Wynne and Koo (2000), Altavilla (2004), or Camacho, Perez-Quiros and Saiz (2006) - the analysis is focused on deviations of real GDP from its trend value (the so-called output gap). The reasons are obvious. Firstly, policy makers aim to minimize output fluctuations. Secondly, output gap is an important indicator of future inflationary/deflationary pressures. To calculate the deviation of real GDP from its trend value, several methods can be used. Unfortunately, there is no consensus about which method is the most appropriate. The best known and most widely used detrending techniques include Hodrick-Prescott filter (Hodrick and Prescott, 1997) and Baxter-King band pass filter (Baxter and King, 1999). In this analysis, both techniques are used.

2.1 Methods

The first method, using which the alignment of business cycles will be assessed, is the *correlation of output gaps*. Correlation between variables is a measure of how well the variables are related. The most common measure of correlation in statistics is the Pearson correlation coefficient, which shows the linear relationship between two variables. The Pearson correlation coefficient is formally expressed as:

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x}) \times (y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \times \sum_{i=1}^n (y_i - \bar{y})^2}} \quad (1)$$

Despite the fact that using the correlation of output gaps is a very popular approach for assessing business cycles alignment, the method has its drawbacks. The heteroskedasticity of time series can cause imperfect correlation between output gaps, even in a situation when positive and negative output gaps of two individual countries coincide perfectly.⁸² Output gap correlation also does not capture whether the gaps are similar in their magnitude. The correlation between the two series can be equal to 1 even when both series have different standard deviations.

Being aware of the shortcomings of the correlation method, additional measures of business cycles alignment will be used to complement the analysis. Particularly, *output gap synchronicity indexes* and *output gap similarity indexes* will be computed.

⁸² For discussion of this issue, see Mink, Jacobs and de Hann (2008).

The output gap synchronicity index⁸³ is easier to interpret and also provides a better quantification of cycle synchronicity. The index (φ) can be formally expressed as:

$$\varphi_{ir} = \frac{1}{T} \sum_{t=1}^T [g_{it}g_{rt} + (1 - g_{it})(1 - g_{rt})], \quad (2)$$

where g_{it} denotes output gap of country i at time t and g_{rt} indicates output gap of reference country r in period t .

To calculate the index, time series have to be modified into a binary series. Positive output gaps get the value of 0; negative get the value of 1. The index then expresses in how many percent of the examined period output gaps share the same positive/negative sign.

Mink, Jacobs and de Haan (2008) further suggest using the business cycles similarity index (γ) that takes into account differences in the magnitude of cycles. The index evaluates the total distance between output gaps of two countries. Formal expression is as follows:

$$\gamma_{ir} = 1 - \frac{\sum_{i=1}^n |g_{it} - g_{rt}|}{\sum_{i=1}^n |g_{it}|}, \quad (3)$$

where g_{it} represents output gap of country i in time t and g_{rt} stands for output gap of reference country r in time t .

2.2 Data

Alignment of business cycles is evaluated between the individual countries and the euro area as a whole. For the purposes of this paper, the euro area is defined as the EA-15 (i.e., the EA-18 without Slovakia, Estonia and Latvia). The analysis is conducted for seasonally adjusted time series of quarterly GDP in terms of EUR for the period from 1st quarter of 1999 to 3rd quarter of 2013. The indexes are calculated not only for the entire period, but also separately for the period from the beginning of financial and subsequent economic crisis (2007-2013). The data are drawn from the EUROSTAT online database (Eurostat, 2014).

3. Results

Table 1 presents the correlation coefficients and the business cycles synchronicity and similarity indexes between individual countries and the euro area when using Hodrick-Prescott filter. The strongest linear relationship is observed for Estonia (0,906). Lithuania (0,866) and Latvia (0,805) also strongly correlate with the EA-15. These results thus suggest a generally high alignment of business cycles between the Baltic countries and the euro area. In case of Slovakia (0,641), the Czech Republic (0,616), and especially Hungary (0,542), the relationship is found to be much weaker. The

⁸³ Business cycles synchronicity index is a simplified form of the concordance index used for example by Rozmahel and Najman (2010).

value reported for Poland (0,725) is approximately the average for the whole group of countries.

Business cycles of Baltic countries also seem to be more synchronous in relation to the euro area than those of Central European countries. Cyclical components of Latvian GDP share the same positive/negative sign with the output gap of the euro area in 86,4 % of time. Estonian and Lithuanian output gaps coincide with the euro area in 84,7 %, respectively 81,4 % of the analysed period. High degree of synchronicity is also reported for Poland (84,7 %). Slovakian and Czech output gap coincide with EA-15 in 76,2 %, respectively 74,6 % of time. The lowest value is observed for Hungary (54,2 %).

In terms of similarity, Estonia (0,224) has the most aligned business cycle with the euro area. The second lowest total distance between output gaps is observed for Slovakia (0,208). Lithuania (0,191), the Czech Republic (0,184), and Poland (0,142) follow. The least similar cycles are reported in case of Latvia (0,123) and Hungary (0,108).

Table 11: Correlation, Synchronicity and Similarity Indexes Between Selected CEECs and the EA-15; 1999:Q1 – 2013:Q3; HP filter

country	correlation		synchronicity		similarity	
	value	rank	value	rank	value	rank
CZ	0,616 (0,000)	6	0,746	6	0,184	4
EE	0,906 (0,000)	1	0,847	2 - 3	0,224	1
HU	0,542 (0,000)	7	0,542	7	0,108	7
LV	0,805 (0,000)	3	0,864	1	0,123	6
LT	0,866 (0,000)	2	0,814	4	0,191	3
PL	0,725 (0,000)	4	0,847	2 - 3	0,142	5
SK	0,641 (0,000)	5	0,762	5	0,208	2

Source: Eurostat (2014), author's calculations

Table 2 presents the same set of indexes when using Baxter-King filter. As in the previous case, the highest degree of linear relationship is observed for the Baltic countries. The strongest correlation is found for Estonia (0,931), Lithuania (0,895), and Latvia (0,825). On the contrary, in the case of Slovakia (0,640), the Czech Republic (0,660), or Hungary (0,674), the correlation is much weaker. The results thus support the findings when using Hodrick-Prescott filter. This time, however, the

values are generally higher. The reason is that when using Baxter-King filter, time series of cyclical components of real GDP are smoother.⁸⁴

When using Baxter-King filter, the values of synchronicity indexes differ (in some cases) significantly compared to the previous results. For example, Lithuanian business cycle is found to be 12,9 percentage points more synchronous. Czech cycle also coincides with that of the EA-15 about 14 percentage points more.

Table 12: Correlation, Synchronicity and Similarity Indexes Between Selected CEECs and the EA-15; 1999:Q1 – 2013:Q3; BK filter

country	correlation		synchronicity		similarity	
	value	rank	value	rank	value	rank
CZ	0,660 (0,000)	6	0,886	3 – 4	0,196	3
EE	0,931 (0,000)	1	0,914	2	0,235	2
HU	0,674 (0,000)	5	0,571	7	0,141	6
LV	0,825 (0,000)	3	0,829	5	0,120	7
LT	0,895 (0,000)	2	0,943	1	0,260	1
PL	0,743 (0,000)	4	0,886	3 – 4	0,153	5
SK	0,640 (0,000)	7	0,743	6	0,184	4

Source: Eurostat (2014), author’s calculations

From the viewpoint of similarity, index values are slightly higher in most cases (see Table 1 for a comparison). This time, the most similar cycle is observed for Lithuania (0,260). Estonia (0,235) and the Czech Republic (0,196) follow. The lowest values are reported for Hungary (0,141) and Latvia (0,120), i.e. their business cycles are most different in terms of magnitude in relation to the euro area.

Table 3 shows the indexes for the period from 1st quarter of 2007 to 3rd quarter of 2013 so that we can compare the business cycles alignment of CEECs during the times of economic crisis. Table 3 presents the results when using Hodrick-Prescott filter.⁸⁵

The results confirm the previous findings even in the light of economic crisis. Estonia and Lithuania have a high degree of linear relationship with the euro area and their cycles are very synchronous. Similarity indexes also do not indicate a significant misalignment in comparison with other countries. The Latvian business cycle is rather less aligned during this period; its similarity index is even the lowest within the group of analyzed countries. A high degree of business cycle alignment is observed for Poland. During the crisis thus the Polish business cycle was in accordance with the

⁸⁴ The values of reported indexes are also influenced because when using Baxter-King filter, there is a loss of the first and last 12 values. The number of observations is therefore lower.

⁸⁵ The results obtained using Baxter-King filter are not reported because they have low informative value.

cycle of EA-15. In the case of Slovakia, except for rather lower degree of correlation, the results also indicate the relatively aligned business cycle in relation to the euro area. Czech and Hungarian cycles seem to be least harmonized. Yet, reported similarity indexes are at a comparable level with the majority of analyzed countries.

Table 13: Correlation, Synchronicity and Similarity Indexes Between Selected CEECs and the EA-15; 2007:Q1 – 2013:Q3; HP filter

country	correlation		synchronicity		similarity	
	value	rank	value	rank	value	rank
CZ	0,653 (0,000)	7	0,741	6	0,235	4
EE	0,924 (0,000)	1	0,889	1 - 2	0,212	6
HU	0,741 (0,000)	5	0,630	7	0,242	2
LV	0,785 (0,000)	4	0,778	5	0,127	7
LT	0,899 (0,000)	2	0,815	4	0,219	5
PL	0,855 (0,000)	3	0,889	1 - 2	0,236	3
SK	0,733 (0,000)	6	0,852	3	0,295	1

Source: Eurostat (2014), author's calculations

4. Conclusion

This article aimed to evaluate and discuss the alignment of business cycles of 7 selected Central and Eastern European Countries – the Czech Republic (CZ), Estonia (EE), Hungary (HU), Latvia (LV), Lithuania (LT), Poland (PL), and Slovakia (SK) – with the euro area.

The analysis was based on the correlation of deviations of real GDP levels from their trend value, output gap synchronicity calculation, and measuring the similarity of output gap magnitude. Using the correlation method, the linear relationships between business cycles were assessed. The shortcomings of the correlation method were then motivation for completing the analysis by calculation of business cycles synchronicity and similarity indexes. The business cycles synchronicity index was used to quantify in how many percent of the examined period output gaps share the same positive/negative sign. The business cycles similarity index further evaluated the alignment between business cycles in terms of their magnitude.

Within the group of analysed countries, the Baltic countries have the most aligned business cycles with the euro area. The Estonian and Lithuanian business cycle is not only highly correlated with the business cycle of the euro area, but is also characterized by a high degree of synchronicity and similarity. Latvia, despite its generally high degree of alignment with the euro area in terms of correlation and

synchronicity, does not share a high degree of similarity. In the case of the Czech Republic, Slovakia and Poland, the degree of correlation was found to be weaker compared to the Baltic countries. However, synchronicity and similarity indexes suggest, on the contrary, almost comparable level of alignment with the euro area as in the case of Baltic countries. All methods used in our analysis indicate a significant misalignment of the Hungarian business cycle with the cycle of the euro area. This fact is not surprising given the large economic problems and controversial economic policy of this country. The results of the analysis indicate that a common monetary policy within the euro area, in terms of business cycles, should be the most suitable for Baltic countries and the least suitable for Hungary. The results also reveal an interesting fact that some non-member countries of the euro area have their business cycles more aligned with the EA-15 than some euro area member countries.

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Higher Education Governance in the EU – Side Effects of Using Measurable Performance Indicators

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Abstract

The paper deals with trends of higher education governance in the EU countries. It concentrates on the unintended consequences of measurable performance indicators that are published, interpreted as criteria of the quality of higher education institutions and used as a tool of regulation. The basis of the approach to the subject lies in the general statement derived from Goodhart's law "When a measure becomes a target, it ceases to be a good measure." (Chrystal & Mizen, 2001) Risks of using measurable performance indicators are presented on changes in the behavior of organizations and their employees in the public sector. In the area of higher education there are given examples of side effects on the conduct of higher education institutions, academic and research staff and other entities. The paper points out that there are some limits in the use of measurable performance indicators in higher education governance.

Keywords: *Goodhart's law, Governance, Higher education in the EU, Performance indicators, Side effects*

JEL Classification: *I22, I23, I28*

1. Introduction

The emphasis on knowledge based economy in the EU strategies and declarations has placed the higher education systems in the forefront of attention. The increasing demands on the higher education institutions (HEIs) caused by the socio-economic situation have brought the changes both at the level of the EU environment (Bologna process creating European Higher Education Area by 2010; development of European Research Area) and in the individual EU countries. Despite the specifics of approaches there can be traced some basic tendencies in higher education governance at the state level: the HEIs have gained more autonomy together with more responsibilities, they are obliged to show that they fulfil the roles which are expected by the society and that they use the public funds responsibly. Underlying the changes there is a common growing trend of introduction of the performance criteria.

The purpose of the paper is to uncover side effects of using measurable performance indicators, especially as a tool of external regulation, on managerial and academic self-governance of public HEIs. The basis of the approach to the subject lies in the general statement derived from Goodhart's law "When a measure becomes a target, it ceases to be a good measure." (Chrystal & Mizen, 2001) Risks of using measurable performance indicators are presented on changes in the behaviour of organizations and

their employees in the public sector. In the area of higher education there are given examples of side effects on the conduct of higher education institutions HEIs, academic and research staff and other entities of the regulated system.

2. Risks of Measurable Performance Indicators in the Public Sector

Risks of the use of measurable performance indicators lie in their dual function. Performance indicators both measure the performance achieved and are used as a tool of regulation of the entities that are able to anticipate the intention of the state. Thus organizations focus on performance indicators and the intended target and the link between targets and performance indicators become secondary. Excessive adjustment to measurable performance indicators generates misconception of organizations' management with negative consequences.

In the following text there are given eight kinds of behavior of organizations in the public sector that focus on the value of the publicly available data of their performance, as described by P. Smith. (Smith, 1995)

Tunnel vision is a management approach that emphasizes quantifiable performance indicators at the expense of non-quantifiable phenomena. It has several serious disadvantages. First of all, it is difficult to construct a scheme of quantifiable indicators for all activities, especially in the public sector. Different stakeholders have different interests and expect the organization to meet various targets. The performance indicators scheme cannot cover all the links to the targets. Secondly public organizations perform also activities that are essential and important but cannot be quantified and measured. Thirdly, some of externalities can be measured with a time lag, there is not always a quantifiable feedback at a time when important management decisions are taken however the managers have to be aware of it and responsive.

Suboptimisation "is the pursuit of narrow local objectives by managers at the expense of the objectives of the organization as a whole." (Smith, 1995) This phenomenon occurs in organizations where management is implemented through performance indicators and cooperation and identification with the goals of the organization are neglected. It touches the problems of the principal-agent model when pay-for-performance schemes including monitoring indicators cause less interest of the employees in team work and achieving the common goals.

Myopia is a management concept focusing on short-term targets that can bring an immediate effect, while the organization neglects long-term objectives. Quick success in improving the values of performance indicators is achieved at the cost of the wrong direction in the medium and long term. The tendency to focus on short-term goals of the organization is supported by temporary contracts, which make the managers and employees think within the horizon of their employment contract. The problem of monitoring indicators in this case exists for long-term goals that are not immediately measurable.

Measurement fixation emphasizes measures rather than the objectives to be achieved and for which the measures serve. It happens in the situation when measures do not

cover all the characteristics of the objectives and an organization wants to improve the values of the measures so as to be regarded as successful. Measures, which are usually proxies for the output, become more important than the output itself.

Misrepresentation is the manipulation of data so that the behavior which is reported differs from the real behavior. It is a misuse of the situation when organization has the control of the data of performance measures reported to the state which are used to hold the organization accountable. There are two forms of misrepresentation fraud and “creative” reporting. “Creative” reporting happens when there is a possibility to choose how to record an event. It is a misuse of the position when the organization and the state have asymmetric information.

Misinterpretation means a problem with the interpretation of data about organizations when the external environment is not taken into consideration. In spite of having enough data, the state misinterprets them and sends a wrong policy signal to the regulated organization. There are five reasons why the performance indicators might be different: organizations might have different objectives, face different operating environment, have different costs of inputs, use different measurement methods, have different levels of efficiency.

Gaming represents the manipulation of behaviour by managers of the organization. It happens when the targets are set by the organization on the basis of performance in the previous period. Improvements in the previous period cause increased expectations in the future therefore initial values of indicators are deliberately underestimated by deliberate behaviour. Then the lower targets values which are set are formally justifiable. Thus the targets are more easily achieved and can be interpreted as a success.

Ossification is "an organizational paralysis brought about by an excessively rigid system of performance evaluation." (Smith, 1995) It uncovers a disadvantage of the bureaucratic performance measurement schemes set in advance. The main threat is the pursuit of set performance indicators regardless of changes in the environment which should not be omitted. The new opportunities and threats are not taken into account which causes a delay in management responses.

3. Measurable performance indicators in higher education systems in the EU

The tendency towards result-driven higher education systems in the EU made the countries create and develop new tools in higher education governance which affect the university management and the workload of the university staff. There has been a major change in the direct funding mechanisms for HEIs to connect public funding to institutional performance accompanied with monitoring and accountability processes. Most of the EU countries use formulas with output measures for public funds allocation and have grant schemes based on a competition of projects. A performance contract between the state authority and HEIs represent such an instrument in twelve EU countries concentrating on the strategic direction. The state has a control of the implementation of the higher education policy. It measures the

outcomes of HEIs, assesses whether the strategic objectives have been achieved and allocates the funds.

As for teaching, the most common measurable performance indicators are a number of graduates, their employment rate or the ability of students to graduate within a standard period. The research public funding usually uses performance indicators as follows (Eurydice, 2008):

- number of academic publications, number of quoted references in academic journals, extent of teaching activities of academic staff;
- number of master's degrees/doctorates awarded over a previous period, number of doctoral theses defended;
- amount of public funding obtained for given research projects on a competitive basis;
- amount of research funding from private sources;
- number and type of research projects undertaken;
- use of research results (licences, copyright, services provided, etc.);
- awards and distinctions received, quality certificates received;
- number of scientific titles conferred by the institution;
- participation in international scientific research projects;
- development of research staff.

4. Examples of Side Effects of Using Bibliometric Indicators

Measurable performance indicators serve as an important source of information about HIEs. They provide a simplified view of the activities of HEIs which used to be a closed scientific and academic community. The HEIs as the providers of public services publish annual reports and submit data to the national databases concerning their activities, so as to inform state bodies and the public in most EU countries. The public and the state have an opportunity to assess HIEs activities on the base of interpretation of reported statistics. Problems arise in the approach to the use, publishing and interpreting the values of performance indicators. Wrong approaches lead to unintended changes in the behaviour of subjects in the higher education system emphasizing reporting and threatening the validity and relevance of performance indicators.

The following text presents documented examples of disadvantages and side effects of measurable performance indicators in the system of higher education. Although there have been chosen bibliometric indicators, specific to the measurement of research outputs which are worldwide used, it can be suggested that the excessive responses to them have typical features of unintended behaviour in the public sector described in the first part.

The first bibliometric analyses were carried out in the 80s of the 20th century in Great Britain, in its beginning they were not intended to serve for policy making. Since then they have undergone dynamic development spurred by the massive introduction of new information and communication technologies. Currently they are used as a source of information for external regulation of HIEs, i.e. they are inputs for formula-based

funding or criteria for awarding research grants. The use of bibliometric indicators for regulation is based on the assumption that measurement provides reliable and objective information for comparison, contributes to the accountability of HIEs for the use of public funds and motivates academics researchers to increase research performance.

There are three main purposes to publish "to disseminate new information so that others can learn from it; to enable other scientists repeat the studies, or build on them with additional observations or experiments; to justify the financial or other support of interested parties". (Lawrence, 2008) The implementation of bibliometric indicators in the regulation of higher education systems has changed the perception of publishing emphasizing the third purpose. Publishing has become a means of obtaining financial resources and building an academic career. Examples of inappropriate adaptation to the bibliometric indicators as a tool of regulation can be found at the level of university management, among academics, researchers and editors of professional journals or conference proceedings.

According to the theory of resource dependency HIEs respond to the performance indicators deciding of the distribution of resources and perception of service quality by the public. (Fowles, 2013) The HEIs adapt their behaviour to "survive" in a regulated system. The university management seeking to maximize financial resources tends to accept external criteria for the allocation of public funds at the state level for redistribution within the university thus the faculties and institutes capable of adaptation profit from it. Having the aim to secure sufficient financial resources for the university and to provide a stable environment as a priority the university management tends to motivate employees to focus on activities to improve measurable outcomes at the expense of activities that are important but not easily measurable and directly financed. There is often a conflict between the activities carried out by academics, especially between research activities and teaching quality.

In addition to their professional work academics and researchers pay attention to the strategy of presenting the outcomes of their research activities in a way to improve the values of performance indicators. They are aware that bibliometric indicators play a crucial role in their career. Therefore there is a tendency to publish more frequently to show statistically higher values. If there is an imperative of publishing the authors take into consideration what is acceptable for editors and reviewers thus new ideas might be suppressed by mainstream thinking.

The decision-making process of accepting scientific articles might be problematic. Reviewers are free to misuse their positions for personal interests and competing against publishing works which would put them at risk. They may also refuse innovative works which contradict established scientific approaches, for example the works of some future Nobel Prize winners. (Campanario, 1996) Thus it happens that not all the beneficial works can be valued by the system.

Gaming the bibliometric indicators also happens at the level of scientific journals. There is a well-known example when the editorial board of scientific journal *Shock* asked the authors of articles to note several references to the journal *Shock* in a list of references and after publishing it asked the authors to persuade the colleagues to cite

the article. These steps were supposed to lead to better results in the journal citation (Weingart, 2005).

5. Conclusion

The higher education governance in the EU countries has undergone many changes. One of the fundamental features is an introduction or a development of external measurable performance indicators as criteria of the quality and as a tool of external regulation of the HEIs. According to the Goodhart's law "When a measure becomes a target, it ceases to be a good measure" (Chrystal & Mizen, 2001) the problem arises when the state, HEIs and other subjects of the regulated system concentrate on the measurement itself. The main reason for side effects is an impact of external measurable performance indicators on managerial and academic self-governance of HEIs. The aim of the text was to point out such examples based on experience and previous studies in public administration and higher education regulation (especially worldwide used bibliometric indicators).

In general, concentrating on external indicators limits the space for a meaningful "bottom-up strategy" created by the experienced HIEs staff and makes the HEIs not invest time and human resources into activities which are not measurable but are still valuable. The values of measurable performance indicators are proxies partly influenceable by intentional behaviour of the regulated subjects which do not pursue the improvement of the performance but aim at the reported values of the measurable performance indicators. Gaming the measures raises questions about the validity and the reliability of the indicators and the limits in their use as signals for regulation. The interpretation of external measures without taking into an account the mission of HEIs makes an appropriate oversimplification.

There is no doubt that it is useful to create and develop linkage between the performance and the resources. We can find many examples when the measurement schemes have been an important incentive for the development of a higher education system. However, some side effects have been uncovered and described which indicate that there are some limits in the use of measurable performance indicators in higher education governance.

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Impact of European Integration on Agriculture in Slovakia

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Abstract

Slovakia is perceived as a leader among the European countries due to its size of farms. Despite of a high concentration of farms - up to 95.1% of the utilized agricultural land is farmed by large farms - the Slovak agriculture is considerably less productive.

The Common Agricultural Policy (CAP) develops not only the traditional role of agriculture, a food production, but shapes the face of country, affects the quality of environment and also helps to increase the potential of tourism development through the cooperation of direct payments system, capping and greening. CAP greatly affects the agriculture in the EU mainly through the subsidies as they are an indispensable source of funding of agricultural firms. The aim of this paper is to analyze the impact of CAP on the economy of farms based on an analysis of a unique set of agricultural entities operating in Slovak Republic

Keywords: Agriculture, Common Agricultural Policy, Development, Influence, Subsidies

JEL Classification: M40, M69, Q29, Q49

1. Introduction

Slovakia's accession to the European Union had an impact on the entire economy, especially on agriculture, representing the integration basis in Europe. The independent Slovak agricultural policy was abolished after entering the EU and it was needed to adopt the unified agricultural policy, which represents a set of economic, institutional, legislative, and policy instruments to ensure a homogenous market.

Profitability in the Slovak agriculture after 2004 period is deep below the average EU-27 countries, as well as the support to agriculture calculated in Euros per hectare of agricultural land. Slovakia is at low level with the amount of total agricultural output per hectare of agricultural land. Not only it lags behind the average EU-27 (against which it achieves only half of the value), but also keeps behind the Czech Republic, Hungary and Poland, i.e. states which Slovakia joined the EU with.

The number of farms in the EU-27 gradually decreased and their average acreage increased. A similar trend was also in Slovakia. Cooperatives and capital companies dominated in the Slovak agriculture. They cultivate 90% of agricultural land, while in the EU-15 is dominated by individuals (family farms).

By Slovakia's accession to the EU, the soil has become an essential means for obtaining government funds from the Common Agricultural Policy. In Slovakia, there is still a substantial portion of agricultural land farmed by farms with large acreage farmed land.

The analysis of the group of agricultural farms (Szabo, 2006), operating in the best climate and agricultural conditions, showed the great differentiation in performance and utilization of factors of production, especially amplifying factors. In 2003 almost the half of the farms was in loss, and many are threatened to destruction after entry to European Union. Agrarian sector needed new strategic solution as modernization of production capacities, conformity of production structure and demands, integration to multinational production sale verticals, development of ecological production and alternative activities.

The adoption of the CAP had a positive impact on the growth of the off-market and total income but at the same time, its production efficiency decreased and the production structure has changed. Less efficient sectors of the crop and livestock production declined. Regarding the aspect of financing of the agricultural sector, the European resources, mainly the direct payments, were determined. The total subsidies into agriculture increased in comparison with the pre-accession period. The volume of direct payments including the complementary national direct payments reached the maximum level in 2007, 2008 and 2009. (Chrastinova, Burianova, 2012)

When analysing the impact of risk of agricultural farms on their profitability, studies show that the lower level of risk, the lower level of profitability of farms may occur (Piterková et al. 2013). The effort of farms is to increase the efficiency of business, which is inextricably connected with achieving the lowest possible cost per unit of output. The low costs represent an important competitive advantage for a farm. (Váryová et al.2012) As confirmed by the results of research in quality management by authors Savov et al. (2013) the Malcolm Baldrige National Quality Award criteria significantly contribute to improve the productivity and efficiency of all business processes.

The behaviour of agricultural farms in agriculture is significantly influenced by the current support scheme and the level of support within the EU CAP but also by market conditions. The impacts of the particular scenarios on the changes of production indicate that Slovak agriculture will approach just slowly the 2008 production level. This will be decisively influenced by the price development. Despite of this, it is evident that the most favourable result can be achieved under the Flat Rate Scenario while the absolute abolition of direct payments (Liberal Scenario) will bring very unfavourable economic consequences with impacts on agricultural production in Slovakia. (Božik, 2011)

In connection with the proposed reform of the current Common Agricultural Policy for period 2014-2020, the direct support should be split more equally between the Member States, namely by reducing the link to historical data and by taking into account the overall context of the EU budget. All Member States with direct subsidies below 90% of the EU average should reduce the difference between their current level and this level by one third. This convergence should finance proportionally all

Member States with direct payments above the EU average. The discussion about the future multiannual financial framework for the period commencing in 2021, should be focused on the objectives of complete convergence through the equal distribution of subsidies across the EU.

2. Data and Methodology

Our analysis was based on the database of Ministry of Agriculture and Rural development for agricultural farms over the period 2000-2012. The database contained individual data including balance sheets and income statements for each farm. For our analysis, data were selected according to the farm legal form to subset of the agricultural production cooperatives and the subset of the capital companies - Joint Stock Company (JSC) and Limited Liability Companies (Ltd.). These are the two main legal forms in Slovak agriculture with respect to the utilised agricultural area (UAA). In 2012 cooperatives cultivated 37.87% of UAA and companies 42.40% of UAA. To measure the effects of Common Agricultural Policy (CAP) we divided the observed period into three parts:

1. Period before CAP implementation – years 2000-2003 in our analysis
2. Period of CAP₁₉₉₉₋₂₀₀₆ implementation – years 2004-2006 in our analysis
3. Period of CAP₂₀₀₇₋₂₀₁₃ implementation – years 2006-2012 in our analysis

Table 1 shows the number of cooperatives and companies included in the database.

Table 1: Number of Agricultural Cooperatives and Companies in the Analysis

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cooperatives	714	665	640	616	573	572	560	539	525	540	506	518	523
Companies	486	558	594	718	709	832	799	820	725	839	793	876	951
TOTAL	1200	1223	1234	1334	1282	1404	1359	1359	1250	1379	1299	1394	1474

Source: Database of Ministry of agriculture and rural development, author's calculations

The farm structure in Slovak agriculture is similar to the situation in Czech Republic. Unlike in old EU Member states the majority of UAA is cultivated by large farms with more than 1000 hectares per farm. The legal form and the double entry accounting enable analyze the balance sheet structure (see table 2). Agricultural farms in 2012 compared to year 2000 had more assets per hectare (+ 917.20 €). This shows the increasing asset intensity in agriculture.

Table 2: Balance Sheet Structure of Agricultural Farms (in €/ha)

	2000	2002	2004	2006	2008	2010	2012
Total assets	1440.4	1556.4	1673.1	1790.9	2203.8	2272.6	2357.6
Fixed assets	916.1	973.2	978.5	1056.0	1291.2	1392.4	1424.8
Current assets	509.2	565.5	677.4	719.1	900.0	868.3	918.5
Accruals	15.1	17.7	17.2	15.8	12.6	11.9	14.3
Total Equity and Liabilities	1440.4	1556.4	1673.1	1790.9	2203.8	2272.6	2357.6
Equity	909.4	937.3	985.4	1003.9	1144.1	1089.4	1109.7
Liabilities	495.2	540.0	616.0	674.1	923.3	976.6	1055.6
Accruals	35.8	79.1	71.8	113.0	136.3	206.5	192.3

Source: Database of Ministry of agriculture and rural development, author's calculations

When comparing legal forms the increase in assets in cooperatives was from 1563.60 €/ha in year 2000 to 2047.30 €/ha in 2012 (+31%). Higher increase in assets was in case of companies. The value of assets per hectare increased sharply from 1205.40 €/ha in 2000 to 2654.20 €/ha in 2012 (+120%). On the Equity and Liability side of the Balance sheet the ratio between equity and liabilities is changing in favour of liabilities. Generally agricultural Cooperatives have higher proportion of equity compared to agricultural Companies.

To analyze the impact of European integration on agriculture we focused on 4 ratios:

1. Subsidies per hectare
2. Profit per hectare
3. Profit without subsidies per hectare
4. Subsidies to Sales ratio

To describe the development of presented ratios in the whole dataset we used descriptive statistics median, upper quartile and lower quartile. The data were visualised by box and whisker plots and the significance of differences was measured by ANOVA, T-test and Tukey Post Hoc test. Results are in the table 3.

Table 3: Significance of Differences in Ratios

	Profit/ha	Subsidies/ha	Profit without Subsidies/ha	Subsidies/Sales
difference between period 1 and 2	Yes	Yes	Yes	Yes
difference between period 1 and 3	No	Yes	Yes	Yes
difference between period 2 and 3	Yes	Yes	Yes	Yes
difference in legal forms	Yes	Yes	Yes	Yes

Source: author's calculations

3. Results and Discussion

Agriculture in all European countries is supported by public funds in form of subsidies. The total amount of subsidies received by agricultural farms in Slovakia increased after 2004 after CAP introduction in 2004 (table 4, increase in median). The increase in subsidies was followed also by higher profit per hectare in first years of CAP introduction (table 4, median of profit/ha in years 2004-2008).

Table 4: Subsidies and Profit per hectare in Slovak Agriculture in 2000-2012 (€/ha)

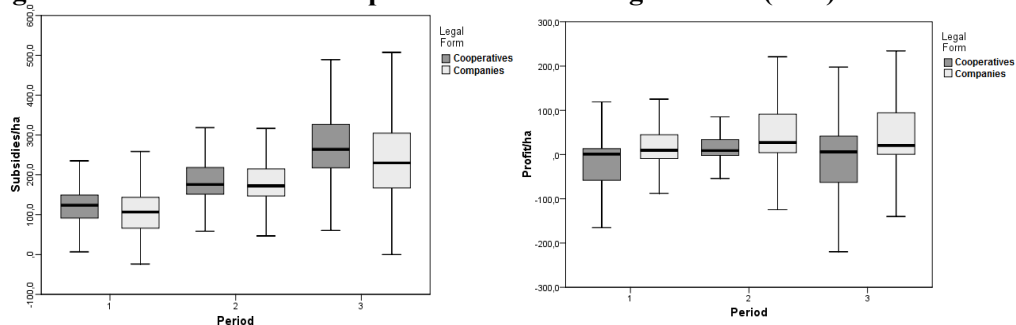
	Subsidies/ha			Profit/ha		
	lower quartile	median	upper quartile	lower quartile	median	upper quartile
2000	107.51	138.38	168.67	-54.22	0.61	14.69
2001	77.03	114.17	146.02	-7.69	7.64	35.62
2002	66.39	106.09	136.53	-4.46	7.25	29.80
2003	76.03	107.53	135.67	-93.12	0.37	14.44
2004	148.84	166.00	195.39	3.51	22.43	69.51
2005	144.48	166.46	208.54	0.21	11.73	49.86
2006	157.86	194.91	259.47	2.04	16.23	52.55
2007	169.88	223.08	286.37	5.74	28.22	89.27
2008	188.05	247.42	317.96	0.40	16.67	67.42
2009	195.00	264.50	349.75	-147.09	0.85	23.26
2010	197.49	262.70	335.71	-46.22	7.02	49.21
2011	186.65	245.05	305.24	-2.25	19.81	93.16
2012	189.02	239.56	297.40	-30.58	11.38	69.38

Source: Database of Ministry of agriculture and rural development, author's calculations

The profitability in agriculture depends on weather and climate conditions and during the observed period 3 years were extremely negative. Adverse weather conditions in 2000, 2003 and 2009 resulted in very low profitability in the majority of agricultural farms (table 4, profit/ha in 2000, 2003, 2009, lower and upper quartile, median). Higher subsidies per hectare were not fully transformed into higher profit per hectare (table 4, higher increase in median subsidies/ha compared to increase in median profit/ha).

Increase in subsidies per hectare was confirmed also by comparing the 3 time periods and legal forms (figure 1). Agricultural cooperatives and companies received in first period (2000-2003) less on subsidies than after the integration into EU in 2004. In the second period (2004-2006) the subsidies in new member state were much lower compared to old member states and the situation improved in the third period (2007-2012). The majority of subsidies were linked to Single Area Payment Scheme (SAPS). It allows a single annual payment to be made to farmers on the basis of the area of the farm. Also there are significant differences between the legal forms measured by ratio subsidies per hectare. The situation is the same in case of profit per hectare.

Figure 1: Subsidies and Profit per hectare in the Legal Forms (€/ha)



Source: author’s calculations

In each period companies generated higher profit per hectare compared to cooperatives. Main reason is the history of agriculture in Slovakia before 1989. Companies in Slovak agriculture are generally new entities driven by the profit maximization in the market economy. Majority of the cooperatives existed also before 1989 and the higher numbers of owners increase the moral hazard and agency cost which results in lower profitability.

In the next section we focused on the profitability of farms without the impact of subsidies and the ratio between Subsidies and Sales (table 5). Subsidies represent stable income without risk for each farm.

Table 5: Profit without Subsidies per hectare (€/ha) and Subsidies to Sales in Slovak Agriculture in 2000-2012

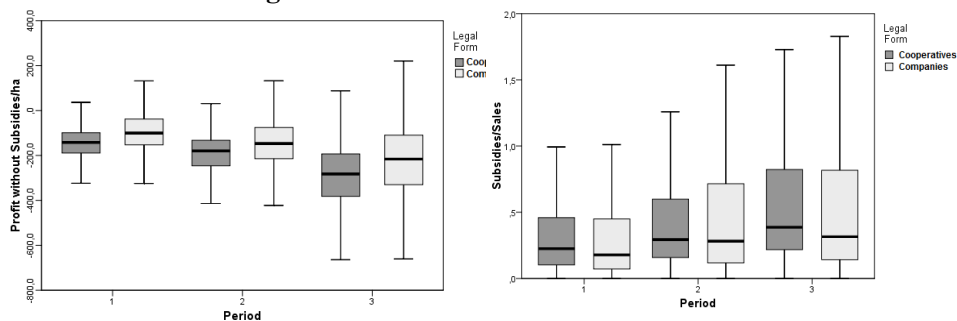
	(Profit without Subsidies)/ha			Subsidies/Sales		
	lower quartile	median	upper quartile	lower quartile	median	upper quartile
2000	-200.38	-153.95	-115.45	0.17	0.31	0.61
2001	-149.93	-108.34	-57.65	0.09	0.21	0.45
2002	-145.70	-99.74	-49.91	0.07	0.17	0.39
2003	-207.95	-132.13	-82.22	0.08	0.19	0.43
2004	-182.28	-138.91	-87.37	0.15	0.29	0.59
2005	-234.90	-166.85	-113.50	0.15	0.30	0.70
2006	-268.32	-187.86	-132.50	0.17	0.34	0.78
2007	-281.66	-191.47	-114.05	0.18	0.32	0.74
2008	-327.47	-236.11	-144.74	0.19	0.35	0.83
2009	-437.82	-324.28	-206.88	0.27	0.48	1.05
2010	-376.51	-272.71	-173.77	0.23	0.43	1.04
2011	-319.58	-216.72	-112.83	0.17	0.33	0.80
2012	-335.33	-230.74	-127.32	0.17	0.30	0.68

Source: author’s calculations

Therefore the majority of farms in Slovak agriculture rely on subsidies and are less motivated to produce agricultural production for the market. This fact can be observed by both indicators in table 5. Farms generate loss from the market production and the loss is increasing in years after CAP implementation (table 5, profit without subsidies in 2004-2009). During the same period the proportion of subsidies on agricultural production in form of sales increases (table 5, subsidies/sales in 2004-2009). An opposite trend can be observed in 2010-2012.

The ability to generate profit without subsidies is different in the legal forms (figure 2). Both legal forms generate loss without subsidies. Loss without subsidies in case of companies is lower than the loss without subsidies in case of cooperatives. Parallel companies generate higher sales (figure 2, subsidies to sales by legal form).

Figure 2: Profit without Subsidies per hectare (€/ha) and Subsidies to Sales Ratio in the Legal Forms



Source: author's calculations

4. Conclusion

The process of integration into EU brought changes to Slovak agriculture. It was followed by increase of public funds in form of CAP subsidies. Their main aim is to support farm income as well as rural development. The Slovak agricultural farms in our sample displayed low profitability measured by profit per hectare. On the other hand after integration into EU in 2004 the majority of farms generate profit. Significant differences in profit per hectare were observed between agricultural cooperatives and companies, the prevailing legal forms in the Slovak agriculture. Companies are more profitable compared to cooperatives.

Increase in subsidies was followed by lower ability to generate profit without subsidies. Agriculture in Slovak Republic is not able to cover cost by revenues without public support. This applies to both legal forms. Companies are more successful as the loss generated without subsidies is lower. Better performance of companies is the result of more factors. We only measured the difference in generated sales which are in favour of companies.

There are several limitations of the study approach, e.g. reliability of the financial statements used for tax purposes. Farms as any other entity are motivated to decrease the profit because of tax optimisation. But the number of farms included in our analysis should minimize this limitation.

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European Competitiveness and Industry Cluster Based Policies: Case of Czechia

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Abstract

The European competitiveness has been examined in the EU for decades and even new strategies, priorities, policies and measures are still developed to reduce the gap between more advanced economies of Japan and US. Industry cluster based policies were prepared at both European and national or regional level strongly supported by EU funds. The aim of the paper is to make an assessment and to discuss the impact of European clusters and cluster initiatives on national and regional performance and competitiveness as it seems their role in economy has been overestimated. The specific case of the Czech Republic is analysed in greater detail as cluster based initiatives and clusters within one decade of their existence have grown pretty well in the country. However their impact on performance of regional industries and regional competitiveness has not been proved yet.

Keywords: Cluster, Competitiveness, Industry, Policy, Region

JEL Classification: L6, O25, R1

1. Introduction

The development of the European Union in the last three decades at least is connected with the assessment of competitiveness and EU position in the world. Evaluation of competitiveness in terms of differences between countries and regions should be measured through a complex of economic, social and environmental criteria that can identify imbalanced areas that cause main disparities (Melecký, Staníčková, 2011; Tvrdoň, Skokan, 2011; Melecký, Poledníková, 2012). The concept of competitiveness which was originally defined for business (microeconomic) level has become also known at macroeconomic level (countries) and at expanded to regions which are increasingly becoming the drivers of the economy (Porter, 2003). Competitiveness as one of the most monitored characteristics of national economies is becoming part of evaluation of their prosperity, welfare and living standards. Competitiveness is most commonly evaluated by decomposition of aggregate macroeconomic indicators of international organizations – Institute for Management Development (IMD) and World Economic Forum (WEF) and is measured by complex indexes such as Global Competitiveness index including many different factors. By Porter (2003) competitiveness is also understood as the productivity of country. From this point of view in the simplest form it may be expressed by gross domestic product per employee or per capita.

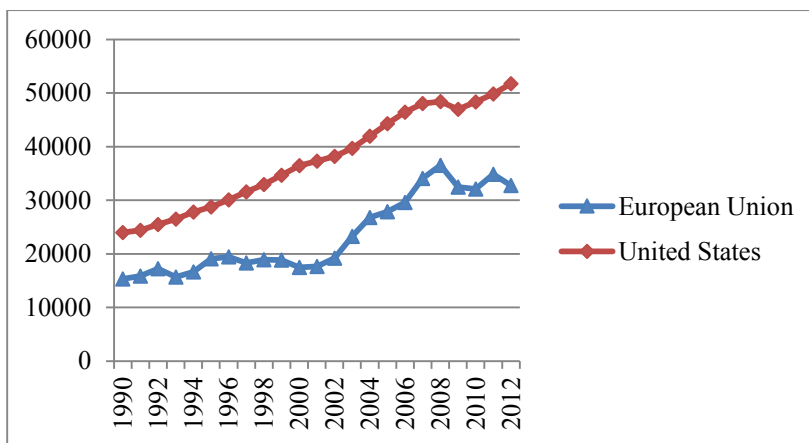
2. Role of Cluster Based Policies in European Competitiveness

All countries in the world try to develop strategies and policies how to increase country competitiveness, the same concerns the European Union as well which has announced since 1990 three long term strategies.

2.1 Competitiveness of EU in the World

In 1993 it was White paper named Growth, Competitiveness and Employment, in 2000 the Lisbon strategy aiming EU to become the most competitive economy in the world and in 2010 the European Union's ten-year growth strategy called Europe 2020 which is about overcoming the crisis, about addressing the shortcomings of former growth model and creating the conditions for a different type of growth that is smarter, more sustainable and more inclusive. In all three announced strategies implicit or explicit goal was also to reduce the gap in economic performance between EU and United states. These strategies definitely supported the EU development, however real numbers of economic performance measured by e.g. GDP per capita show these strategies did not come to expected outcome (Figure 1) and EU is still lagging behind.

Figure 1: Development of GDP per capita in EU and US (in USD)



Source: WB, 2014

Both last EU strategies and from them derived national strategies formulated many policies emphasising the role of technology and innovation in knowledge society including business and regional clusters.

2.2 Cluster Based Policies

The role of clusters in economic development was described in modern times by many authors, most cited are e.g. M. Porter (2003), Lindqvist et al. (2013), Pavelková et al. (2013), critical views presented e.g. Martin and Sunley (2003). By Porter clusters are defined as geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (for

example universities, standards agencies, and trade associations) in particular fields that compete but also cooperate. Clusters are usually managed by cluster organizations and stem from cluster initiatives defined by Lindqvist (2013) as organized efforts to increase the growth and competitiveness of clusters within a region, involving cluster firms, government and/or the research community.

