Charles University in Prague

Faculty of Social Science
Institute of Economic Studies

BACHELOR THESIS

Baltic States: Lessons from the Crisis

Author: **Jiří Čermák**

Supervisor: **doc. Mgr. Tomáš Holub PhD.**

Academic Year: **2012/2013**

Declaration of Authorship

The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

The author grants to Charles University permission to reproduce and to distribute copies of this thesis document in whole or in part.

Prague, July 31, 2013

Signature

Acknowledgments

I would like to thank my supervisor, doc. Mgr. Tomáš Holub PhD., for valuable suggestions and support. Apart from that I would like to thank R. Juma and P. Bláhová for valuable comments.

Abstract

Between 2000 -2007 Baltic countries were among the fastest growing economies in Europe, but in 2008 they were struck by very deep recession. Unlike the other Central and Eastern European countries, the Baltics maintained fixed exchange rate regimes and it raised the question about their effects on the economies. This work focuses on the external imbalances of the Baltic economies. It analyzes the compositions and sources of the current account deficits and discusses other influential factors. Detailed discussion is devoted to the capital inflows and their determinants. The thesis also contains empirical study which analyzes the relationship between the exchange rate regime and current account balance. We find that the current account deficits were not sustainable not only because of their sizes but also for their structure. The empirical analysis of the relationship between exchange rate regimes and current account deficits did not bring clear – cut results which would prove the hypothesis that the fixed exchange regimes negatively affect the current account balances.

JEL Classification	E61, E65, F31, F32
Keywords	Current account adjustments, exchange rate regimes, capital inflows, Baltic countries

Abstrakt

V období 2000 -2007 byly Baltské státy nejrychlející se rozvíjející ekonomiky v Evropě, avšak v roce 2008 byly zasáhnuty velmi hlubokou recesí. Narozdíl od ostatních zemí střední a východní Evropy Baltské státy udržovaly fixní měnový kurz, což podnítilo diskusi o jejich vlivu na vývoj baltských ekonomik. Tato práce se zaměřuje na vnější nerovnováhy Baltských zemí, především pak analyzuje jejich běžné účty platební bilance. Práce zkoumá skladbu jejich deficitů, jejich zdroje a zároveň zvažuje další faktory mající vliv na jejich vývoj. Detailní diskuze je pak věnována tokům mezinárodního kapitálu. Součástí práce je také empirická studie vztahu mezi měnovým kurzem a rovnováhou běžného účtu. Práce zjišťuje, že deficity běžných účtů nebyly udržitelné nejenom kvůli jejich vysokým hodnotám, ale také pro jejich strukturu. Návazující empirická analýza vztahu měnového kurzu a bilance běžného účtu nepřinesla jasné výsledky, které by potvrdily, že fixní měnový kurz negativně ovlivňuje bilance běžných účtů.

Klasifikace JEL	E61, E65, F31, F32
Klíčová slova	přizpůsobování běžného účtu platební bilance, režim měnového kurzu, mezinárodní kapitálové toky, Baltské státy

E-mail autora	`jiri.cermak@ymail.com`
E-mail vedoucího práce	`tomas.holub@cnb.cz`

Contents

1 Introduction **5**

2 Current account sustainability in Baltic Countries **7**

2.1 Introduction 7
2.2 Sources of current account deficit 8
2.3 Composition of the current account 9
2.4 Composition and size of the capital inflows 10
2.5 Real effective exchange rate 11
2.6 Fiscal policies of Baltic countries 13
2.7 Sustainability of CAD 17
2.8 Labour market 18

3 Exchange rate and current account **22**

3.1 Introduction 22
3.2 Literature review 23
3.2.1 Exchange rate regime, growth and inflation 23
3.2.2 Exchange rate and CAD 24
3.3 Exchange rate and CAD – empirical analysis 24
3.4 Explanatory variables 25
3.5 Data and Methodology 26
3.6 Results 27
3.6.1 Model 1 27
3.6.2 Model 2 27
3.6.3 Model 3 27
3.6.4 Conclusion 28

4 Capital Inflows **29**

4.1 Intoduction 29
4.2 Determinants of the capital flows 31
4.3 Exchange rate regime and capital flows 32
4.4 Country development 33
4.5 Foreign trade and financial integration of the country 34
4.6 The decomposition of the capital flows 36
4.7 Credit Boom in the Baltic countries 40

5 Conclusion **44**

6 Bibliography **46**

7 Appendices **51**

7.1 Macroeconomic indicators 51

7.2 Exchange rate regime clasification 53

8 Bachelor Thesis Proposal **54**

Topic characteristics 54

Core bibliography 54

List of Tables

1 Government net lending/borrowing 15
2 Government net lending/borrowing 15
3 Regression results 29
4 Net Private Capital Inflow 30
5 Net Private Capital Inflow 30
6 Macroeconomic indicators of Latvia 51
7 Macroeconomic indicators of Lithuania 51
8 Macroeconomic indicators of Estonia 52
9 Current account composition 53

Acronyms

BIS	Bank for International Settlements
CAD	Current account deficit
CEE	Central and Eastern Europe
EU	European Union
EU15	It contains following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
FDI	Foreign Direct Investments
GDP	Gross domestic product
IMF	International Monetary Fund
OLS	Ordinary Least Squares
PPP	Purchasing - power-parity
REER	Real effective exchange rate
SDR	Special drawing rights

1 Introduction

Baltic countries, until 1990, were part of the Soviet Union for more than 50 years. Although the collapse of the Soviet Union was a big shock for the whole Central and Eastern Europe, the Baltic countries were hit the most. The level of the trade concentration between Baltic countries and the Soviet Union was high, and its sudden cease had harmful effects on their output. The estimated fall in output in Baltic countries was 42 %, which was more than double of what was registered in Central Europe where the decrease was estimated at 18%(Aslund, 2007).

A crucial step towards stabilization of the economy was for the Baltic countries accepting their own currency. All three countries desired to leave the rouble as soon as possible at any cost because of both political and economic reasons. This was achieved under assistance from IMF in 1992 in Latvia and Estonia and one year later for Lithuania. In order to obtain credibility and stability in their economies they decided for fixed exchange rate regimes. Estonia ran under currency board with the Estonian Kroon fixed on Deutche Mark, the same holds for Lithuania, the only difference being that its Litas was fixed on U.S dollar whereas Latvia pegged its currency to SDR. (IMF, 2003)

Unlike other Central and Eastern European countries which chose the fixed exchange rate regime for only transition period to serve as the nominal anchor before entering free floating regime, the Baltic countries had decided to stay in this system permanently. They later repegged their currency to Euro which they pursued to accept as their sole legal tender. Regarding this goal the most successful country is Estonia which joined the Euro zone in 2011. The other countries had so far problems with fulfilling Maastricht criteria, which are necessary for the accession. In May 2013 Latvia submitted an official proposal for accession which was confirmed in July, and on 1 January 2014 Latvia will become the 18th member of euro area.(Latvijas Banka, 2013)

The recent turbulence in the Baltic economies attracted a large amount of interest. There were numerous studies which analyzed the economies from different perspectives, where the most discussed is the role of the exchange rate regime. The exchange rate regime is also the subject of this study when it is

considered in relation to the external imbalances which are centre of this work. We focus primarily on the current accounts and the international capital flows. We analyze their structure and composition and consider several factors and determinants which have an effect on them. The thesis also contains empirical study of the relationship between the exchange rate regime and the current account balance.

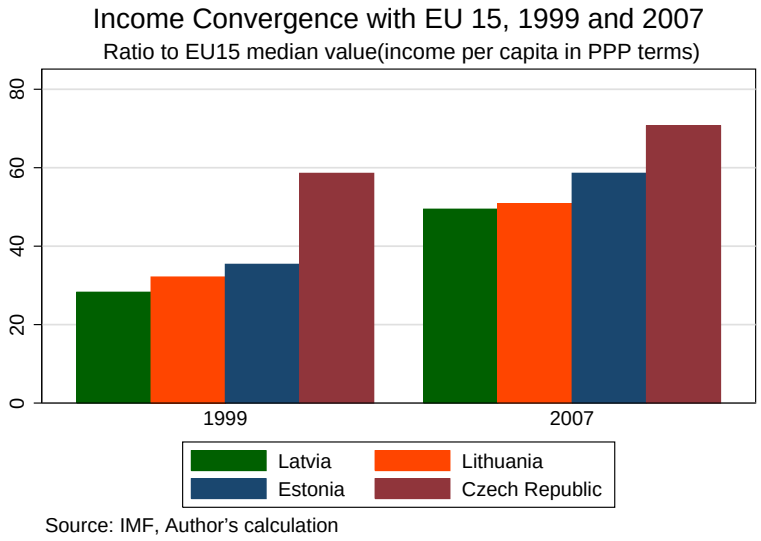
The thesis is structured as follows. The chapter 2 analyzes the current account of the countries. It examines the composition and source of the deficits and discusses their sustainability. The chapter 3 provides the empirical analysis of the effect of the exchange rate regime on the current account balance. There are specified three models which use different specifications and approaches in order to guarantee more comprehensive analysis. Chapter 4 is dedicated to the capital flows whose compositions and determinants are examined and which are put into the perspective of other Central and European countries. The Chapter 5 summarizes the results and gives the conclusion to the study.

2 Current account sustainability in Baltic Countries

2.1 Introduction

Baltic countries experienced between 2000 and 2007 exceptional real GDP growth which was higher than in most of the emerging European economies. The average annual growth was above 8 % and was among the highest in the EU. The result was significant convergence with the "old" European countries. Over the booming years, the countries gained more than 19 percentage points of GDP per capita relative to the EU's 15 median average (in the case of Latvia and Estonia, it was 21 and 23 percentage points respectively).

Figure 1:



Source: IMF, Author's calculation

The growth was driven primarily by strong domestic demand, which was the result of a rapid increase in real wages, optimistic future prospects and cheap credit. The domestic markets were unable to satisfy the rising demand, which became apparent on their current account deficits. The excessive external imbalances gave rise to the question whether they did not pass the sustainable level. Roubini, Wachtel (1997) suggested several criteria in assessing the sustainability of the current account deficit, which are broad enough to cover main macroeconomic aspects. The rest of the chapter analyzes the individual factors and provide an overview of macroeconomic conditions of Baltic countries.

2.2 Sources of current account deficit

The current account deficit (CAD) can be expressed as the difference between national savings and investments. This relationship implies that the current account deficit can be a result of either increased level of investments or lower saving rate. Emerging countries often provide large amount of investment opportunities which in the future may transform into higher economic growth. In theory CAD caused by high level of investments does not pose such a considerable risk for the economy. Regarding the lower savings, in principle there also should not be any serious problem. The lower savings particularly private reflects itself in higher consumption levels under the assumption there are not compensated with the increase in investments. Based on the intertemporal theories, the higher the level of consumption today implies lower consumption tomorrow. It is reasonable to assume that emerging countries can expect strong economic growth accompanied by higher income which implies higher future consumption, therefore it is possible to argue the households consuming more today only smooth the consumption across the time. (Ghosh,2006) Although the theory does not encounter any problem, the reality showed that low private savings can have negative effect on the sustainability of the CAD as was the case of the Mexico in 1994.(Roubini, Wachtel, 1997)

Regarding the Baltic countries, the savings were low in Latvia and Lithuania, whereas Estonia experienced relatively high levels. To some extent it could be justified by lower wealth of these countries as the theory suggests the savings are luxury goods, which increase with higher income. In the case of Baltic countries, the savings did not increase over time, however there was a rapid rise in real income, but on the contrary decreased the most significantly in Latvia. This underlines the fact that the growth was driven by strong domestic demand where the households also got engaged in the investing mainly in the non-tradables and real estate sector in particular. Roubini, Wachtel(1997) consider this source of CAD as the least sustainable. The boom of the real estate sector and non – tradable in general can have considerable impact on the economy as the rise in wages in this sector causes people to leave the tradable sector and the country becomes dependent on the imports. It was the biggest concern in Latvia, where the share of the employed in construction was

increasing significantly and placed the pressure on the other sectors.

2.3 Composition of the current account

The final balance of the current account is the result of three underlying components – balance on goods and services, net income and net transfers. The most discussed are usually the first two where the trade deficit is considered as the serious danger for a country. The excessive import over the export can signal the deterioration of the competitiveness, whose restoration can be often very painful for the economy particularly in the fixed regime conditions where there is no possibility of external devaluation.

