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Transmission of the global crisis to the Baltic States  
Implications for their accession to the Euro Area <sup>+</sup>

Piotr STANEK



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# Transmission of crisis to the Baltic States. Implications for their accession to the EMU<sup>1</sup>

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**JEL classification:** F3

## **ABSTRACT:**

The article presents various transmission mechanisms, which brought (or could have brought) the present global crisis into the Baltic States: Lithuania, Latvia and Estonia. Then, it reviews the consequences of the crisis on these economies. The prospects of their accession to the euro area is also assessed in the light of the projected fulfillment of the Maastricht criteria.

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<sup>1</sup> I would like to dedicate this article to the memory of Mr. Vadimas Titarenko PhD, Head of Research Unit at the DNB Nord Bank Lithuania, who tragically passed away in June 2009. The roots of my interest in this research subject lay in my conversations with Vadimas in November 2008.

# **Transmission of crisis to the Baltic States. Implications for their accession to the EMU**

**Piotr Stanek**

The fact that the present financial and economic crisis is of global dimension is no longer disputed. No national economy is a lonely island, and especially small open economies were severely hit by the recessionary processes. The most often cited examples include Iceland, Hungary, Ukraine and Baltic States. The main goal of the present article is to present the various transmission mechanisms which brought the crisis into the economies of Estonia, Latvia and Lithuania and to analyze their impact for the path of the euro adoption in these countries.

The article is organized as follows. Section one presents various mechanisms of transmission of the disturbances across the financial sector, from the financial sector to the real side of the economy and from one country to another. This is realized through a survey of the most recent literature of the subject. Section two provides some illustration of how these channels had worked since 2007 in the Baltic States. Special attention is given to evolutions of the balances of payments and functioning of the capital markets: both stock exchanges and credit sector. This section offers also a preliminary assessment of the impact of the crises on the analyzed countries through the newest forecasts and statistics by the European Commission. Finally, section three presents the dilemma of policy makers: to try to join the euro area as soon as possible or rather to try to eliminate negative consequences of the crisis first. This choice is implied by the fact that probably attaining these two goals will not be possible during the next assessment of nominal convergence in 2010 in the light of fiscal Maastricht criteria. Concluding remarks close the article.

## ***1. Mechanisms of transmission.***

The origins of present global crisis are situated in the subprime mortgage segment of the American financial market. Taking into consideration its relatively small size, it is important to understand the ways through which it has been transmitted to the other sectors of the financial sector and then to the real economy. Some of these mechanisms work both within a national economy and in international scale but there are also some characteristics to the international dimension.

## 1.1. Financial amplification mechanisms

Mian & Sufi (2008) present how the bubble on the American housing market was created. They show that during the time of lax monetary policy by the Federal Reserve the volume and value of mortgage loans increased significantly especially in those regions where in the previous time a ratio of credit denials was especially high. Mian & Sufi thus prove that an important fraction of the loans was granted to less reliable borrowers. In a subsequent paper (Mian, Sufi & Trebbi, 2008) they also explain the political economy of this process and insufficient reaction from the part of the authorities in the wake of the crisis. However, presenting the detailed chronology of the crisis would not be possible within the scope of the present article.<sup>2</sup>

A number of prominent authors have already described transmission and amplification mechanisms. The list include Bernanke (2009), Blanchard (2009), Borio (2008), Brunnermeier (2009) or Krishnamurthy (2009). These mechanisms can be broadly divided into three categories: amplifiers of the shock within the financial market, transmission channels of the financial shock into the real economy and international contagion mechanisms.

The initial losses in the subprime mortgage sector were surprisingly low, taking into consideration the consequences for the global economy. They were estimated at between \$200 bn. (Brunnermeier 2009, p. 87), \$250 bn. (Blanchard, 2009, p. 3) and \$500 bn. (Krishnamurthy, 2009, p. 1), which seemed possible to be absorbed by the capital of the concerned institutions. However, the complexity of the links between the participants of the financial markets endangered the continuity of activity of many banks, insurers, hedge funds and others.

The processes through which the (relatively) small initial amount of losses are multiplied in this article will be referred to as *financial amplification mechanisms* (like in Krishnamurthy, 2009). Krishnamurthy indicates two main amplification mechanisms: balance sheet (asset prices) mechanism and uncertainty mechanism.