Clusters are dependent upon industry concentration in regions and are present throughout Europe and the world. Some developed over centuries or decades at least, some are very young and were established only as the reaction to rapid changes in industry or technology. However in theory or in policy they are often perceived as drivers of industry and regional competitiveness bringing more innovation, knowledge spill-overs and performance of their members, industries and regions as well. That is why they appear in many European, national or regional policies, a series of different activities, initiatives, programmes and procedures which are aimed at increasing the economic performance and socio-economic benefits based on existence and development of clusters.

In 2006 the EU adopted a broad-based innovation strategy in which identified the goal strengthening clusters in Europe as one of the nine strategic priorities for successfully promoting innovation. In the EU Industrial Innovation Policy - clusters are seen as “powerful engines of economic development and drivers of innovation in the European Union”. Since 2008 EU has developed a set of actions aiming to raise the level of excellence and openness of clusters, including the following tools, instruments and information sources: The European Cluster Excellence Initiative, The European Cluster Policy Group, The European Cluster Observatory, The European Cluster Collaboration Platform and The European Cluster Alliance (Pavelková, 2013). Clusters and cluster policies were also incorporated in so called Smart Specialisation Strategies regarded for one of key concepts of EU 2020 Strategy.

3. Problem Formulation and Methodology

The relation of cluster policies and national or regional productivity is the key concern of this paper. The objective is to find out and to evaluate this correlation at the example of concrete regions in a concrete country, Czech Republic.

3.1 Research Question and Hypothesis

For the limited extent of the paper we make following simplification. The success of cluster policy in the country we can measure by the number of existing clusters expressed by cluster organizations in the region. The regional performance or productivity can be measured by the regional GDP per capita, which is generally known. In research we examine the 14 NUTS 3 regions in the Czech Republic were selected.

The research question is if the presence and development of clusters in the region has a positive effect on regional productivity. To answer the question we will formulate the hypothesis that numbers of clusters in the region have an effect the level of

regional GDP. The confirmation or rejection of this hypothesis is dependent upon the correlation of the variables in corresponding regions.

3.2 Data and Model

For the number of clusters we simplify the assumption the clusters are represented by cluster organizations and regardless the intensity of their activities they include firms which contribute to the creation of regional GDP. The data in the regions of the Czech Republic are available at Czech Statistical Office (CSU, 2014).

To demonstrate the strength of relationship between the two data sets variables, in our case x_1 number of cluster organizations (clusters) and x_2 productivity of regional economy (measured by GDP per capita) we will use the Pearson correlation coefficient which is defined by the equation (1) as follows (Ramík, 2003):

$$r = \frac{n \sum x_{1i} x_{2i} - \sum x_{1i} \sum x_{2i}}{\sqrt{[n \sum x_{1i}^2 - (\sum x_{1i})^2][n \sum x_{2i}^2 - (\sum x_{2i})^2]}} \quad (1)$$

To answer our research question concerning the existence of a linear relationship between number of cluster organizations and the regional GDP per capita the t -test for testing the population correlation coefficient will be used. Null hypothesis $H_0: r = 0$ is defined as there is no dependence between the variables at the level of statistical significance (0,05). Alternative hypothesis $H_A: r \neq 0$ or $H_A: r < 0$ or $H_A: r > 0$ is defined for case there is the dependence between variables.

For the test of linear dependence in data sets we use the test statistics criterion t defined by equation (2) as

$$t = \frac{r}{\sqrt{1-r^2}} \sqrt{n-2} \quad (2)$$

where r is correlation coefficient and n number of variables in data set.

If

$$|t| > t_{0,05}(n-2) \quad (3)$$

null hypotheses H_0 is rejected.

4. Business Clusters and Regional Productivity in the Czech Republic

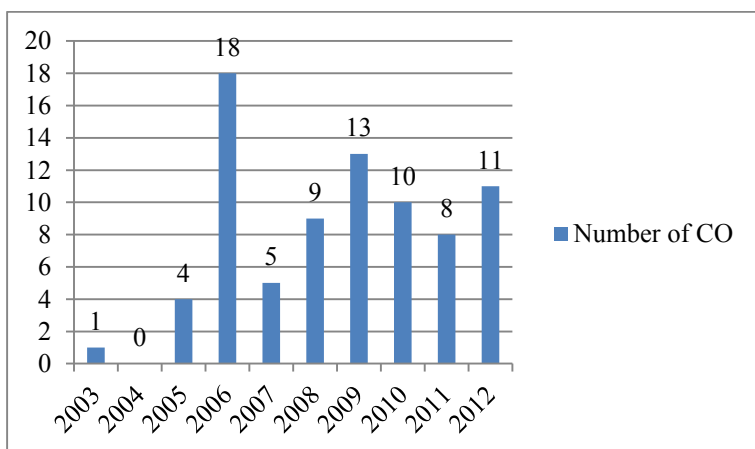
The cluster concept appeared in the Czech Republic in 2001 when Ministry of Industry and Trade initiated the development the Feasibility study of the industrial groupings in the Moravian Silesian region to help in a reconversion of the lagging-behind old industrial region. The conclusions of study resulted in two substantial outcomes. First, the cluster organization the Moravian Silesian Engineering Cluster including 34 organizations and firms from machinery industry was established and second, the Ministry prepared the National Cluster study which analysed the regional

potential for cluster development and National Strategy for Cluster Development 2005-2005 adopted by the Czech Government (MPO, 2013). In the document the strategic objectives, measures and resources to support cluster development were defined and the further financial support was decided stemmed from EU Structural funds.

4.1 Development of Clusters in Czech Regions

The cluster development in the Czech Republic can be divided into two stages (Skokan, 2011). The first stage covers the years 2002-2006, in which the cluster concept was presented in the Czech professional literature, to the public authorities at both the national and regional levels and to company managers in industries with clustering potential. It includes also the announcement of first cluster programme called CLUSTERS supported from the EU Structural funds for the search for prospective clusters and their establishment in the first programme period 2004-2007. The second stage covers the years 2007 up till now (2014), when the established clusters developed or new clusters appeared and gained the access to public funds offered by the programme COOPERATION funded by EU structural funds in the EU programme period 2007–2013. The EU support for cluster establishment and development reached EUR 55,5 mil. and 89 cluster projects were prepared in both programmes during 2004-2013 (MPO, 2013). The growth of number of cluster organizations in the last decade shows Figure 2.

Figure 2: Establishment of Cluster Organizations in the Czech Regions (2012)



Source: Pavelková 2013

4.2 Impact of Business Clusters on Regional Productivity and Competitiveness

Clusters and cluster initiatives in the Czech Republic have a special feature. Majority cluster organizations were established over existing groupings of firms within an industry with former weaker or stronger links, we could call these groupings as latent clusters which have been formalized and started to initiate more intensive joint actions as consequence of EU financial support. In some cases these subsidies driven joint actions have become the basis of future strong cooperation. From this reason when

speaking about cluster organizations we in fact speak about real cluster embedded in the regional economy. In research we examined clusters or cluster organizations which were established in regions in the last decade taking into account the fact the clusters as industry groupings exist in regional economy mostly for longer period. The overview of number clusters and regional productivity in Czech regions is in Table 1.

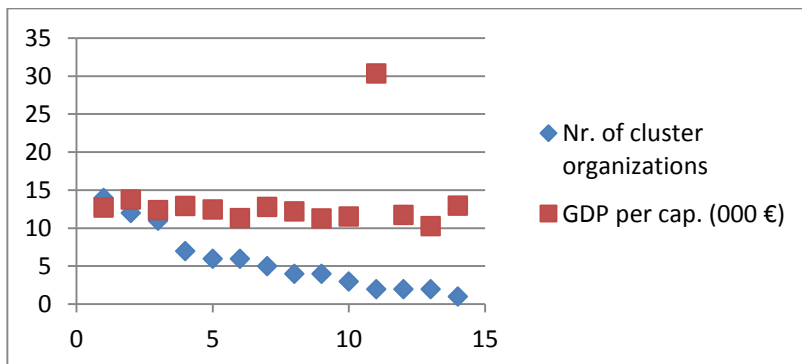
Table 1: Cluster Organizations and Regional GDP (2012)

No.	Region	Nr. of cluster organizations	GDP per cap. (000 €)
1	Moravia Silesia	14	12,70
2	South Moravia	12	13,75
3	South Bohemia	11	12,38
4	Central Bohemia	7	12,95
5	Hradec Kralove	6	12,47
6	Olomouc	6	11,31
7	Zlin	5	12,82
8	Vysocina	4	12,21
9	Liberec	4	11,28
10	Pardubice	3	11,53
11	Prague	2	30,34
12	Usti nad Labem	2	11,74
13	Karlovy Vary	2	10,28
14	Plzen	1	12,96

Source: Pavelkova, 2013 and CSU, 2013

For better understanding of relations between the GDP per capita and number of cluster organizations the data are presented in the graph in Figure 3 to understand the correlation between the two variables.

Figure 3: Correlation Between Cluster Organizations and Regional GDP



Source: Own processing

It seems the correlation is very weak and almost negative. For exact interpretation the Pearson's coefficient (r) was calculated by SPSS software, version 22. The calculated value of r is in Table 2.

Table 2: Correlations (calculated by SPSS)

		GDPpCap	NumberCO
GDPpCap	Pearson Correlation	1	-,162
	Sig. (2-tailed)		,580
	N	14	14
NumberCO	Pearson Correlation	-,162	1
	Sig. (2-tailed)	,580	
	N	14	14

Source: Own processing by SPSS

The value of Pearson's coefficient (-0,162) confirms there is very weak negative correlation at the level of statistical significance 0,58 between the both variables Number of cluster organizations and GDP per capita in the regions.

For statistical test of hypotheses the t value was calculated by equation (2). In our case $t = -0,56824$, however the critical value for level of significance $t_{0,05}(14-2) = 2,179$. As by equation (3) $|-0,56824| < 2,179$ the null hypotheses at the level of statistical significance 0,05 is accepted. This means there is no statistically significant relationship between number of clusters and regional HDP per capita in the regions. Moreover the negative value of correlation coefficient leads to paradoxical conclusions.

5. Conclusion

Cluster policies and their support in official EU programmes, initiatives and strategies has become very strong recently as the existence and development of clusters should obviously be the possible solution to improve the performance and competitiveness in regions and countries. In our short research we tried to prove hypothesis that the presence and development of clusters in regions have positive impact on their productivity and performance in the case of the Czech Republic, where in the last ten years over 70 cluster organizations were established including hundreds of firms in different industries. However direct relation between the number of clusters and the level of GDP per capita as the indicator of regional productivity was not proved and the hypothesis has to be rejected. Of course we cannot make conclusions of negative affect of clusters on economic development from this simple view as there are many other especially soft factors which clusters bring to mutual cooperation, knowledge transfer, innovation and deserve more deeper and complex research.

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Analysis of the Region's Environment for the Formation of Clusters Possibilities

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Abstract

The role of clusters for regional development is significant, as evidenced by the effort of the EU. The problematic of clusters became a motive of extensive discussions at professional and scientific forums. This article deals with the definition of the basic conditions to form clusters as well as the conception of the clusters in EU. Specifically, we focus on the analysis for forming clusters in Trenčín region. Through the analysis of available regional statistical indicators we will point out the need to a selected region in establishment of new clusters. Identification of strong economic perspectives of individual industries in the region is essential for the formation of clusters and their subsequent development, whereby in the contribution we use quantitative method to identify potential clusters - shift-share analysis.

Keywords: *Clusters, Employment, Shift-share analyses, Trenčín region*

JEL Classification: *C38, E24, J21*

1. Introduction

EU awares that strong clusters are a source of entrepreneurial dynamics, intensive linkages with knowledge institutions at the highest level, and greater synergy between the participants of the innovation process. Therefore the EU creates a framework of the European environment for clusters of its member states. EU its member states expressly eggs on to support clusters and cluster policy, namely in its basic document for cohesion policy for the planning period 2007-2013 in so called Community Strategic Guidelines (Tomanová, 2013, p. 99). European Commission prepared several documents dealing with the problem of clusters, and has undertaken several activities to support cluster development. The EU activities for supporting cluster development are for example European Cluster Alliance (ECA), European Cluster Observatory (ECO), European Cluster Policy Group (ECPG), European Cluster Collaboration Platform, European Cluster Excellence Initiative (ECEI) and Cluster Observatory Scoreboard a European Secretariat for Cluster Analysis (ESCA).

1.1 Cluster Definition

According to Pavelková (Pavelková et al. 2009, p. 18), cluster as a „group of similar things, arising together“ represents as a functional concept, as well as a description of the clustering process.

Havierníková (2013) indicateds, that in general clusters can be defined as a group of firms, related economic actors, and institutions that are located near each other. Clusters are defined by relationships and geography with the aspect of a concentration of one or more sectors, within a given region as well as the emphasis on networking and cooperation between companies and institutions.

Interdependencies appear within all kind of relations, embedded in networks and clusters (Gretzinger, Royer, 2014). SME's that are cooperating in the form of clusters together face the threats, pertinent to the growing internationalization and constantly more intensive competition. Membership in the cluster presents for the enterprise not only increasing productivity and the number of innovations, but also a better performance. Better access to suppliers and information, advantage in the form of economies of scale, whether even costs reduction, increasing specialization, but in particular reducing constraints of small firms are benefits, that clusters offer. The positives of cluster forming may not be looking for only at the level of the individual interconnected enterprises - their formation is a tool to increase performance, but also the competitiveness of the whole regions. In addition to the benefits that clusters offer the individual enterprises, in a macroeconomic point of view, they are an important tool of regional policy by the reason of increasing competitiveness and obtaining foreign investment, what consequently affects not only the regional, but also the national employment level. All of these benefits are apparent in the theoretical base, and each member of the cluster can evaluate, whether the costs coupled with the membership are lower than the profit, that cluster generates to them (Krajčo, 2013, p. 210).

The anatomy of the cluster reveals that competitiveness of the sector is heavily dependent on performance of the supply chain and the relationship between its participants (Nunes, Bennett, Marques, 2014). As indicated by several authors, the first mention in regard to the problems of clusters was already in 1890, when the English economist Marshall asserted, that industrial sectors are concentrated locally, whereby they capture significant benefits from externalities, resulting currently from the concentration of these companies, in the form of economies of scale, respectively. spillovers. These externalities according to Havierníková and Janský (2012) results from the alluring and developing of related industrial sectors that provide specialized inputs and services (including manufacturers of special equipment for a given industry), the creation of specialized manpower resources with all the skills, knowledge and know-how necessary for the industry; propagation of ideas, knowledge and technical advance between companies within the department, creating "industrial atmosphere" with an ensemble of formal and specialized institutions, that allows a given industry to innovate and work effectively.

1.2 Conditions of Cluster Forming

For the reason that not only individual regions, but also the goals and ideas of individual clusters are different, the process of cluster forming, as well as their effective management, is subjective. The process of cluster forming is a long-term, individual incorporators elect their own sequence. In the terms of the formation and organization of clusters are two basic approaches:

Natural clusters - in the “bottom up” approach, the project emanate from the firms and the regions within the framework defined by the calls for tender (Fontagné, 2013). Cluster is formed by the reason of an initiative by the companies, that are establishing it. At the outset, the commitments between such companies (actors) are informal, scilicet until the moment, when their intensity increases to an interest of commitments with a formal nature.

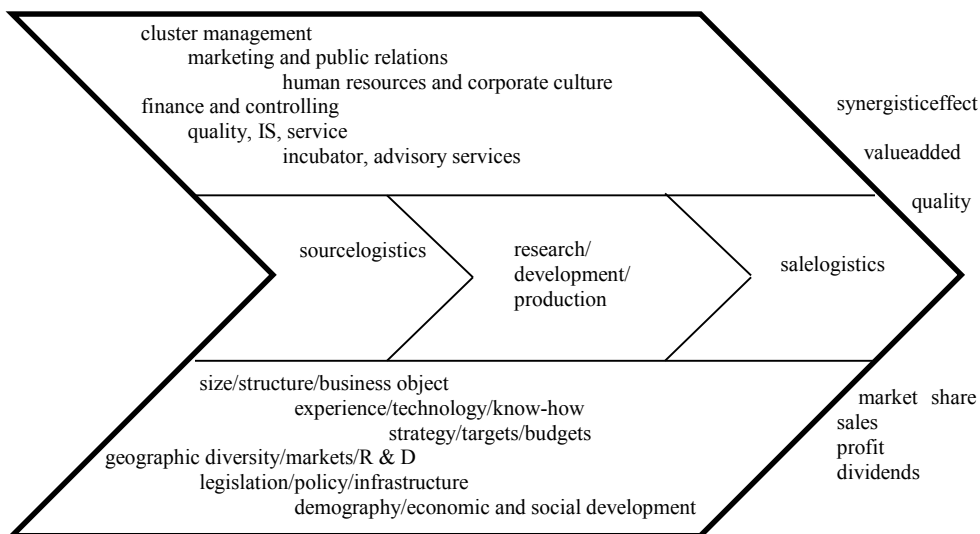
Politically controlled (instigated) clusters – a forming actor is government that supports these clusters, because there absent the critical mass of companies, respectively favourable conditions which are necessary for their natural development. Reason for such support are usually political considerations - effort for more effective implementation of its intentions related to developing the given area, benchmarking of regional policy, allocation of resources and investment, marketing activities related with a goal-directed generation of an regional image on the base of cluster, etc.

Most frequent variation of forming clusters is the combination of these two approaches. The literature defines two types of clusters, which may be formed in both approaches of forming and organization of clusters:

- Clusters based on the value chain - clusters can be formed with the intention of cooperation on the horizontal, respectively. vertical level.
- Clusters based on competences - appear from the specific conditions of the region in research and science provided by the educational and research institutions in the region. They reflect the needs of the business sector in obtaining new knowledge, attainments and know-how, that these institutions can provide them through their activities.

According to Jemala (2009), the key success factors in cluster forming are adequate capital structure; well-prepared long-term business plan, financial plan and budget observing to reality; qualitative infrastructure, nearness of markets and adequate demand in the area; support of the government, the region and the local population; adequate and stable legislation; intensive entrepreneurial and innovation basis and the existence of a knowledge supporting basis on a high-level (including universities and vocational schools); a high-class partnerships and their relationships, and finally a good management and controlling of a cluster. Jemala (2009) pursuant to Porter's and Wirth's value chain set a value chain of cluster (Figure 1), which in order to the maximum synergetic effect transforms inputs into outputs. Value chain of a cluster can be drawn pursuant to its basic activities and the already mentioned key success factors of the cluster.

Figure 1: Model Value Chain of a Cluster



Source: Jemala, M. (2009). Strategické podnikateľské aliancie: Kvalitatívna analýza špecifických faktorov podnikania v klastroch. *Acta Oeconomica Pragensia*, vol. 4, p. 28

2. Problem Formulation

As noted previously, clusters are an important element not only in Slovakia, but throughout the EU. They not only increase the competitiveness of individual countries, but also of regions within them. In SR are dozen clusters, but not all of them are active. Slovak clusters concentrated in regions can be divided into two groups: technological cluster initiatives and clusters of tourism. (Havierniková, 2012). Functioning clusters in various regions of the Slovak Republic have a positive impact on their development and competitiveness. Only one region in Slovakia, in which still wasn't formed a cluster, is Trenčín region. Therefore, our aim is to analyze the conditions for cluster formation in Trenčín region on the basis of shift-share analysis of employment. The concept for choosing that kind of data base analysis is that several authors (Stejskal, Havierniková, Potomová and Letková) use employment data to identify the potential of clusters. Into the analysis it would be appropriate to incorporate HDP or added value. Employment is reported for the last year, but the regional GDP and added value with a delay of 2-3 years, which should distort the analysis.

2.1 Model and Data

As noted previously, to determine the need of the reference region in forming new clusters, we use shift-share analysis of employment. Shift-share analysis is the basic economic approach determining the decomposition of growth the industry, which is specific to a particular region, whereby it helps to identify the competitive advantages of the region. From this perspective it allows to assess the overall performance of the region in relation to other regions (Stimson et al. 2002, 2006, p.114), whereby it is

3. Problem Solution

The input data for the application of shift-share analysis to identify the potential of cluster formation in the Trenčín Region were data of the REGDAT of ŠÚ SR, Statistical Office of the Slovak Republic concerning to the total employment in the various sectors at regional and national level. Concrete were used statistical data about the average registered number of employees by industrial classification NACE Rev. 2 in Trenčín region and in Slovak Republic (years 2009 and 2012).

Table 1 contains the values of the individual coefficients of shift-share analysis. The values of the national component (NS) permit to determine the numbers of workers at the same rate of employment growth by the sectors and the national economy. If we apply just the national component, by the influence of the national economy the number of jobs in Trenčín region would increase by 7 009 jobs.

Table 1: Components of Shift Share Analysis in Trenčín Region

NACE REV 2	NS	IM	RS	TOT
A - Agriculture, forestry and fishing	200	-704	725	221
B - Mining and quarrying	183	-954	576	-195
C - Manufacturing	3016	-4326	-1359	-2669
D - Electricity, gas, steam and airconditioningsupply	107	-457	-148	-498
E - Watersupply, sewerage, wasemanagement and remediationactivities	98	-41	-6	51
F - Construction	259	45	-302	2
G - Wholesale and retailtrade; repairof motor vehicles and motorcycles	662	4633	46	5340
H - Transportation and storage	318	-124	137	331
I - Accommodation and foodserviceactivities	48	304	334	687
J - Information and communication	33	65	352	450
K - Financial and insuranceactivities	63	-213	51	-99
L - Realestateactivities	49	455	-40	464
M - Professional, scientific and technicalactivities	85	965	-352	698
N - Administrative and supportserviceactivities	149	256	-1078	-673
O - Publicadministration and defense; compulsorysocialsecurity	552	-1014	470	8
P - Education	625	-410	163	379
Q - Humanhealth and socialworkactivities	447	-1289	-1511	-2353
R - Arts, entertainment and recreation	82	-259	271	93
S - Otheractivities	33	-33	-121	-122
Total	7009	-3102	-1792	2115

Source: internal data of ŠÚSR (2009,2012), own calculation

If the value of regional coefficient (RS) is positive, the industry in the region has comparative advantages in comparison with other regions in this sector. We argue that Trenčín region achieves comparative advantages in sectors A, B, G, H, I, J, K, O, P and R. These sectors were in the relevance period in Trenčín region more efficient in comparison to their results with national level.

In assessing the impact of the national economy to a change in employment, the highest actual increase (TOT) within the Trenčín region is in sector G. In this sector, the real increase (TOT) 5340 was inflicted by favorable economic conditions of the region, the desired increase of the national component (NS) was 662 jobs. In sector A is the total change higher than the NS, which means that the industry achieved the value required by national component. The same is true in the case of sector H, I, J, L and M. In other sectors, the total increase is below the levels required by the NS.

Industrial mix component (IM) expresses a faster growth of the sector in the region in comparison to the national growth. The impact of IM on the whole country employment had a negative trend, which is reflected in the decreasing the number of workers (6781). Positive values of the component, reflecting a faster industry growth in Trenčín region in comparison to its growth in SR, are in the sectors F, G, I, J, L, M and N - but these were unable to cover the decline of employment in other sectors by the influence of IM. Most jobs created by the reacting of IM were in sector G (4 633), expressively negative growth rate in the sector C is unacceptable in regard to the high proportion of workers in these sector. Very unfavorable conditions in Trenčín region can we monitor in sectors C and Q - in both aren't created conditions for growth at the national, and also at the regional level.

4. Conclusion

Based on the results of the application of shift-share analysis can be argued, that individual components of the shift-share analysis don't have the attributes, that would identify potential sectors for cluster formation. The highest value within the component RS has the industry A, but still it is not high enough. If only the overall increase in employment in the region is measuring, the potential for cluster development we may see in sector G. Although NS and IM in this case indicate the positives of this region, the total increase in employment hinders the exactly most important component RS, which reports a positive, but around zero oscillating value - this expresses a problem with cluster formation. The competitive advantages of Trenčín region can be summarized as follows - low unemployment rate (3rd lowest unemployment rate in comparison with other regions of the Slovak Republic), suitable structure and diversification of industry, excellent geographical location and great potential for tourism development, strong import and export linkages to the EU markets. Among the competitive disadvantages of Trenčín region can we include inadequate utilization of domestic raw materials, a high proportion of production with low added value and low level of product innovation. The possibilities for further research in more detail break down the various sectors that demonstrated the highest potential for the formation of clusters in Trenčín region and focus on cluster initiatives that were in the region just realized.

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Competitiveness Factors in Regional Growth: the Case of Central and Eastern European Countries

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Abstract

In the last 25 years, Central and Eastern European countries went through a process of deep transformation, facing institutional and market reforms which led them to become member states of the European Union. At the beginning of transformation process, these countries were characterized with different initial assumptions and territorial disparities having impact on their success in for integration into the EU. Significant initial differences between regions affect development capacity of each of them and response to external challenges posed by globalization, and especially their ability to enhance competitiveness. The aim of this paper is to understand the evolution of the driving forces of growth in CEEC in different periods with respect to their different institutional and economic reforms. Based on recognizing these initial conditions, the analysis of factors of regional competitiveness and the diversity of regions and different aspects of development is presented.

Keywords: *Central and Eastern European Countries, Competitiveness, Disparity, EU, Transformation*

JEL Classification: *O11, P21, R11*

1. Introduction

The fall of the Iron Curtain in 1989 belongs to modern history nowadays, and most of the consequences that this historical event brought about in the Central and Eastern European Countries (CEEC) are well known, at least for what concerns their national economies. CEEC countries went through a so called post-socialist transformation process of their economies, facing institutional and market reforms, privatisation and liberalisation being the most important steps forward towards market-based economic systems. These processes took place in different times in different CEEC; some of them followed a shock therapy, while others implemented reforms in more cautious ways (Capello and Perucca, 2013). During the last two decades CEEC has undergone a tremendous transformation, and is now an integral part of the European Union (EU) and its market economy.

As EU members a great deal has been done to address weaknesses in national environments, particularly in the transition countries, both at the macro/regio and the microeconomic levels. However, weaknesses still remain and real data point to the fact that the CEEC and their regions still perform poorly on competitiveness drivers and there is a gap between the “old” and “new” EU member states.

Issues of competitiveness and productivity at a regional level have increasingly been a focus for academic and policy concern. As Gardiner, Martin and Tyler (2004) observe, differentials in competitiveness and productivity have been a focus for policy concern on grounds of both equity and social cohesion. Increasingly as well, the policy goal of reducing differentials, specifically by raising the competitiveness of the less buoyant regions, has been seen as a key to raising overall levels of productivity at a national or European level and closing the gap on competing territories in a global context. From this point of view, the analysis of the paper will be devoted to reform different institutional and economic process within CEEC and initial transformation conditions for their integration into EU structure. The main aim of this paper is to recognize the important factors of regional competitiveness and to evaluate their diversity and differences across European countries.

2. Trends of Transformation Process and Effects on CEEC

The approach looking at the evolution of the most important success factors in the different institutional periods allows replying to the question whether CEEC, resp. regions have moved from an exogenously driven phenomenon, mostly based on FDI attractiveness, to a more endogenous pattern of growth, led by local, intangible structural assets, like knowledge, trust, common rules and sense of belonging, as is the case in modern western regions. It is in fact the case that in modern economies regional growth is no longer dependent on material assets, like capital and labour. The hyper-mobility that nowadays characterises these factors reduces their geographical concentration, and shifts the elements on which competitiveness rests from the availability of material resources to the presence of immobile local resources like local culture, competence, innovative capacity; in general: knowledge (Camagni and Capello, 2009).

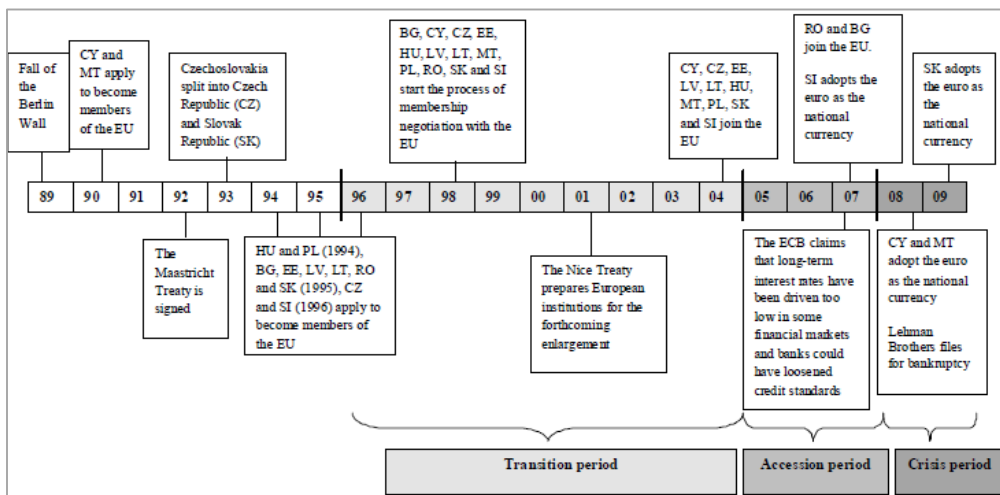
Moreover, in the case of CEEC and their regions, their economic growth patterns are strongly related to the industrial restructuring processes that take place with different intensities and different speeds, according to the institutional adjustments at national level and the regional sectorial specialization. Clearly, the restructuring process undertaken in a certain region is not independent from the endogenous assets characterizing that particular environment. Furthermore, alternative restructuring programmes have an impact on the endowment of these local factors. The attempt of current studies, e.g. (Capello and Perucca, 2013) is to isolate these mechanisms, keeping apart the endowment-effect of regional success factors from the process-effect of industrial restructuring programmes.

Each country from CEE adopted a peculiar strategy to manage the transition from a planned economy to a market one (Godoy and Stiglitz, 2006); each of them went through important steps in the institutional reform in different moments in time (see Figure 1). The first important step after the fall of the Iron Curtain took place between 1994 and 1996, when all of them applied to become member of the EU between 1994 and 1996. The first institutional period starts in 1995, which signals the beginning of the pre-accession period and the constitution of administrative regional boundaries consistent with the European Nomenclature of Units for Territorial

Statistics (NUTS) classification. This phase is called the “transition period” – being characterized by the deepest changes and reforms towards the EU accession, which however occurred at different times and following different rhythms from case to case.

The first EU enlargement in 2004 marks the end of the first period and the beginning of the second institutional one, named the “accession period”. Finally, the third temporal break (2007-2009) is represented by the occurrence of two distinct events. The first one refers to the further enlargement of the EU, joined by Bulgaria and Romania. The second event is represented by the generalized economic slowdown generated by the recent financial crisis. For this reason, it is labelled these last two years as the “crisis period”. In 2009, with the exception of some enforcement actions still needed to reduce abuse of market power and to promote a competitive environment, all Eastern markets and trade systems were almost fully liberalized.

Figure 1: Three Institutional Periods of CEEC Transformation



Source: Capello and Perucca, 2013

As a consequence of the long agenda of institutional reforms, CEEC had to go through a period of economic reorganization of activities. Both elements affected the national economic trends in those years. While the reforms of the EU’s regional and cohesion policies were meant to reduce the spatial inequalities within the Union, and were more or less successful during four decades, expansion to CEEC will result in enhanced regional inequalities. The weak performance of the accession countries will lead to stronger spatial inequalities and increasing number of backward areas.

The demographic, economic, employment and environmental processes that affect the spatial structure of the future member states of CEEC are diverse, and so are the expected impacts of their accession. Yet, the heritage of the state socialist system, the regional effects of transformation, and the different economic and political tools and institutional solutions in the management of new phenomena have brought about rather diverse results in the individual countries, as mentioned (Horváth, 2004; Blažek et al (2013)).

The reforms within the EU receive special attention, since – as we have seen – regions were granted in the course of the process of strengthening European cohesion significantly higher subsidies from the structural and cohesion funds of the integration, than from national resources. The final outcomes of the EU subsidies granted for regional development are not very promising, since the cohesion analyses report a very slow decrease of regional inequalities. One of the reasons of the weak implementation of efficiency requirements is to be detected in the scattered character of subsidies. The determinative direction of the reforms being prepared is not accidentally the improvement of concentrated utilisation of the resources. In the course of the designation of eligible regions the indigence must be defined by strict criterion and the proportion of eligible population must be restricted to one third of the total number of population within the EU. The investment practice is to be reconsidered, since the multiplication effects of the investments did not reach the desirable level and – due to different reasons – the absorption ability of the regions did not develop in accordance with the original expectations. The consistent enforcement of the principle of additionally – the local, regional and national contribution – seems to be the only feasible way. The second key issue is the enforcement of the co-operation between the actors of regional development, the partnership, yet, taking the principle of subsidiarity into account. Within the system of subsistence and incentives of the EU, the “ex-ante” evaluation of “cost-benefit” effects are attached significant importance which could – depending on the possessed knowledge on the functioning of regional economy and not exclusively on the solid capital – launch a new process of differentiation between European regions.

The new democracies and market economies in CEEC cannot withdraw themselves from the above processes. In the case if they intend to unite the advantages of integration for their national rise, they must decentralise their traditionally centralised state political systems and the sectorial management and administration established within the planned economy must be complemented by regional autonomies. The space winning and institutionalization of regionalism in CEEC may become a new differentiating factor in the economic development ability and competitiveness. Moreover, in CEEC of systemic change, the territorial expansion display significant inequalities (Staničková, 2012). Obviously, economic differences among the smaller territorial units are stronger than those among the regions; interestingly, at the county (NUTS III) level the development gap is the widest. Back then, planned industrialisation was to shape the economic potentials of the various regions; today, their economic development is influenced by the competitive sectors of industry and by adjoining services (see Table 1).

Table 1: Characteristics of Territorial Inequalities in CEEC of Systemic Change

	Before 1990	After 1990
The dimension of spatial disparities	Between urban and rural areas Within settlements	Within settlements Between regions
The tendency of disparities	Decreasing inequalities between urban and rural areas Decreasing inequalities between regions Stabile inequalities between settlements	Increasing difference within settlements Increasing difference between regions Stable difference between urban and rural areas
The driving force behind the development of disparities	Industrialization	Structural changes Services Foreign direct investment
Decision determining disparities	National level	Local level Transnational level
Indicators expressing disparities	Demographic composition Communal and social infrastructure Social incomes connected to the use of communal and social facilities	Unemployment rate Wage level

Source: Horváth, 2004

3. Socioeconomic Disparities and Driving Forces Across Countries/regions – Impact on EU Competitiveness

Countries and regions react differently to the impacts of globalisation processes and depending on their features and applied strategies they will end up as winners or losers (Fojtíková, 2013). Trying to avoid negative impacts local and regional authorities introduce a number of measures to protect their interests. At the same time, the applied strategies strengthen the segregation at the expense of amalgamation. The vital regional cultural movements serve for instance this aim as well as the ethnic organisations acting almost all around the world with growing success. It remains questionable, whether a regional strategy favouring identity is appropriate to protect the national or even international position of a given region, whether it represents an adequate development force in terms of the improvement of the region's productivity (Horváth, 2004). Answer is obviously dependent on location of region, which region within what macro-region of world we talk about.

3.1 Regional Patterns of Growth: Potential Success Factors in Regional Growth

Based on study “Do Eastern Regions Move towards an Endogenous Growth Pattern? A Diachronic of Regional Success Factors” of authors Capello and Perucca (2013), it was possible to provide a literature overview about approaches on the link between the growth patterns and some endogenous factors which are expected to promote

economic growth. Capello and Perucca (2013) presented the four groups of assets that are quoted in the literature as potential success factors for regions.

The elements in the first group are specific for CEEC regions, and have been highlighted by the literature as the driving elements for development of those regions in the first years after the fall of the Iron curtain. In particular, relative location with respect to the EU15 border and the presence of capital cities have always been interpreted as the explicative elements for positive regional growth differentials in CEEC regions. Relative location with respect to the EU15 border captures higher market potentials and growth spill overs, while capital cities measure presence of the main economic and social assets necessary for a virtuous pattern of growth. In addition to this reasoning, presence of FDI was generally interpreted as an explanation for exogenous growth patterns in these regions.

The second set of variables is made up by some endogenous growth factors that come from a modern interpretation of the causes of regional growth. Neoclassical growth theory (Solow, 1957) traditionally considered physical capital accumulation as the key determinant of economic development. Based on this mechanism poorer regional economies are expected to grow faster than developed regions, leading in the long-run to a catching-up process. These predictions are only partially confirmed by the broad empirical literature on this topic (Galor, 2007): violations are represented by the existence of the so-called convergence clubs (Quah, 1996) or by the observed sustained growth in many developed countries and regions (Fischer and Stirböck, 2006).

In the interpretation of a modern economic pattern of growth, an important role is played by knowledge and innovation, and this represents a well-established result in economic theory. Factors directly linked to accumulation of knowledge and innovation have therefore become the main sources of growth. Examples include the extensive literature on human capital (Lucas, 1998), on impact of R&D investments on productivity (Bronzini and Piselli, 2009). Presence of FDI has been interpreted by this new literature as an external sources of innovation (Barrell and Pain, 1997).

In this line, a third group of elements comes from the literature that highlights the territorial conditions enabling innovation and knowledge creation to take place. Physical accessibility is traditionally interpreted as a precondition for achieving new information and knowledge. However, even if knowledge is achieved, an innovation process cannot be replicated with the same intensity in any local environment. Knowledge accumulation is deep-rooted in the socioeconomic, cultural and institutional characteristics of places, so that there are some places that are much more innovation-prone than others. Many studies have been aimed at identifying innovation enabling factors, which allow sharing ideas and knowledge, like trust and sense of belonging (Capello and Faggian, 2005) and atmosphere-effects typical of urban areas (Pred, 1977).

A fourth and last group of elements that can explain regional growth comes from the idea that the sectorial component of a region plays a role in explaining regional growth (Perloff et al., 1960). The change in the sectorial composition can in the case of CEEC regions be an important explanatory element.

3.2 Discrepancy Between Competitiveness and Cohesion: Is Economic Growth Always Accompanied by Growing Disparities?

The EU Eastern enlargement is likely to increase regional disparities within the EU. At the same time regional cohesion is a primary objective of EU economic policies. This raises the question of whether and when the regions of the accession countries will reach the average level of economic development of the EU. And regional diversity in the EU will also increase sharply with another enlargement, as will the competitiveness challenge. The present EU regions are already characterized by substantial income, employment and productivity disparities reflecting differing resource endowments and innovation performance (Melecký and Poledníková, 2012). Despite the fact that there are competitive and uncompetitive firms in every region, there are common features that affect the competitiveness of all firms located there. These features include physical and social infrastructure, the skills of the work force, an institutional framework and culture conducting to innovation and the efficiency of public institutions (especially managerial capacity) at the regional level. The lack of competitiveness of CEEC economies reflects the long period before transition when they were protected from market forces (Melecký, 2013). State planning led to a distorted allocation of resources and insufficient investment into sectors with the highest return in the long-term, and key aspects of competitiveness were often neglected. Territorial differences and administrative capacity are widely recognized as contributing to variations in regional competitiveness (see Table 2 – the example of Visegrad countries).

Table 2: European Commission’s Recommendations for Visegrad Countries on Regional Policy to Improve Competitiveness

Task	Czech Republic	Hungary	Poland	Slovakia
Legal regulation	X		X	X
The establishment of institutions	X		X	X
To strengthen coordination among existing institutions	X	X	X	X
To ensure financial resources for regional development	X	X	X	X
Coordination of resources	X	X	X	X
Control	X		X	X
Regional statistics	X		X	X

Source: Horváth, 2004

The quality of the classical productive factors is only one of the preconditions of adaptation. The second, new adaptation criterion – deriving from the functioning mechanisms of networking economy – is the type, character of relationships between the organisations and institutions of the region or the town, the possibility of the institutionalisation of common targets, local incentives, the preparation of local decisions and the social concerns (Horváth, 2004). This group of new competitive factors implies that success of local and regional development is not any more

exclusively dependent on some narrow economic aspects, but rather on close coalition and institutionalised cooperation of the actors interested in regional growth.

Globalisation gives continuous impulse to the trends of restructuring of the postmodern economy and in many cases even accelerates them. Accomplishment of the economic paradigm developed in the 80s can be expected in Europe in the new millennium's first decades yet, space shaping forces will also impact for a longer period. Extension of advanced services enforcing agglomeration benefits is prognosticable and the concentrated decentralisation of these activities will continue yet with different speed in each country. The speed of spreading is highly dependent on the role of mature tertiary and quaternary sectors granted by the region in its development strategy, and on the proportion of sectors organised in clusters producing high value added within the economy. The new approach of regional development, the professional culture's ability to alloy the motive powers of globalisation with local advantages, will be an important selection factor in the reduction or strengthening of territorial inequalities (Horváth, 2004). Prospects of spatial structure of Europe are shaped today only partially by national state strategies, motivating power of global processes and common policies, mostly respecting the former, is significantly stronger. It is therefore not unimportant, which ideas will be born to shape the future of the single European space.

4. Conclusion

The attempt of this paper was recognized on how much CEEC regions have moved towards a so called endogenous growth, based on modern and intangible assets like formal and informal knowledge, rather than exogenous resources. Moreover, the paper highlighted the role of the industrial restructuring processes on regional growth patterns. The results witnessed a clear tendency of CEEC regions to move from an exogenous to an endogenous pattern of growth relying more and more on local elements, like knowledge, as factors able to explain their competitive advantage. Positive regional growth differentials are related to regions that are able to face deep qualitative reconversion processes, exploiting productivity increases in higher value functions and sectors. The crisis of capital cities in the general period of downturn and the simultaneous emergence of second-rank towns can be interpreted in this sense Capello and Perucca (2013). Moreover, innovation and knowledge accumulation did not occur, at least in the first two institutional periods, through foreign investments. These findings convey important policy messages. In the last 20 years, most of the public interventions and programmes, especially at the European level, were aimed at reducing the gap in transport and communication infrastructures between Eastern and Western countries. Moreover, European public strategies are at present devoted to increase R&D activities to foster the competitiveness of Europe as a whole, driving the continent out of the "productivity gap" with its major trade partners. These kinds of policies and strategies seem however to be not so efficient, once the impact of accessibility and R&D are assessed on regional growth. Considering the fact that growing international competition has accelerated the spatial concentration of investment and economic growth, the CEEC in particular will have to meet this

challenge in order to guarantee a balanced development and to prevent further decay of the underdeveloped regions.

As mentioned (Horváth, 2004), the lessening of the state borders' restricting power within the European integration, the institutionalised development of the European economic space and the eastern enlargement of the European Union set the development possibilities of cross-border regions into a new light. Besides community, national and sub-national frameworks European macro-regions may become important strategic units in the future as regards the improvement of continental competitiveness, the regions with high productivity are able to meet the requirements of the economy of scale and to increase efficiency.

The permanent character of transformation trends of the European economy's development factors, the quality changes within the European integration and their impacts on national political systems markedly influence the future arrangement of the target, tool and institutional systems of regional policy. Within the interrelations of regional development and macro-policy and within the internal mechanisms of regional policy it can witness significant changes. The most important lesson of the century is that the long development of regional policy became by today an organic part of the European approach. In this sense, it is possible to suggest that policies should be devoted to the reinforcement of some non-tangible competitiveness characterizing each regional environment.

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European Themes within National TV News Reporting in the Czech Republic

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Abstract

Almost every day we can hear about importance of media. Media undoubtedly represent primary and relevant source of information. Information provided by media co-determine our activities and co-shape our mental maps. Comparisons show that TV coverage epitomizes media agenda in a satisfactory manner as it has rather intense impact on the public on the one hand and is representative enough on the other. The main objective of our paper is to analyze and enlighten the occurrence of European topics within national TV news reporting in the Czech Republic. We will focus not only on the level of the whole country but on regional metropolises as well. Subsequently, we will uncover what are medially the most “European” regional metropolises in the Czech Republic.

