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Full Length Research Paper

Emerging markets arbitrages' perception: Risk versus growth potential

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This paper relates to our analysis of the most important criteria for emerging markets investors. We calculated and sorted both the correlation of price levels and the correlation of returns between six emerging European stock market indices and the world's most significant index: the Standard and Poor's (S&P) 500. Our analysis established a level of emerging markets price dependence on international investors with global market overview. We used a unique dataset with three years of data on the indices and other indicators from the stock markets in Bulgaria, Croatia, Hungary, Romania, Serbia and Slovenia. We compared both the correlation ranks of indices, with the rank of different risk and growth parameters. Our research concluded that the correlation of price returns is most dependent upon the level of corruption as a risk factor. Price level correlation results suggested that investors choose to apply growth potential criteria in deciding where to invest. We proved that the correlation of price levels to S&P 500 Index is dependant on demographic factors, proving it to be the most important factor in investor perception.

Key words: emerging markets; market correlations; investors' decision; risk factors; growth potential.

INTRODUCTION

Analysis of financial market co-movement and correlation is an important issue for both policy makers and market participants, such as portfolio managers. That is, for policy makers, common movement and convergence would support transition in local currency areas (such as the Euro) without significant stock market adjustment caused by any business cycle adjustment. Moreover, such convergence may imply potential efficiency gains from stock market merger activity. Furthermore, financial convergence may lead to greater financial stability and policy coordination across regions. Previous research (Gilmore and McManus, 2003) constituted evidence for weak form market efficiency in emerging markets. Stu-dying the predictions of the exchange rate of Central and Eastern European currencies against the US Dollar and
the Euro, Cuaresma and Hlouskova (2005) examined short term and long term prediction models. With regard to portfolio managers, increased correlations and co-movement between international stock markets implies reductions in the benefits of portfolio diversification, so that portfolio managers would need to actively adjust their portfolios in search of assets with lower correlations (Evans and McMillan, 2009).

Since the beginning of the transition period, the emerging markets in Europe have become increasingly attractive to international and domestic investors willing to diversify their portfolio investments by investing in local stock markets (Podobnik et al., 2007). Investors take into consideration the rapid economic development of those countries providing potentially high returns, as well as the potential for portfolio diversification ostensibly thanks to the process of reform and liberalization within these capi-tal markets (Fedorova and Vaihekoski, 2009). Černý and Koblas (2008) claim that, due to increased globalization of the world economy, markets react very quickly to information revealed in prices from other markets.

Market capitalization and the liquidity of the market are considered primary indicators of the success of a national stock exchange. Discussing Central and Eastern European

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emerging markets, high quality trading data series can be found dating back to the mid 1990s (Fedorova and Vaihekoski, 2009). The increased integration of stock markets in European countries is readily evident during the past decade but it is a process independent of possible simultaneous world-market integration (Hardouvelis et al., 2006). Over the last few years, local stock markets have grown significantly compared with the initial years following the reopening of these financial markets as an early part of the process of transition. Moreover local currencies have tended to move in a fashion more closely co-ordinated with the Euro which is a very important factor for foreign investors. As Gradojevic et al. (2010) note in their work, producing an effective exchange rate forecasting model remains a major challenge to policy makers and practitioners. Based on previous analysis, we can conclude that Central European and South Eastern European markets are influenced by international portfolio investors. These arbitragers bring expertise and liquidity to a market while domestic investors have the role of "noise" traders. A high correlation of a stock market index in comparison to S&P 500 benchmark index indicates a significant level of control of the market by international portfolio investors. It is interesting to note how portfolio investors make their decisions in a time of crisis.

The aim of this paper is to examine the importance of different investment criteria of arbitragers. First, we will observe the influence of world's most important index - S&P 500 - on regional stock market index movements and establish a correlation ranking. We want to observe both price levels correlation and returns correlation values. Price level correlation will show us how regional stock market signals follow S&P 500 signal.. Returns correlation will indicate the exact price deviation between regional indices and S&P 500. In their research, Égert and Kočenda (2007) state that spillover effects can be found from more developed stock market returns to Central and Eastern European emerging markets returns. By comparing correlation with various risk factors and growth potential factors, we will test the portfolio investors' predominant criteria in the decision making process. Country specific risks such as: sovereign risk, market volatility, inflation rate, market liquidity and corruption level will be presented and compared to market correlation. On the other hand, growth potential will be covered by analysis of gross domestic product (GDP) per capita and demographic data in relation to correlation. By establishing the most similar distribution of a factor and level of market correlation, we will be able to establish a pattern and see what criteria have a dominant influence for portfolio investors.