*Balance sheet amplification mechanism* comes from the fact that financial institutions are highly leveraged, i.e. their assets significantly exceed capital. In other words, as Blanchard (2009, p. 9) simplifies it, capital represents the “missing” difference between the value of assets and liabilities on the balance sheet of financial institutions. During benign times

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<sup>2</sup> For the chronology of the crisis see e.g. Borio (2008), Committee on the Global Financial System (2008), Bartram & Bodnar (2009) or (with a historical perspective) Bordo (2008).

preceding the crisis, with the constant growth of the world economy and trade, financial institutions significantly increased their leveraging (mainly through off-balance sheet instruments and other financial innovations). However, due to financial supervision requirements and/or to internal prudential regulations, financial institutions must maintain a certain ratio of capital to (risk-weighted) assets. If, in a quest for profits they decide to operate close to this minimal ratio, and a shock affecting negatively the value of their capital occurs (losses implied by subprime mortgage market collapse are the example in the present crisis), the financial institution has to adjust the amount (or at least composition) of the assets. For a commercial bank this necessitates a sharp decline in the credit action whereas for an investment bank (or investment fund or hedge fund) a fire-sale of assets. The former means a sharp decline of bank's revenues while the latter – taking into consideration a probable decrease in price of the asset sold – further losses. Thus, even without taking into consideration links with other institutions – a small loss of a financial corporation will probably lead to substantial problems.

The troubles may become even more pronounced for the financial system when consequences for other institutions are taken into consideration. They are quite straightforward in case of fire-sell of assets: the implied decrease in price have negative consequences for all the other holders of the asset. Consequences of the reduced lending seem more limited, however, it also means a reduced supply of loanable funds. Thus, as their surpluses may be placed on the inter-bank market or allocated to the investing non-financial firms, the negative consequences will reduce the liquidity of the interbank market or may be directly transmitted to the real sector. The latter mechanism is called *lending channel* and it is also related to (and amplified by) asymmetry of information and connected phenomena of *moral hazard* and *precautionary hoarding*.<sup>3</sup>

A second amplification mechanism described by Blanchard (2009) and Brunnermeier (2009) is a (modern form of) *run on financial institution*.<sup>4</sup> Currently traditional bank runs (with queues of deponents next to the banks' premises) almost do not happen because of insurance of deposits or state guarantees<sup>5</sup>. However, these guarantees usually do not cover institutional nor wholesale deposits, which account for a bulk of liabilities of contemporary

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<sup>3</sup> For more details see Brunnermeier (2009).

<sup>4</sup> Krishnamurthy (2009) within a formalized model does not distinguish between a run on financial institution and balance sheet / asset prices mechanism (his interpretation of the model suggests even that while presenting balance sheet and asset prices mechanism he means what the others call run on financial institution). Blanchard (2009) underlines that the two mechanisms are different and a run on financial institution may occur even without an initial loss.

<sup>5</sup> However, during the present financial crisis a bank run forced the British government to nationalize Northern Rock. For a detailed account of this event see Shin (2008).

financial institutions. This means that concerns about liquidity or (even more) solvability of an institution may lead its lenders to withdraw the deposits (or, more probably, to not to roll-over the new issue of debt). Brunnermeier explains two reasons for which the deponents have incentives to run on the institution at risk: if the institution is believed to be insolvent, then the last withdrawals would not be satisfied and even if the institution faces only liquidity problems, then fire-sell of assets will lead to losses and once again the late withdrawals are endangered.

*Network effects* add some additional power to the above-mentioned amplifying mechanisms. The contemporaneous financial sector is an extremely complex network in which each agent acts at least both as a lender and a borrower (and very often also as a market maker). Moreover, these markets are the most often of *over-the-counter* character which means (among others) that it is impossible to clear multilateral obligations (as there is no institution responsible for the settlements of the contracts). The complexity of this network has been considerably increased in recent years by new financial instruments.

In recent years, the financial innovation processes (highly desirable by themselves), contributed significantly to the tensions, which ultimately led to the present crisis. New financial instruments, such as *collateralized debt obligations* (CDO)<sup>6</sup> and *credit default swaps* (CDS)<sup>7</sup> were designed primarily to allow for a better allocation of risk. The somewhat complicated process of their issuance involved creating off-balance sheet *special investment vehicles*, which were out of scope of the standard financial supervision. Moreover, the internal risk management probably underestimated the level of risk related to these instruments. In fact, instead of reducing the risk, CDS increased the systemic risk, because in times of financial stress, the models of risk valuation proved inaccurate and the issuers of CDS (also financial institutions) suffered additional losses. CDS were also accused of becoming a mean of “gambling” against the default of financial institutions. Allan Greenspan in his testimony at the Congress *Oversight and Government Reform Committee* on the October 24, 2008, indicated the CDS as the instrument which contributed the most to the crisis (Clark & Teanor, 2008). Also huge volume of issued CDOs contributed to increased systemic risk: selling portfolio of credits allowed any given bank to get rid of the risk associated to it, but usually the buyers were also participants of the financial market. Thus, the overall level of the risk in

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<sup>6</sup> CDO are a result of securitization of pools of debt (or other instruments), yielding a constant rate of return for the investor. The level of risk was theoretically very limited by the diversification of portfolio and varied through different “tranches” (senior, mezzanine, equity) of the instrument.

