ASSESSING FINANCIAL INTEGRATION OF THE SEE COUNTRIES (BULGARIA AND CROATIA) WITH THE EU

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ABSTRACT

We analysed financial integration of the SEE countries in comparison to EU with focus on economic activities and the stock exchanges in observed countries to demonstrate the dependence of small financial markets on large ones and to investigate the spillover effect, i.e., the degree and pace of integration of ‘new’ financial markets into larger ones. There is evidence of an increase in stock exchange indices in the period of transition of the SEE countries, due to the opening of the market economy followed by large capital inflows. Main focus of this paper are based on Bulgaria and Croatia as the SEE countries that are already in the EU wing. Those EU countries were found to be more dependent on the global financial markets and more exposed to adverse co-movements but with the certain differences between two of them.

Keywords: EU integration, Financial integration, Stock exchange, Stock indices, SEE.
1 INTRODUCTION

Countries of the South East European (SEE) region are still in the process of transitioning (which mostly began in the 90’s) from an old autocratic socialist system towards a market economy. Some countries in the region went through less painful changes in their system, while others went to war. All these circumstances influenced the direction, speed and course of economic and financial integration into the EU. Definitely, even the most developed countries of the SEE region are faced with challenges when trying to reach the standards of the most developed market economies. After 2000, most Southeastern European countries recorded economic growth with low inflation and progress in the field of market reforms. The average economic growth of South East European countries in transition years was higher than in the EU. Still, the GDP per capita in countries of the Southeastern region shows a gap when compared to the developed countries of Western Europe, suggesting that there is long way ahead of them. Recent economic research has shown that Bulgaria and Romania, which joined the EU in January 2007; Slovenia, which became an EU member in 2004 and introduced the Euro in 2007; and Croatia, which become EU member in July 2013, are countries that have gone much further in their development than other countries in the region. One of the signs of some level of progress in the region is inflow of direct foreign investment mostly directed to Bulgaria, Romania and Croatia. Less encouraging is the fact that the investments were directed more to real estate and financial services, contributing to lower value added of GDP.

The authors of stock market integrations proved that the main economic variables, such as real GDP, trade balances, the import and export of goods and services, exchange rates, interest rates, unemployment, government debt and consumer price indexes are significant in their relation to the indices of the stock market. There has been a growing amount of literature showing the strong influence of macroeconomic variables and stock markets, mostly for industrialized countries (Keran 1971, Black 1976, Nelson 1976, Fama 1981, Chen et al. 1986, Friedman 1988, Balducci 1995, Fifield et al. 2000, Lovatt and Ashok 2000, and Nasseh and Strauss 2000, Hondroyiannis and Papapetrou 2001, Cumhur et al. 2005, Menike 2006, Loayza et al. 2007). Most of these studies suggest that financial and macroeconomic variables influence stock prices across a variety of markets and time frames (Been et al. 1990, Bulmash and Trivoli 1991, Golsten et al. 1993, Ibrahim 1999, Maysami and Koh 2000, Brennan and Yihong 2001, Mukherjee and Naka 1995, Poon and Taylor 1991). Some studies, however, could not improve the relationship mentioned above for the European markets. The outcome of all these studies
suggests that, with minor degrees of variation, fundamental macroeconomic dynamics are indeed influential factors for stock market returns.

Razin et al. (1999) showed that in an environment with asymmetric information, FDI can have positive welfare effects if credit markets are undeveloped, but these effects turn into losses in economies with a well-functioning domestic credit market. Levine and Zervos (1998) showed that stock markets and banks provide different services, but both stock market liquidity and banking development positively predict growth, capital accumulation and productivity improvements. Aizenman and Noy (2005) found the strongest feedback between FDI and manufacturing trade based on the argument that a larger inflow of FDI will lead to a higher volume of trade as well as other benefits, such as increased rates of total factor productivity growth or higher output growth rates (Do and Levchenko 2004, Lane and Milesi-Ferretti 2004).

The authors in this paper investigate macroeconomic variables and their influence on stock exchanges of Bulgaria and Croatia during transition period from old autarchic systems to modern new members of EU. Authors tried to analyze financial integration of the SEE countries in comparison to EU with focus on economic activities and the stock exchanges in observed countries to demonstrate the dependence of small financial markets on large ones and to investigate the spillover effect, i.e., the degree and pace of integration of 'new' financial markets into larger ones. There is evidence of an increase in stock exchange indices in the period of transition of the SEE countries, due to the opening of the market economy followed by large capital inflows.

The test of stock indices with regard to the main economic indicators of Bulgaria and Croatia is based on monthly bases data during 2004-2014.

