

RELATIVE PRICE LEVEL DEVELOPMENTS IN THE BALTIC ECONOMIES AND LESSONS TO LEARN FROM THE CRISES

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Abstract

Estonia and other Baltic countries experienced speculative boom in years 2004-2008. The boom resulted in rapidly rising relative price level or real exchange rate. Euro wages are used as proxies for bilateral real exchange rates. Rapid reversal of capital inflow created instantly short-term real exchange rate overvaluation. The data shows that some other developing countries, like Poland and Russia let their price level to adjust through depreciation of nominal exchange rate. Estonia and other Baltic countries decided to go through adjustment with deflation of prices and wages. This contributed to higher unemployment rate and GDP loss. The most positive way out appears to be restoration of foreign investors interest in local economy and raising equilibrium real exchange rate reducing likely real exchange rate overvaluation. The other important implication was that local businessmen and other individuals were too much risk-takers for volatile emerging market economy.

Keywords: Baltic economies, prices, business fluctuations and cycles, expectations, speculations, information and market efficiency

JEL Classification: D84, E3, G14

Introduction

The three Baltic countries, including Estonia, experienced economic boom in years of 2004-2008. The boom was initiated by accession to the EU and expectation for the euro adaptation. Foreign investors and domestic individuals increased demand for local assets and resources like labour. This resulted general overheating in Baltic economies and rapidly rising relative price level or real exchange rate. Global economic crisis, which started from U.S. mortgage backed securities, spread and international investors reversed their earlier incoming financial flows. This created abrupt need for adjustment of real exchange rate. Devaluations were avoided but misalignments probably remained.

The goal of the article is to provide economic experts better understanding of close relationship between emotional aspects of global financial markets and macroeconomic developments in the Baltic countries. In the first section of the article the emergence of economic boom and its spread into the real economy will be presented. The second section explains the Blow off Phase of financial markets and different adjustment paths of Eastern European economies. The relative euro wages will be used a tool for analysis. The third section provides short-term outlook and the fourth section analyses lessons to policymakers and individuals from the perspective of material implications of behavioural finance.

The article pursues to state that the Baltic countries experienced speculative boom which was not the optimal outcome of conducive economic environment and policy. Abrupt and sizable adjustments are probably accompanied with high restructuring costs in society and high unemployment.

1. Early phase: the boom

The Baltic countries experienced speculative boom during 2004-2008. The bubble was based on belief that accession to the EU and adoption of the euro will raise all prices in a rapid pace to the level of the EU. Foreign and domestic individuals increased their demand for risky assets of developing countries in all three Baltic countries. Part of the buying was justified by fundamental news. Fundamentally justified trends on open free markets tend to develop into speculative trends gaining strength from positive feedback of trend-following market participants. For example in the Baltic countries properties were perceived as assets with everlasting price appreciation.

Capital markets started to provide cheap financing which caused appreciation of asset prices. But this demand driving asset prices was not demand on sustainable level. Many participants probably just pursued to jump on the moving wagon and earn extra speculative profit on emerging markets. Such rapid inflow of foreign capital sent short-term equilibrium real exchange rates sharply higher. Wages and cost level of public sector rose in hefty annual steps. Later, when the inflow stopped, the government and individuals pursued to maintain achieved euro wages and level of welfare as real achievement. This resulted in downward stickiness of nominal wages and increasing unemployment rate.

The director of global strategy in Dresdner Kleinwort Wasserstein James Montier provided overview of stock bubble types based on academic literature in his book "*Behavioural Finance: Insights into Irrational Minds and Markets*" published in 2002. Four types of stock bubbles according to him were:

- **Near Rational bubbles.** Market participants rely on the Greater Fool Theory. Investors are ready to pay higher prices until they believe that someone will purchase asset in future for even higher price. Individuals understand and recognize that prices include bubble but are convinced that they are able to exit the market before the bubble crumbles.
- **Intrinsic bubbles.** Investors concentrate on fundamental variables but they extrapolate mistakenly fast developments in short period of time too far in the future. They believe naively that positive developments will continue for a long time.
- **Fads.** Different actions undertaken by investors are driven by social and psychological factors. Individuals feel strong pressure from majority to accept general beliefs. It was important during internet stocks bubble. Conservative stock analysts were ignored like outdated thinkers because they did not adopt way of thinking of 'new era'.
- **Informational bubbles.** Prices differ from fundamentally justified prices because investors assume incorrectly that prices already include influence from

some hidden fundamentals. Investors believe that rapid price appreciation was caused by some important information that is not known to individual investors. Individuals hope to benefit from this hidden information, they buy and drive market higher. Momentum aspects of bubbles make these very fragile. Small change in trigger could result in large movement in investor behaviour and market price.