<sup>7</sup> CDS are a tradable insurance contracts against a default of a counterparty or a financial instrument (such as corporate bond).



the financial system at the starting date of the crisis was very high and the interrelations within the network of the financial institutions – very strong.

A separate amplifying mechanism, discussed by Krishnamurthy (2009) relies on the reaction of participants of financial markets on the increased level of *uncertainty and lack of knowledge*. If, after a break out of the crisis financial institutions are not able to precisely assess their risk (and they realize that the previous assessments strongly underpriced this risk), they tend to adopt the most pessimistic version of possible losses. This again leads to decreases in asset prices as their expected present value decreases not only because of adjustment of the probability expectation, but also because a worst-case rather than baseline scenario is applied. The theoretical model developed by Krishnamurthy seems to be an appropriate description of the reality in the advent of the crisis, where the complexity of the financial instruments (higher levels of CDOs: CDO<sup>2</sup>, CDO<sup>3</sup> and so on – CDOs backed by CDOs and so on) prevented an accurate measure of risks.

## 1.2. Transmission of financial shock to the real sector

The above-described financial amplification mechanisms explain the (to some extent counterintuitive) channels through which relatively small losses in a narrow segment of the financial market were spread over the financial system. The transmission of the financial crisis to the real economy is relatively more straightforward. The main channels include: credit channel, wealth effects and psychological effects (consumers' confidence).<sup>8</sup>

Turbulences in financial market lead to *credit crunch* – a sharp decline in credit to GDP ratio – implied by the fact that banks are not able to lend (because of lack of liquidity and erosion of capital basis). At the same time acquiring funds through capital markets by firms also become much more difficult. Moreover, due to higher level of uncertainty, firms might be less willing to borrow. All these lead to a significant decrease of private investment, contributing negatively to GDP. Interestingly, Almeida *et al.* (2009) find that the credit crunch exerts the most significant effect on investment of companies, whose incumbent debt approaches to maturity.

Credit crunch affects also households and its dampening effect on private consumption will depend on the customs of individuals: how much of the current consumption is financed by credit. The industries which usually suffer the first significant drop in demand as a

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<sup>8</sup> Interestingly, these channels qualitatively are similar to the transmission channels of monetary policy. Compare e.g. Mishkin (2004), chapter 26 and especially figure 3, p. 619. The main difference is that in monetary policy these adjustments are started by an interest rate move whereas in crises these shocks are exogenous.

consequence of credit crunches include construction, automotive and other consumer durable expenditure producers. Then, the shock is transmitted to all industries constituting their suppliers.

Wealth effects of changes in asset prices influence saving or consuming decisions of households. After a stock market crash or the burst of a housing bubble, the average consumer feels much poorer and thus is incited to save more and spend less, which has a negative impact on the aggregated consumption level. Interestingly, Claessens *et al.* (2008) find that the most severe and longest recessions follow house price bust (and credit crunches) and last typically longer while being more severe than other recessions.

Similarly, consumption and investment might be dampened by consumers' and investors' moods. The amount of "bad news" an agent receives makes him prepare rather to the worst-case scenario and decrease consumption and investment respectively. This channel is a real sector equivalent of uncertainty and lack of knowledge financial amplification mechanism.

### 1.3. International contagion

Transmission of financial and crises on a global scale might be divided into three broad channels: current account, financial account and off-balance of payments mechanisms.<sup>9</sup> The first is a way of contaminating the real sector, the second – financial sector (and as such will be quite similar to the amplifying mechanisms) and the third one might be associated to information, confidence and uncertainty. The present financial crisis is being certainly spread through all these three channels. As the third one does not operate in international dimension in a qualitatively different way than within a country, the following description will focus on the first two. Moreover, both of them might influence also the country's situation through exchange rate, unless it is pegged to another currency (which is the case for all the Baltic States). In the following mechanisms a transmission of the crisis from a "source country" (the US) to an emerging market (Baltic States) will be considered, imputing to the latter such features as positive remittances balance, negative income balance, high share of foreign banks in the financial sector, high ratio of foreign-currency denominated debt and the like.

