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## **MAIN RISK MARGIN DETERMINANTS OF GOVERNMENT BONDS OF VISEGRAD GROUP COUNTRIES<sup>1</sup>**

***Abstract:** In recent years we have witnessed a significant growth in government balance deficits and thus government debts, especially in European countries and mainly in the Eurozone. The aim of this paper is to analyse individual factors that influence the changes in risk margins (focusing on V4 countries – the Czech Republic, the Slovak Republic, Poland, and Hungary). The analysis is based on the Risk spread creation and volatility model. We used empirical-statistical methods and comparison within the frame of the specific model, which is used and applied on the countries of Eastern Europe.*

***Keywords:** government bonds, risk spread, fiscal debt, interest rate, payment balance*

**JEL:** G 01, G 12, E 44

### **Introduction**

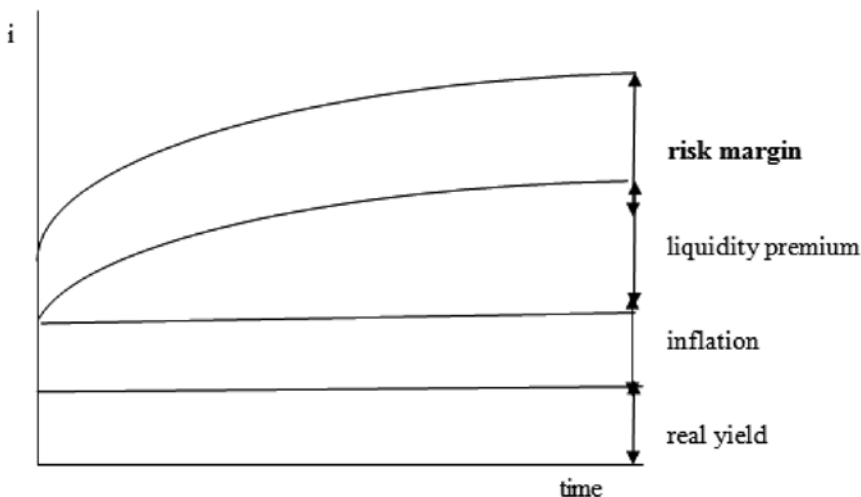
So-called debt crisis phenomenon is currently linked to the need of well-established and functional capital market in Europe, because it is inevitable that investors from the whole world would enter this market and participate as creditors – investors in government debt financing. Each government puts the effort to find an extensive circle of investors as possible and at the same time acquire the funds for the lowest possible price when financing debt. The contemporary problem in government bond emission on the European market is not the liquidity, but the problem caused by the discrepancies between the conditions of the governments and the investors, as the investors are not willing to finance the government debt under the conditions desired by governments. The risk of investing into and issuing government bonds is rising in Europe, and in some cases it is linked to the insolvency risk of the issuer, as well as the growth of risk margin in the structure of investor's yield. Risk margin growth eventually influences also the price of financial resources, which are obtained

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by the issuer on the capital markets. Let us look at the yield curve, which consists of several components.

Graph 1

Bond yield curve; own processing



**Source:** Own processing.

The scheme above (Graph 1) shows that besides the inflation-growth risk, serious problems for the investor may arise also from a low liquidity and risk, which includes credit risk (among other types of risks).

From the aspect of market liquidity critical factors are the volume of the issue and national issuing policy. If the market in the particular bond does not have sufficient liquidity, it could cause significant problems to the investor. If the market needs to restore its liquidity, it may be able to do so only in the long-run; or it must sell its asset for a lower price, i.e. with a loss. It results from the above mentioned that if the liquidity of particular bond is lower, the investor will require a higher liquidity premium. The growth of tradability will on the one hand decrease the liquidity premium. A significant role in the context of liquidity is also played by the future markets, thanks to which investors have the possibility to hedge and also to trade with lower entrance investments. On the other hand, credit risk represents not only the risk of default, which is part of the country credit rating grade, but it also expresses the possibility that the market value of the bond will decrease more than the market value of a comparable bond, which is also part of the market risk. We focus mainly on this component of the yield curve and model approach. Within the scope of empirical analysis we concentrate on the factors that influence the changes of spreads.

