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**Stagflation in Latvia:  
How Long, How Far, How Deep?**

**A BICEPS and SSE Riga Report**\*

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## Executive summary<sup>3</sup>

What a difference a year makes. Our previous report, from June 2007, focussed on overheating of the Latvian economy and rising inflation. Now, some 14 months later, the Latvian economy has entered recession as measured by two consecutive quarters of seasonally adjusted GDP decline. At the same time the latest inflation rate is down from the peak observed in May of this year.

Thus the issues to be discussed in this year's report are somewhat different. In particular we raise five questions – questions we believe should be at the forefront of the economic-political debate in Latvia:

- 1) Has inflation indeed spiked?
- 2) Is disinflation (ie the rate of decline in inflation) likely to be fast or slow?
- 3) Why has the Latvian inflation experience been so much worse than elsewhere e.g. the two other Baltic countries?
- 4) How deep a recession – permitting the use of that concept – will Latvia experience?
- 5) How long will it take for the economy to recover?

We offer the following responses to these questions:

- 1) It is likely that inflation has indeed peaked – the slowdown of the economy and thus the unwinding of overheating in the labour market should suffice for that conclusion.
- 2) The evidence from our Phillips curve analysis, i.e. the inverse link between the rate of inflation and the unemployment rate, together with the flexibility of the Latvian labour market points in the direction of a fast disinflation, while evidence from other countries emphasises the persistence of inflation. However, it needs to be borne in mind that the Phillips curve analysis also predicts that lower inflation will come at the cost of higher unemployment.
- 3) A much more overheated labour market in Latvia and perhaps belated policy response are to blame for the worse performance in Latvia.
- 4) and 5) Evidence from international experience suggests that the cumulative loss from a recession might be the equivalent of two years of double digit GDP growth relative to trend. Instead of growing 10-11% as was the norm until 2008 negative growth – recession – is on the cards. This loss of potential GDP is a setback for the prospects of Latvian convergence. The Latvian economy may be expected to resume normal growth in 2010.

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## 1 Introduction

In recent years Latvia has been the economic growth pacesetter in Europe with double digit growth in each of the three years to 2007. However, this has been at the price of rising inflation. Thus, in our June 2007 ‘inflation report’ we wrote that (p. 8-9) “The current surge in wages<sup>4</sup> has still not shown up fully in inflation but we should expect it to do so later i.e. PPI inflation is very likely to increase and with it to some extent CPI inflation, too”. This turned out to be correct: From June 2007 until May 2008, i.e. for eleven months in a row, inflation increased. In fact it more than doubled, from 8.5% to 17.9%. Since May inflation has dropped to 17.7% in June, 16.7% in July and 15.7% in August. Thus it looks as though the May figure represents the peak but at 15.7% Latvian inflation in August remains comfortably the highest inflation rate in the EU.

Latvia at various times during 2007-2008 has held the EU “record” for inflation, current account deficit, credit growth, wage growth and GDP growth and it now seems set to claim yet another record: For the largest annual drop in the GDP growth rate. GDP growth in Latvia was 11.0% year-on-year for the second quarter of 2007 – the latest figures, for the second quarter of 2008 posted a growth rate that at 0.1% was only just positive, representing a decline of nearly 11 percentage points as compared with a year before. Recent GDP figures suggest that Latvia is lagging Estonia by a quarter in the downward path of economic activity, so Estonia’s 1.1% decline in GDP in the second quarter points to a similar negative Latvian outturn in the third quarter.

It is rather clear, even to the most optimistic officials and bankers, that Latvia is facing at best a period of stagflation and at worst a full blown recession the like of which has not been experienced in post-Soviet Latvia. Thus the relevant questions concerning inflation and GDP in Latvia have changed quite a bit since our 2007 report. This report therefore tries to address the following:

- 1) Has inflation indeed spiked?
- 2) Is disinflation likely to be fast or slow?
- 3) Why has the Latvian inflation experience been so much worse than in e.g. the two other Baltic countries?
- 4) How deep a recession will Latvia experience?
- 5) How long will it take for the economy to recover?

Unsurprisingly, policy makers in Latvia and elsewhere have appealed to global factors such as the rise in oil prices or the surge in food prices as an explanation for poor inflation performance. Accordingly, here we examine two decompositions of Latvian and Baltic inflation into domestic and external or common components. We find that Latvia stands out as having much higher domestically generated inflation than the other two Baltic states. It is tempting to attribute such differences to the inadequacy of domestic policy – however some part of even country-specific inflation may be the result of structural factors that are beyond the direct influence of macro-policy.

Addressing the issue of disinflation and in particular the speed at which this can be expected to take place we have examined the evidence from some simple characterisations of the Phillips curve in Latvia. A very tentative conclusion might suggest relatively rapid disinflation but this hinges, crucially, on stable inflation expectations and rapid wage disinflation. Moreover, the Phillips curve analysis suggests that disinflation will be accompanied by rising unemployment.

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<sup>4</sup> Wages were growing at an annual rate in excess of 30% in the first quarter of 2007.

Current developments in the world economy suggest that the Latvian slowdown is part of a much broader global slowdown induced by both oil and commodity price rises combined with the global ‘credit crunch’. This has prompted us to examine earlier episodes of oil and commodity price shocks to see how they might inform interpretation of the Latvian situation. In particular we have examined the oil price shocks of 1973 and 1979 where according to Blanchard and Gali (2007) the cumulative fall in GDP (relative to trend) for the EU-12 was 9.1% for the first shock and 2.9% for the second shock. For the US the impacts were -13.3% and -11.8% while for the UK they were -16.4% and -9.2%. Blanchard and Gali observe that the impact of the oil shocks of 1999-2000 and 2002 to the present appears to have been smaller than was the case in the 1970s. However, they argue “there were indeed other adverse shocks at work in the 1970s; the price of oil explains only part of the stagflation episodes of the 1970s” (p 3). It also appears to be the case now with non-fuel commodity prices rising by 65% since 2005 e.g. wheat prices rising by no less than 129%<sup>5</sup>. While the present is not an exact reproduction of the 1970s we feel that especially for a high inflation country such as Latvia the 1970s stagflation offers some clues as to how the slowdown might develop today.

The remainder of the paper is ordered as follows. Sections 2 and 3 discuss and model inflation decomposition by separating common inflation factors from country-specific factors. Section 4 looks at the Phillips curve while section 5 examines evidence from previous stagflations. Section 6 concludes.

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<sup>5</sup> See IMF World Economic Outlook database.

## 2 Inflation decomposition: EU-common components vs. country-specific components

That the inflation experience of Latvia has differed from that of the EU27, the eurozone and even of its Baltic neighbours has been evident for some time (see e.g. our first report (2006)) but a quantification of how much difference there has been and in what sectors of the economy may help to illuminate the reasons.

Adhering to a Friedmanesque interpretation, long run inflation is solely determined by central bank monetary policy. For a common currency area such as the eurozone, long run inflation should thus converge. Short run inflation experience may be different in different eurozone countries but should also see less divergence the more homogenous and open the zone is – as product market integration among similar countries increases, price differentials become harder to sustain and thus inflation experiences should become more equal, diminishing the scope for the economic policy of individual nations to influence inflation. This forms the initial argumentation in Mody and Ohnsorge (2007) who then develop the idea further. In the EU, but outside the eurozone, similar forces should be present but so far with less strong effects. Non-eurozone countries, notably the new member states of eastern Europe, display more structural differences in their economies when compared with the eurozone countries and they also face a price level catch-up (essentially the Balassa-Samuelson effect) but a globalization argument (higher market integration) should still reduce inflation differentials also among these countries. In short, Latvian inflation can differ from EU-wide inflation due to structural differences (example: food is a larger share of CPI in Latvia than in most countries; as world food prices have soared so the impact on Latvian inflation has been higher), it can differ due to Balassa-Samuelson type price convergence, it can differ due to differences in regulated prices and their changes, it can differ due to Latvia-specific labour market effects and it could differ because of a different exchange rate regime, i.e. if Latvia did not peg to the euro.