A crisis in the "source country" and the following slowdown in triggers a decrease in aggregated demand, including imports of goods and services. Thus, a country with an open

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<sup>9</sup> The proposed distinction of the channels of contagion differs from the Masson (1999) terminology. He distinguishes monsoonal effects (simultaneity implied by a common cause), spill-over effects implied by (direct or indirect) trade links between countries and contagion, which is applied only to the event of simultaneity of crisis unrelated to macroeconomic fundamentals (and may come from market sentiments).

economy which would not be hit directly by the financial dimension of the crisis (an emerging market), will ultimately face a smaller external demand for its goods and services. Moreover, emerging market economies usually have a positive balance of remittances (private transfers), which (due to worsening labor market conditions for the emigrants in the source country) are also expected to fall. The impact of a crisis on the fourth component of the current account balance – income – is uncertain, although it might be also expected to deteriorate as foreign investors will rather tend to repatriate their profits. These evolutions constitute to the emerging market a current account shock, exerting pressure on depreciation (devaluation) of the currency. If the currency peg is immune to (potential) speculative attacks, the adjustments have to pass through the real side of the economy: decreasing incomes and imports. On the other hand, the worsening of economic outlook and decreasing consumption may precede the deterioration of the current account and the described mechanism will remain invisible (sharp increase of the current account deficit will not occur, but both the credit and debit side will decrease simultaneously).

Deleveraging, global risk aversion and “flight to quality”<sup>10</sup> during the financial crisis force the emerging markets to face the capital account shock. Global investors liquidate their positions in more profitable (and risky) markets and repatriate the funds to “safe bays” of the home (American) markets. This, similarly to current account shocks, squeezes the available funds in the emerging economies necessitating adjustments in their expenses in balance of payments (mainly imports, which decreases welfare of their societies). Moreover, due to the interrelation of capital markets across the world<sup>11</sup> negative sentiments and sharp decreases appear on stock exchanges of emerging markets<sup>12</sup> (implying the above-described transmission from the financial to real sector also *within* the emerging markets). Additionally, as the financial sector in emerging markets is often dominated by foreign-controlled institutions<sup>13</sup>, the parent companies may exert pressure on deleveraging also on these markets, which results in a credit crunch also in emerging markets. The two last effects may but need not be visible in the balance of payments (the spill-over may take place only through sentiments and thus lie outside of the balance of payments mechanisms).

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<sup>10</sup> Expression owed to Bernanke *et al.* (1996).

<sup>11</sup> For a detailed account of these correlations during the present crisis see Bartram & Bodnar (2009).

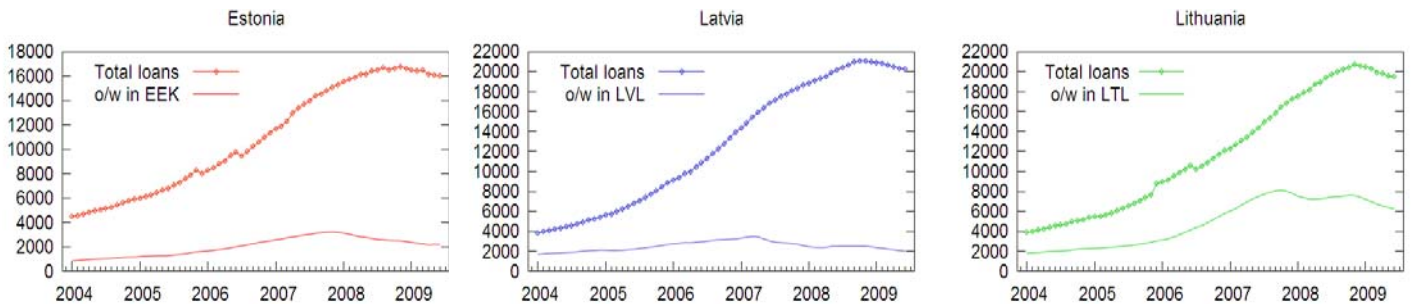
<sup>12</sup> In fact Dooley & Hutchison (2009) find a high degree of correlation of stock market performances between emerging markets and the US during this crisis only after the collapse of Lehman Brothers in September 2008. Their sample, however, does not include Baltic States.

<sup>13</sup> See e.g. Marton & McCarthy (2008) for the account and consequences.

## 2. Crisis in the Baltic States

As early as of October 2008 the European Bank for Reconstruction and Development [EBRD] (2008) considered the Baltic States together with Kazakhstan as the only transition economies to suffer credit crunch (p. 45). This diagnosis turned out to be fully confirmed, which is illustrated by the figure 1 below.