The decomposition of the current account of the Baltic countries is in the Table 12 in appendix. The table shows that negative trade balance accounted for the largest share in the final imbalances on the current account. The worst deterioration occurred in 2006, when the deficit in terms of goods increased by 41% and 49% in Lithuania and Estonia, respectively, and by a striking 66% in Latvia. The ratio of the trade deficit over the export, which is the measure of the sustainability of these imbalances, reached in Latvia 93%. That is a level which signals very serious danger for the economy. Martin(2011) argues that it was primarily due to the loss of competitiveness caused by rising unit labour costs and the structure of the export which depended too much on low added value commodities. This argument can be supported by looking at the composition of Latvian export where the biggest part is represented by the export of wood articles (particularly sawn wood) followed by base metals. Both of those are rather raw products and thus both have low value added. These two together constitute 36% of the total export.[1] On the other hand, Aslund (2011) says in the case of Latvia the trade deficit was not a result of the rising unit labour costs, as the real effective exchange rate (REER)did not change significantly, but rather excessive capital inflows which crowded out export industries.

The current transfers are positive in all three countries, which is something that would be expected from the emerging countries and particularly in Lithuania the values are relatively high. A large portion of these transfers consist of

[1]Source:Statistical office of Latvia, data for 2007

the workers' remittances coming into the countries from abroad, which is the result of large emigration of the Baltic population. Between 2004 and 2007 the official net emigration was 43 000, 8 800 and 129 000 in Latvia, Estonia and Lithuania which represents 4%, 1% and 8% of the working population respectively.[2]The unofficial values are very likely even higher as many people who stay abroad do not change their permanent residence. The issue of the Baltic migration and its effect on the economy was studied intensively, see Barrel et al. (2007),Hazans, Phillips (2011) and others.

Net income also deserves particular interest. Although the literature usually does not pay much attention to this component in emerging countries, it could play a very important role. It can be seen from the table that the values are high particularly in Estonia, where it accounts for more than 40% of the total current account deficit (in 2008 it was nearly 60%). The income can come from either direct investments or portfolio investments, in the case of the Baltic countries, it was almost exclusively from the direct investments which comes hand in hand with the small level of portfolio capital inflows and poor development of financial markets which is discussed in the chapter 4.

2.4 Composition and size of the capital inflows

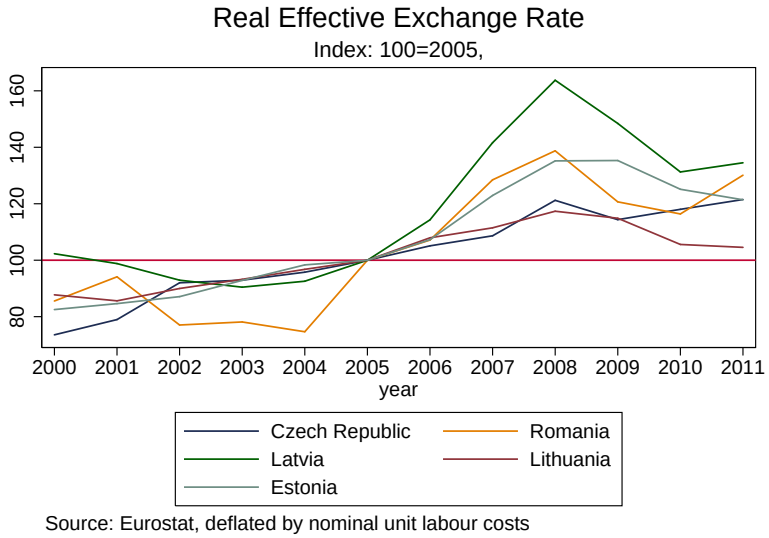
Another possible definition of CAD is that it equals capital inflows and the changes in international reserves of a country. The international reserves should be accumulated when an economy expands, so that they can be used when the economy experiences contraction, or when there is some shock to the economy. (Calvo,1998) In the case of the fixed exchange rate regimes, they are also often used in the interventions on the foreign exchange markets to prevent the pressures on the exchange rate of the currency. (IMF,2007) However, the international reserves usually play a rather minor role compared to the capital flows which implies that the country can run current account deficit only when it finds someone who is willing to borrow the money. The chapter 4 is dedicated to the discussion of capital flows so we leave this issue for now.

[2]Source:National statistical offices of the countries

2.5 Real effective exchange rate

The real effective exchange rate does not have a direct effect on the CAD, as in the case of other factors, but plays an important role because it is crucial for competitiveness of the economy. The rise in real exchange rate deteriorates the trade as the domestic products become relatively more expensive and the imported products relatively cheaper.

Figure 2:



Source: Eurostat, deflated by nominal unit labour costs

Figure 2 shows the development of real effective exchange rates of Baltic countries together with the Czech Republic and Romania. Aslund (2011) in his discussion of the causes of the Latvian deep slump in 2009 argues that the country did not face the loss of the competitiveness. The argument uses the fact that the real effective exchange rate appreciation was not very significant and reached lower levels than in the Czech Republic or Romania. This argument was based on the growth in REER between 1999 and 2008. This argument can be quite misleading for two reasons: First, the real effective exchange rate of the Czech Republic in 1999 was very low compared to the levels recorded in the beginning of the century, which are more relevant when we discuss the situation at the end of the decade. On the contrary, the level of the real effective exchange rate in Latvia at the end of the century was comparable with the level reached even in 2005. Second, the long time horizon used by Aslund subdues the extreme real appreciation during three years prior to the crisis. Only over the span of three years the Latvian REER appreciated by 63% which is far

above what other countries experienced.

Regarding the other two Baltic countries, the rise in the REER was also very high compared to the EU average, but the levels were more similar to other CEE countries which are more suitable as the benchmark for the analysis. The higher values of real exchange rate in the emerging European countries does not necessarily mean there was a loss of competitiveness but can indicate the convergence of the real incomes between new and old members of EU.

An important issue when discussing REER is by its definition inflation. Since the beginning of the century, the Baltic countries experienced very high inflation which poses a problem for two reasons: First, high inflation caused Baltic countries to be not eligible to enter euro area, as they did not fulfil Maastricht criteria, which state that a country's inflation rate cannot be above 1.5% of the average of three EU countries with the lowest inflation. Secondly, in general if a country works under fixed exchange rate regime it should keep the same price level as the anchor country. This relationship comes from the fact that inflation differentials between these countries cannot be adjusted by external depreciation of the currency as it is the case in the flexible regimes and therefore the result is REER appreciation and the loss of competitiveness as discussed above that is in the long –term unsustainable as purchasing –power-parity theory implies. The validity of this argument is limited by Balassa-Samuelsson effect. If the fixed exchange rate parity is set between the countries on the different development level, then the inflation differentials can be to some extent justified by the convergence of the real incomes between these countries. There is no doubt that is the case in the Baltics and the euro area countries. There still remains the question about the extent of this process.

Comparing the average inflation between 2005 and 2008 in Baltic countries and euro area the mismatch in their price levels is apparent. Latvia, Estonia and Lithuania experienced the inflation of 9.7%, 6.4% and 5.9 % respectively, whereas the inflation in euro area was only at 2.6%. It implies Latvian inflation exceeded the euro area average three times. Although the differentials seem to be excessive, Bulgaria, a country with fixed exchange rate regime, was in the similar position with the inflation of 8.3%.

These excessive levels of inflation led to the question to what extent it was

the result of overheated economy and how much can be explained by Balassa-Samuelsson effect. This issue was a subject in the study by Mihaljek, Klau (2009) who examined the Balassa-Samuelsson effect in five CEE countries. They found out that in the Baltic countries the effect was very strong and could explain as much as 31% and 21% of the inflation differentials vis-a-vis euro area in Estonia and Latvia respectively. Lithuania was omitted from the results because the estimates of the Balassa-Samuelsson effect were higher than the true differentials, which had its origin in the particularly strong growth in the productivity. On the contrary in Bulgaria, the estimate of the Balassa-Samelsson effect was very small. It was a result of the slow productivity growth of the country, which was lower than in the euro area.

2.6 Fiscal policies of Baltic countries

Roubini, Wachtel(1997) do not explicitly specify the fiscal policies in their set of criteria, although they discuss their importance regarding the national savings and investments. Despite that this issue is covered in this work, because of the possible effect on the current account. The relationship between fiscal policies and current account is often the subject of discussion, as they are mutually influential. Particularly twin deficits hypothesis which examines the link between budget deficits and current account deficits is relevant. Abbas et al. (2010) using sample of 124 countries over 1985-2007 and distinguishing between different country groups show that strengthening the fiscal balance by 1 percentage point of GDP improves the current account by 0.3 percentage points of GDP. Although the estimates vary in the different country groups they oscillate around this value. Similar study was conducted by Rahmann(2008) who as the sample used 59 countries both industrial and developing over the period of 1992 -2006 for European transition countries and 1971 -2006 for all other countries and found that 1-percetange point increase in fiscal balance decrease the current account deficit by 0.39 percentage point which is very close to the Abbas et al. conclusions. The results imply that the effect of the fiscal balance on the current account can be substantial. It is vital to look at the fiscal positions of the individual countries to see to what extent the fiscal policies could affect the current account.

Moreover, fiscal policies were important for the Baltics because the coun-

tries maintained fixed exchange rate regimes and since the 1990s have undergone financial liberalization including the international capital flows. Based on the impossible trinity theory they practically gave up the opportunity to coordinate their economies through the monetary policies, which emphasizes the role of the fiscal policies.

Unlike in other European countries, the government debt was not a concern for the Baltic countries. Before the crisis the EU average of debt to GDP was 44 % and although most of the countries that joined the EU after 2000 were below this level, the Baltic debt was the lowest amongst them. Estonian debt reached only 3.7% of GDP and Latvia and Lithuania had debt of 9% and 17%, respectively.[3]

Even though the countries were not in the direct risk of default, the fiscal policies were still very important because of their contribution to the business cycle. As Kaminsky(2004) shows, in general developing countries tend to pursue pro – cyclical and expansive policies, which was also the case in the Baltic countries. Over the period of 2005 - 2007 when the countries were booming and showed apparent signs of overheating, the governments did little to cool them down.

Table 1 and 2 summarizes government net borrowing, both actual and cyclically adjusted for all three countries. The actual data shows that countries had rather balanced budgets, with only slight deficits and Estonia ran even small surplus. However, it should be taken into account the speed of growth of these countries, which reached double digit numbers and even exceeded the forecasts. The higher than expected growth rate meant also higher than expected government revenues and thus lower deficits. The validity of this argument is confirmed by cyclically adjusted data. Table 2 shows that Lithuania and particularly Latvia ran significant deficits, even during the boom period. Although Estonian's budget was balanced (even cyclically adjusted) its fiscal policies were also strongly criticized. Estonia set a rule which stated that the country's budget must be balanced in nominal terms.(European Commission, 2012) The motivation for this framework is to constrain the policy makers from pro – cyclical measures and to ensure low level of indebtedness. However the cons of these rules come with the fact that the country can hardly react to the

[3]data for 2007

business cycles and its output tends to be more volatile and the government's expenditure are biased towards current expenditures.(Fatas,2005). It was exactly the case in Estonia where the output and private consumption were more volatile than in other European emerging economies (Brixiova et al., 2009).

Table 1: Government net lending/borrowing (% of GDP)

	2005	2006	2007	2008
Estonia	1.6	2.5	2.4	-2.9
Latvia	-0.4	-0.5	-0.4	-4.2
Lithuania	-0.5	-0.4	-1	-3.3

Source:European Comission (2012)

Table 2: Government net lending/borrowing cyclically adjusted(% of GDP)

	2005	2006	2007	2008
Estonia	0.1	-0.2	-1.1	-4.3
Latvia	-1.8	-3.3	-4.6	-6.4
Lithuania	-2.2	-2.8	-4.3	-5.8

Source:European Comission (2012)

If we use an alternative approach for measuring pro-cyclicality of fiscal policies suggested by Kaminsky (2004) we come to the same conclusion. Kaminsky specifies two main factors for measuring cyclicality - tax rates and government expenditures. It defines pro-cyclical policies as lower (higher) tax rates in good (bad) times and higher (lower) government expenditure in good (bad) times. Looking at three major taxes – corporate tax, income tax and indirect tax the main findings are as follows. First, none of the countries increased any of the tax rates during the boom period. On the contrary, tax rates were decreasing over time. Between 2002 and 2008 the corporate tax decreased in Latvia and Estonia, where it reached the same level of 15% before the crisis. In the case of Lithuania there was a decrease in income tax, specifically from 33% to 24%. (KPMG, 2007 and KPMG, 2013) These tax rates were low compared to the other EU countries and it was reflected in the total tax revenues. Before the crisis the highest tax revenue relative to GDP from Baltic countries had Estonia, where the revenue reached 31.5% of GDP and even this level was

amongst the smallest in the European Union, where the average was 40.6%.[4]. This fact is important because it implies that the government had little space to coordinate their tax policies after the downturn.