## 1 Risk Spreads in Theory and Practice of the Capital Markets

Designation and calculation of the bond spreads is not a simple matter. Many contemporary, as well as historical renowned authors concentrate on the aforementioned issue. Frank J. Fabozzi, the most famous author in the field of bond markets, deserves individual attention with his publication “*The hand book of fixed income securities*” (2011) [5]. The author devotes himself to the analysis of the yield curves and market risks. David Blake is a well-known author in professional circles who concentrates in detail on the bond analysis and yield curve construction with the risk spreads in his publication “*Financial market analyses*” (2000) [3]. Renowned is also a publication by Moorad Choudhry “*An Introduction to Bond Markets*” (2010) [7], which focuses on the issue of risk and spreads on the bond market. Another authority and financial expert in this sphere is Josef Jílek and his book “*Finanční trhy a investování*”<sup>2</sup> (2009) [8] where he devotes himself (inter alia) to the theory of yield curves from the aspect of bond markets.

Many other authors focus on quantification of the factors that influence the scale of the spreads and its change, using different types of statistical and econometric models. In this sphere there are well-known studies and scientific papers by Haque, Pesaran and Sharma (2000) [6], Boyd and Smith (2002) [4], Manganeli, S., Wolswijk, G. “*What drives spreads in the euro area government bond market?*” (2009) [9]. Also new members of the European Union, especially from Eastern and Central Europe, have become the object of interest in this area. Likewise renowned is a study from the ECB “*Determinants of government bond spreads in new EU countries*” (2009) written by Ioana Alexopoulou, Irina Bunda, Annalisa Ferrando (2009) [1]. The authors of the above-mentioned study demonstrate the influence of selected, mostly macroeconomic, factors on the level of the risk spreads and by means of the correlation coefficients they show the level of these factors.

### 1.1 Risk Spread and Factors of its Change

Most of the above-mentioned authors agree that determinants of government bonds risk spreads are primarily domestic fundamentals and common factors, which influence the economy. As the mentioned authors state:

Spread = f (fundamentals, common factors),

Very common is also the ARDL model (p,q<sub>1</sub>,.....,q<sub>n</sub>)

$$Spreads_{it} = \mu_i + \sum_{j=1}^{p_i} \lambda_{ij} Spreads_{it-j} + \sum_{j=0}^{q_{i1}} \delta_{ij}^{(1)} F_{it-j}^{(1)} + \dots + \sum_{j=0}^{q_{in}} \delta_{ij}^{(n)} C_{t-j} + \varepsilon_{ij} \quad (1)$$

Where

t=1, 2, .....T – time period,

i=1,2,..... N – groups of countries

<sup>2</sup> *Financial Markets and Investing.*

F – fundamentals,

C – common factors,

$\mu_i$  – fixed effect coefficients of a particular country,

$\gamma_{ij}, \delta_{ij}$  – coefficients on the  $n$  lagged explanatory variables

$$\Delta Spread_{it} = \phi_i Spread_{it} + \gamma_{ij}^* F_{it}^1 + \dots + \gamma_{ij}^n C_{it} + \sum_{j=1}^{p-1} \lambda_{ij}^* \Delta Spread_{it-j} + \sum_{j=0}^{q-1} \lambda_{ij}^1 \Delta F_{it-1}^1 + \dots + \sum_{j=0}^{qm-1} \lambda_{ij}^{(n)} \Delta C_{t-j} + \mu_i + \varepsilon \quad (2)$$

$\phi, \gamma$  – new coefficients on lagged levels

### *Choice of variables*

Following factors that influence the spreads were considered the most important by the authors by construction of the cited models:

- fiscal fundamentals
- external position
- openness of the economy
- inflation rate
- level of real convergence
- exchange rate
- money market interest rates
- common factor (inside the Eurozone).

It follows from the abovementioned results that the authors focused on the fundamental macroeconomic internal and external factors. Changes in these factors will significantly affect the spread levels of a particular country.