Keywords: *Differentiation, European themes, Media, Regional metropolises*

JEL Classification: *R10, R19, M30*

1. Introduction

All towns and regions can be captured from both material and intangible perspectives. Settlement system plays an indispensable role in this context as population present in the given territory can be treated as an impetus for the formation of particular material structures (Suchacek, 2013a). Nevertheless, every territory can be depicted also from an intangible point of view. Atmosphere, reputation, image or the position on the mental map embody intangible but existing dimension of the space we live in.

Mental maps reflect the psychological representation of space. Gould and White (1974) showed that mental maps are not mere preference surfaces but also predictors of consequent spatial behaviour. Growing relevance of mental maps is in consonance with recent accentuation of soft location factors (see Johston, Gregory and Smith, 1994 or Sebova and Dzupka, 2013).

Media contributions influence the audience mainly in the short run, which complies with contemporary emphasis on quick and often ad hoc solutions. However, frequent repetition of certain topics can affect long term attitudes and behaviour of the population. Mental maps are formed not only through the influence of media but a distinct role is played also by educational institutions, family settings or surrounding milieu in general (Suchacek and Seda, 2011).

Image of individual territories should be in line with their specific offer and DNA. In reality, territorial images considerably differ from territorial realities. Naturally,

media take an important part in these processes. Media are not mere observers of events any more, instead they became *sui generis* one-way mediator of information from elite groups to the wide public and are able to influence everyday events (Suchacek, 2008). Not surprisingly, it is increasingly claimed we are living in the era of mediocracy.

The number of information affecting wide public is constantly growing. People are thus informed about the events but at the same time media more or less conspicuously direct their behaviour and the perception of reality. Many people even accept opinions presented by media in a very sophisticated way. Agenda-setting, i.e. accentuation of chosen events or agenda-cutting, i.e. ignorance of selected occurrences play increasingly important role in this context (McCombs and Shaw, 1972 or Shoemaker and Vos, 2009).

Albeit it is mentioned only rarely, there exists geographical-scalar differentiation of media. Naturally, the influence of national media is considerably higher than that covering regional or local levels. In this article we are concentrating primarily upon national media, more precisely on TV news reporting in public Czech TV and private TV Nova. Comparisons show that TV coverage embodies media agenda in a satisfactory manner because it has rather intense impact on the public on the one hand and is representative enough on the other. News in national TV reporting related to regions and localities importantly co-determine territorial images and in aggregate view also mental maps.

The main objective of this article is to analyse and interpret European themes, which appear in the framework of national TV news reporting in the Czech Republic. We will focus not only on the level of the whole country but on individual regional metropolises too. Subsequently, we will uncover what are medially the most “European” regional metropolises in the Czech Republic. Our analysis will be accomplished from both quantitative and qualitative perspectives. The topic is exciting even more in view of the fact that this year we are celebrating 10th anniversary of the Czech Republic's membership in the European Union.

2. Materials and Methods

Taking into account contemporary data limitations, the article constitutes an attempt to capture European themes within national TV news reporting in the Czech Republic. This will concern not only the whole country but 13 regional metropolises as well. The whole paper is largely of synthetic nature.

The author of this paper utilized the data on media content provided by Media Tenor institute, which is the only non-university entity in the country specialized on media content analysis. In that way, it was possible to analyze the media presentation of investigated territories within the Czech Republic.

As already mentioned, TV coverage has one of the highest impacts on the public on the one hand and is representative enough on the other. As stated by Nečas (2009) comparisons show that TV coverage agenda to a large extent represents also press or

radio coverage agenda. That is why TV coverage will be taken as a basis for this research.

TV reporting that was investigated consisted of evening news of 2 principal TV companies in the country. The research thus monitored Události of Czech TV (public), Události, komentáře of Czech TV (public) and Televizní noviny of TV Nova (private). In order to see the dynamics of investigated topics, time series 2004-2010 turned out to be appropriate ones.

Quantitative analysis concentrates upon the number of contributions in national TV reporting as territories, which disappear from media space become naturally less conspicuous also in common life. It is useful to consider also the number of inhabitants in the researched territory as they embody basic socioeconomic potential of the territory in question.

Qualitative analysis and interpretation is based on the content structure of contributions appearing in national TV reporting. From the perspective of wide public, media represent the source, on the basis of which people form their attitudes and priorities. And just the shifts in the thinking of wide public can be predicted via qualitative analysis of media contents. In this case, various European themes represented the focal point of the research.

3. Results

3.1 Quantitative View on European Topics in National TV Reporting

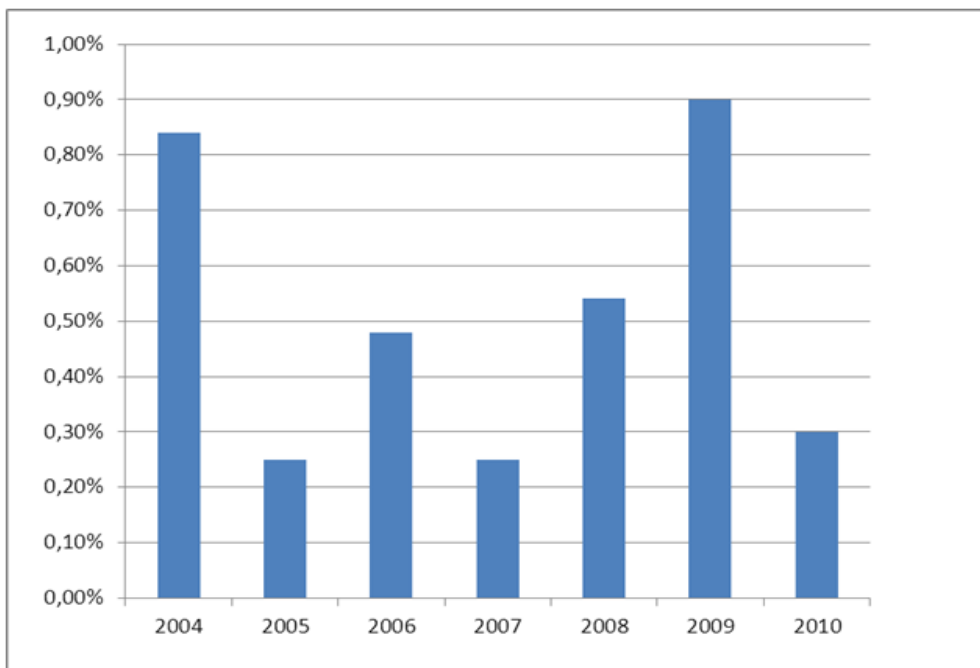
As already indicated, in order to capture, explain and interpret spatial socioeconomic development, spatial distribution of population is of utmost importance. Various activities are always bound to the population present in the given territory. Interactions and processes happening in individual territories should find at least rough reflection in the number of territory-related news.

Previous researches revealed that the amount of media contributions is not always in compliance with the population weight of individual regional metropolises in the Czech Republic. While distinctive dominance of the capital city could be expected, media attention devoted to Brno and Ostrava (taking into account the number of their inhabitants) proved to be surprisingly low (for more details see Suchacek, 2013b).

Considering the importance of European Union for everyday life, the ratio of European topics on the total amount of news within national TV reporting is rather small (see also Figure 1).

We could contemplate just two substantial summits in the years 2004 and 2009. The first one is connected with joining the European Union as well as information related to that entity. Relatively less attention concentrated on elections to the European Parliament, which turned out to be completely a new phenomenon at that time in the Czech Republic.

Figure 1: Ratio of Topics Related to the European Issues on the Total Number of Topics between 2004-2010



Source: Media Tenor and author's calculations

Contrary to 2004, in 2009 elections to the European Parliament attracted much larger attention. However, Czech presidency of the European Union (in spite of widely spread euroscepticism in the country) acted as a certain bait for that part of national TV news reporting, which deals with European issues. In spite of this, the share of topics related to the European Union on the total number of topics in national TV news reporting was under 1%!

In case we focus on thirteen regional metropolises in the Czech Republic, we can find a profound differentiation as to European themes. This differentiation, however, roughly complies with urban settlement hierarchy in the country.

From absolute perspective, there is distinctive dominance of the capital city of Prague. Contributions related to other towns do not deviate significantly from the position of individual regional metropolises within settlement system. Nonetheless, relatively good position of Hradec Králové and Karlovy Vary is worth mentioning. At the same time, one has to bear in mind that above "media ladder" is based on just a few contributions.

Table 1: Absolute and Relative Number of Topics Related to European Issues Bound to Regional Metropolises between 2004-2010

	Absolute number	Relative number (in %)
Praha	61	0.50
Brno	12	0.45
Ostrava	11	0.67
Plzeň	8	0.66
Hradec Králové	10	0.99
Pardubice	4	0.67
Karlovy Vary	5	0.65
Ústí nad Labem	3	0.34
Zlín	2	0.41
Liberec	1	0.12
Olomouc	1	0.14
České Budějovice	1	0.16
Jihlava	0	0

Source: Media Tenor and author's calculations

From relative point of view, Hradec Králové has proven to be medially the most "European" regional metropolis in the Czech Republic. Share of European themes related to Hradec Králové on the total amount of TV contributions bound to that town reached just 0.99%. On the other hand, Jihlava is the least "European" regional metropolis, which holds true for both absolute and relative numbers.

3.2 Qualitative View on European Topics in National TV Reporting

Previous text provided us with the basic insight into the issue of geographically differentiated contributions dealing with European issues, which appear in the national TV coverage. One has to take into consideration that quantitative view is far from sufficient as it gives us only the limited information about media portrayals of individual regional metropolises. Therefore, it is useful to have a look also at the thematic structure of the news and complement quantitative dimension of the problem by the qualitative one.

Media portrayal of Prague in the realm of European affairs is substantially affected by the fact that it is a capital city. And it has to be stated that the analysis disregarded these European news, which were of national character and were directed from the capital city.

So, as to the European topics related directly to Prague, their peaks could be seen in 2004 and 2009. While the year 2004 concerned namely joining the European Union, the latter witnessed Czech presidency of the European Union as well as elections to the European Parliament. One cannot omit further themes, such as inner security, freedom or justice or even European transport policy.

While qualitative composition of news bound to Prague shows some favourite topics, for Brno, much more homogeneous pattern without any dominating theme is

symptomatic. Thus, in case of the second largest town in the Czech Republic we can barely find any specialisation or concrete European domain.

TV news reporting on European issues related to the third and fourth largest towns in the country, i.e. Ostrava and Plzeň, was the most intense in 2010 and underlined mainly artistic and cultural themes. The reason behind was the candidacy of both regional metropolises for the title of European Capital of Culture 2015.

Hradec Králové represents further relatively distinct media profile. European subsidies and elections to the European Parliament turned out to be the most frequent themes related to the town. Still, it is worth reminding that total number of Europe-oriented contributions was rather modest.

The common feature connecting all remaining regional metropolises is minimal attention devoted to European issues. This is in compliance with previous researches (see Suchacek, 2013b) that proved tabloid topics tend to displace development orientated ones. Subsequently, rather differentiated genuine character of regional metropolises does not find its media projection.

4. Conclusion

Media became an important entity co-determining the creation of mental maps. From aggregate perspective, 2004 and 2009 turned out to be the most “European” years in national TV coverage. However, national TV news reporting in the Czech Republic has also its spatial dimension. As it has been examined, from quantitative perspective, the number of Europe - orientated contributions is largest in the capital city of Prague, which is no surprise. Nonetheless, if we measure the share of European themes on the total amount of contributions related to the given town, Hradec Králové turned out to be the most “European” regional metropolis. At the same time, one has to bear in mind that European themes appear only rarely, which influences the final results.

Qualitative point of view represents an appropriate complement to the quantitative analysis. Content structure of Europe - orientated news appearing in individual regional metropolises brought further interesting facts. Prague as a capital city represents entirely specific category, for which themes, such as Czech presidency of the European Union as well as elections to the European Parliament became typical. Contrary to the capital city, media profile of Brno does not reveal any important European theme. European artistic and cultural themes were stressed in case of Ostrava and Brno, mainly for the sake of the candidacy of both towns for the title of European Capital of Culture 2015. Last but not least, amount of European themes bound to other regional metropolises is nearly negligible.

Acknowledgements

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Entrepreneurial Activity as a Driver of Economic Sustainability in the Czech Republic: Lessons from Ireland

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Abstract

The main goal of the paper is to reflect on the challenging economic environment currently being experienced in the Czech Republic and to explore if increased entrepreneurship could act as a driver of economic sustainability. Although there were many positive trends that could be identified as a source of sustainability in the Czech Republic over the past decade, there were considerably more challenging forces than in the past due to global crisis. During the same period, Ireland has gone from a position of deep economic to a country which Forbes magazine (2014) recently described as being the “the best country in the world in which to do business”. While the strengths and experience that firms have developed will contribute to the success of enterprises in Ireland, the majority of companies must continue to differentiate themselves from their competitors in new ways in order to create sustainable competitive advantage.

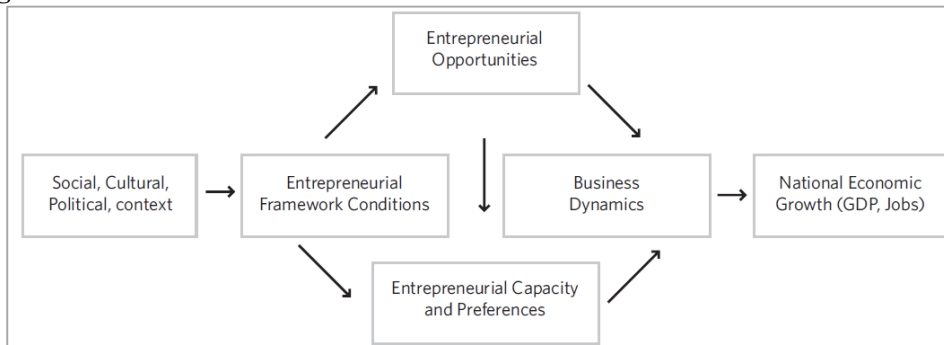
Keywords: *Entrepreneurship activity, comparison, cooperation, supporting policy, sustainable competitive advantage*

JEL Classification: *M13, L26, L53, O57*

1. Introduction

A positive relationship between the regional level of start-ups and subsequent strategic growth was confirmed through studies carried out in several countries such as the United Kingdom (Ashcroft, Love, 1996) and United States (Acs, Armington, 2002). But a number of other studies could not identify such a positive relationship between the level of start-ups and regional employment, growth and business strategy (Audretsch, Fritsch, 1994). Recent literature and research studies focus significantly on measuring turbulence in the industry (Stacey, Griffin, and Shaw, 2000) based on the start up and exit rate of emerging companies and the relationship between GDP growth and company ownership (Carree and Thurik, 2008). The global crisis has caused governments in many countries to analyse if greater entrepreneurial activity would alleviate their economic woes and the crisis also significantly altered the business behaviour of Czech and Irish businesses. The crisis cut numbers in GDP per capita in both countries (in Czech for 11.66% in comparison for last 5 years, for Ireland 25.75%) and led to a substantial restructuring of both economies.

Figure 1: Model of Processes That Affect National Economic Growth



Source: Reynolds, Hay and Camp (1999)

The model by Reynolds et al (1999) (see Figure 1) offers a very useful framework from which the relationship between entrepreneurship and economic growth be explored. Within this model, the stage ‘Entrepreneurial Framework Conditions’ could be defined as “the necessary oxygen of resources, incentives, markets and supporting institutions to the growth of new firms” (Bosma et al., 2008 p. 40). Starting from this place, the authors sought to identify the most important factors that influenced entrepreneurial activities during the observed period 2009-2013.

1.1 Business Environment Evaluation in the Czech Republic and Ireland

It is arguable that the contribution of entrepreneurs to an economy varies according to its phase of economic development (Wennekers et al., 2005), which to certain extent drives the institutional setting. It also reflects a nuanced distinction between the phases of economic development, in line with Porter’s typology of ‘factor-driven economies’, ‘efficiency-driven economies’ and ‘innovation-driven economies’ (Porter et al., 2002). However, although the Czech (CZ) and Irish (IRL) economies are both called ‘innovation driven’, but the ranking in competitiveness index between countries is different (CZ – 38th, IRL - 25th of 171 countries). The Global Competitiveness Index is based on 12 pillars and it is evaluated by Likert scale 1 to 7 in each pillar, which consists of two to five variables (see Table 1 below).

The position of the Czech Republic highlighted future problems in the sector of transport (Infrastructure indicator), Technology, and the Innovations and Financial markets. The opposite problems were evident in the Irish business environment, particularly in the case of macroeconomic stability and financial markets. In long-term comparison, the Irish economy should be able to take advantage from infrastructure development and investments, followed by innovative practices, supported by technological readiness and education.

Table 1: Global Competitiveness Index Comparison 2009-2013

		INST	INF	MAC	HPE	HET	GMS	LME	FMD	TR	MS	BS	INN
CZ		3.6	4.7	5	5.8	4.9	4.4	4.2	4.2	4.9	4.5	4.4	3.7
IRL	2013-	5.3	5.3	3.6	6.6	5.4	5.2	4.9	3.9	5.7	4.2	5	4.6
dif.	2014	-1.7	-0.6	1.4	-0.8	-0.5	-0.8	-0.7	0.3	-0.8	0.3	-0.6	-0.9
CZ		3.7	4.8	5.2	5.9	4.9	4.5	4.3	4.3	5.1	4.5	4.5	3.8
IRL	2013-	5.2	5.3	3.4	6.5	5.3	5.2	5	3.6	5.8	4.1	5.1	4.7
dif.	2012	-1.5	-0.5	1.8	-0.6	-0.4	-0.7	-0.7	0.7	-0.7	0.4	-0.6	-0.9
CZ		3.6	4.9	5.2	5.9	5	4.6	4.6	4.3	4.8	4.5	4.4	3.8
IRL	2012-	5.2	5.1	4	6.5	5.2	5.1	4.9	3.4	5.3	4.1	4.9	4.4
dif.	2011	-1.6	-0.2	1.2	-0.6	-0.2	-0.5	-0.3	0.9	-0.5	0.4	-0.5	-0.6
CZ		3.9	4.8	4.9	6.1	5.1	4.6	4.7	4.5	4.5	4.5	4.5	3.9
IRL	2011-	5.1	4.8	4.3	6.5	5.2	5.1	4.9	3.8	5	4.2	4.8	4.2
dif.	2010	-1.2	0	0.6	-0.4	-0.1	-0.5	-0.2	0.7	-0.5	0.3	-0.3	-0.3
CZ		3.9	4.3	5	5.9	5.1	4.8	4.9	4.6	4.7	4.5	4.8	4
IRL	2010-	5.2	4.2	4.6	6.2	5.1	5.1	4.9	4.6	5.3	4.3	5	4.3
dif.	2009	-1.3	0.1	0.4	-0.3	0	-0.3	0	0	-0.6	0.2	-0.2	-0.3

Source: Schwab and Sala-I-Martin, (2009-2013), author's calculations, where: INST-Institutions, INF-Infrastructure, MAC-Macroeconomic environment HPE-Health and primary education, HET-Higher education and training, GME-Goods market efficiency, LME- Labour market efficiency, FMD-Financial market development, TR-Technological readiness, MS-Market size, BS-Business sophistication, INN-Innovation

1.2 Willingness to Start a Business

As a nation's economic development advances into the innovation-driven phase, businesses become more knowledge-intensive and the service sector expands. While entrepreneurship and innovation factors are more dominant in this phase, it must be noted that these conditions rely on a healthy set of basic requirements and efficiency enhancers. The framework incorporates the three main components that capture the multi-faceted nature of entrepreneurship: entrepreneurial attitudes, entrepreneurial activity, and entrepreneurial aspirations. Furthermore, potentially ambitious entrepreneurs react differently to different regulatory and legal regimes than those who are less ambitious (Levie and Autio, 2011). All dimensions of analysis are connected in GEDI index (Global Entrepreneurship and Development Index). Entrepreneurial attitudes are associated with the entrepreneurship-related behaviour of a country's population. The Czech answer to entrepreneurial conditions is currently weak (without any dominating factor) and is in marked contrast with the Irish approach where cultural support is strong (Ács, Szerb, Autio, 2013). An entrepreneurial activity in Ireland could be connected with the notion of economic freedom and while in the Czech Republic it is frequently connected with a weak system of higher education. Finally, the entrepreneurial aspiration refers to the process of globalization in both countries and weak variables such as venture capital, risk capital in context of financial support of business under Global Competitiveness Index. As mentioned

previously, the index evaluates conditions, but it is not measuring a level of willingness to start a business. This measurement, mainly qualitative, is provided by the Global Entrepreneurship Monitor (GEM). In comparison with such data, the authors were able to describe the situation in both countries from a macro and a micro level (see Table 2 below). Among those elements which configure ‘entrepreneurial quality’, the three most relevant are (1) the need of independence, (2) entrepreneurial motivation and (3) energizer behaviours (Guzmán and Santos 2001).

Table 2: Evaluation of Business Activity Based on GEM Studies (% share)

	Nascent entrepreneurship rate	New business ownership rate	Early-stage entrepreneurial activity (TEA)	Established business ownership rate	Discontinuation of businesses	Necessity-driven (% of TEA)	Improvement-driven opportunity (% of TEA)
CZ	4.9	2.7	7.3	5.3	3.4	23	60
IRL	5.5	3.8	9.2	7.5	2.5	18	44
Average	4.8	3.3	8	6.4	2.9	23	47

Source: Amorós, Bosma, 2014, author’s calculations

Both elements exert an influence on the energizer behaviours, which are the external and more visible factors defining the entrepreneurial quality. In fact, the performance of these energizer behaviours shows the quality based level of entrepreneurial orientation because they drive entrepreneurial actions to improve (or not) the performance of the business. These behaviours lead to certain type of entrepreneur (Santos and Liñán 2007): ambitious, innovative, proactive, cooperative. It also confirms the finding that most entrepreneurs in both countries are innovative oriented, but there is still a big group who are pushed into entrepreneurship as necessity driven entrepreneurs.

2. Problem Formulation

2.1 Entrepreneurship Policy in Ireland - Case Study

Although Ireland has been experiencing challenging economic conditions, 37 per cent of Irish people stated that if they could choose between different kinds of jobs, they would prefer to be self-employed rather than be employed by a company (similar to the EU average). The survey, carried out by the European Commission in 2012, revealed that Irish people had a more positive view of entrepreneurs than their EU counterparts as 89 per cent of the population (compared with 79 per cent at EU level) agreed that entrepreneurs create new products and services that benefit the wider population. However, there has been a significant change on this question since 2009, with far more people now saying that they would rather work as an employee (+11 points), and an even bigger decline in the number of people who favour self-employment (-12 points). This change is understandable given the need for people in Ireland to prioritise financial security for themselves and their families over riskier career options. But if Irish people have such a positive view of entrepreneurship and have expressed a strong desire to one day start their own business, then the question

must be asked as to why this is not happening? The 2012 GEM Ireland Report (Forfás, 2013) clearly showed that there was a decrease in the rate of Total Early-Stage Entrepreneurial Activity (TEA) in Ireland in 2012 (6.1% down from 7.3% in 2011) and these figures mean that Ireland is now ranked 14th across the EU and 18th among the OECD countries in terms of early stage entrepreneurial activity.

In the 2012 EU report, 28% of respondents stated that they do not regard self-employment as feasible on the grounds that they do not have enough capital or financial resources (more than the 21% of people who give this answer at EU level). This is a particularly interesting finding given the various government initiatives to finance business start-ups (e.g. Microfinance Ireland). More people in Ireland than in the EU as a whole (16% vs. 12%) also stated, that the current economic climate is not good for a start-up although one could argue that many opportunities still exist in the global marketplace. Roughly one respondent in seven in Ireland felt, that they lack the skills to be self-employed, while less than one in ten gave other reasons, such as that they have no business idea that they would have difficulty reconciling self-employment with family commitments, that they fear the risk of failure and its consequences and that they are put off by the burden of red tape. Perhaps, most interestingly, 43% stated that they would be afraid of the risk of going bankrupt if they were to become self-employed (the same as at EU level). However, slightly more people in Ireland felt that the risk of losing their property/home would concern them the most. Over a third of respondents in Ireland stated that the risk of irregular income would make them afraid of setting up a business.

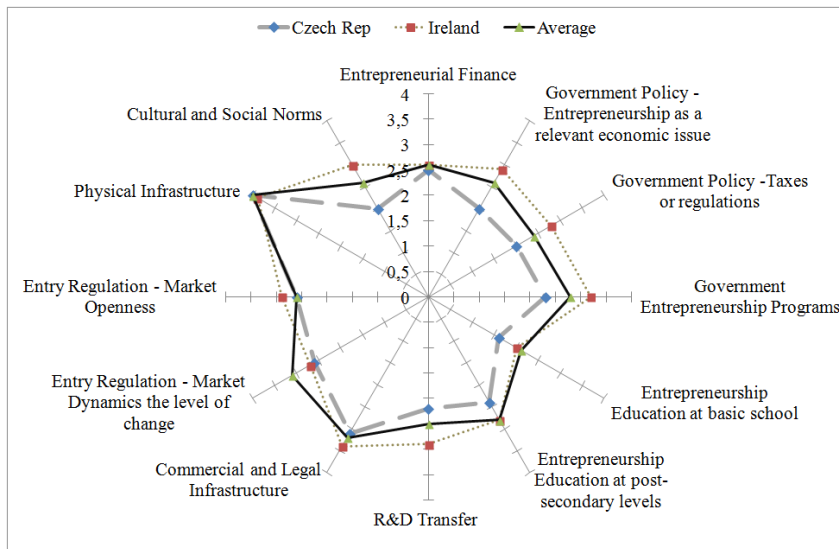
A key element of entrepreneurship is the relationship between risk and reward and obviously many people in Ireland feel that gaining full-time employment is a better option as it reduces risk and offers certain levels of reward which cannot be guaranteed if a person starts their own business. But what about people who are unemployed and cannot find a job: would self-employment not be a better option for them as opposed to claiming welfare benefit? Indeed a common characteristic of recessions is that there is an increase in 'push entrepreneurship' as workers who have become unemployed utilise their skill-sets to create opportunities through self-employment but this trend has not happened in Ireland. In unadjusted terms there were 441,976 people signing on the Live Register in July 2013 (13.5%) (CSO, 2013). This is the lowest rate since March 2010 although some commentators have argued that emigration and government schemes are softening the real rates of unemployment. The number of long term claimants on the Live Register in July 2013 was 197,571 while youth unemployment remains a serious issue as it now stands at 16.4%. A married person with a qualifying partner and two children can currently receive approximately €20,000 per annum in various welfare benefits. That person may also be eligible for a range of other supports such as medical card assistance and rent supplements depending upon their circumstances. To earn the equivalent amount that such a person receives from welfare benefit will mean that they will need to earn a gross income substantially above €20,000 given that there will be income tax, USC (Universal social charge) and PRSI (pay related social insurance) deductions taken from any possible income, plus there will also be a number of indirect costs such as transport to and from work. There is a scheme available to welfare recipients called

the Back to Work Enterprise Allowance scheme, which encourages people getting certain social welfare payments to become self-employed. A person on this scheme can keep a percentage of their social welfare payment for up to 2 years while they are getting their business started. However, to qualify for this scheme a person must have been in receipt of a qualifying payment for at least 12 months (you do not qualify if you are unemployed for less than one year) and the scheme is also considered to be highly bureaucratic by many people who have availed of it. While some people believe that the vast majority of people who are currently unemployed would prefer to be gainfully employed, many are caught in the so-called 'welfare trap' where the security of their current income from welfare benefits makes the prospect of starting one's own business less likely to occur. If a person was to examine the reward side of the risk-reward equation then the prospects look no stronger. Obviously, starting one's own business creates the opportunity to achieve significant wealth but the number of people who have achieved strong financial independence is a very low percentage of the entrepreneurial population. Additionally, Ireland's marginal rate of income tax (52% for employees and 55% for the self-employed) penalises the entrepreneur even though they are the person taking the risk and potentially employing people. While great success is possible, the reality is that the failure rate for new businesses is quite high as anecdotal evidence from the US suggests that 36% of firms fail after two years, 50% after four years and 71% after ten years. For an Irish entrepreneur, not only do they have to deal with the stigma of failure and live in a culture that does not celebrate the concept of 'second chance', they must also deal with a welfare system that acts against them. While an employee can apply for welfare benefits immediately after becoming unemployed, self-employed people pay Class S PRSI and this only covers people for certain social welfare payments and it does not cover a person for Jobseeker's Benefit. There are other additional challenges in claiming welfare benefits that the self-employed must also endure that employees do not face, which combined reinforces the belief for many self-employed people that no safety net is available to them should their business fail.

3. Problem Solution

Each quality level of entrepreneurial orientation exerts an influence on a specific entrepreneurial structure such as combination of a high quality entrepreneurial orientation level with the entrepreneurial structure of a developed region. This will be the case of the richest regions of European Union, such as northern Italy, southern Germany or the southeast of England. A combination of low quality entrepreneurial orientation with the entrepreneurial structure of an underdeveloped region is very difficult to alter, and this is the case for many countries from central and Eastern Europe such as Poland, the Czech Republic or Hungary. Low levels of economic conditions, education and legal conditions still brings disparity into regional development (see Figure 2).

Figure 2: Sources of Sustainable Conditions



Source: Amorós, Bosma, 2014, author's calculations

4. Conclusion

There is a positive attitude to entrepreneurship in Ireland but it is arguable that the risk-reward relationship for people claiming welfare benefit does not entice them to start their own business. Future budgets will need to address this issue if Ireland is to create a society of entrepreneurs who rather than wait to become employed (or hope that their local area attracts a multinational company), will instead utilise their expertise and skill-sets to establish their own business and potentially create employment for others. Within the 441,976 currently on the Live Register, surely a sizeable proportion of that population would like to become entrepreneurs but first the risk-reward system needs to move more favourably in their direction. The recently published Entrepreneurship Forum Report (2014) and the 2014 Action Plan for Jobs (2014) have offered many recommendations and actions which could lead to change in culture towards starting a business in Ireland.

In fact, several typologies of firms or regional productive systems refer to different characteristics of the entrepreneurial structure and the quality of the entrepreneurial functions. Still weak areas as bureaucracy, access to financing, which are similar to both countries according all levels of analysis will be still barriers of sustainable development of business.

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Absorption Capacity of the Czech Republic to the European Union Funds

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Abstract

The main goal of this paper is to give information about Czech Republic's problems with obtaining funds in the 2007-2013 period and find some solutions how to increase the ability to obtain funds for the Czech Republic from the European Union. The first chapter deals with the general regional policy of the European Union and absorption capacity. Absorption capacity is the ability of a Member State of the European Union to effectively draw funds from the EU. It has several aspects. The second chapter contains specific data utilization finance of the Czech Republic from the European Union. The core chapters are the chapters The Solution to the Problem and Conclusion, where current problems with raising funds from the EU and proposals for solutions are discussed.

Keywords: *Absorption capacity, EU funds, Operational programs, Regional policy*

JEL Classification: *H0, R1, R11, R58*

1. Introduction

One of the main European Union's policies is regional policy, which comes after the common agricultural policy as the second most important policy. The EU regional policy is an investment policy. It supports job creation, competitiveness, economic growth, improved quality of life and sustainable development. The regional policy also expresses the EU's solidarity with less developed countries and regions, concentrating funds on the areas and sectors where they can make the most difference. Its main aim is to increase economic and social cohesion by reducing disparities in the development of individual regions (Marek, 2009). Leaving these disparities in place would undermine some of the cornerstones of the EU, including its large single market and its currency, the euro. In the 2014-2020 period the EU will invest a total of EUR 351,8 billion in Europe's regions. The regional policy puts a strong emphasis on the requirements for planning, partnership, monitoring, evaluation and checking of the use of EU funds. In order to draw from these funds, national administration must have a certain set of institutions and follow strictly defined policies at both national and regional levels (The International Bank for Reconstruction and Development; The World Bank, 2003). After the Czech Republic joined the European Union on the 1st of May 2004, they received significant help by gaining the possibility of using Structural Funds, especially in those regions that have a weaker development potential, but are prerequisites for effective use of invested funds (Halásek, 2009). The largest volume of funds is provided by the European Regional Development Fund

(ERDF), another option is the European Social Fund (ESF) and the Cohesion Fund (CF). To ensure that the Member States can effectively obtain money from these funds, it is important to have high absorption capacity.

1.1 Absorption Capacity

The term absorption capacity can be explained by Document Revision Phare 2000 as the national government's ability to plan and implement external assistance. Absorption capacity reflects the degree of the state's ability to use the resources provided by the Structural Funds. It cannot be understood solely from an economic viewpoint. There are other aspects such as political, legal, cultural, etc. This problem has many aspects, especially with regards to: 1) administrative capacity, i.e. the ability to manage the Structural Funds programs in accordance with applicable rules and regulations of the EU, 2) co-funding, ability to co-finance projects from national public resources, and 3) project pipeline, i.e. the ability to prepare high-quality projects well in advance that are awaiting funding (Ministry of Regional Development, 2005). Absorption capacity does not mean the ability to spend the funds. Absorption capacity means using the funds on quality projects with a large (provable) contribution to the economy (competitiveness) (Ministry of Regional Development [online], 2009). The extent of absorption capacity from the EU funds has many dimensions, especially the ability to provide national co-financing for the implementation of the selected projects, the readiness of the State to meet the legal conditions for the adoption of the Structural Funds, the existence of suitable and prepared projects, the ability of national administration to ensure the decision making process of strategy development, placement of a selection of realistic and effective project management capability and control of implementation and financing of projects (Boháčková, 2009).

2. Drawing Funds

2.1 National Strategic Reference Framework

For procuring financial resources from EU funds, the Czech Republic, like other EU Member States, has created a set of programme documents and necessary institutional guarantees. The National Strategic Reference Framework (NSRF) represents a basic programme document of the Czech Republic for using EU funds from 2007-2013. The basis for drafting the NSFR was the National Development Plan of the Czech Republic. The NSFR determines the system of operational programmes under economic and social cohesion policy for 2007-2013, through which the various cohesion policy objectives are implemented. For regional policy purposes, the European Union uses the NUTS (Nomenclature des Unites Territoriales Statistiques) system of regional subdivision. There are three levels under the NUTS system and each Member State is divided up into these levels (according to population). Mainly the regions on the NUTS II are used for the utilisation of EU funds and for this reason, cohesion regions were created in the Czech Republic.

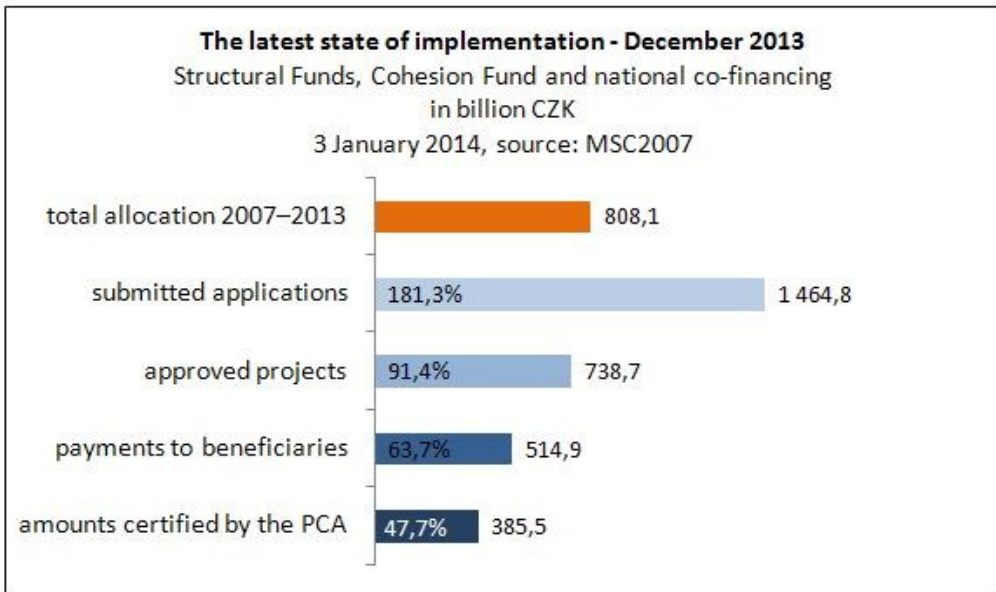
2.2 EU Programmes 2007-2013

In the 2007-2013 period, there were 26 operational programmes in the Czech Republic, which were divided up among the three economic and social cohesion policy objectives. In the Czech Republic, all cohesion regions, with the exception of the capital city of Prague, fall under its scope, and it is implemented through eight thematic operational programmes and seven regional operational programmes. 25,89 billion EUR are earmarked for the convergence objective in the Czech Republic.

2.3 Figures of Drawing

The following graph shows the disbursement of funds from the EU funds in relation to the total allocation for the programming period 2007-2013.

Figure 1: State Drawing from SF/FS and National Resources



Source: Ministry of Regional Development

By the 3rd of January 2014 the applications submitted for funding from the Structural Funds, the Cohesion Fund and national resources totalled 75 874 for individual projects (IP) totalling 1 343,5 billion CZK. In the OP Human Resources and Employment and Operational Programme Education for Competitiveness a further 106 applications were submitted for global grants (GG) for the amount of 35,0 billion CZK. Within these GG applicants filled 28 045 applications for grant programs (GP) worth 121,3 billion CZK. The volume of funding applications submitted to the IP/GP exceeds the total allocation NSRF by 81,3 %. In the month to month comparison, the total number of applications increased by 1 671 applications for IP worth 18,8 billion CZK and 3 requests for GP worth 47,0 million CZK. The number of applications GG in the period remained unchanged.

By the 3rd of January 2014, the Paying and Certifying Authority (PCO) at the Ministry of Finance has certified 385,5 billion CZK, which is 47,7 % of the total allocation from 2007-2013. The amount of funds includes spending on IP and GG both from EU funds (85 %) and also from national public sources (15 %). In the month to month comparison the volume of certified expenditure relatively increased the most in ROP Central Bohemia, Integrated OP and ROP Northwest.

3. Solutions to the Problem

Why is the Czech Republic at the end of the ranking among the countries of the European Union in the success of drawing financial resources from European funds? There are several reasons. You may ask whether the National Development Plan in the Czech Republic is correctly set up and if the most important development priorities of the regions are actually listed. In the 2007-2013 programming period, there were also a relatively high number of operational programs. However, as Poland and Portugal had even more operational programs they were more successful in obtaining the funds. In the current programming period, the number of operational programs is significantly reduced. In particular, seven regional operational programs are merged into a single integrated operational program managed by the Ministry of Regional Development. The programs are developed in 8 themes. Support should therefore be better targeted and it should not be the case that some operational programs have little success in obtaining funds.

The conditions for successful obtaining funds from the EU are well-prepared projects and their verifiable benefit. By the 3rd of January 2014 many projects were excluded from the administration because of failure to meet challenges or the applicant himself pulled out the application. The total of unsuccessful applications was 42 618 applications for IP and GP, the total value of 515,3 billion CZK. This accounted for 41,0 % of the total number of applications for IP and GP, while 35,2 % of funds in all applications made on IP and GP.

In connection with the absorption capacity it is also necessary to mention the administrative capacity. That is the human factor that significantly affects the success of obtaining funds from the EU funds. In 2006-2007, the replacement of a people who were in charge of the funds was in connection with the formation of a new government. All new employees, often with no previous experience need time to learn their new role. If there are many new employees in an office, this can cause a big issue. There is a delay in administration and errors arising from ignorance or incompetence. As a result, it can slow down the whole process of reimbursement of funds, increased error rate program and in the worst scenario the suspension of certification and the threat of the $n + 2/n + 3$. It is important to choose the right people and as soon as possible get them the appropriate training. Quality of human resources in an organization plays an essential role.

There is a possible foreign exchange risk arising from the volatility of the Czech Crown against the euro. The decline of the single crown against the euro, for example, means the loss of more than six billion in seven regional operational programs.

On the 2nd of January 2007 the rate announced by the Czech National Bank was 27,53 EUR/CZK. On the 6th of November 2013 the above exchange rate was changed to 25,74 EUR/CZK. Since the beginning of the period there has been a strengthening of the crown by 6,5 %. After foreign exchange intervention by the Czech National Bank against the strong crown, the crown has been significantly weakened against the euro. On the 12th of March 2014 the exchange rate was 27,35 EUR/CZK. This means that Czech operational programs may obtain more funds from the European funds due to the depreciation of the crown. On the contrary, if the Czech crown strengthens, it increases the risk of not obtaining sufficient funds. The managing authorities of individual operational programs, usually reserve funds and adequate supply projects and therefore the possible foreign exchange risk would not affect the funding.

In January 2013, payment requests for reimbursement were submitted by the European Commission due to the high error rate of some operational programs resulting from the annual and audit reports for the year 2012. This means that there is no reimbursement of funds from the EU budget to the PCO account from which they were already transferred to the state budget chapters, which issued the funds for pre-financing projects. The suspension of the certification process is decided by the PCO.

In August 2013 it was on the basis of implemented measures renewed submission of payment claims for reimbursement to the European Commission for ROP Northwest and ROP Moravia-Silesia. In October 2013 certification in OP Prague Adaptability and ROP Central Bohemia was renewed, during December 2013 sending requests for payment to the Commission by the OP Enterprise and Innovation and the Integrated OP were exacerbated. Reimbursements of EU funds have been suspended due to large errors in the already approved projects and also because of the lack of transparency in public procurement. Restoring sent requests for payment and reimbursement to the Commission is the key to the implementation of the rule $n+3/n+2$. If the allocation for a particular year is not exhausted by the end of calendar year $n+3$, respectively $n+2$, the unspent funds will be returned to the EU budget.

By the 7th of October 2013 subsidy recipients were able to submit an extraordinary request to the Operational Programme European Territorial Co-operation Austria - Czech Republic 2007-2013 on the basis of a critical situation where Czech Republic was threatened with the loss of funds. At the same time, this program was going to suspend funds from the European Regional Development Fund, due to the lack of funds in the account of the European Commission on the line of cross-border cooperation. In early March 2014 the payment of funds under the Operational Programme European Territorial Co-operation Austria - Czech Republic 2007-2013 by the European Commission was re-launched.

The Czech Republic was at risk of losing 24 billion CZK due to the slow uptake of EU funds for 2013. This was due to poor financial planning. The most risk was from the perspective Operational Programme Environment, Research and Development for Innovation and Entrepreneurship and Innovation. The Ministry of Regional Development was therefore seeking to adopt measures that would minimize the risk. One of them was loosening the rules on $n+3$. The European Parliament, the proposal of relaxing the rules $n+3/n+2$ Member States, with the exception of Slovakia and

Romania, was dismissed. Another measure was the transfer of unspent funds within a single program from one priority axis to the other, in particular the Operational Programme Environment. In connection with this, the European Commission managed to agree to an exception that allows not draw allocation priority axis up to 10 % without risking loss of unused funds. Transfers between operating programs are not possible currently. For large projects, it is possible to use so-called phasing. The point is to divide the project into individual integrated phases and try to transfer the later ones to the new programming period 2014-2020. At present, there are also quite a large number of projects blocked due to inspection by the Office for Protection of Competition. Such projects can not be cashed in, but funding can not be used for anything else.

4. Conclusion

There are some problems with exhaustion allocation, which could be solved in two ways - the first - acceleration announcing calls, the second way - cooperation with potential recipients. Since 2014, moreover, the EU agreed that everyone will benefit from the extended n+3 rule. This is also enshrined in the new legislation for the years 2014-2020. That gives more time to prepare projects, the process and successful implementation. The rules for obtaining funds should also meet significant simplification and should minimize bureaucracy (for example the introduction of computerization).

