

Structured Instruments in Poland – Current State and Prospects for Development

Joanna Błach¹

Abstract

Structured instruments are one of the latest developments of the financial engineering, that are spreading around the global financial markets. As relatively new financial innovations, they have also entered the Polish financial market. The paper aims at presenting the results of the research focused on the structured instruments in Poland. The aggregated data illustrating the current state of the market are analyzed. They are also used to indicate the potential of development considering the advantages and disadvantages of the structured instruments analyzed both from the issuers' and investors' perspective.

Key words

structured instruments, financial innovations, Polish financial market

JEL Classification: G11, G19, G24

1. Introduction

Structured instruments are one of the latest financial innovations created by the financial engineering. Their dynamic development is observed worldwide since 1990s, as due to their particular features they can be an attractive solution applied both in the investment decisions and financing decisions. Structured instruments are also offered and traded on the Polish market. As relatively new phenomenon they require careful analysis, particularly in the aftermath of the global financial crisis.

The main objective of this article is to present the results of the research focused on the analysis of the current situation and the prospects for development of these instruments on the Polish financial market. The research is based on the aggregated data characterizing the Polish market provided by KNF (the Polish Financial Supervision Authority), WSE (the Warsaw Stock Exchange) and structus.pl (professional internet platform devoted to the structured instruments).

The paper is structured as follows. Section 2 presents the basic theoretical information concerning the definition and construction of the structured instruments. Section 3 provides and discusses the results of the empirical research and the last section concludes the paper.

2. Theoretical insight

Modern financial system is characterized by the dynamic development of the financial innovations that can be defined as any new products, instruments, institutions, markets, regulations and organisational developments that improve the efficiency of the financial system in realizing its main functions and by this, enhancing the economic development. In a narrow meaning the financial innovations are defined as new instruments developed by the

¹ Joanna Błach, Ph. D., Assistant Professor, Department of Finance, Faculty of Finance and Insurance, University of Economics in Katowice, jblach@ue.katowice.pl.

financial engineering that are used to improve the situation of the business entity implementing them. However, these instruments are treated as innovative, only if they are applied for the first time in this particular business entity. The functions of the financial innovations and their importance for the financial system are widely discussed in the literature (Anderloni, Llewellyn, Schmidt, 2009; Gubler, 2010; Henderson, Pearson, 2009; Jenkinson, Penalver and Vause, 2008).

One of the latest developments in the financial securities are structured instruments that can be defined as a combination of the traditional instrument (e.g. shares, bonds) and derivatives (e.g. options, futures) (compare: figure 1). The most important result of this combination is the modification of the cash flows generated by these instruments that can be better adjusted to the investors' preferences and issuers' needs. By the combination of two or more instruments, the new quality can be achieved, as this new structure gains a new risk-return profile. Another problem connected with structured instruments arises from the fact that their performance depends on the value of a given underlying asset (e.g. shares, basket of shares, market index, exchange rate, interest rate), not on the credit standing of their issuer (Culp, 2006, p. 295; Zaremba, 2009, p. 13-18; Mokrogulski, Sepielak, 2010, p. 7-8; Blumke, 2011, p. 31-34). The issuer of such instruments is committed to pay out the investor the amount of money based on the predetermined formula, on a predefined expiry date. Thus, the structured instruments can be analyzed from two perspectives: (1) investor's (investment management approach, which is more popular) and (2) issuer's (financing management approach).

From the investors' point of view, structured instruments provide possibility to invest in instruments or markets that are not available directly. In addition, according to their particular construction, structured instruments can offer investors the protection guarantee for the invested capital (partial or total), which decreases the level of the investment risk. Thus, the structured instruments can be an attractive investment opportunity, as they are quite safe (similar to straight bonds or traditional bank deposits) and at the same time they provide potential for growth and higher rate of return connected with the changes in the value of the underlying assets.

From the issuers' point of view, structured instruments are liabilities, that enable to raise funds through structured finance that is independent from their risk profile and creditworthiness. In addition, structured instruments can be an interesting solution for the issuers, as they enable to combine the procedure of acquiring additional funds with the risk management process. Due to the new developments provided by the financial engineering, the characteristics of the structured instruments can be adjusted to the particular needs and financial situation of the issuer. Thus, structured instruments are not a homogenous group of innovations and they can be classified according to different criteria (see: table 1).