In the boom of the Baltic countries probably all four types of emotional fallacies were present. Many participants were aware that asset prices were too high but they still tried to extract some profits before the markets collapse. Extrapolation of current rapid growth rates too far into the future was common. Property markets were described by fad because public opinion was positive and admiring creation of real estate empires and real estate development. The typical boom and bust cycle is presented on the following Figure 1.

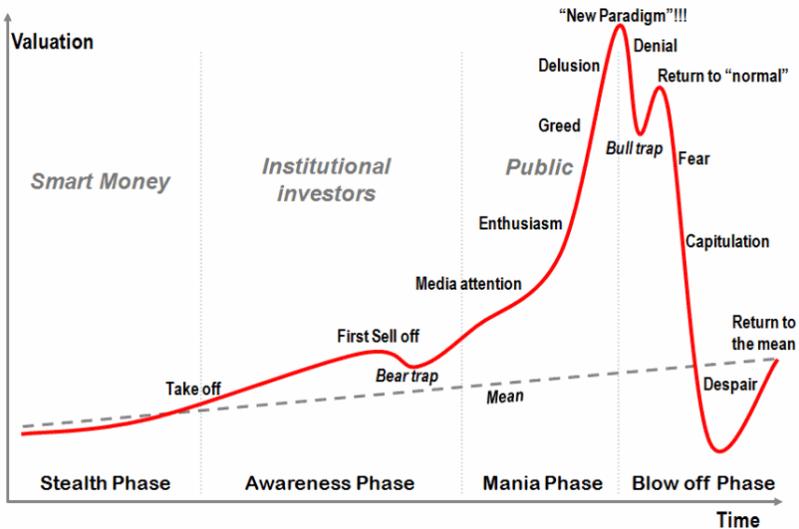


Figure 1. Phases of speculative bubbles. Source: Rodrigue, J.-P. 2008.

In the Baltic countries the Mania phase probably began in 2005. The “New Paradigm” perception and market top was achieved in 2007. The first to achieve its top in early 2007 was the stock market. The property market achieved its top in early 2008.

Emerging markets are speculative by nature and nominal prices of assets or resources may overshoot in short-term. The extent of market price movement depends on how elastic are supply and demand. Likely on markets where the number of suppliers is smaller, elasticities are lower. Therefore overshooting on smaller and less developed markets are more likely. Capital markets and labour

markets are good examples. Therefore the levels of capital supply and wages of 2007-2008 should not be taken as equilibrium levels. Prices of resources and assets exceeded equilibrium level in order to attract more resources and assets to the markets. The largest price appreciations were observable in nontradables sectors such as property market and labour market. Overshooting wage level and asset prices caused consumer prices to rise also very rapidly. This resulted in sharply higher tax revenues for the government. Real exchange rate or relative price level appreciated rapidly. Politicians welcomed the news of more tax revenues and sharply raised wages to public sector to increase popularity. Fixed costs of public sector increased. After the end of the boom the government lacked resources and faced cost-cutting. This time several tax rebates were cancelled instead of cutting back public sector pay level. Overheating of the economy was visible in the form of extraordinarily high current account deficit ratio to GDP.

Montiel (Montiel *et al.* 1999, p. 1) wrote that the highest goal of exchange rate policy is to avoid large and persisting misalignments from equilibrium. The goal should be to avoid such misalignments. Overextension in the economy may result in inconvenient corrections for investors and other economic agents. John Williamson in his basic work on international exchange rates 'The Exchange Rate System' in 1985 stressed that the real exchange rate misalignment causes misallocation of resources and macroeconomic problems (Williamson 1985). Increasing financial integration throughout the world elevates the costs related to real exchange rate misalignment (Montiel *et al.* 1999, p. 2). It means that on financially integrated markets adjustments will be more powerful.

2. The main act: the crisis

The trigger

Global economic crises started on US housing market which slowed down due to increasing central bank interest rates and record high commodity prices. US house prices topped in summer 2006. In 2007 started doubts and problems regarding leveraged mortgage backed securities (Figure 2).