After the break-out of the crisis, all three countries responded with changes in tax rates, but the results were mixed. Any decrease in one tax rate was compensated by the increase in another. It holds true particularly for Estonia and Lithuania. In the case of Latvia, there hardly occurred any decrease. All in all, it can be concluded that in terms of tax rates, the countries followed pro-cyclical pattern.

The second indicator suggested by Kaminsky for measuring cyclicality of fiscal policies are government expenditures. Cyclically adjusted government expenditures show apparent rising trend in the case of Latvia and Lithuania where between 2003 and 2008 the expenditures increased from 33% to 40% of GDP and 34% to 43% of GDP respectively. In the case of Estonia the increase was the smallest, only 5 percentage points. During the downturn in 2009 and 2010, the government expenditures of the Baltic countries did not follow a single pattern. The results are most obvious in Latvia, where the ratio decreased in both years and in nominal terms the decline in the expenditures between 2008 and 2009 was as high as 17%. In the case of Lithuania and Estonia the data were more ambiguous. The expenditures increased in 2009, even though only slightly, but decreased quite sharply in 2010. However, it does not pose any considerable problem to draw a conclusion that the policies were rather pro – cyclical in all three countries as we did not record any significant increase in the expenditures in any of them.[5]

Before we end the discussion policies there are three remarks which should be noted regarding the fiscal policies of Baltic countries. First, although there is no doubt about the pro-cyclicality of the fiscal policies in Latvia it is necessary to say that Latvia was forced to implement these drastic budget expenditures cuts in order to receive the financial assistance from IMF.

Second, the data we used in our analysis was cyclically adjusted. The actual data indicates stable government expenditures during the boom time and a rapid increase in the downturn. Taking into account the volatility of

[4]data for 2007

[5]Data source: European Comission. 2012. Cyclical Adjustment of Budget Balances

GDP and the strong business cycle of the countries actual data are not very suitable for any inference.

Finally, we must look at the fiscal stance of Baltic countries before and after the crisis. The crisis had significant deteriorating effect on the debt position of the Baltic countries. The debt to GDP ratio increased by 22 and 25 percentage points in Lithuania and Latvia respectively. The rapid deterioration was not a result of the excessive spending but of the relative increase of debt stock to the GDP which contracted significantly during the crisis.

2.7 Sustainability of CAD

Although general consensus considers a current account deficit above 5% of GDP as a serious danger for the economy, (Edwards, 2002) it is not possible to use this level uniformly as the sustainability of the current account depends on many factors as was described above. Aristovnik (2006) estimates the sustainable level of CAD for Central and European countries and finds that the sustainable level is at 7.4%, 4% and 4.5% in Estonia, Latvia, Lithuania respectively. The actual values of their deficits exceeded this estimated sustainable levels significantly. Although Roubini and Wachtel(1997) argue that current account deficits in the transition countries can be the sign of structural changes in the economies, the levels reached in the case of Baltic countries were too high and indicated external imbalances of the economies. Argentina, which was severely criticized in 90s for running excessively large current account deficit, never exceeded the threshold of 5%.

The Baltics were not the only countries which ran current account deficits. This phenomenon was prevalent across the whole Central and Eastern European region, where particularly Bulgarian deficits were very high. The fact that both Bulgaria and the Baltic countries maintained fixed exchange regime leads to the question whether there is any relationship between the rigidity of the regime and CAD. This issue is examined in the next chapter so we will skip the discussion for now.

It is important not only what preceded the crisis but also what followed after its breakout. The current account adjustment experienced by Baltic

countries was extraordinary and can be classified as the sudden reversal. Over the course of two years the countries moved from the excessively high deficits to significant surpluses. Particularly Latvia stood out with the adjustment of 30 percentage points of GDP. IMF (2007) finds that the adjustment can be facilitated either via GDP contraction or real exchange rate depreciation, where the first option is usually associated with the countries using more rigid exchange rate regimes. This finding is in line with what Baltic countries experienced. The GDP of all three countries decreased substantially most extremely in Latvia where the contraction from the peak in the fourth quarter in 2007 to the trough in the third quarter of 2009 was 24.5% of GDP. It was most severe slump in GDP in the EU history and according to Weisbrot, Ray(2011) in the past century only United States in 1929 experienced worse downturn.

2.8 Labour market

Before we finish our discussion concerning the macroeconomic conditions of the Baltic countries, there should not be omitted the issue of the labour markets which are widely discussed in regards to the Baltic countries. (see e.g. Weisbrot, Ray (2011), Martin (2010), Kasjanovs, Kasjanova (2011) and others)

Labour market played very a important role both prior to crisis and also after its break out. Before the crisis, the tensions within the labour market put upward pressure on the wages and inflation. During the crisis, labour market was supposed to be an adjustment mechanism. Taking into account that Baltic countries maintained fixed exchange rate regime and they cannot depreciate their currency to fix the imbalances within their economies, the adjustment had to be achieved through internal devaluation at which the labour market mobility and flexibility is crucial.

All three countries started the century with relatively high unemployment which was among the highest in the EU. The unemployment rate in all three countries was above 13 % and in Lithuania it exceeded 16%. During these years unemployment decreased while employment participation rate increased. Job creation occurred quickly. This increase was thanks to the construction sector, where an increase in new jobs reflected rising demand for new buildings. In Latvia and Estonia the number of people employed in this sector between

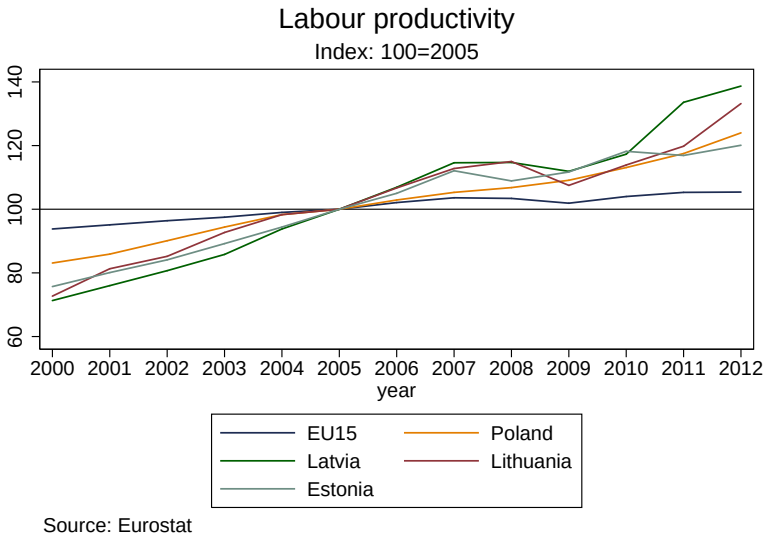
2002 and 2007 doubled. The most rapid development occurred in 2005 and 2006 when the unemployment decreased by more than 2 percentage points in all three countries in one year. The minimum was reached in 2007 when the unemployment was only 3.8% in Lithuania and 4.6% and 6.5% in Estonia and Latvia respectively. The particularly noticeable dynamics were strong on the labour market of Lithuania. Over the course of only 7 years, the country moved from one of the highest levels of unemployment in the EU to the nearly lowest. It is noteworthy to point out the important role played by emigration in the case of Lithuania.

The crisis dramatically changed the situation. Unemployment spiked rapidly, increasing by 10 percentage points in Latvia and 8 percentage points in Lithuania and Estonia. Peak unemployment occurred a year later already in the time of returned economic growth when the levels were 18.2%, 13.8% and 13.6% in Latvia, Estonia and Lithuania respectively. Since then the unemployment has been showing decreasing trend.

Labour productivity is an important indicator in regards to the labour market. Figure 3 shows the development of the labour productivity between 2000 and 2012 in the Baltics. For comparison purposes, Poland and EU15 average were added. As could be expected from the emerging countries, the growth in the Baltic countries significantly exceeded the EU15 average where the growth was sluggish, even compared to the developed countries. What more interesting is the Baltic increase was also higher than what other CEE countries experienced. This is more relevant because these countries are more suitable as a benchmark. The rapid growth had significant impact on the strength of Balassa-Samuelsson effect of these countries and on the convergence of the real incomes with old EU countries.

Higher productivity was accompanied by also higher labour costs where growth also exceeded the growth of comparatively similar countries of Central and Eastern Europem see Figure 4. The most rapid adjustment occurred in labour costs in the construction sector. High demand for new dwellings, large number of new jobs together with a significant level of migration led to the labour shortages and put upward pressures on the wages. The rise in the wages in construction was later transmitted to the higher wages in the whole economy. Between 2005 and 2008 average monthly salaries increased by 60%,

Figure 3:

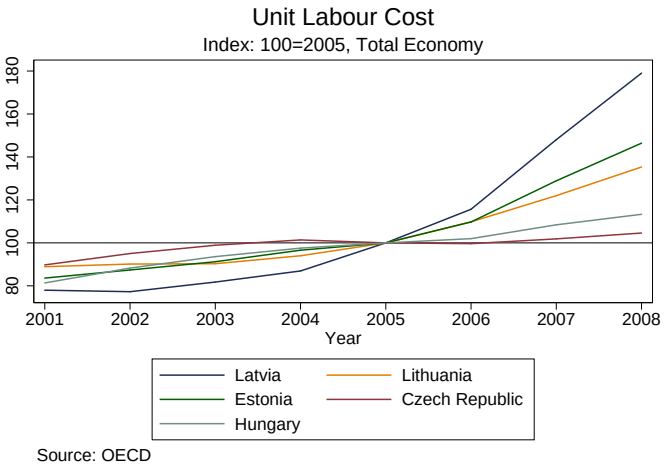


64% and 68% in Estonia, Latvia and Lithuania respectively.

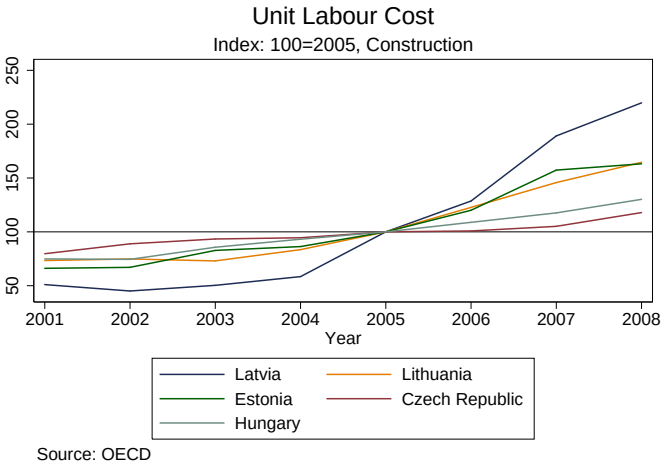
The outbreak of the crisis was a shock for the whole labour market, particularly the construction sector experienced hard landing. Between the two-year period of 2008 and 2010, the number of people employed in the construction sector was cut in half. In 2009 the wages decreased both in real and nominal terms and continued decreasing in 2010 in Latvia and Lithuania. In the case of Estonia, wages in nominal terms already started to grow by 2010, particularly because the adjustment had been the fastest - the most pronounced decrease in wages together with almost zero inflation. In Latvia and Estonia the real wages did not start to grow until 2011. Lithuania has not experienced positive growth yet, although the forecasts signal that it could be achieved in 2013. The growth in real wages indicates that the increase in competitiveness via low wages is exploited. Therefore, their rise is expected as they cannot stay lower than in other countries as all three countries participate in free labour mobility.