**Figure 1 Total amounts of outstanding residents' loans in Baltic States in mln EUR (Jan. 2004 – Jun. 2009).**



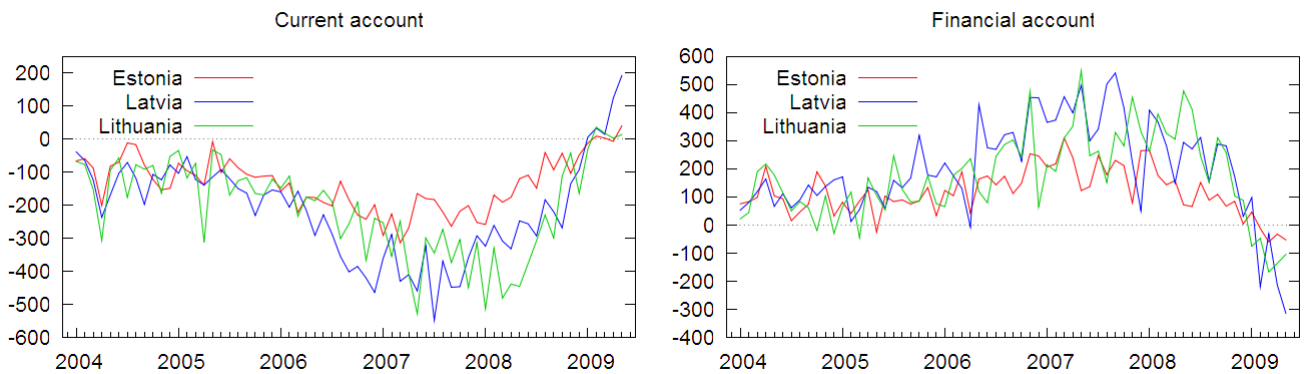
Source: Own computations based on data available on the respective central banks' websites (<http://www.eestipank.info>, <http://www.bank.lv>, <http://www.lb.lt>)

Clearly, since the third quarter of 2008, a high pace of increasing indebtedness of the Baltic economies stopped and the value of outstanding loans started to decrease. That also means that granting of new loans froze. This, accordingly to the transmission mechanisms presented above, contributed to an acute recession, which will be presented together with its consequences below.

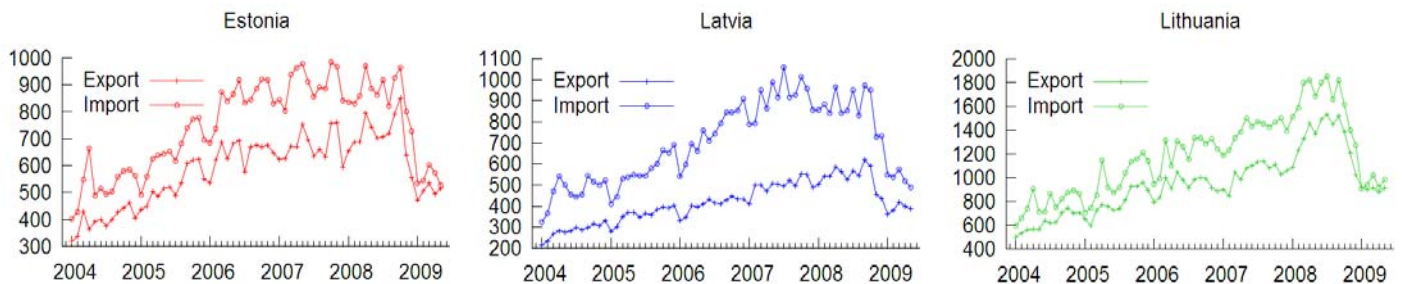
Looking at the figure 1 one may also remark that the dominating part of debt is denominated in foreign currencies (mainly euro – the anchor currency of the Baltic States' exchange rate pegs). This virtually forces the central banks to keep the existing currency board arrangements intact, because any “competitive” devaluation would have a disastrous impact on firms' balance sheets and net wealth of the population. Thus, the only feasible “exit strategy” from the current fixed exchange rate systems is the adoption of the euro at the existing parity.

Fixed exchange rates (together with relatively high inflation rates– see table 1 below) contributed to the real appreciation of the kroona, lats and litas, which led (at the outbreak of the crisis), to a sharp balance of payments adjustment (see figure 2 and 3 below).