Economist Robert Shiller from University of Yale wrote a book 'Irrational Exuberance' about ensuing overwhelming correction on housing market in coming decade (Shiller 2005). Another authority pointing to US housing bubble was Federal reserve Bank's former head Alan Greenspan. Despite that, large losses in house prices came as a surprise to most of market participants. Problems accelerated rapidly in 2008 when leveraged trader of such securities Lehman Brothers went bankrupt. The reality hit and momentum-driven traders started selling all kinds of securities. This broad wave of fear and inconfidence sent US stock market implied volatility index VIX to 89 percent, which was the highest level of all history (Figure 3).

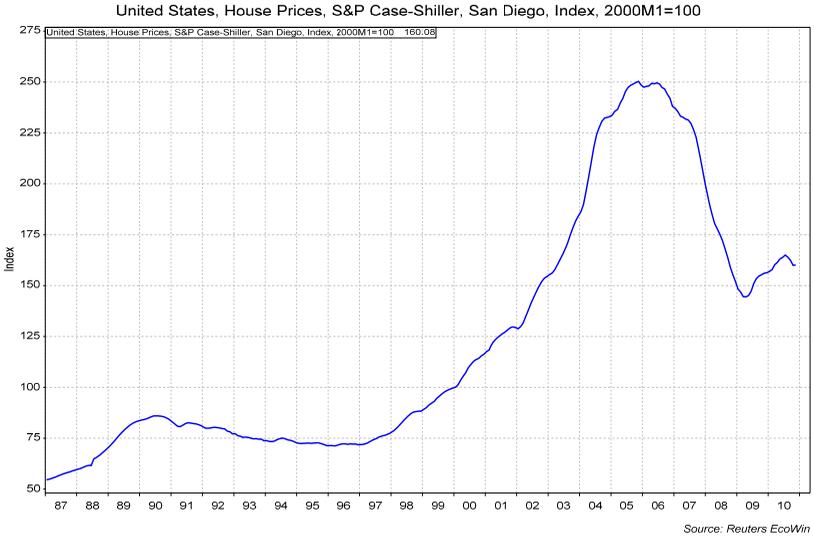


Figure 2. House price in San Diego, Case-Shiller Index 1987-2010. Source: Standard & Poor's, S&P/Case-Shiller Home Price Indices.

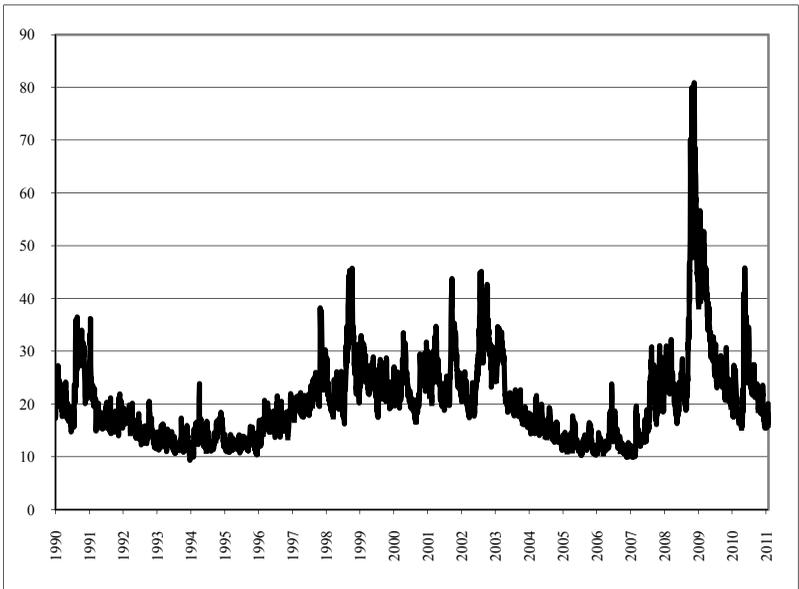


Figure 3. S&P 500 options implied volatility index VIX in 1990-2011. Source: Chicago Board Options Exchange.

Banks were among the most vulnerable companies. If quality assets on developed markets became available at cheap prices, such speculations like bubbles in emerging market assets had no other outcome as to explode. At that moment steady inflow of foreign capital had reversed in the Baltic countries. This was the most important abrupt change in economic environment.