Mody and Ohnsorge use this idea to separate inflation into two components, common inflation (or virtual inflation) and country-specific inflation. Their econometric modelling is fairly straightforward but notation-wise<sup>6</sup> very cumbersome. The next sub-section explains how the separation has been computed and what is meant by virtual inflation and country-specific inflation<sup>7</sup>.

### 2.1 Modelling and notation.

We have used annual inflation<sup>8</sup> data for all<sup>9</sup> 27 EU countries for 1999<sup>10</sup>-2007 for the twelve COICOP<sup>11</sup> level 1 commodity groups:

01	Food and non-alcoholic beverages
02	Alcoholic beverages, tobacco and narcotics
03	Clothing and footwear
04	Housing, water, electricity, gas and other fuels
05	Furnishings, household equipment and routine maintenance of the house
06	Health

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<sup>6</sup> See section II of Mody and Ohnsorge. A full presentation of the econometric model is beyond the scope of this paper.

<sup>7</sup> And may be skipped by the reader who wants to avoid the more technical parts.

<sup>8</sup> HICP data, i.e. Harmonized Indices of Consumer Prices, the common or harmonized approach by which inflation is calculated in all EU countries, see e.g. European Commission (2004) for an introduction.

<sup>9</sup> Though Belgium had to be excluded due to lack of data at certain disaggregated series for some years.

<sup>10</sup> I.e. from the start of the eurozone.

<sup>11</sup> Classification of Individual Consumption by Purpose, an internationally used standard.

07	Transport
08	Communications
09	Recreation and culture
10	Education
11	Hotels, cafes and restaurants
12	Miscellaneous goods and services

This means we have thirteen sets of annual inflation rates for each country – the overall inflation rate plus the (twelve) inflation rates for each of the commodity groups.

#### Virtual inflation for a product group for a country

Virtual inflation for product group  $i$  (e.g. for  $i = 10$ , education) for a country, e.g. Latvia

$$= \begin{aligned} & \text{Average (EU) product inflation of product } i \\ & + \text{ its domestic time-varying component} \\ & + \text{ its EU-wide time-varying component} \end{aligned}$$

Another way of putting it (and intuitively possibly more appealing) is as the inflation rate that would appear if only external factors influenced the inflation rate.

#### Virtual inflation for a country

The weighted average of the individual virtual inflation rates, weighted by the share of the product group in overall CPI/HICP for the country (example: for 2007 the weight for group 01 (food) was 25% for Latvia while the weight was 7.2% for group 09 (recreation and culture). For Sweden the corresponding weights were 14.6% and 12.4%, reflecting that Sweden is a richer country (people in Sweden spend more on food and recreation but spend relatively less on food and can thus also afford relatively more for recreation etc.). This also shows how a certain external food price increase would create higher inflation in Latvia than in Sweden.

#### Country-specific inflation for a product group for a country

Again, use education as an example:

Country-specific inflation ( $i = 10$ , education, Latvia)

$$= \text{HICP inflation } (i = 10, \text{ education, Latvia}) - \text{Virtual inflation } (i = 10, \text{ education, Latvia})$$

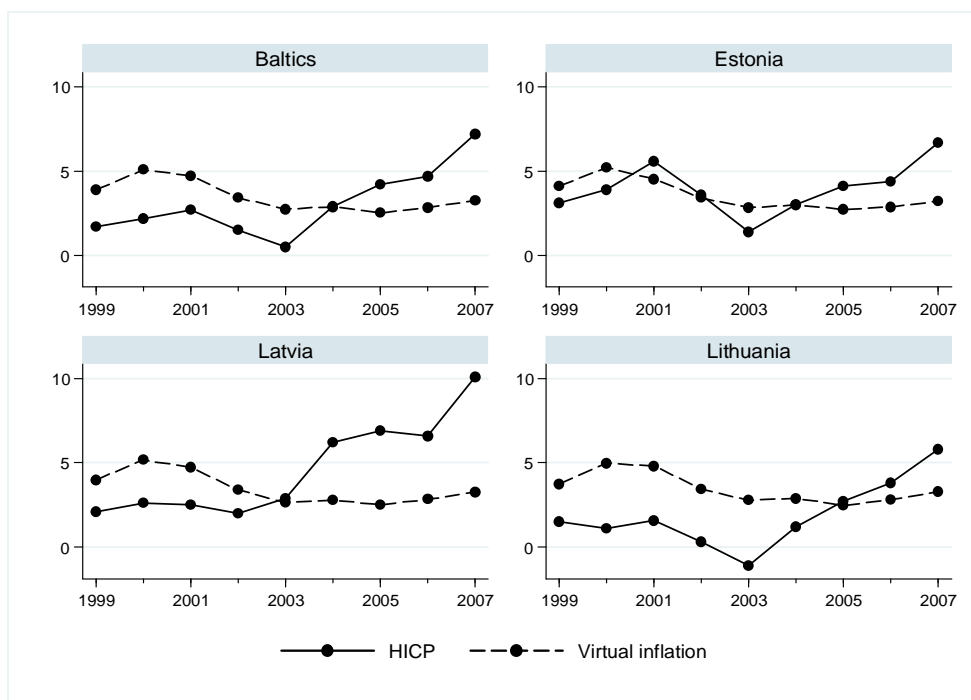
Or, in words, any difference between HICP inflation and virtual inflation is the result of country-specific factors. Country-specific inflation can of course be both positive and negative. An important outcome of this procedure is that any “excess” HICP inflation for some product group does not show up as country-specific c.f. the example above with Latvia, Sweden and food prices. “Excess” country-specific inflation is exactly that – excess inflation which is solely explained by domestic factors.

## **2.2 Results and interpretation**

Although our main interest is Latvia it adds insight to provide results also for Estonia and Lithuania and to use similarities and differences for making conclusions.

Below, in Figure 1, we portray overall HICP (Harmonized Indices of Consumer Prices, see footnote 5) inflation and overall virtual inflation for the Baltics as a whole, as well as for the three Baltic countries individually. Whenever these two differ, it implies that country-specific inflation – positive or negative – is present. In the following pages, in figures 2-13 we provide similarly constructed graphs for the twelve level 1 COICOP commodity groups.

**Figure 1: Overall HICP inflation and virtual inflation**



From 2004 Baltic HICP inflation rose above virtual inflation, implying that country (Baltic)-specific inflation became positive. Before 2004 this was actually negative, implying a Baltic-specific deflationary impact. As one can see from the graphs HICP inflation overtook virtual inflation first in Latvia, then in Estonia and lastly in Lithuania. The reason for the latter is undoubtedly the deflationary impact of the peg that Lithuania had had to the US dollar as this appreciated strongly back in 2002. This line of reasoning is consistent with our 2006 report. Why was Baltic-specific inflation negative prior to 2004? We believe it is mainly explained by low wage inflation relative to productivity growth.

Which conclusions can be drawn from the COICOP commodity group breakdowns? We found it most convenient to list the twelve graphs together on the following six pages. Below we comment on some of the more interesting results.

Food (group 01, Figure 2) somewhat resembles the overall picture. Around 2004 HICP inflation overtakes virtual inflation, in Latvia it starts earlier and the difference, i.e. the Latvian-specific inflation, becomes very pronounced from around 2004 as anyone shopping in Latvia will testify to. Although the effects are similar in Estonia and Lithuania they are much more pronounced in Latvia.