**Figure 2: Current and financial account balances of the three Baltic States in mln EUR (monthly, Jan 2004 – May 2009)**



**Figure 3: International trade in Baltic States in mln EUR (monthly, Jan 2004 – May 2009)**



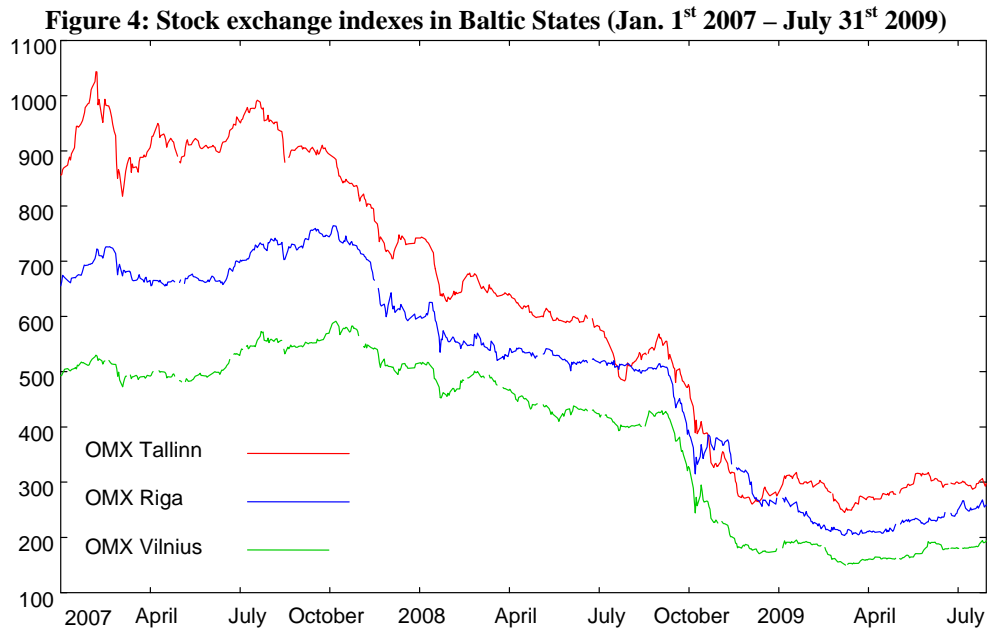
Source: Own computations based on balance of payments data published by the respective central banks.

Source: like in figure 1.

It seems that the adjustment of the balance of payments of the three countries immediately followed the shocking bankruptcy of Lehman Brothers in September. A significant correction also took place on the financial account side of the balance of payments. This “flight to quality” of the foreign capital turned huge surpluses of the financial accounts into significant deficits. Thus, financing huge current account deficits became much more difficult (and thus demand for imports sharply weakened). At the same time, foreign demand for Baltic exports declined, which left all the three countries with (small) trade deficits (and minimal surpluses of the whole current accounts).<sup>14</sup> Thus, it is clear that the financial crisis caused for the Baltic States a shock on both sides of the balance of payments.

The outflow of foreign capital (together with the worldwide gloomy investors’ sentiments) was not without consequences for the behavior of stock exchanges in the Baltic States. The evolutions of stock market indexes: OMX Talinn, OMX Riga and OMX Vilnius is presented on figure 4.

<sup>14</sup> Which confirms Obiora’s (2009) findings that both financial and trade links of the Baltic States to their main partners (EU and Russia) an important factor of shock transmission.



Source: Own computations based on data from <http://www.nasdaqomxbaltic.com> (retrieved August 1<sup>st</sup>, 2009).

Figure 3 clearly illustrates co-movements of stock indexes in all the Baltic States (all the three indexes lost between 60 and 65% of their value in the beginning of 2007). It demonstrates furthermore that the wealth channel also contributed to a negative growth of these economies, which started in the fourth quarter of 2008.

The above illustrations of the force with which the global financial crisis has been transmitted to small open economies of the Baltic States show that the analyzed countries were highly vulnerable to negative shocks. This finds confirmation in statistics for the second half of 2008 and first quarters of 2009 and strongly influences forecasts for the years to come.

Selected economic indicators with forecasts by the European Commission for the three Baltic States are presented in table 1 below.