Emerging markets reacted differently to this change. The countries with the biggest bubbles suffered the most – like the Baltic countries and especially Latvia. The change is depicted on Figure 4 on the next page. Risk premium for emerging markets had increased throughout 2007 and exploded in Q3 2008. The mainstream economic thinking concluded that the Baltic country’s currencies should be devalued to allow such abrupt adjustment after so big current account deficits. But the political will was against it. All the necessary adjustment had to take place through deflation and increase in unemployment. This was political decision to avoid devaluation at any cost.

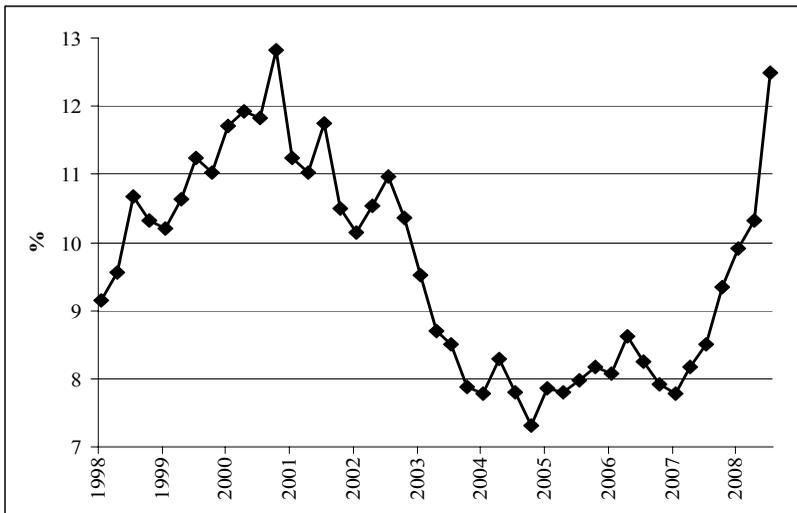


Figure 4. Emerging market risk premium 1998-2008. CSFB High Yield Institutional Index. Compiled by Credit Suisse First Boston. Source: Credit Suisse First Boston.

But some other countries shared the adjustment pressure between labour market and real exchange rate letting their floating currencies to depreciate. The following Table 1 presents the maximum downward movements on selected Eastern European countries.

The Table 1 shows that the Baltic countries experienced the deepest downturns in almost every category except in currency depreciation. Polish economy was able to avoid GDP loss during economic crises because real exchange rate depreciation was the largest in Eastern Europe. But it has to be remembered that Polish GDP was

measured in local currency which depreciated against the euro. Polish population also was not possessing big loan burden in strong foreign currency.

Table 1. Maximum losses of the crisis in Eastern European countries 2008-2009

	Max. stock market decline	Max. currency depreciation against €	Max. property prices downturn	Max. GDP loss, S.A.	Max. unemployment
Estonia	-77.48%	0.00%	-62%	-19.23%	19.8%
Latvia	-73.50%	-2.07%	-60%	-28.28%	20.4%
Lithuania	-73.65%	0.00%	-40%	-19.69%	18.3%
Czech Rep	-68.79%	0.00%	0%	-4.94%	9.7%
Poland	-68.20%	-31.57%	-9%	-2.54%	12.3%
Slovak Rep	-56.31%	0.00%	-18%	-5.40%	15.1%
Russia	-80.28%	-29.00%	-12%	-18.50%	8.6%
Romania	-83.12%	-29.88%	n.a.	-10.35%	8.1%

Source: IMF International Statistics Database, Global Property Guide, author's calculations.

Relative euro wages as alternatives to exchange rates

When talking about adjustment through unemployment, wage level becomes a key. But wage level is also an alternative measure of price level or real exchange rate. Proxy for real exchange rate may be **wage level** expressed in international currency. Wage level is important cost factor for international entrepreneurs or investors. Halpern (Halpern *et al.* 1997, p. 434-435) also pointed to dollar wage index similarity to real exchange rate. The same indicator was promoted by Thorvaldur Gylfason (1.1) (Gylfason 2002).

$$(1.4.) \quad R_w = \frac{eW}{W^*}$$

where R_w is the real exchange rate from wage indices, e is the nominal exchange rate (foreign units per one domestic unit), W is the wage index in domestic country in domestic currency and W^* is the wage index in foreign country in foreign currency.

