Factors of the Current Account Sustainability in the Central and Eastern European Countries

by Tetiana Rodionova

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Department of Economics

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Supervisor: Professor László Halpern

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Abstract

Current accounts have diverged substantially among the Central and Eastern European Countries (CEECs). This divergence has raised concerns about the sustainability of countries' external indebtedness. In this thesis the common criteria of assessing the current account sustainability are discussed and a framework for analyzing external imbalances in transition economies is provided. This study uses a model of the current account to analyze the fluctuations in current account balances experienced by CEECs over the period of EU membership and to highlight one of its main determinants – external indebtedness of a country. A vector autoregression (VAR) model is used to test the causal relationships between the current account and the external debt in five CEECs. Namely, using VAR framework, Granger causality testing is performed and variance decomposition is undertaken to see the relative contribution of three different sources of debt (government, banking sector or corporate sector's debt) to the current account deficits. The results of the research show that high external debt accumulation may be a major cause of current accounts instability in CEECs. The recommendations to decrease dependence of the CEE economies on external financing to prevent national economies from currency, debt and financial crises are suggested.

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Introduction

After the European Union accession, the Central and Eastern European countries (CEECs) have been running large external imbalances which facilitated a more rapid convergence rate in economic development of these countries compared with other EU members. Sizeable and persistent current account deficits, experienced by most of the CEE countries since the beginning of the transition process, increasingly cause concerns regarding the sustainability of the countries' external balances. Certain factors, which contribute to the country's saving and investment, set the new EU members apart from other emerging market economies: transition from socialism required higher investment owing to an overhauling of the existing capital stock and institutional reforms associated with the EU membership.

By EU accession CEE countries fully liberalized their capital accounts during the transition period. Robust economic growth was accompanied by substantial capital inflows and large current account deficits in some countries. This is a standard case in economic theory explaining countries with insufficient domestic savings employing imported capital to increase investments and finance economic growth. With a lack of absorptive capacity of the CEE financial systems to properly channel the inflowing capital, an ensuing over-investment, and consumption boom gave rise to current account deficits. Persistently high level of capital inflows needed to finance these deficits in the CEE countries caused a substantial increase in the level of external liabilities, particularly external debt. In the 90's large current account imbalances and a high level of external debt in emerging markets triggered financial crises: balance of payments or debt crises.

External imbalances in the CEE countries and the question whether recent current account deficits as well as level of external debt are sustainable are becoming a key policy issue for these countries. Current account deficits must be carefully monitored, since they might be especially dangerous for the countries which do not posses substantial reserve assets

and whose currencies are not actively used in international settlements. Such countries include emerging market economies, the CEECs being among them (except for the Slovak Republic and Estonia who joined the eurozone). In case of instability of the national financial systems or international capital markets turbulence, the presence of the current account deficit leads to a rapid depreciation of the national currency (Hungary and Ukraine in 2008, Belarus – 2011), devaluation of the national assets, sharp increase of the debt-servicing burden (public and private) and, consequently, to rising costs of production, losing national competitiveness and falling living standards. This is exactly why the problem of the current account sustainability is important.

Prior to EU membership large capital inflows financing current accounts were inevitable in the transition period when capital markets became open, exchange rate flexibility was limited and interest rates were higher compared to the EU levels. The consumer price inflation in all CEE significantly decreased during the transition period. Interest rates declined but real interest rates increased to relatively high levels during the process of disinflation. Given the sufficient interest rate differentials, compensating investors for exchange rate risk, huge amount of foreign capital was attracted to CEE countries. Liberalization associated with the transitional process implied a higher level of inflation for the domestic country compared to its trading partners, leading to the appreciation of the real exchange rate under the policy of fixed nominal exchange rate. This created a macroeconomic pressure on the banking system: real appreciation means that the depreciation of the local currency is smaller than the inflation differential, which gave a strong incentive both for companies and for banks to refinance themselves in foreign currency, as Schröder (2001) points out. Capital inflows led to growth of foreign exchange denominated lending. This in turn led to the external debt accumulation. Such lending might be interrupted by real depreciation as a consequence of correcting accumulated imbalances which arose as a result of previous real appreciation.

Analysis of the sources, magnitude and composition of capital flows is extremely important for determining if the balance of payments is sustainable. Clearly, when countries simultaneously offer high real interest rates and the prospect of steady real appreciation, they are likely to attract substantial portfolio and shorter-term capital inflows. The non-FDI inflows - portfolio and other investments - usually pose more difficulties to monetary authorities in terms of economic policy, external vulnerability, and financial stability than direct investment flows. It is generally recognized that FDI are much more stable compared to portfolio and other investments: FDI flows have provided transition economies with more opportunities to share risk with and obtain technology from their trading partners than have non-FDI flows. The profitability of the FDI is likely to be linked to the performance of the domestic economy: higher return on FDI is likely to be associated with a higher rate of domestic output growth, making repayments more affordable as pointed out by Lane and Milesi-Ferretti (2007). Moreover, inflow of the FDI is much less dangerous for the balance of payments sustainability, as these investments can't be withdrawn rapidly, as opposed to portfolio and other investments.

Given the substantial interest rate differentials in CEE countries large interest-rate-sensitive financial inflows (portfolio and financial credit flows), which can be highly volatile, contributed to credit booms, complicating monetary and exchange rate policies. As the burden of interest on debt and principal repayments increases over time, borrowing countries need to ensure that trade surpluses allow the external position to stabilize or decline, relative to the size of economy. The size of the needed trade surpluses depends on the outstanding stock of accumulated liabilities and economic growth. However, as will be shown in the following analysis, the external borrowing mainly in the form of financial credits of the banking sector boosted consumption in CEE, the major pat of which was spent on imported goods, and did not produce sources to finance external liabilities.

The notion of current account sustainability has come to be of considerable interest in the context of recent episodes of macroeconomic turbulence in many emerging markets. Consequently, studying the behaviour of the current accounts in the CEECs and assessing their sustainability is of high importance due to its implications for the economic growth and overall external sustainability of an economy. The purpose of this thesis is to analyze factors contributing to the current account deficits, find the relationship between current account deficit and foreign debt accumulation, which could have important policy implications for the CEECs that in the conditions of international debt crises need to decrease their dependence on external financing to enhance the resilience of the national economies to external shocks.

The methodological approach is different from the existing empirical literature in that this study focuses on the particular determinant of the current account balances – external debt, and how the different components of the debt (government, banking sector or corporate sector's debt) influence the current account dynamics in the CEECs. The results of the research show that high external debt accumulation could be a major cause of current accounts instability in CEECs.

The organization of this paper is as follows. The first chapter provides the theoretical framework for assessing the current account sustainability. Then, based on the theoretical framework an analysis of the external imbalances in CEECs is performed. The analysis highlights the most salient features of the capital flows structure in terms of relative importance of FDI, portfolio and debt categories in the overall level of external liabilities of the CEECs. Analysis of the sources of the current account deficits, as well as sectoral breakdown of the external indebtedness of the CEECs is performed. In the second chapter the empirical methodology is discussed, methods used in this study are justified, data and its sources are described and findings of the econometric analysis are presented. The thesis concludes with a summary of main results and economic policy recommendations.

1. The Importance of the Current Account Sustainability for the CEECs

1.1 Economics of External Sustainability

External imbalances are one of the central themes in both economic policy and open-economy macroeconomics. In the early 1970s, tensions over external imbalances caused a fundamental overhaul of the international monetary system, marking the end of the Bretton Woods system as Makin and Paresh (2011) point out. In the 1990s, external imbalances in emerging economies were a key source of concern, with a series of financial crises in nearly all large emerging economies. Today, the world again faces large external imbalances, particularly in emerging economies. Structural changes in the Central and Eastern European countries (CEECs) in the process of transition have allowed a widening of their external positions which may or may not be sustainable. The aim of this section is to examine the theoretical framework behind the current account imbalances with particular attention to the transition context in which these imbalances initiated in CEECs.

First of all, the reason why external imbalances are important should be analyzed. From Mann's (2010) point of view, whether in deficit or surplus, or as measured by composition of exports, imports, or financial flows, a country's external balance is not a fundamental economic force in itself, but is a manifestation of the general equilibrium interaction between many factors: domestic consumption and investment and production; prices, rates of return, and the exchange rate; international financial portfolio choice and capital flows; and fiscal, monetary, and development policies. While the building up of vulnerability is mostly due to internal imbalances (e.g. inflation, credit growth and fiscal deficit), external shocks and imbalances are critical in triggering crises. Looking at external balances from several different perspectives does illuminate aspects of the more fundamental drivers over which policymakers exert control. The three perspectives are: (1) savings and

investment based on national income and product accounts; (2) international trade flows in goods and services and the current account; (3) international capital flows and holdings of financial assets. Taken together, the three perspectives present a consistent and mutually reinforcing view of the sources and consequences of external imbalances (Mann 2010).