.

Figure 4:



Source: OECD



Source: OECD

3 Exchange rate and current account

3.1 Introduction

The previous chapter examined several criteria of current account sustainability in the Baltic countries and the conclusion was that the current account deficits of the Baltic countries were excessively high and exceeded the sustainable levels. The deficits were hardly comparable with other CEE countries only with the exception of Bulgaria. The fact that countries with fixed exchange rate regimes experienced the highest deficits leads to the question what was the role of the exchange rate regime. In Figure 5 the current account deficits of CEE countries are plotted against their exchange rate regimes which are classified by the level of rigidity on the scale of 1 to 4, where one is most rigid and four the least. The results suggest an existence of an empirical relationship between the rigidity of the regime and the current account deficit but this correlation it is not sufficient to make any serious conclusion on the effect of the exchange regime, because it is not controlled for other factors. A more rigorous analysis is conducted in section 3.3, but first follows short literature review.

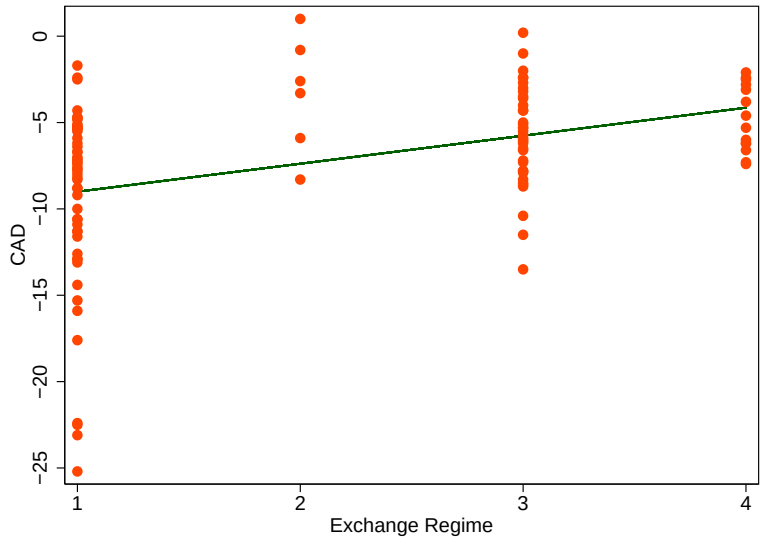


Figure 5: Source: Eurostat; Ilzetzki, I., Reinhart,C. & Rogoff,K.(2011)

3.2 Literature review

3.2.1 Exchange rate regime, growth and inflation

There are numerous studies that try to assess the functioning of the countries under different exchange rate regimes. They compare the performance of key macroeconomic variables including economic growth, inflation, capital flow or credit expansion. The most discussed is the relationship of the effect of the exchange rate regime on the inflation and growth. The proponents of fixed exchange rate regime argue that rigid exchange rate regimes tend to promote the stability of the economy which results in higher growth and lower inflation particularly in small open economies.

Regarding the growth, Rogoff et al.(2003) provided empirical study using the large sample of countries over the period 1970-1990 which brought mixed results. When the whole sample was used, no relationship was found and only after dividing the countries into the groups based on their level of development the results proved that fixed exchange regime has positive effect in developing countries and negative in developed countries.[6] The effect of the exchange regime on growth was studied also by Dubas, Lee, Mark (2005) who used sample of 180 countries over the period of 1960-2002 but their results were rather different from the previous study. In a full sample positive relationship between rigidity and growth was found and no effect was proved for industrialized countries. With regard to developing countries the results concur with the previous work.

These two studies served as the examples of the variability of results in the recent literature concerning the effect of the exchange regime on the growth. Tavlas et al. (2008) provided comprehensive summary of this studies and found that a clearer picture is obtained after dividing the countries into the groups based on their development and the consensus tends to be achieved in the case of developing countries where the pegged regimes seems to outperform the flexible counterparts.

Regarding the inflation, studies tend to be less contradictory. Ghosh (2002) used large dataset of IMF member states and showed that countries with fixed exchange rate regimes have lower inflation and similar results were

[6]Rogoff clasifies Baltic countries as developing countries

also provided by Rogoff(2003) or Alfaro (2004). After dividing the countries based on their development the results hold for developing countries but revert in advanced economies in both Ghosh (2002) and Rogoff (2003)

Particularly important for our discussion is the study is of De Grauwe, Schnabl (2005) who examine the relationship between inflation, growth and exchange rate regime in CEE countries over the period of 1994 and 2004. Their main findings were that the level of inflation is lower and the economic growth tends to be stronger in countries with less flexible exchange regimes.

3.2.2 Exchange rate and CAD

Although the literature covering the effect of the exchange regime on the growth and inflation is extensive, it is relatively silent when it comes to the current account balance. An exception is the work of Chin, Wei(2008) which studies the relationship between the flexibility of the exchange regimes and the speed of the current account adjustment toward its mean value. The research was conducted on a sample of 170 countries over the 1971 – 2005 period. Although they used various model specifications and distinguished between different groups of countries they were not able to find any evidence that more flexible regimes facilitate faster current account adjustment. This work was followed by the Herrmann's study (2009) who used in his sample 11 CEE countries over the 1994 -2007 period and compared to the previous work of Chin, Wei(2008) Herrmann used different measure for capturing the rigidity of the exchange regimes. Rather than standard- fixed, intermediate and floating classification Herrmann worked with the z-score index computed for the individual countries. He found that flexible regimes are accompanied by significantly faster current account adjustments.

3.3 Exchange rate and CAD – empirical analysis

This section uses econometric analysis to examine the effect of the exchange regime on the current account. It contains three models which use different approaches to capture the exchange rate regime. The first model involves one discrete variable to represent the exchange rate regime. The rise in its values indicates higher flexibility and therefore a positive coefficient is expected. The

other two models use dummy variables for each exchange rate regime except for one in order to avoid the dummy variable trap. The coefficients can be interpreted as the difference of the given regime and the freely floaters and therefore negative values are expected. The latter two models differ in the econometric approach which was used for the estimation. In order to obtain meaningful results about the effect of the exchange regime, it is necessary to control also for other variables which affects the current account. The variables used in the models are as follows.

3.4 Explanatory variables

- GDP growth

  The GDP growth reflects higher economic activity which positively affects the confidence of households about the future and improves their long term prospects. It is then transmitted in a strong demand which leads to the increased import. For this reason a negative coefficient can be expected. The used data contains annual observations on changes in the real GDP in the sampled countries.

- Real effective exchange rate

  A rise in real exchange rate indicates a loss of the country's price competitiveness relative to its counterparts. The export becomes more expensive, whereas import is cheaper which results in the negative impact on the development of the current account balance and therefore again negative coefficient is assumed. The variable is in the model captured by the annual change in the real effective exchange rate which is computed as an average of the monthly changes over the course of the corresponding year. The data implemented were sourced from Bank for International Settlements.

- Exchange rate regime

  Although the theory suggests the current account imbalances should be determined by the real factors, particularly real exchange rate, in reality,

given the price stickiness the nominal fluctuations of the exchange rate might have an effect on the cross - border financial flows. The stability in the exchange rate can also eliminate the currency risk hence stimulate the cross country trade. Moreover, if the fixed regime is credible it guarantees stable conditions in the long-term which provides incentives to engage in the international trade.

The used measure for exchange regime was the IMF classification which captures the rigidity on the scale of 1 to 6 where 1 stands for the most rigid and 6 the least. The regimes are classified as described in the section 7.2. As mentioned above the first model uses only one variable, whereas the other two models involve dummy variables for each class. None of the countries in our sample worked under freely falling or dual market regime which are classified as five and six respectively, hence only three dummy variables were used.

- Investments

The current account balance can be expressed as the difference between national investments and savings hence there should be positive correlation between level of the investments and current account deficit and therefore negative coefficient is expected. In order to capture this variable the annual level of investments relative to GDP was used.

3.5 Data and Methodology

Our sample contains eleven CEE countries, namely- Czech Republic, Slovakia, Slovenia, Bulgaria, Romania, Croatia, Poland, Hungary and the Baltic countries. There are used annual data over the period of 1999 – 2008. The sources of the data were databases of International Monetary fund, Eurostat and Bank for International Settlement. For the exchange rate regime, there was used the Reinhart and Rogoff exchange rate classification which is standard in the recent exchange rate regime literature.

The first two models use pooled –OLS method, whereas the last model

control for the region - specific factors. The dataset is not large enough to control for the fixed effect in each country, hence the countries were divided into the three groups – Baltic countries, Central Europe and Eastern Europe. The Central Europe group contains the Czech Republic, Slovakia, Poland, Hungary and Slovenia and Eastern Europe group consists of Romania and Bulgaria and Croatia. The data contains strong heteroskedasticity, and for this reason the estimates were obtained using heteroskedasticity robust standard errors

3.6 Results

3.6.1 Model 1

The column 2 of Table 3 summarizes the results of the first model. All coefficients have expected sign, although only the variables representing the exchange rate regime and investments are statistically significant. The results suggest that 1-point increase in the exchange rate classification index decreases the level of the current account deficit by about 1 percentage point. It implies that the exchange regime can explain as much as 3 percentage points in the difference between current account deficits of the Baltic countries and Poland or other countries which ran under independent floating, hence it is not possible to consider the estimated effect as economically negligible.

3.6.2 Model 2

The results are summarized in Table 3 column 3. The coefficients of the dummy variables can be interpreted as the difference between the level of current account deficit in countries with independently floating regime and the countries with the regime represented by the corresponding dummy variable. The only two statistically significant variables are investments and fixed exchange rate regime. The other exchange regime variables are not significant and their coefficients lack any economic justification. On the other hand, the estimate of the fixed exchange regime is highly significant and its coefficient is -2.35. Although the effect of the fixed exchange regime is smaller than what the first model implied, the result still owns economic weight.

3.6.3 Model 3

The estimates of the model 1 and 2 should be interpreted with caution. The used pooled – OLS method does not take into account the specific effects of

the individual countries, and therefore it is reasonable to assume that parts of this country specific features are contained in the exchange regime variables. To fix this problem the dummy variables for each region are added into the last model so that they at least partially solve this problem.[7] The results are shown in column 3 of Table 3. The region - specific variables created noise in the model. Although the variables for the region - specific effects are significant, they are not the subjects of our interest. The results for exchange regime variables are more important. Unlike in the previous model, the effect of the fixed regime is almost negligible. Its insignificance is influenced by high correlation with the region - specific dummy variables. Regarding the other two exchange regimes, they seem to have strong impact on the current account balance and the estimates are also statistically significant. The model suggests that the countries with fixed exchange rate regimes have about the same current account deficit as the countries with flexible regimes, whereas the intermediate regimes countries tend to experienced substantially lower deficits. The proposed results were not only able to prove our hypothesis but also lack any economic justification.

3.6.4 Conclusion

In summary, the first two models suggest a strong effect of the fixed exchange regime on the current account deficit which proves our hypothesis. On the contrary, if it is controlled for the specificities of the individual regions the results change substantially. Only investments remained significant across all three models and also the estimated coefficients stayed close together which underlines its strong effect in regards to the current account.

One note regarding the possible measures which could improve the results. First, the use of z-score suggested by Herman (2009) rather than the strict IMF classification as the measure of the rigidity of the regimes could not only partially eliminate the correlation with the country effect variables but also bring more variability in the data. Secondly, quarterly data rather than annual data would provide more observations which would make the inference stronger.

[7]The data does not contain enough observations to control for the fixed effects of all countries, therefore it is not proper implementation of the fixed - effect method

Dependent variable: Current account balance			
Variable	Model 1	Model 2	Model 3
GDP growth	-0.078	-0.0698	0.004
	(0.113)	(0.117)	(0.104)
REER	-0.012	-0.0172	-0.003
	(0.063)	(0.062)	(0.047)
Investments	-0.552***	-0.549***	-0.604***
	(0.074)	(0.079)	(0.0826)
Exchange regime	1.062***	-	-
	(0.259)		
Fixed	-	-2.352***	-0.198
		(0.821)	(1.073)
Intermediate	-	1.757	3.610 ***
		(1.631)	(1.150)
Float	-	0.538	2.355**
		(0.859)	(1.012)
East	-	-	-3.881***
			(0.836)
Baltic	-	-	-2.279**
			(1.006)
R-squared	0.499	0.531	0.632
Observations	110	110	110

Note: Values in parentheses are standard errors,
*** significant at 1 percent, ** significant at 5 percent

Table 3: Regression results

4 Capital Inflows

4.1 Intoduction

The capital inflows are very important for the growth of a country, because they provide finances for the investments and strengthen the financial integration within the international markets. In emerging markets, the capital inflows can be a signal of improving macroeconomic policy framework as the confidence of the international investors in these countries rises. On the other hand, large capital inflows bring along significant pressures on the key economic variables like inflation, real exchange rate and the aforementioned current account.