Criteria	Types of structured instruments				
Traditional instrument	Bank deposits	Certificates of deposit	Investment certificates	Life insurance policies	Bonds
Derivative	Option	Forward	Future	Swap	Warrant
Underlying asset	Equity-linked (shares, basket of shares, stock index)		Currency-linked (foreign exchange rates)		Hybrids (two or more underlying assets)
	Interest rate-linked (bonds, interest rates)		Commodity-linked (prices and market indices)		Others (e.g. credit derivatives, weather derivatives)
Types of linkages	Principal payment		Interest payment		Both principal and interest payment
Participation rate	With participation rate =1		With participation rate > 1		With participation rate <1
Capital protection guarantee	With guaranteed rate of return	With total capital protection guarantee	With partial capital protection guarantee	Without capital protection guarantee	
Standardization	Tailor-made instruments			Standardized instruments	
Type of issue	Public issue		Private placement		Off-shore issue
Maturity	Short-term		Medium-term		Long-term
Currency	Single currency option		Dual currency option		Multiple currency option

Table 1. Classification of the structured instruments

As the construction of the structured instruments is quite complex, to understand their performance the most important elements should be explained.

The very first element is traditional instrument that is combined with derivatives. In Poland structured instruments are constructed on 5 basic forms: (1) bank deposits, (2) certificates of deposit (CDs), (3) bonds, (4) investment certificates, (5) insurance policies (Mokrogulski, Sepielak, 2010, p. 9-10, Zaremba, 2009, p. 13-20). Bank deposits and certificates of deposit are „issued“ by banks and they are guaranteed by the BFG (Bank Guarantee Fund).² In case of the structured bank deposits the capital protection guarantee is equal to 100% of the invested capital. However the certificates of deposit are more liquid as they are financial securities that can be traded on the organised secondary market. Also, investment certificates are financial securities issued by the closed-end investment funds and traded on the private or on the public market. The most popular form of the structured instruments in Poland is the life insurance policy that is issued by the insurance companies and distributed by the bank or other financial institutions. The insurance premium paid by the investor is divided into two parts – the first part is used to create protection for the policyholder, the second part is used to make investment with potential to generate high profit. It should be stressed, that in case of the structured insurance policy, the investor's return received at the maturity or in case of death is tax-free. The last group of the structured instruments is based on the bonds, that can be issued by different institutions both financial and non-financial ones and traded on the public and private market. They can offer capital protection guarantee to some degree and the return for investor depends on the changes in the chosen market indicator.

The formula of the traditional instrument built-in the structured instrument, determines the type of the issuer and the form of the issue procedure. Thus, the structured instruments are mainly issued by the financial institutions in the private placement procedure. However, non-

² Bank Guarantee Fund is an institution managing the deposit guarantee scheme in Poland. Its main role is to reimburse, up to the specified amount of funds accumulated on the bank accounts in the event of the bankruptcy of a bank participating in this system. Currently the maximal level of compensation is EUR 100 000 per person per bank (BFG, 2011).

financial institutions can also issue structured instruments. Besides the private placement, the structured instruments can be issued on the public market and be listed on the domestic stock exchanges or even on the international financial market as the result of the off-shore issues. The structured instruments can be listed on the stock exchanges due to the standardization process. While, tailor-made instruments can not be traded and should be treated as a buy-and-hold investment.

The second element of the structured instruments' construction is the derivative contract. They are usually options or futures on various classes of the underlying assets, however warrants, swaps and forwards can be also applied. The most popular derivatives are based on: (1) equity, (2) interest rate, (3) currency and (4) commodity. Other classes of assets are also possible according to the needs of the issuer and the preferences of the investors.

The return for the investor depends on the predetermined payout formula set by the issuer. There are many various solutions based both on the plain vanilla and exotic options³ (see more about different pay out formulas in: Mokrogulski, Sepielak, 2010, p. 58-60; Blumke, 2011, p. 170-197; Zaremba, 2009, p. 69-86). Sometimes the procedure of the payment for the investors are very complex and difficult to understand for the ordinary investor. The payout formula, according to particular construction, can determine either the principal payment to the investor, or the interest payment or both the principal and interest payment.