But why was this? Many in Latvia will see this as evidence of the “dark forces” of lack of competition among the (foreign-owned) supermarkets. We concede that less competition implies higher prices but this should be a one-off shift towards higher prices. Persistently higher inflation should then be the result of persistently less competition which is an assertion we do not believe stands up to scrutiny. Although the issue warrants deeper analysis than we can provide with this data we believe it is a result of the particularly overheated Latvian labour market. As wages increase fast (see also section 3), also for supermarket employees, costs are driven up for supermarkets and their logical response is higher prices. But whatever the reason, the data certainly shows that “Latvia is different”.

Clothing and footwear (group 03, Figure 4), a good example of traded goods, does what one should expect from traded goods i.e. that inflation is externally determined because of international competition. Country-specific inflation is thus quite subdued.

Housing, water, gas, electricity (group 04, Figure 5) displays positive Latvia-specific inflation from around 2005 – this must be a result of the rather sharp increases in administered prices in recent years.

Health (group 06, Figure 7) is a non-traded service i.e. strong possibilities for country-specific inflation exist. We associate the positive Latvia-specific inflation since around 2002 mainly with rising labour costs.

Communication (group 08, Figure 9) contributes with negative inflation and country-specific inflation is mostly negative in the Baltics reflecting increasing competition (and more scope for this in the Baltics) and innovation (lower unit costs).

Recreation and culture (group 09, Figure 10) is somewhat puzzling. Again, Latvia is ‘special’ with strong positive country-specific inflation since 2002 which we attribute to labour costs but we find it hard to explain the rather different development in Lithuania.

For education (group 10, Figure 11) we would a priori expect a similar picture as for health. This is roughly also what we have for Latvia – again, this is a highly non-traded service with little scope for productivity gains and where labour costs are the main variable costs. As these costs increase (higher wages for teachers and lecturers) so does the price of education. But we cannot explain why Estonia and Lithuania are so different – unless the reason is a much more overheated labour market in Latvia.

A somewhat similar picture emerges for restaurants and hotels (group 11, Figure 12) – Latvia displays a strong country-specific inflation which is absent in Estonia and for most of the years is negative in Lithuania. ‘Ice hockey effect’?<sup>12</sup> Stag party effect?<sup>13</sup> Or again labour costs? Disaggregated data (not reported in any graph) seem to provide evidence in favour of this.

Whereas it is rather pointless to discuss group 12, miscellaneous goods and services it is nevertheless interesting to see that it provides quite similar evidence as seen earlier with positive Latvia-specific inflation from 2003, not much Estonia-specific inflation and until recently (2004) negative Lithuania-specific inflation.

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<sup>12</sup> In 2007 Latvia hosted the World Championship in Ice Hockey. This made local hotels double or triple their prices and many pubs and restaurants followed suit.

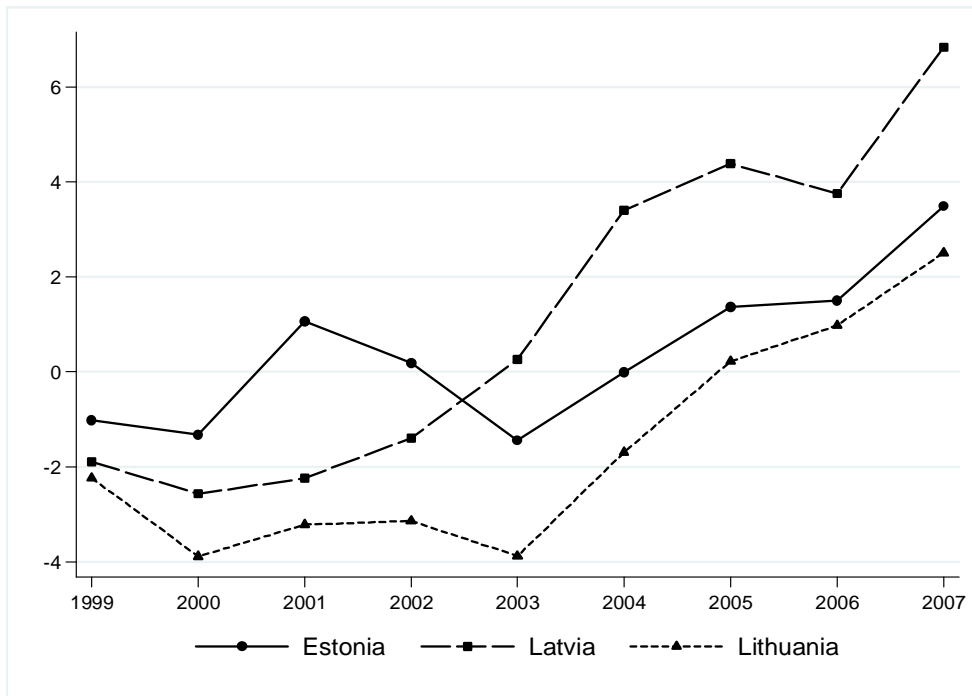
<sup>13</sup> Riga has become rather notorious as ‘stag party capital’ of the Baltics or perhaps of eastern Europe with higher prices as one consequence.



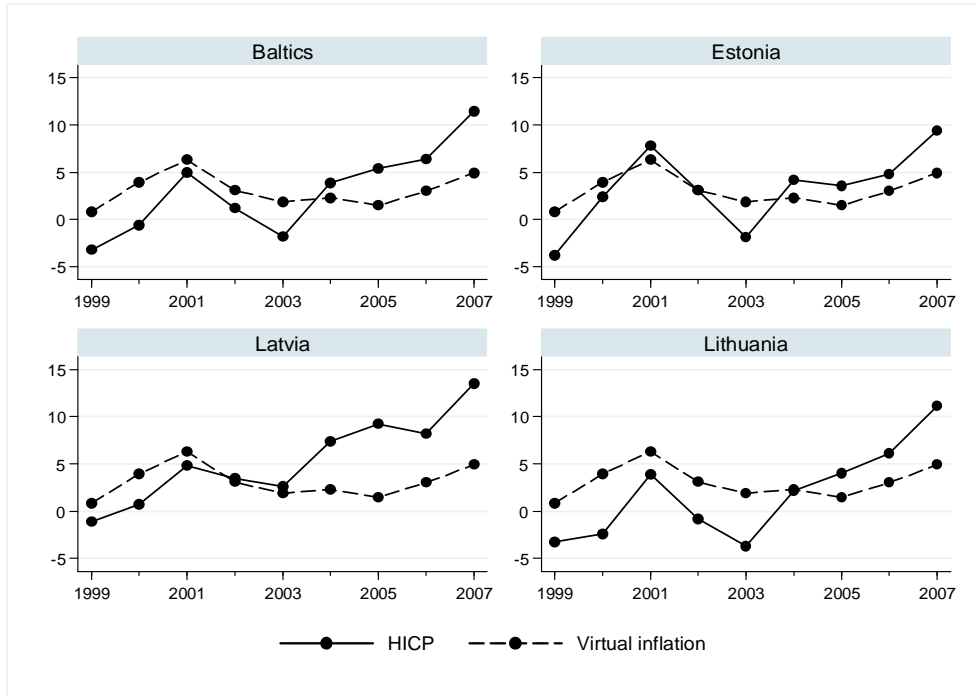
Summing up we must conclude that Latvia stands out from the other two Baltic countries with respect to country-specific inflation which has become strongly positive in many sectors such as food, alcoholic beverages, water and electricity, household equipment, health, transport recreation, education and restaurants. In fact, in eleven of the twelve COICOP groups (communication is the exception) Latvia-specific inflation is currently positive. We find that this provides a strong argument for a more overheated labour market in Latvia than in Estonia and Lithuania as the main reason – labour is, after all, the only factor of production used in all sectors of the economy. While different wage developments may not be the whole story it is certainly a very significant part of the story.

Figure 14 below displays overall country-specific inflation in the three Baltic countries. It shows that this has been increasing in all three since 2003 which follows our 2006 report well and that it is highest in Latvia as already explained.