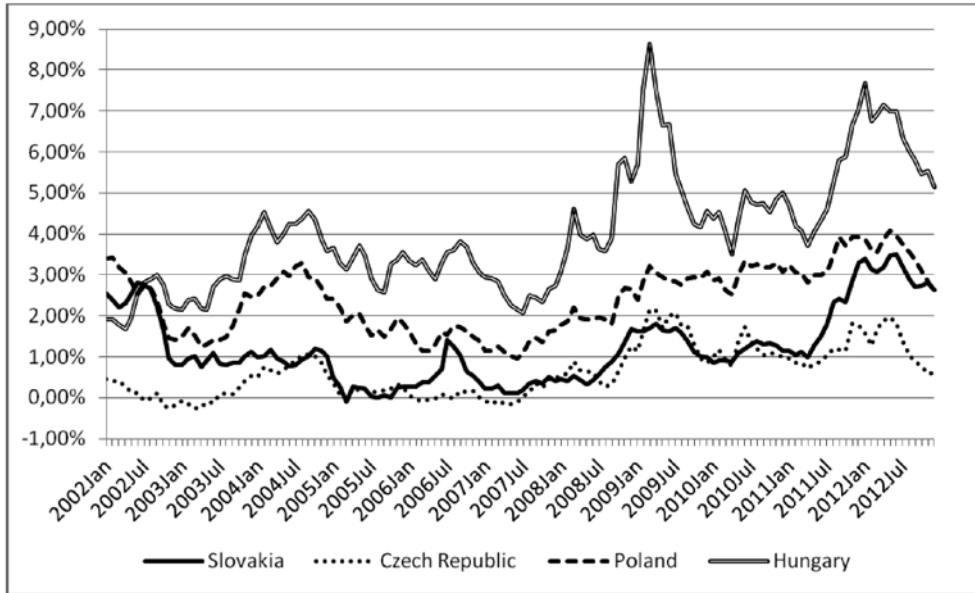
## **2 Risk Spreads of the V4 Countries**

If we turn our attention to the situation by issuing and trading bonds of Eurozone countries, we can assert that there has been a considerable increase of the level of bond spreads. Inside the Eurozone the least risky bonds are the German “bunds” (bonds) according to the investors. German bonds represent a safe haven and are a benchmark for the European bond market. With the rising government balance deficit the bond spread of a particular country against German government bonds rises too. A distinctive growth of the spreads started in the first half of 2009. It first affected Greece, Ireland and Portugal, later Cyprus, then Italy, Spain, and on a smaller scale also Belgium.

We can follow a similar trend by V4 countries. If German bonds are considered the benchmark on the European bond market, then we can state that (especially in the last years) we could follow a growth of spreads of Hungarian but also the Slovak government bonds.

Graph 2

10-year government bond spreads of the V4 countries compared to Germany



Source: own processing using data of ECB.

In 2007 the spreads between Czech and German bonds were only on the level of 50 basis points (i.e. 0.5% difference in the yield of the bonds), about the same data are valid also for the Slovak Republic; in the case of Poland, the spread was 161 basis points (1.61%) and Hungarian bonds were issued with the spread of 265 basis points (2.65%). The level of spreads is also changing currently. In May 2012 the Slovak bonds spread level was at 346 basis points, Czech bonds at 197 basis points, Polish 407 basis points and in the case of Hungary, the spread was on the level of 699 points. The above-mentioned data show that the spreads by bond issues and trading in all monitored countries increased considerably. The largest risk pose the Hungarian bonds (according to this criterion).

## 2.1 Empirical Analysis of the Spread Level Determinants and their Change

Most of the authors who deal with the issue of spread levels cite the abovementioned determinants as the main factors influencing the spread levels of government bonds of different countries. Some authors put the emphasis on government budget balance. They concentrate primarily on the fiscal balance and its relation to the gross domestic product. A very important role in this context is played by Growth and Stability Pact of the EU (GSP) that clearly sets the maximum limit for the government budget deficit at 3% of the GDP and maximum level of government debt at 60% of the GDP. We will follow the influence of this factor on the changes in risk spreads of V4 countries over a longer time period (10-year period) until the present time.

In the time period monitored there have been major differences in fulfilling established fiscal criteria – government budget balance and volume of government debt. As shown in the following table (1), while the Czech Republic and the Slovak Republic managed to keep the government budget deficits under the established limit of 3%, Poland managed to keep the deficit under the limit only once, and Hungary has been constantly exceeding the limit over the entire monitored period.