THEORETICAL BACKGROUND

Portfolio investment choice is a process which requires serious risk and market growth potential analysis. While making their decision where to invest and how to diversify their investment portfolio, investors around the globe consider various risk perspectives. Risk and return models in finance take into consideration investor risk aversion, information uncertainty and perceptions of macroeconomic risk (Damodaran, 2009). These factors can be considered as the most important criteria for the final decision of investors where to invest.

Stock returns reflect new market-level and firm-level information. As Roll (1988) makes clear, the extent to which stocks move together depends on the relative amounts of firm-level and market-level information capitalized into stock prices. Stock prices in economies with high GDP per capita move in a relatively unsynchronized manner. In contrast, stock prices in low per capita GDP economies tend to move up or down together. The systematic component of returns variation is large in emerging markets, and appears unrelated to fundamental co-movement, consistent with noise trader risk (Morck et al., 2000). Studying financial co-movement and correlation from 33 international stock market indices, some authors have used the realized correlation coefficients to form international portfolios and compare the level of risk to that of an equally weighted portfolio (Evans and McMillan, 2009). Results suggest the portfolios weighted according to the realized correlations exhibit diversification benefits over the equally weighted portfolios. Their findings suggest that there remains room for portfolio managers to obtain diversification benefits, while policy makers may need to take in to account the possible adjustment costs of coordinated action.

Other authors show that synchronous stock returns in emerging economies are not an artifact of structural characteristics of economies, such as market size, fundamental volatility, country size, economy diversification, or the co-movement of firm-level fundamentals. Though some of these factors contribute to stock return synchronicity, a large residual effect remains, and this effect is correlated with measures of institutional development (Morck et al., 2000). We believe that these findings should be further investigated in the case of selected Central and South Eastern European markets.

DATA AND METHODOLOGY

The data used for correlation calculations in this paper are accessible from websites of emerging market stock exchanges and the Standard and Poor's website. When analyzing the credit rating of a country, or referencing macroeconomic and stock market trading categories, we extracted the historical data from various sources (stock exchange markets, statistical offices and notable international agencies). We conducted our experiment on six Central and Eastern European countries, with a three years time period sample, the data runs from the beginning of January, 2007 until the end of December, 2009.

We used the daily closing prices of the following country major stock market indices: BELEX LINE (Belgrade Stock Exchange), BET (Bucharest Stock Exchange), BUX (Budapest Stock Exchange), CROBEX (Zagreb Stock Exchange), SBI 20 (Ljubljana

Stock Exchange) and SOFIX (Bulgarian Stock Exchange - Sofia). In order to have a relevant sample of index values, we compared trading days for all stock markets in focus from January, 2007 until December, 2009. We considered only overlapping trading days of each regional index against the S&P 500 with a three year time period. Due to differences in working calendars (caused by public holidays), a few trading days were not taken into consideration. The final sample size varies between 719 and 737 closing prices for each pair of six regional indices compared with S&P 500 (Table 1). Criteria for the sample extraction took into consideration the difference in time zones and the fact that some observed stock markets have overlapping trading hours with the US market.

When we compared values of BELEX LINE, BET, SBI 20 and SOFIX with S&P 500 values, we lined up current day closing value of regional indices with the previous trading day closing value of S&P 500 index. In the case of BUX and CROBEX versus S&P 500 values, we compared both the closing values of the same day and the previous trading day closing value of S&P 500 index to the current day closing values of BUX and CROBEX, because there is at least some overlapping in trading hours on these three markets. Table 2 shows the trading hours on the stock markets in our research, according to Greenwich Mean Time (GMT).