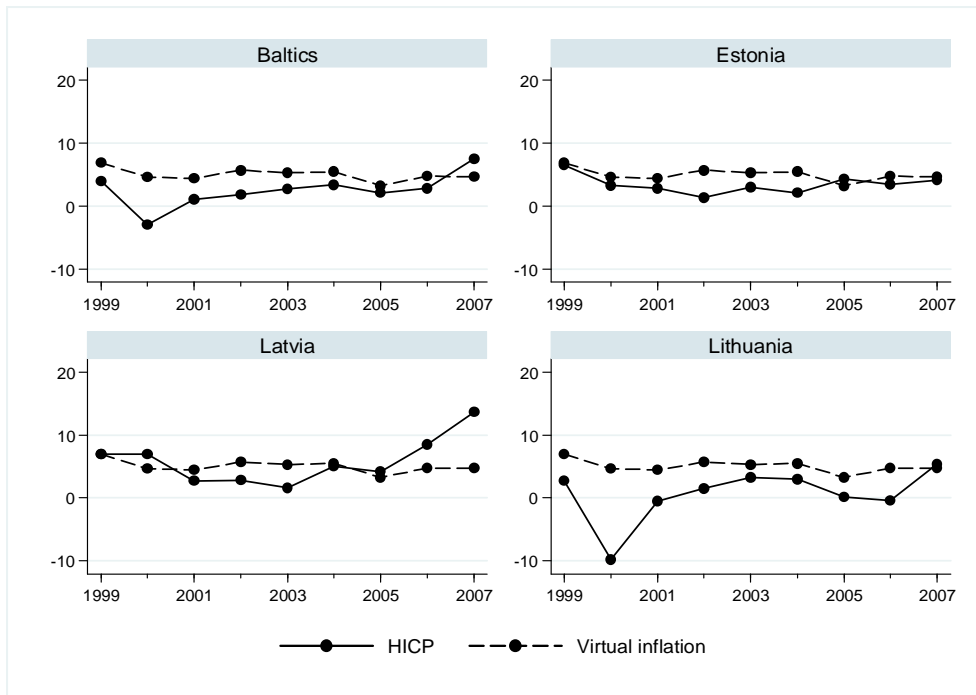
**Figure 14: Country-specific inflation**



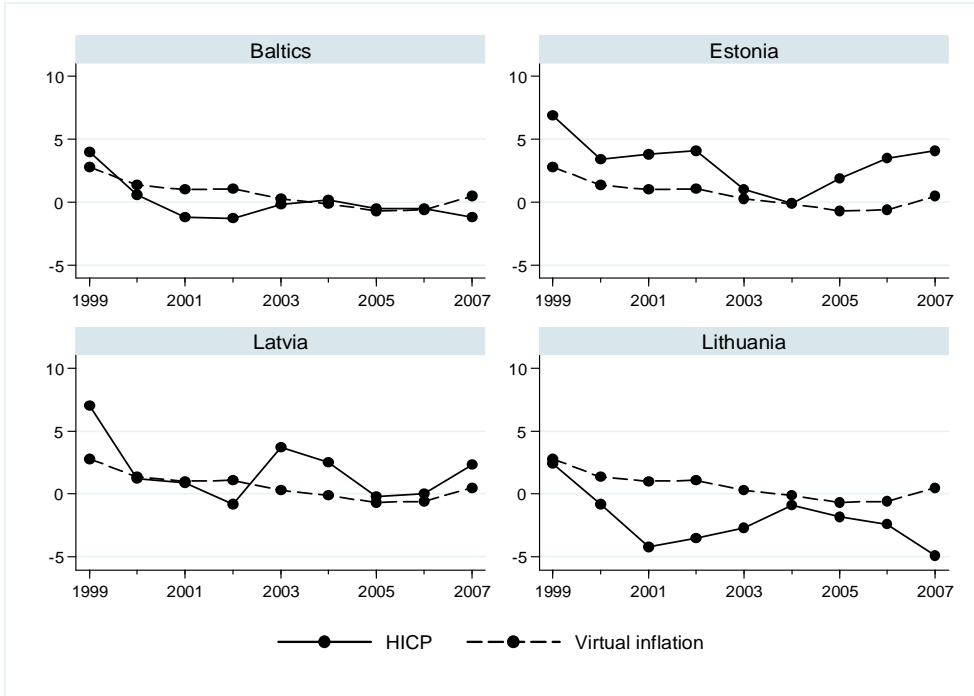
**Figure 2: HICP inflation and virtual inflation, 01, Food and non-alcoholic beverages**



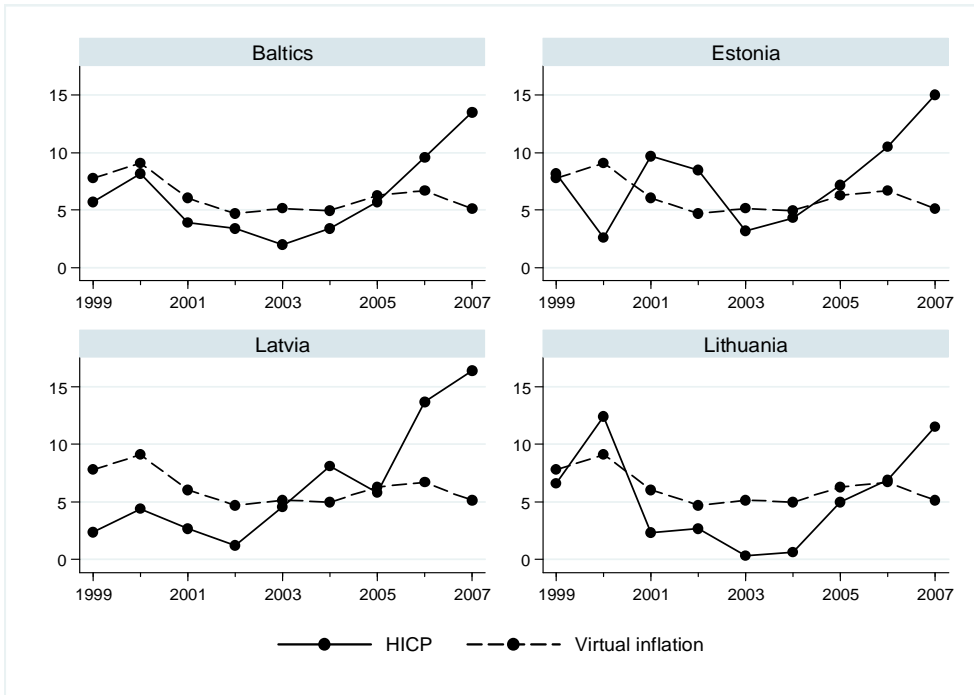
**Figure 3: HICP inflation and virtual inflation, 02, Alcoholic beverages, tobacco and narcotics**