But this index still fails to account for relative productivity change. Still, if local labour force is assumed to be nontradable or immovable resource over country borders, then this indicator is a good proxy for local price or cost level. The cost and price of local nontradable services depends directly on local wage level as local market is unavailable for international price competition and local labour is often the most important input. The following Figure 5 depicts growth of euro wages in Eastern European countries.

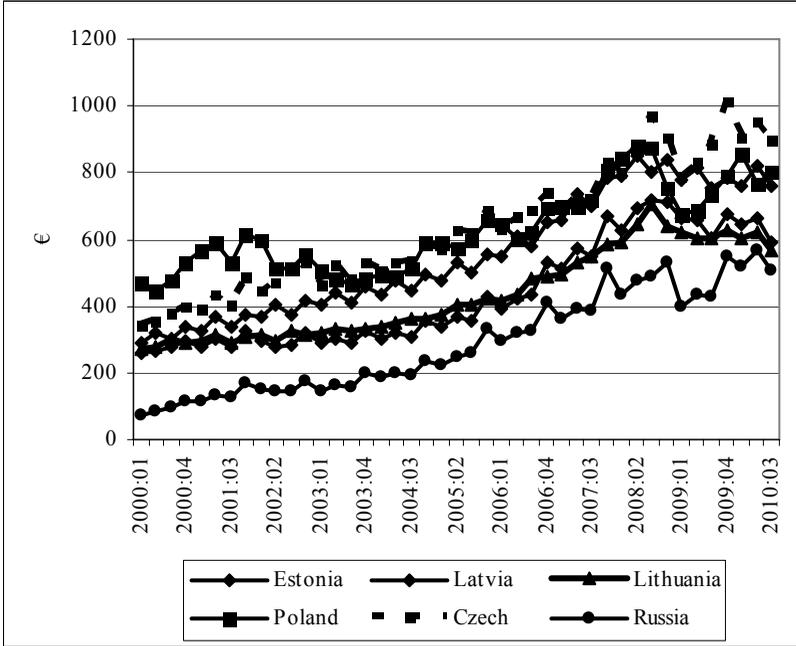


Figure 5. Annual nominal euro wages in selected Eastern European countries 2000-2010. Source: IMF International Statistics Database.

The Figure 5 shows that rapid appreciation of wage level or real exchange rate indeed started in 2005. Due to nominal depreciation of the exchange rate Poland and Russia managed to adjust euro wages to lower level among the first selected developing countries. Estonia was quite slow. But avoidance of devaluation actually served this goal.

The next Figure 6 shows year-over-year change in euro wages in selected Eastern European countries. This figure convinces also that those countries with floating exchange rates were able to achieve more rapid upward or downward adjustments of euro wages or real exchange rates.

Generally downward adjustments of euro wages were still rather small. Even in those countries which had floating exchange rates. Therefore the loss for the Baltic countries was not probably so big. On the other hand other countries were not in such a deep disequilibriums.

As a result of the crisis and slow downward adjustment of the local price level, likely short-term overvaluation of the real exchange rate or price level was created. Several indirect signs recommended that. For example large GDP loss and high unemployment rate. The previous Table 1 shows that the Baltic countries

experiences the largest GDP losses and the highest unemployment in the sample of Eastern European countries.

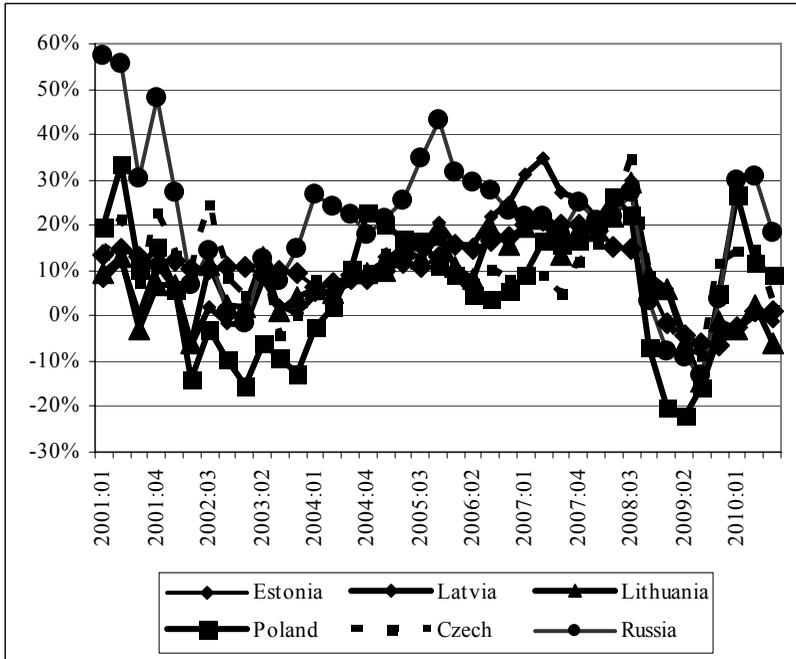


Figure 6. Annual nominal euro wage growth in selected Eastern European countries 2001-2010. Source: IMF International Statistics Database.