A brief description of the mathematical background and methodology is as follows. We observed two samples $x = (x_1, x_2, ..., x_n)$ and $y = (y_1, y_2, ..., y_n)$ with size n, where $n \quad N$, $x_i \; R^+$, $y_i \; R^+$, $i = 1, 2, ..., n$. Mathematical formulae used in further analysis, are listed below:

Mean value:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i \quad \text{and} \quad \bar{y} = \frac{1}{n}\sum_{i=1}^{n} y_i \qquad (1)$$

Correlation coefficient of price levels:

$$r_{LEV}^{xy} = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2}\sqrt{\sum_{i=1}^{n}(y_i - \bar{y})^2}} \qquad (2)$$

Correlation coefficient of price returns:

$$r_{RET}^{xy} = \frac{\sum_{i=2}^{n}(a_i - \bar{a})(b_i - \bar{b})}{\sqrt{\sum_{i=2}^{n}(a_i - \bar{a})^2}\sqrt{\sum_{i=2}^{n}(b_i - \bar{b})^2}} \qquad (3)$$

Where $a_i = \mathrm{LN}(x_i) - \mathrm{LN}(x_{i-1})$ and $b_i = \mathrm{LN}(y_i) - \mathrm{LN}(y_{i-1})$, $i = 2,3,..., n$.

β-coefficient:

$$\beta = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^{n}(x_i - \bar{x})^2} \qquad (4)$$

Spearman coefficient:

$$\rho = 1 - 6\frac{\sum_{i=1}^{n}(p_i^x - p_i^y)^2}{n(n^2 - 1)} \qquad (5)$$

Where p_i^x i p_i^y are ranks of item on position i in samples x i y.

We calculated Spearman coefficient using two types of data sets as follows: price levelS&Price return correlations, country rankings and country rankings for a given factor (such as S&P 500 sovereign risk rating 2009, Market volatility, Average inflation rate, etc.). By doing so, we are able to present a quantitative value of equality or inequality between those two rankings. In general, the coefficient of correlation may assume any value on a scale of -1 to +1, inclusive, and it describes the strength of the relationship between two sets of interval-scaled or ratio-scaled variables (Lind et al., 2006). A correlation coefficient close to -1 or +1 indicates a high correlation, correlation coefficient close to -0.5 or +0.5 indicates a moderate correlation, while coefficient close to 0 shows a *weak correlation*. In further consideration, we will explain the significance of correlation coefficients by using previously explained scale and terms (high, moderate and low correlation).

RESULTS AND DISCUSSION

Price levels and price returns correlations analysis

Results presented in Table 3 show correlation coefficients of price levels r_{LEV} calculated through the mathematical formula for correlation of price levels (2). Results are sorted in descending order.
There is a strong evidence for a high correlation of price levels in the case of every considered index pair. Although we calculated two different sets of correlations: in the case of same day closing values (for BUX and CROBEX) and in the case of regional indices with one day lag after S&P 500, we found better results in these cases. Two correlation coefficients presented for CROBEX - S&P 500 evidence that there is stronger correlation for time lag calculations and that coefficient is considered. On the other hand, BUX – S&P 500 correlation has a higher coefficient for same day closing values compared to values with one day time lag but, that does not disturb the correlation ranking. High values of correlation confirm the initial assumption of market co-movement. There is a clear evidence of S&P 500 influence on regional stock exchanges and Predominant market influence of international arbitragers. In our further analysis, we will test the relationship of structural characteristics of economies and market correlation.

Results presented in Table 4 show correlation coefficients of price returns r_{RET} calculated through mathematical Formula (3). Results are sorted in descending order.

The presented price returns correlation results display

Table 1. Sample size by index pairs.

Indices pair	Sample size (n)	
	Same day	With lag
BELEX LINE - S&P 500	-	737
BUX - S&P 500	728	725
BET - S&P 500	-	729
CROBEX - S&P 500	725	724
SBI 20 - S&P 500	-	728
SOFIX - S&P 500	-	719

Table 2. Trading hours on stock markets in focus.

Index	Trading hours (GMT)	
	From opening	To closing
S&P 500	14:30	21:00
BUX	08:00	15:30
BET	08:00	14:25
BELEX LINE	09:00	11:00
CROBEX	09:00	15:00
SBI 20	08:30	12:00
SOFIX	08:00	12:45

Table 3. Correlation coefficient of price levels r_{LEV} for each indices pair.