The following chapters are structured thusly: The macro-economic environment and stock exchange development in the observed SEE countries are presented in chapter 2. The methodology and the data for the empirical analysis are explained in chapter 3, results and discussion can be found in chapter 4 and the implication of the empirical analysis are revisited in the conclusion.

2 THE MACROECONOMIC ENVIRONMENT AND STOCK EXCHANGE DEVELOPMENT IN SOUTHEASTERN EUROPE (CROATIA AND BULGARIA)
2.1 The macroeconomic environment in Southeastern Europe

In most SEE countries from 2008 to 2015, the recession has slowed down real GDP. There are lower capital inflows and domestic credit has negatively impacted domestic demand. Most SEE governments, either alone or with IMF and EU support, have tried to reconstruct the public sector and cut expenditures. Due to lower domestic and foreign demand, and lower commodity prices, current account deficits has continued to narrow in most SEE countries. It seems that all governments and central banks in the SEE region have been aware of the importance of stabilization and low inflation for economic growth, but every country has chosen a different approach for monetary policy, exchange rate policy and state intervention (see Ho 2009). Still, all countries in the region are prone to high deficits in their balance of payments (adding the price dynamics of food and energy sources on the world market), proving the fact that certain countries have been living beyond their realistic possibilities in the years before.

2.2 Stock exchanges in South Eastern Europe

Emerging capital markets in the transition countries of Southeastern Europe are becoming increasingly important for both institutional and individual investors. Southeastern transition countries slowly started opening up to the world market during the end of 1980’s and the beginning of the 1990’s, and established a local exchange as part of their transition process towards adopting the mechanisms of a market economy (Syllignakis and Kouretas 2006). The stock markets of SEE have tried to adapt their standards to an international one, by improving the disclosure practices of firms, order execution, ownership rights, and by bringing down limitations to international capital flows. However, they still remain small, fragmented and underdeveloped in comparison with the capital markets of developed countries. The Zagreb Stock Exchange was founded in 1991 as a profit-making corporation with HRK 2.7 million in registered capital. Four banks from Montenegro established the Montenegro Stock Exchange in June 1993. The Bulgarian Stock Exchange was established in 1997. Some exchanges include some SEE indices, such as the Vienna Exchange and the Dow Jones FEAS South East Europe. The Vienna Exchange started calculating the index of Croatian shares – CROX (Croatian Traded Index) in July 2007, which covers the Croatian capital market. CROX is the fourth index of the Vienna Exchange to cover Southeast Europe, after the Romanian ROTX, the Serbian SRX, and
the SETX, which covers Bulgaria, Croatia, Romania, Serbia and Slovenia. Following the removal of restrictions on capital flows, the opening up to foreign investors, the creation of appropriate corporate governance structures and the establishment of ownership rights, both market capitalization and daily trading volumes increased rapidly in the SEE's during transition. However, since the equity markets in these countries are still relatively small when compared with developed ones, they tend to exhibit higher volatility, possibly because of their sensitivity to even relatively small portfolio adjustments (Égert and Kočenda, 2007).

3 METHODOLOGY AND THE DATA

3.1 Methodology
The individual Ordinary Least Square (OLS) method was used to uncover empirical evidence of a relationship between stock return indices and economic variables of Bulgaria and Croatia. An OLS estimation was applied for the procyclicality of Bulgarian and Croatian stock markets through the fourteen-year period of historical data (main economic indicators and BG40 and CROBEX stock price (closing)), on monthly bases from January 2000 to December 2014, in order to find the structural break when the analyzed cycles started to accelerate by using a Chow stability test (Hansen 1997). We included the structural break in 1\textsuperscript{st} of January of 2007 when Bulgaria became EU member state, same as in 1\textsuperscript{st} July of 2013 in the case of Croatian regression when Croatia finally become EU member state.

Before applying linear regression methods, we eliminated the overly correlated explanatory variables. All variables were seasonally adjusted through the seasonal adjustment method (Eviews 7) on the basis of 2000-2014 monthly data of Bulgaria’s and Croatia’s regression. We used the Augmented Dickey-Fuller (1979) test to examine a series for the presence of a unit root. According to test results, all variables are stationary in the form dlog (x) i.e. variables were integrated of order 1 (Table 1) (Dickey and Fuller 1979, Esaka 2003).