It is necessary to introduce a number of rules so that the systems of subsidies in the Czech Republic are united. The contract then needs to be modified so as to have a single form, to establish uniform criteria for project evaluation, control of economy, competition, but also a plan for obtaining funds and a crisis plan. There must be a single rule for all operational programs, agreed by all managing authorities. It is important that the managing authorities of individual operational programs respond with more flexibility to the current situation and as soon as possible make and implement appropriate measures.

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Is Active Labour Market Policy Useful? The Case of the Chosen Countries

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Abstract

Economic crisis which started in 2008 influenced many areas of the economic policy of the individual countries. One of the most serious problem is the rapid increase of the share of the unemployment individuals in all involved countries. To struggle with this problem many countries provide huge amount of money to the active labour market policy with belief that it's tools will help to solve this problem. The aim of this article is to compare active labour market policy in the chosen countries during period 2007–2011. The presented paper describes main reforms of the active labour market policy in the PIIGS countries (Portugal, Italy, Ireland, Greece, Spain) and the Czech Republic within given period. In the following part a regression analysis of panel data will be used to verify whether funds spent on the active labour market policy are useful in the chosen countries.

Keywords: *Active labour market policy, Labour market, Unemployment*

JEL Classification: *J08, J64, J68*

1. Introduction

Active labour market policy and its impact on the labour market belong to the topic which is discussed not only in the relevant economic papers in the connection of economic crisis. General findings of studies which focused on the effect of active labour market policy were quite different according to used methodologies and measures.

The aim of this article is to compare active labour market policy in the chosen countries during period 2007–2011. Our paper will be divided into two parts. In the first part main reforms will be described which were implemented in the area of the active labour market policy in the PIIGS countries (Portugal, Italy, Ireland, Greece and Spain) and the Czech Republic. The second part of the paper will present model used for estimation of impact of active labour market policy (ALM) measures on the unemployment rate in the chosen countries. Last part concludes main results of our paper.

2. Active Labour Market Policy Reforms in the EU, the PIIGS Countries and the Czech Republic

Before the onset of the global economic crisis in 2008, the new millennium had been characterised by the gradual emergence of a new consensus around labour market

policy reform in Europe. The flexicurity debate emphasised protecting individuals through good unemployment benefits and active labour market policies (ALMP) rather than protecting jobs through the strict regulation of employment while reforms to unemployment benefit systems and ALMPs themselves increasingly sought to extend these measures to those most distant from the labour market). In general, ensuring that labour market policies and institutions combated, rather than reinforced, segmentation in the labour market became the overriding concern of policy debates and reforms in many European countries. Since 2008, however, this still fragile consensus around the goals of labour market policy reform has been confronted to an entirely novel set of economic circumstances, as a result of sharp drops in output, spikes in unemployment and, as a second-order effect, soaring public deficits. (Clasen, Clegg, Kvist, 2012).

Numerous studies from abroad present that employment policy is just complementary to a complex of macroeconomic interventions regarding a support of recovery as it cannot solve an issue of the lack of the jobs available. (Sirovátka, Šimíková, 2013).

It plays its role in a short-term when it mitigates an effect of crisis on labour force. It also limits a time lag between the end of recession and labour market recovery. Further on, it mitigates the discrepancies between the absence of jobs and worsened position of handicapped groups at the labour market and reduces the impact of a time lag and other structural disproportions.

In a medium and long-term the employment policy contributes to the total labour market flexibility and as regards a labour force readiness it helps to put up with both expected and unexpected changes at the labour market.

After the crisis, following the recommendations in the European Economic Recovery Plan of December 2008, reform activity focused on supporting aggregate demand, employment, and income support to reduce social distress caused by the crisis whilst at the same time on easing transition to new jobs. (European Commission, 2011)

Activation and job-search assistance policies have remained one of the most widely used instruments to fight unemployment. New strategies and action plans have been devised to improve matching, by focusing on reinforced individual support and an early activation, especially of the young and long term unemployed, and in some cases of workers from specific sectors particularly hit by the crisis.

Employment incentives have continued to be used extensively to support labour demand and recruitment of specific vulnerable groups. Newly introduced or scaled-up wage subsidies and tax incentives to employers have been decided in many countries, often conditional upon new hires, and targeted at specific and less employable demographic groups such as young, long-term unemployed, older persons, ethnic minorities or foreign-born residents and mothers. (European Commission, 2012)

Skills developments, youth employment and, more generally, job creation are the three policy areas in which countries have concentrated their efforts over the last two years. Starting from 2012, combating youth unemployment has become the policy mantra of most European countries (European Commission, 2013).

2.1 Active Labour Market Policy Reform in Selected countries

Greece

The core of the employment policies concern the job maintenance, the rehabilitation of the unemployed, the integration of young people and vulnerable groups into the labour market, the implementation of vocational training schemes, the support of older people as well as the support of sectors affected mostly by the consequences of the crisis. (Greek Ministry of Finance, 2013).

The ministry of labour, under the obligations arising from the Memorandum of Understanding with the IMF/EU/ECB, has assigned the Economic and Social Council of Greece to prepare an integrated Action Plan on Employment policies. The aims of the Plan are as follows: a. Upgrading the Employment Promotion Centres, in order to better match the unemployed with available vacancies b. enhance the effectiveness of training programs for the unemployed and seeking training for the unemployed from businesses, and c. replenish reduced working hours with training.

Italy

Amongst other measures, greater safeguards for maternity a paternity leave, and new public services (such a professional training and orientation services) to help the unemployed get back to work.

An Intergenerational Pact was instituted so that companies can simultaneously offer part-time contracts to older workers, and apprenticeship of full-time contracts to younger workers (Ministerio Dell' Economia e Delle Finanze, 2013).

Portugal

„The government has prepared a plan to reform the Public Employment Services and implement a wage subsidy. Finally, a recent programme involving about 90,000 young will create internships, reduce social security contributions and provide subsidies to firms.“ (European Commission, 2012).

The Memorandum of Understanding envisages ALMPs targeting in particular the employability of young people and the disadvantaged categories of people, as well as tackling labour market mismatches. In addition, through policies relating to vocational training, the objective was to address early school leaving and to improve the linkages from education to the labour market. As a response to this, the Portuguese Government introduced short-term stimulus programmes to provide wage subsidies for companies to hire and train job seekers registered with public employment services (PES); whilst youth unemployment was being tackled through a cross-country task force. (ILO, 2013)

Spain

Active labour market policies in Spain have a new strategy based on the following 5 main lines of action. The first is Institutional aspects: coordination, evaluation and

efficiency. It aims to establish appropriate coordination between the different competent authorities in the field and gradually implement a culture of evaluation of active labour market policies. Promoting employment through training is a second line. The aim of Links between active and passive employment policies (activation) is to strengthen the mechanisms designed so that people receiving unemployment benefits adequately and effectively meet their activity and training compromise. The next line is improved labour market intermediation. With the aim of better matching employment supply and demand and boosting activation of the unemployed, stress is being placed on the following measures designed to improve the quality of information and take advantage of the experience of private agencies. The Strategy for Youth Entrepreneurship and Employment is in line with the aim to boost measures to reduce youth unemployment by promoting employment and self-employment. It is the result of a process of dialogue with the social partners. (National Reform Programme Kingdom of Spain, 2013)

Ireland

„A comprehensive reform aims at enhancing incentives to join the labour force and for job search activities. Key features of this reform include: more efficient administration of unemployment benefits, social assistance, ALMPs, and vocational training; enhanced conditionality on work and training availability; strengthened activation, via better identification of job seekers' needs, more effective monitoring and use of sanctions for beneficiaries not complying with job-search conditionalities.“ (European Commission, 2012).

Czech Republic

The long-term strategic objectives of employment policy are concentrated in three pillars with primary goals to increase a quality of services for employment via their optimisation, to make monitoring and collection of data relevant for an efficient active employment policy more effective and to support learning and training of employees and an offer of retraining courses with the aim to increase a qualification of job applicants.

Besides the programmes already implemented in the frame of the active employment policy there are some newly prepared instruments of employment policy, e.g. a project "Activation Job Opportunity" focused on the long-term unemployed, "Guarantee for Youngsters" designated for young people up to 25 years old and "A project for employees being dismissed during a notice period".

3. Problem Formulation

3.1 Model and Data

Evaluation of influence of active labour market policy on unemployment rate will be based on regression analysis of pool data, model is set up according Hančlová et al. (2012):

$$u_{it} = \beta_0 + \beta_1 ALP_{it} + \beta_2 TR_{it} + \beta_3 \pi_{it} + \beta_4 TW_{it} + \hat{u}_{it} \quad (1)$$

where i represents years (2007-2011), t represents country. ALP_{it} represents active labour market policy expenditures, all are expressed as ratio to GDP. This variable will be gradually represented by labour market services (lms_{it}), training (tra_{it}), employment incentives (ei_{it}), supported employment and rehabilitation (ser_{it}), direct job creation (djc_{it}), start-up incentives (sui_{it}). Control variables are represented by TR_{it} (rate of growth of nominal GDP), inflation rate (π_{it}), and tax wedge on labour costs (TW_{it}). Dependent variable is represented by unemployment rate (u). All used data are obtained from Eurostat database (2014). As the active labour market policy measures are supposed to have delayed effects on the unemployment rate (in the sense of lowering the unemployment rate), our model will be also tested for delayed active labour market policy measures. We will use time delay $t-1$ and $t-2$. Longer delays will not be tested because of short observed time period.

Represented model is estimated through Least Squares Method and tested by common test according Wooldridge (2008). Estimation will use White Cross-Section method which ensures that plausible t-statistic and standards errors and adjust them from heteroscedasticity. Individual models will be estimated within models with fixed effects.

As it was mentioned above, main independent variable is expressed by labour market expenditures. This variable will be represented by six measures which are usually used in all EU member countries. Those measures are briefly introduced in the following text. *Labour market services* covers all services and activities of the Public Employment Service together with publicly funded services for jobseekers (Eurostat [online], 2014). The provided amount of this measure varies between 0.20 % GDP (Ireland) to 0.09 % GDP (Czech Republic). The provided amount decreased in all observed economies after 2008; the most visible decrease is obvious in the case of Ireland, where the provided funds in 2008 were 58 % higher compared to 2011.

Other used measures cover interventions that provide temporary support for groups that are disadvantaged in the labour market and which aim at activating the unemployed, helping people move from involuntary inactivity into employment, or maintaining the jobs of person threatened by unemployment (Eurostat [online], 2014). In the case of *training* support of the chosen countries varies between 0.42 % (Portugal, Ireland) and 0.01 % (Czech Republic). Significant increase of funds provided to the training after 2008 is noticed in the case of Portugal – from 0.24 % to 0.43 % GDP – nevertheless also this country again lower its support after 2009. Spain and Ireland are increasing their support during whole observed period. *Employment incentives* are stable during observed period and varies between 0.28 % (Portugal) and 0.02 % (Czech Republic). Only Ireland slightly increases it's provided funds within whole period. *Supported employment and rehabilitation* is not used in Greece and Italy; Czech Republic and Spain are increasing their support (to 0.09 % in 2011). On the other side Portugal deeply decreased its support to this measure. *Direct job creation* is quite stable for the whole period and its amount is about 0.05 % GDP. Higher support is provided by Ireland (about 0.25 % GDP). The smallest amount of

fund is aimed at *start-up incentives*, which obtain up to 0.01 % GDP in all countries. Only Greece and Spain seems to give more attention to this measure and are slowly increasing amount of funds provided to this measure.

4. Problem Solution

Results of the models are represented in Table 1. It is obvious that in the chosen countries unemployment rate can be significantly influenced by active labour market policy measures. The direction of influence is in all observed cases positive – higher unemployment rate is connected with higher funds provided for the active labour market policy. Those higher funding doesn't lead to the lower unemployment rate in the same period. We suppose that this feature can be mainly explained by time delays of active labour market policy measures.

The models were also estimated for delayed active labour market policy. We used time delay for *t-1* and *t-2* (results for *t-2* are represented in the Table 1) but for both cases active labour market policy measures do not lower unemployment rate.

Table 1: Main Results

variable (t)	lms	tra	ei	ser	djc	sui
t-statistic	0.1265	2.3550**	3.3415***	1.1193	0.6856	3.1608***
F-statistic	2.6969***	4.7577***	20.3240***	3.7369***	2.8113***	24.8378***
variable (t-2)	lms	tra	ei	ser	djc	sui
t-statistic	0.1489	0.5954	5.9455***	1.8637*	1.1483	12.0174
F-statistic	2.2902**	2.4112***	22.8549***	3.4999***	3.0249***	93.9962***

Source: own calculation.

*variable (model) is significant on 10% significance level, ** variable (model) is significant on 5% significance level, *** variable (model) is significant on 5% significance level

5. Conclusion

The first part implies that employment policy including active labour market policy is just complementary to a complex of macroeconomic interventions regarding a support of recovery as it cannot solve an issue of the lack of the jobs and unemployment rate. In a medium and long-term the employment policy contributes to the total labour market flexibility and as regards a labour force readiness it helps to put up with both expected and unexpected changes at the labour market.

All countries included in the analysis have implemented reforms of instruments used within the active labour market policy aimed at support of employment and

employability of young people and handicapped groups of population at the labour market.

Second part of our paper tested influence of active labour market policy measures on the unemployment rate in the PIIGS countries and the Czech Republic during 2007-2011 period. For the testing was used regression analysis of pool data, all models were estimated with fixed effects. Obtained results suggest that active labour market policy tools does not influence unemployment rate in the short period in the sense of lowering unemployment rate. Despite of obtained results we do not consider active labour market policy as useless. Correctly used LMP can have important effects on the labour force and can help people move from involuntary inactivity into employment. As Immervoll and Scarpetta (2012) state, one of the main limitations of empirical studies is that they are not able to evaluate broader activation strategies and their interactions between different policy areas.

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Development of Socio-Economic Indicators and Mortality Rates during Ten Years of the CR Membership in the EU

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Abstract

Since the accession of the Czech Republic (CR) to the European Union (EU) in 2004, there have been many socio-economic changes in our society. Differently set conditions have caused the changes in economic activity and inactivity of the population, employment and unemployment, living standards, public health, and the mortality rates in the population. This paper will evaluate the population development in the CR since 2004 until 2012 based on selected demographic approaches. These include the evaluation of socio-economic demographic structures, from which arise the changes in the economic activity of the population by age groups and sex and changes in employment structures of the population, again by age groups and sex. Due to the fact that since the accession to the EU the living standards in the CR has improved as same as the access to medical care, the mortality rates of Czech population have decreased during the evaluated period. Based on the known tendency of the selected indicators there the trends will be presented and the possible future development will be discussed.

Keywords: *Employment, EU Membership, Mortality Rate, Socio-Economic Demographic Structure, Unemployment*

JEL Classification: *C22, E24, J11*

1. Introduction

The accession of the Czech Republic (CR) to the European Union (EU) in 2004 brought many changes in our society. Freer labour market, easier import and export of goods and services, easier traveling, better access to information and education are some positives that have had an impact on the CR in past ten years. On the other hand, there are also negative factors such as more extensive and lengthy administrative and bureaucracy, fragmented management etc. In this paper, we examine the development of socio-economic factors in the CR since its accession to the EU. Since 2004, there was a significant breakthrough in the educational structure, the proportions between age groups by employment and unemployment have changed, the standard of living of the population has increased and the availability of information, goods and services, social welfare and medical care has improved. The need to obtain a higher and quality education has become increasingly important, because the demand for the human capital and knowledge is higher. The probability of finding a good job with a low education level is low and Czech society is aware of this. The mortality rates of the population decrease (and the life expectancy increase) with increasing living standards

and education and with the better availability of welfare and healthcare systems. (Arltová et al., 2013) The increasing life expectancy is related to the fact that the population will have to be more economically active in the highest ages than ever before. (Langhamrová, Fiala, 2008) The retirement age is shifting to the later ages, the population is aging. If the labour market is opened, the supply of job opportunities will be dynamic and these people will be allowed to work, then it might not represent the significant problems. (Park, Yu, 2013) However, if the potential of the EU is optimally used and the economic growth slows down, we will not be able to keep the sustainable rising of standard of living. (Miskolczi et al., 2011)

For the purposes of the International Standard Classification of Education the methodology ISCED 97 was created in cooperation with the Organisation for Economic Co-operation and Development (OECD) and the European Statistical Office (Eurostat). This standard is also acknowledged by the CR and through the relevant information resources, CR provides to Eurostat the information about the specific numbers of people by age and sex by the highest level of education attained. Given that the point estimates of these persons are complex and their calculation takes a long time, we consider only the time series from 2004 to 2012 (the latest year for which there are complete data). (Eurostat, 2013) On the basis of Eurostat data about the total persons, economically active persons and employed persons (all by age, sex and highest level of education attained), we use a Multi-Tree Charts (Šimpach, 2013) and comment the development and changes in socio-economic demographic structures by age, sex and ISCED 97 level of education. We include decreasing age-specific mortality rates during the period, because they are related to the above mentioned factors as they influence the standards of living. Data about the age and sex specific numbers of deaths and numbers of mid-year population are obtained from Czech Statistical Office (CZSO, 2013). Next section of the paper confronts the results of the socio-economic development and mortality analysis. Mutual relations are characterised and the conclusions about the expected future development are formulated.

2. Methodology and Data

Given that the population (*POP*) according to the methodology of International Labour Organisation (ILO) is divided into the population economically active (*ACT*) and economically inactive (*INACT*), using the known time series is possible to calculate the inactive population as $INAC_{x,t}^{s,e} = POP_{x,t}^{s,e} - ACT_{x,t}^{s,e}$, where $x \in \langle 15 - 19 ; 70 - 74 \rangle$, x is the age-group in population, t is the time, where $t \in \langle 2004 ; 2012 \rangle$, s is *male* or *female* and e is the code of ISCED 97 level. Eurostat database uses 3 groups of ISCED 97 levels, where ED0-2 are persons with pre-primary, primary and lower secondary education (without high school diploma), ED3-4 are persons with upper secondary and post-secondary non-tertiary education (with HS diploma) and ED5-6 are persons with first and second stage of tertiary education (with university degree). If a person is economically active, may be classified (again according to ILO) as an employed or unemployed person. We will calculate the

unemployed persons as $UNEMP_{x,t}^{s,e} = ACT_{x,t}^{s,e} - EMP_{x,t}^{s,e}$, where EMP denotes employed persons. Inactive and unemployed population by age, sex and highest level of education attained is published in regional statistics of the Eurostat database, but only for years 2009–2013. For the calculation of age-specific mortality rates $m_{x,t}^s$, we need to know $M_{x,t}^s$ (numbers of deaths at age x , year t and sex *male* or *female*), and numbers of mid-year population ${}_{1.7.}S_{x,t}^s$, where the lower index in front of the letter mean 1st July of a given year. Consequently we are able to calculate $m_{x,t}^s = M_{x,t}^s / {}_{1.7.}S_{x,t}^s$, which is better to express in logarithms $\ln(m_{x,t}^s)$, because the values especially between the ages of 1–40 years limit to zero. The socio-economic data will be displayed in the population pyramids as Multi-Tree Charts. Multi-Tree (Šimpach, 2013) is a special bar chart, where the bars are displayed in contour without padding. In order to highlight the development in time it is a good to use the appropriate rainbow spectrum of these contours. The resulting stripes represent higher or smaller deviations of observed characteristics over time. Development of $\ln(m_{x,t}^s)$ will be displayed by 3D charts by Charpentier, Dutang, (2012), using R package by Dutang et al. (2008). Detailed rainbow charts were used in papers by Hyndman, Khandakar (2008), Hyndman, Shang (2009) and programmed by Hyndman (2012) to R package. We use MS Excel 2013 and R Studio v. 0.98.490 (R Development Core Team, 2008) in this paper.

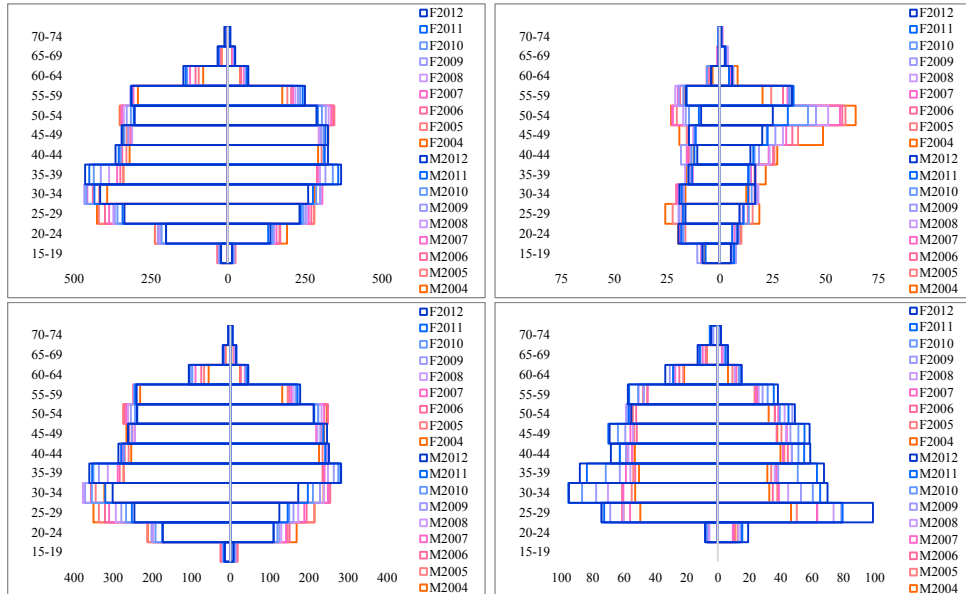
3. Socio-economic Development

This section describes the development of socio-economic characteristics of the population. At Figure 1 there are 4 Multi-Tree Charts that gradually show the development of economically active population of the CR in 2004–2012. On the left side of the zero centreline is always displayed the male population, on the right are females. We see that in the total population there are the highest numbers of economically active males and females aged 25–29 to 55–59. The most significant changes occurred in the male population in the age group 25–29 years (decrease - due to study at the university) and 35–39 years (increase - the older leavers from secondary schools with a HS diploma and universities who have extended their education throughout the years 2004–2012). High decline of economically active females without HS diploma (ED0-2) in the age groups 45–49, 50–54 and 55–59 is caused by their moving into the category of economically inactive, because they were in their economically active process since their very young years.

Development of economic inactive population (shown in Figure 2) supplements the mentioned trends. Looking at the total population, we see that economic inactivity of females prevails over the males in age groups from 25–29 to 70–74. In the lower ages this is due to university studies and parental leave, in the higher ages due to earlier retirement and higher female life expectancy. Higher representation of economically inactive females in the majority of age groups is evident in all educational levels of

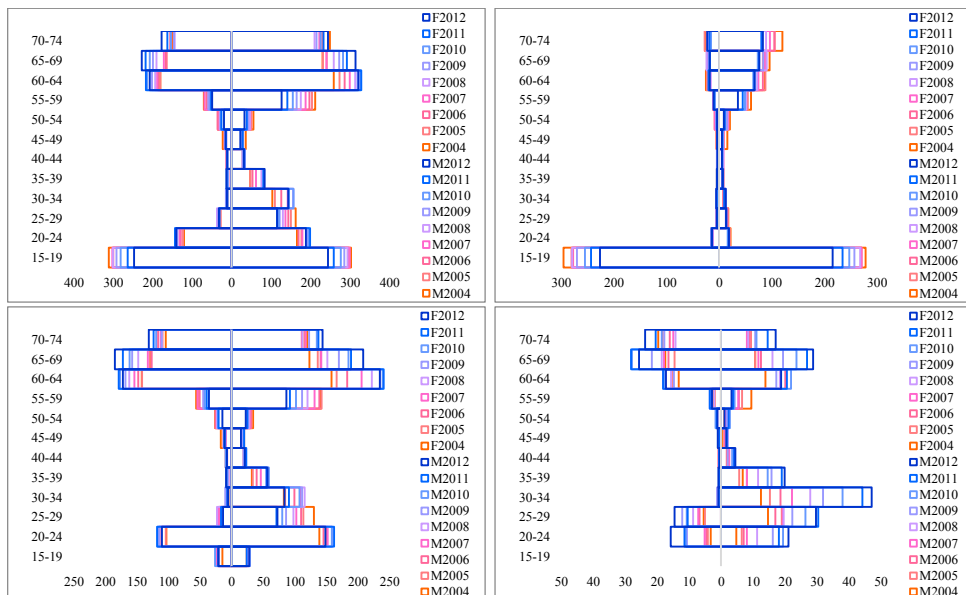
ISCED, but the most significant changes over time occurred at the level of ED5-6 from 25–29 to 35–39 years (increased numbers of females at universities).

Figure 1: Economically Active Population in 1 000 persons – Total Numbers (top left), ED0-2 (top right), ED3-4 (bottom left) and ED5-6 (bottom right)



Source: data Eurostat, author's construction and illustration

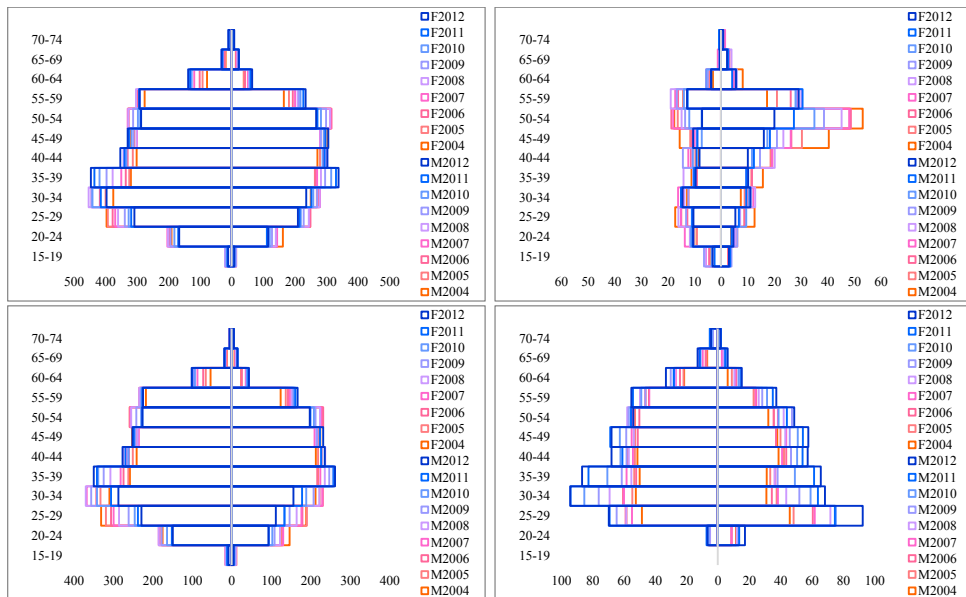
Figure 2: Economically Inactive Population in 1 000 persons – Total Numbers (top left), ED0-2 (top right), ED3-4 (bottom left) and ED5-6 (bottom right)



Source: data Eurostat, author's construction and illustration

Employment and unemployment has always been an important economic issue. Figure 3 shows the employed population by age and sex and by the highest level of education attained. Over time, the most significant decreases were observed in the numbers of 45–49 and 50–54 years old females at the level of ISCED ED0-2 level. It is because these females with education without HS diploma (see the comments in the part of economically active population) left the labour process as they started to work as teenagers. The numbers of employed males with HS diploma always predominated (and still dominate) over the females. However, there have been decline in the age groups 25–29 and 30–34 years recently. These males probably expanded their education and later were included into the workforce as a group of ED5-6 educated people. The significant increase in the numbers of employed university graduates is evident from the graph ED5-6 (bottom right). At the time of membership in the EU Czech tertiary education system began to expand and produce the huge amounts of university educated workforce. This might be also thanks to the Lisbon strategy and Europe 2020, which financially supports the target to increase the share of graduates from tertiary education to at least 40 % by 2020. On the other hand, many graduates were unable to find jobs, as will be described below. The most significant increase in the numbers of employed persons with a university degree is certainly evident in female population aged 25–29. It is caused not only by increment in the numbers of graduates, but also that the employers have begun to employ more young females to senior positions.

Figure 3: Employed Population in 1 000 persons – Total Numbers (top left), ED0-2 (top right), ED3-4 (bottom left) and ED5-6 (bottom right)

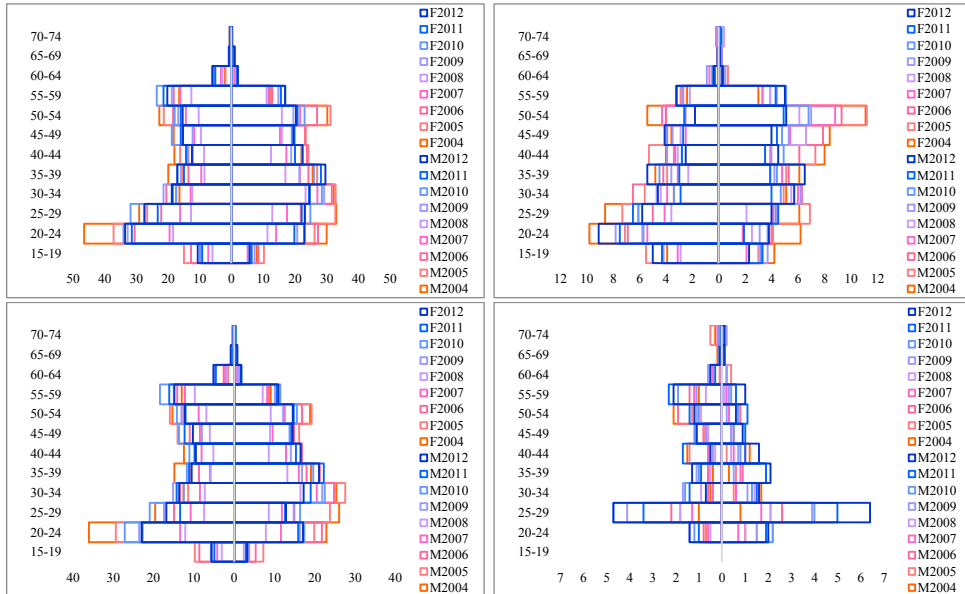


Source: data Eurostat, author's construction and illustration

In Figure 4 (top left) there is displayed for about 400–460 thousand unemployed persons (according to the considered year), while absolutely the worst year was 2004. If we look at the number of unemployed males in total population, at the population

ED0-2 and at ED3-4, we see the crisis year of 2004, which was modal for the age group 20–24 years old males.

Figure 4: Unemployed Population in 1 000 persons – Total Numbers (top left), ED0-2 (top right), ED3-4 (bottom left) and ED5-6 (bottom right)



Source: data Eurostat, author’s construction and illustration

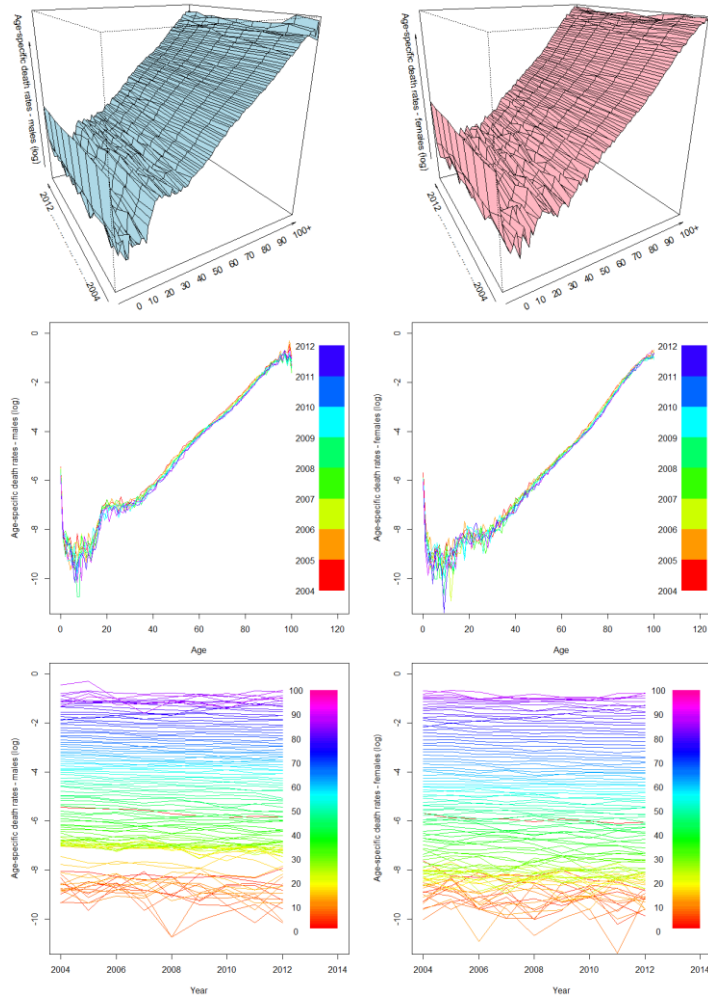
The situation in the majority of young age groups has improved over time, but the deterioration has appeared in the highest ages. It was due to the fact that employers started to prefer the employees in the middle age (i.e. those who already have the sufficient experience, but are not so old), and dismiss those in age before the retirement. They supposed that these employees cannot provide sufficient working performance. The last mentioned include the situation of unemployed tertiary educated males and females (ED5-6) aged 25–29. They are the freshly unemployed university graduates, whose numbers have enormously increased in the years 2010, 2011 and 2012 and it is still rising. On one hand, there is a goal to increase the number of university graduates, but on the other, they lack the jobs opportunities.

4. Mortality Development

At Figure 5, we can see (on the top left and right) the development of males and females logarithms of age-specific mortality rates in the considered period. At the first glance there can be seen the decline of this rates, especially in the lowest and highest ages. This is related to the better health condition of the population, higher living standards and other related issues. The decrease in the lowest ages indicates the reduction of infant mortality, the decrease in the highest ages indicates longevity. This development is in detail evident in rainbow chart of these rates for males and females in the middle left and right in Figure 5. It is possible to see the male excess mortality in ages 20–29 due to suicides, poisoning, dangerous behaviour, gambling, etc., but this

is unfortunately a long-term trend. At the bottom there is evident the development of logarithms of age-specific mortality rates across all ages. We can identify the most significant decreases in specific ages, (mainly 0–9 and 90+).

Figure 5: Logs of Age-specific Death rates in 2004–2012 for Males (top left), Females (top right) and Detailed Rainbow Charts for Males and Females (middle right and left), and for Males and Females aged 0–100+ (bottom right and left)



Source: data CZSO, author’s construction and illustration

5. Conclusion

During the period from the accession to the EU, our population did not develop poorly according to presented socio-economic statistics. The standard of living (measured by the GDP per capita) increases, but we need to remember that increasing education level of the population and a higher level of human capital brings also the need to keep a population more economic active than before (as long as possible), because

the population live longer. Life expectancy at birth was calculated by CZSO at the time of accession to the EU at the level of 72.6 years for males and 79.4 years for females, in 2012 it was already 75.0 years for males and 80.9 years for females. Retirement will have to be in later ages and the numbers of economically active persons (and if possible also employed persons) displayed in Multi-Tree Charts will have to move to higher age groups. Mortality rates of males and females will continue to decline in the future.

Acknowledgement

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Economic Crisis and the Movement of the Value Added Tax Rates in the European Union Member States

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Abstract

Tools of the fiscal policy are also used for the mitigation of the economic crisis effects. The most obvious changes can be observed in the oscillation of value added tax rates. The current legislation only specifies the minimum rates of the reduced and standard tax rate, which gives the possibility to Member States to change the rates, respectively to increase them. This paper compares the macroeconomic parameters which characterize the economic crisis and changes in VAT rates in 27 European Union Member States in the period of 2008 - 2013. The aim is to examine the dependence between the growth rate of the gross domestic product and public deficits on one hand and the change of VAT rates on the other hand with the use of analytical and statistical methods (static and dynamic model). The tested assumption is the increase of tax rates as an effort to reduce public budget deficits due to the economic crisis.

Keywords: *Economic Crisis, EU Tax Policy, Method of Least Squares, Value Added Tax, Value Added Tax Rates.*

JEL Classification: *H20, H25, F36*

1. Introduction, Aim and Methodology

The cooperation in a field of the taxation has already been enshrined in the European Community establishing Treaty and also in the present (e. g. James, Nobes, 2010, Hammelgarn, 2013) taxes should help to the European Union market functioning. The current form of the European Union market, i.e. the single market, was established on 1st January 1993 and it is defined as an area without internal borders in which the free movement of goods, persons, services and capital is guaranteed (Sinn, 1990).

However, the tax policy is also used as a tool for economic crisis signs reducing. The written output of the EU summit indicated, in November 2011, the need for a "pragmatic coordination of the tax policy for the fiscal consolidation and the boost of the economic growth" (European Council, 2011).

The paper is focused on the analysis of value added tax changes during the economic crisis (2008 – 2013) that is also reflected in the tax policy of the European Union. Tested assumption is the interdependence of VAT rate changes and economic crisis, which is based on the logical links that chronic deficits of governments and public finance are the consequence of the economic crisis and that governments increase value added tax rates in order to increase the revenues. This assumption is solved with the use of analytical and statistical methods (the static and dynamic model; Friedrich et al., 2005).

With respect to the short time of Croatia EU membership and the possible inconsistencies of gained data, the examined assumption is tested only in 27 Member States. In 2014, the VAT rates were changed in France, Croatia and Cyprus, these changes are not included in the paper because of the absence of other macroeconomic data.

2. Materials and Results

2.1 Characteristics of the Economic Crisis in the EU

The economic crisis, that began to manifest in the EU in 2008, led to a significant reduction of the economic growth in all EU Member States and to deepening of national budget deficits in most cases. Specific values are shown in Table 1, where A is real GDP growth rate (percentage change on previous year) and B is general government deficit, resp. surplus in a particular year (in percentages).

As it is evident from Table 1, the reduction of the total public budget deficit has begun to realize, on average, within the European Union as a whole in recent years of the examined period. However, the change of the real GDP growth has had a slightly downward trend (in percentage comparison to the previous year) since 2010.

2.2 Issue of VAT Rates in the European Union

The VAT is characterized as a general indirect turnover non-duplicate tax on the final consumption of goods and services, which is the only permitted general tax on consumption in the European Union. Its development is highly specific and very difficult for a comparison with the history of other taxes (Tait, 1988 or Cnossen, 1998).

The complexity of the VAT system was reflected in the release of COM(2010)695 material from 1st December 2010, the “Green Paper on the future of VAT. Towards a simpler, more robust and efficient VAT system“ and the material of the Commission COM(2011)851.

After difficult discussions, a model with two types of tax rates: the standard and reduced ones, is considered as the fundamental VAT model in the EU (Eur-lex, 2006). However, conclusions of the European Commission emphasize the need for further harmonization of Member States' approaches to tax rates and tax base, so that the mutual relations between the countries could be considered as transparent and flexible. VAT rates are considered to be highly diverse and relatively very difficult at the present (Bogetić, Hassan, 1993, Schenk, Oldman, 2007).

Table 1: Consequences of the EU Economic Crisis

	2008		2009		2010		2011		2012		2013	
	A	B	A	B	A	B	A	B	A	B	A	B
BE	1.0	-1.0	-2.8	-5.6	2.4	-3.8	1.8	-3.7	-0.3	-3.9	0.0	-3.1
BG	6.2	1.7	-5.5	-4.3	0.4	-3.1	1.8	-2.0	0.8	-0.8	0.9	-0.1
CZ	3.1	-2.2	-4.5	-5.8	2.5	-4.8	1.8	-3.3	-1.2	-4.4	-0.4	-3.1
DK	-0.8	3.2	-5.7	-2.7	1.6	-2.5	1.1	-1.8	-0.4	-4.0	0.7	-3.1
DE	1.1	-0.1	-5.1	-3.1	4.0	-4.1	3.3	-0.8	0.7	0.2	0.4	1.1
EE	-4.2	-2.9	-14.1	-2.0	2.6	0.2	9.6	1.2	3.9	-0.3	3.0	-0.5
EL	-0.2	-9.8	-3.1	-15.6	-4.9	-10.7	-7.1	-9.5	-6.4	-10.0	-4.2	-8.8
ES	0.9	-4.5	-3.8	-11.2	-0.2	-9.7	0.1	-9.4	-1.6	-10.6	-1.5	-8.6
FR	-0.1	-3.3	-3.1	-7.5	1.7	-7.1	2.0	-5.3	0.0	-4.8	-0.1	-3.2
IE	-2.1	-7.4	-5.5	-13.9	-0.8	-30.8	1.4	-13.4	0.9	-7.6	1.1	-7.8
IT	-1.2	-2.7	-5.5	-5.5	1.7	-4.5	0.4	-3.8	-2.4	-3.0	-1.3	-2.9
CY	3.6	0.9	-1.9	-6.1	1.3	-5.3	0.5	-6.3	-2.4	-6.3	-8.7	-6.1
LV	-3.3	-4.2	-17.7	-9.8	-0.9	-8.1	5.5	-3.6	5.6	-1.2	3.8	-1.6
LT	2.9	-3.3	-14.8	-9.4	1.5	-7.2	5.9	-5.5	3.7	-3.2	3.1	-4.9
LU	-0.7	3.0	-4.1	-0.8	2.9	-0.9	1.7	-0.2	0.3	-0.8	0.8	-0.7
HU	0.9	-3.7	-6.8	-4.6	1.3	-4.3	1.6	4.3	-1.7	-1.9	0.2	-2.1
MT	3.9	-4.6	-2.8	-3.7	4.0	-3.6	1.6	-2.8	0.8	-3.3	1.4	-3.6
NL	1.8	0.5	-3.7	-5.6	1.5	-5.1	0.9	-4.5	-1.2	-4.1	-0.8	-4.3
AT	1.4	-0.9	-3.8	-4.1	1.8	-4.5	2.8	-2.5	0.9	-2.5	0.6	-2.4
PL	5.1	-3.7	1.6	-7.4	3.9	-7.9	4.5	-5.0	1.9	-3.9	1.1	-3.8
PT	0.0	-3.6	-2.9	-10.2	1.9	-9.8	-1.3	-4.4	-3.2	-6.4	-2.3	-7.1
RO	7.3	-5.7	-6.6	-9.0	-1.1	-6.8	2.2	-5.6	0.7	-2.9	1.6	-3.1
SI	3.4	-1.9	-7.9	-6.2	1.3	-5.9	0.7	-6.4	-2.5	-4.0	-2.0	-3.5
SK	5.8	-2.1	-4.9	-8.0	4.4	-7.7	3.2	-5.1	2.0	-4.3	1.0	-4.0
FI	0.3	4.4	-8.5	-2.5	3.4	-2.5	2.7	-0.8	-0.8	-1.9	0.3	-2.1
SE	-0.6	2.2	-5.0	-0.7	6.6	0.3	3.7	0.2	0.7	-0.5	1.5	-0.3
UK	-0.8	-5.1	-5.2	-11.5	1.7	-10.2	1.1	-7.8	0.2	-6.3	0.6	-6.2
EU-27	0.4	-2.4	-4.5	-6.9	2.0	-6.5	1.7	-4.5	-0.4	-4.4	0.2	-3.9

Source: Eurostat, 2013.

The fact that there are given only lower limits of the VAT rate, leaves the space for Member States to set, resp. to move the rates upwards (see Široký, Maková, 2012).

Table 2 shows the development of VAT rates in the period of 2008 - 2013. For the purpose of further analysis, there is indicated the prevailing reduced rate as the first in the table, and the standard rate as the second in the order (because Denmark has a single rate, there is stated 25, 25). Changes of rates are shown in bold.