Another factor that has influence on the return for the investor is the participation rate, indicating part of the return generated by the underlying asset that can be paid out to the investor, signalling also the level of the market risk. Participation rate equal to 1 means that investor will receive the return equal to 100% of the return on the underlying asset. Participation rate higher than 1 means that the return for the investor would be higher than the return on the underlying asset and lower than 1 means respectively lower payment to the investor. The final return to the investor depends also on the level of the guarantee, as higher capital protection decreases the potential to record loss, but simultaneously it limits the potential profits resulting from the changes in the built-in market indicator.

3. Results and discussion

Structured instruments market is one of the youngest segment of the financial market in Poland. First structured instruments appeared on the Polish financial market in 2000 as a result of the private placement organized by the financial institutions. In August 2006, the Warsaw Stock Exchange (WSE) also introduced structured instruments – the first product in offer was structured bonds of Deutsche Bank in London (WSE, 2011). Thus, structured instruments in Poland are both traded on the private and on the public market and their dynamic development has been observed since 2005 (see: table 2).

Years	2005	2006	2007	2008	2009	2010
Value of investments in structured instruments (PLN mln)	2,6	6,6	9,0	12,9	14,5	15,2*
Volume of structured instruments	62	113	123	337	458	462

*at the end of the first half of 2010

Source: based on: (Krasoń, Szeliski, 2011; Mokrogulski, Sepielak, 2010, p. 18.)

Tabela 2. Structured instruments in Poland in 2005-2010

³ The plain vanilla option is also called uncapped call. The return to the investor is proportional to the increase in the value of the underlying asset above the predetermined strike level at the maturity. The most popular exotic options are: range, look back, himalaya, knock out, ladder or spread options.

Increasing number and value of the structured instruments in Poland indicates growing interest of the investors. Even the global financial crisis did not affect the development of this market in Poland. However, the potential for growth is still quite huge, as the value of the structured instruments bought by the individual investors equaled to 3,9% of the household bank deposits and 15,2% of the capital invested in the investment funds. In addition, the value of the investments made in the form of the structured instruments at the end of 2009 was equal to 1,1% of the Polish GDP which was the lowest level as compared to other European countries e.g. Belgium (26%), Italy (13%), Switzerland (11%), Spain (8%) or Germany (6%) (Mokrogulski, Sepielak, 2010, p.17, 20). It is worth to notice that the market of the structured instruments, due to their particular features and functions is analyzed mainly from the investors' perspective and the main investors are individual clients. In addition, the availability of the structured instruments in Poland to individual investors is increasing as the value of the initial investment is decreasing⁴.

Uptill now the only issuers of the structured instruments on the Polish market have been financial institutions – banks, investment funds and insurance companies. In 2010 - 26 financial institutions offered Polish investors 462 structured instruments. Five biggest issuers according to the number of the offered instruments in 2010 are presented in table 2.

Institution	Number of instruments	Market share
Noble Bank	73	15,8%
Butik Inwestycyjny	54	11,7%
Raiffeisen Bank Polska	52	11,3%
BZ WBK/DM BZ WBK	51	11,0%
Deutsche Bank PBC	44	9,5%

Source: based on: (Krasoń, Szeliski, 2011, p. 3).

Tabela 2. The biggest issuers of the structured instruments in Poland in 2010

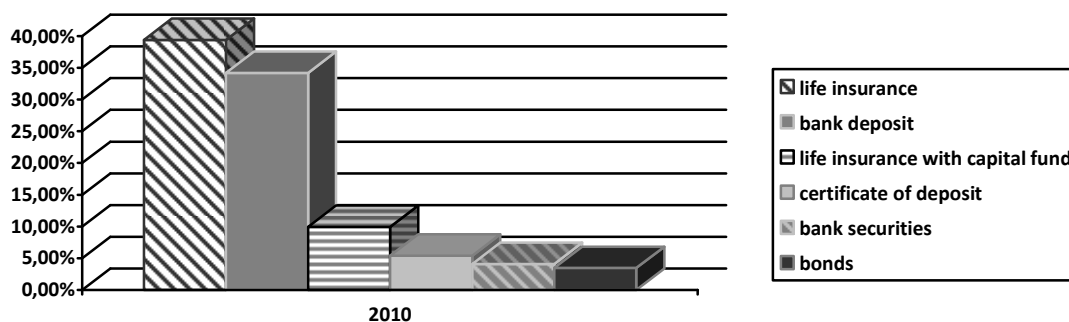
Currently on the WSE there are 6 issuers of the structured instruments: UniCreditBank AG, Raiffeisen Centrobank, Deutsche Bank, BNP Paribas Arbitrage Issuance B.V., Barclays Bank PLC and SecurAsset S.A. The instruments listed on the WSE are in two forms: (1) structured bonds and (2) structured certificates (WSE, 2011).