To determine the lag length, we used the Schwarz Information Criterion - because the Schwarz criterion and its parsimonious model perform better over a longer period of research (Ashgar and Abid 2007) - as well as the Akaike and Hannan-Quinn Information Criterion (Akaike 1987). A maximum of twelve lags was considered for each variable when determining the lag length.
3.2 Data

Based on the studies investigating the correlation of stock market indices and macro economic variables in empirical literature, we constructed a data set of explanatory variables that are usually included in models: capital inflow expressed as percentage points of GDP; GDP expressed in annual percentage change; interest rates (p.a.); EXP: export of good and services expressed as a contribution to GDP in percentage point. We relied on the database of the European Commission (2015)\(^1\), and on the databases of the national statistical bureau.

In our research, we relied on the closing prices of stock markets for the CROBEX (Croatia) and BG40 (Bulgaria). The local stock price indices (closing prices) were used for each of the examined stock markets: CROBEX (Croatia) and BG40 (Bulgaria) were collected on national stock exchanges and adapted to monthly average indices from January 2000 to December 2014.

4 RESULT AND DISCUSSION

The obtained results confirmed the influence of the chosen explanatory variables on the stock exchange indices. As expected, we found a correlation among the main economic indicators and stock exchange indices of the observed countries. We can confirm the positive influence of capital inflows, GDP, inflation and export on stock exchange indices. We also confirmed that interest rate has negative impact to stock exchange indices.

Stock market performance illustrates the state of the country’s economy - if stock prices start to fall, an economic depression is likely to take place. Conversely, rising stock prices signal possible economic growth. Rising stock prices in the SEE countries in the scope of our interest, provide evidence about economic growth in the region in the light of the financial integration process, in general and in light of the EU integration process, in particular. The efforts of transition countries with respect to changing to a market economy, has resulted in massive FDI for the stock markets, especially in the course of 2004, which boosted stock indices in almost all countries. The

dramatic increase in stock prices in the EU accession countries clearly followed the announcement of EU enlargement.

A development of the financial markets was not homogenous across the SEE region. Bulgaria, Romania and Slovenia, as countries that are already in the EU, had previously experienced strong capital inflows coupled with particularly high asset valuations and buoyant demand conditions due to their announcement of EU accession (see Dvorák and Podpiera 2005). Croatia have also seen strong capital inflows in the last decade connected with the EU membership.

Table 1. The stationarity (Augmented Dickey-Fuller) – Bulgaria and Croatia

<table>
<thead>
<tr>
<th>Variable</th>
<th>Level</th>
<th>dlog(x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Explanatory variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital inflows</td>
<td>-1.019668</td>
<td>-8.230745</td>
</tr>
<tr>
<td></td>
<td>(0.7445)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>GDP</td>
<td>-1.962436</td>
<td>-10.78866</td>
</tr>
<tr>
<td></td>
<td>(0.3031)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Interest rate</td>
<td>-1.418622</td>
<td>-10.77858</td>
</tr>
<tr>
<td></td>
<td>(0.5710)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>CPI</td>
<td>-1.469875</td>
<td>-10.77638</td>
</tr>
<tr>
<td></td>
<td>(0.5475)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Export</td>
<td>-3.510379</td>
<td>-4.777713</td>
</tr>
<tr>
<td></td>
<td>(0.0094)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Import</td>
<td>-1.648416</td>
<td>-6.922105</td>
</tr>
<tr>
<td></td>
<td>(0.4546)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Croatia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Bulgaria</td>
<td>Croatia</td>
</tr>
<tr>
<td>--------------</td>
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<td>------------------</td>
</tr>
<tr>
<td>dlog (CAP)</td>
<td>0.066577</td>
<td>0.029891</td>
</tr>
<tr>
<td>(-8)</td>
<td>(0.0236)**</td>
<td>(0.0481)**</td>
</tr>
<tr>
<td>dlog (GDP)</td>
<td>0.208348</td>
<td>0.059465</td>
</tr>
<tr>
<td>(-12)</td>
<td>(0.0002)**</td>
<td>(0.0102)**</td>
</tr>
<tr>
<td>dlog (INT)</td>
<td>-0.173985</td>
<td>-0.293007</td>
</tr>
</tbody>
</table>

Notes: CAP: capital inflow expressed in percentage of GDP; GDP: expressed in annual percentage change; INT - interest rate p.a.; CPI: consumer price index; EXP: export of good as and services expressed as a contribution to GDP in percentage point

Source: Authors calculations

Table 2: Dependent variable: dlog(x) (01m 2004 to 12m 2014) Bulgaria and Croatia
dlog (CPI)  
(-4)  
0.094453  
(0.0003)***  
(4)  
0.069299  
(0.0662)*

dlog (EXP)  
(-12)  
0.045338  
(0.0484)**  
(12)  
0.135968  
(0.0851)*

Weighted statistic  

R-squared  
0.500769  
R-squared  
0.230965

Adjusted R-squared  
0.468561  
Adjusted R-squared  
0.185728

S.E. of regression  
0.063833  
S.E. of regression  
0.088645

Durbin-Watson stat.  
1.902225  
Durbin-Watson stat.  
1.950126

S.D. dependent. Var  
0.087562  
S.D. dependent. Var  
0.098235

Stability test  
(Chow Breakpoint Test)**  
(0.34) i  
Stability test  
(Chow Breakpoint Test)***  
(0.46) i