One of the most popular theoretical model for interpreting the causes and policy significance of external imbalances is the intertemporal model of international borrowing and lending based on the saving – investment perspective. Since first introduced by Sachs (1981), and synthesised by Obstfeld and Rogoff (1994), this intertemporal model of current account has been extensively used in the literature to study the evolution of current account balances for different countries and time periods. This intertemporal approach demonstrates the effects of fiscal and other shocks assuming a highly interest elastic supply of foreign savings and implies that foreign borrowing by forward looking optimising agents can raise national income and intertemporal consumption relative to capital autarky outcomes. According to this intertemporal approach, the economy can finance large investment or government budgetary needs by external imbalances which fit the situation in transition economies. Therefore, a current account imbalance, either in magnitude or duration, is irrelevant and should not spur any serious concern for policy makers.

Basic economic identities help shed light on the macroeconomic determinants of current account fluctuations. National income Y is defined as the sum of private and public consumption, C and G, investment, I, and net exports, X-M (which, for sake of simplicity, are identified with the current account below),

$$Y_t = C_t + I_t + G_t + X_t - M_t$$

Rearranging the equation gives:

$$X_t - M_t = Y_t - C_t - G_t - I_t = S_t - I_t$$

This means that the external account has to equal the difference of national savings (defined as income less private and public consumption) and investment. This relation implies that the current account is directly related to saving and investment in the economy. Savings can be further decomposed into private S^p and government S^g, where government savings correspond to fiscal budget position, and are defined as the difference between tax income, T, and expenditures, G.

$$CA_t = S_t^p + S_t^g - I_t = S_t^p - I_t^p + (T_t - G_t)$$

One of the most important policy implications of the intertemporal models of current accounts is that, as long as deficits are created by increasing investment, these should not be a cause of concern, as the building up of external debt will be repaid easily due to increased growth as noted by Zanghieri (2004). The only important variable that should be in check is government deficit. Such a view of the current account deficit has been named Lawson's Doctrine, after the former British Chancellor of the Exchequer, Nigel Lawson, who first proposed it in the 80s. However, the sequence of debt and balance of payment crises occurred in the last twenty years showed that such a theory is seriously flawed.

It is often argued that the relationship between public sector (general government) deficits and current account deficits are related strongly and positively ("twin deficits"). However, the relationship between public sector and current account deficits is more complicated, depending on the behavior of the private sector savings/investment gap, since the well-known national account identity states that the current account deficit is equal to the sum of the public sector deficit (that is, the difference between government investment and government saving) and the private sector deficit (that is, the difference between private sector investment and saving).

According to the standard paradigm, the effects of a higher public sector deficit are transmitted through two channels of influence, namely the goods market (via the real

exchange rate) and the capital account (via the real interest rate) (Papadogonas, Stournaras 2006). A higher public sector deficit is associated with an appreciation of the real exchange rate and higher output (as aggregate demand increases). As a consequence, it is also associated with a deterioration of the current account. In addition, a current account deficit results in net asset decumulation and higher foreign debt. The impact of this on expenditure, as well as long-term considerations regarding the need to raise taxes to repay the public sector debt, are additional transmission mechanisms through which public deficits might affect external deficits according to Papadogonas and Stournaras (2006).

There is a sound reason to worry about a country's long-term prospects if the onset of the current account deficit reflects lower (private) savings or a larger budget deficit. In both cases, the country is borrowing abroad or running down its foreign assets to sustain or raise consumption, whether by the private sector or the public sector. Yet there is less cause to worry when the onset of a current account deficit reflects an increase in investment. Namely, the country is then raising its capital stock more quickly and therefore raising its future output faster as Aristovnik (2005) points out. Moreover, certain types of investment are more likely to be associated with sustainable deficits than others. Private sector investments in productive capital, particularly in traded goods industries, as pointed out by Roubini (1998) will make current account deficits more sustainable, as opposed to, for example, borrowing from abroad in order to make real estate investments.

Following Frenkel and Razin (1997) the concept of current accounts sustainability can be defined: a current account is sustainable if the continuation of the current government policy stance and private sector behaviour are not going to entail a drastic policy shift (such as a fiscal contraction) or lead to a currency or balance of payment crisis. Of course such a definition needs to be complemented by a benchmark level for the current account. Moreover, in order to assess the sustainability of the deficit, the source of it must be taken into account.

It is often difficult to distinguish between current account deficits that are the consequence of growth inducing capital inflows and current account deficits that result in debt accumulation that can not be sustained. Making the distinction between the two views is very difficult in transition economies that are subject to large and sometimes unpredictable shocks that can lead to temporarily very large current account flows as well as undergoing major structural changes that may require long-term current account imbalances.

In their study of current account sustainability in transition economies, Roubini and Watchel (1998) highlighted the following indicators for assessing current account (CA) sustainability: sources of current account deficits (investment and savings rates, rate of growth of output and fiscal balance); composition of CA: trade deficit/surplus and factor income from abroad; composition and size of capital flows: short-term capital inflow, foreign direct investment (FDI), portfolio flows, and debt flows; real exchange rate appreciation; foreign exchange reserves and debt burden; fragility of the financial system, and political instability and uncertainty about the economic environment.

The sources, magnitude and composition of capital flows are extremely important for determining the current account sustainability. With regard to equity, portfolio investment is usually more volatile than foreign direct investment. A current account financed by large inflows of foreign direct investment is more sustainable than a deficit financed by short-term flows that can be reversed if market conditions change. Inflows from official creditors are also more stable and less reversible in the short run that private flows. Other capital inflows increase the liquidity of the domestic banking sector which is sometimes in terms of foreign exchange denominated liabilities or in domestic currency if the central bank buys the foreign exchange in order to avoid the appreciation of the exchange rate. In either case domestic banks can face severe liquidity problems in case of capital outflow, particularly if their assets are in domestic currency and are illiquid.

It is not unusual to observe large capital inflows exceeding the current account deficits. While in the short-run such inflows enhance sustainability as they finance the current account imbalance, over time they may contribute to unsustainability by leading to nominal appreciation of the domestic currency that would worsen the country' competitiveness. Central banks avoid such appreciation by intervening in the foreign exchange market and buying foreign currency in large amount which leads to accumulation of foreign exchange reserves. While increases in foreign reserves make current account imbalances more sustainable, large capital inflows exacerbate the real appreciation of the currency. However, if large foreign exchange reserves are not sterilized, they lead to excessive monetary growth that causes higher inflation and leads to greater real appreciation. If they are sterilized, domestic interest rates remain high and the original source of nominal exchange rate appreciation is not eliminated so that capital inflows continue and prevent any nominal depreciation that might be necessary to restore external competitiveness of the country in face of large and growing current account imbalances as pointed out by Roubini and Watchel (1998).

With regard to debt sustainability, the maturity structure, currency composition and interest structure of the debt affect a country's vulnerability to shocks. Milesi-Ferretti and Razin (1996) highlight short term maturities, foreign currency denominations and variable interest rates which increase risks of vulnerability as they magnify the impact on the debt burden. An existing large debt burden will make it difficult to finance a current account imbalance. A large debt-servicing burden can exhaust export revenues and preclude imports of investments goods that are needed for growth as noted by Roubini and Watchel (1998). The debt burden can inhibit any growth policies in such case. Traditional ratios of external and domestic debt sustainability include external debt to GDP, external debt to exports, debt service to GDP, public debt to GDP, public debt to government revenues. Market prices of the

value of the external debt of a country also provide a measure of market perception of the likelihood that a country may not pay in time its external liabilities.

There exist two competing approaches for calculating benchmarks for current account: the external sustainability approach by Lane and Milesi-Ferretti versus the structural current accounts literature based on panel econometric techniques. Lane and Milesi-Ferretti (2006) use an accounting framework to derive current account benchmarks that would stabilize net foreign assets position. According to this approach, a country can sustain a permanent current account deficit, and this deficit can be larger, the larger the growth rate and the larger the stock of external liabilities that the country will service in the long run. Two factors turn out to be decisive: at what level policy makers wish to stabilise external indebtedness - in some countries the 2010 level is by international standards high; whether to include foreign direct investment in the aggregate measure of indebtedness - the composition of net foreign assets positions may matter. The empirical literature on structural current accounts applies panel econometric techniques to establish if there is relationship between the current account and standard macroeconomic fundamentals, such as domestic output growth rate, fiscal policy, exchange rate policy, external debt, etc. Key examples are the studies by Debelle and Faruquee (1996), Bussière et al. (2004), Chinn and Prasad (2003). The latter were focusing on the medium-term determinants of current accounts for a large sample of industrial and developing countries. The economic underpinning theory for this empirical analyses stems from the intertemporal approaches to the current account.

Despite the existence of a large literature, both theoretical and empirical, which addresses the issue of the potential determinants of the current account, it is difficult to capture the entire range of relationships affecting the current account of a country. In this study the development of the current account imbalances experienced by CEECs over the period of EU membership will be analyzed with particular attention to one of its main

determinant – external indebtedness, thus, being different from existing literature on the current account sustainability. After carrying out a comprehensive analysis of the structure and dynamics of the foreign debt in the CEECs, the influence of the different components of the debt – government, banks' and corporate sector's – on the growth of the current account deficits and decreasing sustainability of these economies to external shock will be studied. Based on the results of this study, the recommendations to decrease dependence of the CEE economies on external financing to prevent national economies from currency, debt and financial crises will be elaborated.