3. The solution and way out of the crisis

The problem is that adjustment takes long time. Considering how volatile were Estonian macroeconomic variables during boom times, ensuing downward adjustment should be probably much bigger than was visible in terms of relative price level depreciation.

The consequence of choosing so-called internal devaluation is that unemployment will stay high for long period and GDP growth rate rather low. Real exchange rate misalignment of overvaluation is likely related to slower GDP growth rate (Razin *et al.* 1997, p 1) than otherwise. Wage level growth rate should remain also low in order to allow relative euro wage level adjustment. The vicious view on internal devaluation is that choosing such track of economic development was advantageous to high rank officials and businessmen. They were able to keep their high level wages and profits. Fighting high level of unemployment was not in their first interest. Politicians pursued to avoid devaluation in any case as this was their core

promise to voters. The benevolent view could be that loan-burdened people were saved and wage-earners were supported in expense of enterprises, whose profitability was depressed because of higher-than equilibrium euro wage level.

The next step is to wait until productivity in the economy catches up with actual level of wages and prices in the Baltic countries' economies. Until then unemployment rate will stay high and nominal growth rate of wages remain low. Eventually the world is fair.

Consequences of running probably overvalued price level and high unemployment rate are increasing income inequality, weak property markets, high delinquency rates of bank loans, difficulties in financing start-up companies and stressful relationships between employers and employees. These points result in high social costs in terms of active emigration of young workforce, insufficient investments into education and creation of discouraged workers.

During the last economic boom the Baltic countries took on large amounts of foreign capital. This pushed short-term equilibrium real exchange rate higher. The net investment position ratio to GDP is depicted on Figure 7 below.

The Figure 7 shows that Estonia should probably return foreign investor's funds rather than increase foreign investments. This should put ceiling on real exchange rate or price level or wage level appreciation in future.

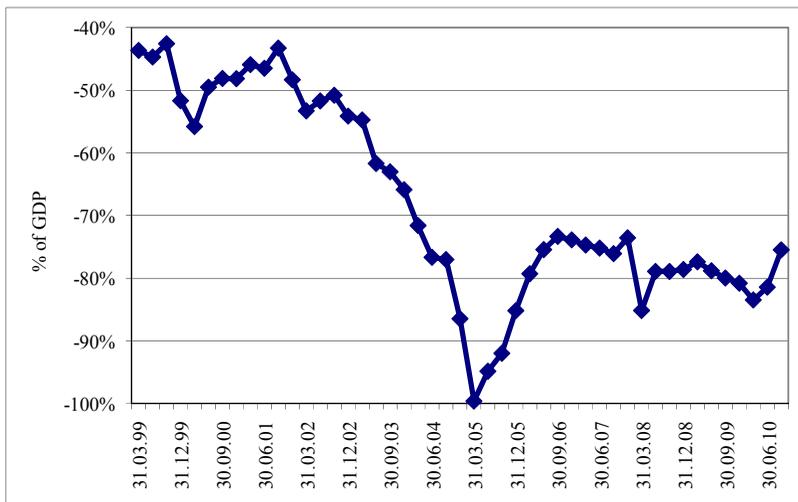


Figure 7. Net investment position to annual GDP ratio in Estonia 1999-2010.

Source: Bank of Estonia, Statistics Estonia, author's calculations.

Probably the Baltic countries experienced overvalued real exchange rate or relative price level at least in short-term. This fact is supported by facts that Baltic countries suffered deflation and downward pressure on wages, unemployment rate moved to very high level, GDP loss was large and property prices crashed.