Variables:
**CAP:** capital inflow expressed in percentage of GDP; **GDP:** expressed in annual percentage change; **INT** - interest rate p.a.; **CPI:** consumer price index; **EXP:** export of goods and services expressed as a contribution to GDP in percentage point

**Notes:**

The time lag of the variables is given in subscript; (probabilities)*** are in parentheses below.

Significance levels are denoted as: *** significant at 1%; ** significant at 5%; * significant at 10%.

1 Probability of the Chi-Square distribution

Source: authors.

Results of Chow stability test in OLS estimation of Bulgarian and Croatian stock markets (see Table 2) give us positive evidence about the structural brakes in accordance to date of EU entry. Bulgaria became EU member state in 1\textsuperscript{st} of January of 2007 (0,34 probability) and started to face acceleration of positive economic activities (rise of GDP, industrial production, export). Croatia became EU member in 1\textsuperscript{st} July of 2013 (0,46 probability) and also faced acceleration of positive economic activities but rather slower than Bulgaria.

**Bulgaria** saw more than 30% increase in stock indices due to EU accession. Since 1999, **Croatia**’s FDI inflows increased by up to EUR 1 billion and increased especially in 2005 (after its announcement as an EU candidate country). The great majority of FDI inflow in Croatia was through the acquisition of existing companies (mostly through privatization in the service sector, telecommunications and financial services).

It provides us with evidence that the accession of the SEE countries in the EU required the implementation of reforms that lead to further economic expansion. Probably the most important factors driving the acceleration of financial integration are related to the policy measures undertaken by the “new” member states in order to meet European financial standards, including the liberalization of capital accounts, as well as legal and institutional reforms (see Poghosian 2008). Obviously, the liberalization of the market is connected with EU accession and other regional and international trade integration. The process of integration should increase cross-border investments among countries, which have joined the EU and are in the
process of joining the European and Economic Monetary Union (see Baltzer et al. 2008).

GDP growth presumes a rise of the industrial production index and the rise of trade due to closer trade connections between the EU and candidate countries (see Onay 2007). Openness to international trade, domestic credit supply and GDP are quite successful candidates among the drivers of international financial integration. EU accession provides better market access for Southeastern European firms and increased assistance from the EU budget, which leads to greater consumer confidence in light of the prospects of EU membership (see Dvorak and Podpiera 2005). Beyond direct trade links, openness in general (possible through indirect trade links) make economies less prone to move with others (see Onay 2007).

Bulgaria (together with Romania) signed the EU Accession Treaty in April, 2005 with entry into the EU scheduled for January 2007. Bulgaria joined the EU in 2007 and averaged more than 6% growth from 2004 to 2008, mostly through significant amounts of foreign direct investment following EU accession. The global recession in 2009 reduced exports, capital inflows and industrial production, and GDP contracted by approximately 5%. In 2010, the situation in Bulgaria started to improve with increased exports, a well-capitalized liquid banking sector, and strong fiscal metrics. But domestic demand weakness is still a sign of a slow economy, just as a lack of control on domestic monetary conditions and a large private sector debt are. Despite Bulgaria’s government commitment to economic reforms and responsible fiscal planning, the general government deficit remains very high, which caused a delay in the application for ERM II entry (SEE Banking Study, 2015).

From 2009 to 2012 Croatia have been lost 11% of the real GDP, while personal consumption is reduced for 35%, and investments for 11%. Thus, poor results of the Croatian economy in the period from 2008 to 2013 generated increase of unemployment and government debt. The focus of the new Croatian government was on domestic economic and social policies, with the promise to pull the country out of the crisis. The government introduced a tax reform and began the restructuring of large state-owned companies, but projects that were supposed to boost the economy, such as investments, fell short. Moreover, the government failed to implement structural reforms to reduce public spending, and at the end of 2012, this failure resulted in a reduction of Croatia’s debt rating. In 2011, Croatia’s left government and other state bodies have started implementing demanding reforms, which have resulted in the slow rise of GDP Croatia become EU member in 1st of July
2013. Slow rise of GDP in 2015 for the first time after 6 years and faces a better entrepreneurial climate, rise of private consumption, rise of export and industrial production.