1.2 Evolution of the Balance of Payments Imbalances of the CEECs

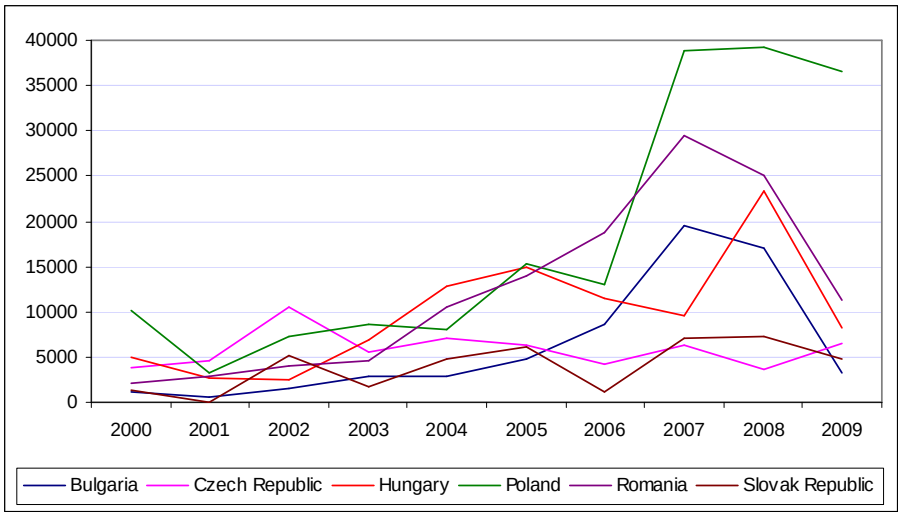
The problem of external imbalances is one of the central points when assessing the economic development of the Central and Eastern European countries that joined the European Union and committed to join European monetary union. So far the conceptual aspects of current account sustainability have been discussed, emphasizing the role of the sources of financing and overall foreign indebtedness. The main aim of this section is to view the external position of the CEE countries since their EU accession and during and after the Global financial crisis. The section highlights the most salient features of the capital flows structure in terms of relative importance of FDI, portfolio and debt categories in the overall level of external liabilities of the CEECs. Analysis of the sources of the current account deficits, as well as sectoral breakdown of the external indebtedness of the CEECs is performed. The CEE countries included throughout this study are the Czech Republic, Hungary, Poland, Slovak Republic, Bulgaria and Romania.

The international capital flows contribute significantly CEE countries and help to finance their current account deficits. Due to the general lack of domestic savings in these

countries, capital inflows are necessary to finance domestic investments and thus economic growth. The financial account of the balance of payments (Figure 1.1) measures the net effects of financial investment flows: Figure 1.1 shows that all countries experienced net capital inflows and therefore a surplus of the financial account balance, which had an increasing pattern after the EU accession, and rather unsustainable surge in net inflows just before the global financial crisis. The cumulative financial account balance in the years from 2004 until 2009 shows remarkably high values for Bulgaria, Romania and Hungary (see Table 1.1), compared with Poland, Slovak Republic and Czech Republic, ranging from 18% to 120% of GDP.

Looking at Figure 1.1 it can be seen that the highest surge of net inflows was experienced by Poland, where in 2007 it amounted to US$38.8 billion, which is a 197% increase compared to previous year's net inflows. Other countries, except for the Czech and

Figure 1.1: Financial Account (In millions of U.S. dollars)



Source IMF *International Financial Statistics*

Slovak Republics, experienced similar problems: in 2007 there was a huge net capital inflow to Romania, Bulgaria, and in 2008 to Hungary. Then, for these countries net capital inflows likewise plummeted in the aftermath of the global recession. It should be also noted that in Poland there was no capital flight compared to other CEECs. It will be discussed later what

stands behind this observation. All in all, such a huge volatility of capital inflows can not be sustainable for an economy and requires identification of the sources leading to such high fluctuations.

Looking at the structure of the financial account provides further insights in the composition of foreign capital flows. Table 1.1 shows that all the countries experienced net capital inflows of FDI, portfolio and other investments (exception is Bulgaria, where there was a net outflow of portfolio investments, though not substantial). If in the period before EU accession FDI significantly dominated other and portfolio investments which was indicated in the research of Arvai (2005), in the period from 2004 until 2009 structural shift took place in the financial accounts towards other investments, which are now prevailing over FDI in some countries: in Hungary other investments amount to 72% of total inflows, in Romania – 51%, Slovak Republic – 47%. On the other hand, in Czech Republic major capital inflows are in the form of FDI – 90%, Bulgaria – 73% of the capital inflows are from FDI, Poland – 43%.

Table 1.1: Breakdown of Cumulative Net Capital Inflows 2004-2009

Country	FDI	Portfolio investment	Other Investment	Total amount (in millions of U.S. dollars)	Sum in % of GDP
Bulgaria	73%	-7%	34%	56406.0	120%
Czech Republic	90%	2%	8%	35833.0	18%
Hungary	19%	10%	72%	78781.8	61%
Poland	43%	17%	40%	156039.6	36%
Romania	48%	1%	51%	109960.2	69%
Slovak Republic	47%	6%	47%	31089.9	35%

Source: IMF, *International Financial Statistics*, UNCTAD, own calculations.
Note: Financial derivatives are not reported as their weight is negligible

In 2007, just before the unfolding of the global financial crisis, the CEECs experienced a substantial surge in their net capital inflows (Hungary - in 2008). The main driving force of these huge inflows was other investments (OI) component of the financial account (see Table 1.2). For Poland net OI amounted to US$ 28 billion (which is 73% of the net inflows in 2007), having increased by 358% from the level of 2006. It must be noted that in the aftermath of the Global financial crisis Poland did not experience a large decrease in net

capital inflows compared to other CEECs. This was mainly due to the large portfolio inflows in the form of debt securities, which in 2009 and 2010 amounted to US$14.7 billion and US$19.7 billion respectively. The new government bonds issuance and rollover of existing debt helped Poland to meet the external financing requirement, with strong capital inflows underpinning the zloty's recovery in 2009 – 2010 from the lows reached during the global downturn.

Romania in 2007 experienced a surge of OI by 141% amounting to US$19.6 billion (67% of net inflows); Bulgaria saw a 900% increase of net OI in 2007 (from US$741 million in 2006 to US$7466 million in 2007); Hungary stands out of this group because it had a boom of financial account in 2008, reasons for this case will be discussed later. The only exception is Czech Republic, for which financial account was not that volatile as for the other CEE countries. Net OI of Czech Republic in 2007 decreased relative to the previous level by 95%.

Table 1.2: Net Other Investment Capital Inflows in 2007

Country	Total amount (millions of U.S. dollars)	% of total net inflows	Percentage change from 2006
Bulgaria	7465.86	38%	907%
Czech Republic	85.55	1%	-95%
Hungary*	25395.90	93%	237%
Poland	28353.00	73%	358%
Romania	19573.20	67%	141%
Slovak Republic	4745.66	68%	118%

* since Hungary experienced a surge of financial account in 2008, data is reported for this year
Source: IMF, Balance of Payments Statistics

It should be investigated what other investments consisted of for CEE countries in 2007, when there was such a high surge of these flows. According to the IMF classification the major groups in "other investment flows" category are trade credits and loans (usually referred to as financial credits) as well as currency and deposits. Other investment flows are reported for the monetary authorities, general government, the banking sector, and other sectors (predominantly the enterprise sector). The sectoral breakdown of other investment flows reveals not only some common trends, but also some differences across the countries.

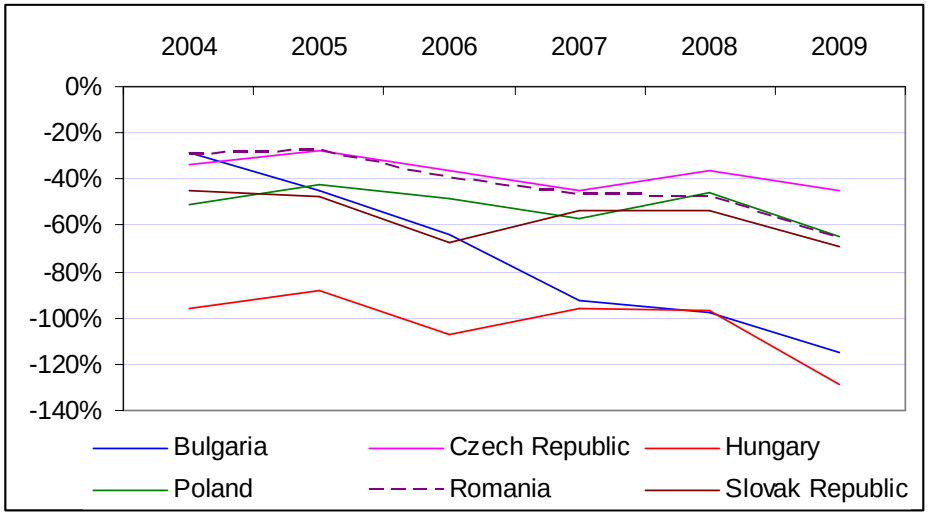
For Poland, in 2007 the major component of other investments liabilities were loans (financial credits), share of which was 44% (banks and enterprise sector being main debtors) and currency and deposits – 47% (monetary authorities and banks sharing equally). Bulgaria in 2007 had the same picture: loans (banks and enterprise sector being main debtors) and currency and deposits were the main components of OI liabilities. Romania: dominating component were loans and currency and deposits as well, the debtors - banks and enterprise sector. For Hungary, in 2008 the major components of other investments liabilities were loans – share of which was 66%. Within this category the main borrowers were monetary authorities (36%) – which was the first tranche of the IMF bailout of US$6.3 billion, other sectors (27%) and banks (20%). Czech Republic: currency and deposits of banks – 60% of OI liabilities. Slovak Republic: currency and deposits of banks – 87% of OI liabilities.