Table 2: Development of VAT Rates in the EU in the Examined Period

	1/01/2008	1/01/2009	1/01/2010	1/01/2011	1/01/2012	1/01/2013
BE	6; 21	6; 21	6; 21	6; 21	6; 21	6; 21
BG	7; 20	7; 20	7; 20	9; 20	9; 20	9; 20
CZ	9; 19	9; 19	10; 20	10; 20	14; 20	15; 21
DK	25; 25	25; 25	25; 25	25; 25	25; 25	25; 25
DE	7; 19	7; 19	7; 19	7; 19	7; 19	7; 19
EE	5; 18	5; 18	9; 20	9; 20	9; 20	9; 20
EL	9; 19	9; 19	9; 19	13; 23	13; 23	13; 23
ES	7; 16	7; 16	7; 16	8; 18	8; 18	10; 21
FR	5.5; 19.6	5.5; 19.6	5.5; 19.6	5.5; 19.6	5.5; 19.6	5.5; 19.6
IE	13.5; 21	13.5; 21.5	13.5; 21	13.5; 21	13.5; 23	13.5; 23
IT	10; 20	10; 20	10; 20	10; 20	10; 20	10; 21
CY	8; 15	8; 15	8; 15	8; 15	8; 15	8; 18
LV	5; 18	10; 21	10; 21	12; 22	12; 22	12; 21
LT	9; 18	9; 19	9; 21	9; 21	9; 21	9; 21
LU	6; 15	6; 15	6; 15	6; 15	6; 15	6; 15
HU	5; 20	5; 20	5; 25	5; 25	5; 27	5; 27
MT	5; 18	5; 18	5; 18	5; 18	5; 18	5; 18
NL	6; 19	6; 19	6; 19	6; 19	6; 19	6; 21
AT	10; 20	10; 20	10; 20	10; 20	10; 20	10; 20
PL	7; 22	7; 22	7; 22	8; 23	8; 23	8; 23
PT	12; 21	12; 20	12; 20	13; 23	13; 23	13; 23
RO	9; 19	9; 19	9; 19	9; 24	9; 24	9; 24
SI	8.5; 20	8.5; 20	8.5; 20	8.5; 20	8.5; 20	9.5; 22
SK	10; 19	10; 19	10; 19	10; 20	10; 20	10; 20
FI	8; 22	8; 22	12; 22	13; 23	13; 23	14; 24
SE	12; 25	12; 25	12; 25	12; 25	12; 25	12; 25
UK	5; 17.5	5; 15	5; 17.5	5; 20	5; 20	5; 20

Source: European Commission, 2013 and SCHELLEKENS, M., 2013.

In the examined period, there were done in total 27 amendments of the standard VAT rate:

$$\Delta DPH^{\text{EU}} (5; 6; 7; 3; 6) = 27,$$

and these changes took place in 17 EU Member States. The highest increase of the standard rate is recorded in Hungary (7 percentage points) and in Romania and Spain (5 percentage points), on the contrary the standard rate has not been changed in 10 countries (BE, BG, DK, DE, FR, LU, MT, AT, SI and SE).

In the examined period, in total 15 amendments of the reduced VAT rate were done:

$$\Delta DPH^{\text{EU}} (1; 3; 7; 1; 3) = 15,$$

and these changes took place in 9 EU countries. The highest increase of the reduced rate is recorded in Latvia (7 percentage points) and in the Czech Republic and Finland (5 percentage points) and on the contrary the reduced tax rate has not been changed in 17 countries (DK has the uniform rate).

Governments of the EU Member states realized altogether 42 amendments in VAT rates in the period of 2008 – 2013:

$$\Delta DPH\ EU\ (6; 9; 14; 4; 9) = 42,$$

while it was a reduction of the rate in three cases and an increase of the VAT rate in 39 cases. Changes have taken place in 18 EU Member States and led to an increase of VAT rates (compared with the beginning and the end of the examined period). This development has resulted in an increase of the arithmetical mean of the reduced VAT rate in the EU Member States from 8.0 % to 9.2 % (in the case of a weighted average from 7.4 % to 8.1 %) and the arithmetical mean of the standard rate from 19.5 % to 21.2 % (in the case of the weighted average from 19.3% to 21.0%).

Also the share of revenues from VAT on GDP, respectively on tax revenues has been increased in the period of 2008 - 2013: the proportion of VAT on GDP from 7.4% to 7.8% in the arithmetical mean (in the weighted average from 6.9% to 7.3%), respectively the share of the VAT on total taxes from 21.0 % to 22.1 % in the case of the arithmetic average (from 17.4 % to 18.6 % in the case of a weighted average).

Statistical methods and below mentioned programs based on the method of least squares were used when searching for dependencies stated in the aim of the paper.

The data group consisted of annual indicators of 27 European Union member states during a six-year period of 2008-2013. Please see appendix for the calculation.

3. Discussion and Conclusion

The tax instruments have not been omitted while searching for economic policy instruments to mitigate impacts of the economic crisis (Bye et al, 2012). The most visible change, in the area of the VAT, is the increase of VAT rates, which helps states to saturate the public budget revenue shortfalls, respectively to decrease (not to increase) budget deficits. In the period of 2008 - 2013, 18 EU countries increased the VAT rate.

The assumption of the value added tax usage as an instrument of the fiscal policy in times of economic crisis (the increase of value added tax rates) to mitigate the impact of the crisis has been tested using the method of least squares. The assumption was weakly confirmed at the standard VAT rate.

Findings of the static model are:

1. The amount of VAT do not depend either on the change of the real GDP growth or on the total deficit (surplus) of public budgets, only on a calendar year.
2. The mean value of the standard VAT rate is equal to 19.3 % in the EU-27 for 2008, each subsequent year it increases, on average, about 0.40 %.
3. The reduced rate of VAT is not directly affected by macroeconomic indicators, only by the standard rate.
4. The mean value of the reduced VAT rate is equal to 8.1 % in the EU-27 for 2008, each subsequent year it increases, on average, about 0.33 %.

5. The change of one percentage point of the standard VAT rate is reflected in the reduced VAT rate as a change about 0.82 %.

Findings of the dynamic model are:

1. Both VAT rates (standard and reduced one) are mainly affected by the value of the rate in the previous year.
2. Both VAT rates are weakly negatively influenced by an annual change of the real GDP growth delayed by one year (year-on-year real GDP increase / decrease about 10 % will cause a decrease / increase of both VAT rates about 0.5 % with one year delay).
3. Year-on-year change of the real GDP growth appears to be the leading indicator of the first order of both VAT rates (i.e. with one year advance).

Of course, not all results of the method of least squares can be economically agreed and these results have to be interpreted in context with the done primary comparative analyses. E.g. the statement that the change (increase) of the standard VAT rate about one percentage point will result in an increase of the reduced rate about 0.82 % point can be interpreted that if a country increases the standard rate so the reduced rate will likely be increased as well. Likewise other statistical conclusions have to be clarified economically as well. Then results of the least squares method together with the done comparative analysis (statistical method itself without knowledge of economic relationships may not give relevant conclusions, moreover, the same comparison for the years 2008 - 2012 gave results about the strong interdependence of GDP changes and the standard tax rate) gives the final conclusion: **changes of macroeconomic indicators mainly affect the standard tax rate with one-year delay**, which confirms the assumption of selected research.

It also remains unclear to which limit it is possible to increase the value added tax rate at the possible negative influence on the ligation of economic incentives and the reduction of the economic growth.

In future it will be interesting to observe which of these proposals stated in the Green Paper on the future of VAT, resp. in COM (2011)851 material, will be finally realized.

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Appendix

GDP - change of the real GDP growth (percentage change on previous year)
 DEF - general government deficit (surplus) in a particular year
 DPH_A - reduced VAT rate in a particular year
 DPH_B - standard VAT rate in a particular year

Static model

When examining the impact of the economic crisis on the increase of VAT rates, GDP and DEF indicators are considered as potential crisis indicators. Therefore a general model is constructed:

$$(HDP, DEF) \rightarrow (DPH_B) \rightarrow (DPH_A)$$

It is assumed that the higher (standard) VAT rate (DPH_B) is primary, while a reduced rate (DPH_A) is secondary, derived.

$$DPH_B = a_0 + a_1 R + a_2 HDP + a_3 DEF \tag{1}$$

$$DPH_A = b_0 + b_1 R + b_2 HDP + b_3 DEF + b_4 DPH_B \tag{2}$$

where R is a time variable expressed as:

$$R = \text{particular year} - 2008 \tag{3}$$

Both regression relations were solved classically by the method of least squares in SPSS.

formula 1 – standard VAT rate:

adjusted coefficient of determination: $R_a^2 = 0.064$ (4)

Akaike criterion: $AIC = 304.0$ (5)

significance of the model: $Sig F = 0.004$ (6)

autocorrelation: $DW = 2.415$ (7)

final formula:

$$DPH_B = 19.666 + 0.394 R - 0.005 HDP + 0.077 DEF \tag{8}$$

The regression model is statistically significant (at the level of $\alpha = 0.05$), however, only R variable (time variable) is statistically significant in this model, while GDP (change of the real GDP growth) and DEF (general government deficit) variables came out as insignificant.

This fact is confirmed by the optimization of the model using the *stepwise* method on the level of 0.05 / 0.1. Parameters of the model were improved in most cases by the elimination of insignificant variables - GDP and DEF.

adj. coefficient of determination: $R_a^2 = 0,062 \downarrow$ (9)

Akaike criterion: $AIC = 302.2 \downarrow$ (10)

significance of the model: $Sig F = 0,001 \downarrow$ (11)

autocorrelation: $DW = 2.384 \rightarrow 2$ (12)

final formula: $DPH_B = 19.317 + 0.399 R$ (13)

formula 2 – reduced VAT rate:

adj. coefficient of determination: $R_a^2 = 0.271$ (14)

Akaike criterion: $AIC = 405.8$ (15)

significance of the model: $Sig F = 0.000$ (16)

autocorrelation: $DW = 1.855$ (17)

final formula:

$$DPH_A = -8.251 - 0.043 R - 0.028 HDP - 0.086 DEF + 0.845 DPH_B \tag{18}$$

The regression model is statistically significant (at the level of $\alpha = 0.05$), only DPH_B variable (standard VAT rate) came out as significant (at the level of $\alpha = 0.05$). Other input variables, i. e., R (time variable), GDP (change of the real GDP growth) and DEF (general government deficit) came out as insignificant.

This fact is confirmed by the optimization of the model using the *stepwise* method on the level of 0.05 / 0.1. The monitored parameters of the model were improved by the optimization.

adj. coefficient of determination: $R_a^2 = 0.275 \uparrow$ (19)

Akaike criterion: $AIC = 401.8 \downarrow$ (20)

significance of the model: $Sig F = 0.000 =$ (21)

autocorrelation: $DW = 1.863 \rightarrow 2$ (22)

final formula: $DPH_A = -7.743 + 0.818DPH_B$ (23)

general (optimized) static model:

$DPH_B = 19.317 + 0.399 R$ (24)

$DPH_A = -7.743 + 0.818 DPH_B$ (25)

First order dynamic model

In the process of the dynamic model creation, the linear regression equation is replaced by difference equations of the first order. There are put regressors delayed by one year and dependent variable delayed by one year in addition to the individual regressors (first order autoregressive model).

Thus a two-stage hierarchical model with following equations arises:

$DPH_B_t = a_0 + a_1 R + a_2HDP_t + a_3DEF_t + a_4 HDP_{t-1} + a_5 DEF_{t-1} + a_6 DPH_B_{t-1}$ (26)

$DPH_A_t = b_0 + b_1 R + b_2HDP_t + b_3DEF_t + b_4DPH_B_t + b_5 HDP_{t-1} + b_6 DEF_{t-1} + b_7$ (27)

$DPH_B_{t-1} + b_8 DPH_A_{t-1}$ (28)

where R is a time variable expressed as:

$R = \text{particular year} - 2008$ (29)

Both regression relations were solved classically, as well as in the case of the static model, by the method of least squares in SPSS.

formula 1 – standard VAT rate:

The regression model is statistically significant (at the level of $\alpha = 0.05$). During the optimization of the model using the *stepwise* method at the level of $0.05 / 0.1$, there will remain only the delayed change of the real GDP growth in the previous year (HDP_{t-1} variable) and an autoregressive member – the standard VAT rate in the previous year (DPH_B_{t-1}) in the model.

adj. coefficient of determination: $R_a^2 = 0.858$ (30)

Akaike criterion: $AIC = 0.13$ (31)

significance of the model: $Sig F = 0.000$ (32)

autocorrelation: $DW = 1.806$ (33)

final formula: $DPH_B_t = 1.517 - 0.058 HDP_{t-1} + 0.942DPH_B_{t-1}$ (34)

(There are not stated the initial, i.e. non-optimized form of regression equations for dynamic models).

formula 2 – reduced VAT rate:

The regression model is again statistically significant (at the level of $\alpha = 0.05$), only the delayed change of the real GDP growth in the previous year (HDP_{t-1} variable) and an autoregressive member – the reduced VAT rate in the previous year (DPH_A_{t-1}) appeared as significant after the optimization using the *stepwise* method. Other input variables came out as insignificant.

adj. coefficient of determination: $R_a^2 = 0.957$ (35)

Akaike criterion: $AIC = -46.1$ (36)

significance of the model: $Sig F = 0.000$ (37)

autocorrelation: $DW = 1.979$ (38)

final formula: $DPH_A_t = 0.395 - 0.053 HDP_{t-1} + 0.984 DPH_A_{t-1}$ (39)

general (optimized) first order dynamic model:

$DPH_B_t = 1.517 - 0.058 HDP_{t-1} + 0.942DPH_B_{t-1}$ (40)

$DPH_A_t = 0.395 - 0.053 HDP_{t-1} + 0.984 DPH_A_{t-1}$ (41)

EU as Highly Competitive Social Market Economy – Goal, Options, and Reality

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Abstract

In its Article 3, paragraph 3 the Treaty on European Union (TEU) requires from the EU for the first time to go after the goal of a highly competitive social market economy. In the aforementioned Treaty clause is noticeable that although it deals with the EU internal market its authors burdened it with far more socially-oriented than market-oriented mission. However, is nowadays „a highly competitive social market economy“ a realistic goal and has the EU in its present form the capacity and powers to achieve such an objective? The paper is a combination of economic and legal -political analysis through which the authors try to answer four main questions: What is the contemporary meaning of the term “social market economy” in the both - economic and EU-law academic theory? Is the original concept of “Sozialmarktwirtschaft” applicable in the conditions of a globalized economy of the 21st century? Can the EU, within the powers conferred to it, positively fulfill such an objective, or can the EU just approach it by weakening the still prevailing tendency towards liberalization and deregulation brought about by the construction of the EU internal market and by the promotion of its freedoms?

Keywords: *European Union, Lisbon Treaty, Social market economy, Social policy*

JEL Classification: *F15, I38*

1. Introduction: EU and the Goal of Social Market Economy

The Lisbon Treaty in force from December 2009 brought numerous changes to the legal basis of the EU including one novelty with potentially far-reaching significance. The change at issue is the wording of Article 3 of the Treaty on European Union (TEU) specifying the objectives of the European Union. These objectives, for the first time in the European integration history, refer to “a highly competitive social market economy, aiming at full employment and social progress”. Given that, in parallel, one of the originally proposed goals, that of free and undistorted competition, was excluded from the integration objectives, many commentators assumed that the Lisbon Treaty would significantly strengthen the social aspects of European integration. (Barnard, Deakin, 2012, Damjanovic, 2013, O’Gorman, 2011, Weiss, 2013).

In the 1950-ies the founding fathers made the compromise to entrust the supranational bodies of the then EEC with tasks of “negative integration” that could be solved by impartial technocrats on the basis of economic rationality, while the politically sensitive decisions requiring broad social consensus had been left to the Member

States. This division of competences, expressed sometimes briefly as “Keynes at home, Smith abroad” (Micossi, Tosato, 2009), has in the course of years inevitably swung the integration towards deregulation and liberalization of until then nation-specific and preponderantly closed sectors and systems.⁸⁶ The progress of deep-going markets opening, however, has gradually plunged the national redistributive social systems, based on local solidarity or even on the national corporatism, under the pressure of migrant workers, public tender bidders and service providers representing cheap and dynamic competition.

The EU's development towards a greater consideration of social aspects can symbolically be dated from the adoption of (not binding) Community Charter of Fundamental Social Rights of Workers in December 1989. This was followed by amendments to the primary law that brought about a. o. the Article I- 3 of the draft Constitutional Treaty (CT) that called for a highly competitive social market economy, aiming at full employment and social progress. This target was then copied to Article 3(3) TEU in its current Lisbon's version.

Among the “social” innovations of the Lisbon Treaty one has to note also the Article 9 TFEU containing the so-called “horizontal social clause”, a general obligation of the EU to take into account in all its measures “promotion of a high level of employment, the guarantee of adequate social protection, the fight against social exclusion, and a high level of education, training and protection of human health”. Moreover, the Lisbon Treaty in Article 6, paragraph 1 has made part of primary EU law the Charter of Fundamental Rights of the European Union, which includes Title IV “Solidarity” containing provisions on workers' right to collective bargaining and action, or right to social security and social assistance. Although it has always been understood even by supporters of social Europe that by the Lisbon Treaty neither new specific powers accrued to the EU in the social field nor any directly claimable social rights were given to European workers, nevertheless, the belief that the social aspects of the Lisbon Treaty would “open up opportunities for further strategic development of social Europe” was widely shared. (Špidla, 2009)

This paper is trying to review those expectations from a distance of more than four years that passed since the Treaty of Lisbon came into force, in an attempt to find a possible meaning of the concept of social market economy in the current economic and legal situation of the European Union.

⁸⁶ The EU harmonized, strictly expressed, rather labor than social standards as the former could adversely affect the free movement of workers. Their non-exhaustive list would thus include: health and safety at the work place, information and consultation of workers, collective redundancies, working time, maternity leave, posting of workers, part-time and fixed-time contracts, temporary agency work, protection in the event of insolvency etc. The EU has never had relevant tools or means to “re -distribute” in the name of social spending, i.e. no social benefits, no social security ensured and provided directly by the EU. In parallel, social rights such as those enshrined today by the EU Charter have been recognized by the ECJ as part of guiding principles of EU law. It means that they must be observed in EU policies and legislation but do not themselves provide legal base for the individual or collective claims of EU workers or citizens.

2. "Social Market Economy" as a Concept in Economic Theory

For several reasons the answer to the question of what economic theory means (or previously understood) under the concept of social market economy is not clear.

The first reason is that the concept of the social market economy itself was born (in the work of Alfred Müller-Armack) as a part or a complement to the German concept of ordoliberalism. As Sojka (Sojka, 2010) points out this school is usually overlooked in English and American literature. One of the most outstanding representatives of the original ordoliberalism, Walter Eucken, was also the founder of the Freiburg School of Economics and Law where together with other colleagues he sought to combine theoretical approaches of both economic and legal science in order to apply them on the issues of market economy and economic policy. From the perspective of the history of economic thinking the concept of ordoliberalism, so with its part or a complement - the concept of the social market economy, lies out of the main stream economic thinking and can well be classified among the major directions of institutional economics. Some authors then consider the whole concept of ordoliberalism a predecessor of constitutional economics. Ordoliberalism containing also the concept of the social market economy can be better described as a "theory of economic policy" as Quéré, Coeur, Jacquet and Pisani - Ferry define it (Bénassy-Quéré, Coeuré, Jacquet, Pisani-Ferry, 2010). The concept of the social market economy is - and at the time of its inception was - rather than pure economic theory - a distinct part of a comprehensive theory of economic policy.

The second reason for the ambiguity of the current interpretation of the concept of social market economy in the economic theory is that - as again coincides with a number of authors - in current research works economics as a discipline has become too specialized, too narrowly focused, broken into the sub-disciplines, which usually have a procedure for determining the hypothesis, its verification or falsification on the data followed by some interpretation, but in this form, and with this methodology it may not have the ambition to give answers to practical questions of economic policy not to mention when they are associated with a priori value preferences pronounced and declared and enforced by political leaders, although they are embodied in documents such as TFEU being a long-term political commitment. In his famous article in *Foreign Affairs*, Alan Blinder (Blinder, 1997) deals very sensitively with issues of optimal determination of value priorities of the society by politicians and their subsequent achievement in a form of "policy design" by educated technocrats.

The third reason for the ambiguity of the meaning of the term social market economy in economic theory (or rather already in the theory of economic policy) is that the founders of the concept themselves endowed it with the principles of solidarity at one and subsidiarity at the other side. In the context of European integration where the concept of subsidiarity was transferred, it is being used to defend the asymmetric transfer of responsibilities and powers to the supranational level. In this context, Baldwin and Wyplosz even refer to asymmetric integration, or even omitted integration in the area of social policy and taxation. (Baldwin, Wyplosz, 2012)

For the above reasons explaining the ambiguity of the term "social market economy" in economic theory, we chose to define the term in the following way. To return to the original meaning of the term "social market economy" we return back to the definition by the members and associates of the Freiburg school. For the definition in the contemporary theory we turn to teleologically oriented parts of economic theory, such as the OCA theory while trying to look for normatively oriented recommendations for economic policy by established experts in the field of theoretical economics

The original meaning of the term social market economy in the works of the representatives of ordoliberalism can be characterized by the fact that ordoliberalism itself builds on the so-called "politics of order" (Ordnungspolitik) where they perceive the role of the state as irreplaceable for creation of the environment and for guaranteeing the quality of formal institutions (constitution, laws). In the concept of Eucken (Eucken, 2004), functional price system is a basic principle for establishing of economic order. Because of the interdependence of social and economic order the existence of price system requires the fulfillment of six basic principles.

1. Dominance of monetary policy guaranteeing price stability.
2. Free markets without entry restrictions.
3. Private property (with a protection of competitive market environment).
4. Freedom of contract (again, subject to the protection of the competitive market environment).
5. Strong responsibility for liabilities (and event. losses) from transactions of market participants gaining benefit from them.
6. Stability of economic policy (fixed rules that reduce the level of uncertainty - here it is again argued by possible damage of competition and strengthening of autonomous tendency to cartelization in the case of a higher degree of uncertainty).

These basic principles then correspond to the requirements on regulatory policy in addressing market failures and corrective (social) policies limiting inequalities arising from the existence of the market system correcting the degree of inequality and strengthening social cohesion. Essentially, social policy has to stay next to the functioning price system and market competition and correct the allocation of income in accordance with the principles of solidarity and subsidiarity. To this purpose progressive redistributive taxation can be applied together with social policies associated with various measures in favor of the worse-off layers of the society (child allowances, rent subsidies, social housing, etc.). The intervention should only take place where the problem arose (subsidiarity) and only in cases where people are unable to take care of themselves (the so-called legitimate poverty as defined by Murray) (see Murray, 1998).

In contemporary theory, the idea of a social market economy represented by its basic instrumental ideals is usually addressed. Especially the subsequent correction of too high level of inequality and possible suppression of the phenomenon of reproducing social exclusion connected with the results of the market distribution is being discussed in relation to the challenges of globalization and European economic integration. Baldwin (Baldwin, 2008) and Blinder (Blinder, 2006) point to the new

challenges in redefining the role of the state (or public sector at any - European, national and regional - level) due to the increasing pressures of globalization transferring competition from the level of "among competitors" level up to the level of "among departments and individuals".

A number of authors of the OCA theory postulate the need for greater symmetry between monetary integration and centralization of fiscal, respectively, social policy (the part of which would include both a European tax and the implicit transfers). Other authors, such as Buti (Buti, 2014), De Grauwe (De Grauwe, 2013) or Pisani – Ferry (Pisani – Ferry, 2012), speak of "Post-crisis inconsistent trinities" etc., in other words of the need for an adjustment of the institutional framework of the EU so that the ideas of social market economy remain fulfilled.

3. Lisbon Treaty and Its “Social Market” Potential

Historically, the expression “a highly competitive social market economy” appeared for the first time in the third paragraph of Article I-3 of the draft CT. (Official Journal of the European Union, 2004) Although the wording was not fully identical to that of the current Article 3(3) TEU, its segment “based on balanced economic growth and price stability, a highly competitive social market economy aiming at full employment and social progress ...” reads in both documents exactly the same. This text is the result of negotiations originally within the Working Group XI - Social Europe of the Convention (in charge of the CT drafting), as confirmed by its Report from February 4, 2003. (Final Report of Working Group XI on Social Europe CONV, 2003) The fact that objectives of the Union made then for the first time reference to “social market economy” was the fruit of a compromise between those who lobbied for the reference to European social model and those who pushed for maintaining the reference to an open market economy with free competition (as already contained in Article 4(1) of the existing EC Treaty). According to analysts, this reference reflected a clear compromise in the corridors of power. (Craig, 2013) Members of Working Group Social Europe (WGSE) could not agree on proposing any extension of EU competences in the social field, thus merely emphasized the requirement of equivalence between economic and social objectives of the EU.

The transcription of the third paragraph of Article I-3 CT into the paragraph 3 of Article 3 TEU took place in the European Council’s documents without any noteworthy discussion. A fierce debate erupted on the contrary about its second paragraph that in the draft CT’s Article I-3 ranked among the EU objectives the “internal market where competition is free and not distorted”. Under pressure from the then French President, N. Sarkozy, the European Council decided to drop the reference to free and undistorted competition, stressing nevertheless its importance in a new Protocol 27 “On internal market and competition” added to the Treaty. This symbolic swap can also be read as the expression of resistance by more balanced Europe proponents, not just in France, against too (neo)liberal direction of the European integration. (Spiegel Online International, 2007) It sparked a controversy about whether the EU was really undergoing “a major reorientation”, as Sarkozy immediately stressed in his interpretation of the event (Capital.fr, 2007).

It is really hard to dispute that the inclusion of the objective of social market economy, vaguely defined though, into the legislative text of the highest legal force and into its opening provisions, which the legal doctrine classifies as “Constitutional principles”, should have some practical significance and weight. (Blanke, Magiameli, 2013) The rule says, at least since the judgment of the ECJ in the case 1973 6/72 *Continental Can*, that these target provisions of the Treaty are not “provisions that merely contain general program devoid of legal effect”. (Commission of the European Communities) In practice, this means not only that all the institutions forming and implementing EU policies must properly take them into account. (Blanke, Magiameli, 2013) The most important consequence is that if a certain measure of the EU or of Member State acting in the field covered by EU law denies or openly ignores these objectives, it could be declared contrary to EU law by a decision of the ECJ, which in the case of an EU legal act would lead to its annulment. (Falkner, 2008) It is therefore of utmost importance to examine whether the Lisbon Treaty gives some more specific content to the goal of social market economy.

Regarding direct clarification of the term, neither TEU nor Treaty on Functioning of European Union (TFEU) offers any indication as to its content. It is difficult to construe it using the wording of Article 3(3) TEU, as in addition to the term “social market economy” this Article contains other 17 targets, majority of which are either explicitly social and solidarity oriented or rather cultural and ecological than free-market oriented. Some commentators assess this enumeration of targets as a mess with no clear guidance for any political or legislative activity. (European Union Committee, 2008) In order to infer from the wording of Article 3(3) TEU some specific mission other authors point out that this entire paragraph begins with a short and laconic sentence: “The Union shall establish an internal market”. Therefore, all what follows behind, i.e. all the other objectives listed in the paragraph should be understood as characteristics of this historically paramount and everlasting goal of European integration (Blanke, Magiameli, 2013).

From this perspective, however, the social market economy looks as somewhat incongruous feature of the internal market. It lacks any explicit command to optimize, similar to more explicit objectives, such as to support economic growth, to work for full employment, to combat social exclusion etc. If understood in its original West-German meaning, the social market economy designs rather a major strategic approach towards the economic and social order of a society, not just an amendment to policies that underpin and further develop its “internal market”. (Joerges, Roedl, 2004) Downgraded to internal market activities of the EU, it could likely mean the necessity to always respect the balance between the economic and the social. But does this mean that the objective of social market economy amounts to nothing more than to a commandment to look for compromise between economic freedoms and protection of social rights in all activities of the EU and the Member States?

A possible answer can be found, according to some opinions, in the “horizontal social clause” of Art 9 TFEU and more specifically in the wording of Article 151 TFEU, which opens its Title X “Social policy”. It says that lasting high employment, improved living and working conditions, proper social protection, dialogue between

management and labor etc. will ensue not only from the functioning of the internal market. There would also be the need of “regulation or administrative action” as provided for in the Treaties as well as the approximation of provisions laid down by law. Although it is not a sufficiently specific and structured expression of objectives and corresponding measures, some take it for the base from which an EU (social and economic) model can be developed. (Buecker, 2013) Other authors, however, argue against the interpretation that Article 3(3) TEU points towards stronger EU harmonization and investments in the name of social objectives. (Craig, 2013) They stress the wording of Articles 119-120 TFEU (Title VIII “Economic and monetary policy”) which directly refer to the implementation of Article 3 TEU by the EU and Member States. In its four paragraphs laying down principles to be followed, the principle of “an open market economy with free competition” is quoted three times (!) followed by other guiding principles such as stable prices, sound public finances and sustainable balance of payments. The logic of social protection and solidarity and that of fiscal austerity and free competition do not match each other easily, even if their marriage should take place in one Member State. Difficult power sharing between EU and its members and different national models of social security, social dialogue and social services make any EU policy satisfying the logic of both 119 and 151 TFEU Articles a mission almost impossible.

A certain progress in the interpretation of the social market economy target can after all be accomplished thanks to analysts that claim that this objective is not the basis for positive action, but far more a limiting principle, or even the break to any further development of integration in one-sided direction. Joerges and Roedl referring to West German post-war economic model, that provides the only historically fixed content of the social market economy concept, conclude that in its core there is not the priority of the social. Right the opposite is true, as there is a clear restriction of instruments to achieve any social objective at all. (Joerges, Roedl, 2004) A social market economy has always been about market-compatible corrections of otherwise free market, not about building welfare state or social Union. In contrast, Costamagna considers the inclusion of the social market economy goal into TEU in the context of other social clauses and provisions and infers that this objective poses a clear limitation to further liberalization and deregulation measures of the internal market. It is about strengthening the social rights against internal market freedoms and so it is a signal not that much for EU legislators but for the ECJ to re-balance social rights and market freedoms in favor of stronger position of the former ones. (Costamagna, 2011)

Be it that way or the other one, the social market economy objective thus does not open the door to any flood of new EU legislation designed to achieve this vaguely defined goal. It should rather be seen as a defensive clause, as a possible judicial brake that should prevent the EU from the switch to either socialism or neoliberalism. (O’Gorman, 2011) This assessment of importance of the social market economy objective looks plausible also after a more detailed analysis of Treaty provisions. The strengthening of social aspects of the EU was incorporated into the Lisbon Treaty at a symbolic level, not at the practical one because the EU has not received any substantial powers to build its own social model. First, there is no doubt that neither Article 3(3) TEU nor the horizontal social clause in Article 9 TFEU nor

the principles⁸⁷(Explanations relating to the Charter, 2007) set out in Title IV Solidarity of the Charter of Fundamental Rights give individuals the rights which they could directly claim before the institutions of the EU or Member States. (Blanke, Magiameli, 2013) Second, it should be emphasized that the objectives of the EU, even codified in the opening provisions of the Treaty, do not imply any corresponding powers to achieve them. The EU can legislate only if the Treaty provides for corresponding competence to act in a particular area. (Joerges, Roedl, 2004, Blanke, Magiameli, 2013) And the wording of the key “social” article 153 TFEU allows the EU only to “support and complement” the activities of the Member States in several social fields, however at the same time it excludes any EU legislation affecting fundamental principles of national social security systems and rules out any EU act that would apply to pay, to the right of association, to the right to strike or to the right to impose lock-outs.

It is therefore clear that the EU itself is not under the provisions of the Lisbon Treaty capable to implement on its own any ambitious program of social measures or collective social rights of workers.⁸⁸(Blanpain, 2013, Schoemann, 2010) The interpretation of the social market economy objective not as a green light to development of EU social model, but as a defensive principle which should serve not that much EU legislators as ECJ judges to reduce bias for the leftist or for the rightist solutions of arising problems then appears as very close to reality.

How could the ECJ assume such a role was suggested by its General Advocate (GA), Cruz Villalón, in his Opinion in the case C-515/08 *Santos Palhota* in May 2010. Addressing the question concerning the legitimacy of national requirements imposed on an employer from another Member State, which posted to the country at issue his employees within the cross-border provision of services, GA proposed to the Court to take account of the new social provisions of the Lisbon Treaty stipulating that “the internal market is to be realised by means of policies based on ‘a highly competitive social market economy, aiming at full employment and social progress’”. (Opinion of advocate General Cruz Villalón, 2010) However, the ECJ issued a judgment without a single reference to the objectives of Article 3 paragraph 3 TEU or the social market economy... Moreover, this term, according to the EUR-LEX database has never been used by the ECJ in its judgments so far in the whole post - Lisbon period.⁸⁹

⁸⁷ The Charter contains in some Titles justiciable rights but in others only so-called „principles“ that must be observed by institutions when the issue legislative or executive acts.

⁸⁸ Nothing should be expected in this respect from the so called *flexibility clause* of Article 351 TFEU, which allows the Union's competences to be adjusted to the objectives laid down by the Treaty when the latter has not provided the corresponding powers of action, as this “escape clause” cannot be used in cases where the Treaties exclude such harmonization (Art 352(3) TFEU).

⁸⁹ It was the EU's General Court that so far in one judgment from September 2012 (T-565/ 08, *Corsica Ferries*) used the argument based on the social market economy principle and upheld the Commission's decision not to prohibit a state aid provided to a state controlled company. This isolated case in more than four years (since Lisbon Treaty entry in force) could hardly prove a major shift in EU Courts' approach towards assessing the balance between the economic and the social.

Commentators have already concluded that the ECJ does not intend to accept, in consequence of the Lisbon Treaty, any significant changes regarding the relationship between economic freedoms and fundamental social rights. (Grimmel, 2013, Voogsgeerd, 2012) Or maybe the ECJ does not want to do the work that should be carried out by political decision makers as it is not up to judges to draw far reaching political consequences if the Treaty framers could not decide what direction the EU should set for.

4. Conclusion

In contemporary economic theory, the idea of a social market economy represented by its basic instrumental ideals is usually addressed. A number of authors of the OCA theory postulate the need for greater symmetry between monetary integration and centralization of fiscal, respectively, social policy (the part of which would include both a European tax and the implicit transfers). Other authors, speak of "Post-crisis inconsistent trinitities" etc., in other words of the need for an adjustment of the institutional framework of the EU so that the ideas of social market economy remain fulfilled.

From a legal point of view the social market economy objective seems to have no other specific mission than to order a balancing test between the economic and the social at any occasion when rights arising from either economic freedoms or social protection come into clash. So far this objective has not brought about any significant change of accents in favor of a more social EU in contrast to what had been expected when the Lisbon Treaty had been signed. The EU's social market economy means a compromise between free markets and protected social rights and does not imply either itself or under provisions of the Treaty, any push towards "social Union" in the sense of specific EU measures that would harmonize social rights and benefits. If this should take place at the EU level a shift in competencies would have to be approved among Member States and the Title X TFEU on Social policy would have to be redrafted.

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Regional Disparities of the Ageing Process in the European Union

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Abstract

The article deals with the differences of the age distributions on the countries in the European Union for the last thirty years. The EU has consisted of twenty eight countries now. The typology is given by weigh of the children's and oldest component. The analyses on this spatial level are using choropleth maps for demographical data presentation where we used ArcGIS 10.1 as a complete system for information. The main goal is to sort all the 28 countries on the basis of children and elderly ratio to the different population ageing groups: gently ageing population, ageing population, old population and very old population. The second main goal is to explain territorial differences of the ageing index in the years 1980 to 2012 and to measure their change for the last three decades. Those differences between EU countries are calculated against dynamic ageing index.

Keywords: *Ageing index, Dynamic ageing index, Elderly ratio, European Union, Children ratio, Regional disparities*

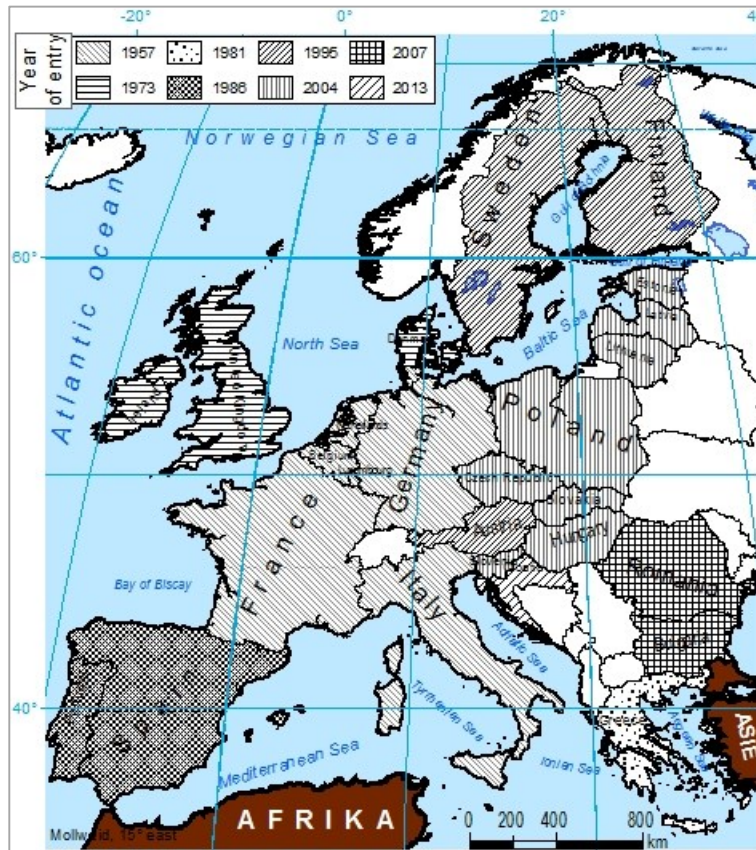
JEL Classification: *C46, J11, J13, J14, R23*

1. Introduction

It is very useful to anywhere when the population is unnoticed part of the science focus. Human resources are one of four the basic economic resources next to capital, soil and new technology. Economic behaviour is always affected by living phase. The population is playing the important rule in all basic economic activities as consumption, production and barter. The characters of these activities have a strong contexture on the age structure. The ageing process is one of the very prominent population structural matters. Age is basic structural characteristic on the field of demographic analysis. And we know that economic behaviour is always affected by living phase.

The main aim of this paper is to compare differences of the ageing process 28 member countries of the European Union for the last thirty years. We will analyzed change of their age composition after year 1980. We are using detailed statistics on the European Union which is prepared by their statistical office situated in Luxembourg (EUROSTAT). The European Union is an economic and political union of 28 member states now (map 1).

Map 1: Member States of the European Union



Source: Own elaboration

The population is playing the important role in all basic economic activities as consumption, production and change. And characters of these activities have a strong contexture on the population size and development. The ageing process is one of the very prominent population structural matters. Age is basic structural characteristic on the field of demographic analysis. And we know that economic behavior is always affected by living phase.

The change of age composition of population depends on the many factors such as size of natural increase and migration, on the mortality characteristics. And in the European Union at present, migration is a greater cause of population growth than natural increase. Both population growth and migration can affect the age structure.

Young people (0 to 14 years old) made up 15.6 % of the EU-28's population in 2012, while persons considered to be of working age (15 to 64 years old) accounted for 66.2 % of the population, and older persons (65 or more years old) had a 18.2 % share. Eurostat's latest set of population projections (EUROPOP2010) were made covering the period from 2011 to 2060 – and show that population ageing is likely to affect all EU Member States over this period.

Table 1: Basic Characteristics of the EU

E U (year)	member states	area (sq km)	population (mil., 2012)	density (inh./sq km)
1957	6	1,365,961	188.892	138
1973	9	1,727,181	273.001	158
1981	10	1,859,138	287.943	155
1986	12	2,457,340	338.159	138
1995	15	3,318,227	370.658	112
2004	25	4,056,761	457.679	113
2007	27	4,406,051	493.153	112
2013	28	4,493,712	503.771	112

Source: Own elaboration, based on UNO and Eurostat data

The global human population is projected to grow from 6.9 billion in 2010 to 9.15 billion in 2050. The population of what is now the European Union increased from 408 million in 1960 to nearly 504 million in 2013 (table). It is projected to go on increasing, reaching 521 million in 2035 and then begins to slowly decline to 506 million in 2060 [5].

We can see, that process of spreading the European Union was very dynamic for the last nearly sixty years (table). There live approximately 73 % of the European population on 43 % of European continental territory now [3].

2. Methodology and Analytic Approaches to Study Ageing Process

Before more than one hundred years Swede A. G. Sundbärg distinguished three age groups: progressive (expansive), stationary and regressive (constrictive). We can say that population analyses are very useful more than one century. And during this long time arose a number of demographic analytic approaches which are part of demographic methodology. Specialized studies wanted to solve many problems linked to ageing process for the last several decades.

The basic indicators [2, 3] which can show share of very important age groups are children (1) and elderly ratio (2). Very often we can compute the percentage substitution subsequently:

$$\text{children ratio} = \frac{P_{0-14}}{P} \times 100 \quad (1)$$

$$\text{elderly ratio} = \frac{P_{65+}}{P} \times 100 \quad (2)$$

Their common weights we can compare by the help of the ageing index (*AI*). The ageing index [1] show us the relatively weight of the elderly to children (3). The ageing index is a composite demographic ratio, defined as the percentage between the old age population (over 65) and the young population (under 15).

$$AI = \frac{P_{65+}}{P_{0-14}} \times 100 \quad (3)$$

Very special view of development trend ageing process presents indicator dynamic ageing index (*DAI*) in the case, when we want follow the time changes (4).

$$DAI = \left(\frac{\tau_1 P_{0-14}}{\tau_2 P} - \frac{\tau_2 P_{0-14}}{\tau_1 P} \right) \times 100 + \left(\frac{\tau_2 P_{65+}}{\tau_2 P} - \frac{\tau_1 P_{65+}}{\tau_1 P} \right) \times 100 \quad (4)$$

For references territory diversity values of the children and elderly ratio and ageing index we will use cartogram method. All using data come from the statistical office of the European Union (EUROSTAT), their sector “Social statistics“. The analyses on this spatial level are working with the creation of cartogram method for processing of the demographical data.

We can divide the population again age to the many groups. But as major groups we can identify:

- Young people or children (0 to 14 years old);
- Old-age people or elderly people (65 years and more);
- Working age population (15 to 64 years old).

The sum of the number of young and the number of elderly people are generally economically inactive. The developed countries have very accuracy statistical information and therefore they work with one year age structure. This statistical data come from censuses usually. And this demographic data we can use for planning actions too. The very special age model is population pyramid. **Population pyramids** show the distribution of the population by sex and by age groups (one-year, five-year or ten-year in general). Each bar corresponds to the share of the given sex and age group in the total (men and women combined) population. We can distinguish *three types of population pyramids*: expansive population (young population), stationary population (adult population) and constrictive population (old population). The analysis of age structure it is not only major groups or types of population pyramids but average age, median age, life expectancy at birth. This compare shares of children and elderly people and some age dependency ratios as the every first analysis of the age structure.