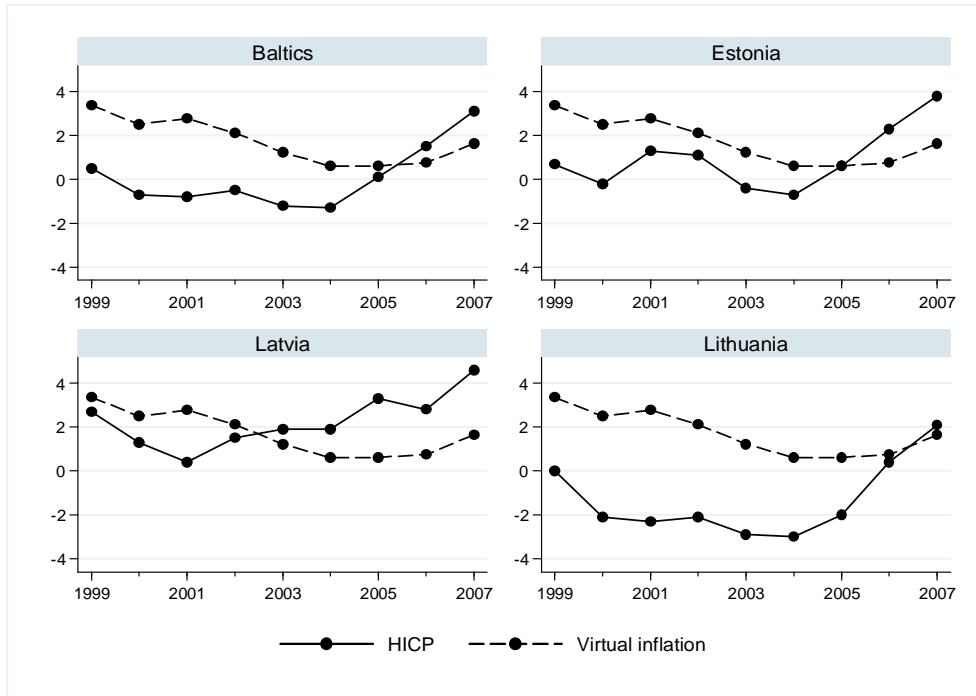
**Figure 4: HICP inflation and virtual inflation, 03, Clothing and footwear**



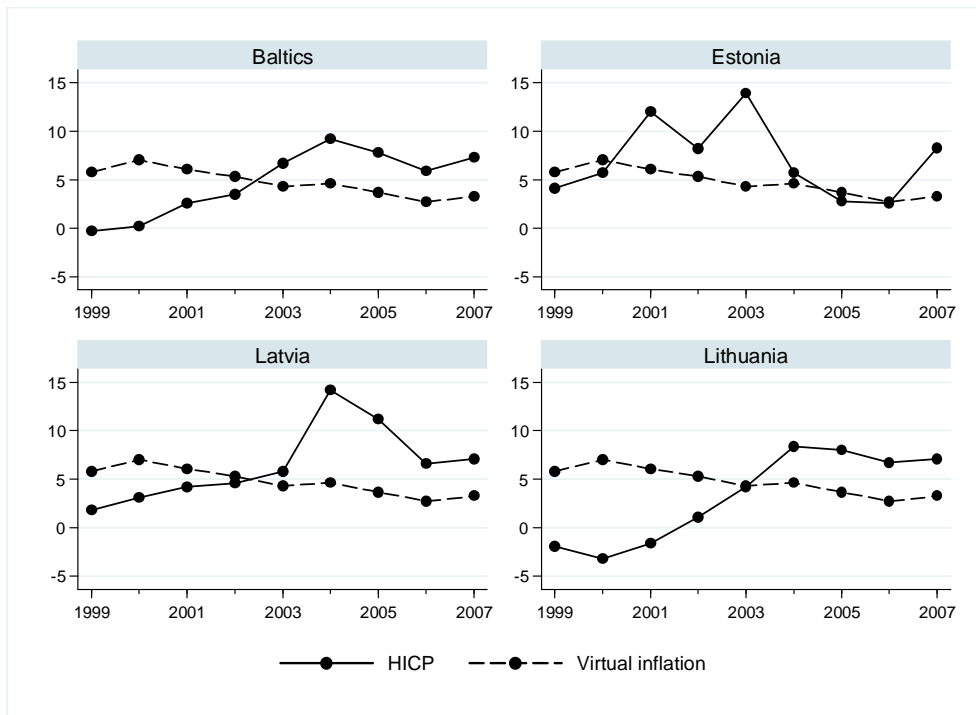
**Figure 5: HICP inflation and virtual inflation, 04, Housing, water, electricity, gas and other fuels**



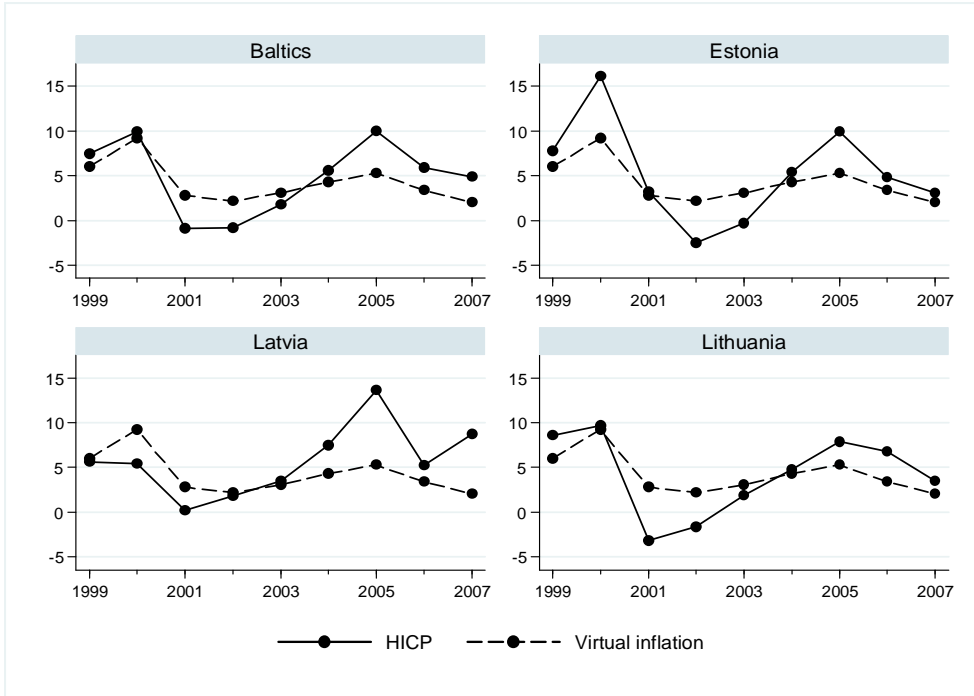
**Figure 6: HICP inflation and virtual inflation, 05, Furnishings and household equipment**



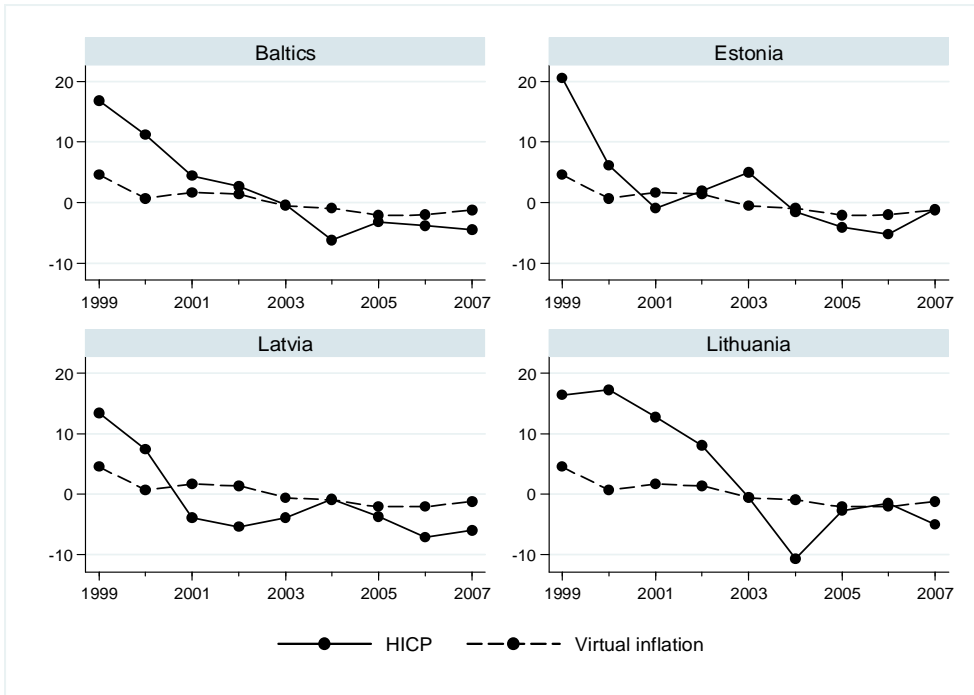
**Figure 7: HICP inflation and virtual inflation, 06, Health**