Table 1

## Government budget deficit and government debt measured relative to GDP

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Government budget balance / GDP (%)	SVK	-8.2	-2.8	-2.4	-2.8	-3.2	-1.8	-2.1	-8.0	-7.7	-4.8	-4.5
	CZE	-6.5	-6.7	-2.8	-3.2	-2.4	-0.7	-2.2	-5.8	-4.8	-3.1	-4.4
	POL	-5.0	-6.2	-5.4	-4.1	-3.6	-1.9	-3.7	-7.4	-7.8	-5.1	-3.9
	HUN	-9.0	-7.3	-6.5	-7.9	-9.4	-5.1	-3.7	-4.6	-4.2	-4.3	-2.0
Gross government debt / GDP (%)	SVK	43.4	42.4	41.5	34.2	30.5	29.6	27.9	35.6	41.1	43.3	52.4
	CZE	27.1	28.6	28.9	28.4	28.3	28.0	28.7	34.3	37.6	40.5	46.2
	POL	42.2	47.1	45.7	47.1	47.7	45.0	47.1	50.9	54.8	56.3	55.6
	HUN	55.7	58.5	59.4	61.7	65.9	67.0	72.9	79.7	81.3	80.6	79.8
Interest payments from government debt / GDP (%)	SVK	3.0	1.7	1.4	1.1	0.9	1.0	0.9	1.1	1.2	1.4	1.6
	CZE	0.3	0.5	0.6	0.7	0.7	0.7	0.7	1.0	1.1	1.2	1.3
	POL	2.1	2.4	2.5	2.2	2.1	1.7	1.6	2.1	2.2	2.3	2.3
	HUN	3.6	3.7	4.0	3.8	3.7	3.8	3.7	4.1	3.8	3.8	4.0

Source: own processing, using data of Eurostat.

The situation has worsened considerably after the start of the crisis, when all monitored countries stopped fulfilling convergence criteria and in the case of Poland, the criterion of maximum government budget deficit was exceeded more than twice the limit values. Hungary paradoxically managed to lower the budget deficits more efficiently during the time of crisis than during the time of economic growth. Foreign aid is accountable for such a situation, when it was bound to austerity measures on the expenditure side of the government budget. The austerity measures are applied also presently. This is the cause of successful decreases of government budget deficits in Hungary. The aim to lower the deficits under the established limit of 3% may be changed (negatively) by the current return of recession in Europe.

The growth of government budget deficit during the crisis period has caused growth of the public debt in all V4 countries. It is inevitable to mention that all countries except Hungary have not exceeded the limit of 60% government debt to GDP ratio. Not negligible is a significant growth of government debt in these countries after 2008. In the case of the Czech Republic, the recorded growth was

from 28.7% to 41.2% of GDP in 2011. Similarly, government debt in the Slovak Republic was in 2008 on the level of 27.9% of GDP and crossed the level of 43.3% of GDP in 2011. However, we can assert that the Czech Republic and the Slovak Republic are still considerably under the 60% of GDP level. On the other hand, Poland's government debt has been approaching the limit levels for a longer period of time. Hungary has been constantly exceeding the maximum government levels since the entry into the European Union. Growth of internal indebtedness represents a pressure on the obtained volume of financial resources in the economy, as these resources are becoming more expensive and thus, the investors are expecting higher yields.

The amount of gross government debt has an impact on the amount of debt service. Debt service consists of instalments of the principal and interest payments. The higher yields the capital markets desire, the higher interests a country must pay. This increases the pressure on the public finance. In case when the interest payments reach too high levels, serious problems with debt servicing may arise. From this perspective the best situation is in the Czech Republic and in the Slovak Republic, where the interest payments represent only 1.2% or 1.4% of GDP respectively. In Poland it is 2.3% and in Hungary even 3.8% of GDP. This means that Hungary has to spend annually 3.8% of GDP just to pay for the interest their government debt generates. For comparison – the government budget deficit in Hungary was 4.3% of GDP in 2011.

The next factor – external position is closely related to external, as well as internal solvency of the country. As quantitative indicators of this factor in analyses and models are used the ratio of current account balance and GDP and gross external debt to GDP ratio. Gross external debt represents all external commitments in the relations with foreigners (including the private sector). It is necessary to say that some governments solve government deficits by issuing bonds only for the internal market or a large portion of the bond issue is absorbed by the national market (Japan), which of course contributes to lower external indebtedness.

We do not represent the data on gross external debt in the period of 2002 – 2004, since the methodology of computing this indicator changed in this period due to accession processes into the European Union.

In the first step we concentrate our attention on balance of payments. As it is shown in Table 2, V4 countries have lowered their balance of payments deficits despite the financial crisis. Slovakia and Hungary deserve special attention as they managed to reach active balance of payments. This result was reached in Slovakia due to decreases in imports and parallel increase of export mostly from automobile and electrical engineering industry.