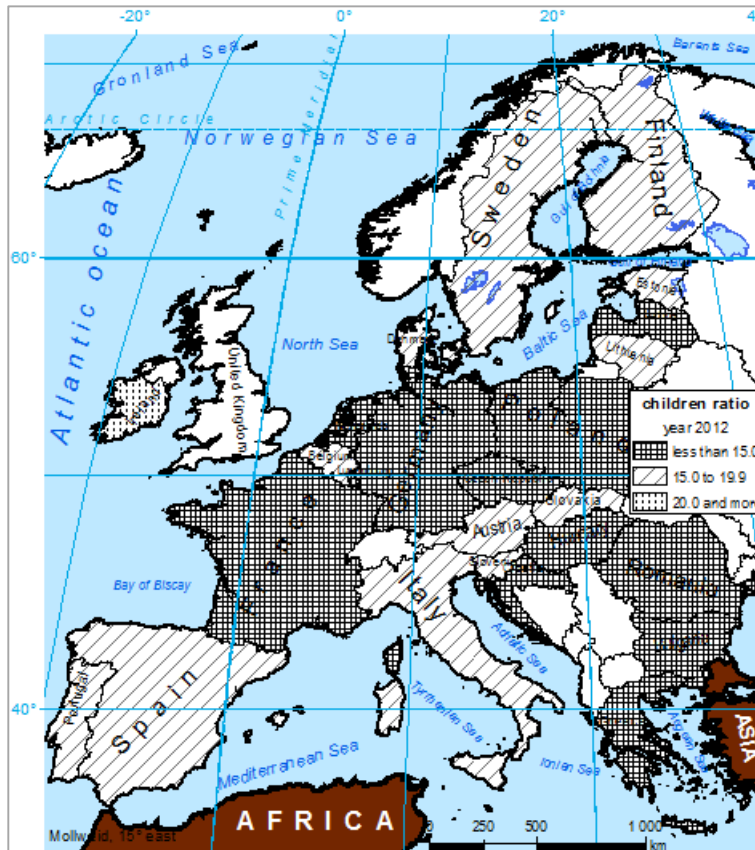
3. Regional Disparities Between European Union Countries

If we want to analyze changes of the **children ratio** on the population (1) we can name this situation as the ageing process [3] from below. Our working model distinguishes the four phases in this case:

- **Gently ageing population**: the proportion of children is more than 20.0 percent.
- **Ageing population**: the proportion of children is between 15.0 to 19.9 percent
- **Old population**: the proportion of children is between 12.5 to 14.9 percent.
- **Very old population**: the proportion of children is less than 12.5 percent.

The regional differences according to scale of children are very extreme on the world and they achieve more than thirty five per cent. Some African states (Niger, Uganda, Mali, Guinea-Bissau, Democratic Congo, Chad, Malawi etc.) have more than 40 % of the children. On the other side are countries where children are less than 15 %. There are Japan and a lot of European countries such as Ukraine, Bulgaria, Czech Republic, Germany, Greece, Croatia, Italy, Latvia, Lithuania, Hungary, Malta, Austria, Portugal and Slovenia. The regional differences are not so extreme between 28 EU countries, only 8.8 per cent in the year 2012. This number compares countries Ireland and Germany (map 2).

Map 2: Distribution of Children at the European Union Regions in the Year 2012



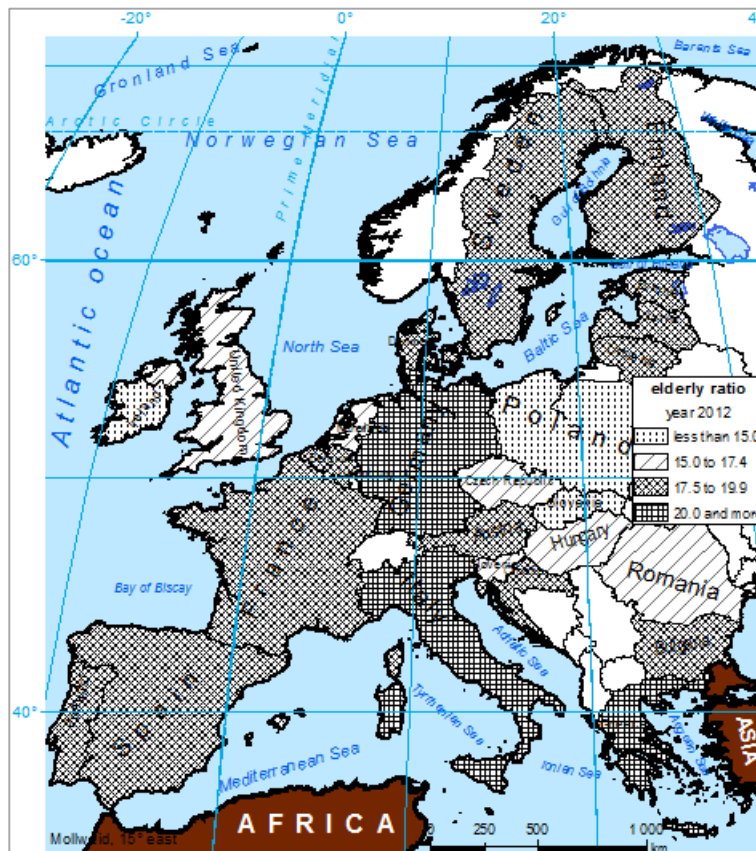
Source: Own elaboration (EUROSTAT data)

Only Ireland has gently ageing population now (map 2). The type of ageing population is typical for this countries: Spain, Sweden, Denmark, Malta, Belgium, Lithuania, Finland, Slovakia, Italy, Portugal, Estonia, UK and Slovenia. The countries with old population are: Austria, France, Czech Republic, Poland, Latvia, Greece, Hungary, Romania, Cyprus, Luxembourg, Netherlands, Croatia, Bulgaria and Germany. Today we have no countries where are children less than 12.5 percent (very old population) in the EU.

The indicator of the **elderly ratio** means how many people at the age of 65 and more are relatively (2) in the population. Our second working model of the ageing process from above distinguishes the four phases:

- **Gently ageing population:** the proportion of elderly is less than 15 percent;
- **Ageing population:** the proportion of elderly is between 15.0 to 17.4 percent;
- **Old population:** the proportion of elderly is between 17.5 to 19.9 percent;
- **Very old population:** the proportion of elderly is 20 percent and more.

Map 3: Distribution of Elderly People at the EU Regions in the Year 2012



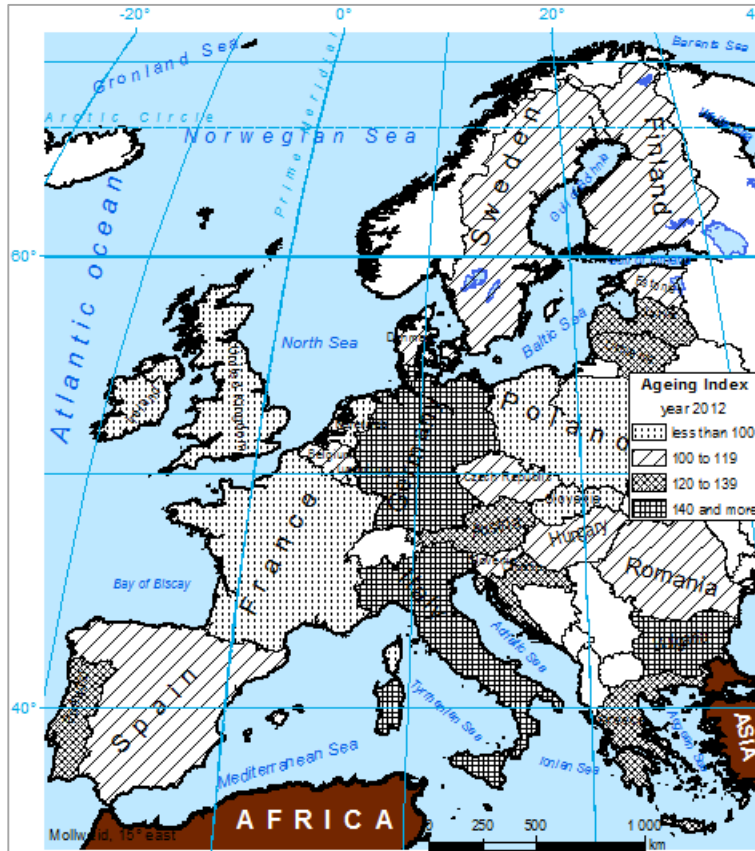
Source: Own elaboration (EUROSTAT data)

Only three countries have very old population in European Union now: Italy, Germany and Greece. The old population has Portugal, Bulgaria, Sweden, Latvia, Finland, Lithuania, Croatia, Austria, Estonia, Denmark, France, Spain and Belgium. The ageing population have United Kingdom, Hungary, Malta, Slovenia, Netherlands, Czech Republic and Romania. The gently ageing population have Poland, Luxembourg, Cyprus, Slovakia and Ireland. There live only 12.2 percent elderly people in Ireland now (map 3).

4. Territorial Difference Against the Ageing Index

No European Union country has ageing index over 100 in the year 1980. Only Germany, Sweden and Austria had *AI* between 75 and 85. Even ten countries had *AI* less than fifty. Value of *AI* was 57 in the Czech Republic and 61 in EU at that time.

Map 4: Territorial Difference of the Ageing Index in Year 2012



Source: Own elaboration (EUROSTAT data)

According to the 2012 figures (map 4), Italy ranks second for the ageing index, as in recent years, falling just behind Germany (151 and 158 respectively). The average EU rate of 117 shows a greater balance between the elderly and the young. Overall, thirteen countries have a higher than EU-average ageing index: in addition to the two mentioned above, we find, among others, Spain, Malta, Slovenia, Hungary, Croatia, Lithuania, Austria, Latvia, Portugal, Greece and Bulgaria. By contrast, there are countries where the number of the younger age classes is greater. The most favorable ratio of all was detected in Ireland (53). The others are following countries are Cyprus, Luxembourg, Slovakia, Poland, France, United Kingdom and Netherland. The Czech Republic is country, where live more seniors at the age of 65 and more than children from year 2006 if in European Union it was year 2004. Nevertheless sixty years ago was ageing index only 35 in Czech Republic, in European Union probably around 38.

But the most important change will be the marked transition towards a much older population structure and this development is already becoming apparent in several EU member states (e. g. Germany, Italy, Spain, Malta, Slovenia, Hungary, Croatia, Lithuania, Austria, Latvia, Portugal, Greece and Bulgaria).

5. Conclusion

Population ageing is a demographic transition affecting the entire world not only European Union countries. For the first time in history, our global population will no longer be young, thanks to lower fertility, increased child survival, better nutrition, sanitation, medical advances, health care, education and economic well-being. Population ageing is happening in all regions and in countries at various levels of development. It is progressing fastest in developing countries, including in countries with large populations of young people. No country is exempt.

Demographic changes in European Union countries after 1980, similarly to the whole EU, were characterized by a rapid decrease in demographic dynamics, which had mainly resulted from the decrease in the number of births, which reflected violently decreasing women's fertility and the number of children they had during their reproductive age. At the same time a significant improvement in mortality rate characteristics which brought distinct extension of expected lifespan was, observed. Those changes influenced the population structure by age and, as a consequence, also the relations between three basic age groups. The share of people at the pre-productive age decreased and the share of old age group of people increased in the total population. This caused intensification of the process.

The ageing process has started in every countries of European Union because their children population fell down below 25 percent. The time periods of this process were significantly different. We can diversify those intervals:

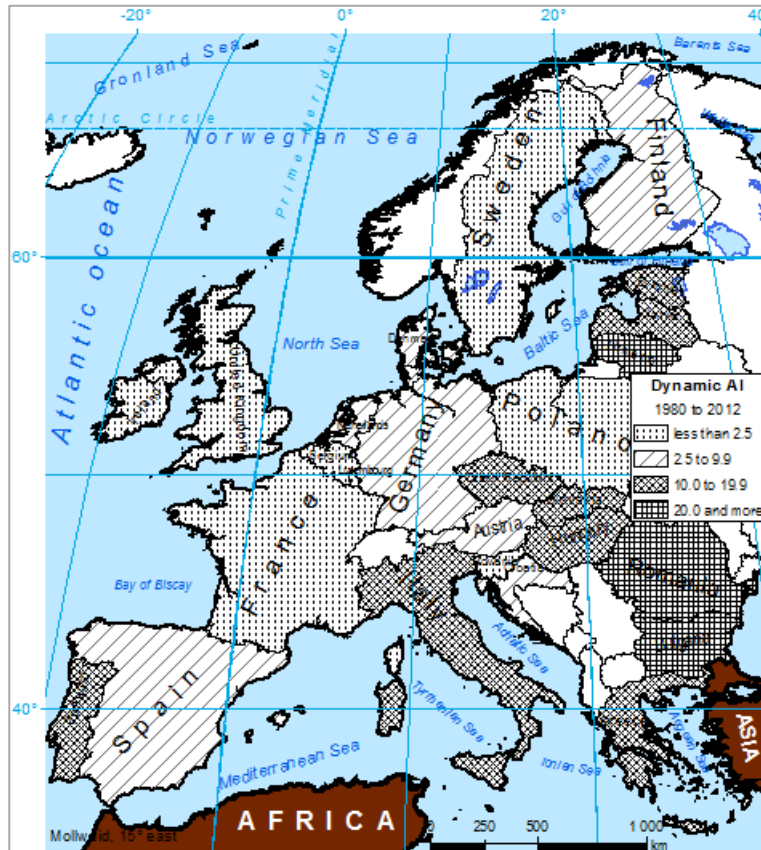
- During the fifties ageing process started at Belgium, Germany, Estonia, Italy, Luxembourg, Austria, Sweden and United Kingdom.
- During the sixties ageing process started at Bulgaria, Czech Republic, Denmark, Croatia, Latvia and Hungary.
- During the seventies ageing process started at France, Greece, Lithuania, Malta, Netherland, Poland, Slovenia and Finland.
- During the eighties ageing process started at Spain, Portugal and Romania.
- During the nighties ageing process started at Cyprus, Ireland and Slovakia.

Today the youngest population has Ireland, Cyprus, Luxembourg and Slovakia. The countries as Poland, France, UK and Netherlands have a slight majority of children group. The others twenty countries of European Union has population with superiority of elderly people. The oldest population have Germany and Italy. There live about fifty percent more seniors than children. The countries as Bulgaria, Greece, Portugal, Latvia and Austria have old population now.

It is very interesting to compare ageing process on the European Union territory between 1980 and 2012 against dynamic ageing index (map 5). The EU index grew by nearly 90 percentage points from 61 to 117.

- The ageing process was **very quickly** in the regions in Bulgaria, Romania and Lithuania.
- The second group forms regions of the eight European Union countries, where ageing process was **quickly**: Latvia, Estonia, Portugal, Hungary, Italy, Czech Republic, Slovakia and Greece.

Map 5: Territorial Difference of the Dynamic Ageing Index



Source: Own elaboration (EUROSTAT data)

- Ageing process in Germany, Spain, Malta, Finland, Austria, Croatia, Netherlands and Denmark was **slowly**.
- The minimal changes from the point of ageing process were typical for this EU countries: Belgium, Slovenia, France, UK, Sweden, Poland, Ireland, Luxembourg and Cyprus.

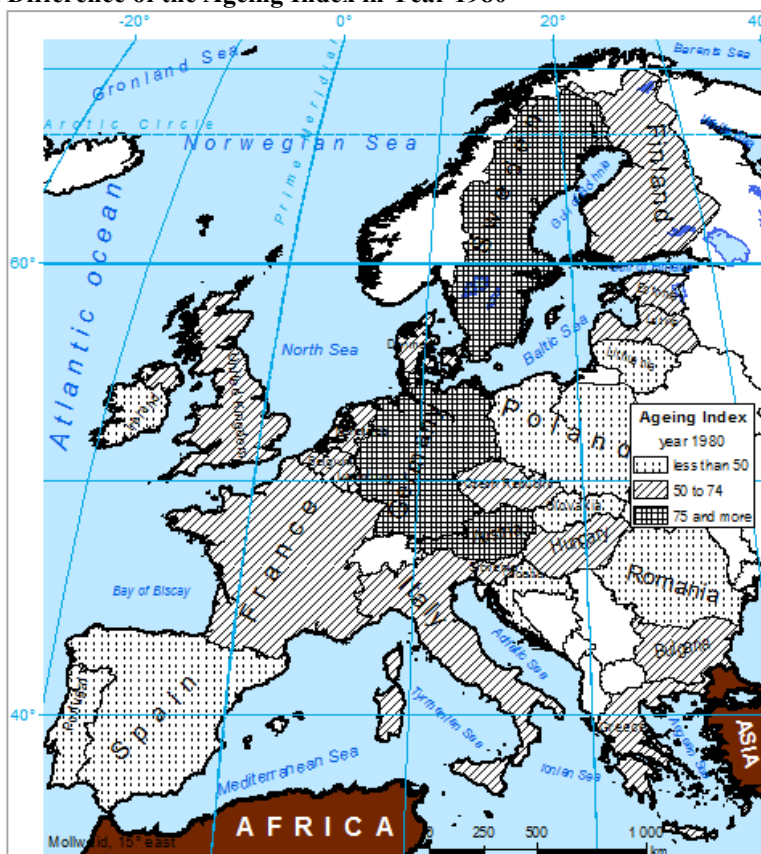
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Appendix

Territorial Difference of the Ageing Index in Year 1980



Source: Own elaboration (EUROSTAT data)

Distance-Based Optimization Approach to Building Competitiveness

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Abstract

As the world globalization takes deeper roots, it is imperative for many companies to stay competitive. To do so, companies must fine-tune their products in terms of what these products offer to the customer, i.e. what product features are supplied to the market. If the features can be quantified, mathematical methods are at hand to suggest in an exact way how to improve the product features so that they are closer to an ideal state. Some of these methods can be based on the concept of Euclidean distance, one of the most important concepts in the world of science. This concept is presented in the paper, and is used to suggest how companies, facing not only European competition, can be competitive in a cost-effective way.

Keywords: *Competitiveness, Euclidean distance, optimization*

JEL Classification: *C02, C54, D21*

1. Introduction

As global markets, including European ones, interlink themselves more increasingly, competition across countries becomes stiffer. Therefore, it is imperative for medium-sized and large-sized companies to observe continually economic development in their business sphere, and react to any shift in the character of competitive products, because the shift could oust the companies from their desired market position. This is true not only globally, but also within European economic mechanisms.

If a company registers that sales of a competitive product from a its own or a different country exceed its sales significantly, it should, apart from improving its management system (Zgodavová and Bober, 2012), run a search on what features the competitive product offers to the customer, and compare the level of its own product features to the level of the competitive product features to see relevant differences. Such a search is usually easy to do, and if the features are technically sophisticated, various scholarly journals often provide results of consumer product tests that are detailed enough to get a clear view of the product standards. Let us have a comparison of two products, based on a consumer test, for instance. Let one of the products is manufactured by a company under scrutiny that we shall call „company A“ for further references in this paper, while the other product belongs to a competitive company, henceforth referred to as „company C“. If the character of the product we are talking about was such that the product was represented by a single feature, it would be simple for the company A to determine what to do with its own product in the future to keep up its existing position in the market, as compared to the position of the other company: it should

simply improve the level of that single feature for its own product so that it was at least as good as the competitor, the company C. The problem arises when products are depicted by more than one feature, as is often the case, since it happens then that two products of the same type are incomparable in terms of the levels of the features they provide to the customer – one product is often better than another in one respect, but simultaneously it is also worse than the other product in another respect. If this is the case, how should the company that falls behind its competitor change its product features to catch up with the competitor? Generally speaking, there could be an infinite number of ways how to change the product features.

To give an example of the problem just outlined, let us have a two-feature product – a computer machine. The customer is interested in the performance of the machine, represented by its chip frequency measured in gigahertz, and the color of the machine measured, say, in wavelengths to have a measure of color saturation. Staying in an interval of values, we can theoretically change the color and the chip frequency in an infinite number of ways to attract the customer – we can raise the brightness of the color to any extent we want, and the same is true about the frequency. What is the proper combination of these changes to become competitive? This is a question every company must ask itself sooner or later, especially when it is entering a new European or more globalized market. Of course, no one will ever know exactly how the customer behaves. Not even the customers themselves often know why they buy this product and not the other product, because their behaviour is affected by a *proper mix* of the product features that they cannot describe exactly. But do we need to have that insight in the customer? Not really. All we need to know is which product is becoming competitive in the market, *the competitiveness being measured by the number of product units sold, for instance*. Such a product, belonging to the company C, for example, becomes a model for the product of the company A.

All that is necessary is to resemble the good product, within legal limits, of course, to be more competitive. There are two questions, however, that must be resolved in this respect. The first question relates to what the word „resemble“ means. The second question is how to resemble another company’s product without spending much money on it, i.e. how to make the resemblance as cheap as possible.

These two questions are what this paper aims to resolve in an *exact* manner. The question number one has to do with distance (Jarník, 1984), one of the most important concepts in technical science, and this is the concept incorporated in this paper to solve the outlined problems. The second question has to do with optimization. We present a procedure how to perform the optimization *exactly* and *explicitly*, the latter term meaning that our result is an explicit formula to be used to get the optimal changes in the product features. It is possible to perform the optimization, using a proper software, without the necessity to have knowledge of advanced mathematics. It must be stressed, however, that computer optimization software uses a *fixed* algorithm which may not give expected results. The problem with any optimization software is that the algorithm used is such that it assumes certain mathematical conditions to be valid, which may not be the case. If the conditions are not valid, the software may

return a wrong result. And this is where the results of this paper might be used, because we prove that the solution presented in the paper is the true optimal solution.

2. Distance as a Resemblance

Let n product features (x_1, x_2, \dots, x_n) be observed by the customer. For the more competitive product of the company C, let the features attain specific levels (y_1, y_2, \dots, y_n) , whereas for the product of the company A, let these levels be (z_1, z_2, \dots, z_n) . These levels can be grades generated by a consumer product test, for instance, the grades usually having the property that the higher the grade, the better the corresponding feature. This property will be assumed to hold in our analysis. There is also usually an idea what levels are the most desirable within technical capabilities of a company. Let these desirable levels be $(\max_1, \max_2, \dots, \max_n)$. Further, our situation is assumed to be such that the company C experiences higher sales of its product than the company A, and thus the company A wishes to change its product features to be as competitive as the company C. Competitiveness is measured by the number of product units sold.

A wise strategy is to change the features so that the changed product resembles the competitive product, drawing customers' attention. It should be similar in what it offers to the customer, although for legal purposes, it cannot be identical. One way how to proceed is to measure *how far* the company C's product is from the desirable situation, and set up the company A's product features in such a way that its product will be as far away from the desirable state $(\max_1, \max_2, \dots, \max_n)$ as the company C's product. However, there are many ways how to make this set-up, and we specifically search for the one that will cost the company A the least. If the features of the two products had the same distance from the desired state, such a situation could be regarded as making the two products as similar as possible. Thus, the distance can be viewed in this context as a measure of resemblance of the two products. We are going to pursue this idea. We avoid obvious results by assuming that $(y_1, y_2, \dots, y_n) \neq (\max_1, \max_2, \dots, \max_n)$. If these vectors were the same, the recommendations for the company A would be simple – the company A would need to change its product so that $(z_1, z_2, \dots, z_n) = (\max_1, \max_2, \dots, \max_n)$, because only then would its product have the same distance from the desired state as the competitive product, and there would be one scenario the company A could follow.

To sum up, our goal is to find features of the company A's product that would render the product as desirable as the company C's product, the desire being measured by how far from the most optimal levels $(\max_1, \max_2, \dots, \max_n)$ product features occur. And we want to achieve this objectively cheaply. Although there is an infinite number of ways how to measure distance in mathematics, we shall use the distance used perhaps most frequently. It is the Euclidean distance (Ramík and Tošenovský, 2013). Given two vectors $\mathbf{x} = (x_1, x_2, \dots, x_n)$ and $\mathbf{y} = (y_1, y_2, \dots, y_n)$, or given two points in an n -

dimensional real Euclidean space, to be precise, the Euclidean distance between the two points $\rho(\mathbf{x}, \mathbf{y})$ is given by

$$\rho(\mathbf{x}, \mathbf{y}) = \left(\sum_{i=1}^n (x_i - y_i)^2 \right)^{1/2}. \quad (1)$$

Companies know how much it costs to change their product features. For the i -th feature, let the cost be $P_i > 0$. Thus, to change the current i -th product feature level x_i to a competitive or desired level a_i , we assume the company A needs to spend P_i crowns, dollars or any other currency units it uses in its business. Using this financial measure, what we seek is a solution to the following optimization problem

$$\min_{x_1, x_2, \dots, x_n} P_1(x_1 - z_1) + P_2(x_2 - z_2) + \dots + P_n(x_n - z_n) \quad (2)$$

subject to the condition

$$\left(\sum_{i=1}^n (x_i - \max_i)^2 \right)^{1/2} = \left(\sum_{i=1}^n (y_i - \max_i)^2 \right)^{1/2}. \quad (3)$$

The function in (2) measures the total costs the company A will record when changing its product features from the levels (z_1, z_2, \dots, z_n) to new levels (x_1, x_2, \dots, x_n) . Since the function is minimized subject to (3) if and only if the function $P_1x_1 + P_2x_2 + \dots + P_nx_n$ is minimized subject to

$$\sum_{i=1}^n (x_i - \max_i)^2 = \sum_{i=1}^n (y_i - \max_i)^2, \quad (4)$$

we shall keep the analysis simpler, dropping the z_i 's in our optimization problem. Therefore, we shall work with a simpler, but equivalent problem

$$\min_{x_1, x_2, \dots, x_n} P_1x_1 + P_2x_2 + \dots + P_nx_n \quad (5)$$

subject to the condition

$$\sum_{i=1}^n (x_i - \max_i)^2 = \sum_{i=1}^n (y_i - \max_i)^2. \quad (6)$$

The right-hand side of (6) is a given number, a constant we shall denote c .

3. Optimization

Let us now solve explicitly the problem defined by (5) and (6). To solve the problem, it is first necessary to show the solution exists. Showing that the function in (5) is continuous and the set

$$M = \left\{ (x_1, x_2, \dots, x_n) \in R^n : \sum_{i=1}^n (x_i - \max_i)^2 = c \right\} \quad (7)$$

is compact, which is equivalent to saying the set is closed and bounded in R^n , is one familiar way of proving the solution exists. Since the continuity of the linear function in (5) in R^n is a known fact, we shall focus on the properties of M .

To prove that M is closed, we must show that every point which has a zero distance from M belongs to M . To show this, we use two known facts: the fact that a point $\mathbf{x} = (x_1, x_2, \dots, x_n)$ has a zero distance from M if and only if there is a sequence of points $\{\mathbf{x}_k\}_{k=1}^{\infty}$ from M , where $\mathbf{x}_k = (x_{1,k}, x_{2,k}, \dots, x_{n,k})$, such that $\lim_{k \rightarrow \infty} \rho(\mathbf{x}_k, \mathbf{x}) = 0$; and the fact that a real function $f(\mathbf{x}) = f(x_1, x_2, \dots, x_n)$ is continuous in R^n if and only if $\lim_{k \rightarrow \infty} f(\mathbf{x}_k) = f(\mathbf{x})$ for any point $\mathbf{x} = (x_1, x_2, \dots, x_n) \in R^n$ and any sequence of points $\{\mathbf{x}_k\}_{k=1}^{\infty}$ from R^n , for which $\lim_{k \rightarrow \infty} \rho(\mathbf{x}_k, \mathbf{x}) = 0$.

Let us have a point $\mathbf{x} = (x_1, x_2, \dots, x_n)$ with a zero distance from M . Let $\{\mathbf{x}_k\}_{k=1}^{\infty}$ be a sequence of points from M such that $\lim_{k \rightarrow \infty} \rho(\mathbf{x}_k, \mathbf{x}) = 0$. Since the points \mathbf{x}_k are from M , $\sum_{i=1}^n (x_{i,k} - \max_i)^2 - c = 0$ for each integer k . Since the function $f(\mathbf{x}) = \sum_{i=1}^n (x_i - \max_i)^2 - c$ is a polynomial, and thus it is continuous in R^n ,

$$\begin{aligned} \sum_{i=1}^n (x_i - \max_i)^2 - c &= \\ = f(\mathbf{x}) &= \lim_{k \rightarrow \infty} f(\mathbf{x}_k) = \lim_{k \rightarrow \infty} \sum_{i=1}^n (x_{i,k} - \max_i)^2 - c = 0. \end{aligned} \quad (8)$$

Thus, the point $\mathbf{x} = (x_1, x_2, \dots, x_n)$ belongs to M , and the set M is therefore closed.

Let us now turn our attention to whether M is bounded. To prove this, it suffices to show that for any two points $\mathbf{x} = (x_1, x_2, \dots, x_n) \in M$, $\mathbf{y} = (y_1, y_2, \dots, y_n) \in M$, their Euclidean distance $\rho(\mathbf{x}, \mathbf{y})$, or its second power $\rho^2(\mathbf{x}, \mathbf{y})$, is bounded. It then follows that

$$\sup_{\mathbf{x} \in M, \mathbf{y} \in M} \rho(\mathbf{x}, \mathbf{y}) < \infty, \quad (9)$$

which is the definition of boundedness of a set. For any two points $\mathbf{x} = (x_1, x_2, \dots, x_n) \in M$, $\mathbf{y} = (y_1, y_2, \dots, y_n) \in M$, we have

$$\begin{aligned} \rho^2(\mathbf{x}, \mathbf{y}) &= \sum_i (x_i - y_i)^2 = \\ &= \sum_i (x_i - \max_i)^2 + \sum_i (\max_i - y_i)^2 + 2 \sum_i (x_i - \max_i)(\max_i - y_i), \end{aligned} \quad (10)$$

or

$$\rho^2(\mathbf{x}, \mathbf{y}) - 2c = 2 \sum_i (x_i - \max_i)(\max_i - y_i). \quad (11)$$

Thus

$$\begin{aligned} |\rho^2(\mathbf{x}, \mathbf{y})| &= |2c + 2 \sum_i (x_i - \max_i)(\max_i - y_i)| \\ &\leq 2c + 2 \sum_i |(x_i - \max_i)(\max_i - y_i)| \leq 2c + 2nc^2. \end{aligned} \quad (12)$$

M is therefore bounded as well, which completes the proof of its compactness.

Knowing that our constrained optimization problem given by (5) and (6) has a solution, we may find the solution, using the technique of Lagrange multipliers. The solution $\mathbf{a} = (a_1, a_2, \dots, a_n) \in M$ satisfies the following set of equations

$$P_i + 2\lambda(a_i - \max_i) = 0, \quad i = 1, 2, \dots, n, \quad (13)$$

where λ is the Lagrange multiplier, and also the feasibility equation

$$\sum_{i=1}^n (a_i - \max_i)^2 - c = 0. \quad (14)$$

From (13), we get

$$a_i = \frac{2\lambda \max_i - P_i}{2\lambda}, \quad i = 1, 2, \dots, n, \quad (15)$$

which, if inserted in (14), gives

$$\lambda = \pm \frac{\sqrt{\sum_{i=1}^n P_i^2}}{2\sqrt{c}}. \quad (16)$$

Therefore, reinserting (16) with the plus sign to (15), results in

$$a_i = \max_i - \frac{P_i \sqrt{c}}{\sqrt{\sum_{i=1}^n P_i^2}}, \quad i = 1, 2, \dots, n. \quad (17)$$

Reinserting (16) with the minus sign to (15) would obviously increase the cost function (5), and cannot thus lead to the minimization of the function. Substituting (17) for x_i in (6) shows that solution (17) does indeed satisfy condition (6).

Two notes are in place, regarding solution (17). First, as can be seen from (17), the higher the cost P_i of adjusting the i -th product feature to the level a_i , the smaller the level of that product feature will be. In other words, it will not be financially convenient for the company A to raise the level of this feature too much simply because doing so would be too expensive for the company. It is obvious that the result (17) may also suggest to lower the value of the i -th product feature so that this lowering may be too steep to be realizable at all. Therefore, the result is applicable in cases where the costs P_i are not extremely high. Secondly, as can be seen from (17) again, the result confirms what many companies do – to be competitive, they improve

those product features that are cheap to improve, of course, or put another way, they improve features, calling these improvements innovations, however, the changes made to their products are often rather cosmetic.

4. Examples

Some theoretical approaches were presented in the previous sections, and we show in this section how to work with the results. Two examples are presented. The first example shows that our theoretical result is in line with the result returned by one of the more frequently used optimization software packages – the Excel Solver module. The second example shows why it is more convenient to have an explicit result at hand, since the Solver may return an *approximate* solution which is not exactly optimal because it is not feasible in the first place – it does not satisfy (6).

Example 1

Let us have for illustrative purposes the setting: $\mathbf{max} = (\max_1, \max_2) = (10, 10)$, $\mathbf{P} = (P_1, P_2) = (5, 4)$, $\mathbf{z} = (z_1, z_2) = (6, 7)$, $\mathbf{y} = (y_1, y_2) = (7, 9)$. The squared distance of the competitive product from the desired levels is $\rho^2(\mathbf{max}, \mathbf{y}) = 10 = c$, whereas the squared distance of the product to be improved from the desired levels is $\rho^2(\mathbf{max}, \mathbf{z}) = 25$. Using equation (17), we get $a_1 = 7.53$, $a_2 = 8.0245$. These are the levels to which the current levels given by \mathbf{z} should be shifted. The cost of doing so is $P_1a_1 + P_2a_2 = 69.75$ of the corresponding currency. This is exactly what the Excel Solver returns. And $\rho^2(\mathbf{max}, \mathbf{a}) = c$ is satisfied.

Example 2

Let the setting be now: $\mathbf{max} = (\max_1, \max_2) = (15, 20)$, $\mathbf{P} = (P_1, P_2) = (4.6, 7.1)$, $\mathbf{z} = (z_1, z_2) = (12, 14.5)$, $\mathbf{y} = (y_1, y_2) = (13, 17)$. The squared distance of the competitive product from the desired levels is $\rho^2(\mathbf{max}, \mathbf{y}) = 13 = c$, whereas the squared distance of the product to be improved from the desired levels is $\rho^2(\mathbf{max}, \mathbf{z}) = 39.25$. Using equation (17) again, we have $a_1 = 13.03951$, $a_2 = 16.974$. These are the levels to which the current levels given by \mathbf{z} should be moved. The cost of doing so is $P_1a_1 + P_2a_2 = 180.497$ of the corresponding currency. This is not *exactly* what the Excel Solver returns. The software returns: $a_1 = 13.03991$, $a_2 = 16.97368$ at a cost of $P_1a_1 + P_2a_2 = 180.4967$. The software result is slightly different and a tiny bit cheaper, but the software result gives, regarding condition (6), $\rho^2(\mathbf{max}, \mathbf{a}) = 13.00056$, whereas our solution given by (17) returns $\rho^2(\mathbf{max}, \mathbf{a}) = 13$ exactly. We can see the software finds an approximate solution only, which in this case is not feasible exactly, as opposed to solution (17) which is the exact feasible and optimal solution.

5. Conclusion

Since companies need to upgrade their products to stay competitive, questions arise how to change the product features to catch up with the competition, and how to do it cheaply. This is a problem companies face in any market, especially when markets get bigger, as is the case resulting from European economic integration. We presented a solution to this problem, using the mathematical concept of distance and optimization theory which give a straightforward solution in the form of an explicit equation. The virtue of this approach is such that not only can companies use this solution to optimize their product profile, but they can do so cheaply and *exactly*, as opposed to what they are provided with if they use an optimization software instead. As was demonstrated in an example, optimization software may help solve the problem only approximately, which may not be enough. We stress that the problems we dealt with were of quantitative nature. If this is not the case, other approaches must be taken to make a product improvement, which are more focused on the overall quality of the product rather than its individual quantified features (Tošenovský and Noskievičová, 2001). This problem, however, does not happen too often. Also, our technique relies heavily on the proper measurement of product features, and this has to be taken care of, as well (Zgodavová, 2010).

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Quaternary Sector as a Source of Growth and Competitiveness in the EU

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Abstract

This article deals with definition of quaternary sector in the EU which, with regard to contemporary trends, extends traditional sectoral structure of the economy. Quaternary sector was separated from the tertiary sector with intention to define requirements of such sectors in the economy that, by their nature, touch all areas of intellectual activities and operations. The request to extend range of economic sectors by next sector stems from growing contemporary tendency of assigning knowledge and information increasingly higher significance and importance. Quaternary sector of EU countries defined using the gross value added for selected industries, classified according to NACE Rev. 2, is analyzed here in the direct context of economic growth, respectively progress of per capita GDP, in years 2003 - 2012 and degree of competitiveness of individual membership countries in selected years.

Keywords: *Competitiveness, Economical growth, Quaternary sector, Sectoral structure of economy*

JEL Classification: *N14, P52, R11*

1. Introduction

Every economic system is characterized by a number of different economic activities collected and categorized into specific sectors and into sectors of the national economy. Agriculture, services and manufacturing are traditionally defined sectors, which are generally stable (grounded) in conventional economic thinking. Classification of economic activities in primary, secondary and tertiary sector represents practical means for characterization of the economic structure and the advancement of a country and for comparison of the countries among themselves or in a course of time.

Development of sectoral structure reflects natural transition from traditional, agricultural, economy through industrial, manufacturing, economy to a modern economy, combined with a dominant share of commerce and services, and then to a new knowledge economy, based on generation, development and use of knowledge, ideas, skills and innovational and technological potential. Knowledge is considered as one of the key sources of the economic growth in global economy. (Paličková, 2012) Knowledge economy consisting of a knowledge society uses those of its intangible assets to increase productivity and competitiveness across all spectrums of economic activity and therefore it is behind the economic growth and behind deepening of economic levels. It is the knowledge economy that is a key

source of competitive advantage in all areas of the economy and the economy as a whole. Knowledge-based activities are an important source of national and regional competitiveness. In European Union countries knowledge industries represent not only one of the fastest growing sources of new jobs, but also account for an increasing share of Gross Value Added and exports. (Melachroinos, Spence, 2013)

Formation of a knowledge economy, growth of competitiveness and debates about establishing the fourth, newly allocated, production factor in form of technology, create a space and a need to define the fourth economic sector which would reflect these impetuses and which would manage to cover them somehow.

Definition and estimation of quaternary sector in 25 EU countries⁹⁰ through selected years in the period 2003 to 2012 is given below in the context of the evolution of per capita GDP and the level of competitiveness, measured by Global Competitiveness Index (GCI) and Country Competitiveness Index (CCI).

1.1 Quaternary Sector

The growing tendency of attaching increasing relevance and importance to knowledge, technology and information, for their ability to generate qualitative economic growth and competitiveness, led, in practical and theoretical level, to extension of existing range of economic sectors by the fourth, quaternary, sector. Quaternary sector was separated from universally conceived tertiary sector, which included all services, so far. Now a specific group of services that, by their nature, touches all areas of intellectual activities and operations was moved to quaternary sector.

The services related to the generation, application and sharing of knowledge, technology and information, education, scientific development and research are included in the quaternary sector.⁹¹ This core group of complementary services is enhanced by consulting, financial services and activities related to health care and medical research.

The quaternary sector and its share of total sectoral structure of the economy requires a highly skilled and educated labor and ability of the economies to use effectively their human and intellectual capital. For this reason it is possible to assume its higher representation in highly developed countries and eventually its growing importance over time and to the future. It is an integral property of the output of quaternary sector that, directly or indirectly, intentionally or unintentionally, immediately or with delay but certainly will affect existing sectoral structure and productivity in all spheres of economic activities. (Turečková, 2012) Economical activities included in quaternary sector are the engine of innovation, they create space for emergence of new markets and sectors and they are reflected in the original work and management practices and

⁹⁰ Malta and Ireland are missing due to lack of data.

⁹¹ The science system, essentially public research laboratories and institutes of higher education, carries out key functions in the knowledge-based economy, including knowledge production, transmission and transfer. (OECD [online], 1996)

methods. Therefore the quaternary sector is crucial for the quantitative growth and qualitative development of the national economy and society.

1.1.1 Measurement of the Quaternary Sector

It is important to clearly define the economic activities or group of particular branches of industries and services to be able to assemble extended sector structure. We have to appropriate all specific economic activities from the traditionally defined tertiary sector and convert them into quaternary sector. These activities are by their nature, theoretically or practically, touching areas of generation, intensification, development and application of information, innovation, technology and knowledge.

Sector structure consisting of in the primary, secondary, tertiary and quaternary sector is determined as a percentage of economic activities of the total value of all economic activities in the country, most specifically expressed by gross value added through defined period of time.

For relevant comparison of the extended sector structure between compared countries or during period of time it is needed to use a uniform classification of economic activities. Then two general propositions basic to the study of sectoral problems are: first, that the primary, secondary, tertiary and quaternary activities of the economy are sufficiently different from each other to permit their separation and comparative analysis, and second, that the overall growth rate and the efficiency performance of the economy are influenced by changes in the relative importance, contribution, and input-output relationships of four main thesis of sectors (Kenessey, 1987).

1.1.2 Quaternary Sector in Selected EU Countries

The requirement to estimate the proportion of quaternary sector in total sectoral structure of the economy is necessary for definition of specific branches of industries and services. Classification of economic activities according to relevant sectors is based on NACE rev. 2, which is a standard statistical classification of economic activities in the European Community and has 21 sections and 88 divisions. Distribution of the 21 sections (A-U) extended to the sectoral structure, which reflects the quaternary sector is shown in table 1.

Quaternary sector is expressed as a percentage of total sectoral structure defined by the division in table 1 and is measured by gross value added. Figure 1 shows the proportion of quaternary sector in 2003 and 2012 in each country. During these years occurred in the most of countries increasing importance of economic activities included in quaternary sector, as it is evident from this figure. The average amount of quaternary sector for the analyzed group of countries in 2003 was 27.9%, while in 2012 it was 30.2%. This means that its importance grew approximately by 8.3% over ten years.

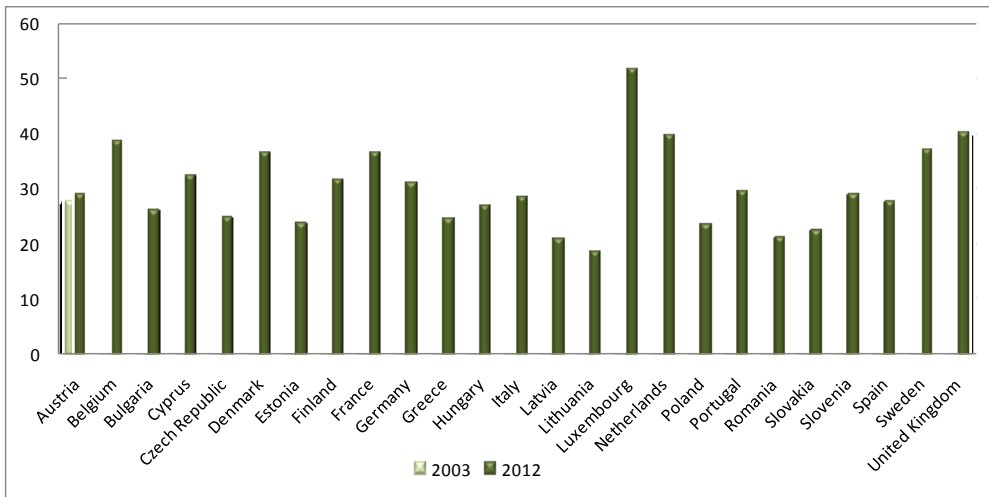
Table 1: Specification of Economic Sectors in the Context of the Classification of Economic Activities According to NACE rev. 2

Economic sector	Economic activities by NACE rev. 2
Primary	A) agriculture, forestry and fishing, B) mining and quarrying
Secondary	C) manufacturing, D) electricity, gas, steam and air conditioning supply, E) water supply; sewerage, waste management and remediation activities, F) construction
Tertiary	G) wholesale and retail trade; repair of motor vehicles and motorcycles, H) transportation and storage, I) accommodation and food service activities, L) real estate activities, O) public administration and defence; compulsory social security, R) arts, entertainment and recreation, S) other service activities, T) activities of households as employers; undifferentiated goods- and services-producing activities of households for own use, U) activities of extra territorial organisations and bodies
Quaternary	J) information and communication, K) financial and insurance activities, M) professional, scientific and technical activities, N) administrative and support service activities, P) education, Q) human health and social work activities

Source: Eurostat (2014), adjusted by author

Figure 1 confirms the general conclusion that long-term members of the EU, which means countries of Western Europe and the Nordic countries, have larger proportion of quaternary sector in its sectoral structure of economy than the countries of Eastern and Central Europe.