Outside the stock exchange, the most popular form of the structured instruments in 2010 was life insurance policy (39,39%) due to its favorable tax status, as the return for investor is tax-exempt, contrary to the other forms of the structured instruments, in which the investor is obliged to pay 19% income tax on the received return (see: figure 1)⁵. More than 71% of all structured instruments in a form of life insurance policy were issued in 2010 by one insurance company – TunŻ Europa. The second popular form was a structured bank deposit (34,20%), as it is regarded as the safest and the most stable form of investment and is typical for short-term period. It is worth to notice the increasing number of the third type of structured instruments – life insurance policy with capital fund. Almost 10% of all structured instruments offered in 2010 were in this form – however, in this case the investor has to pay 19% income tax, but lower capital requirements make them attractive for the insurance companies.

⁴ In 2010 in case of 50% of all offered structured instruments, the minimal initial investment was below 5 000 PLN, and in case of the next 36% - below 10 000 PLN (Krasoń, Szeliski, 2011, p. 11).

⁵ The tax exemption is also connected with the capital gains from the Luxembourg funds that can also offer structured instruments, however they are not so popular in Poland as in 2010 only 2 funds were offered to the investors by BNP Paribas Fortis Bank (Krasoń, Szeliski, 2011, p. 7).

Figure 1: Forms of the structured instruments in Poland in 2010

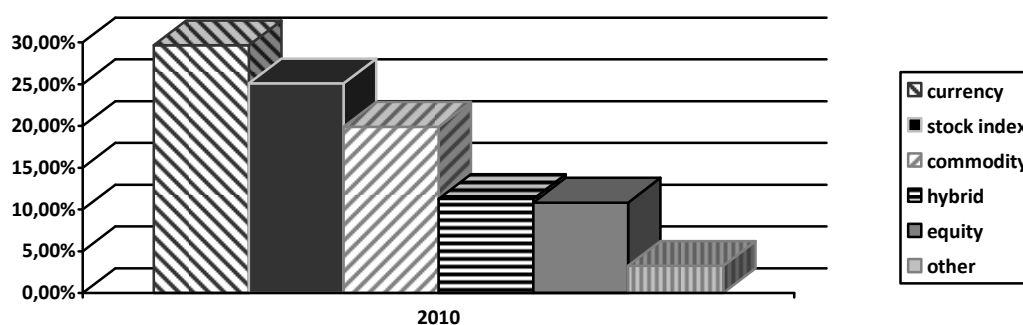


Source: based on: (Krasoń, Szeliski, 2011, p. 6).

The legal form of the traditional instruments built-in the structure is strictly connected with the period of investment. As short-term investments are mainly in a form of bank deposit and other forms are used for longer periods. In 2010 almost 50% of the total offer of structured instruments were with maturity below 2 years, in which more than 24% - below 1 year. Instruments with maturity between 2 and 3 years constituted about 23% and between 3 and 10 years – about 20%. Only little more than 6% of all offered instruments were with maturity longer than 10 years (Krasoń, Szeliski, 2011, p. 5). These results indicates that Polish investors preferred short- and medium-term instruments to long-term ones, probably due to the higher liquidity and lower level of the investment risk, as in times of the high volatility of the market prices it is difficult to forecast market trends for longer periods.

Taking into account the underlying assets, the characteristics of the structured instruments in Poland in 2010 is presented in the figure 2.

Figure 2: Underlying assets of the structured instruments in Poland in 2010



Source: based on: (Krasoń, Szeliski, 2011, p. 8).