The above data suggest that the majority of the CEECs faced difficulties in the conditions of the Global financial crisis, having accumulated large interest-rate-sensitive financial inflows, which contributed to credit booms, complicating monetary and exchange rate policies. The countries experienced capital flows reversals as a consequence of the downturn in the international financial markets and some of them were forced to apply for the IMF and the EU rescue packages.

While the financial account shows the flows of international capital, Figure 1.2 summarizes the stocks of international investments. The net international investment position (NIIP) represents the sum of all claims by CEECs residents on foreign residents less the claims of foreigners on the CEECs. The level of net foreign assets is considered to be a fundamental determinant of external sustainability by Lane and Milesi-Ferretti (2001). The figures clearly show that all countries under consideration have net liabilities to the world. The NIIP/GDP ratio is primarily a signal of the weight of an economy's debt service

obligations; when the NIIP/GDP ratio reaches a certain size, investors may decide to limit their acquisition of the economy's assets, fearing that larger NIIPs may not be serviceable.

Figure 1.2: Net International Investment Position (in % of GDP)



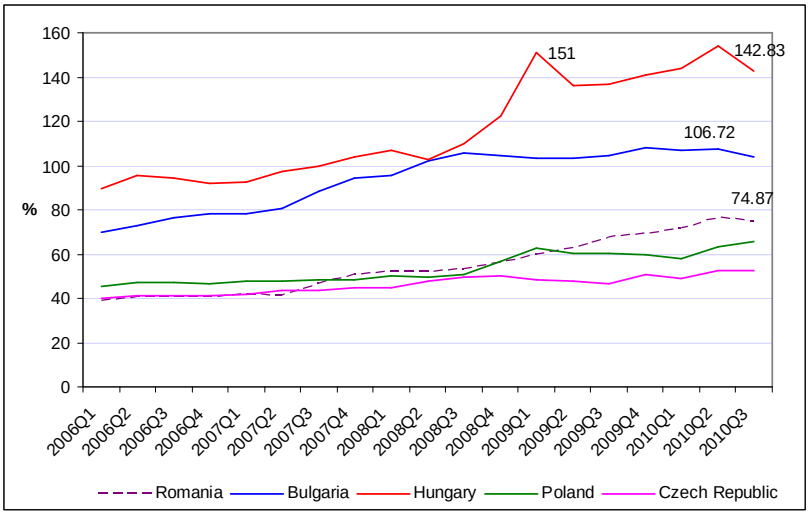
Source: IMF, *Balance of Payments and International Investment Position Statistics*, UNCTAD, own calculations.

The NIIP has been deteriorating for all the countries during the considered period, making these countries highly exposed to international financial markets environment. The high degree of indebtedness can be seen from the ratio of net liabilities to GDP. The worst situation is in Hungary, for which net foreign liabilities amount to 129% of GDP in 2009, and in Bulgaria – 115% of GDP. Net liabilities amount to 69% of GDP in Slovak Republic, 66% in Romania, 65% in Poland and 45% of GDP in Czech Republic in 2009.

Compared to other countries from the region Hungary stands out to have the most important role of the foreign capital in the economy. The ratio of the liabilities of Hungary, controlled by foreign investors through FDI, amounts to 194% of GDP in 2009, having increased from 163% of GDP in 2008, and from 60.7% in 2005 according to the UNCTAD World Investment Report 2010. It is followed by Bulgaria with inward FDI stock ratio to GDP amounting to 107%, which is also quite substantial, but not as high as in Hungary. The same ratio for other countries is much lower: for Czech Republic it is 60%, Slovakia – 57%, Romania 46% of GDP, and Poland is just 42% of GDP.

Consequently, the external debt of CEE countries reached levels that give rise to serious concerns about the risks for their financial stability. The external debt ratio (relative to GDP) can be used as a measure of the vulnerability of the economies to changes of the external value of their currencies. As a result of capital inflows, a large stock of foreign debt was accumulated: as it can be seen from Figure 1.3, Bulgaria and Hungary have external debt levels higher than 100% of GDP. For Bulgaria up to 97 percent of debt was denominated in foreign currency in 2010 Q3 according to the World Bank quarterly external debt statistics.

Figure 1.3: Gross External Debt as a percentage of GDP



Source: ECB *Statistical Data Warehouse*

For Hungary foreign currency debt amounts to 82% of the total external debt, Romania – 89%. In such situation a depreciation of the national currency can have a dramatic impact on the debt service these countries have to bear, what in particular happened in Hungary, where as a consequence of the Forint huge depreciation in 2008, the external debt level surged to over 150% of GDP in year 2009.

The depreciation of the national currencies laid a heavy burden on domestic borrowers, who took the loans in foreign currencies. While in Poland, Slovak Republic and Czech Republic the share of mortgages taken in foreign currencies was not significantly large – 26, 20 and 10% respectively, in Hungary and Romania 59% of mortgages were

denominated in foreign currencies – Swiss francs and euro. The devaluation resulted in a surge of non-performing loans in the credit portfolios of the banks.

It is important to analyze dynamics and structure of the external debt of the CEE countries in more details which will provide the basis of empirical analysis following in the next section. The World Bank Special Data Dissemination Standard (SDDS) prescribes the dissemination of external debt data with breakdowns by the following sectors: general government and monetary authorities, banks, other sectors and inter-company lending between entities in a direct investment relationship. It should be noted that in the following empirical analysis in the next section other sectors debt and inter-company lending between entities in a direct investment relationship are combined into "other external debt", and general government and monetary authorities' debt are combined into "government debt". Such modification is justified since it will help clearly define the direction of government economic policies aimed at increasing economic resilience to external shocks

Poland's gross external debt has been steadily growing from the time of EU entrance: if in the beginning of 2004 it was US$107.2 billion, in the end of 2010 it amounted to US$312.2 billion. The general government debt accounted for 36% of the gross external debt, having increased by almost 40% from the middle of 2010. The banking sector's external debt was US$64.7 billion, which constituted 20% of the gross external debt (see Figure 1.4 for sectoral representation of the external debt). The external debt of other sectors substantially decreased by almost 20% by the end of 2010 from US$72 billion in 2009 to US$57.7 billion and constituted 18% of the gross external debt. The intercompany lending between direct investment companies amounted to US$68.7 billion. Both other sectors and intercompany lending between direct investment companies constituted 40% of the gross external debt.

Thus, these numbers show that the dependence on the external financing has been decreasing for Polish corporate sector, which is undoubtedly a positive factor since the cost of

servicing such debt and, consequently, the burden on the current account is the highest. The substantial share of intercompany lending between direct investment companies is not a factor decreasing sustainability, since parent companies are interested more in the growth of the efficiency of their subsidiaries in Poland, and not in the receiving high profits from loans, which makes such borrowing rather safe for Polish corporate sector.

In Hungary gross external debt amounted to US$230 billion in the third quarter of 2010. Government external debt was US$62.9 billion. From EU accession the government debt increased from US$23.2 billion by 270%. Because of the continuous issuance of government bonds, the prevailing part in the structure of government foreign debt is long-term securities. This indicates to the confidence of investors in Hungary's government bonds. However, the growing volume of indebtedness is one of the signs of unbalanced budgetary policy. 98% of the government and monetary authorities' external debt is long-term. The general government debt accounted for about 27% of the gross external debt.

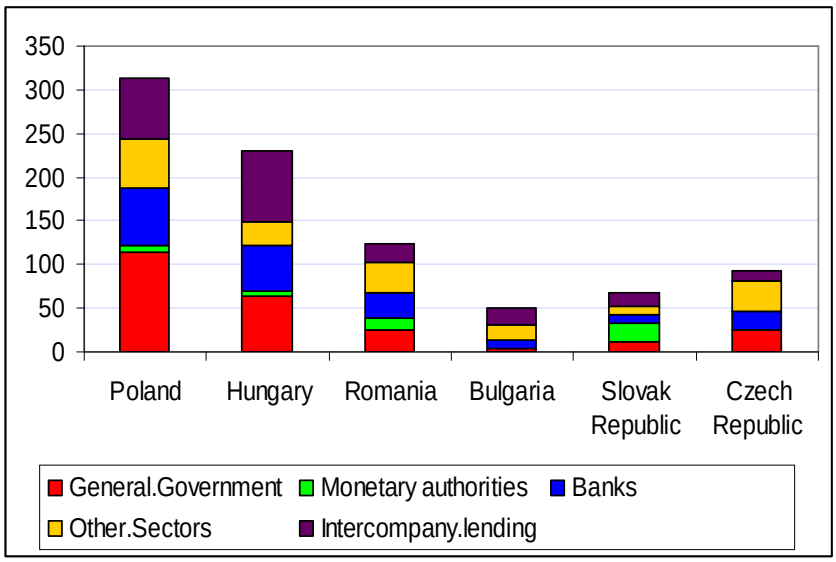
The indebtedness of the banking sector of Hungary has been growing steadily by approximately 135% each year during EU membership until 2009: from US$13 billion in 2004 to US$60 billion by the end of 2008. But starting from 2008 the external indebtedness of the banks was decreasing, and by the second quarter of 2010 reached US$48.6 billion which constituted 23% of the gross external debt. It means that from the onset the financial crisis Hungarian banks had to repay the 19% of the debt. In the maturity structure of the external indebtedness of the banking sector prevails long-term debt - US$33.6 billion (64%).

