

Measures to Assess Country Risk

Princípy oceňovania rizika krajiny¹

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Abstract

Country risk has been a neglected issue in the euro area for a long time. This has changed dramatically throughout the global financial and economic crisis in the recent three years. It all emerged in August 2007 with the tensions in the inter-bank market, in which financial institutions lend to and borrow from one another. These tensions culminated in the collapse of Lehman Brothers in September 2008. With this event the tensions escalated and they developed into a global loss of confidence and to a deep recession in 2009. Article discusses the emerging issue of country risk and methods of pricing country risk. It analyzes the development of country risk in Eurozone countries.

Key words

Country risk, recession, risk pricing, credit default swap,

JEL Classification: G010, G100

1. Evolution of risk pricing

In order to avoid witnessing a full scale crash of financial and economic systems, governments stepped into the game through various measures, as emergency loans, open credit lines or full fledged bail outs of systematically important institutions and/or corporations. Loss of confidence in 2009 spilled over to the real economy through squeezing provision of credit to non-financial sector in the time when it was the most vulnerable. Increased unemployment and consequent social costs and in addition attempts of governments to start up the economic activity weighted heavily on the public finances of many developed economies.

In 2010 some countries that were experiencing fiscal and structural problems even before the crisis became the subject of increased market scrutiny. The debt levels of these countries were increasing swiftly both due to large budget deficits and due to stagnant or shrinking economies. In 2011 tensions in sovereign debt markets spilled over to all other countries, that markets did not perceive to be perfectly fit.

Country risk is therefore not flat and stuck to zero as it has been for most of the first decade of this century. Markets have started to price this risk very sensitively and as much country specific as never before in the history. In this context, various measures are being used. The aim of this short article is twofold: (i) to navigate across the measures used to price the

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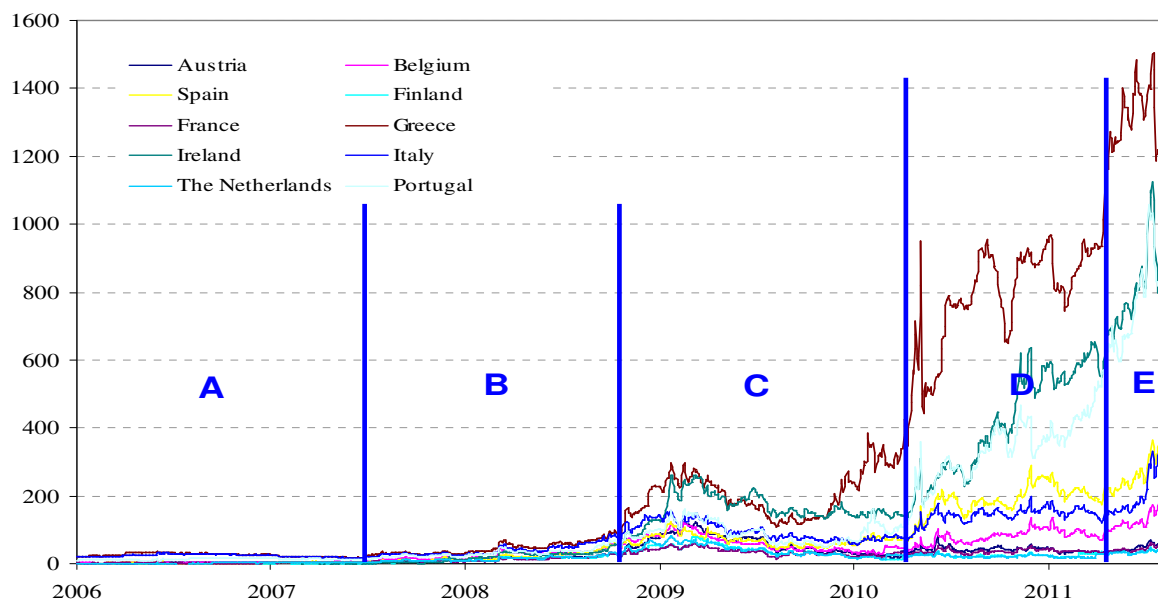
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country risk (ii) to identify their main differences and individual weaknesses and (iii) to assess and compare how is the risk of Slovakia being priced by markets.