The large capital inflows into emerging markets started after 2002, when the confidence of investors recovered after the financial turmoil at the end of 90s (Asian crisis, Russian crisis, Argentina crisis). This new period followed the capital flow boom of the mid 90s when large amounts of capital surged

in Asian and Latin American markets. The current period brought also high inflows into emerging European countries where reached historical levels. The net capital inflows[8] of individual CEE countries are in Table 4. For comparison purposes, Table 5 contains capital flows into emerging countries during 90s.

There are several main findings coming directly from the table. First, the intensity of private capital flows into CEE countries was exceptional and significantly exceeded the level experienced by most Asian and Latin American countries during 90s. Only three countries, Malaysia, Thailand and Peru were able to reach the threshold of 10% of GDP per year which was achieved by most of the European emerging countries.

Table 4: Net Private Capital Inflow
(in % of GDP)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Bulgaria	9.3	7.1	11.6	9.2	14.4	15.6	29.1	41.4	32.8
Czech Republic	6.6	7.2	13.8	5.7	6.2	3.8	2.6	3.4	2.2
Estonia	7.3	4.4	10.3	12.9	12.9	11.8	17.9	14.9	12.3
Latvia	5.5	11.0	7.1	8.7	14.8	17.6	29.9	23.4	6.4
Lithuania	7.1	6.8	7.5	9.0	6.8	9.4	15.1	15.2	9.2
Hungary	9.7	6.4	3.2	8.1	10.6	12.7	8.6	4.4	9.0
Poland	6.8	3.4	4.7	5.0	4.1	6.4	4.7	8.2	9.1
Slovenia	3.4	5.7	8.4	1.8	2.0	4.5	-0.2	-2.1	5.6
Slovakia	5.8	7.8	20.5	8.9	15.7	12.8	2.7	10.3	6.8

Source:Eurostat, Author's calculation

Table 5: Net Private Capital Inflow
(in % of GDP)

	1988	1989	1990	1991	1992	1993	1994	1995
Indonesia			2.5	1.9	1.3	0.2	1.1	3.6
Korea				2.6	2.5	0.6	2.4	3.5
Malaysia		2.9	5.7	11.1	15.3	23.2	1.2	6.6
Philippines		2.1	3.9	4.4	2.3	4.4	7.9	5.2
Thailand	7.4	10.4	12.3	12.3	8.6	7.7	8.3	12.1
Chile		3.3	8.6	3.1	7.4	6.3	7.7	4.0
Mexico		2.6	2.2	7.5	7.6	8.5	3.3	

Source: World Bank(1997,pp. 175,table 4.1)

[8]In this chapter by the capital flows we refer to the private capital flows

Secondly, the current period lasted for a longer time horizon than was in the case of 90s boom. In the 90s, the intensive inflows generally did not last longer than 4 years, whereas CEE countries were net recipients of capital in eight successive years. The exception in this trend was Slovenia where the levels of capital inflows were relatively low for the whole period. Thirdly, the rapid boom was followed by sharp reversal. The break out of the crisis caused that the capital inflows suddenly to dry up in most of the countries, most severely in those which reaped the biggest share of inflows in the boom time. The most apparent finding which comes from the table is the level of capital flows in Baltic countries and Bulgaria. Malaysia which attracted the highest level of capital inflow during Asian boom reached in its peak year net inflow of 23% of GDP. This level was exceeded significantly by both Bulgaria and Latvia. This underlines the fact that this period was exceptional and historically unparallel.

It leads to the question what were the determinants of such a intense capital flows particularly in the Baltic countries, respectively in Bulgaria.

4.2 Determinants of the capital flows

There is extensive literature which focuses on explaining the determinants of capital flows. The literature suggests a large number of possible factors and usually distinguishes between so-called "push" and "pull" factors. The push factor group refers to external factors, which are out of control of the capital hosting country e.g. international interest rates. The second group contains factors which are specific to each individual country and are related to the financial and political environment of the particular country.

Although the prime interest is in explaining the determinants of the Baltic flows, there still should be a concern about the push factors. In general, the fact that the countries are exposed to the same factors does not necessarily mean that countries react to each of them with the same strength and intensity.

This issue was subject of study by Jevcak (2010), who examined the reactions of CEE countries to these common factors. Using factor analysis he finds that the countries react to a great extent in the similar way with the exceptions of the Czech Republic and Slovakia where the intensity of reactions

tend to be relatively lower. For this reason we will turn our attention to the specific or "pull" factors.

4.3 Exchange rate regime and capital flows

The most apparent link between the Baltic countries and Bulgaria is the exchange rate regime. In principle, the countries with more rigid exchange rate regimes should attract more foreign investments because the fixed regime eliminates the fluctuations between the currencies and if they are credible, also the currency risk.

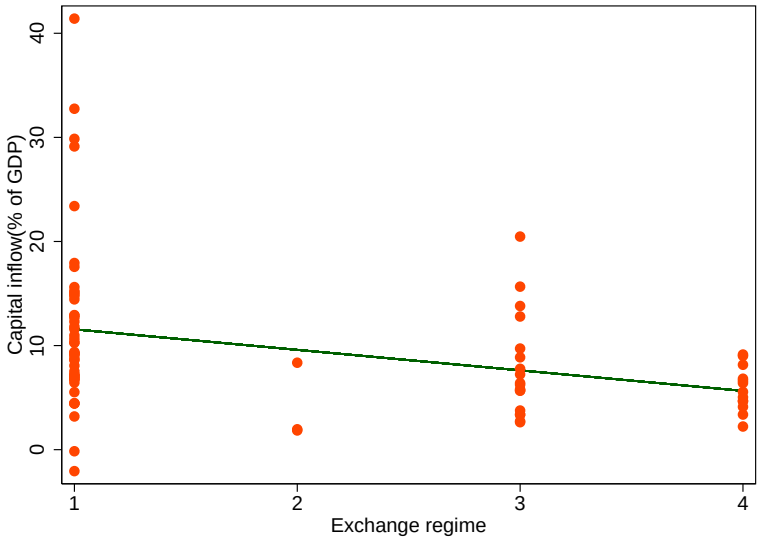


Figure 6: Source:Eurostat, Ilzetzki, I., Reinhart,C. & Rogoff,K.(2011), Author's calculation

In Figure 6, capital inflows of the CEE countries are plotted against their exchange rate regimes. The results suggest a positive relationship between rigidity of regimes and capital flows. The countries with fixed exchange rate regimes experience higher levels of capital inflows than countries which work under flexible regimes. The recent literature is not able to prove this hypothesis. Magud (2012), who studied the link between the exchange rate regimes and capital flows using in his sample also CEE countries, after controlling for other variables did not find that the exchange regimes would have the effect on the level of capital flows. This finding is in line with Jevcak (2010) who also did not find strong role of the exchange regime.

Although the empirical studies were not able to prove the relationship, it is not correct to argue that the exchange regimes did not affect the capital flows at all. Probably it is more precise to asay that the effect of the exchange rate regime was marginal compared to the other factors which the countries were exposed to.

4.4 Country development

Often discussed is the relationship between country's development and the capital flows. According to the neoclassical theory less developed countries should attract more investments as they promise higher marginal returns. In reality this relationship does not seem to work. Empirically this phenomenon was studied for example by Gourinchas, Jeanne (2011). This problem, known as Lucas paradox, was subject of many studies which have tried to provide the explanation. Particularly rigorous work was conducted by Papaioannou (2008) who uses data for the period of 1984 and 2002 for large sample of countries and his main finding is that main driving force seems to be poor institutional framework which does not guarantee the protection of rights.

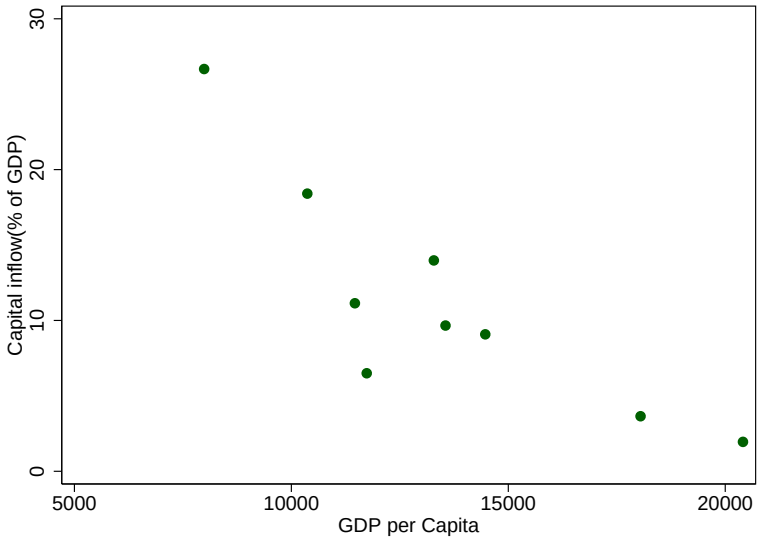


Figure 7: Source: IMF, Eurostat, Author's calculation

Based on what has been just outlined, it should be expected that relatively richer countries attract higher levels of capital flows. In Figure 7, net private

capital flows are plotted against GDP based on PPP per capita[9] which serves as the proxy for the wealth of the individual countries. The results suggest negative relationship between the wealth and capital flows. The capital flows tend to increase with the lower levels of GDP per capita which goes against the existing literature. Although this evidence is not sufficient to make any serious conclusions that the level of development had an impact on the capital flows, it is possible to discuss why in the case of CEE countries this relationship could hold.

As written above the main driving force, which seems to limit the capital flows into the less developed countries, is the poor institutional framework. Although the countries after the collapse of the Soviet Union started on different wealth levels, their institutional framework was similar. Accession of the countries into EU indicated that certain levels of institutional development were achieved in all countries therefore the investors could have incentives to invest primarily in the less developed countries as not only higher returns but also higher demand for the capital could be expected. This hypothesis cannot be validated because no empirical study has been conducted yet.

4.5 Foreign trade and financial integration of the country

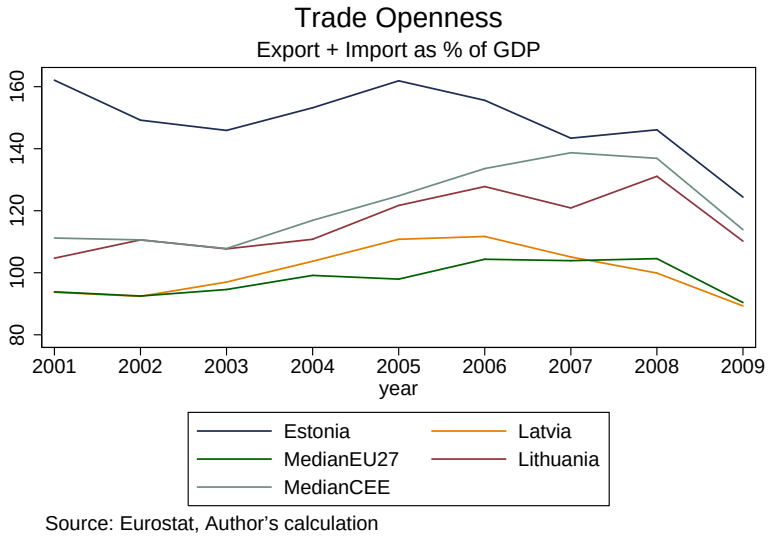
The extent to which a country is open to foreign trade and integrated in the international markets is without doubt country specific and can differ significantly across countries. The reason why the country openness and financial integration should have an effect on the capital flows deserves some explanation. The relationship between foreign trade and capital flows tends to be rather simple. The higher level of flows of goods and services must be associated with higher level of capital flows which facilitate the transactions. The relationship between financial integration and capital flows is more subtle. A possible explanation is that previous experience provides the lenders with the knowledge on investment conditions in a borrowing country and so they have more incentives to get involved in lending activities repeatedly. The relationship between foreign trade, financial integration and capital flows was empirically proved by Magud

[9]GDP per capita is for year 2004, Source: IMF, values of capital inflows are the averages over the 2004-2008 period

(2012), who had in his sample 26 emerging markets in the different time periods. Possible case study how trade openness can affect the capital flows could be Argentina's experience in 90s (Calvo, 1998).