Figure 1: Quaternary Sector as a Percentage of the Total Gross Value Added in the EU Countries in 2003 and 2012

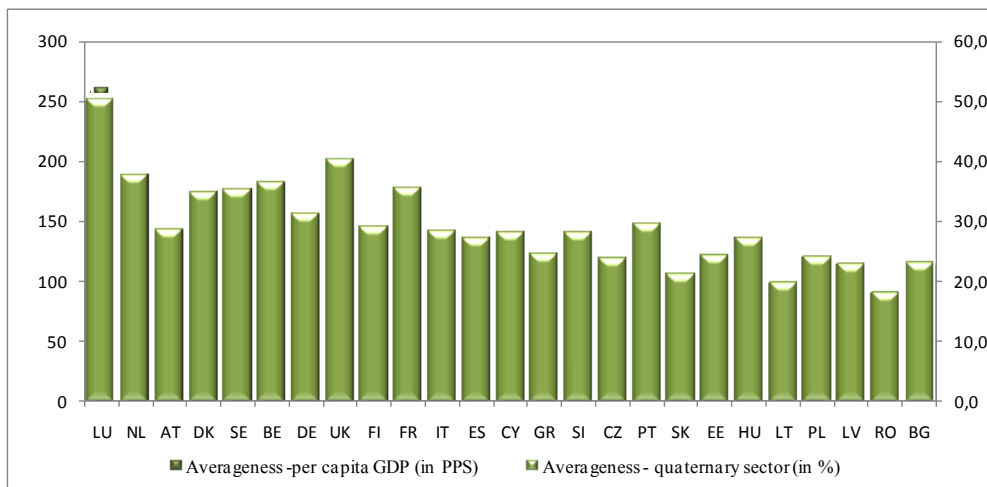


Source: Eurostat (2014), adjusted by author

2. Quaternary Sector in the Context of per capita GDP

Theoretical assumption that countries with larger share of economic activities oriented towards knowledge and information will achieve a higher degree of economic level is fulfilled. Figure 2 shows the average percentage ratio of quaternary sector in total sectoral structure of the economy and the average amount of per capita GDP expressed in Purchasing Power Standards (PPS), both for the period of 10 years in 25 states.

Figure 2: Average Percentage of Quaternary Sector in the Context of Average per capita GDP in PPS in the EU Countries for the Period 2003-2012



Source: Eurostat (2014), adjusted by author

The correlation coefficient between the above variables (the amount of quaternary sector and per capita GDP) is 89%. This corresponds with the individual results for all particular years. We can say that there is significant positive degree of correlation dependency between the share of quaternary sector in the sectoral structure of the economy and economical levels determined by per capita GDP.

The answer for the question how the amount of quaternary sector affects per capita GDP is following: the result of regression analysis is that the model at the 5% significance level is significant, which is valid also for the variables. We reject the null hypothesis. The coefficient of determination is 80%. Based on the results of the hypothesis testing we can say that if the share of quaternary sector in the overall structure is increased by one percent it can be expected that per capita GDP increases by more than 5 points.

3. Quaternary Sector and Competitiveness

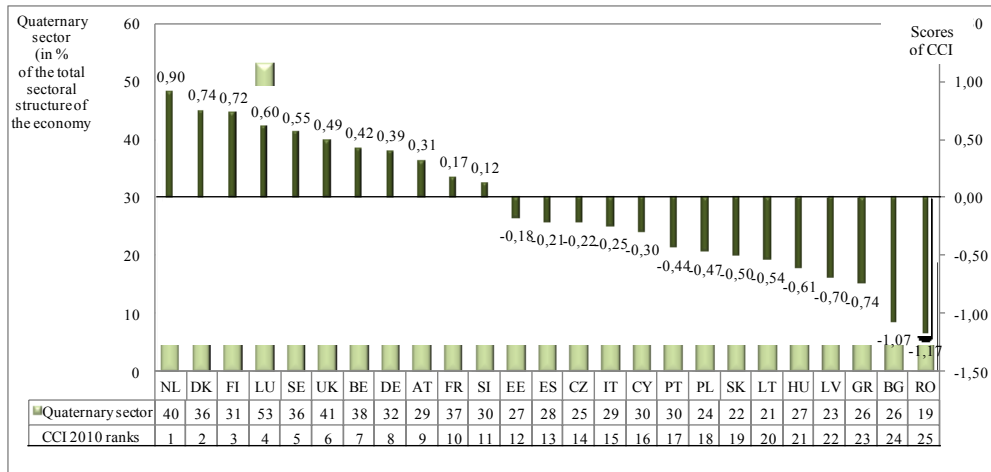
In the text we compare the ratio of quaternary sector in total sectoral structure of the economies with two indicators of competitiveness. One of these indicators is the Country Competitiveness Index, defined as "an indicator of competitiveness on the country level, that is computed as a population weighted average of the regional scores for each country" (Europa, 2013), it means based on the calculation of Regional

Competitiveness Index, compiled by Joint Research Centre for the European Commission. The second indicator is the Global Competitiveness Index which is a result of World Economic Forum annually presented in The Global Competitiveness Report. The global competitiveness assesses the competitiveness landscape of 144 economies, providing insight into the drivers of their productivity and prosperity. The report series remains the most comprehensive assessment of national competitiveness worldwide. (Weforum, 2014)

3.1 Quaternary Sector and Country Competitiveness Index

Figure 3 shows percentage of quaternary sector and CCI score for 2010. It can be seen that the countries which achieved better than average share of quaternary sector per whole group of countries (30%) had positive CCI score, it means higher than countries with less than average proportion of quaternary sector.

Figure 3: Quaternary Sector in the Context of the CCI Scores in the EU Countries in 2010



Source: Europa (2013), Eurostat (2014), adjusted by author

The results of the statistical analysis show that correlation between the two variables is 78%, which is confirmed by high degree of correlational dependency. Considering the relationship between the amount of quaternary sector by CCI score, it can be claimed that if the share of representation of quaternary sector in the overall structure of the economy will increase by 1% the score will increase by 0.06 points.

3.2 Quaternary Sector and Global Competitiveness Index

Table 2 shows amount of quaternary sector and GCI score in 2004, 2007 and 2010 in the EU countries in descending order. Value of quaternary sector is highlighted if it is greater than average for the appropriate year. It can be seen that countries with higher proportion of quaternary sector achieved higher GCI score.

Table 2: Quaternary sector (QS) and Scores of the GCI in Years 2004, 2007 and 2010

GEO	QS 2004	GCI score 2004	GEO	QS 2007	GCI score 2007-2008	GEO	QS 2010	GCI score 2010-2011
FI	27,7	5,95	DK	33,3	5,55	SE	35,6	5,56
SE	34,6	5,72	SE	34,3	5,54	DE	31,5	5,39
DK	33,3	5,66	DE	30,6	5,51	FI	30,8	5,37
NL	36,9	5,3	FI	27,9	5,49	NL	39,6	5,33
UK	38,7	5,3	UK	40,5	5,41	DK	36,4	5,32
DE	31,5	5,28	NL	36,2	5,4	UK	41,2	5,25
AT	27,7	5,2	AT	28,2	5,23	FR	36,5	5,13
EE	23,2	5,08	FR	35,2	5,18	AT	28,8	5,09
ES	25,8	5	BE	35,4	5,1	BE	38,0	5,07
PT	28,6	4,96	LU	51,3	4,88	LU	52,8	5,05
BE	35,2	4,95	EE	23,5	4,74	EE	26,5	4,61
LU	46,4	4,95	ES	26,9	4,66	CZ	24,9	4,57
FR	34,6	4,92	CZ	23,0	4,58	PL	23,9	4,51
SI	27,3	4,75	LT	20,2	4,49	CY	29,8	4,5
LT	18,6	4,57	PT	29,9	4,48	ES	28,1	4,49
GR	22,3	4,56	SI	27,0	4,48	SI	29,9	4,42
CY	26,3	4,56	SK	20,3	4,45	LT	21,0	4,38
HU	26,8	4,56	LV	22,8	4,41	PT	30,1	4,38
CZ	22,3	4,55	IT	28,1	4,36	IT	29,1	4,37
SK	20,1	4,43	HU	26,4	4,35	HU	27,3	4,33
LV	21,8	4,43	PL	24,3	4,28	SK	22,5	4,25
IT	28,0	4,27	CY	27,0	4,23	RO	19,0	4,16
BG	20,6	3,98	GR	24,3	4,08	LV	22,6	4,14
PL	23,9	3,98	RO	17,3	3,97	BG	26,0	4,13
RO	16,9	3,86	BG	22,8	3,93	GR	26,0	3,99

Source: World Economic Forum (2004), Weforum (2006), Weforum (2010), Eurostat (2014), adjusted by author

Correlation between the size of quaternary sector and GCI score is moderate (60%-70%). The result of the regression analysis is such that if the size of the quaternary sector will increase by 1 per cent the GCI score will approximately increase by 0.045 points.

4. Conclusion

The requirement to extend the traditional three sectors by a new one, quaternary sector, is reflecting contemporary development and trend of the formation of a knowledge-based economy. Innovation, information, technology and research and development are key and determining factors for economic growth and competitiveness of all economies.

The aim of this paper was definition and determination of quaternary sector for EU countries and then putting it in direct correlation with the development of per capita GDP and competitiveness indicators. The results of the analysis clearly confirmed high correlation between these variables while increasing representation of quaternary

sector in total sectoral structure of the economy is projected into increase of competitiveness and economic growth and also into increase of per capita GDP in these countries.

Acknowledgements

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Export Diversification of the European Union and BRICS Countries

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Abstract

Export diversification theory came to the fore in the second half of the 20th century as opposed to classical and neoclassical theories of foreign trade. It defend the positive impact of trade diversification on the economic performance of a country. This paper will answer the question how much big economies diversify their exports in the case of product groups and export destinations. The paper uses five different indices describing various features of product and territorial export diversification. The analysis shows that the EU have reached long-term highest export diversification for both the product and the territorial diversification. The BRICS countries have increased their export position in the world economy through the internal and external margin, but from the perspective of alternative indicators, they show very different development of product and territorial diversification.

Keywords: *Export diversification, External margin, Index, Internal margin, International trade*

JEL Classification: *F10, F12, F14*

1. Introduction

This paper provides basic understanding of the concepts of export diversification, what trade theories says about export diversification and what empirical evidence shows on export diversification of the European Union and BRICS countries. It should answer the question how much these big economies diversify their exports in the case of product groups and export destinations. The main hypothesis says that the EU will reach higher level of export diversification than other BRICS countries.

In the macroeconomic theory the export diversification can be defined as a change of the country's export composition of existing product mix or export destinations (Ali, Alwang and Siegel, 1991). It is actually the process of a country's offer of a wide range of its products to a wide range of countries. From the above mentioned definition of export diversification results that the process of diversification can take place in two directions. The first of them is the **product diversification**. The developed countries usually have their export diversified among many products of all product groups. But in the case of developing countries the situation is very different. Developing countries are usually specialized in a few primary commodities of products and undergo the risk of economic or political changes. The economic risks may take the form of high volatility and instability in the foreign exchange earning which have the following impact on other parts of economy (for example economic growth, employment, investment, cash flow etc.). Low export diversification can also

have serious effect on politics of the country. Poor economic and political situation caused by bad or low diversification of foreign trade, which exists in developing countries, particularly Least Developed Countries, can lead to civil unrest or civil wars (Samen, 2010). The second direction towards export diversification is a focus on the highest possible number of export destinations (it is called **territorial diversification**). This type of diversification has similar consequences as the product diversification. Wide range of export destinations can mitigate any negative economic or political events in the exporting countries.

1.1 Main Export Products and Destinations of the EU and BRICS Countries

In the analysis of export diversification of an economy is important to monitor the contribution of individual products and destinations to the total exports. This section introduces five major export product groups (SITC - 2 classification level) and five major export destinations of any economy. The Table 1 illustrates the share of five major export partners or share of five major export commodities on the total export of the countries under study. The ranking then evaluates and order countries in according to the dependence of their export on major export partners or commodities. The EU placed on the first place because it is the least dependent of five major export partners or commodities and Russia is the last because it is the most dependent country.

As the Table 1 shows, the European Union exported the 45.6% of its total exports of goods to the five major export countries in 2012 and five biggest export product groups' accounts for 34.6% of its total exports. The major export partner is the USA where the EU exports fully 17.3% of its total exports. Then it is followed by China (8.5%), Switzerland (8%), Russia (7.3%)⁹² and Turkey (4.5%). Major exports products of the EU in 2012 were road vehicles (10.6%), petroleum and petroleum products (7%), medical and pharmaceutical products (5.9%), electrical machinery (5.7%) and other industrial machinery (5.4%).

Table 1: EU and BRICS Countries Export Diversification by Main Five Products and Destinations in the Year 2012

Country	Territorial	Product	Rank
EU	45.6%	34.6%	1.
BR	58.8%	45.3%	4.
RU	61.4%	83.4%	6.
IN	51.6%	45.8%	2.
CH	61.0%	49.1%	5.
SA	50.8%	51.7%	3.

Source: UNCTAD, 2014; own elaboration

Note: EU – European Union, BR – Brazil, RU – Russia, IN – India, CH – China, SA – South Africa

⁹² Although Fojtíková (2013) found that there is untapped export potential to Russia in 12 member states of the European Union.

Brazil showed a much greater dependence than the EU, especially in the territorial diversification because it exported almost 60% of its total exports to the five major trading partners. A fifth of Brazil's total exports went to the European Union in 2012. Other major trading partners are China (17%), USA (11%), Argentina (7.4%) and Japan (3.3%). Brazil exported mostly metalliferous ores and metal scrap (15.2%), petroleum and petroleum products (10.9%), oil seeds and oleaginous fruits (7.3%), meat and meat preparations (6.5%) and sugar and honey (5.4%). Generally, the five product groups participated of 45.3% in total Brazilian exports in 2012.

As shown in the ranking of Table 1, the Russian export is most dependent on its five main trading partners (61.4%) as well as on five main export commodities (83.4%) from the observed countries. The 45.1% of Russian export went to the European Union in 2012. Then it is followed by other partners with much lower shares of Russian exports. The second biggest export partner of Russia was China, but with only 6.4% share, followed by Belarus (4%), Turkey (3%) and Japan (2.9%). In the case of commodities export, the Russian dependence is much higher. Russia exported fully 58.3% of its total export only in the petroleum and petroleum products, gas (14.1%), iron and steel (4.8%), non-ferrous metals (3.6%) and coal, coke and briquettes (2.8%).

India came second in the export dependence. Five major Indian partners share 51.6% of its total exports destination and India exported 45.8% of its total exports in five major products groups in 2012. Indian major trading partners are the EU (16.7%), USA (12.8%), United Arabian Emirates (12.3%), China (5.1%) and Singapore (4.7%). The main export products of India was petroleum and petroleum products (18.8%), non-metallic mineral manufactures (8.7%), miscellaneous manufactured articles (8.2%), textile yarn and related products (5.3%) and articles of apparel and clothing accessories (4.8%).

Chinese export is also pretty much dependent on a few trading partners or commodities. In the first case, it takes 61% of Chinese total exports and in the case of commodities it is 49.1% of total exports. China exports mostly to the USA (17.2%), then to the European Union (16.3%), Hong Kong (15.8%), Japan (7.4%) and South Korea (4.3%). The biggest share of Chinese exports has electrical machinery (11.8%), telecommunication apparatus (11.2%), office machines (11.2%), articles of apparel and clothing accessories (7.8%) and miscellaneous manufactured articles (7.1%).

Export of South Africa was placed in the middle of the BRICS ranking. Top five biggest export partners of South Africa keep 50.8% and similar situation is in the case of five major product groups for South African export. The South Africa exported a fifth of its total exports to the EU in 2012. Other major partners were China (11.7%), the USA (8.7%), Japan (6.2%) and India (4.2%). The metalliferous ores shared by 15.7% of total SA's export, followed by non-ferrous metal (12.2%), road vehicles (8.8%), gold (7.5%) and iron and steel (7.5%).

2. Problem Formulation

The previous part highlights some reasons for export diversification. The issue of export diversification was getting to the forefront of economic interest after

the Second World War. In the period before the First World War, the functioning of the international trade was inspired by classical and neoclassical economic theory. Trade relations were thus based on specialization, barriers-free trade and comparative advantages of countries involved in the international trade. Since 1950s, in connection to the collapse of the colonial system, it began to tackle the question of whether developing countries should not increase the variety of their export basket (Samen, 2010). The first pioneers of these ideas were R. Prebisch (1950) and H.W. Singer (1950). They point out the fact of excessive dependence of developing countries on exports of a few commodities to several countries that may have a negative impact on the macroeconomic stability of the country. New trade theories began to exert more influence on the economic policy of the country. For example Dornbusch (1977) expects that the more the country diversifies its export the more increase the volume of its trade.

2.1 Model and Data

The following chapter will use five types of indices broken down by product or territorial diversification to evaluate and compare export diversification. Hummels and Klenow (2005) came up with a variant of measuring export diversification through extensive and intensive margins as the weighted share of the sectors in which the exporter exports its production in a given year. They also adapted the same approach to geographical markets. This approach is based on the ratio of the significance of that product or destination of world exports. It investigates if the country exports larger quantities of each variety of goods or higher value of total export to the importing country (intensive margin) or if it exports a wider variety of goods or greater number of export countries (extensive margin).

The **intensive margin** measures exports of the observed country to the importer relative to total exports to the importer (excluding exporter's exports) in those sectors in which the exporter exports to the importer in a given year:

$$IM_{ijt} = \frac{\sum_{s(d) \in S(D)ijt} X_{ijt}^{s(d)}}{\sum_{s(d) \in S(D)ijt} X_{kjt}^{s(d)}} \quad (1)$$

where the IM_{ijt} means the intensive margin between country i and country j in the year t . It is composed as a ratio of exports of the country i to the country j and exports of the world k to the country j in the structure of production of the exporting country i . The S_{ijt} is the set of sectors s in which exporter i exports to j in the year t . The same approach can be used for territorial diversification. In this case, there has to be exchanged the production structure of i 's exports for its territorial structure. In the case of territorial diversification, it is composed as a ration of exports of the country i to the country j and exports of the world k to the country j in the structure of destinations of the exporting country i . The D_{ijt} is the set of destinations d in which exporter i exports to j in the year t . This indicator takes values from -1 to 1.

The **extensive margin** measures the share of the products belonging to i 's portfolio in world trade. The numerator of EM_{ijt} measures exports from the rest of the world k to

the importer j in those sectors s in which i exports to j in year t and the denominator includes all exports from the rest of the world to j in all sectors s in year t :

$$EM_{ijt} = \frac{\sum_{s(d) \in S(D)ijt} X_{kjt}^{s(d)}}{\sum_{s(d) \in S(D)} X_{kjt}^{s(d)}} \quad (2)$$

The extensive margin of territorial diversification can be measured as the ratio of exports from the rest of the world k to the importer j in those destinations d in where i exports in year t and of the exports from the rest of the world to j from all destinations d in the year t . The result of extensive margin takes the value between 0 and 1.

Export diversification can be measured also by alternative approaches. There can be found a lot of indexes to measure trade diversification. To compare the results of the intensive and extensive margin of export diversification, there were chosen tree indices (Hirschman index, Entropy index and Absolute deviation index). Two of them are based on the concentration ratio approach and last of them is an alternative index. All of them can be also used for product and geographic diversification.

The Hirschman index measures the degree to which a country's exports are dispersed across different products or destinations. High concentration levels indicate excessive dependence of the economy on several types of exported products or of some important export destinations. The Hirschman index can be defined as a square root of the sum across products (destinations) of the squared export shares for the country under study to all products (destinations):

$$H1 = \sqrt{\sum_{d=1}^N \left[\frac{x_{i(d)t}}{X_t} \right]^2} \quad (3)$$

where x_{it} represents exports of the country in the product i in the year t and X_t means total exports of that country in the year t . A higher Hirschman index shows greater concentration of exports on a few commodities. The same approach can be used for territorial diversification. In this case is measured export concentration to the country among its export partners d . N is the total number of export products or destinations in the country's portfolio. In both cases the value of Hirschman index takes values between 0 and 1.

The other approach is representing by the **Entropy index** that is traditionally used in many other sciences, not only in economics. It measures the diversity of spread of a distribution and indicates extreme specialization or concentration in few commodities or destinations. In the case of measuring product or territorial concentration the Entropy index looks as follows:

$$ENT = \sum_{d=1}^N \left[P_{i(d)} \log_2 \left(\frac{1}{P_{i(d)}} \right) \right] \quad (4)$$

where P_i means x_{it}/X_t . The export Entropy index is calculated by summing the export shares multiplied by the logarithm of the reciprocal of the export of the country under study across all products or destinations. High values of this index can be interpreted as a measure of the degree to which the country is integrated with the world economy

by its exported products or export partners. It theoretically takes a value between 0 and $+\infty$ while the value of the index is maximized when the export share to every product group or market is the same.

The **Absolute deviation index** that is available on the UNCTAD website measures whether the structure of the country's exports of products differ from the structure of export products of the world. This index is then computed by measuring absolute deviation of the country share from world structure, as follows:

$$S_j = \frac{\sum_{i(d)} |h_{i(d)j}| - |h_{i(d)}|}{2} \quad (5)$$

where h_{ij} is the share of commodity i in total exports of a country j and h_i means the share of commodity i in the world's exports. The same can be computed in the case of territorial diversification. This index that ranges from 0 to 1 reveals the extent of the differences between the structure of trade of the country or country group and the world average. The index value closer to 1 indicates the biggest difference from the world average (UNCTAD, 2014).

3. Problem Solution

The following analysis uses the above-mentioned indices to evaluate commodity and territorial export diversification of the EU and BRICS countries in the period of 1995 - 2012. Due to the scope of the paper, there was selected for each country only the initial year (1995) and final year (2012) of that period for the Table 2 and 3. Both tables describe the values of intensive margin (IM), extensive margin (XM), Hirschman index (HI), Entropy index (ENT) and Absolute deviation index (S). The first table describes product diversification and the second territorial diversification of the EU and BRICS countries export.

The intensive margin shows that the EU still keeps the highest product intensive margin in the international trade, but it continues to decline. By other words, positive indicator shows increasing export flows of the EU, but the share on the world's export is weakening. The same situation also shows South Africa. But the intensive margin of other BRICS countries grows. This is best seen in the case of China. Its trade volume has increased several times in that period.

The extensive margin of product differentiation is not so volatile. It measures the width of variety of exported goods. The EU, China, India and South Africa exports the whole range of goods in accordance to the SITC-level 2 classification, while Russia and Brazil do not fill the whole range of product differentiation i.e., their export portfolio doesn't include all commodity groups. It is worth noting that the indicator of extensive margin of Russian export declines long-term. It is also confirmed by Hirschman index. This index shows a very slight increase concentration of exports on a certain type of commodities for the EU and China and the decline in the case of India. But a significant increase has been recorded in Brazil, South Africa and especially in Russia that has intensified its dependence of 22 points during last two decades. Also the Entropy index shows that Russia and South Africa reaches highest diversity of spread of distribution of exported products. The Absolute deviation index

shows that the structure of Russian exports differs most from the world average, while the EU has its export the most similar to the world average. But the long-term trend of both economies has gone in the opposite direction. While the structure of Russian exports is getting closer to the world's average, the structure of the EU has started to differ as well as the export of South Africa. The export structure of China and Brazil is also different in many ways, but it is stable. Only the structure of Indian export has gone closer to the world average.

Table 2: Results of Export Product Diversification Indices of the EU and BRICS Countries in the Year 1995 and 2012

	IM	XM	H1	ENT	S
EU1995	0,4101	1,0000	0,1907	0,0955	0,1372
EU2012	0,3115	1,0000	0,1966	0,0994	0,1982
BR1995	0,0093	0,9984	0,1934	0,0996	0,4509
BR2012	0,0134	0,9978	0,2446	0,1285	0,4594
CH1995	0,0301	1,0000	0,2472	0,1283	0,3879
CH2012	0,1152	1,0000	0,2487	0,1353	0,4042
IN1995	0,0064	0,9938	0,2763	0,1457	0,5306
IN2012	0,0161	1,0000	0,2577	0,1322	0,3366
RU1995	0,0134	0,9954	0,3880	0,2004	0,6432
RU2012	0,0280	0,9845	0,6040	0,2103	0,6225
SA1995	0,0055	1,0000	0,2295	0,1209	0,4377
SA2012	0,0041	1,0000	0,2676	0,1453	0,5095

Source: own elaboration

The intensive margin of territorial diversification shows that the share of the EU exports has decreased during the observed period. By other words, the EU export is slowly replaced in some destinations by the export from other countries. This decline of the EU intensive margin is mainly at the expense of Chinese expansion that increased rapidly. On the other hand, the intensive margin of BRICS countries increases in whole period with exception of South Africa. The EU has the highest values of extensive margin because it has all countries of the world in its trade portfolio. Other observed countries have expanded their territorial diversification as well.

The Hirschman index clearly shows that the EU keeps the best position in territorial diversification of its exports. The Brazil, China, India and South Africa also expanded their portfolio of export destinations during last two decades. The only exception is Russia again. Russia has a growing concentration of territorial diversification of its exports i.e., that reduces the number of its export destinations. It is confirmed also by the Entropy index. The Absolute deviation index indicates that the structure of export destinations of the EU as well as Brazil, India, Russia and South Africa is more and more different from the world average. This increase is particularly evident in the case of India and South Africa. Opposite direction, then, has been kept by Chinese exports diversification. The reason that this indicator is getting closer to the world's average is that China by itself indicates the direction of the export flows, especially among developing countries, over the last decade.

Table 3: Results of Export Territorial Diversification Indices of the EU and BRICS Countries in the Year 1995 and 2012

	IM	XM	H1	ENT	S
EU1995	0,1416	1,0000	0,2576	0,1273	0,2340
EU2012	0,1235	1,0000	0,2447	0,1233	0,2549
BR1995	0,0091	0,9971	0,3726	0,1871	0,2705
BR2012	0,0131	0,9999	0,3107	0,1606	0,2844
CH1995	0,0292	0,9991	0,3852	0,2158	0,4037
CH2012	0,1112	0,9998	0,3099	0,1644	0,2602
IN1995	0,0061	0,9993	0,3620	0,1816	0,2617
IN2012	0,0157	0,9998	0,2718	0,1402	0,3432
RU1995	0,0133	0,9894	0,4824	0,2003	0,3528
RU2012	0,0239	0,9986	0,5626	0,1985	0,3796
SA1995	0,0054	0,9999	0,4086	0,1810	0,2368
SA2012	0,0047	0,9999	0,3502	0,1787	0,3652

Source: own elaboration

4. Conclusion

This paper should answer the question how much observed economies diversify their exports in the case of product groups and export destinations based on the approach of different indices describing various features of product and territorial export diversification in last two decades. The analysis shows that the EU has reached the highest long-term export diversification for both, the product and the territorial diversification. But indices also show a slight long-term worsening of export diversification of the EU. The BRICS countries have higher volatility of indicators. From the perspective of intensive margin, all BRIC countries have increased the value of product and territorial diversification. The only exception is South Africa. All BRICS countries keep high extensive margin during the whole period. However, alternative indices illustrate worse situation of the BRICS countries export diversification compared to the EU. While the territorial diversification of exports of China, Brazil and South Africa is growing, diversifying their product portfolio decreases. That means that these countries are expanding their portfolio of export destinations, but they also more concentrate their product portfolio. India has increased its product and territorial export diversification during the whole period. The Russian export has gone exactly the opposite direction. The both types of Russian export diversification are rapidly diminishing, for the last two decades has deteriorated almost doubled. This point to a rapidly growing dependence of the Russian exports on a small number of exported goods, as well as on a few but important markets.

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Transatlantic Partnership and Its Political-legal, Trade and Socioeconomic Impacts

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Abstract

The report discusses about the basic legal and related economic impacts of the Transatlantic Trade and Investment Partnership (TTIP) between the European Union and the United States of America. The aim of this report is pointing out the positives and negatives of possible acceptance of the Agreement, making an unprecedented liberalized market with regard to the influence and political-legal, business and socioeconomic impacts.

Keywords: *Business-trade policy, Political-legal, Trade and socio-economical influences. Transatlantic agreement – free trade*

JEL Classification: *F 13, F 15, K 22, P24, P 26, Q 02*

1. Introduction

As is well known, the European Union has a legal personality and, among others, the capacity to conclude international agreements with foreign business entities of international law. The common commercial policy of the European Union belongs to their so-called "exclusive competence".

This is, in particular, to regulate questions of imports from third world countries into the European Union, or in the Member States of the European Union, and the associated legal regulation of the import. Among the effective tools of trade policy of the European Union towards third countries, belong to the duties, customs tariffs, a single customs tariff and customs code of the EU.

That applies to third countries, the European Union applies its trade policy differentiated, there are special agreements, for example, with the Member States of the European economic area, with Turkey, with developing countries, etc. In connection with the relevance and differentiation of commercial policy of the European area, it should be noted that the commercial policy of the European Union are determined by its membership in the World Trade Organisation (WTO).

The European Union in July 2013 has launched negotiations on a future trade agreement with the United States of America, aimed at the conclusion of the Transatlantic trade and investment agreements TTIP (Transatlantic Trade and Investment Partnership) (TTIP) (<http://www.businessinfo.cz/cs/clanky/transatlanticka-dohoda-o-obchodu-a-investicich-mezi-eu-a-usa-ttip-40811.html#>).

The aim of this written document is the conclusion of the agreement, the partner of the parties about free trade, but its planned closure of the content exceeds the framework of normal trade agreements relative to the size of the market of the United States of America and the European market and the volume of international trade.

2. Methodology and Objective

The aim of the paper is to provide an overview of the political-legal, commercial and socio-economic impacts of future trade agreements TTIP provided its conclusion. Application methods of research are focused on the collection of information, analysis and interpretation of the political-legal, socio-economic impacts, and impacts on the sustainability of foreign trade with regard to the prediction of the conclusion of the trade agreement of the parties.

3. Results and Discussion

The aim of the upcoming trade agreements TTIP is to harmonize the legislation of the European Union and the United States of America for the purpose of deepening the mutual trade and investment. The content of the upcoming agreement from a legal standpoint is the emphasis on the import and export policy of the European format. Due to the absence of the final version of the agreement cannot predict the future impacts of TTIP trade agreement for stakeholders, final options may have a different written agreement, combination or a compromise form of cooperation of business partners for foreign units of the parties (<http://johanisova.blog.ihned.cz/c1-61512560-transatlanticka-dohoda-chysta-se-privatizace-evropske-legislativy>).

From the economic point of view, we see that the transatlantic trade and investment forms the backbone of the world economy. The European Union (EU) was in the year 2012, according to the information of the International Monetary Fund, GDP at current prices of 12, 637.057 milliard EUR, United States 12, 312.093 milliard EUR, while the GDP of the world at current prices was 54, 734.253 milliard EUR (used for the conversion of the ECB'S rate to valid 31.12.2012, where 1 EUR = 1, 3194 USD) (<http://www.imf.org/external/pubs/ft/weo/2013/02/weodata/weorept.aspx?sy=2010&ey=2013&scsm=1&ssd=1&sort=country&ds=.&br=1&pr1.x=72&pr1.y=17&c=111&s=NGDPD%2CNGDPDPC%2CPPPDP%2CPPPPC%2CPPPSP%2CLP&grp=0&a=>)

The GDP of the two business bodies represents 45.6% of world GDP, i.e. make up almost half of the total amount. The balance of trade between the European Union and the United States in the year 2012 was the following: import 205,170 million. EUR, i. e. 11, 5 % of the total EU import when the US totaled, 3. place in the ranking guest the balance of trade after China and Russia. In terms of export value reached 292,193 million. EUR, i. e. 17.3 %, when the US was 1. place in the role of a stable, business partner. In the sum of the items we collect import and export value of 497,363 million. EUR, i.e.. 14.3% share in the total EU trade with the United States as the most important trading partner. The balance of trade with the US is for the EU in the long term, economically favorable; in the reference period of the year 2012 has reached a value of 87,024 million. EUR.

For comparison, we present in table 1 a comparison in terms of the foreign trade import and export business operators to partner parties in the EU and the United States according to the classes of the international classification SITC (http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113465.pdf).

Table 1: Import of EU Goods from USA 5 the Most Important According to the International Classification of SITC in 2012

Class of the international classification SITC	(€ million)	(%)
7 Machinery and transport equipment	77 987	38.0
5 Chemicals and related products	43 761	21.3
8 Miscellaneous goods	25 430	12.4
3 Mineral fuels, lubricants and related materials	19 643	9.6
6 Manufactured goods classified chiefly by material	13 036	6.4
Total import	205 170	100.0

Source: European Commission, Eurostat Comext, 2012

Table 2: Export of EU Goods to the USA 5 the Most Important According to the International Classification of SITC in 2012

Class of the international classification SITC	(€ million)	(%)
7 Machinery and transport equipment	120 845	41.4
5 Chemicals and related products	66 715	22.8
8 Miscellaneous manufactured articles	33 513	11.5
6 Manufactured goods classified chiefly by material	29 329	10.0
3 Mineral fuels, lubricants and related materials	19 457	6.7
Total export	292 193	100.0

Source: European Commission, Eurostat Comext, 2012

According to the World Trade Organization is the average U.S. tariff rate of 3.5 % and 5.2 % EU, the two sides have maximum tariffs in sectors being the highest economic interest of the other partner. Tariff load mutual trade can be considered relatively low, case studies point to the fact that particularly with regard to the size of the volume of mutual trade by removing tariffs mean significant savings of around 0.1 % of EU GDP by 2027 in the manufacturing and textile industry, clothing store, footwear and leather goods.

Interesting comparison is based on the total import and export of the commodity structure focused on trade in food and agricultural products, which are represented

in the international classification of SITC classification classes 0.1 and 4. As is evident from the tables no. 3 and no. 4 are the main commodities business article and the total percentage is less than the sum of the values expressed by the 5% for export, but also the import. With regard to the service of food especially in the us raise great concern, above all, discussions between the experts and the European public in terms of importing these commodities aimed at trade in food and agricultural products (<http://www.imf.org/external/pubs/ft/weo/2013/02/weodata/weorept.aspx?pr.x=33&pr.y=11&sy=2012&ey=2012&scsm=1&ssd=1&sort=country&ds=.&br=1&c=001%2C998&s=NGDPD&grp=1&a=1>).

Table 3: Import Goods from the United States, the EU Focused on Trade in Food and Agricultural Products, According to the International Classification of SITC in 2012

Class of the international classification SITC	(Mil. €)	(%)
0 Food and live animals	5,104	2.5
1 Beverages and tobacco	1,484	0.7
4 Animal and vegetable oils, fats and waxes	0,255	0.1
Total import for the SITC 0, 1, 4	6,843	3.3

Source: European Commission, Eurostat Comext, 2012

Table 4: Export of EU Goods to the United States Focused on Trade in Food and Agricultural Products, According to the International Classification of SITC in 2012

Class of the international classification SITC	(Mil. €)	(%)
0 Food and live animals	5,627	1.9
1 Beverages and tobacco	7,844	2.7
4 Animal and vegetable oils, fats and waxes	0,741	0.3
Total import for the SITC 0, 1, 4	14,212	4.9

Source: European Commission, Eurostat Comext, 2012

The legal implications of the upcoming trade agreements can be divided into several groups. First and foremost, this is about the impact of a procedural nature consisting in the fact that, as in the case of other trade agreements of this type, the system checks the fulfilment of the obligations of the agreements replaced the international arbitration system when in disputes between the State (or in this case, as well as international institutions such as the European Union) and the foreign person taken by the judicial authorities of the State (or the European Union) but the de facto Referees appointed ad hoc parties. Such a trade agreement does not provide for the protection of the procedural rights of the classic of the parties concerned, moreover, when negotiations in the framework of the arbitration proceedings are open to the public, and against the decision cannot be appealed. Arbitration are also very costly and often lengthy with a great impact to the State budget (or in this case, European Union).

From the information at the moment to obtain, it is evident that in order to populate the main objective of the trade agreement should also be legal TTIP standards (regulations) of the European Union (and probably also the EU Member States)

are subject to examination of the extent to which these standards (regulations) violate or restrict (or may distort or restrict) free trade.

The substantial legal effect is the fact that to increase the competitiveness of enterprises in relation to the mutual cancellation of trade policy instruments (customs duties, quantitative restrictions on imports) can interfere with the other limitations have not yet formulated in legal standards of the EU, its Member States and the US, which relate to the "public interest".

In the account of the fall of legal norms in the areas of health care, environmental protection, consumer protection, the protection of the labor market, social security, State aid, the protection of intellectual property rights, safety standards, safety standards, the exclusion of public participation and civic associations in administrative proceedings relating to investment Tomášek a Týč (2013).

So far, that any foreign firm entering the EU market must comply with and adhere to all legal standards and rules set by EU law. This standard protect the functioning of the internal market, but also serves to protect the quality of life of EU citizens and companies operating on the territory of the Member States of the EU.

The risk of the upcoming agreement TTIP is the process of "softening" of European standards, because most of the standards in force in the USA are milder in terms of what the lowest limit of the free market. The result of the trade agreement may be adapting to European standards, American standards or the process of making new standards (common), which no longer guarantee a wide range of standard to protect the public interest, which so far provides a European law or the national law of the Member States (<http://ec.europa.eu/trade/policy/in-focus/ttip/>).

The expected goal and at the same time the impact of the upcoming trade agreements TTIP is full market liberalization, mutual trade and investment. In terms of planned future is one of the most important bilateral agreements in historical context with regard to the mutual trade between the EU and the USA. According to estimates by the European Commission, under the terms of the conclusion of the trade agreement partner parties should increase in EU exports to the US by up to 28%, increase in the trade of the EU with third countries as a result of increased demand for raw materials and other inputs with regard to the liberalized market. The European Commission sees the positive impact in the area of the labor market by increasing the creation of new jobs, with an increase of 1.3 million workers in the EU.

Critics of the planned trade agreement TTIP see its negative impact mainly from the economic point of view in relation to the limitation of the protection of public interest, softening of European legislation and the free entry of American goods to the European market, which imports have so far prevented the European standards. Criticism also focused on the desired economic growth and development of the EU and the Member States of the EU, to increase the income of households and on the labor market benefits. Opponents point to the absence of relevant independent studies that these economic aspects evaluated. Further attention to the purely theoretical premise of the supporters of the agreements, such as the assumptions of perfect competition or the general balance of the performance of the economy. Criticism also

focused on the impact of the differentiated agreement on individual regions particular TTIP poorer regions where per capita GDP is less than 75% or less of the economically advanced countries of Central and Eastern Europe.

From our perspective, we assess the democratic deficit in future trade agreements as a result of the reduction of TTIP or restricting the powers of the national authorities, from the legislative and judicial authorities.

4. Conclusion

Trade agreement TTIP IF adopted a liberalized market, with all the political, legal, business and socio-economic positive as well as negative effects. In our opinion, the conclusion of a trade agreement would be negation TTIP decentralization policy, support for small businesses, family businesses, co-operatives, food and energy sovereignty of individual States and its relevant regions. The negotiations on the conclusion of the agreement point to TTIP existing differences between the States located on both sides of the Atlantic, and to a certain extent it can be considered as indicators of the further direction of the Euro-Atlantic civilization.

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EU and Eastern Europe – Cooperation Problem

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Abstract

This paper deals with the issues related to non-member EU countries. The concept of the "Eastern Partnership" lies in the center of attention. It is built on the initial thesis that the collaborative process cannot ignore the historical processes, which are taking place outside the EU territory. However, the subject of research is not its own historical process in the area of Eastern European countries, but then again the analysis of the economic level, on which they occur. The author comes to the conclusion about the erroneousness of the current strategy of the EU in this area, since a differentiated approach to individual countries has been taken. Given the existence of long-term economic, cultural, ethnic and other relations between the subjects of Eastern Europe its policy has contributed to increased problems rather than their solution.

Keywords: *Association Agreement, Eastern Europe, Eastern Partnership, EU*

JEL Classification: *B41, E66, F43, O47*

1. History and Economic Analysis

In today's world, it seems to people that modern technological and information infrastructure has severed ties with the past. Our world seems to be something new, unique, moreover we do not actually ever turn to the experience of our ancestors, we find their ideas and struggles for our world dead; metaphorically speaking, it is like coming out of the closet when we want to have fun and laugh over their narrow-mindedness and our greatness.

It is not that this stance did not have certain justification. The Englishmen cannot live constantly through Cromwell or Trafalgar, the French through Napoleon or the First World War, the Russians through Peter the Great or the Second World War and the Czechs through Charles IV. and the Hussites. All nations also have had their famous periods of decline – The Battle of White Mountain for the Czechs, The Time of Troubles for the Russians, the Thirty Years' War for the Germans, etc. The present day cannot be experiencing history as transformed conditions of our existence by past activities prevent us from mechanical repetition of certain algorithms of action. In other words, traditional norms and patterns of behavior are facing a new reality, which they cannot optimally deal with.

On the other hand, ignoring and misunderstanding history provides a wide range of problems, which cannot be solved through logical and abstract reasoning; their essence consists in "ignoring all non-essentials." The abstract concepts and processes, which arise here, help us in understanding the reality; as yet a popular saying by

Goethe applies here "the theory is gray and the tree of life is green." So we should not therefore forget that the real history is not experiencing a theory, however the real life. Its subject is not what it would be if ..., but it's a conscious interpretation of complicated processes, which have not been "narrowed down" to simple structures.

Human perception of historical processes is a reflection of the individual (material and immaterial) aspects, which act on the consciousness of different individuals with the knowledge, experience, skills and ideas. It is therefore very problematic if, in the social sciences and in economics in particular, we fail to remember the historical dimension of the existence of individuals, different social groups, classes and nations. As practice shows the real behavior of people, does not often match the elegant, logical and abstract reasoning. Their resulting arguments then become the cause of further work for economists, since they have to write new studies justifying the fact why their predictions did not materialize.

The historical process can be reduced to a certain aspect, however only in the sense of emphasizing the importance and not disengaging from the interrelationship and ignoring the complexity. In explaining economic development we cannot measure the real contour of development only through the prism of a revenue-cost calculus and its movement it is somewhat a wider problem, even though as an economist, the author believes in the fundamental importance of economic life.

In this sense there is a lack of understanding history, in the case of Eastern Europe and Ukraine from the current EU political representation. Their concept of the "Eastern Partnership" is erroneous in the premises and the current crisis in the post-Soviet area is proof of that.

With the intention of understanding the above stated claim, let's consider the basic economic problems of this area.

2. Area of the "Eastern Partnership" in Economic Development

The eastern area between the Black Sea and the Baltic Sea has a complex history and economic history⁹³, which had been predetermined by the natural character - a large area of steppes from the Danube to the steppes of Mongolia and forests from eastern Poland to Siberia. At the same time, it was also linked to north-south trade routes from the "Varjags to the Greeks." It developed as a unified national economic complex from the time of Kievan Rus until today.

In addition that is where the fundamental moment consists in. At the same time we should not lose sight of it in view of the fact that the disruption of mutual relations in that area has always seemed like the beginning of the regression of whole territories. Riga could never have got its position if it had been separated from the Dvina basin, Odessa without the Ukrainian hinterland and Donbas without Russian markets.

⁹³ From the basic literature on the economic history of this area, see e.g.: LJAŠČENKO, P.I. *History of the National Economy of the USSR I, II*. Prague: SNPL 1953 *Istoria socialistčeskoj ekonomiky v semi tomach*. i-VII. (team of authors) Moscow: Nauka 1976

Competition for the legacy of Kievan Rus between Poland, Lithuania and Moscow had led to many wars with various results, nevertheless the figure of Bohdan Khmelnytsky in the mid-17th century as well as the partition of Poland in the late 18th century led to the fact that industrial processes in this area took place within a political organization of the Russian Empire and later the Soviet Union. At this point it is necessary to realize that it's not just about pace and standards of industrialization, but rather about a specific distribution throughout the production, transport, social and administrative infrastructure of the observed territory.

This also applies to ethnogenesis in that area, which leads to colonization of the steppe area from the area of Poland and Lithuania and Belarus and Russia, but then again there are also strong influences of Greeks, Serbs, Germans and other nationalities.