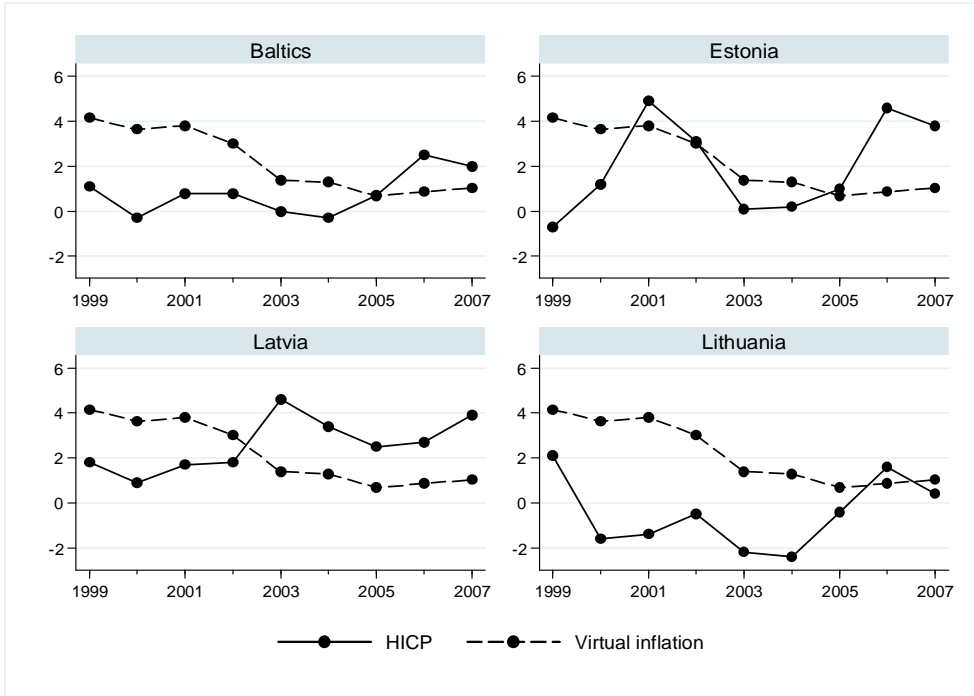
**Figure 8: HICP inflation and virtual inflation, 07, Transport**



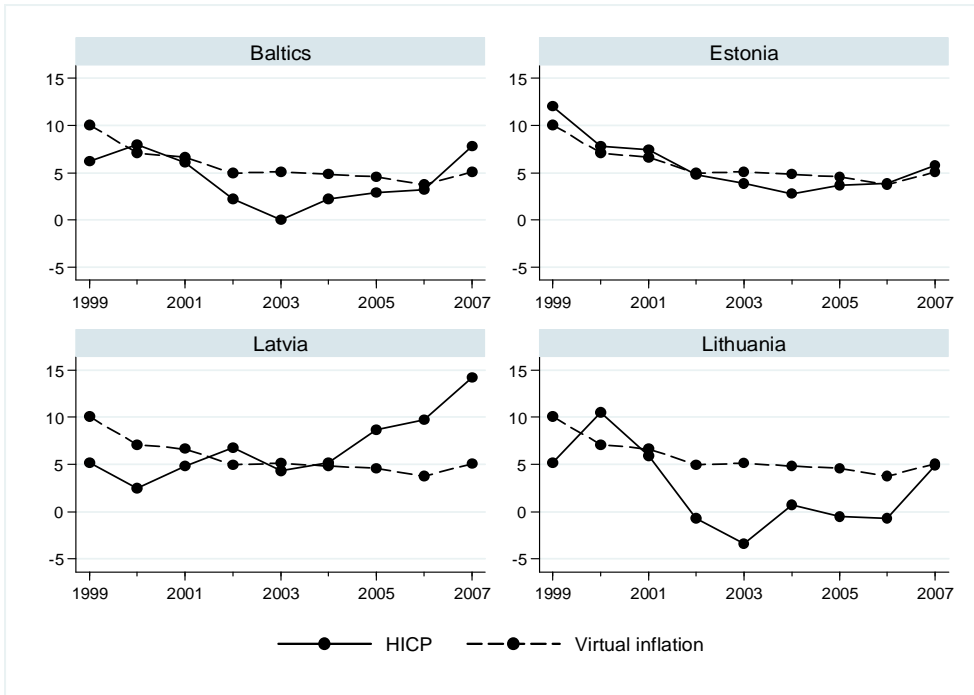
**Figure 9: HICP inflation and virtual inflation, 08, Communications**



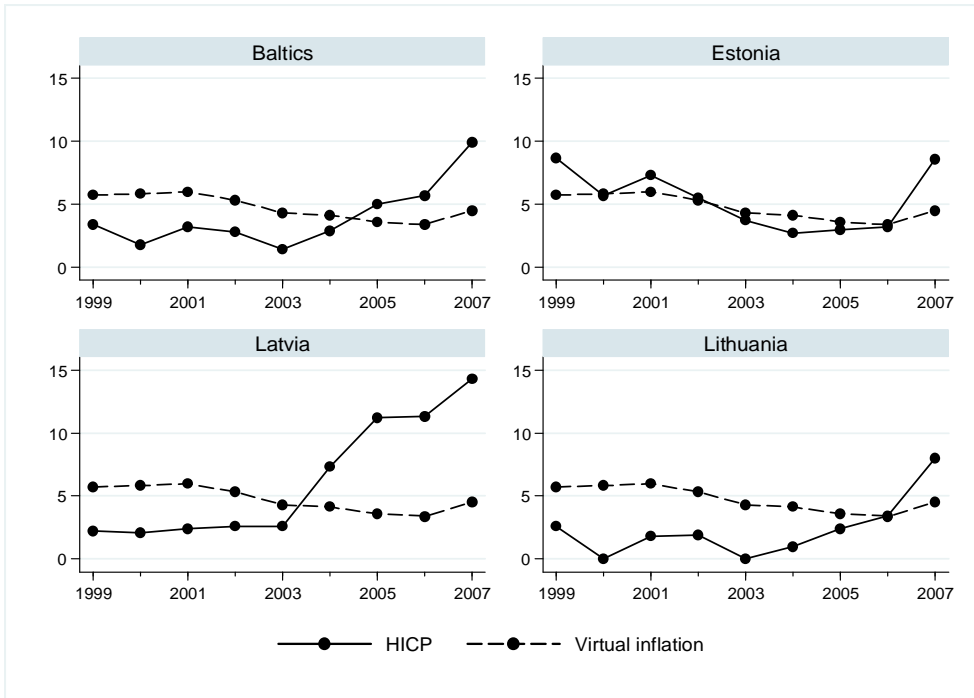
**Figure 10: HICP inflation and virtual inflation, 09, Recreation and culture**