Table 2

## Current account balance

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Current account balance / GDP (%)	SVK	-7.9	-5.9	-7.8	-8.5	-7.8	-5.3	-6.2	-2.6	-3.7	0.1	2.2
	CZE	-5.3	-6.0	-5.0	-1.0	-2.0	-4.3	-2.1	-2.4	-3.9	-2.8	-2.4
	POL	-2.8	-2.5	-5.3	-2.4	-3.8	-6.2	-6.6	-3.9	-5.1	-4.9	-3.7
	HUN	-7.0	-8.0	-8.3	-7.2	-7.4	-7.3	-7.3	-0.2	1.1	0.9	1.7
Gross external debt / GDP (%)	SVK	N/A	N/A	N/A	56.2	48.3	54.7	55.4	71.6	74.7	77	-
	CZE	N/A	N/A	N/A	40.14	39.91	43.05	48.52	51.62	56.54	58.39	-
	POL	N/A	N/A	N/A	44.09	46.58	48.43	56.83	59.4	66.36	71.93	-
	HUN	N/A	N/A	N/A	82.38	92.37	105.4	123.1	144.9	144.1	146.2	-

Source: own processing, using data of Eurostat, ECB and NBS.

Hungary has the largest external debt from all monitored countries, which is bound to the problems of the Hungarian economy that are currently being solved also with the help of the International Monetary Fund. This factor is also the main cause of the spread levels of the Hungarian government bonds. It is due to the fact that investors consider Hungarian bonds more risky.

Many authors assign a very important role to the openness of the economy [2]. This indicator informs about the openness of a country towards the trade with foreign countries and financial flows linked to the trade. The higher is the foreign trade in the comparison with GDP, the higher is the openness of the economy.

It is obvious from Table 3 that the largest levels of openness from V4 countries were achieved by Slovakia and Hungary. A little lower levels of openness were reached by the Czech Republic. A lower level of openness is recorded in Poland, where the levels of openness to GDP ratio reached only 90%, which is almost half of the levels reached by the Slovak Republic and Hungary. The result of this is a lower dependence of Poland on foreign trade. This was also reflected in the period of financial crisis when Poland was the only country from monitored countries that avoided recession.

Table 3

## Share of import and export on GDP of V4 countries

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Foreign trade / GDP (%)	SVK	149.5	153.6	151.9	157.2	173.0	174.8	169.3	142.6	163.8	175.5
	CZE	116.4	119.4	125.1	126.1	130.9	133.8	126.5	115.4	132.5	145.6
	POL	60.7	69.3	77.3	74.9	82.5	84.4	83.8	78.8	85.7	N/A
	HUN	128.4	126.7	130.3	134.0	156.4	161.7	162.9	150.3	166.6	177.2

Source: own processing, using data of IMF.



Particular attention also draws development of inflation levels in the monitored countries. The V4 countries committed themselves in the accession process and then also later after becoming the EU members to fulfil convergence criteria. One of the criteria is the commitment to maintain low levels of inflation. Development of inflation is recorded in the following table (4).

Table 4

## Development of inflation levels in V4 countries

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Average annual level of inflation (%)	SVK	3.5	8.4	7.5	2.8	4.3	1.9	3.9	0.9	0.7	4.1	3.7
	CZE	1.9	0.1	2.8	1.8	2.5	2.9	6.3	1.0	1.5	1.9	3.3
	POL	1.9	0.8	3.5	2.1	1.0	2.5	4.2	3.5	2.5	4.3	3.7
	HUN	5.5	4.4	6.8	3.6	3.9	7.9	6.1	4.2	4.9	3.9	5.7

**Source:** own processing, using data of IMF.

The Czech Republic is the most successful among all V4 countries from the aspect of inflation levels in the long run, and it is the most successful country in fulfilling convergence criteria before, as well as after the crisis. The Czech Republic exceeded the price level development limits three times before the crisis; however, it was always temporary crossing of the limit linked to the measures of government that had inflationary character (increase in taxes). Poland was doing well in the aspect of inflation before the crisis. However, after the outbreak of crisis Poland paid for extraordinary economic growth associated with increased inflation levels. Poland has not been fulfilling the inflationary criterion since 2008. Hungary has not been able to fulfil the criterion from the very beginning of the monitored period. This situation mostly resulted from expansionary remuneration policy of the government in the pre-crisis period and the effort to solve high deficits with tax increases during the crisis period. If Hungary wants to adhere to the established inflation level criteria, besides fiscal consolidation also an increased activity of the central bank is needed. Slovakia's anti-inflationary policy was more visible after the accession into the EU. After the entry into the Eurozone likewise the influence of the monetary policy is visible. Inflation plays a very important role by placing of the government bonds on the capital markets. If investors expect higher inflation levels in a particular country, they will require higher yields. This will have to be reflected in the actual yields of the government bonds. Yields of the government bonds should be higher than the inflation levels. In practice it is possible that especially in the short-run real interest yield may be actually negative. The reason of such a result is naturally higher inflation level than the yield level of certain government bond in a particular country. This paradox may be observed on the real yields of particular government bonds in Europe. Such a situation is also related to several other factors.