The indebtedness of other sectors was US$27.7 billion in the third quarter of 2010. After the EU accession it did not grow so rapidly as banking or government sectors debt did. In the beginning of 2004 the external debt of other sectors was US$8.8 billion. However, a strong growth is observed in intercompany lending between direct investment companies: in the third quarter of 2010 it amounted to US$81.1 billion. Before the EU accession it was just

US$11 billion. Both other sectors and intercompany lending between direct investment companies constituted 47% of the gross external debt.

By the end of 2010 the gross external debt of the Czech Republic amounted to US$95.3 billion, having increased from the middle of 2010 by US$13 billion mainly due to the growth of the government external debt. Major part of the external debt of the Czech Republic is other sectors' debt which together with intercompany lending between direct investment companies constituted 50% of the gross external debt. Government debt accounted for 27%, banking sector debt – 23% of the gross external debt. Starting from the middle of 2008 the external indebtedness of the banks decreased by almost US$10 billion, which is a similar pattern to that seen in Hungary. However, it should be noted that the gross external debt position of the Czech Republic is not a cause for concern since the ratio of it to GDP is the lowest among considered countries –around 50%.

Figure 1.4: CEE Gross External Debt by Sectors as of Q3 2010
(In billions of U.S. dollars)



Source: World Bank *Quarterly External Debt Statistics*

By the end of 2010 the gross external debt of the Slovak Republic was US$66.4 billion. The government and monetary authorities' debt amounted to US$33.5 billion or 50 % of the total external debt. Banking debt accounted just for 13% of the total debt. It has

substantially decreased from the beginning of the global financial crisis: if in the end of 2008 it was US$18.6 billion, by the end of 2010 it decreased to US$8.3 billion. Other sectors debt together with intercompany lending between direct investment companies constituted 37% of the gross external debt.

The external debt of Bulgaria was US$49.9 billion in the end of 2010. Government debt played a minor part in the structure of the total debt – just 10%. Major contribution was done by the other sectors' debt and intercompany lending between direct investment companies – US$36 billion or 72%. The dynamics of these sectors' debt have not been affected significantly by the global downturn. Banking sector debt constituted US$9.2 billion or 18% of the total debt having decreased by more than 25% from the onset of the global financial crisis.

The external debt of Romania amounted to US$122.8 billion by the end of 2010. The general government and monetary authorities' debt accounted for 31% of the gross external debt, having increased from the onset of the global downturn by 141%. Banking sector's debt was US$30 billion or 24% of the total debt, it has decreased from the second half of 2008 by 18%. Other sectors debt together with intercompany lending between direct investment companies constituted 44% of the gross external debt and amounted to US$54 billion.

The analysis of the structure of the external debt of the CEECs shows that the share of the indebtedness of the banking sector in the overall debt has decreased substantially in recent years. This indicates that in the situation of high uncertainty about exchange rate risk operations with carry trade became less attractive for the banking sector, consumer lending also decreased owing to the weakness of domestic demand. For Hungary, Czech Republic and Poland the indebtedness of the government has substantially increased, which put their governments in dependence on external funding. Nevertheless, in all considered countries the highest share of external borrowing was attributed to other sectors and intercompany lending

debt. Intercompany lending should cause less concern for sustainability of a current account (through net factor income payments) since parent companies are more interested in the growth of the efficiency of their subsidiaries than in the receiving high profits from loans. However, substantial debt of other sectors leads to the rising current account deficits, since this type of debt is more risky compared to the loans for banks and government, and creditors require higher premiums for the risk, which directly influences the deterioration of the income debit of the current account.

To support this argument measures of yields on external liabilities for banks and other sectors are constructed using IMF balance of payments statistics data on investment income, together with data on international investment positions of the CEECs. Investment income payments in US dollars related to asset-type X in year t are defined as ID_t^x (where *ID* stands for income debits). US dollar yield on liabilities is $yd_t^x = \frac{ID_t^x}{XL_{t-1}}$, where XL are the country's stocks of external X-type liabilities (X can be either bank or other sectors' debt).

Table 1.3 Comparison of the yields on external liabilities of banks and other sectors of the CEECs

	Bulgaria		**Czech Republic**		**Hungary**		**Poland**		**Romania**	
years	Banks	Other Sectors	Banks	Other Sectors	Banks	Other Sectors	Banks	Other Sectors	Banks	Other Sectors
2010	0.011	0.023	-	-	0.018	0.021	0.016	0.023	0.024	0.025
2009	0.016	0.029	0.019	0.047	0.026	0.029	0.017	0.036	0.032	0.030
2008	0.030	0.050	0.045	0.071	0.060	0.032	0.039	0.052	0.050	0.049
2007	0.029	0.048	0.046	0.076	0.045	0.026	0.028	0.045	0.059	0.045

Note: "-" stands for data not available

The results of the analysis of the yields on external liabilities from Table 1.3 indicate that in the beginning of the world financial crisis (years 2007-2008), during which the liquidity on the world financial markets substantially decreased, the cost of external borrowing for all considered countries was significantly higher than in 2009-2010. The possible explanation for this is that the European Central Bank (ECB) and Federel Reserve

System (Fed) conducted liberalization policy, which was aimed to provide refinancing to the EU and the U.S. financial sector. As a result, the highest reduction of interest rates in the history took place, which led to two- or even three-fold reduction in the costs of servicing external debt of CEE countries in 2009-2010 compared to the years 2007-2008.

On the one hand, such a policy of the Fed and the ECB facilitated the servicing of internal and external loans in the U.S. and EU countries, including CEE. On the other hand, it led to an inadequate price increase of almost all financial assets and derivative securities, which in turn led to higher prices of all commodities, including raw materials and foodstuffs. In such a situation, given that price stability remains a strategic priority for the ECB and the Fed, it is likely that in the near future the ECB and the Fed interest rates will grow (to reduce inflation), which in turn will lead to an increase in the cost of servicing of the external liabilities of the CEE countries. Therefore, the question of optimizing the cost of servicing the external liabilities of CEE countries is a priority in economic policies of the countries.

The findings suggest that external debt servicing by the banking sector in most cases is less expensive compared with other sectors. It can be seen from table 1.3 that in Bulgaria, Czech Republic and Poland the yields on external liabilities of other sectors are higher than those of banks for all the years 2007-2010. For example, in Poland in 2010 the yield of other sectors was 0.023 dollars for 1 dollar of the liabilities, while the yield on banks liabilities was 0.016 dollars for 1 dollar of the liabilities. In Hungary and Bulgaria the yields of other sectors are also higher than those of banks, but the difference is less significant than in Bulgaria, Czech Republic and Poland and this pattern only started from recent years. For Slovak Republic data were not available.

These numbers indicate that the countries experience larger outflow of interest earnings and payments on the liabilities of corporate sector's external debt than on banking sector's debt, which directly leads to the deterioration of the current accounts in the CEECs.

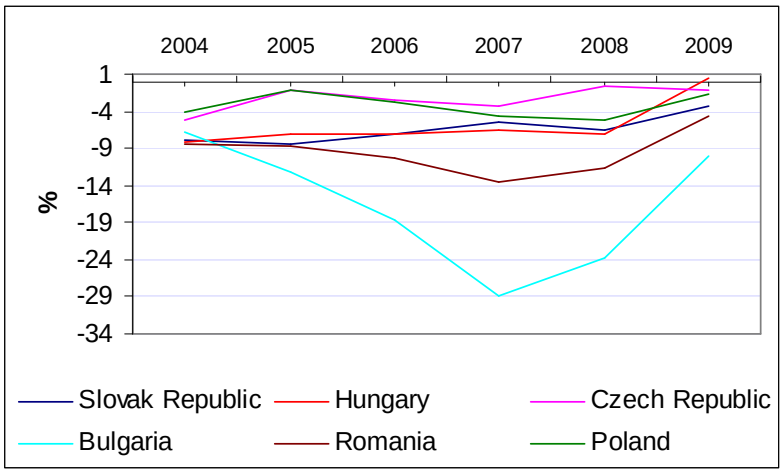
This result is explained by the fact that foreign lending to companies is associated with a greater risk than external loans of the banking sector. In every country there exists a strict control from the Central Bank (regulations on capital adequacy, reserve requirements on foreign currency loans, etc.) the purpose of which is to prevent the bankruptcy of domestic banks. For companies such official standards do not exist (there are only requirements for transparency, accountability), which makes loans to foreign non-banking sector more risky and therefore more profitable. However, as calculations show, in Table 1.3, during certain time periods (2007-2008 for Hungary, 2007-2009 for Bulgaria) the cost of servicing the external debt of the banking sector was higher than in other sectors. This was associated with a significant inflow of foreign loans from parent foreign banks and companies (through "intercompany debt" channel), whose rates were much lower than for domestic banks and companies (that are not affiliated with foreign investors).