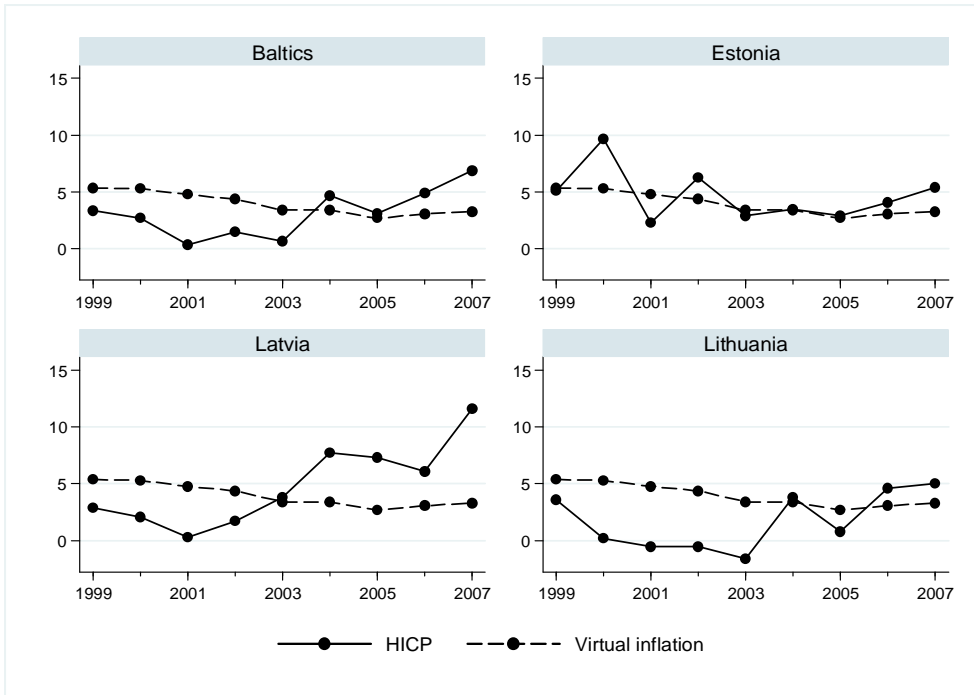
**Figure 11: HICP inflation and virtual inflation, 10, Education**



**Figure 12: HICP inflation and virtual inflation, 11, Restaurants and hotels**



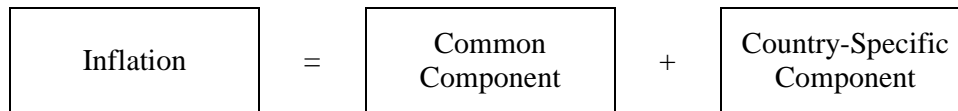
**Figure 13: HICP inflation and virtual inflation, 12, Miscellaneous goods and services**



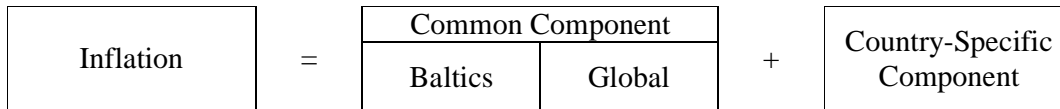
### 3 An alternative decomposition of inflation: NMS<sup>14</sup> common components vs Baltic country-specific components

An alternative approach to decomposition is to use the Global Factor Model (GFM), a statistical method similar to the common factor models that have been used to model the dynamics of industrial output (Stockman, 1988), employment (Marimon and Zilibotti, 1998), and stock returns (Brooks and Del Negro, 2004). Here we have taken the 12 EU new member states as the base of comparison on the grounds that these countries may have been subject to common influences not observed in the old EU. We have then applied the factor model method to decompose a country's inflation into two parts<sup>15</sup>: (i) a **Common Component** – that reflects factors that are common across all NMS-12 countries, and (ii) a **Country-Specific Component** – which reflects idiosyncratic factors tied to a particular country.

Graphically, the decomposition can be illustrated in the diagram below:



However, in order to test the hypothesis of a common “Baltics Inflation” we augment our analysis by further breaking the common component into two parts: (i) **Baltics Component** – a component that is observable in Latvia, Lithuania and Estonia only; and (ii) **Global Component** – a factor that is common to all NMS-12 countries. Our graphical decomposition, slightly modified, is shown in the graph below:



The main advantage of this decomposition is that our approach can shed some light on the extent to which the movement in HICP inflation of the Baltic countries is the result of a region-specific (Baltics) component as opposed to a global one. Before we move on to discuss the results one should notice that impact of the global component is equal across all NMS-12 countries; the impact of the Baltics component is the same for Latvia, Lithuania and Estonia; while the country-specific component is, by definition, idiosyncratic to a particular country.

The results of our decomposition are shown in Figure 15 below.

Several interesting things emerge from this figure. The global component has been relatively stable fluctuating around 5% until August 2007 but has been on the rise since then. Meanwhile, the Baltics component was negative until October 2004 but has been increasing since then. This component was disinflationary in nature during the first half of the period<sup>16</sup>; hence, the influence of the common factor was lower in Latvia, Estonia and Lithuania than in the rest of the NMS countries. In the second half of the period, the impact of the common factor was higher in the Baltic countries.

<sup>14</sup> NMS is commonly used for New Member States, i.e. the ten countries that joined the EU in 2004 and the two that joined in 2007.

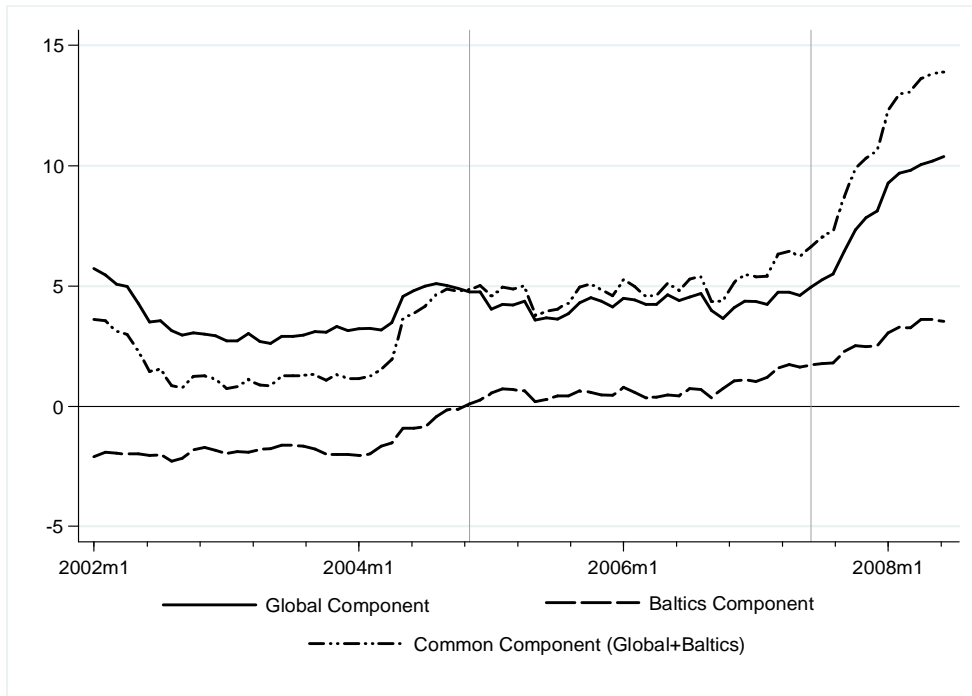
<sup>15</sup> All data and replication files, in STATA format, are available upon request.

<sup>16</sup> This is consistent with the analysis in section 2.