Indices pairs	Correlation coefficient of price levels r_{LEV}	
	Same day	With lag
BET - S&P 500	-	0.9725**
BUX - S&P 500	0.9574**	0.9568**
SOFIX - S&P 500	-	0.9463*
BELEX LINE - S&P 500	-	0.9448*
CROBEX - S&P 500	0.9357*	0.9374*
SBI 20 - S&P 500	-	0.9011*

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05, ±0.10 levels respectively, around the *high correlation* (±1).

evidence of lower values and, in the case of BUX and CROBEX, better correlation exists without time lag, although that does not influence the ranking.

Considered risk factors

We consider several major risk factors important for international portfolio investors willing to diversify their portfolio by investing in emerging markets. In our analysis, we deal with: sovereign risk, market volatility, inflation rate, market liquidity and corruption level.

Sovereign risk

Standard and Poor's sovereign risk rating is presented in Table 5. Results are sorted in descending order, from higher to lower sovereign risk. Spearman coefficient values for this factor are presented in Table 5.

Market volatility

We calculated coefficient β (4) for sample emerging markets using S&P 500 as a benchmark index. Results in Table 6 are sorted in descending order, from the market

Table 4. Correlation coefficient of price returns r_{RET} for each index pair.

Indices pairs	Correlation coefficient of price returns r_{RET}	
	Same day	With lag
SBI 20 - S&P 500	-	0.4849**
BUX - S&P 500	0.4343*	0.3313
SOFIX - S&P 500	-	0.4272*
BET - S&P 500	-	0.3566
BELEX LINE - S&P 500	-	0.2754
CROBEX - S&P 500	0.2665	0.1906

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *moderate correlation* ((±0.5).

Table 5. S&P sovereign risk rating 2009.

Sorted by sovereign risk	S&P rating 2009	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Serbia	BB-	Romania	Slovenia
Romania	BB+	Hungary	Bulgaria
Hungary	BBB-	Bulgaria	Romania
Croatia	BBB	Serbia	Hungary
Bulgaria	BBB	Croatia	Serbia
Slovenia	AA	Slovenia	Croatia
Spearman coefficient ρ		**0.5429****	**-0.5429****

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *moderate correlation* (±0.5).

with the highest volatility to less volatile markets. High market volatility implies higher risk and Spearman coefficient values are presented within the same table.

Inflation rate

The third considered risk factor is the average inflation rate over 3 years. The data are shown in Table 7. A high inflation rate is viewed as a significant risk factor and markets with higher inflation rates should have lower correlation. Results from Table 7 show Spearman coefficient values.

Market liquidity

Liquidity risk is of high importance for portfolio investors in emerging markets. We compared liquidity of markets in focus by ranking their turnover as a measure of absolute liquidity and turnover/capitalization ratio, as a measure of relative liquidity.

Lower market turnover should imply higher liquidity risk of the market and therefore, a lower level of correlation. The results of the Spearman coefficient are provided in Table 8. In order to reach a better perception of market liquidity, we calculated a ratio of average turnover for three years and market capitalization (Table 9) which place in context turnover and size of the market. Relative market liquidity is presented by turnover/capitalization ratio (Table 10).

Spearman coefficient values for relative market liquidity and price levels and returns correlations are given in Table 8.

Corruption level

The level of corruption plays an important role in estimating market risk. Using the Transparency International Corruption Perceptions Index for the year 2009, we show that the corruption level is one more considered risk factor which cannot be correlated, as shown in Table 11.

The Corruption level risk factor has the highest Spearman coefficient absolute value with the price returns correlation distribution. Negative value means that the price returns correlation is lower when a higher corruption level in a particular country exists. This shows that co-movement is correlated with measures of institutional development as suggested by Morck et al. (2000).

Table 6. Market volatility.

Sorted by market volatility	Coefficient β	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Hungary	20.42	Romania	Slovenia
Slovenia	10.26	Hungary	Bulgaria
Romania	10.24	Bulgaria	Romania
Serbia	4.97	Serbia	Hungary
Croatia	4.91	Croatia	Serbia
Bulgaria	1.97	Slovenia	Croatia
Spearman coefficient ρ		0.1429	0.6000*

*******, ******, and ***** denote statistical significance at the, ±0.01, ±0.05 and ±0.10 levels, respectively, around the moderate correlation (±0.5).

Table 7. Average inflation rate.