Thus, it should be noted that in the upcoming growth of the interest rates of the ECB and the Fed there will be a surge in amounts paid to foreign creditors. Therefore, the CEE countries should, on the one hand, try to reduce the total amount of external borrowing, on the other – try to reduce the cost of debt service, which is possible by partially substituting the external debt of other sectors by banking sector's debt.

The findings of the analysis suggest that the large current account deficits in CEE countries were the result of substantial capital inflows (see Figure 4). Compared to Visegrad Group, Bulgaria and Romania experienced huge current account (CA) deficits amounting to more than 10% of GDP in 2006 – 2008. Before the crisis the CA balance was negative, reflecting not only the trade deficits, but also a negative balance on investment income as the NIIP gets more and more negative. In Hungary the main component contributing to the negative CA was negative investment income of US$10.9 billion (98% of CA) in 2008. In Bulgaria and Romania the main component of negative CA were trade deficits, amounting to

-US$12.6 billion and to - US$28.2 billion respectively. In Poland both large trade deficit and negative investment income constituted CA deficit. In Czech and Slovak Republics the CA

Figure 1.5: Current account as a percentage of GDP



Source: IMF, *Balance of Payments and International Investment Position Statistics*

deficits are much more sustainable, compared to other CEE, with income balance contributing to negative CA. Starting from 2008 all the countries except Czech Republic experienced the so-called current account reversals. Especially strong CA adjustment took place in Hungary and Bulgaria: Hungarian CA for the first time became positive, in Bulgaria CA reduced from -23% of GDP in 2008 to -10 % of GDP in 2009.

The analysis of the sources and composition of capital inflows and external indebtedness that affect the current account sustainability shows that countries in the region have become dependent on western financial capital, which in the Global financial crisis led to their vulnerability. Along with the growth of banking and corporate external borrowing of the countries, the current account deficit of balance of payments rapidly increased to the unsustainable levels, which after facing a "sudden stop" led to the CA reversals and devaluations of national currencies. It is clear that the CEE countries will have to run future surpluses on their balance of goods, services and transfers to stabilize their net external position. CEE countries are not a homogenous bloc. Hungary, Bulgaria and Romania, in particular, have followed similar boom-bust trajectory: external imbalances in these countries

rivaled, and in some cases exceeded the maximum allowable threshold of imbalances. Current account deficits in Romania, Bulgaria were well over 10% of GDP in 2008. Bulgaria operates a fixed exchange rate system and a key concern is whether crisis would shake confidence in Bulgaria's currency board and strong intention to join euro area. Romania and Hungary may have flexible exchange rates, however, they have needed IMF-led rescue packages. Given the large trade deficits Bulgaria and Romania are currently running, the needed shift in trade balance to stabilize their net external position is substantial. Other countries in the region – Czech Republic, Poland, Slovakia – also built up imbalances in recent years. Nevertheless, their imbalances never reached the same proportion as those of Hungary, Bulgaria and Romania. Overall, their economies are in stronger positions to weather any contagion. Slovakia successfully entered the Eurozone in 2009, while Poland qualified for a US$ 20.5 billion flexible credit line (FCL) from the IMF, which is a precautionary facility, available only to countries with very strong fundamentals, which can be drawn upon at any time and without meeting any specific conditions. Such a facility should help provide Poland with a defence against contagion.

2. Empirical Approach for Assessing the CEE External Sustainability

2.1 Methodology and Data

In this section the empirical analysis is conducted in order to reveal potential effect of external debt accumulation on current accounts of the CEE countries. I choose vector autoregression (VAR) framework in my empirical analysis since it provides a systematic way to capture rich dynamics in multiple time series as argued by Stock and Watson (2001). Specifically, to provide evidence on the dynamic interactions between the current account and the external debt of the CEE countries, I estimate the following VAR systems to test the Granger non-causality:

$$CA_t = \alpha_1 + \sum_{i=1}^{p} \beta_{1i} TD_{t-i} + \sum_{i=1}^{p} \gamma_{1i} CA_{t-i} + \varepsilon_{1t}$$
$$TD_t = \alpha_2 + \sum_{i=1}^{p} \beta_{2i} TD_{t-i} + \sum_{i=1}^{p} \gamma_{2i} CA_{t-i} + \varepsilon_{2t}\ , \quad (1)$$

where CA and TD and ε denote the current account, total debt and error term respectively; α is a constant term; β and γ denote the coefficients to be estimated, p is the lag order selected. The null hypothesis of Granger non-causality from TD to CA and from CA to TD are β_{1i}=0 and γ_{2i}=0, respectively. The rejection of the null hypothesis of the Granger non-causality from TD to CA implies that the past external debt can help predict the current CA, and vice versa. Similar methodological approach was used in the study of Ho-don Yan (2007) who found that foreign capital inflows Granger-cause the current account in the cases of emerging market countries, while a causal relation was negligently detected in the cases of developed countries.

To test the causal relationship between the current account and the three components of external debt (government external debt, banking sector external debt and other sectors external debt), the estimation method is similar to Eq. (1). The VAR system may be expressed as follows:

$$
\begin{aligned}
CA_t &= \alpha_1 + \sum_{i=1}^{p} \beta_{1i}^{GD} GD_{t-i} + \sum_{i=1}^{p} \beta_{1i}^{BD} BD_{t-i} + \sum_{i=1}^{p} \beta_{1i}^{OD} OD_{t-i} + \sum_{i=1}^{p} \gamma_{1i} CA_{t-i} + \varepsilon_{1t} \\
GD_t &= \alpha_2 + \sum_{i=1}^{p} \beta_{2i}^{GD} GD_{t-i} + \sum_{i=1}^{p} \beta_{2i}^{BD} BD_{t-i} + \sum_{i=1}^{p} \beta_{2i}^{OD} OD_{t-i} + \sum_{i=1}^{p} \gamma_{2i} CA_{t-i} + \varepsilon_{2t} \\
BD_t &= \alpha_3 + \sum_{i=1}^{p} \beta_{3i}^{GD} GD_{t-i} + \sum_{i=1}^{p} \beta_{3i}^{BD} BD_{t-i} + \sum_{i=1}^{p} \beta_{3i}^{OD} OD_{t-i} + \sum_{i=1}^{p} \gamma_{3i} CA_{t-i} + \varepsilon_{3t} \\
OD_t &= \alpha_4 + \sum_{i=1}^{p} \beta_{4i}^{GD} GD_{t-i} + \sum_{i=1}^{p} \beta_{4i}^{BD} BD_{t-i} + \sum_{i=1}^{p} \beta_{4i}^{OD} OD_{t-i} + \sum_{i=1}^{p} \gamma_{4i} CA_{t-i} + \varepsilon_{4t}
\end{aligned} \tag{2}
$$

Quarterly data from 2002 to 2010 are used, taken from the International Financial Statistics and Balance of Payments statistics of the International Monetary Fund and World Bank Quarterly External Debt Statistics. For Bulgaria the data on external indebtedness are available from 2005Q3 2010Q4. For Romania the data on external indebtedness are only available starting from 2008 Q2, thus not allowing to include it into the analysis due to the lack of observations.

The model is estimated as follows. First, an unrestricted VAR is estimated. Granger causality testing is performed. Second, from the VAR, the variance decomposition is undertaken for the current account for each type of debt. Thus, particular attention is paid to three different components of external debt and their effects directly on CA. Variance decomposition separates the variation in an endogenous variable into the component shocks to the VAR. Hence, it provides information about the relative importance of each random innovation in affecting the variables in the VAR.

The optimal number of lag length was chosen by looking at AIC and SIC criteria. The stability of VAR was checked: all AR roots are inside the unit circle and Autocorrelation LM test states that no serial correlation in the residuals was detected.

2.2 Empirical Results

Before estimating the model it is important to consider the stochastic properties of the series used in the analysis. The order of integration of the variables was identified by performing the unit-root tests. Specifically, Augmented Dickey-Fuller (ADF) test was used.

The results of the test are reported in Table 2.1. The results of the test indicate that first-differences of the series are stationary. CA of Slovak Republic is found to be stationary according to ADF test at 1% significance level. All the other variables have unit roots I(1).