As mentioned above, all the phases of pricing risk are well visible on the Figure 1, which features the most prominent and most widely used measure – spread of long term (10 years maturity) government benchmark bond to the German bund of the same maturity:

- neglecting risk reflected in a flat line close to zero until summer 2007,
- some tensions related to the financial market between summer 2007 and autumn 2008, which however have only marginally affected country risk premium
- elevated risk premium as a consequence of the global financial and economic crisis
- the first “debt shock” triggered by markets considering Greek debt being unsustainable, spilling over to other countries,
- extreme tensions driven by contagion to other countries’ price of debt, resulting in government debt service becoming more expensive and in consequence its debt being considered unsustainable.

Figure 1: Spreads on government bonds over time



Source: Datastream

The rationale, why this measure is the most widely used is clear cut. Given German Bund has been the safe haven for investors, difference of pricing other bonds relative to the former well reflects the premium that one has to pay for holding less safe asset. However, other measures might be used, too. These include:

- Spread of government bonds over OIS swap of appropriate maturity
- Credit default swaps on government bonds
- Spread of corporate bonds over risk-free assets

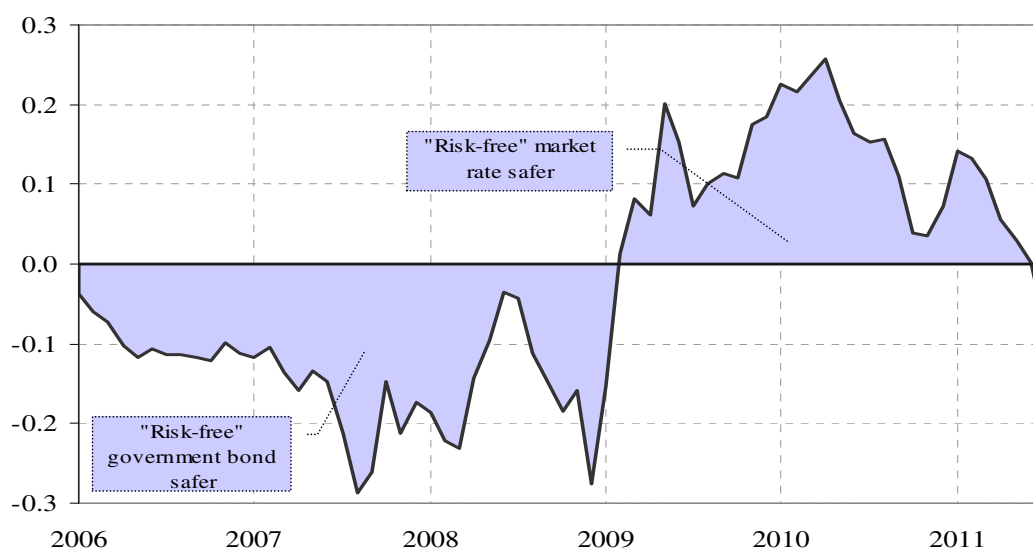
2. Other risk-free measures

The first in the list is related to a possible objection whether German Bund is to be considered a risk-free asset. This argument might become more valid in present times, when debt burden is more spread across other countries due to expectations of common guarantee schemes among the euro area member states. These events are putting an extra premium on the German Bund, which in return may result in a loss of risk-free characteristics.

Possible alternate for the risk-free leg of risk pricing may be an Overnight Indexed Swap (OIS) rate, which is also being used as a benchmark of a risk-free asset. The most often use of OIS rate is in the measure of LIBOR to OIS spread, which is commonly used to measure uncertainty on the interbank market. OIS being the risk-free leg of this spread, it captures the rate of risk-free borrowing on the money market³.

Comparing the Bund yield and OIS rate of the same maturity we can see that a peak of a relative German government bond perceived safety occurred at the top of the business cycle in 2007 and also in the turbulent times at the market in late 2008. On the contrary, the moment governments started to be excessively involved in the crisis, the safest of the government bonds stopped to be perceived ideal risk-free measure at the market. This culminated in spring 2010 with the first wave of the debt crisis. The latter trend erosion to parity in the recent period may be attributed to flight to safety in very unstable markets, where high demand for German bund pressed the yield down relatively to the EUR denominated interest rate instrument.