The interest rates should also be an important factor in explaining stock market returns because it can influence the level of corporate profits, which in turn influences the price that investors are willing to pay for the stock through expectations of higher future dividends payments. A reduction in interest rates reduces the costs of borrowing, which have a positive effect on the future expected returns for the firm. Also, an increase in interest rates would make stock transactions more costly. Investors would require a higher rate of return before investing. Negative interest rate in the Bulgarian and Croatian results is in line with the theory that stock market returns are usually negatively correlated to interest rates (see Fama 1981). A rather high interest rate is typical for transition countries due to insufficient money supply and due to lower national savings. The transition from planned to market economies in the SEE region has led to rapid financial developments, which were further boosted by a strong, mainly EU, foreign banking and other financial intermediaries’ presence (see Mishkin 1999, Stavárek 2009, Baltzer et al. 2008).

Inflation and the stock exchange in all the observed SEE countries are positively correlated in our research, confirming the Fisher hypothesis (The Fisher hypothesis (Fisher 1930) is that the market rate of interest comprises the expected real rate of interest and expected inflation.) This hypothesis, when applied to stock markets, postulates a positive one-to-one relation between stock returns and inflation. Obviously, there is no consensus in theories and empirical evidence about the influence of inflation on stock exchange. The influence of inflation on stock exchange volatility could be negatively or positively correlated to the stock exchange. In the long-run, inflation is usually negatively correlated to stock exchange returns, especially in countries with higher rates of inflation but could also be positively correlated to stock exchanges, especially in the case of more stable economies (see for example: Fama 1981, Knif et al. 2008). It seems that all governments and central banks in the SEE region are aware of the importance of stabilization and low inflation for economic growth, but every country has chosen a different approach for monetary policy, exchange rate policy and state intervention.

Low inflation in Bulgaria is here to stay and is set to further stimulate GDP growth next year (we see end of period (eop) and average (avg) CPI in 2015 at -0.3% and -0.5%). Iossifov and Podpiera (2014) explored the causes for
low inflation in Bulgaria. They found a number of contributing factors, including commodity prices, low inflationary pressure in the euro area, as well as administered price changes. The relative importance of those factors is affected by a particular country’s exchange rate regime, the import content of domestic demand, and other country specific factors. For instance, countries with fixed exchange rates, like Bulgaria, tend to import more inflation from the euro area.

Croatia faced the highest inflation rate in 2009 but the national currency, the kuna, was stable during whole observed period. The announcement of EU enlargement was obviously a trigger for a rise in stock prices in EU candidate countries, which is confirmed in the cases of Bulgaria and Croatia, and was also followed by significant capital inflow, stronger currency and low inflation.

Exports are also among the components with a stronger upside potential and one that helps explain why the GDP growth momentum of the Bulgarian economy is expected to defy gravity. Demand-side conditions for Bulgarian exports are likely to see some marginal improvement in the future although it remains clear that more time will be needed before the geopolitical shock triggered by the Russian incursion in Ukraine begins to fade.

When compared to other transition countries, Croatia in the middle of the last decade did not fully succeed in adjusting its export structure to new demand, while strong imports were necessary to satisfy the domestic demand for consumption, and recently, for investments (see Stučka 2004). Trade in Croatia started to slow down in 2009, as was the case in all other SEE countries. It resulted in Croatian GDP growth lagging behind other SEE countries. But cumulative exports in February 2015 rose by 4% on an annual basis, driven mostly by the increased trade in miscellaneous manufactured articles, food and live animals. This can be attributed to the slight revival of Croatia’s EU trade partners.

5 CONCLUSION

Transition countries of SEE were, in the last decade, exposed to large FDI inflows, followed by GDP growth, trade liberalization and industrial production growth due to financial integration, opening of autarhic transitional economies toward liberal markets and due to EU accession as well.
The positive influence of GDP, capital inflow and export, which is confirmed in the results, improves the theory that foreign direct investments in developing economies have grown rapidly following financial and political transformations. Local stock markets in the SEE countries were established as part of their transition process towards adopting the mechanisms of a market economy to intermediate funds towards investment projects.

This integration is positively associated with real GDP per capita, educational level, banking sector development, monetary growth, credit growth, stock market development, the legislation of the country and government integrity. These processes are also pushing the whole SEE region towards further international financial integration because almost all SEE countries are trying to follow European financial markets.

Our result confirmed positive influence of capital inflows, GDP, inflation and export on stock exchanges of the Bulgaria and Croatia as a representative SEE countries. The empirical result also proved that stock indices in the transitional SEE countries are negatively correlated to interest rates and import.

REFERENCE