**Table 1: Selected economic indicators and forecasts**

Country	Indicator	2005	2006	2007	2008	2009 (f)	2010 (f)
Estonia	Real GDP growth <sup>a</sup>	9.2	10.4	6.3	-3.6	-10.3	-0.8
	Unemployment rate <sup>a</sup>	7.9	5.9	4.7	5.5	11.3	14.1
	HICP inflation <sup>a</sup>	4.1	4.4	6.7	10.6	0.6	0.5
	Current account balance <sup>b</sup>	-10.1	-16.7	-18.3	-9.1	-1.1	-3.1
	General government balance <sup>b</sup>	1.5	2.9	2.7	-3.0	-3.0	-3.9
	General government gross debt <sup>b</sup>	4.5	4.3	3.5	4.8	6.8	7.8
Latvia	Real GDP growth <sup>a</sup>	10.6	12.2	10.0	-4.6	-13.1	-3.2
	Unemployment rate <sup>a</sup>	8.9	6.8	6.0	7.5	15.7	16.0
	HICP inflation	6.9	6.6	10.1	15.3	4.6	-0.7
	Current account balance <sup>b</sup>	-12.5	-22.5	-22.5	-13.6	-1.5	-1.9
	General government balance <sup>b</sup>	-0.4	-0.5	-0.4	-4.0	-11.1	-13.6
	General government gross debt <sup>b</sup>	12.4	10.7	9.0	19.5	34.1	50.1
Lithuania	Real GDP growth <sup>a</sup>	7.8	7.8	8.9	3.0	-11.0	-4.7
	Unemployment rate <sup>a</sup>	8.3	5.6	4.3	5.8	13.8	15.9
	HICP inflation <sup>a</sup>	2.7	3.8	5.8	11.1	3.6	-0.4
	Current account balance <sup>b</sup>	-7.1	-10.4	-15.1	-12.2	-1.9	0.7
	General government balance <sup>b</sup>	-0.5	-0.4	-1.0	-3.2	-5.4	-8.0
	General government gross debt <sup>b</sup>	18.4	18.0	17.0	15.6	22.6	31.9

<sup>a</sup> in percents, <sup>b</sup> as a percentage of GDP, (f) – forecasts.

Source: European Commission (2009), p. 62, 79, 81.

Data and forecasts of the European Commission confirm that after a few years of very high economic growth, the Baltic States were harshly hit by the global crisis and in 2009 may attain even double-digit negative growth of GDP. Obviously, this will trigger hikes in unemployment and, due to smaller budget revenues and higher expenses, higher general government deficits. This, however, will not raise the government's debts to dangerous levels (maybe except for Latvia). On the other hand, this sharp and certainly unpleasant adjustment will allow for regaining external equilibrium and contain inflation pressures.

### ***3. Implications of the crisis for the euro adoption in the Baltic States***

These changes require a prompt response in order to limit the time span and magnitude of negative consequences and to preserve appropriate living standards. As (due to exchange rate regime in the Baltic States) any expansionary reaction from the monetary policy cannot be expected, all the responsibility remains in hands of the government.<sup>15</sup> Taking into consideration the relatively low levels of debt (or even very low in case of Estonia), it seems that the governments of the analyzed countries have enough room for maneuver. Nevertheless, as all three countries officially want to join the euro area as soon as possible,<sup>16</sup> they will have to choose: countercyclical fiscal policy (and higher deficits) or quick (but still uncertain) euro adoption.

The probability and scenarios of joining the euro area by the Baltic States in the aftermath of the crisis will be assessed on the basis of (the probable realization of) the Maastricht convergence criteria. The record of fiscal requirements (debt below 60% of GDP and general government deficit below 3%) as well as HCPI inflation are presented in table 1 above. The two remaining requirements concern long term interest rate and exchange rate stability. All the three Baltic States fulfill the exchange rate criterion, participating in ERM II with a unilateral commitment to currency boards.

The crisis changed the criteria which tend to be the most difficult to satisfy by the analyzed countries. As suggested above, instead of inflation, the biggest threat for early euro adoption is now posed by government deficit. As indicated in table 1, the European Commission forecasts a significant worsening of the general government balance in all the

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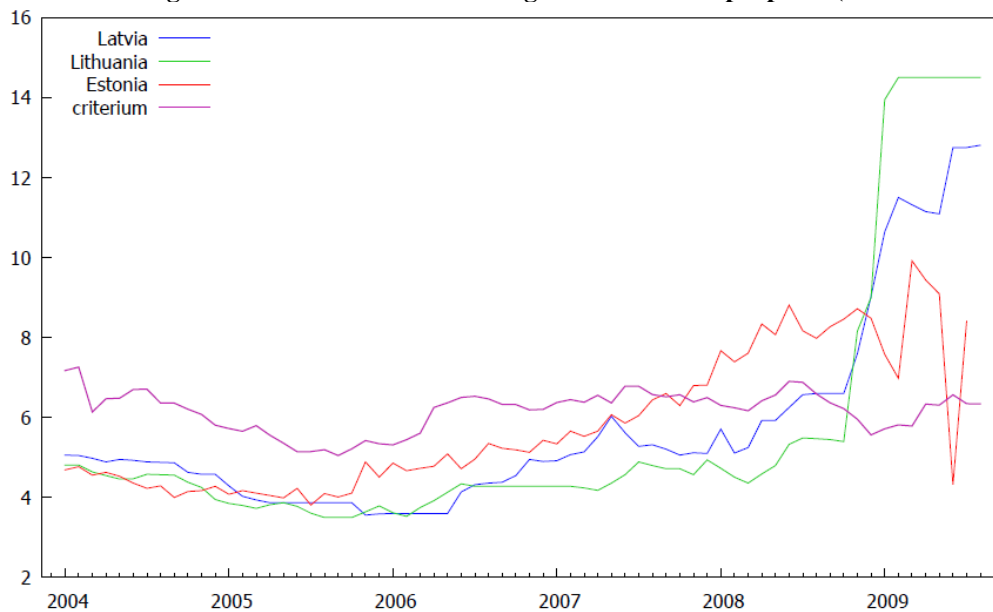
<sup>15</sup> Extensive guidelines for policy makers in emerging markets are provided by Ghosh et al. (2009).