How positive real exchange rate misalignment (MISAL) is corrected:

MISAL \uparrow \Rightarrow production costs (wages) \uparrow \Rightarrow profits \downarrow \Rightarrow foreign investments \downarrow \Rightarrow current account \uparrow \Rightarrow money supply \downarrow \Rightarrow absorption \downarrow \Rightarrow prices, wages \downarrow \Rightarrow RER \downarrow \Rightarrow MISAL \downarrow

4. The main lessons of the crises and discussion

1. The crisis was beneficial for the Baltic countries' economic future so that irresponsible risk-takers on properties market were ripped off of their capital. Preceding decades of Estonian economic history convinced local businessmen that you can not lose capital in developing real estate projects. Therefore perceived risk-reward ratio in real estate business was very good. Therefore the first and the most important lesson for Estonian entrepreneurs was that real estate business is not risk-free.

2. Another lesson was that businessmen should keep their heads cold and not buy the politicians propagandistic promises of everlasting economic prosperity. This is especially true in Estonia where the government pursued balanced budget policy. Previously too rapid growth favoured reckless businessmen who acted first and then performed analysis and justified.

3. If economic agents would think more often about the equilibrium level of price level, the actual price level in the economy and the difference between them, then economic decisions could be better. Necessity for painful cost-cuttings and destructive steps in future could be smaller. Finding the exact equilibrium value of the real exchange rate is a difficult task but is highly rewarding as estimating fair value of the share in listed company.

4. Policy-makers and individuals underestimate importance of market forces, its impact on macroeconomic development and everyday life. This lack of knowledge about modern macroeconomy is visible in average voters rhetorics on economic slump. Emotions and expectations have bigger role than mainstream economic thinking presumes.

Financial theory says that in order to achieve optimal total risk level and if operating leverage is high, then financial leverage should be low to maximize capital-owners welfare. The recent crises showed that Estonia belonged clearly into the group of emerging market countries and operating risk was high. This was demonstrated in how foreign investors cut back their investments in Estonia. Despite much lower prices for properties and labour force they still keep low profile. Estonia is forced to finance capital outflow from higher current account surplus. This requires rather

lower real exchange rate and puts pressure on local price level in terms of decreasing wages and high unemployment. Therefore the two most realistic ways to restore equilibrium price level or real exchange rate is to:

- 1) restore investor's confidence and investments inflow or;
- 2) go through deflation of wages and nontradables prices.

Mainstream economic theory would recommend devaluation of the local currency but Estonia does not possess this option after adoption of the euro. Deflation is painful and costly because it means keeping overvalued real exchange rate for a long time. Therefore the only positive option is restoring investor's confidence in Estonian economy. During the progress of the last crises this restoration took long time since US subprime mortgage securities crises was followed by several problems in Europe which intensified in May 2010.

On the other hand if international investors presume that local price or cost level is too high for productivity level in that specific country, they discard their investments. Overvalued real exchange rate should mean too high costs, lack of price competitiveness and lower expected rate of return on investment. Probably even bigger problem is that foreign investors are scared of the extent of macroeconomic downturn. The crisis itself creates new uncertainties regarding confidence in local banks and exit opportunities.

Rational expectations theory says that current expectations for the future are correct. In Estonia during real estate boom property investor's and Estonians expectations for everlasting bull market for properties were not correct. Therefore the asset bubble was not rational. Political implication could be that monetary policy should fight against irrational asset price bubbles. Estonia put their hopes on European Central Bank's interest rate increases. These steps were not sufficient to fight country-specific booms in Baltic countries. According to Gruen, Plumb and Stone (Gruen *et al.* 2003) from Australian central bank in the ideal world central bank reacts to asset price boom with raising interest rate and asset price weakness with lowering interest rates. But this would require central bank to give very precise estimation to price level's possible over- or undervaluation and existence of asset price bubble. Due to this fact central banks in real world are not able to provide optimal reaction to asset price bubble.

Estonian economic policy have been clearly right-wind. It means that economic individuals or speculators who participated in the bubble must suffer their consequences. Deep economic crises is just punishment for being overly optimistic. The world is finally still fair place. There is still at least one minor flaw in this kind of thinking. The individuals responsible for speculative boom were in large part foreign individuals or companies looking for risky business ventures of speculative nature. Therefore suffer other individuals (locals) than those who created the boom (international speculators). The simplest solution would be closing Estonia for capital mobility. This is impossible because Estonia wants to receive more foreign investments in long-term. More realistic proposition would be that local individuals

and institutions should understand better economic reality and keep higher financial reserves to avoid cutting back their costs in too extreme pace during bad times.