Figure 8 and 9 show the financial integration and trade openess of the Baltic countries.

Figure 8:

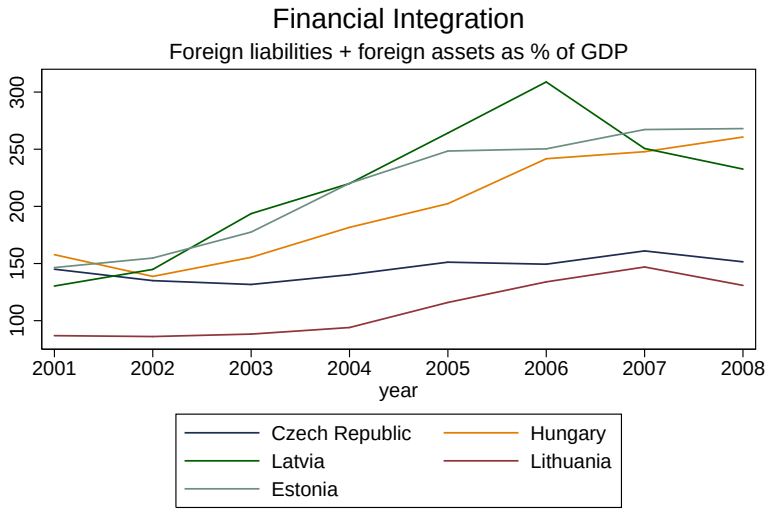


Source: Eurostat, Author's calculation

The measure of trade openness is the level of exports and imports to GDP, which is standard and used also by Magud. As the proxy for financial integration Magud used index suggested by Chinn, Ito which is based on not publicly available data. For this reason the measure of financial integration is the ratio of external assets and liabilities relatively to GDP for each country in given year.

It comes directly from Figure 8 that Estonia is an extremely open country relative to both the other European emerging countries and European countries in general. It exceeds the average significantly particularly in the earlier years. Later on, the difference between Estonia and other CEE countries narrowed which resulted from the growing openness of other countries. The other two Baltic countries do not show any exceptional values and are even below the CEE average. Lithuania to a great extent follows the development of other CEE countries, whereas Latvia's economy is compared to the other countries rather closed.

Figure 9:



Source: National banks of the countries, Author's calculation

Regarding the financial integration, Latvia and Estonia started the century already with relatively high external positions, which increased sharply during the boom period exceeding the other CEE countries although still relatively small compared to the old European countries. On the contrary, Lithuania started with very low external position and its growth was not particularly strong.

All in all, the results are rather mixed. With the exception of Estonia, the Baltics significantly exceeded the rest of the CEE countries neither in their level of openness nor financial integration.

4.6 The decomposition of the capital flows

The extent of the capital flows is not the only determining factor but also the composition matters. The capital flows are divided into four groups – foreign direct investments(FDI), portfolio investments, financial derivatives and "others". Prevalent opinion is that FDI are the most stable as they mostly consist of the investments into equity which is hardly reversible in the short - term, whereas portfolio investments constitute considerable risk for the country, because of their instability. Compared to the direct investments the portfolio investments can easily change the direction and create great tensions in the

economies. The Asian experience at the end of the last century can serve as the evidence. Large shares of the flows were represented by this "hot money" and its sudden reversal had crippling effect on the economies. (Chowdhury, 1999) The "other" component of the capital flows consists of international bank loans and deposits. Compared to the portfolio investments, the loans have given maturities, therefore the investors cannot withdrawn them on the demand, however they still pose a risk for the stability of the economies especially if maturity and currency mismatches are present. If a bank takes short term loans on the international markets but provides long – term loans instead, the change in the economical environment and sudden lack of liquidity on the markets can have devastating effect on the bank's balance sheets (it was the case of one major bank in Latvia).

The regional decomposition of capital flows for the period of 1985 – 2006 was carried out by IMF(2007). Crucial difference between the current and 90s period is in the role of portfolio investments. The previous period was marked by high level of portfolio investments mainly in Latin America and Asia which resulted in great turbulences in their economies. On the other hand, the current period recorded only marginal levels of the portfolio investments and this feature tends to be prevalent across all regions. The net portfolio investments reached even negative values meaning that more capital in the form of portfolio investments went abroad than came into the emerging countries.

Although there are numerous factors in the case of the Baltic countries and CEE countries in general, these small levels of portfolio investments could at least partially be explained by poorly developed financial markets. Market capitalization of stock exchange to GDP, one indicator of development of the financial markets, is across all European emerging countries low compared to the old Europe and the Baltic countries stand out. In 2007 market capitalisation of listed companies was 10.8%, 27.4% and 25.9% of GDP in Latvia, Lithuania, Estonia respectively, whereas in Germany it was 63.3% [10]. It is probably a result of insufficiently developed institutional framework, which does not provide the guarantee to the shareholders that their rights will be met, which in turn has negative effect on their development. (Stulz, 2006).

[10]Source: World Bank

Figure 10 shows that the large amount of the flows in CEE countries[11] was in the form of FDI. This holds particularly for the beginning of the century when FDI exceeded significantly the other two capital forms. Later on, the share of the FDI on the total declined sharply, even though relatively to GDP they decreased only slightly. It was a result of rapid increase in other flows in most of the countries. The Czech Republic broke this trend as the other flows sustained low levels for the whole period. It was a consequence of the ample liquidity held by Czech banks which had therefore little incentives to engage in the international borrowing.

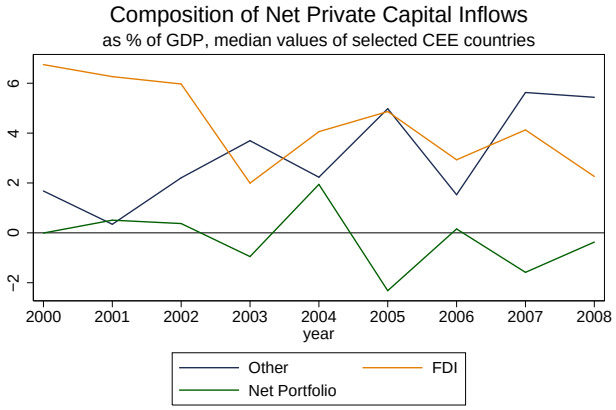
Although the Baltic countries had similar level of FDI relatively to GDP, their share on the total was shadowed by the massive inflows of other capital. The other capital inflows sky-rocketed particularly after the year 2004, that is after the countries joined EU and became members of free capital mobility area. It is questionable to what extent it was the result of the accession as the Baltics entered the EU with other CEE countries where the capital flows did not experience such a steep path.

The decomposition of capital inflows of Baltic countries indicates that the level of FDI in Baltic countries was comparable with the rest of the CEE countries and similar conclusion can be drawn in regards to portfolio investments. It is the excessive level of other flows which distinguishes Baltic countries from the rest of the CEE countries.

.

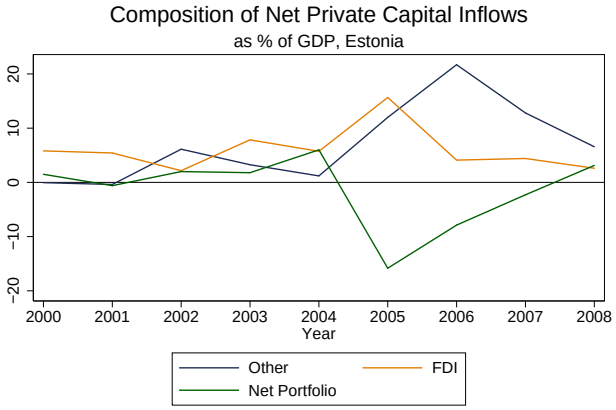
[11]The sample contains:Bulgaria, Czech Republic, Hungary, Poland, Slovakia, Slovenia, Baltic countries are not included

Figure 10:



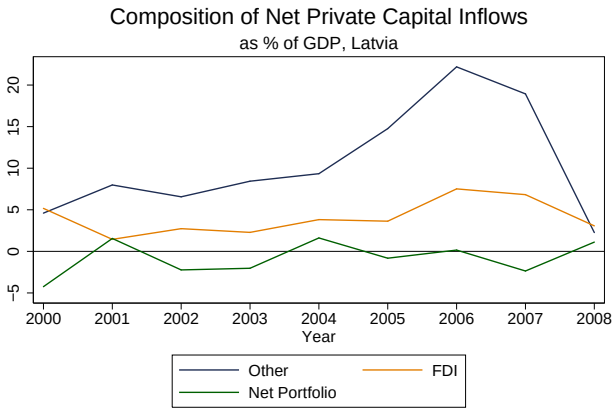
Source: Eurostat, Author's calculation

Figure 11:



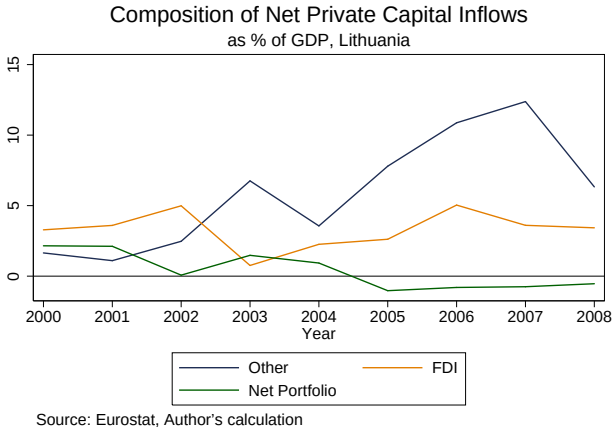
Source: Eurostat, Author's calculation

Figure 12:



Source: Eurostat, Author's calculation

Figure 13:



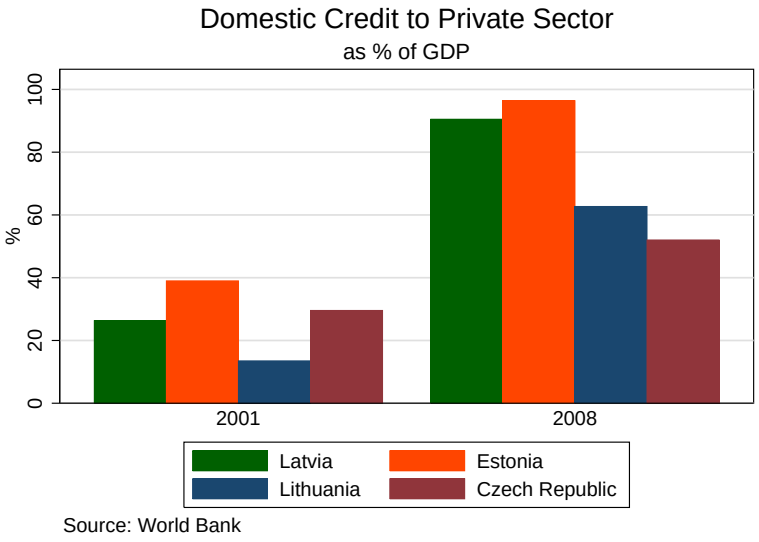
Source: Eurostat, Author's calculation

4.7 Credit Boom in the Baltic countries

The other component of capital inflow consists primarily of the deposits and international loans. For this reason, it is worthwhile to examine the banking sectors of the countries. The Baltic countries over the booming years experienced rapid increase in the domestic credit which was a consequence of the ongoing housing boom. The housing boom was a result of both good economic enviroment and low levels of housing conditions. Lamine (2009) analyzed the housing stock in Estonia and found out that even in 2006 the dwellings constructed before 1970 accounted for more than 50% of the total and only 6% of the housing stock was less than 15 years of age. Although there is no similar analysis for the other two countries, given the similar background and the fact that Estonia was the wealthiest of these three countries, measured by GDP per capita, it is reasonable to assume that the situation in the other two countries was rather similar or even worse. The strong demand for new dwellings was rather a outcome of the underlying conditions and it soon became reflected in the levels of the domestic indebtedness.