Sorted by inflation rate	Three years average inflation rate	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Serbia	8.67	Romania	Slovenia
Bulgaria	7.37	Hungary	Bulgaria
Romania	6.13	Bulgaria	Romania
Hungary	5.97	Serbia	Hungary
Croatia	3.57	Croatia	Serbia
Slovenia	3.4	Slovenia	Croatia
Spearman coefficient ρ		**0.4857****	**-0.3714**

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *moderate correlation* (±0.5).

Table 8. Market turnover.

Country	Average turnover rate [EUR million]	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Serbia	1.128,07	Romania	Slovenia
Bulgaria	1.929,89	Hungary	Bulgaria
Slovenia	1.472,24	Bulgaria	Romania
Romania	2.640,05	Serbia	Hungary
Croatia	5.025,52	Croatia	Serbia
Hungary	26.058,73	Slovenia	Croatia
Spearman coefficient ρ		**-0.2571**	**-0.0857***

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *weak correlation* (0).

Table 9. Market capitalization.

Country	Average capitalization [EUR million]	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Bulgaria	9.086,84	Romania	Slovenia
Slovenia	12.223,58	Hungary	Bulgaria
Serbia	13.034,45	Bulgaria	Romania
Romania	18.427,72	Serbia	Hungary
Croatia	34.406,94	Croatia	Serbia
Hungary	67.606,67	Slovenia	Croatia
Spearman coefficient ρ		**-0.3143**	**0.2571**

Table 10. Turnover / capitalization ratio.

Country	Average turnover/ capitalization ratio	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Serbia	0,0865	Romania	Slovenia
Slovenia	0,1204	Hungary	Bulgaria
Romania	0,1433	Bulgaria	Romania
Croatia	0,1461	Serbia	Hungary
Bulgaria	0,2124	Croatia	Serbia
Hungary	0,3854	Slovenia	Croatia
Spearman coefficient ρ		**-0.4286***	**-0.2000**

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *moderate correlation* (0).

Table 11. Corruption perceptions index 2009.

Sorted by corruption level	CPI 2009 Score	World Rank	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Serbia	3.5	83	Romania	Slovenia
Romania	3.8	71	Hungary	Bulgaria
Bulgaria	3.8	71	Bulgaria	Romania
Croatia	4.1	66	Serbia	Hungary
Hungary	5.1	46	Croatia	Serbia
Slovenia	6.6	27	Slovenia	Croatia
Spearman coefficient ρ			**0.4286***	**-0.6571**

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *moderate correlation* (±0.5).

Table 12. GDP per capita 2009.

Sorted by GDP per capita	GDP per capita 2009 (US $)	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Serbia	6,782	Romania	Slovenia
Bulgaria	6,857	Hungary	Bulgaria
Romania	9,292	Bulgaria	Romania
Hungary	15,542	Serbia	Hungary
Croatia	15,628	Croatia	Serbia
Slovenia	27,149	Slovenia	Croatia
Spearman coefficient ρ		**0.4857****	**-0.3714**

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *moderate correlation* (±0.5).

Table 13. Populations 2008.

Sorted by demographics	Population 2008 (in millions)	Sorted by correlation coefficient of price levels	Sorted by correlation coefficient of price returns
Romania	21,513	Romania	Slovenia
Hungary	10,038	Hungary	Bulgaria
Bulgaria	7,623	Bulgaria	Romania
Serbia	7,350	Serbia	Hungary
Croatia	4,434	Croatia	Serbia
Slovenia	2,039	Slovenia	Croatia
Spearman coefficient ρ		**1.0000*****	**-0.0286**

*******, ******, and ***** denote statistical significance at the ±0.01, ±0.05 and ±0.10 levels, respectively, around the *high correlation* (±1).

In order to further explore the value distribution match for the correlation of regional markets with S&P 500, we continued our research to ascertain how international investors' growth perception is correlated with the results.

Growth perception of international investors

The high price level correlation coefficient values of observed emerging markets compared with S&P 500 index indicate that these markets are strongly influenced by international investors who use movements in S&P 500 as an indicator in decision making process. We examine international investors' perception of growth potential of markets in focus, by investigating GDP per capita and demographic distributions.

GDP per capita

GDP per capita can be used as economic development indicator. Lower GDP per capita in a country within a region, suggests a higher expected growth rate for the given country.