Table 2.1: ADF unit root tests

Country	CA	GD	BD	OD	TD
Bulgaria (2005Q1 2010Q4)	-1.12	-2.01	-1.49	-2.07	-1.66
Czech Republic (2002Q1 2010Q3)	-1.57	0.67	-1.16	-0.75	-0.45
Hungary (2002Q1 2010Q3)	-1.63	-0.74	-0.75	-1.29	-0.92
Poland (2002Q1 2010Q3)	-2.27	-1.1	-0.49	-1.2	1.86
Slovak Republic (2002Q1 2010Q3)	-4.52*	-1.56	-2.11	-0.77	-1.87

* CA of Slovak Republic is found to be stationary according to ADF test at 1% significance level. All the other variables have unit roots.

Since unit root tests indicate that the series are integrated, a question arises whether there exists a cointegrating relationship between current account and external debt, which is if there is a long-run equilibrium relationship between these variables. For that the Johansen cointegration test is used to determine the number of cointegration vectors.

Table 2.2 reports the results of the Johansen cointegration test. Both the maximum eigenvalue test and trace test strongly reject the null hypothesis of no cointegration. There is strong evidence for one or two cointegrating vectors.

Table 2.2: Johansen cointegration tests

	Bulgaria		Czech Republic		Hungary		Poland		Slovak Republic	
Hypothesis	Lmax	Trace	Lmax	Trace	Lmax	Trace	Lmax	Trace	Lmax	Trace
r =0	65.29	122.3	81.81	113.3	47.94	80.95	51.67	90.69	30.57	61.57
r =1	32.17	57.08	19.16	31.57	20.45	33	24.72	39.01	19.22	31
r =2	22.63	24.91	11.86	12.41	9.44	12.55	14.16	14.29	11.06	11.77
r =3	2.27	2.27	0.54	0.54	3.10	3.10	0.13	0.13	0.70	0.70

* Lmax is the maximum eigenvalue test of the null hypothesis of r cointegrating vectors against the alternative of r+1 relations. Trace is the trace test of the null hypothesis of r cointegrating vectors against the alternative of 0 relations. At the 5-percent significance level, the critical values are, starting from the null of r=0: 27.58 (47.85), 21.13 (29.79), 14.26 (15.49), 3.84 (3.84). The critical values for the Trace test are shown inside the parenthesis

The results of the Granger causality test are reported using current account and total external debt first, and then current account with three different components of the external debt: banks debt, other sectors debt and government debt. Behind the country name the sample range is listed in parentheses. The numbers in the parentheses beside the Wald statistics are the P-values.

Table 2.2 investigates the causal relationship between the current account (CA) and the total external debt (TD). Table 2.2 shows that for the CEE countries either TD causes CA, or CA Granger-causes TD, or both. Among them, Bulgaria exhibits a significant bi-directional causality between CA and TD. For Czech Republic it is current account that causes total external debt at 5% significance level. In case of Hungary TD causes CA, as well as CA causes TD at 1% significance level. In Slovak Republic TD significantly causes CA at 1% level, while CA causes TD at 5% significance level.

Table 2.3: Granger causality test on CA and TD

Country	Dependent variable	Lagged variables	
		CA	TD
Bulgaria (2005Q3 2010Q3)	CA		33.48 (0.00)[a]
	TD	21.49 (0.00)[a]	
Czech Republic (2002Q1 2010Q3)	CA		6.22 (0.18)
	TD	9.81 (0.04) [b]	
Hungary (2002Q1 2010Q3)	CA		15.55 (0.00)[a]
	TD	12.71 (0.00)[a]	
Poland (2002Q1 2010Q3)	CA		12.00 (0.03) [b]
	TD	11.84 (0.03) [b]	
Slovak Republic (2002Q1 2010Q3)	CA		14.5 (0.01)[a]
	TD	12.48 (0.02)[b]	

Note: CA and TD denote the current account and total debt respectively. Behind the country name the sample range is listed in parentheses. The numbers in the parentheses beside the Wald statistics are the P-values: a,b,c represent the 1%, 5%, and 10% significance levels, respectively.

In the next step the total external debt is decomposed into three different components: government sector debt, banking sector debt and other sectors debt. Since the variable of interest is CA, the results of Granger causality among other variables are not reported for the sake of analysis. The results are presented in the Table 2.3. It can be seen that among CEE different components of the debt Granger-cause CA. For Bulgaria the results are consistent with the results found in Table 2.2 where total debt is not divided. CA is caused by

government debt and by banking and corporate sector debt. In case of Czech Republic none of the components of external debt causes CA, which is consistent with the finding in table 2.2. In case of Hungary banking sector debt causes CA at 1% significance level, while corporate sector causes CA at 10%. For Poland results are consistent with those shown in Table 2.2: corporate sector debt causes CA. In Slovak Republic banking sector debt causes CA at 1%. Thus, separating the total debt into three different components reveals which type of external debt has a causal relationship with CA.

Table 2.4: Granger causality test for CA, GD, BD, OD

Country	**Dependent variable**	**Lagged variables**		
		GD	BD	OD
Bulgaria (2005Q1 2010Q4)	CA	9.32 (0.02)[b]	14.6 (0.01)[a]	32.5 (0.00)[a]
Czech Republic (2002Q1 2010Q3)	CA	3.18 (0.81)	2.26 (0.67)	2.97 (0.70)
Hungary (2002Q1 2010Q3)	CA	1.73 (0.62)	16.91 (0.00)[a]	6.66 (0.08)[c]
Poland (2002Q1 2010Q3)	CA	1.67 (0.43)	1.29 (0.52)	8.33 (0.01)[a]
Slovak Republic (2002Q1 2010Q3)	CA	1.45 (0.48)	5.74 (0.05)[b]	1.10 (0.57)

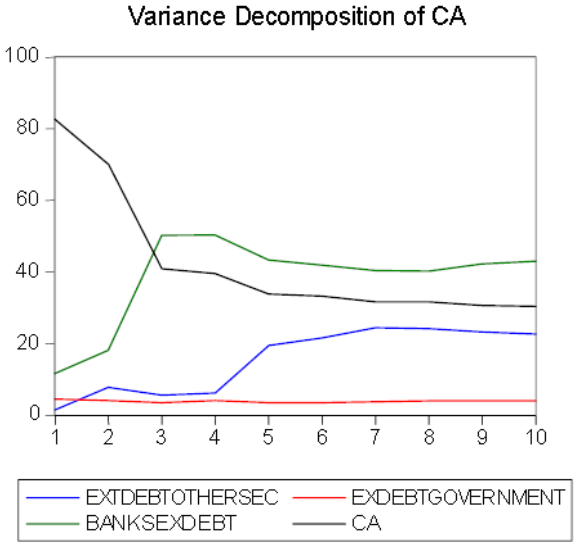
Note: CA and GD, BD, OD denote the current account, government sector debt, banking sector debt and other sectors debt respectively. Behind the country name the sample range is listed in parentheses. The numbers in the parentheses beside the Wald statistics are the P-values: a,b,c represent the 1%, 5%, and 10% significance levels, respectively. Since the variable of interest is CA, the results of Granger causality among other variables are not reported.

Figure 2.1 presents the results of the forecast error variance decomposition for 5 CEE countries, which shows how much of the unanticipated changes of the variables are explained by different shocks. Variance decomposition separates the variation in an endogenous variable into the component shocks to the VAR. Thus, it provides information about the relative importance of each random innovation in affecting the variables in the VAR.

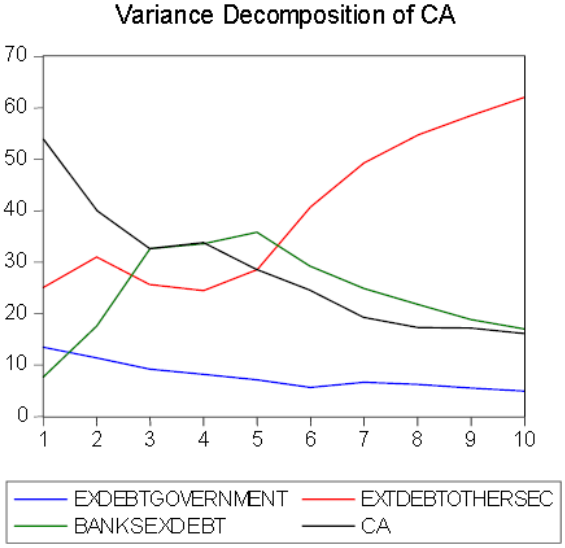
The variance decomposition of the model points out that external debt accumulation makes a large contribution to CA of Hungary, Poland, Slovak Republic, Bulgaria, but this is not the case for the Czech Republic. Starting from the third quarter about 40% of the variation in the Hungarian CA is explained by innovations in the external debt of the banking sector. In Poland the external debt of other sectors is the main source of variation in the CA starting from the fifth quarter.