<sup>16</sup> Estonia officially maintains Jan 1<sup>st</sup>, 2011 as the target date for euro adoption (Estonia's National Changeover Plan, as of June 2009), Bank of Lithuania officially expresses hopes that 2010 is a real date, however, one of its officials (Ramune Vilija Zabuliene, Deputy Chairperson of the Bank of Lithuania) expresses doubts if the 2010 convergence report would admit Lithuania to the euro area, whereas the Bank of Latvia admits that the most probable date is 2014, due to high budget deficit (projected to descend below 3 percent only in 2012).

Baltic States. Taking into consideration the calendar of the assessments (the next will take place in spring 2010), it is highly improbable that any of these countries fulfils all the convergence requirements. The only of the three countries which may fulfill the fiscal requirement is Estonia. However, its general government deficit is projected to be very close to the 3% ceiling and thus a high degree of uncertainty persists.

An additional difficulty comes from the fact that the crisis increased interest rate spreads for sovereign debt of emerging markets. The case of Baltic States is clearly illustrated on figure 5 below.

**Figure 5 Harmonized long-term interest rates for convergence assessment purposes (Jan. 2004- Aug. 2009)**



\*For Estonia MFI interest rate indicator is presented

Source: Own computations, based on ECB data (<http://www.ecb.int/stats/money/long/html/index.en.html>, retrieved Oct. 4<sup>th</sup>, 2009.)

Countries with higher debt to GDP ratios (Latvia and Lithuania) attained levels that are clearly inconsistent with interest rate convergence requirement. The Estonian situation is ambiguous, as the government does not issue long term debt instruments, which is implied by a very small country indebtedness. The ECB publishes for Estonia an indicator based on MFI interest rates for households and non-financial firms. However, the European Commission (2008) suggests that the indicator should not be compared to the benchmark but rather analyzed in a qualitative manner. Nevertheless, the Estonian indicator became highly unstable, undermining slightly the probability of fulfilling the criterion (even if all previous Convergence Reports in 2004, 2006 and 2008 concluded that Estonia accomplished interest rate criterion).

To summarize the situation of the Baltic States with respect to their assessment in the light of Maastricht criteria in the aftermath of the crisis, it should be noticed that only in two cases



(exchange rate stability and public debt) their fulfillment is not endangered. The inflation rates are now clearly on a trajectory to attain levels consistent with price stability (which will be reached in all the three countries in 2010). Latvia and Lithuania will breach the remaining two convergence criteria: long-term interest rate and general government deficit, whereas the situation of Estonia will depend on the actual realization of government deficit (which is projected to be precisely at the threshold) and on the interpretation of the interest rate criterion in the next convergence report.

#### ***4. Concluding remarks***

The transmission of the global financial turmoil to the Baltic States changed dramatically their situation with respect to the euro adoption process. Countries that were systematically breaching inflation convergence criterion and were best pupils in keeping government finance close to balance became non-inflationary excessive deficit runners. Moreover, the risk aversion (and “flight to quality”) transmission channel drove them to unacceptable long term interest rate levels.

One of possible interpretations of the Chinese word for “crisis” states that it consists of elements of danger and opportunity. If one would like to follow this logic on the grounds of the present article, it seems that dangers clearly surpassed opportunities and the Baltic States will not be admitted to the euro area. The only one of them, for which the crisis might create an opportunity to join, by dampening inflation is Estonia, but the degree of uncertainty related to this event remains very significant.

Thus it seems that in spite of a high degree of commitment of the Baltic States’ governments, adoption of the euro as early as in 2012 (and even before 2015) is not too realistic. This is implied by, among other things, the fact that monetary authorities of the three countries have tied their hands by adhering to currency board arrangements with the euro as the anchor currency and by leading a fiscal policy with only very weak automatic stabilizers. It also seems that if the countries want to adopt the euro quickly, the only solution might be unilateral euroization. This, however, would not be very welcome by the ECB.

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