Not to mention the fact that a large part of the people from this area had gone to Siberia, the Far East or to the steppes of Central Asia, besides there are still family ties among them even today. Their differing ethnogenesis from the Norwegians, the English, the French and others means that here it is not possible to use mechanical biological cultural stereotypes of Western Europe.⁹⁴

We can mention Nikolajevsk as a concrete example of the economic tragedy of breaking the political, cultural and economic ties. It was established at the mouth of the Ingul River in 1798 as the city related to the shipbuilder, which should have been the center of the building of Russian ships in the Black Sea.⁹⁵ Thus the industrial center for the Black Sea fleet was born, which totaled the construction of aircraft carriers, and was the only one in the USSR. In 1989 three shipyards operated here and the city had a population of 523.000, in 2012 the population dropped to 496,000.⁹⁶ At the same time there were dramatic restrictions on the construction of ships. Similarly, it might be pointed to the Antonov aerospace company, whose legendary An-2 had been manufactured in the amount of 18,000 and in 2012 there were still 1271 in operation.⁹⁷ Antonov Company produced 22,000 aircraft in total.⁹⁸ Today, however, if work related to restoring the joint production of heavy transport aircraft with Russia as well as An 70 transport aircraft were stopped, the main focus of existing aircraft would be the repair and supply of spare parts. Any complete cut off from the Russian markets would likely mean the end of the company in its present form.

Breaking the USSR had proved the thesis of the necessity of mutual cooperation in the form of macroeconomic tradition in this area in the first half of the 90s - see table no. I

⁹⁴ Due to the author's professional orientation, among other things, the aim is not to discuss the creation and development of peoples from the point of view of historical development. In order to comprehend the basic processes in the Eastern European area, see the work of V.I. Verdansky and L.N. Gumilev, V.I. Ambros and others.

⁹⁵ See more on the issues in *Istoria otčestvenogo sudostrojenija v pjati tomach*. (team of authors) Saint Petersburg : Sudostrojenije 1994

⁹⁶ See Nikolajevsk.ru.wikipedia.org/wiki/Nikolajev_(Nikolajevskajaoblast)

⁹⁷ An 2.ru.wikipedia.org/wiki/AnZ

⁹⁸ Antonov. <http://www.antonov.com/about>

Table 1: Development of GDP and Population of Selected Eastern European Countries (in billions of U.S. dollars, PPS, constant prices 2005)

Countries	Years					Population (mil.)	
	1990	1996	200	2008	2012	1990	2012
Ukraine	419,5	180,2	180,1	311,8	291,6	51,45	45,41
Moldova	17,3	6,4	6,0	9,9	10,5	4,36	3,56
Georgia	29,5	9,3	11,1	19,8	23,0	5,43	4,48
Russia	1874,7	1121,9	1260,0	2096,2	2178,4	147,66	142,95
Belarus	65,8	44,1	58,3	109,9	127,0	10,18	9,46
Estonia	-	11,4	15,8	25,3	25,3	1,57	1,32
Lithuania	45,1	28,0	33,5	59,3	56,4	3,72	2,98
Latvia	28,8	16,0	20,4	35,4	31,8	2,66	2,03
Poland	311,8	368,9	451,9	627,4	705,6	38,12	38,53

Source: Macroeconomic Overview. UNECE. <http://w3.unece.org>

As can be seen from these figures, the economic activity of Ukraine declined in the mid-90s by almost 60%, in Moldova even by 66% and in Georgia by nearly 70%. However, other countries experienced a smaller decrease at the time of the boom as well as in 2008 they had already exceeded the level of 1990. The rise of Poland is also noticeable, which, through its dynamics, created the material basis and became a regional leader in this area.

In this area the depopulation process is apparent from Table no. 1. Altogether, with the exception of Poland, the population had decreased by 14.84 million and in the case of the "Eastern Partnership" it amounted to 7.79 million, in Russia and Belarus to 5.43 million and in the Baltic States to 1.62 million. Expressed as a percentage it looks a little different. 20.4% of the population had "disappeared" in the Baltic countries, 12.7% in the "Eastern Partnership", and 3.4% in Belarus and Russia.

To put it differently, the opening of the EU represents rather the deepening of depopulation as people probably prefer to leave than to resolve the difficult socio-economic situation. We can therefore assume that the facilitation of the movement of labor for Ukraine, Moldova and Georgia will result in worsening conditions of the local markets and thus the future of the economy.

Consequently if the point is not to dominate this area, regardless of the consequences, a form of cooperation, which is beneficial to all parties involved, is rather crucial.

Nonetheless efforts to unilateral policy supported by the Baltic States and Poland were met with resistance of Russia and Belarus. They cannot allow at any rate the free penetration of EU production to their markets, without endangering their own production capacities. In addition there was a political, as well as an economic struggle for this area, too.

3. Basic Macroeconomic Problems of “Eastern partnership” Countries

The development in the 90s cannot be called otherwise than an economic disaster with long-term consequences. It suffices to realize the impact of the decline in gross investments on the Ukrainian economy from 1992 to 1999 from 150.5 billion dollars to 27.5 billion dollars (PPS, constant prices 2005). The consequent rise in the peak of the boom in 2008 (90.3 billion dollars) did not even reach two-thirds of the original level in 2009 and gross investments decreased to 38.5 billion, and until 2012 they remained at one-third from the one of 1992.⁹⁹ It is not necessary for readers to have vivid imagination so that they could imagine what influence this exerts on the state of infrastructure (transport, social, public and corporate) of the country.

If we regard the development in recent years in the monitored area, then, in our opinion, it is best to follow the relationship of gross domestic saving (GDS) and gross domestic investment (GDI), as they illustrate best the use of resources.

Table 2: Development of GDS and GDI of the Eastern European Countries 2005-2012 (in % GDP)

Country	2005		2008		2010		2012	
	GDS	GDI	GDS	GDI	GDS	GDI	GDS	GDI
Ukraine	26	23	20	25	17	20	9	18
Moldova	22	31	23	39	15	24	13	23
Georgia	22	33	3	26	11	22	13	18
Russia	31	20	31	25	27	23	30	26
Belarus	30	28	29	38	26	41	32	34
Estonia	24	34	20	30	23	20	25	28
Lithuania	17	24	15	27	20	17	-	-
Latvia	22	34	20	32	27	22	-	-
Poland	18	19	19	24	17	21	18	21

Source: Compiled on the basis of: Gross Capital Formation (% of GDP) and Gross Saving (% of GDP). Available: <http://data.worldbank.org/indicators>.

As the table demonstrates, only Russia shows a permanent excess of domestic saving over investment. This means that it is a net provider of capital and allows it to create reserves. In Belarus it is clear that it accelerated investment growth at the expense of borrowed resources, which are mostly provided by Russia.

Nevertheless the three countries of the "Eastern Partnership" maintain their investments at the expense of foreign sources. Debt growth is achieved with relatively low investments. In other words, the material requirements for future dynamics do not grow unless they are extremely effective and at the same time their dependence

⁹⁹ UNECE. Statistic. www.unece.org

on foreign countries is increasing. It is therefore questionable whether return on these investments can be assumed while a confrontational strategy is selected with a partner who is able to provide resources and flows. At present, such a strategy does not appear to be economically optimal.

In Ukraine, where the problem broke out in full force, we are dealing with the issue of gas transportation. We have to realize that fees for gas accounted for 4-6% of GDP at the turn of the millennium, yet from 2009 there was a decrease up to 1.34% in 2011.¹⁰⁰ Unquestionably part of the decline is given by the rise in GDP; however, the fact of not cooperating with Russia in this area looks like economic ill-consideration.

It all came to pass at the same time of the deterioration of the international status of Ukraine. If in 1994 debt service accounted for 2% (measured as a percentage of exports) and foreign exchange reserves amounted to 11.8% of the external debt, but then again the debt service in 2011 reached 32.7% and 31.5% in 2012. The share of foreign exchange reserves to external debt fell from 22.5% to 16.8% in the same period.¹⁰¹

The overall situation in terms of external finance is illustrated by the following no. Table 3.

Table 3: Basic International Financial Indicators for 2013 (billion U.S. dollars)

country	GDP at current prices ¹⁾	foreign debt ¹⁾	Balance of current accounts of the balance of payments ¹⁾	Reserves of foreign exchange and gold ¹⁾
Ukraine	175,50	138,3	-11,9	21,9
Moldova	7,93	6,0	-0,5	2,6
Georgia	15,95	11,7	-1,3	3,3
Russia	2113,00	714,2	+74,8	515,6
Belarus	69,24	1,2	-4,2	4,5
Estonia	24,28	27,6	-0,3	0,5
Lithuania	46,71	29,5	-0,6	10,3
Latvia	30,38	39,8	-0,6	7,2
Poland	513,9	365,2	-11,0	107,8

1) in billions USD

Source: World Factbook. Available: <http://cia.gov/library/publications/index.html>.

¹⁰⁰ See World Development Indicators. In: data.worldbank.org/country/ukraine.

¹⁰¹ International Debt Statistic. In: data.worldbank.org/data-catalog/international-debt-statistic

Based on the stated data, the following essential conclusions ensue:

1. If Russia used reserves for the repayment of external debt (public and private one), then approximately 200 billion dollars would be left unpaid, which would be paid by a three-year delay of the surpluses of the balance of payments. In the case of Poland as the second largest player in the Eastern area of Ukraine it would have to liquidate debts of 11 billion dollars in the current account following the liquidation of reserves of 256 billion dollars of debt, in order not run further into debt.
2. We can observe also the external economic weakness in Belarus, which has otherwise very good macroeconomic indicators; reserves are higher than foreign debt, yet continual passive balance of payments forces them to seek additional resources. In other words, it needs to find another market; however those come along only in Russia and thanks to inept policy of the EU it is fully dependent on the financial resources of Russia.
3. In contrast, what is evident is the weakness of the economic position of the 'pillars' of the Eastern Partnership. Georgia has to cover the current external debt of 11.7 billion dollars with reserves of 3.3 billion dollars together with a passive balance of the current account of the balance of payments of 1.3 billion. Moldova shows similar flows like Ukraine and on grounds of the current account it has a loss of 11.9 billion, and a debt of 138.3 billion and in contrast there are reserves of \$ 21.9 billion and the prospects for an economic upturn in the coming years are poor.

4. Conclusion

In light of the stated data the approach to the EU "Eastern Partnership" appears to be economically irrational. The objective of this paper is not to debate obscure political concepts - the Eastern Partnership without Russia, given the fact that stability will occur there. This is probably due to the lack of European personalities like Ch. De Gaulle and Adenauer K., and economics itself cannot solve that on its own. However, it is its duty to draw attention to the historical trend of development that can be ignored, however not without the risk of crisis.

It is very difficult to promise Ukraine the possibility of deeper integration into the EU common market, while Ukraine has long-term negative trade balance with the EU¹⁰² and its export products of iron, steel, aircraft, weapons and food face excess capacity in the own EU.

It would be possible in the case of major structural transformations of the Ukrainian economy, yet those cannot be achieved quickly, i.e. within a few years. This creates a question of whether the EU can withstand the systemic financing of the agricultural sector where subsidies are now about 10 times lower than in the EU, besides

¹⁰² Eg. In 2012, the EU exports to Ukraine amounted to 30.6 billion dollars and imports from Ukraine were 18.7 billion dollars. See International Trade Statistic.

the agrarian industrial complex employs 7-8 million people.¹⁰³ It is not clear how the surplus production in case of success would be realized in the EU internal market, or what role of a competitor it would play on the world market.

In the author's opinion it is necessary to change the overall strategy of the "Eastern Partnership". Its fundamentals have to involve assistance for starting the economic growth in the territory as a whole, along with the interconnection of cooperative linkages among parties involved. The growth of aggregate demand in the countries concerned then will invoke the need for greater international specialization. Subsequent effects will incur:

1. The dynamics of the economy will increase the production of resources for the repayment of foreign investments.
2. Reducing economic and political risks will increase the overall attractiveness of the regions of Eastern Europe, which will reduce the cost of the EU resources.
3. The growth of the economic level will increase the need of the international division of labor and specialization, which in turn will increase the scope for cooperation with all the countries of the EU.

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¹⁰³ The speech given by President Yanukovych on TV, March 28, 2014. That is why, the current strategy that differentiates approaches to Russia and Belarus and other countries cannot be regarded as risk-free both for Eastern Europe and the EU.

Establishing of the Customer Service Level of Cities and Villages

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Abstract

As a result of membership of Czech Republic in the EU is increasing of importance of city and village management. The article deals with customer service at the municipal level. Determination of the appropriate level of customer service is an essential task in the context of cities and villages. An important part of the management process is the identification, selection and evaluation of pre-transaction, transaction and post-transaction elements of customer service. The paper also deals with the evaluation of the basic elements of customer service among selected cities in Moravian-Silesian Region. The part of the article is an analysis of the transport infrastructure of cities and it is focused on passenger transport, which is a prerequisite for setting of an appropriate level of customer service.

Keywords: *Customer service, Elements of customer service, Transport infrastructure*

JEL Classification: *H54, M31*

1. Introduction

During last decades, the importance of ensuring tangible and intangible flows increases and these are necessary for the functioning of the business sector. According to Muñuzuri at al. (2005) local authorities may set different regulations affecting tangible and intangible flows and they should find solutions related to access conditions, solutions related to traffic management and solutions related to enforcement and promotion.

At the level management of cities and municipalities have requirements of citizens and companies impact on the development of the city. As a result of increased customer requirements it is necessary to pay attention to cost control and logistics using specific approaches, methods and techniques helps to ensure customer satisfaction.

2. Importance of Logistics at the Municipal Level

The aim of towns and villages is primarily to ensure sustainable development and create the necessary strategy and program services which will meet the needs of citizens, and they can be implemented in a cost effective way. The basic step in the context of logistics processes (Sixta, Mačát, 2005, Svoboda, 2006) is the identification of customer requirements (in municipal management level customers are residents, visitors and business subjects) and appropriate transfer the requests into the criteria of customer service.

2.1 Customer Service

The customer service can be viewed in terms of function, performance, and organizational philosophy (Grant et al., 2006). At the municipal level, this means:

- activities or functions, that are needed to manage in order to ensure the functioning of municipalities, e.g. the ability to ensure citizens' mobility, communication among citizens and businesses, dealing requirements, etc.
- the specific performance parameters in order to manage tangible and intangible flows in the municipalities; e.g. public transport,
- customer service as an element of the strategy of the city or village.

From the above it is clear that although the focus on the performance of selected logistics functions can seem like a useful. In the long run, it is necessary to develop the logistics system, which will be able to implement customer service at the appropriate level, while minimizing the total cost.

The goal of customer service is to create added value, which ensure optimal level of offer services, especially for the citizens living and working in the city, as well as organizations and businesses operating in the city / village and not least also visitors to the city. Customer service creates added value as utility of place, time, form and ownership. The customer service can therefore be seen as a process that takes place between:

- city or village,
- citizens and businesses residing in the municipality
- and a third party, the entities providing the range of services according to the order of city/village.

2.2 Components of Customer Service Within Cities and Villages

We can identify the specific components of customer service in the logistics and it can be divided into three basic groups (Grant et al., 2006):

- pre-transaction elements,
- transaction elements,
- post-transaction elements.

At the municipal level, the specific components should include the realization of the consecutive tasks. Pre-transaction elements of customer service are mainly related with the strategy of municipality and can have a significant impact on level of citizen satisfaction with housing, work and leisure activities. The elements should be available before the municipality will implement or change activities in the area of customer service. The pre-transaction elements include:

- a written statement of policy customer service at the city/village,
- the declaration of customer service to citizens and entities operating in the city/village,
- organizational structure, which ensures flexibility and level of logistics services.

Transaction elements are those services, which are primarily linked with the concept of customer service, and within the logistics management of cities and villages may include the following items:

- availability of housing,
- availability of jobs,
- availability of leisure activities,
- the level and quality of provided services,
- availability of information on the current services state,
- mobility of citizens and ensure tangible and intangible flows,
- ensure substitutability in the offer services.

Post-transaction elements of customer service are related to support of public services after the customer has received them. And these can include:

- complaint handling,
- measure and indemnification in case of problems.

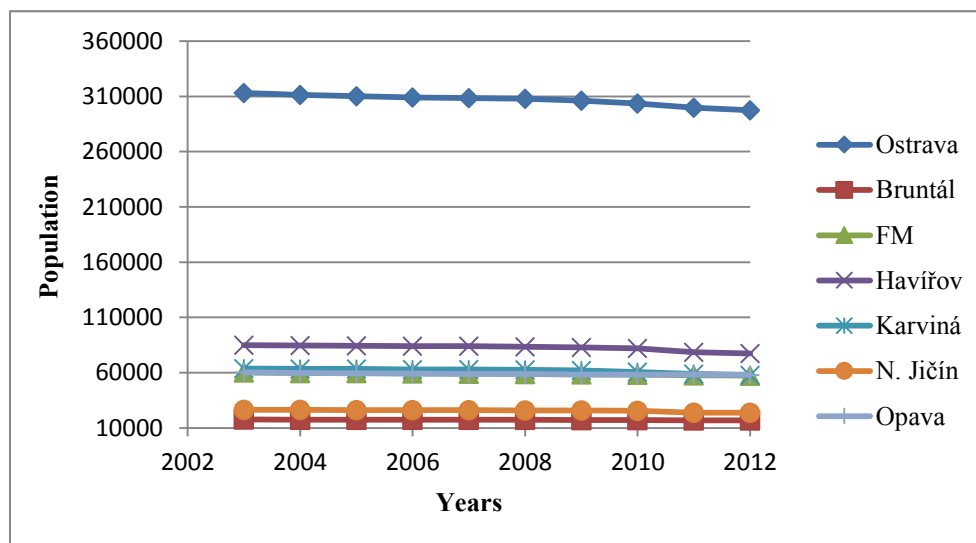
Within towns and villages must realize that this is better and more cost-effective to satisfy current citizens and enterprises than to try to get new ones to live and do business.

3. Research on Transport Infrastructure and Mobility of Citizens

The aim of research is to analyse and compare transport infrastructure and mobility in selected cities of Moravian-Silesian (MS) Region. If we compare a given city in terms of population and its evolution over the last ten years (2003-2012), then, as expected, the county town of Ostrava was and still is the most populous city. The city of Havířov has retained the second place. Karviná is the third most populous city of our selected towns and during these ten years the population in Karviná got closer to population in the town of Frýdek-Místek (FM), see the following graph 1.

As you can see from the graph 1, in the all selected cities there was annually decline in the population in the considering ten years. Only in Opava the year 2011 was an exception, there was a slight population increase (about 7 people). In 2012 there was decrease again, even at values a lower than it was in 2010.

Figure 1: Development of the Population in Selected Towns of MS Region in 2003-2012



Source: Český statistický úřad (2014). *Počet obyvatel v obcích 2003-2013*. [online]. [cit. 2014-02-26]. Available: <http://www.czso.cz/csu/2012edicniplan.nsf/p/1301-12>

The overall population decline within the considering ten years is shown in Table below, where the population in 2012 is compared to the year 2003. Cities are sorted so that in the first line of the table the town with the largest relative population decline is. From our selected cities it is Nový Jičín with a decrease of 10.61% (2816 persons), followed by Karviná with a decrease of 9.16% (5835 persons). The other way around the smallest population decline was recorded in Opava – about 3.65% (2198 persons). The population decrease of 5% in the case of Ostrava means decline of 15667 inhabitants, which in absolute terms is the most of the selected cities. The smallest absolute decline was recorded in Bruntál (761 persons).

Table 1: Population Decline

	Population change in 2012 relative to 2003 absolutely	Order	Population change in 2012 relative to 2003 relatively	Order
N. Jičín	2816	4	10.61%	1
Karviná	5835	3	9.16%	2
Havířov	7553	2	8.89%	3
Ostrava	15667	1	5.00%	4
FM	2767	5	4.59%	5
Bruntál	761	7	4.30%	6
Opava	2198	6	3.65%	7

Source: Český statistický úřad (2014). *Počet obyvatel v obcích 2003-2013*. [online]. [cit. 2014-02-26]. Available: <http://www.czso.cz/csu/2012edicniplan.nsf/p/1301-12>

In our selected cities there are roads 1st to 3rd class and a number of local roads, in Ostrava there are also 18 km of motorways, see the following table, where are a number of km of each type of roads in 2012. The table also shows area of each selected cities. In the last column of the table covering the cities roads is shown, i.e. how many km of roads respond to one square kilometre of area of the city. Cities are given in the table by just using the last named indicator when the first Havířov is a city with the largest coverage (7.5 km/km²), followed by the town of Frýdek-Místek (coverage 7.22 km/km²), on the last line we can see the city of Opava with coverage only 2.34 km/km².

Table 2: Population, Area and Road Coverage in Selected Cities

Selected cities in the MS region	Population	Area [km ²]	Roads [km]				Road coverage [km/km ²]
			Motorway	1st to 3rd class	Local	Total	
Havířov	297421	32		156	84	240	7.50
FM	16925	51		182	186	368	7.22
Ostrava	57523	214	18	195	822	1017	4.75
Nový Jičín	77361	44		127	71	198	4.50
Bruntál	57842	29		85	35	120	4.14
Karviná	23731	57		125	80	205	3.60
Opava	58054	90		144	67	211	2.34

Source: Ředitelství silnic a dálnic (2014). *Přehledy z informačního systému o silniční a dálniční síti ČR*. [online]. [cit. 2014-03-03]. Available: <http://www.rsd.cz/doc/Silnicni-a-dalnicni-sit/Delky-a-dalsi-data-komunikaci/prehledy-z-informacniho-systemu-o-silnicni-a-dalnicni-siti-cr>

The relationship between area and number of inhabitants in these cities in 2012 expressed by population density of the given cities we can see in the table below. The most densely populated city is Havířov followed by Ostrava and Frýdek-Místek. The density more than 1000 inhabitants per 1 km² is also in Karviná.

If we compare the cities according to the number of inhabitants per 1 km of roads, then the first place, taken again in descending order, occupies, as in the case of population density, the city of Havířov. Ostrava has in this ranking again 2nd place. Only about 10 persons less at 1 km roads in we can see in Karviná closely followed by Opava. City of Frýdek-Místek takes up fifth place. The lowest number of inhabitants per 1 km of roads as well as the lowest population density is in the city of Nový Jičín.

Table 3: Population Density and Population per 1 km of Roads in Selected Towns

	Population density per 1 km ²	Order	Population per 1 km of roads	Order
Havířov	2417.53	1	322.34	1
Ostrava	1389.82	2	292.45	2
FM	1127.90	3	156.31	5
Karviná	1014.77	4	282.16	3
Opava	645.04	5	275.14	4
Bruntál	583.62	6	141.04	6
N. Jičín	539.34	7	119.85	7

Source: Own processing and calculations

The graph 2 below shows the proportion of the number of passengers in public transport in the town of Ostrava in each year to its population. This means that if only inhabitants of this city were transported, in 2003 every citizen would travel in the public transport 586 times, whereas in 2012 already only 324 times, which represents about 55% of the original amount in 2003.

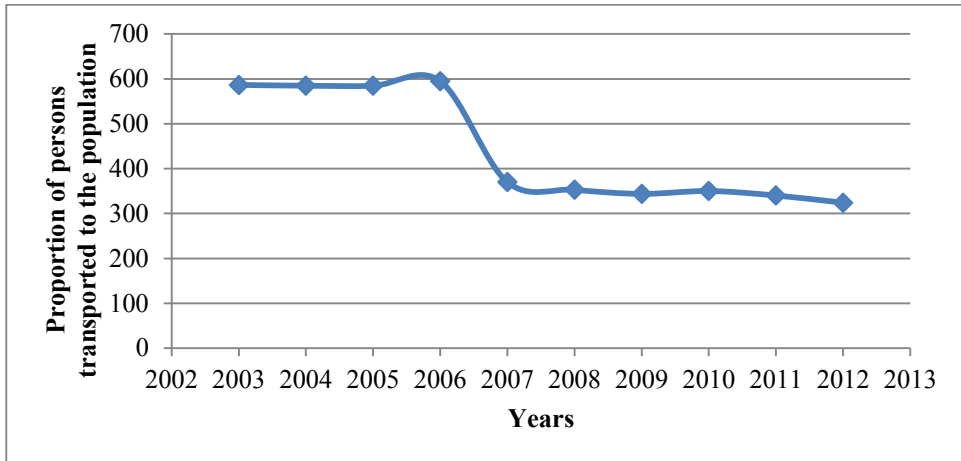
The figure also clearly shows the significant decrease in the proportion of transported people to the population in 2007 (almost 38%) compared to the previous year 2006. In other years, the decline was not as dramatic, only between 1-5%. Between 2009 and 2010 we can see even a slight increase (1%), but overall the trend remains downward.

We also note the declining trend in the time series of the number of passengers carried on a 1 Vehicle-kilometre of city transport. Despite reducing the number of vehicle-km of public transport in Ostrava in the selected period, as shown below, that was down from 36941 km to 33773 km (a decrease of 9%), a decrease of passengers carried on a 1 vehicle-kilometre from nearly 5 persons in 2003 to less than 3 people in 2012 was recorded. This decrease is due to a faster rate of descent of time series of the number of transported passengers.

Conclusion of research:

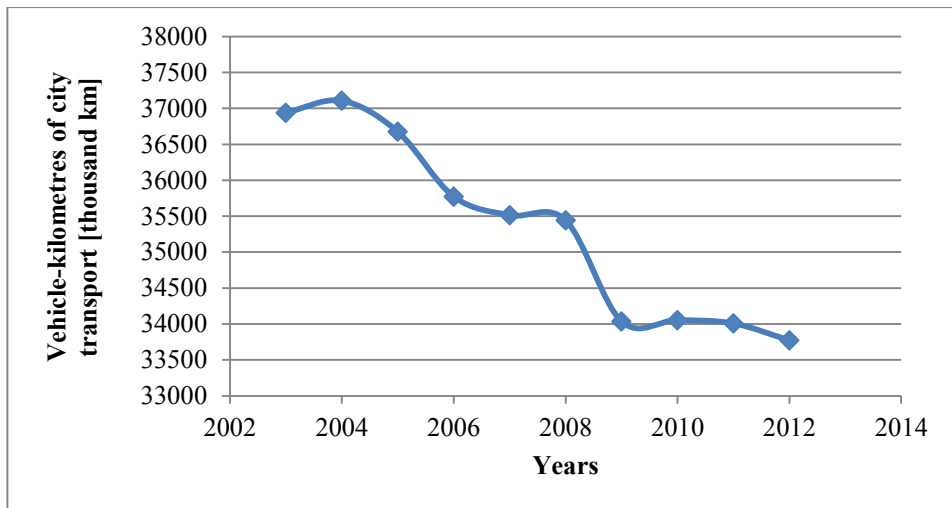
1. All monitored cities depopulate.
2. Demand for public transport services decreases with a declining population. This situation can be also explained by the increase in individual personal transport.
3. Because in the near future we cannot await a change of the trend of depopulation the city government should pay more attention to the issue of public transport.

Figure 2: Proportion of Persons Transported to the Population



Source: Own processing and calculations

Figure 3: Vehicle-kilometres of City Transport



Source: Own processing and calculations

4. Future Development of Customer Service within Cities and Villages

Implementation of logistics approach and the possibility of establishing indicators of customer service is a specific task. The basis must be the concept of total cost, which is the key to effective management of logistics system in the public service sector. Cities and towns should not only focus on the management of individual isolated logistics activities but should focus on minimizing of the total cost of all logistical activities implementation. Reducing costs in one area (reducing public transport) can lead to increased costs in other areas (increasing of individual motoring and thereby increasing the likelihood of congestion and accidents), due to changes caused by reducing the cost of inputs in the previous area.

The goal of municipal logistics is to minimize the total cost while maintaining specified levels of customer service. Municipal management should decide on the identification of key logistics activities within the city or village and the subsequent analysis of information on cost links among logistics activities. Therefore, logistical system of municipality should ensure following:

- the level of customer service (measured by customer satisfaction levels),
- transport costs (e.g. costs of public transport vs. the mobility of the population)
- the costs of supply and storage (problems related to the construction and operation of logistics and distribution centres),
- quantitative costs,
- costs of information system (communication among municipality and citizens and entities operating in the city/village).

5. Conclusion

Sustainable development of municipalities in the rapidly changing environment is a fundamental task of municipality management in cooperation with citizens and all entities within their territories of cities and villages. According to Dablanc (2006) “*transport practitioners should identify the means by which they can work closer together with the planning departments of the city for whom they work*”.

Implementation of logistics approach and setting of the level of customer service is a prerequisite for maintaining an acceptable level of cost. In the integration of the concept of customer service, it is necessary to understand the specific differences between the application of logistics in the business sector, which is already successfully used for decades, and implementation to management processes within cities and villages.

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Impact of Accession to the EU on Corruption in the Czech Republic

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Abstract

Entry into the EU meant one of the most important events in history of the independent Czech state. Ten years since this event, which we remind this year, show that the decision of the Czech Republic in this respect was correct. The topic of this paper is the issue of corruption which is often associated with persistent shortcomings and failures of democratic and economic reforms, especially in the new EU Member States. The paper contains an analysis of the influence of Czech membership in the EU on the status and nature of corruption in the country and discusses the benefits of Czech membership in the EU which result in building anti-corruption policy and its effectiveness. These issues are addressed in the article in retrospect the past ten years of membership of Czech Republic in the EU. Authors also deal with a broader context of the issue which lies in the attitude of the EU institutions on the issue of corruption, particularly in terms of preventive and repressive steps.

Keywords: *Anti-corruption policy, Corruption, Czech Republic, Economic transformation, European Union*

JEL Classification: *E6, P2, D73*

1. Introduction

On May 1st 2004, Czech Republic became a new member of the European Union (hereinafter only as EU). It is clear today that accession to the EU has been one of the most important events in the history of the independent Czech state, which significantly influenced position of the Czech Republic in Europe and the world. Ten years after this event, which this year marks, shows that the decision of the Czech Republic in this respect was correct. The benefits of membership in the Union brings are obvious and we believe that they still outweigh the existing problems and negatives.

The concern of this article focuses chiefly on the issue of corruption, which is often associated with persistent deficiencies and failures of democratic and economic reforms, especially in the new EU Member States. Although the dividing line between the new and the original Member States (EU-15) is not in terms of the degree of corruption as clear, and although the corruption in the EU and its organs is a persistent problem, there is a relatively broad consensus that due to their own historical heritage and the nature of transformation itself, the corruption in Central and Eastern European countries is a problem much more severe than in other EU Member States, and that post-communist countries are much more prone to the corruption. Therefore, it is clear

that due to the deforming impact of potential corruption on markets and in connection with the EU's primary objective of creating a single market, coping with the corruption appears to be a central element of the unification process. The following text deals with the issue of corruption in the context described above. We are interested in the influence of Czech Republic's membership in the EU on the status and nature of corruption in the country and what benefits of membership in the EU does Czech Republic derive in terms of anti-corruption policies and their effectiveness. These issues are described in retrospect of the past ten years of Czech Republic's membership in the EU. The wider context of the attitude of EU institutions on the issue of corruption, particularly in terms of preventive and repressive measures, is also an essential part of the text.

2. Problem Formulation

With hindsight, it can be said that corruption was and still is one of the main and permanent concerns of the EU in relation to the candidate countries and new Member States. Corruption has first been assessed in the "Agenda 2000" already in 1997, a report on the request of the Central and Eastern European countries for membership in the EU, and later in November 2001, in its summary conclusions of the examined countries, the Commission evaluated the corruption as a "serious" problem or a "source of serious concern" in Bulgaria, Czech Republic, Poland, Romania and Slovakia. The commission identified corruption as a "persistent problem" in Hungary, Latvia and Lithuania (Volejniková, 2007). The so-called demonstrable success in fighting corruption and building effective anti-corruption policies has also become one of the necessary political conditions that must be met before accession of new countries into the EU. The criteria used by the Commission to evaluate the actions made in the area of anti-corruption policies in the candidate countries are in principle governed by these six criteria for corruption monitoring when preparing the "Regular Reports": *existence and implementation of anti-corruption policy; institutional solutions for implementation and division of tasks between institutions; ethical codes of conduct for public officials; public officials training programmes; incidents of corruption in government and public administration, and reactions of the government towards them; ratification and implementation of Conventions. (Convention of the European Council and the OECD Convention).*

The focus of the European Commission on corruption in candidate countries was and still is perfectly justified. The negative impact of corruption on the effectiveness of sub-markets, the overall economic performance of countries and efficiency of public expenditure have been documented by many studies, both theoretical and empirical. In these studies, the most frequently studied issue is the correlation of corruption, indicators of economic performance and economic level of the country (particularly changes in dynamics of GDP growth). According to various studies by many authors, e.g. (Abed and Davoodi, 2002), (Leite and Wederman, 2000), (Mauro, 1997), (Tanzi, 1997), (Tanzi and Davoodi, 2001) and others, the corruption has quantifiable negative impact on the economic performance and growth of the countries, when the decline in corruption by 1% in range of 0-10 leads to decline in GDP/citizen by up to 2%.

Empirical study on impact of corruption on the ratio of investments to GDP has been conducted by e.g. (Mauro, 1995). The negative impacts of corruption were also demonstrated by (Del Monte and Papagni, 2001) when they examined the relationship between efficiency of public spending and bureaucratic corruption. A model to monitor the distortions of public investments due to the presence of corruption has been used by e.g. (Croix and Delavallade, 2009). Negative impacts of corruption on public investments are empirically documented by e.g. (Mauro, 1998), (Delavallade, 2006), a group of economists (Brunetti, Kisunko and Weder, 1997), a study of the World Bank and the University in Besel, etc. In all cases, the authors concluded that corruption significantly reduces the share of investment in GDP. Similar results are presented by e.g. (Elliot, 1997) using the CPI/1996¹⁰⁴. Theoretical and empirical results of the analysis of the negative impact of corruption on countries' economic performance explain concerns of the EU about the acceleration of corruption in connection with gradual expansion of the Union. However, there is an increasing concern in the EU about potential growth of corruption in relation to the growth of public expenditure and budget deficits in the context of the current debates on the fiscal rules, which all EU Member States should follow. Proof of this is the increasing number of international and national documents focused at combating corruption. In addition to the organizations and instruments adopted by the EU itself in the 90s of the last century¹⁰⁵, the EU still adopts a number of other regulatory measures against corruption.

It can be said that the process of approaching to the EU positively influenced the building of anti-corruption policies, implementation of anti-corruption mechanisms and creating a transparent economic environment in all new EU Member States. On the road to democracy, this process has contributed to the creation of sufficient will to build national anti-corruption strategies and reform of law enforcement authorities in the investigation of corruption in these countries. Nevertheless, although the European evaluation of corruption in EU candidate countries has always been a subject to negative criticism, it is now clear that a number of these countries entered the EU with serious problems of corruption (Volejníková, Linhartová, 2012). The actual approach of the Commission to corruption in candidate countries has not always resulted in the creation of anti-corruption policies appropriate for solving existing problems. Assessment of the level of corruption in these countries proved to be a difficult problem, not only due to the lack of quality information and research of corruption. It has been confirmed that corruption problems of (now former) transition economies indeed often differs from the problems of corruption of the original fifteen EU

¹⁰⁴ Corruption Perception Index (CPI) is published by international non-governmental organization Transparency International (TI) since 1995. The index ranks countries according to the degree of perception of corruption in the public sector. Countries are ranked on a scale of 0-10 (now 0-100), where the lower the value of the CPI, the higher the perceived corruption. Detailed information on the CPI are available at www.transparency.cz

¹⁰⁵ These include the creation of a special monitoring mechanism through the Group of States against Corruption (GRECO). The agreement establishing GRECO has been adopted by the Council of Ministers on May 5th, 1998, and the group started its activities in May 1999. Currently, GRECO has 37 members (including the USA).

Member States. In addition, the EU lacks its own anti-corruption framework that would clearly define what specific criteria or what minimum or acceptable standards, according to which it would be possible to measure or objectively evaluate the corruption climate (reducing corruption or advances in formal anti-corruption policy), must the candidate countries fulfill in relation to anti-corruption policy so as to comply with the requirements of accession. Corruption is usually assessed on a legal basis, which is more or less restricted to the adoption and ratification of defined conventions (Linhartová, Volejníková, 2013). There is also clear evidence that corruption is a serious problem in many original Member States including some of the biggest, such as Germany, France, Italy and Greece. In this context, we cannot forget the frequent disparity between the power of the Commission in the Member States and candidate countries (e.g. European Council Criminal Law Convention on Corruption has been ratified in 8 out of 10 candidate countries by June 2002, as compared to only 3 out of 15 original EU Member States). There are also external and internal corruption problems within the Commission itself – some EU institutions and procedures were mainly in the past subjects of many large corruption scandals. Frauds related to the EU budget became a serious problem and unfortunately, there are still cases of bribery of public officials of European countries, who are employed in the allocation of budgetary funds. The EU loses considerable amounts every year for this reason. If the estimates in 2004 spoke of the annual loss of around 14 billion EUR, the first report on the fight against corruption in the EU, published by the Commission in early February 2014, corruption costs today's European economy around 120 billion EUR a year (European Commission, [online], 2014). The report demonstrated that the nature as well as the extent of corruption and the effectiveness of anti-corruption measures in Member States varies considerably and corruption therefore deserves more attention in all Member States. Part of this report is the results of current research, which investigated the attitude of Europeans towards corruption. Three quarters (total of 76%) of Europeans think that corruption is widespread and more than half (56%) considers that the level of corruption in their country has grown in the last three years. Every twelfth European (8%) states that he or she encountered a case of corruption either him or herself or was its witness in the past year.

2.1 Issue of Corruption and Accession of Czech Republic to the EU

Corruption in Czech Republic has been identified as one of the chief institutional problems by the European Commission during the accession period. Therefore, as in other new EU Member States, the process of accession became one of the important factors that influenced building of anti-corruption policies in the Czech Republic. Its history goes back to 1999 when the first Report on corruption in the Czech Republic was compiled, and when the first Government program to fight corruption has been adopted. This happened in political climate characterized by a number of privatization scandals as well as scandals with fraudulent financing of political parties, collapse of several banks and even a fall of the government (Studie národní integrity, 2011). A number of anti-corruption measures so far introduced by the Czech government were strongly influenced by pressure from the EU, which also initially provided much needed assistance, especially through the PHARE programs (e.g. funding dedicated

for the reform of the Czech judiciary). Evaluation of the process of fight against corruption by the European Commission during the accession negotiations was based on the Reports on the implementation of the government program. With hindsight, it can be stated that although at the time of accession of the Czech Republic to the EU, the Program has more or less been implemented, the Czech Republic entered the Union with many problems. The corruption situation in the country during its accession to the EU can be documented based on the evaluation of perception of corruption using the CPI. In year 2004, Czech Republic entered the EU with a CPI score of 4.2 and occupied 22nd place within the EU-25. This means that corruption in the Czech environment was perceived as the third worst among the ten new Member States (only Latvia, Slovakia and Poland placed behind Czech Republic). Assessment of states from 2005 confirmed Poland in the last place, Latvia on 24th and Czech Republic with Slovakia (but also Greece) on 23rd place within the EU-25 (with a CPI score of 4.3). Although further development of the CPI showed a slight growth, it still has not reached the highest ever value (5.3 CPI) from 1996, when the perception of corruption was first assessed in Czech Republic. The latest currently available results of CPI index from 2013 show Czech Republic with Croatia on 22nd place (4.8) within the enlarged EU-28. Slovakia, Bulgaria and Romania achieved worse results, last places are however still occupied by Italy and Greece. This unfortunately confirms the long-term negative trend of perception of corruption in the Czech Republic and reflects profoundly decomposed administration, poor functioning of political parties and insufficient implementation of key anti-corruption policies, which in long-term include particularly a quality law on civil servants, law on financing of political parties and a state prosecution act. Equally important is the strengthening of the state companies' management control, and resolving the problems related to procurement and misuse of public funds. Efforts to introduce legal provisions regarding the conflicts of interest within the public service have been unsuccessful so far. The nature, level and genuineness of anti-corruption policies in Czech governments illustrate the attitude to international anti-corruption instruments. For instance, older European Council and OECD conventions (see above) have been ratified and Czech Republic became a member of GRECO. However, UN convention¹⁰⁶ against corruption has still not been ratified, although it has been signed already in 2002. This ranks the Czech Republic among mere 15 countries around the world (i.e. countries such as Bhutan, Guinea and Sudan).

3. Problem Solution

Although the fight against corruption is a matter of the individual Member States in the first place, all EU Member States are obliged to take the same measures to counter the machinations affecting the financial interests of EU, which acts against the machinations affecting their own financial interests, according to Article 209a of

¹⁰⁶ United Nations Convention against Transnational Organized Crime (UNTOC), adopted in 2000. The Convention addresses the liability of legal entities, establishes commitments in the fight against trafficking in human beings – especially women and children, smuggling of immigrants, arms production and their trade.

the Maastricht Treaty. It is therefore clear that in today's globalized world, the fight against corruption cannot remain an internal matter of one country, but rather become subject to the necessary international cooperation. At the same time, however, it is necessary to respect the national specifics of corruption in individual Member States. There are significant social, cultural, historical and other differences among individual countries that are reflected in different extent of corruption. For instance, (Volejníková, 2007) states that *"corruption in the Czech Republic is probably conditioned not only by the legacy of communism, but also by the historical heritage of Habsburg monarchy and their bureaucratic traditions, while corruption in Poland is among other things considered, especially by many domestic observers, a given result of century long mistrust towards the state, whose history consists of a series of occupations by foreign powers."* The above implies that the existence of common factors determining the existence of corruption in the countries of the former Soviet bloc does not imply its absolute sameness, and based on this, it cannot be fought with the same instruments. The inevitable problem and future task will thus be a need for more precise comparative research of corruption both in current EU member states and candidate countries, and attention will need to move to mastering clear standards and creation of strong mechanisms to support effective anti-corruption policies in all countries of the enlarged EU. In addition to the need for international cooperation and integrating efforts within the EU, it will be necessary to continue the support of the projects of other international organizations (World Bank, IMF, etc.) as well as use the abilities and experience of individual States in fighting corruption. There is still a large deficit in building preventive policies and internal and external control mechanisms. It is also necessary to increase the effectiveness of law enforcement and prosecution as well as political responsibility within the Czech environment.

4. Conclusion

Although the EU has implemented many anti-corruption initiatives in recent years, they have yielded very uneven results in individual countries and are still considered inadequate. This creates a contradictory situation, where EU implements a number of anti-corruption instruments on one hand, while the level of corruption in various regions grow on the other. Also, the implementation of anti-corruption policies is often more difficult in the original states of EU-15 than in the new EU Member States. Regrettably, this has become one of the established causes of doubts about the functioning of the free market as one of the main mottos of the EU. It raises controversial questions about the future of the EU and further development of the process of European unification. In the Czech Republic, despite the past ten years of membership in the EU, there is still intense corruption activity present. A total of 95% of Czechs agree with the statement that corruption is widespread in the country and 8% of Czechs states they were asked for a bribe in the last year (this constitutes a double of the European average). Also, 71% of Czech companies (the highest proportion within the EU) state that corruption is a major obstacle to business (European Commission [online], February 2014). The expected positive impact of closer contact with developed institutional environment in the EU-15 has not yet manifested in formation of the Czech anti-corruption environment. Corruption in

the Czech Republic continues to be concentrated in the distribution of public funds, the intransparent area of intertwining of the political parties' interests, government and economy. The primary issue is now a systemic control of public resources, not an individual and local corruption. It is in this context that the membership of Czech Republic in the EU resulted negatively. This mainly relates to more resources that can be redistributed and the complexity of the processes for the approval of European subsidiaries, which essentially undermined the principle of solidarity and continue to create opacity. *According to authors opinion the process of approaching to the EU positively influenced the building of Czech anti-corruption policy, implementation of anti-corruption mechanisms and creating a transparent economic environment. On the other hand acces to more resources that can be redistributed naturally results in emergence of corruption. These conclusions of our analysis are crucial even in the context of the current global imbalance and debates on the necessary fiscal policies to improve the fiscal position of the EU Member States.*

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