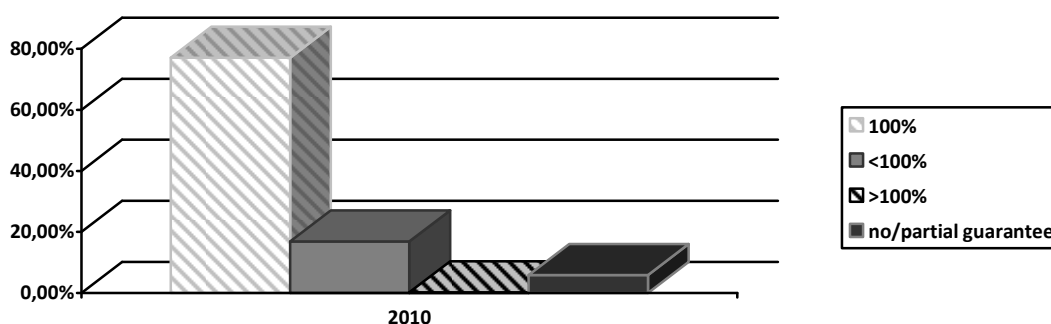
The biggest group of the structured instruments in Poland offered in 2010 were based on the currency (29,65%), mainly EUR/PLN (24,03% of total offer). Different strategies were offered to the investors based on the foreign exchange rates assuming either increase, decrease or stabilization of the particular currency. It is a significant change, as for years the most important assets have been stock indices, particularly WIG20⁶. In 2010 structured instruments based on these assets equaled to 25,11% of the total offer, including WIG20 (15,37%). Increasing popularity can be observed in case of the hybrid strategies, based on more than one

⁶ WIG20 is the main index for the 20 biggest companies listed on the Warsaw Stock Exchange.

assets classes. Close to 20% of all offered instruments were structured instruments based on the commodity prices, as they have become very popular in times of the increasing fluctuations on the financial markets (2008-2010). In this group, the most popular asset was gold with direct and indirect investment strategies (3,0%). The increasing importance of the commodity-linked structured instruments was also observed in case of the securities listed on the WSE. The highest share in the total turnover in 2010 was observed in three types of structured certificates issued by Raiffeisen Centrobank based on: (1) brent crude oil inverse performance (52,53%), (2) gold (8,09%) and (3) silver (7,20%) (WSE, 2010).

The popularity of the structured instruments in Poland arises mainly from the assumption that they are safer than direct investments on the financial markets and simultaneously they offer investor higher potential rate of return as compared to the traditonal bank deposits. Thus, the level of the capital guarantee is particularly important to the Polish investors (see figure 3).

Figure 3: Capital protection gaurantee of the structured instruments in Poland in 2010



Source: based on: (Krasoń, Szeliski, 2011, p. 10).

More than 77% of all structured instruments offered in Poland in 2010 were characterized by the full protection guarantee of the invested capital. Only one issuer offered investors capital guarantee higher than 100% but it was only symbolic, as the gaurantee was raised to 100,1%. About 23% of the total number of the structured instruments offered investors lower level of the capital guarantee (below 100%) or conditional guarantee or no guarantee at all. It is worth to add, that the higher level of the guarantee, the lower potential of the investment to generate return for investors. The preference for the safety is also observed in the tendency to choose currency in which the instruments were denominated. The dominant currency was PLN - 99,35% of all offered instruments were denominated in Polish zloty, only two offers were denominated in USD and one in EUR (Krasoń, Szeliski, 2011, p. 11).

Instrument	Institution	Underlying assets	Annaul rate of return	Total rate of return
Fortis L Fix Everest	Fortis Bank Polska	WIG20	18,66%*	18,66%*
Asy Parkietu I	BRE Bank	WIG20	20,00%	40,00%
Mocca	NWAI	coffee, cocoa, sugar	15,60%*	39,00%*
AutoCall69-WIG20 T1	Citi Handlowy	WIG20	18,00%	18,00%
Obligacja strukturyzowana Koszyk Rolno-Spożywczy	Citi Handlowy	soybean, sugar, wheat, corn	15,81%	47,43%

*with tax-exemption

Source: based on: (Krasoń, Szeliski, 2011, p. 13-14).

Tabel 3. The highest rates of return on structured instruments in Poland maturing in 2010

The highest annual rates of return generated by the structured instruments maturing in 2010 were between 15-20% (see: table 3). However, the average rate of return was about 3,5% and only about 48% of all investments generated positive rate of return. Close to 3% of investments generated negative rate of return and more than 48% ended only with the repayment of the invested capital. The highest loss was incurred by the instrument called Food^3 issued by Nwai, which ended with 20% loss after the 2,5 years of investment.