A very important factor is the degree of real convergence. Influence of this factor is assessed through the indicator known as gross national income per capita. Growth

of this indicator leads not only to a better credit rating but also to the decrease in spread within the yield curve. Development of this factor in monitored period can be seen in the following table (5).

Table 5

**Development of gross national income per capita  
in V4 countries**

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
GNI per capita (USD, current prices)	SVK	5 930	6 800	8 800	11 040	12 550	14 410	15 900	15 820	16 030	16 070	17 180
	CZE	6 340	7 720	9 750	11 890	13 440	14 910	17 840	17 860	18 490	18 520	18 120
	POL	4 860	5 480	6 270	7 270	8 340	9 800	11 870	12 190	12 450	12 480	12 660
	HUN	5 210	6 550	8 540	10 220	11 040	11 510	12 890	12 980	12 860	12 730	12 380
	EU	18 054	20 353	24 663	28 234	30 186	32 301	34 674	34 061	33 811	33 982	33 641
Sniper capita in comparison with EU mean (%)	SVK	0.328	0.334	0.357	0.391	0.416	0.446	0.459	0.464	0.474	0.473	0.511
	CZE	0.351	0.379	0.395	0.421	0.445	0.462	0.515	0.524	0.547	0.545	0.539
	POL	0.269	0.269	0.254	0.257	0.276	0.303	0.342	0.358	0.368	0.367	0.376
	HUN	0.289	0.322	0.346	0.362	0.366	0.356	0.372	0.381	0.380	0.375	0.368

**Source:** own processing, using data of World Bank.

As the indicators for individual countries show, since 2002 there has been a significant growth of GNP per capita, especially in the Slovak Republic and the Czech Republic, where this indicator grew to triple values in the monitored period. However, V4 countries are still lagging behind the EU average.

Another important macroeconomic indicator is the development and level of interest rates. As it is shown in the following graph (3), high inflation in Hungary and Poland has been (and still remains) the main historical cause of not fulfilling the long-term interest rate criterion, which is also expressed in the growth of spreads between Euribor (The Euro Interbank Offered Rate) and national interest rates indicators.

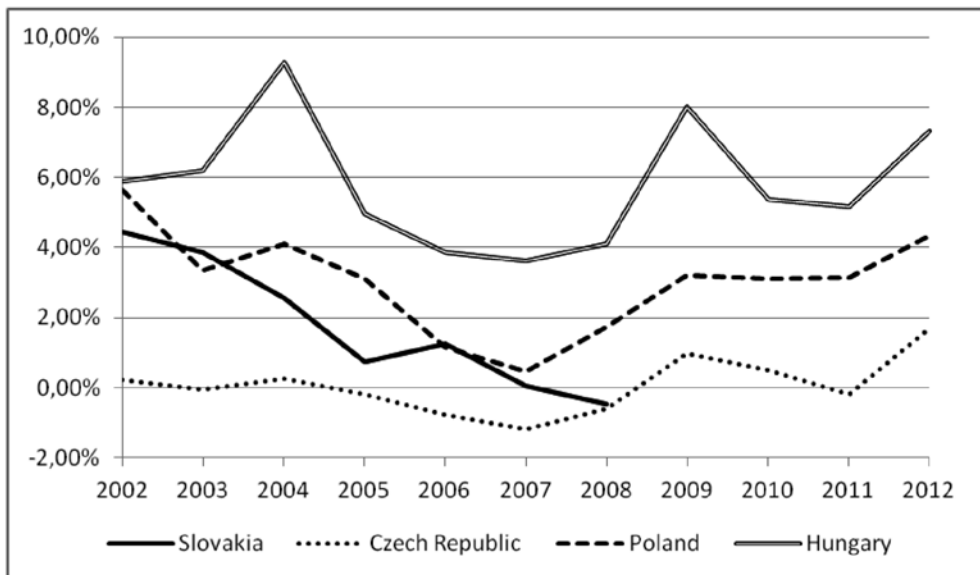
As it is shown on the graph, interest rates of the Czech Republic have been closely following the Eurozone interest rates. In the selected years, especially at the time of the outbreak of the crisis they tried to stimulate the economy with the price of money that was even lower than in the Eurozone. Slovakia was continuously decreasing interest rate levels and with the entry into the Eurozone, Euribor became the key interest rate. In the case of Poland and Hungary significant spreads from Euribor are visible.<sup>3</sup>