Conclusions

The main issue of the article was the statement that Estonia experienced speculative boom which included overheating in property prices, stock prices and prices which determine labour costs. It was probably not the optimal outcome for Estonian economy and development. Abrupt and sizable adjustments are probably accompanied with high restructuring costs in society and high unemployment.

The main conclusion is that Estonian economic agents were inexperienced, emotional and probably irrational because such booms and busts are likely characteristics of inefficient markets.

The Baltic countries and other Eastern European countries went through speculative boom due to accession to the EU and expected adoption of the euro in 2004-2008. As a result of the boom local prices for assets and resources appreciated. The main local manly nontradable resource was labour force. According to the main definitions of the real exchange rate, real exchange rate appreciated rapidly. Actually wage level expressed in euros is quite good proxy for real exchange rate or local price level development. This was also expressed in rapid official inflation rate of consumer prices.

The boom was interrupted by US mortgage-backed securities crisis. Risk-aversion of global investors rose and emerging markets lost their previous attraction as a place of above-average speculative returns. Instead, investors pursued to massively sell assets on emerging markets. Rapid reversal of capital inflow instantly created short-term real exchange rate overvaluation. The data shows that some other developing countries, like Poland and Russia let their price level to adjust through depreciation of nominal exchange rate. Estonia and other Baltic countries decided to go through adjustment with deflation of prices and wages. This contributed to higher unemployment rate and GDP loss.

As Estonia lost its opportunity to lower actual real exchange changing nominal exchange rate and deflation of wages takes long time, the only positive way out of likely real exchange rate overvaluation appears to be restoration of foreign investors interest in local economy and reversing capital flows. According to the theories of real exchange rate, higher sustainable capital inflow raises equilibrium real exchange rate and this removes likely misalignment.

The other important implication was that local businessmen and other individuals were too much risk-takers for volatile emerging market economy. This was lesson to keep higher reserves for tougher times even if the government and politicians tout everlasting economic prosperity in order to become elected back.

References

1. Bank of Estonia. Statistics.
[<http://www.eestipank.info/pub/en/dokumendid/statistika/>]. 03.02.2011.
2. Chicago Board Options Exchange. CBOE Volatility Index (VIX). Reuters.
3. Credit Suisse First Boston. Emerging market risk premium 1998-2008. CSFB High Yield Institutional Index. Ecwin, ew:wld37753925.
4. Global Property Guide. [<http://www.globalpropertyguide.com/>]. 03.02.2011.
5. **Gruen, D., Plumb, M., Stone, A.** How Should Monetary Policy Respond to Asset-Price Bubbles?
[http://www.rba.gov.au/PublicationsAndResearch/Conferences/2003/Gruen_Plumb_Stone.pdf]. 02.02.2004.
6. **Gylfason, T.** The Real Exchange Rate Always Floats. University of Iceland. Presentation. [<http://www.hi.is/~gylfason/WEASeattle.ppt>]. 30.09.2002.
7. **Halpern, L., Wyplosz, C.** Equilibrium Exchange Rates in Transition Economies. - IMF Staff Papers, 1997, Vol 44, No. 4, pp. 430-461.
8. IMF International Statistics Database. EcoWin.
9. **Montiel, P. J., Hinkle, L. E.** Exchange Rate Misalignment: An Overview. In: Exchange Rate Misalignment. Concepts and Measurement for Developing Countries. A World Bank Research Publications, 1999, pp 1-37.
10. **Montier, J.** Behavioural Finance. Insights into Irrational Minds and Markets. John Wiley & Sons, Ltd. Chichester. 2002.
11. **Razin, O., Collins, S. M.** Real Exchange Rate Misalignments and Growth, 1997. [<http://econwpa.wustl.edu:8089/eps/if/papers/9707/9707001.pdf>]. 09.06.2011.
12. **Rodrigue, J.-P.** Stages of a Bubble. Department of Economics and Geography, Hofstra University. Wikipedia.
[http://upload.wikimedia.org/wikipedia/commons/4/4b/Stages_of_a_bubble.png]. 24.01.2011.
13. **Shiller, R.** Irrational Exuberance, Second Edition. 2005. Princeton University Press, p. 344.
14. Standard & Poor's, S&P/Case-Shiller Home Price Indices. EcoWin.
15. **Williamson, J.** The Exchange Rate System. - Institute for International Economics, Policy Analyses in International Economics, 22, Washington. 1985.