The studies analyzing Polish market of structured instruments for period 2000-2010 received similar results – the average annual rate of return was 3,31% and was lower as compared to the average interest rate on the time bank deposits - 4,30% (Mokrogulski, Sepielak, 2010, p. 49). These results may discourage investors from buying newly offered structured instruments, as they are quite complex and require professional knowledge to become successful.

The presented data illustrate the current situation on the structured instruments market in Poland. However, it should be stressed that the picture of the market can not be completed, as the collected data concern only the offers that are publicly available to all investors, without any limitations. But structured instruments are also issued on the private market in the process called „club subscription“, when they are offered only to a chosen group of individual or institutional investors. They can be also prepared for the individual purpose of particular investor, often as a part of the services provided by the private banking for wealthy clients. In these cases, the information characterizing the issued instruments are only available to these particular investors. Thus, the transparency of the market is limited.

4. Conclusion

The structured instruments market in Poland is still developing but it is already very diversified. Polish investors can choose from the wide range of the offered instruments, taking into account various features of their construction that meet their particular needs and expectations. The observed tendency in terms of value and volume of the offered instruments indicates the dynamic development and the potential for growth in the future. However, the consequences of the structured instruments both for the investment management and for the financing management should be taken into account as they have influence on the situation on the market and its potential development. The most important advantages and disadvantages of the structured instruments for the investors and for the issuers are presented in the table 4 and 5.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Combine safety and potential to generate higher rate of return as compared to the traditional instruments • Full or partial capital protection guarantee • Predetermined payout formula • Tax exemption on capital gains (in some cases) • Access to the investments (markets and instruments) that are not directly available • Lower transaction costs as compared to purchasing several single instruments • Investment portfolio diversification • High liquidity in case of the instruments listed on the stock exchange 	<ul style="list-style-type: none"> • Complex and sophisticated construction • Require professional knowledge / advice • Complex and unclear payout formula (in some cases) • Low level of transparency of the market • Low level of liquidity (buy-and-hold investments) • Require the acceptance of the potential loss in case of the unfavorable market conditions (return is based on unpredictable outcomes) • Low average annual rate of return as compared to the bank deposits (empirical evidence)

Tabel 4. Advantages and disadvantages of the structured instruments for the investors

Analyzing the characteristics of the structured instruments, the predomination of the advantages both for the investors and issuers can be observed. Many individual investors decide to choose this type of investment due to the capital protection guarantee and the built-in potential of higher rate of return. However, investing in the structured instruments requires knowledge about their construction and potential performance, including the negative consequences.

As to the issuers, it can be expected, that non-financial companies will start to use the structured instruments to acquire additional funds, as they can combine it with the risk management process. However, the issuers must pay attention to the characteristics of the offered instruments, as the terms and conditions should be attractive in order to enhance the investors to buy them and make the issue successful. Financial institutions would be also interested in such application of the structured instruments, as they can earn the distribution fee.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Combine the risk management with funds acquiring process • Adjust risk-return profile to the investors' needs • Adjust cash flows generated by these instruments to the cash flows generated by the issuer • Attract new investors • Flexible capital structure • Lower interest payments as compared to traditional debt instruments 	<ul style="list-style-type: none"> • Offer must be attractive to the investors • Lack of universal regulation standards • Increasing competition between institutions offering structured instruments • Risk of ineffective issue • Liquidity risk (in some cases)

Tabel 4. Advantages and disadvantages of the structured instruments for the issuers

The structured instruments market is also characterized by the significant asymmetry of information, as the investors and market regulators are less informed than the issuers. To close this gap, in order to increase the transparency of the market, the legislative actions are taken both by the national capital market supervisory bodies as well as the European Union ones. The European Commission is preparing the unified standards that will be published in the directive concerning PRIPs (Package Retail Investment Products including structured instruments). The main aim of this directive is to improve the situation of the individual investors by providing them possibility to compare different investment opportunities offered in a form of bank deposits, insurance policies, investment funds and others. The increasing transparency of these instruments, should enhance the development of this segment of the financial market in European Union, including Poland.

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