<sup>3</sup> Interest rates crossed the Eurozone levels more than 4 times (2001 – Poland 19%, Eurozone 4.75%). Despite a significant fall of the interest rates in Poland we can assert that the interest rates in Poland are still high above Eurozone levels (4.91% vs. 0.57%). Similar situation is present in Hungary, where there was recorded increased interest rate volatility with upward pressures despite the effort of continuous lowering of the interest rates. In 2011 was the average 3-month interest rate of Hungarian central bank still at the level of 7.9%, which is even higher than in Poland.

High interest rate level on the money market leads to higher expectations of yields by issuing of the government bonds. For the government budget service it means to renounce long-term bond issues, as their high price would extensively burden the budget. On the other hand, short-term bond issues also limit the elasticity of monetary policy that hits the barrier of short-term issues.

Graph 3

Comparison of spreads of V4 countries and Eurozone key reference rates;  
own processing



Source: using data of ECB.

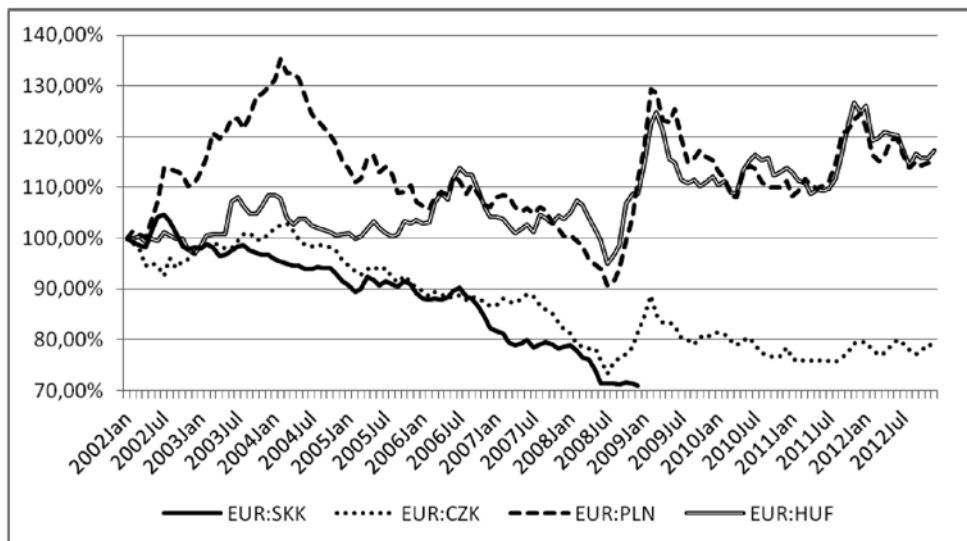
Analysis of macroeconomic indicators also follows the relation of the national currencies of the V4 countries with EUR – exchange rate. It is crucial to say that Slovakia switched to the single currency in 2009, and thus it is not possible to follow further development of the exchange rate of its national currency.

High volatility of the exchange rates is obvious in over a decade data-record of Polish Zloty and Hungarian Forint. In the period of 2008-2009 there is obvious and considerable depreciation of both currencies.

High exchange rate volatility and depreciation of particular currency may have a negative impact in two aspects. On the one hand, it creates uncertainty of investors and thus may cause capital outflows from the country. On the other hand, in the case of government bonds issue, the investors will require a higher yield regarding to a higher currency risk.

Graph 4

Development of the exchange rates of V4 countries; own processing



Source: using data of ECB.