Figure 2: Spread between German Bond and Risk-free Market Rate



Source: Datastream

Figure 2 shows the two separate trends in the two risk-free measures due to:

- perception of money market and budgetary risk in calm vs. turbulent times
- expectations subject to actual developments
- country specific vs. euro area features.

OIS may therefore as well as risk-free government bond serve as alternative risk-free measures. However, they should be treated carefully and used sensitively with the context.

Credit default swaps (CDS) are instruments that should serve to protect buyer of the CDS in a case of default of the underlying asset. Credit default swap on a government bond therefore prices a probability of the event that a government will not be able to hold to its obligations anytime before the asset matures. Since these instruments are usually heavily traded at the market and therefore such instruments are usually very liquid, it is capable to measure the country risk premium fairly well. However, since CDS may be purchased by agents that do not hold an underlying asset, it is often becoming a subject of market

³ 10-year OIS swap rate represents a contract between two parties swapping a fixed interest and overnight interest rate. Risk-free feature of this instrument is ensured by all the other risks being off-set apart from time-related expectations of overnight borrowing costs.

speculations. The measure thought might be subject to mass behaviour effects (which in very turbulent environment may even drive specific titles out of the market).

Calculated spread of the probability of default (CDS) of two underlying assets is therefore another measure that may well price a country risk. As a matter of fact, it is one of the most heavily used indicators of risk pricing in general.

In the same veins as government bonds, corporate bonds could be used to measure country market risk. However, due to current state of globalised corporate business, it is impossible to isolate pure one country based corporate bonds of the same maturity unless it is an extremely large market as it is in case of the U.S., Euro area or Japan. In all other cases country based composite corporate bond yields would tend to be biased.

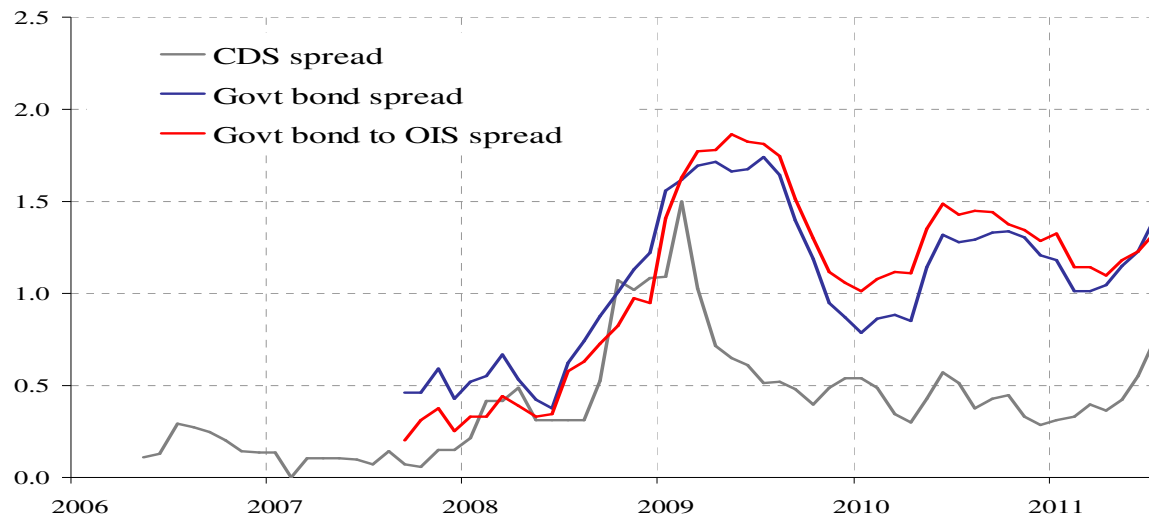
3. Risk-pricing Measures in a Perspective

The three country risk measures considered are the following:

- spread of government bond vs. risk-free government bond (DE)
- spread of government bond vs. OIS rate (EUR)
- spread of credit default swap on the government bond to risk-free government bond (DE)⁴

On the Figure 3 we show the pattern of pricing country risk for Slovakia. The pattern displayed on the Figure 2 is reflected in the differences between the two government bond measures. However, the CDS spread shows somewhat different pattern, but the correlation between government bond spread and CDS spread is higher than 0.5 also for the sub-period after 2009.