Spearman coefficient values for GDP per capita distribution and price level correlation and returns correlation rankings are presented in Table 12.

Demography

The demographic factor is important in estimating growth potential of a market. Investors see economies with a higher number of residents as markets with better growth potential. In Table 13 we show that there is equivalent distribution between price level correlation and size of population, as the value of the Spearman correlation coefficient is 1. This leads to the conclusion that international investors, who influence market correlation with their portfolio investments, place emphasis on demographics when deciding where to invest.

Conclusion

In our paper we examined different investing criteria that international portfolio investors have in a decision making process, when investing in emerging markets. We limited our research to South East European, middle and small sized countries in order to exclude criteria other than risk and growth. These other criteria include various political and strategic factors that can change investor's market preferences.

Our examination of price levels and returns correlation coefficients proved that international investors do have a major influence on emerging markets in focus. Using S&P 500 as benchmark index in calculating correlations and obtaining high correlation values, we proved that international investors use movements of S&P 500 as an indicator in day-to-day investment decisions.

We explored international investors' emerging market preferences through the risk approach and growth potential approach. Spearman correlation coefficient value is used as an indicator for risk and growth factor influence. In the case of price returns correlation, the highest Spearman correlation was found for the level of corruption, proving that the level of institutional development is the most important factor for arbitragers. On the other hand, in the case of price level correlation; risk factors, such as: sovereign risk, market volatility, inflation rate, market liquidity risk and corruption level did not show high Spearman coefficient values. From these results, we concluded that risk factors are not predominant investing criteria. On the other hand, market growth potential indicators proved to be more important.

Growth factors that we observed were size of GDP per capita and number of residents for each emerging market. The Spearman correlation coefficient value for demographic criteria and price level ranking is 1, showing that between these two factors distribution is equivalent. From this evidence, we concluded that the most important factor in emerging market investor decision making perception is demography. In our further research, we intend to investigate in greater detail the relationship between population and the market perspective of international investors.

REFERENCES

Cuaresma CJ, Hlouskova J (2005). Beating the Random Walk in Central and Eastern Europe. J. Forecast., 24: 189-201.

Černý A, Koblas M (2008). Stock Market Integration and the Speed of Information Transmission. Finance a úver - Czech J. Econ. Finance,58: 2-20.

Damodaran A (2009). Equity Risk Premiums (ERP): Determinants, Estimation and Implications - A Post-Crisis Update. Available at SSRN: http://ssrn.com/abstract=1492717.

Égert B, Kočenda E (2007). Interdependence between Eastern and Western European stock markets: Evidence from intraday data. Econ. Syst., 31(2): 184-203.

Evans T, McMillan D (2009). Financial co-movement and correlation: evidence from 33 international stock market indices. Int. J. Bank. Account. Finance, 3: 215-241.

Fedorova E, Vaihekoski M (2009). Global and Local Sources of Risk in Eastern European Emerging Stock Markets. Finance a úver - Czech J. Econ. Finance, 59: 2-19.

Gilmore C, McManus G (2003). Random-Walk and Efficiency Tests of Central European Equity Markets. Manage. Finance, 29(4): 42-61.

Gradojević N, Djaković V, Andjelić G (2010). Random Walk Theory and Exchange Rate Dynamics in Transition Economies. Panoeconomicus. Forthcoming.

Hardouvelis G, Malliaropulos D, Priestley R (2006). EMU and European Stock Market Integration. J. Bus., 79: 365-392.

Lind D, Marchal W, Wathen S (2006). Statistical Techniques in Business and Economics, McGraw-Hill/Irwin.

Ljubljana Stock Exchange (2009). http://www.ljse.si/.

Morck R, Yeung B, Yu W (2000). The information content of stock markets: why do emerging markets have synchronous stock price movements? J. Finan. Econ., 58: 215 - 260.

Podobnik B, Balen V, Jagric T, Kolanovic M (2007). Croatian and Slovenian Mutual Funds and Bosnian Investments Funds. Finance a

úver - Czech J. Econ. Finance, 57: 159-177.
Roll, R (1988). R2. J. Finance. 43: 541 - 566.
Standard and Poor's (2009). http://www.standardandpoors.com/indices/main/en/us/.
Transparency International Corruption Perceptions Index (2009). http://www.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table.