Although the countries started the century with very low credit levels, the households took on themselves large amounts of the loans during the boom period. The ratio of credit over GDP sky – rocketed and only within a few years increased by about 60 percentage points in all three countries. The consequence was that the Baltic countries together with Bulgaria had the highest level of indebtedness among all CEE countries.(Brixiova, 2010)

Figure 14:

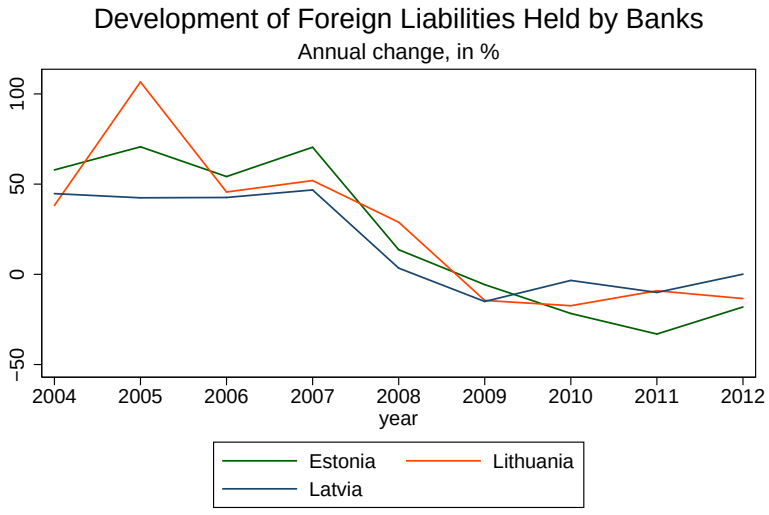


Magud (2012) who used in his sample also CEE countries found positive relationship between the rigidity of the exchange regimes and the credit level. Possible explanation could be that the fixed exchange rate regimes provide easier access to the international capital as suggested by Montiel (2001).

The massive borrowing activity of households was not accompanied by proportional increase in the savings. The national savings of the Baltic countries was relatively low for the whole period in Latvia and Lithuania, and it did not change even after the rapid increase in the wages as the theory would imply. The domestic deposits became soon insufficient in funding the extensive loans which forced the Baltic banks to turn to the external financing. The heavy flows of foreign capital started coming into the countries and resulted in high accumulation of foreign liabilities by banks, see Figure 15. The foreign liabilities rose very sharply between 2003 and 2007, in 2008 there occurred slowdown followed by a reversal in the next years.

There is one specific feature of the Baltic banking system which was very important in regards to the cross- borders capital flows. The large share of financial assets of these countries is held by banks which have foreign owners, particularly from Nordic countries. In Estonia, four largest foreign-owned banks held 95% of the total assets, a very similar situation was in Lithuania. The only exception was Latvia where one domestically owned bank prior to

Figure 15:



Source: National banks of the countries, Author's calculation

crisis held 14% of the total assets but still more than 50% of the market share accounted for foreign – owned banks.[12]

The foreign ownership of Baltic banks had one important implication on their borrowing activities. In order to obtain capital, banks were not forced to go on the international markets but easily obtained the liquidity from their parent banks. Moreover, it also brought stability to the banking systems as the banks were not susceptible to changes on the global markets. The importance of what has just been outlined is underlined by the experience of the only large domestically-owned bank in Latvia. This bank after the break out of the crisis and sudden lack of liquidity on the international markets was not able to meet its liabilities and had to be nationalized, which resulted in other tension in already stressed Latvian economy. (Aslund, 2011)

The source of financing did not change the fact that the extent of foreign liabilities taken by Baltic banks was excessive and the banks were exposed to the significant funding vulnerabilities. Figure 16 shows the loans to deposit ratio for the Baltic countries and for comparison purposes the Czech Republic is added. These two, Baltic countries and the Czech Republic, represent rather extreme cases. The EU 27 average was before the crisis about 125% [13]therefore

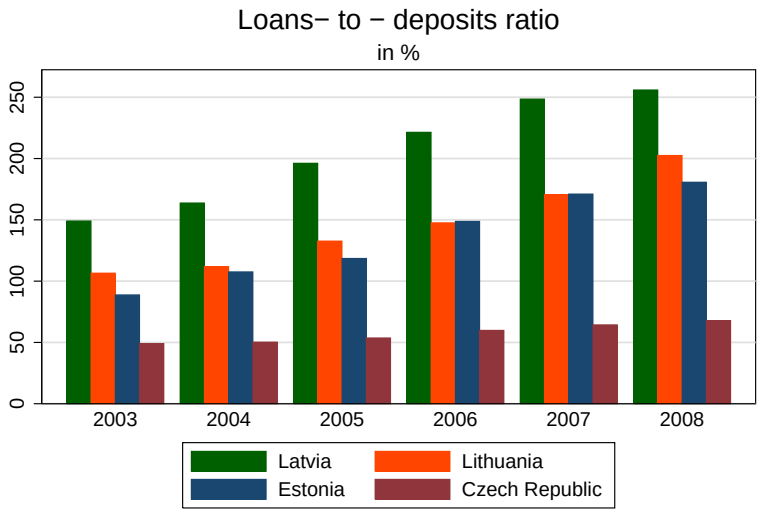
[12]Source: National Bank of Estonia, National Bank of Lithuania, Association of Latvian Commercial Banks, data for 2007

[13]Source:European Banking Federation

it is obvious that the Baltic countries were well above and the Czech Republic well below this level.

The literature specifies many factors which influence the capital inflows where is again distinguished between "pul" and "push" factors. Our effort to construct model inspired by Jeanneau, Micu (2002) did not bring the expected results. The data had signs of low variability and high correlation and therefore were not suitable for the inference. It seems that the main driving force for attracting the capital flows could be the high demand for the credit. Baltic banks in an effort to satisfy the demand for loans attracted the large amount of cross-border capital. It is in contrast with the Czech Republic where the bank had excessive liquidity and therefore had low incentives to engage in international borrowing. This fact corresponds with very low levels of other capital flows coming into the Czech Republic on the one hand and high flows into the Baltics on the other.

Figure 16:



Source: National banks of the countries, Author's calculation

5 Conclusion

This work analyzed the external imbalances of the Baltic countries with the focus on the current accounts and capital flows. Baltic countries experienced very high current account deficits and this study examined their source, compositions and discussed effects of the real effective exchange rate or the fiscal policies and at the end also evaluated their sustainability. Because the capital flows are particularly important for the current accounts as they finance the deficits they were discussed in detail and put into perspective of other Central and Eastern European countries. The section 3 continued with the empirical study of the effect of the exchange rate regime on the current account balance. There were constructed three models which used different specifications and methods in order to provide better analysis of the role of the exchange rate regime.

We found that the current account deficits of Baltic countries were not sustainable not only because of their sizes but also for their structure. They were results of both decreased savings and increased investments which surged particularly in the real estates. The export of the countries lagged significantly behind the import and the countries' trade deficits relatively to the export reached very high levels, particularly in Latvia. The export was negatively affected by the rapid rise in real effective exchange rate which was a consequence of the pressures on the labour markets which had the impact on the inflation and labour costs. The empirical analysis of the effect of the exchange rate regimes did not bring clear – cut results. Although two models suggested positive relationship between rigidity and deficits, after controlling for the region – specific factors the results became insignificant and lacked any economic justification.

The analysis of the capital flows showed that the amount of capital coming into the Baltics was hardly comparable with other Central and Eastern European countries with the exception of Bulgaria and its main source turned out to be the "other" form of the capital. After discussing several determinants most convincing tended to be the credit boom of the Baltic countries. In order to satisfy the domestic credit demand which was not accompanied by the increase in the deposits, Baltic banks were forced to obtain the capital abroad. Although our efforts to carry out own empirical analysis of the role of the exchange regime

on the capital inflows were not successful, we can find support from the work of Magud (2012) who was not able to find any relationship between the capital flows and the exchange rate regime. On the other hand positive relationship between the credit level and rigidity of the exchange regimes suggests that the exchange rate regime had at least indirect effect on the capital flows through the higher credit demand.

6 Bibliography

Abbas, A., Bougha-Hagbe, Fatas, A. & Mauro, P. 2010. *Fiscal Policy and the Current Account*. IMF Working Paper 10/121. International Monetary Fund

Alfaro, L.2005.Inflation, openness, and exchange-rate regimes: The quest for short-term commitment. *Journal of Development Economics*,vol. 77, issue 1, pp. 229-249.

Aristovnik, A. 2006. Current account deficit sustainability in selected transition economies. *Zbornik radova Ekonomskog fakulteta u Rijeci*, vol.24, issue 1, pp. 81-102.

Aslund, A. & Dombrovskis, V. 2011. *How Latvia came through the financial crisis*. Washington, D.C.: Peterson Institute for International Economics.

Åslund, A. 2007. *The Transformation of Central and Eastern Europe, Russia, and Central Asia*. New York, NY: Cambridge University Press.

Barrel, R., Fitzgerald, J. & Riley. *EU enlargement and migration: Assessing the macroeconomic impacts*. NIESR Discussion Paper No. 292. National Institute of Economic and Social Research.

Brixiova, Z. (2009). *Labour Market Flexibility in Estonia: What more Can be Done?*. OECD Economics Department Working Papers, No. 697, OECD Publishing.

Brixiova Z., Vartia L. ,Wörgötter A.2010. *Capital flows and the boom–bust cycle: The case of Estonia*. Economic Systems,vol. 34,issue 1, pp. 55-72.

Calvo, G., Izquierdo & Talvi, E. 2003. *Sudden Stops, the Real Exchange Rate, and Fiscal Sustainability: Argentina's Lessons.* NBER Working Paper No. 9828. National Bureau of Economic Research.

Chinn, M. & Wei, S. 2008. *A Faith - Based Initiative: Does a Flexible Exchange Rate Regime Really Facilitate Current Account Adjustment?*. NBER Working Paper 14420. National Bureau of Economic Research.

Calderon, C., Chong, A. & Loayza. 1999. *Determinants of Current Account Deficits in Developing Countries*. Working Papers No. 51. Central Bank of Chile.

Calvo, G. 1998. Capital Flows and Capital-Market Crises: The Simple Economics of Sudden Stops. Journal of Applied Economics, pp. 35-54

Chowdhury, A. 1999. *The Asian currency crisis: origins, lessons, and future outlook*. Helsinki: UNU World Institute for Development Economics Research.

De Grauwe, P. & Schnabl. 2008. Exchange Rate Stability, Inflation, and Growth in (South) Eastern and Central Europe.*Review of Development Economics*, vol. 12, issue 3, pp. 530-549. Available from:
http://doi.wiley.com/10.1111/j.1467-9361.2008.00470.x

Dubas, Lee, B. & Mark, N.. 2005. *Effective Exchange Rate Classifications and Growth*. NBER Working Paper No.11 272. National Bureau of Economic Research.

Edwards, S. & Frankel, J. 2002. Does the Current Account Matter. *Preventing currency crises in emerging markets*. Chicago: University of Chicago Press, pp. 21-75

European Commission.2012. *Numerical fiscal rules in the EU Member States*. Ec.europe.eu [online]. Available from:
http://ec.europa.eu/economy_
finance/db_indicators/fiscal_governance/fiscal_rules/index_en.htm

European Comission. 2012. *Cyclical Adjustment of Budget Balances*. [online].available from:
http://ec.europa.eu/economy_finance/db_indicators/gen_gov_data/
documents/2012/ccab_autumn_en.pdf

Fatás, A. (2005). *Is there a Case for Sophisticated Balanced-Budget Rules?*. OECD Economics Department Working Papers. No. 466. OECD Publishing.

Ghosh, A., Gulde, A. & Wolf, H.2002. *Exchange rate regimes*. Cambridge, Mass.: MIT Press, pp. 75-107.

Ghosh, A. & Ramakrishnan, U. 2006. Do Current Account Deficits Matter?.

Finance and Development. Washington, DC: International Monetary Fund, pp. 44-45
Gourinchas, P. & Olivier, J.. 2007. *Capital Flows to Developing Countries: The Allocation Puzzle.* NBER Working Paper No.13602. National Bureau of Economic Research.