Figure 2.1

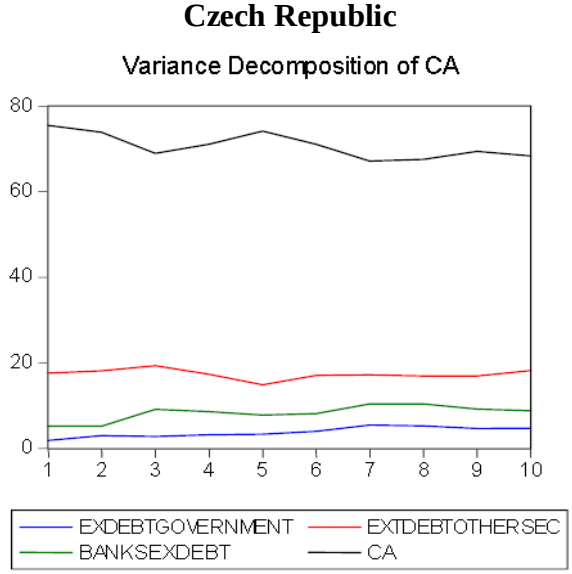
Hungary



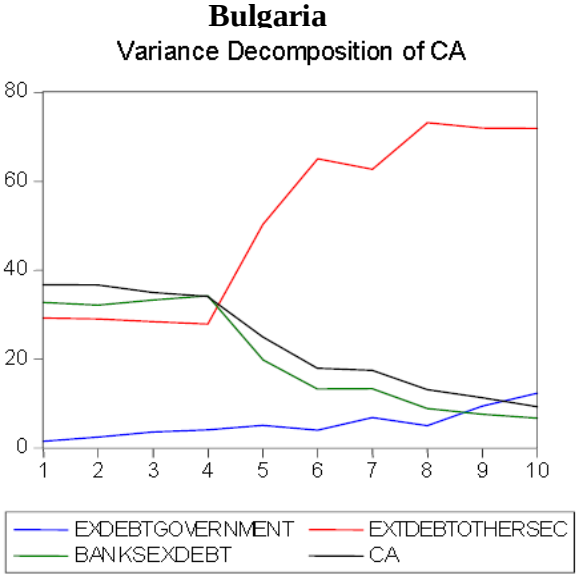
Poland



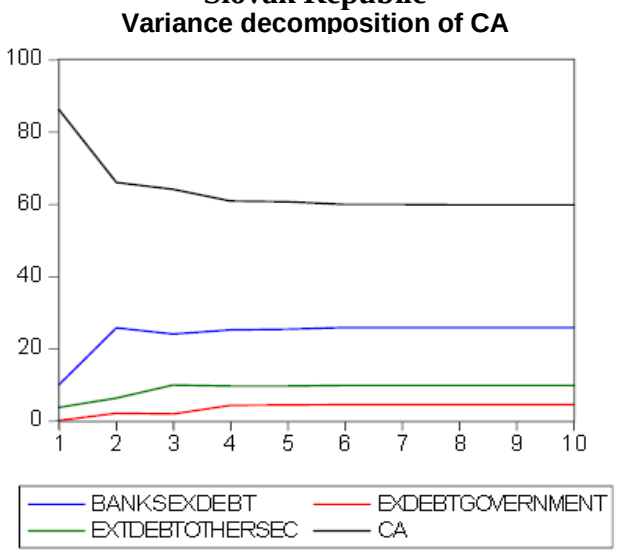
Czech Republic



Bulgaria



Slovak Republic



The contribution of the banking sector is rising steeply until the fifth quarter, but then stabilizes at 20%. Bulgaria has similar pattern: external debt of other sectors is the main source of variation in the CA starting from the fourth quarter. In Slovak Republic starting from the second quarter about 20% of the variation in the CA is explained by innovations in the external debt of the banking sector. In Czech Republic none of the components of the external debt makes significant contribution to the CA, CA plays the largest role in its own errors. Thus, it can be inferred that for the Czech Republic the external debt is not significantly contributing to the current account dynamics and should not cause concern. This result is in line with the previous section finding that the CA of the Czech Republic is more sustainable than those of other CEECs.

When assessing the overall quantitative performance of the presented results it must be noted that one possible weakness stemming from the quality of the data is present – the limited length of the time series due to the availability of the data on external indebtedness of the CEECs only from 2002. Nevertheless, the obtained results allow making a number of relevant policy recommendations which are discussed in the conclusions of the thesis.

Conclusion

It is clear that during the convergence process external imbalances in the CEECs are likely to continue. This is to some extent a natural outcome of catching up, but current account deficits must be carefully monitored, since they might be especially dangerous for the countries which do not posses substantial reserve assets and whose currencies are not actively used in the international settlements. In case of instability of the national financial systems or international capital markets turbulence, the presence of the current account deficit leads to a rapid depreciation of the national currencies, devaluation of the national assets, sharp increase of the debt-servicing burden and, consequently, to rising costs of production, losing national competitiveness and falling living standards.

In designing an appropriate policy to deal with external imbalances, it is important to identify the source of these imbalances. In particular, in the thesis it was identified that the widening of the current account deficits in the CEECs was a result of a number of long-term growth and structural factors, external shocks and domestic policies: the growth of trade deficits, rising external indebtedness and profit repatriation and the consequence of the real appreciation of domestic currency. All the CEECs countries have been facing net capital inflows and therefore a surplus of the financial account balance, which had an increasing pattern after the EU accession, and rather unsustainable surge in net inflows just before the global financial crisis. Such a huge volatility of capital inflows can not be sustainable for an economy especially taking into consideration the sources leading to such high fluctuations. While in the period before the EU accession FDI significantly dominated portfolio and other investments, in the period from 2004 until 2009 there was a structural shift in the financial accounts towards other investments, which are now prevailing over FDI in some countries. Such a shift of the capital inflows structure poses more difficulties to monetary authorities in terms of economic policy, because the external borrowing in the form of financial credits of

the banks boosted consumption in CEECs, which was mainly spent on imported goods, and did not produce sources to finance external liabilities.

The CEECs have become dependent on western financial capital, which in the Global financial crisis led to their vulnerability. Along with the growth of banking and corporate external borrowing of the countries, the current account deficit of balance of payments rapidly increased to the unsustainable levels, which after facing a "sudden stop" led to the current account reversals and devaluations of national currencies. The external indebtedness of the countries is likely to remain large. The problem for the economies would be exacerbated if the interest rates go up in developed countries. Countries with large amounts of foreign debt, like Hungary, Bulgaria and Romania will face an increase in their debt servicing payment that would directly further worsen their current account balances. A large debt-servicing burden can exhaust export revenues and preclude imports of investments goods that are needed for growth. The debt burden can inhibit any growth policies in such case.

This thesis has empirically verified that the current account imbalances of CEECs are caused by the external indebtedness. The empirical results showed that during rapid integration of capital markets of the new EU members rising external indebtedness have often led to current account deficits in all considered CEECs, but the Czech Republic. These results suggest that external borrowing in the form of other sectors and intercompany lending debt play important role in current account developments in the CEECs. The inter-company lending between entities in a direct investment relationship causes less concern for sustainability of a current account (through net factor income payments) since parent companies are more interested in the growth of the efficiency of their subsidiaries, than in the receiving high profits from the loans. However, substantial debt of other sectors leads to the rising current account deficits, since this type of debt is more risky compared to the loans for banks, and creditors require higher premiums for the risk, which directly influences the

deterioration of the income debit of the current account. This argument is supported by the analysis of the yields on external liabilities of the banking and corporate sectors' debt, which showed that the CEE countries experience larger outflow of interest earnings and payments on their liabilities of corporate sectors than on banking sectors external debt. This, in turn, directly leads to the deterioration of the current accounts in the CEECs.

It is expected that in the conditions of growing prices in the U.S. and EU economies, caused by the extremely liberal monetary policy of the U.S. and the ECB, the regulators will be forced to raise interest rates in the coming year, which will significantly increase the cost of debt servicing for the CEE countries. Expecting the increase of the interest rates on international credit markets and the corresponding negative impact of debt service on the fiscal budget (public debt) and current account balance (all components of external debt), governments of the CEECs need to create conditions for reducing the total amount of external borrowing and to reduce the cost of its service.

In this connection, it is suggested to reshape the structure of the external debt of the CEECs by reducing the indebtedness of other sectors, hence alleviating the burden of it on the current accounts. The governments should create conditions for the growth of domestic banking sector's lending to corporate sectors by increasing the liquidity of the national banking systems. This can be done either via lowering the refinancing rate or if necessary via reducing the reserve requirements for loans received from abroad. In the conditions of national monetary policy liberalization restraining the private consumption is important as its high growth can lead to the inflation and growth of imports. Inflationary pressure created as a consequence of such policy may be minimized by reducing the budget deficits (which will directly reduce the external debt of the government), and increasing the taxes on personal income (income tax) and consumption (VAT), as well as property and luxury taxes. Such a

policy will lead to the improvement of the income balance of the current account as well as trade balance (reducing imports and enhancing exports).

Suggested measures primarily relate to the countries such as Hungary and Bulgaria, that have external debt to GDP ratios higher than 100%, and also Romania and Poland, which have accumulated high external imbalances. These measures will help reducing the dependence on the external funding in the conditions of the international debt crisis and will not allow the repetition of the situation in Greece, Ireland, and Portugal. These measures do not relate to the Czech Republic and Slovakia. This is because the Czech Republic has rather sustainable external position as it was shown during the analysis. Slovakia, in turn, has a greater margin of safety, because the ratio of debt to GDP and the amount of payments on the debt service are less than in Hungary, Bulgaria, Romania and Poland, and the membership in the euro area eliminates the risk of the currency devaluation.

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