Figure 3: Risk Pricing of Slovakia



Source: Bloomberg

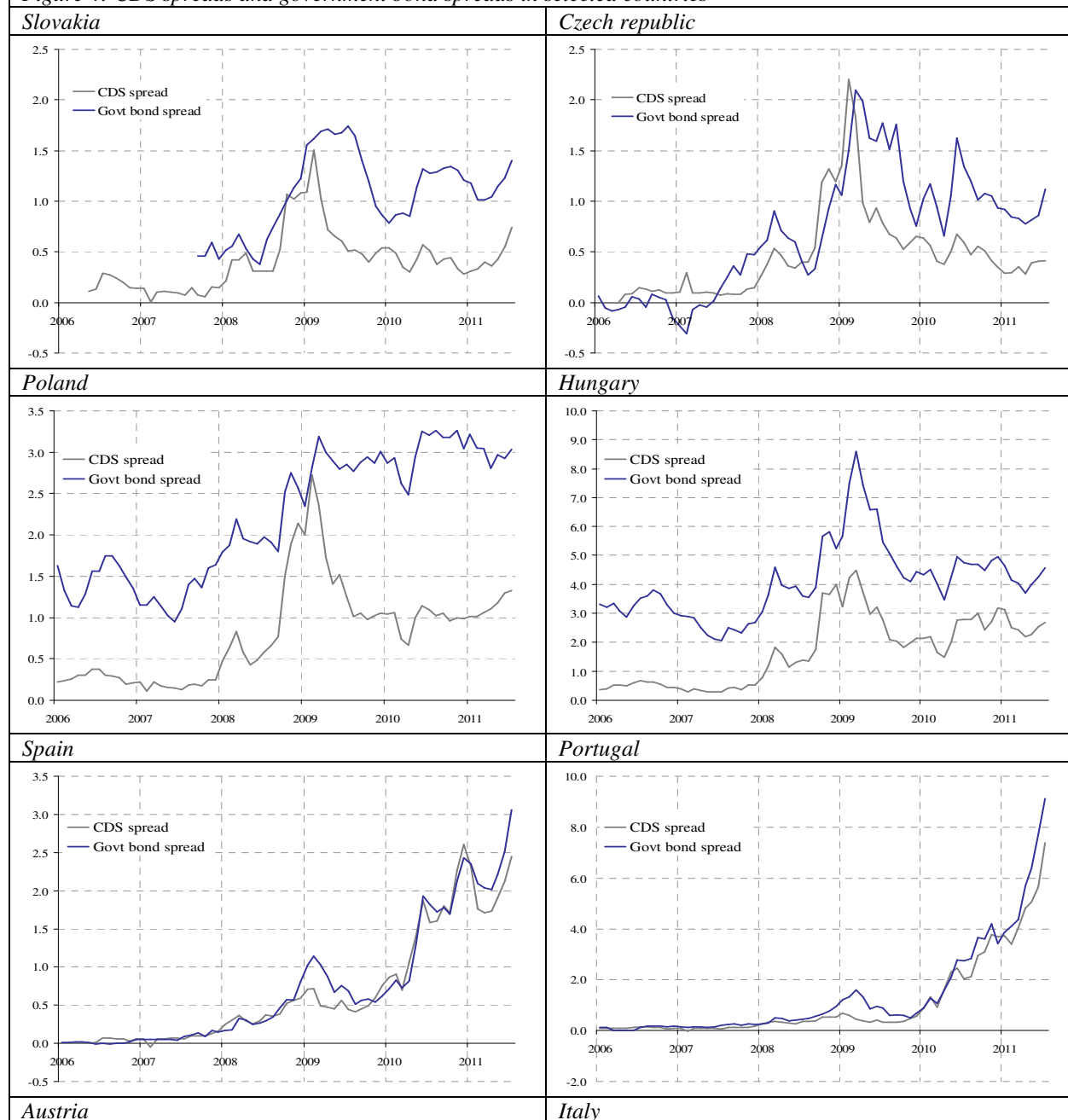
The obvious split in the two measures could have the following reasons:

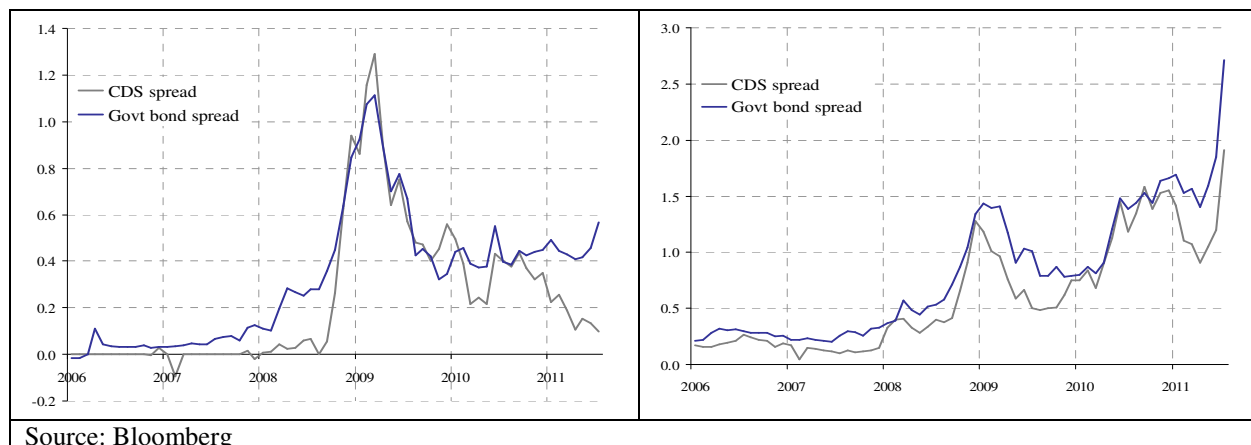
- changed composition of premium after euro adoption
- perception of German bund as a safe haven and much higher inflow of liquidity pushing German bund down relative to Slovak government bond
- low liquidity of CDS market distorting a message in emerging economies

⁴ In all cases we use 10-year maturity instruments.

Looking at the two measures on wider variety of countries (Figure 4) however reveals that developed economies, however problematic in their budgetary policies, do not display such a difference in the two country risk measures. This disqualifies the first two reasons, stressing the importance of liquid markets in obtaining a consistent measure of country risk.

Figure 4: CDS spreads and government bond spreads in selected countries





For emerging economies therefore government bond spread seems to be the preferred measure to reflect the country risk in emerging economies as other measures may be hard to obtain the data for or tend to be distorted. For developed economies however, where CDS market is liquid, CDS spread may be alternatively used, however one should be cautious on the interpretation of its use.

In episodes of high turbulence and uncertainty for instance, government bonds might lack trading volume to reflect the real market price, while CDS might still be in a high demand and supply, reflecting thus the risk premium better.

Conclusion

Level of country risk has been evolving rapidly in the recent several years and the methods to measure it can vary. Over last 5 years we have witnessed the episode of underpricing country risk, showing in a flat line close to zero, moderately elevated risk in before the brink of the crisis as well as explosions of premia with its local peaks and troughs. Country risk assessment became much more individual reflecting various economic, political and budgetary issues.

Having these in mind, selection of proper indicators to measure the country risk should closely link with the purpose and interpretation of the analysis. Special focus should be taken in the liquidity of the market that may widely vary and influence the explanatory power of a given measure.

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Summary

Riziko krajiny bolo donedávna považované za relatívne nevýznamné riziko v krajinách Európskej únie. Táto skutočnosť sa v priebehu posledného obdobia v dôsledku volatilných finančných trhov, hlavne od augusta 2007, významne zmenila. Napätie na medzibankovom trhu vyústilo do pádu Lehman Brothers v septembri 2008 výsledkom čoho bola strata dôvery investorov a recesia. Príspevok analyzuje vývoj tých ukazovateľov finančných trhov, ktoré vypovedajú o riziku krajiny, poukazuje na potrebu merania rizika krajiny a zároveň načrtáva prístupy k jeho meraniu a identifikácii.