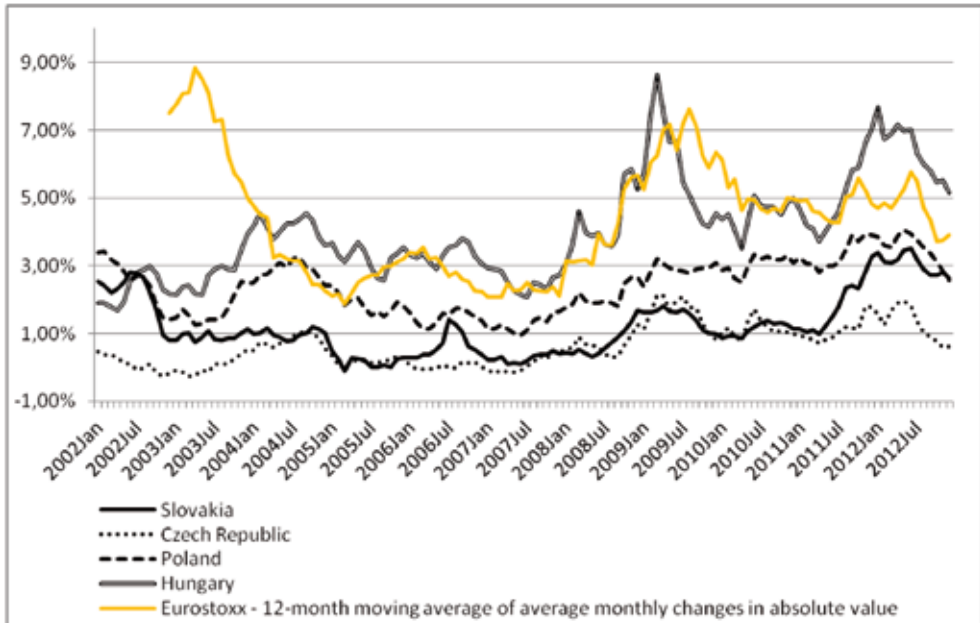
Besides the abovementioned fundamental indicators, authors include in their models influences of common factors as e.g. stock market. We used DJ Eurostoxx 50 volatility indicator by comparison of the spreads of V4 countries government bonds, as it is currently one of the most used benchmarks of the European stock market.

Graph 5 captures the development of government bond yield spreads of the V4 countries in comparison with the Eurostoxx volatility index. Volatility index expresses a 12-month moving average of average monthly index changes in absolute value. Especially in the last years a very clear trend is visible, where by volatility growth of the stock index grew also the yield spreads of V4 countries government bonds. The reason for this is that in the periods of uncertainty, which are marked by increased volatility, the investors tend to turn to safer assets. That means that on the one hand they are purchasing more German government bonds, whereby they put a downward pressure on their yields; at the same time they are redeeming V4 countries government bonds and thus putting upward pressure on their yields. This kind of situation results in increasing spreads between the German bonds and the government bonds of the V4 countries. We may then assert that there is a correlation between the high volatility of the stock market and government bonds yield spreads. At the same time, we can assert that stock index volatility linked to higher yields is comparable to the yields of bond yield spreads of the riskiest country. We base our assertion on the assumption that the investors on current global markets will diversify their portfolio in such way that a part of their assets will be placed on the government bond market, other part will be placed on the stock market, and part of the asset will be placed in high-liquidity assets i.e. cash. If they invest on the bond market, they

will diversify also these investments according to the quality classes that result from credit ratings in different regions. By significant volatility growth of a stock market and thus the possibility of losses, the investors will shift a part of their investments also on the bond markets, whereby they may place a part of their investments into the bonds riskier countries that are bound to higher yields.

Graph 5

Yield spreads of government bonds and volatility of stock markets



Source: own processing, using data of ECB and [www.stoxx.com](http://www.stoxx.com)

## Conclusion

The current situation on the government bond market, especially in Europe changes also a theoretical view of investment into such assets as government bonds. In the recent past, government bonds were considered safe assets and many model approaches were based on the hypothesis that government bonds create the benchmark of the capital market with zero-insolvency risk. However, growing problems of many European economies also indicate the growth of the government bond investment risk, which is reflected in risk spreads by issue and trading of government bonds. This trend is visible also in V4 countries, which are considered riskier region by the investors. Even though there has been an improvement in most of the key economic indicators, spreads are currently comparable if not even on higher levels than at the beginning of the monitored time period.

Risk spreads are influenced by many factors, as we mention in our paper. Present situation indicates that the most obvious influence on them is exerted by government

budget deficits and government debts linked to them. Other determinants show positive development, especially in the case of the Slovak and Czech Republics and thus are creating less risky conditions for investors. Poland and Hungary pose a higher risk for investors mainly because of large volumes of government debt and high interest rates, which is also reflected in the level of risk spreads.

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