Hazans, M. & Philips, K.. 2011. *The Post-Enlargement Migration Experience in the Baltic Labor Markets.* Discussion Paper No. 5878. Institute for the Study of Labor.

Hegerty S. 2009. Capital inflows, exchange market pressure, and credit growth in four transition economies with fixed exchange rates, Economic Systems, vol. 33, issue 2, 155-167.

Herrmann, S. 2009. *Do we really know that flexible exchange rates facilitate current account adjustment? Some new empirical evidence for CEE countries.* Discussion paper Series 1:Economic Studies No 22/2009. Deutsche Bundesbank.

Herrmann, S. & Mihaljek, D. 2010. *The determinants of cross-border bank flows to emerging markets: new empirical evidence on the spread of financial crises.* BIS Working Papers No 315. Bank for International Settlements.

Ilzetzki, I., Reinhart,C. & Rogoff,K.2011. *The Country Chronologies and Background Material to Exchange Rate Arrangements into* the 21st Century: Will the Anchor Currency Hold?[online].
http://personal.lse.ac.uk/ilzetzki/data/ERA-Country_Chronologies_2011.pdf

IMF. 2007a. *World Economic Outlook:Spillovers and Cycles in the Global Economy.* pp. 81-120.

IMF. 2007b. *Managing Large Capital Inflows. World Economic Outlook:Globalization and Inequality.* pp. 105-135.

Jeanneau, S. & Micu, M.. 2002. *Determinants of international bank lending to emerging market countries.* BIS Working Papers No. 112. Bank for International Settlements.

Jevcak, A., Setzer & Saurdi, M. 2010. *Determinants of Capital Flows To the New EU Member States Before and During the Financial Crisis.* Economic

Papers 425. European Comission.

Kasjanovs, I. & Kasjanova. 2011. The Crisis in Latvia: Reasons and Consequences. *World Economics*, pp. 105-121.

Kamisky, G., Reinhart, C., Vegh, C. 2004. *When it Rains, it Pours: Procyclical Capital Flows and Macroeconomic Policies*. NBER Working Paper No. 10780. National Bureau of Economic Research.

Knobl, A. & Haas, R. 2003. *IMF and the Baltics: A Decade of Cooperation*. IMF Working Papers 03/241. International Monetary Fund.

KPMG International. 2007. *KPMG's Corporate and Indirect Tax Rate Survey 2007* [online].
Available from: http://www.in.kpmg.com/pdf/corptaxratesurvey2007.pdf [Accessed 2013-07-26]

Lane, P. & Milesi-Fereti, G. 2006. *Capital Flows to Central and Eastern Europe*. IMF Working Paper 06/188. International Monetary Fund.

Latvias Banka. 2013. *On the irrevocably fixed exchange rate of the lats to the euro*. Www.bank.lv [online].
Available from: http://www.bank.lv/en/for-media/press-releases/on-the-irrevocably-fixed-exchange-rate-of-the-lats-to-the-euro/8619 [Accessed 2013-07-26]

Magud, N., Reinhart, C. & Vesperoni, E. 2012. Capital Inflows, Exchange Rate Flexibility, and Credit Booms. IMF Working Paper 12/41. International Monetary Fund.

Martin, R. 2010. Boom and bust in the Baltic countries — Lessons to be learnt. *Intereconomics*, pp. 220-226.
Available from: http://link.springer.com/10.1007/s10272-010-0340-9

Montiel, P. & Reinhart, C. 2000. The Dynamics of Capital Movements to Emerging Economies During the 1990s. Griffith-Jones & Montes, M. *Short-term Capital Movements and Balance of Payments Crises*. Oxford: Oxford University Press, pp. 3-28.

Mihaljek, D. & Klau, M. 2009. Catching-Up and Inflation in the Baltics and Southeastern Europe: the Role of the Balassa- Samuelson Effect. *Recent Developments in the Baltic Countries – What Are the Lessons for Southeastern Europe?*. Wien: Österreichische Nationalbank.

Papaioannou E. 2009. What drives international financial flows? Politics, institutions and other determinants. *Journal of Development Economics.* vol. 88, issue 2, pp.269-281.

Rahman, J. 2008. *Current Account Developments in New Member States of the European Union: Equilibrium, Excess, and EU-Phoria.* IMF Working Paper 08/92. International Monetary Fund.

Rogoff, K., Husain, A., Mody, Brooks, R. & Oomes. 2003. *Evolution and Performance of Exchange Rate Regimes.* IMF Working Paper 03/243. International Monetary Fund.

Stulz, R. 2006. *Financial Globalization, Corporate Governance.* NBER Working Paper No. 11912. National Bureau for Economic Research

Weisbrot, M. & Ray, R. 2009. *Latvia's Internal Devaluation: A Success Story?* . Center for Economic and Policy Research. Washington,D.C.

Wooldridge, J. 2009. *Introductory econometrics: a modern approach.* 4th ed. Mason, OH: South Western, Cengage Learning. World Bank.1997. *Private capital flows to developing countries: the road to financial integration.* New York: Oxford University Press for the World Bank.

7 Appendices

7.1 Macroeconomic indicators

Table 6: Macroeconomic indicators of Latvia
(in %)

	2003	2004	2005	2006	2007	2008	2009
GDP growth	7.6	8.9	10.1	11.2	9.6	-3.3	-17.2
Current account balance	-8.2	-12.9	-12.5	-22.5	-22.4	-13.2	8.65
Unemployment	11.3	11.2	9.6	7.3	6.5	8.0	18.2
Investments	28.4	32.8	33.6	39.1	40.0	31.2	20.5
National Savings	20.3	19.9	21.0	16.5	17.5	18.0	29.1
Balance of trade/export		-77.0	-68.5	-93.7	-92.6	-70.0	-30.7
Inflation	2.9	6.2	6.9	6.6	10.1	15.3	3.3
Gross government debt	14.6	14.4	11.8	9.9	7.8	17.2	32.9
Government revenue (% of GDP)	33.3	34.9	35.4	37.5	35.6	34.9	34.0
Government expenditures cyclically adjusted(% of GDP)	34.3	36.2	37.7	42.5	42.5	43.4	41.5
onstruction employment(share of total)	7.7	8.8	9.3	9.8	11.5	11.3	7.6

Source:Eurostat,IMF,
National statistical office

Table 7: Macroeconomic indicators of Lithuania
(in %)

	2003	2004	2005	2006	2007	2008	2009
GDP growth	10.2	7.4	7.8	7.8	9.8	2.8	-14.8
Current account balance	-7.0	-10.6	-14.8	-13.3	4.7	-6.8	-7.6
Unemployment	12.4	11.3	8.0	5.2	3.8	5.3	13.6
Investments	21.4	22.3	23.6	26.0	31.2	26.9	10.5
National savings	14.6	14.8	16.5	15.7	16.2	13.9	15.1
Balance of trade/export		-33.2	-31.7	-37.0	-42.4	-31.5	-11.2
Inflation	-1.1	1.2	2.7	3.8	5.8	11.1	4.2
Gross government debt	21.0	19.3	18.4	18.0	16.8	15.5	29.4
Government revenue (% of GDP)	31.8	31.7	32.7	33.0	33.6	34.0	35.5
Government expenditures cyclically adjusted (% of GDP)	33.5	34.4	35.1	36.0	38.3	40.0	40.6

Source:Eurostat,IMF,
National statistical office

Table 8: Macroeconomic indicators of Estonia
(in %)

	2003	2004	2005	2006	2007	2008	2009
GDP growth	7.8	6.3	8.9	10.1	7.5	-3.7	-14.3
Current account balance	-11.3	-11.3	-10.0	-15.3	-16.0	-9.1	3.4
Unemployment	10.1	9.7	7.9	5.9	4.6	5.5	13.8
Investments	33.1	33.0	33.8	38.7	37.6	30.4	18.8
National savings	21.8	21.8	23.8	23.4	22.7	21.3	22.2
Balance of trade/Export		-40.6	-32.7	-38.8	-42.4	-28.6	-12.1
Inflation	1.4	3.0	4.1	4.4	6.7	10.6	0.2
Gross government debt	5.6	5.0	4.8	4.4	3.7	4.5	7.2
Government revenue (% of GDP)	36.5	35.6	35.2	36.1	36.4	36.7	43.5
Government expenditures cyclically adjusted(% of GDP)	36.1	35.1	35.3	36.6	38.0	41.2	42.4
Construction employment(share of total)	7.4	8.0	8.0	9.8	12.5	12.3	9.8

Source:Eurostat,IMF,
National statistical office

.

Table 9: Current account composition
(in million euro)

Estonia	2004	2007	2009
Net total	-1095	-2563	470
Net goods	-1569	-2641	-591
Net services	892	1042	1391
Net Income	-509	-1059	-506
Net transfers	92	95	177
Lithuania			
Net total	-1393	-4149	996
Net goods	-1920	-4279	-891
Net services	655	461	437
Net Income	-495	-1179	-288
Net transfers	367	848	1160
Latvia			
Net total	-1439	-4710	1598
Net goods	-2261	-5054	-1320
Net services	489	733	1120
Net Income	-227	-666	-1171
Net transfers	559	274	628

Source: Eurostat

7.2 Exchange rate regime clasification

1	No separate legal tender
1	Pre announced peg or currency board arrangement
1	Pre announced horizontal band that is narrower than or equal to +/- 2%
1	De facto peg
2	Pre announced crawling peg
2	pre announced crawling band that is narrower than or equal to +/- 2%
2	De facto crawling peg
2	De facto crawling band that is narrower than or equal to +/- 2%
3	Pre announced crawling band that is wider than or equal to +/- 5%
3	Moving band that is narrower than or equal to +/- 2%
3	Managed floating
4	Freely floating
5	Freely falling
6	Dual market in which parallel market data is missing

Source:Magud(2012)

8 Bachelor Thesis Proposal

Author	Jiří Čermák
Supervisor	doc. Mgr. Tomáš Holub PhD.
Proposed topic	Baltic States:Lessons from the Crisis

Topic characteristics The economies of Baltic countries have been in recent years going through very dynamic developments which carry some interesting economic features which can give us lessons for the future. Since the beginning of the century economic performance of the countries was very dynamic with annual GDP growth reaching the level of 8%. Then a very severe recession has arrived when the GDP growth decreased to the level of -15%. But the countries coped with the recession and turned back to growth very quickly. One of the goals which I would like to achieve in my work is to find not only the causes which led to the such a spectacular economic growth on the one hand and to such a severe recession on the other but also what enabled that the countries came back to economic growth so quickly. In my work I would like to briefly cover the post-communist economic developments of the countries with the prime interest to examine the factors which causes the recession. But mainly I intend to explore the recession itself and especially I would like to concentrate on the role of exchange rate regimes in the process.

Core bibliography

1. Arratibel, A., Furceri, D., Martin, R. (2008), "*Real Convergence in Central and Eastern European EU Member States Which Role for Exchange Rate Volatility?*" ECB Working Paper 929.
2. Brixiova et al., (2010) "*Capital flows and the boom-bust cycle: the case of Estonia.*" Economic Systems, 34 (1) (2010), pp. 55–72"
3. Erixon, F.(2010):" *BALTIC ECONOMIC REFORMS: A Crisis Review of Baltic Economic Policy*" ,ECIPE Working Paper 04/2010
4. Martin, R. (2010): "*Boom and bust in the Baltic countries — Lessons to be learnt*", Intereconomics: Review of European Economic Policy, vol. 45, issue 4, pp. 220-226
5. Weisbrot, M. and Ray, R. (2010). *"Latvia's recession: the cost of adjustment with an 'internal devaluation'*." Center for Economic and Policy Research (CEPR), February.
6. Darvas,Z.(2011): "*Exchange Rate Policy and Economic Growth after the Financial Crisis in Central and Eastern Europe*," Working Papers 1103, Department of Mathematical Economics and Economic Analysis, Corvinus University of Budapest
7. Krugman,P., Obstfeld,M.(2009): "*International Economics: Theory and Policy*", 8th edition, Pearson Addison Wesley, Boston

8. Driver,R., Sinclair,P., Thoenissen,C.(2005) "*Exchange rates, capital flows and policy*", Routledge, London

Author

Supervisor