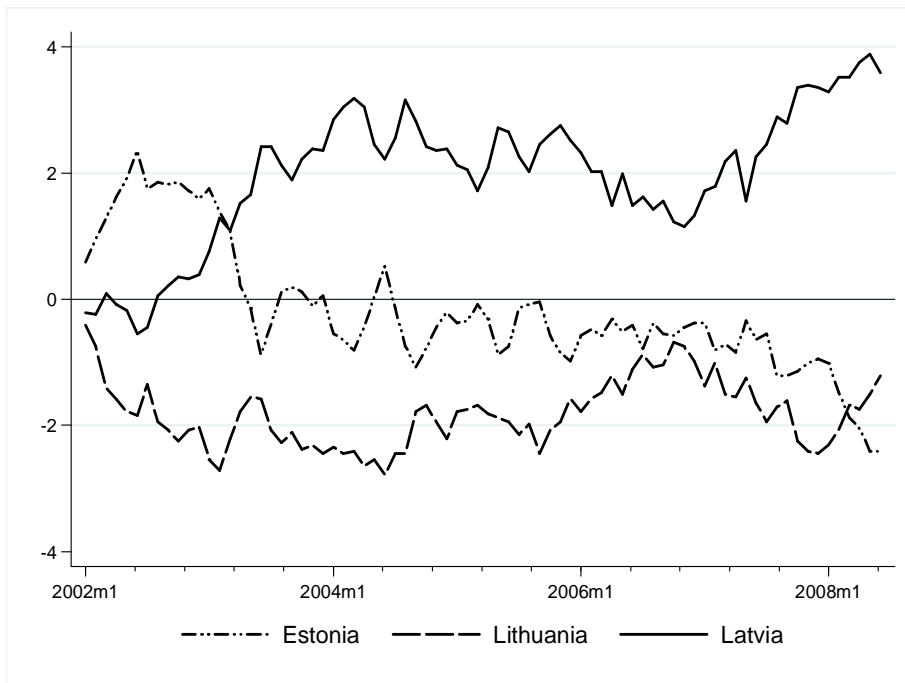


This illustrates the usefulness of our decomposition of the common component because one can say that it is not so “common” after all.

**Figure 15: Common Component Decomposition**



**Figure 16: Country-Specific Component**



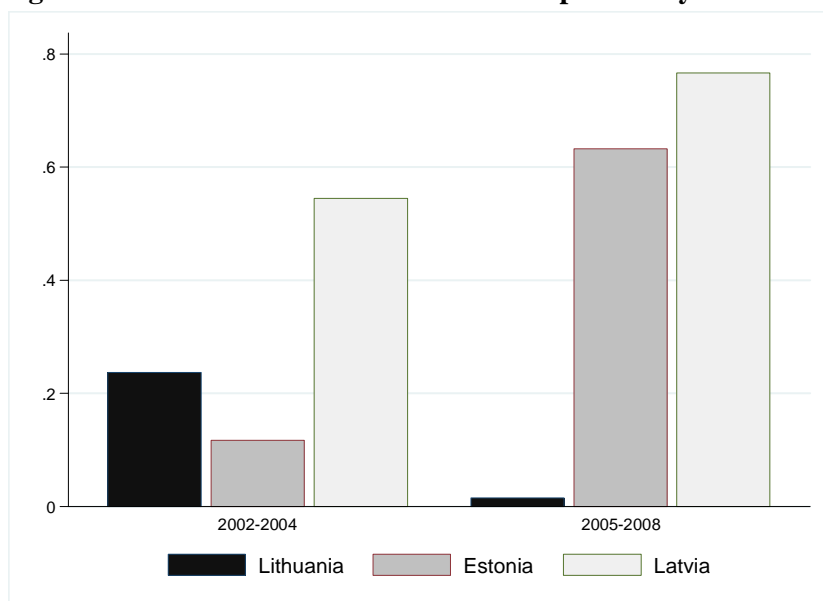
In order to get a more complete picture, Figure 16 plots the country-specific components for the three Baltic countries.

It is striking to observe that for Lithuania the country-specific component has been negative throughout the whole period. For Estonia, it has been decreasing and became negative from May 2003. This negative dynamics contrasts with the consistently positive country-specific component for Latvia which has been both volatile and increasing throughout the period.

All of this suggests that even within the Baltic countries there has been considerable heterogeneity in inflation developments, especially in the early part of the period. In particular what we observe in Latvia is very different from Lithuania and Estonia.

Figure 17 shows the share of inflation for each of the Baltic states that can be explained by the country-specific component.<sup>17</sup> The analysis is split into two periods – 2002-2004 and 2005-2008, and Latvia is the clear outlier in both periods. Thus, in the post-2005 period the country-specific component explains 76.6% of the variation in Latvian inflation, which is up from 54.5% in the first period. The corresponding numbers for Estonia are 11.7% and 63.2% respectively, while in Lithuania, the share of the country specific component has moved in the other direction – down from 23.7% in 2002-2004 to just 1.5% in 2005-2008. We can conclude from this that ‘home grown’ inflation has been a large and growing feature in Latvia and to some extent also in Estonia.

**Figure 17: Share of Inflation Variance Explained by the Country-Specific Component**



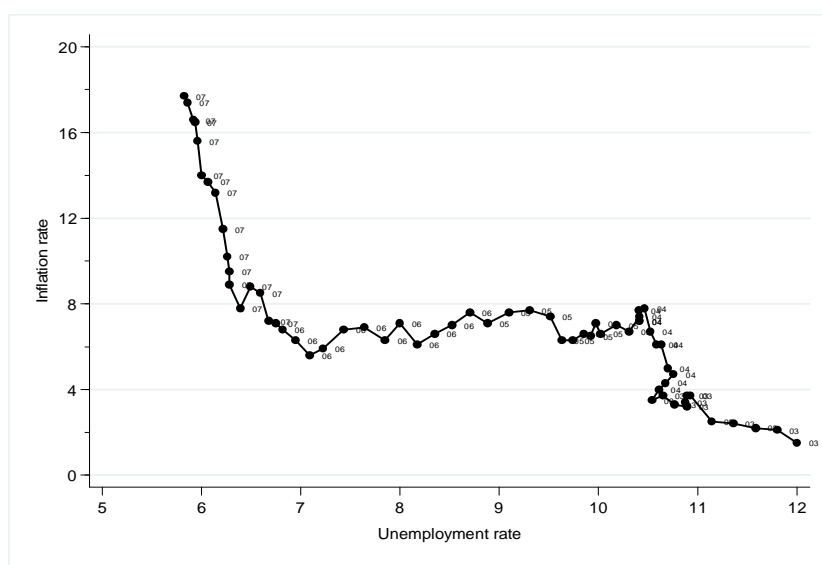
<sup>17</sup> This was done by regressing inflation for each of the Baltic states on a constant and the country-specific component, and calculating the R-squared from each of the regressions. These bivariate regressions were run for two periods.

#### 4 A back-of-the-envelope Phillips curve

The Phillips curve links some measure of the inflation rate (e.g. CPI inflation or wage inflation) to a measure of economic activity (typically unemployment or the output gap). The idea is that low unemployment is equivalent to high economic activity and thus high demand for labour, leading to wage pressure, which increases marginal costs for firms, forcing them to raise prices, thus increasing inflation. The Phillips curve is a main ingredient of macroeconomic theory but although useful for both theoretical and empirical purposes one should be careful not to overestimate what information can be inferred from a Phillips Curve relationship.

Below is a representation of the Latvian Phillips curve since 2000<sup>18</sup>. The inflation measure is CPI inflation<sup>19</sup>, year-on-year using monthly data while the measure of economic activity is the unemployment rate. To avoid seasonal fluctuations, unemployment is represented as a 12-month moving average, i.e. the average unemployment rate for the past twelve months.

**Figure 18: Phillips curve for Latvia, 2003-I – 2008-V, CPI inflation vs. unemployment**



As can be seen the curve has the typical downward-sloping shape, indicating a short-run trade-off between inflation and unemployment. It is important to notice, of course, that this does not in itself imply a stable relationship between inflation and unemployment for the future. In particular, the contributions by Friedman and Phelps in the late 1960s pointed out that economic theory does not predict a stable relationship between unemployment and inflation because changes in expected inflation will shift the short run Phillips relationship. If workers expect that high inflation will continue they will include this in their wage demands and, if successful, this will add to inflation, shifting the Phillips curve relationship to the right<sup>20</sup>. In short, one may not be able to use a given Phillips curve relationship to forecast future inflation, see e.g. Atkeson and Ohanian (2007).

<sup>18</sup> The most recent data available is for May 2008.

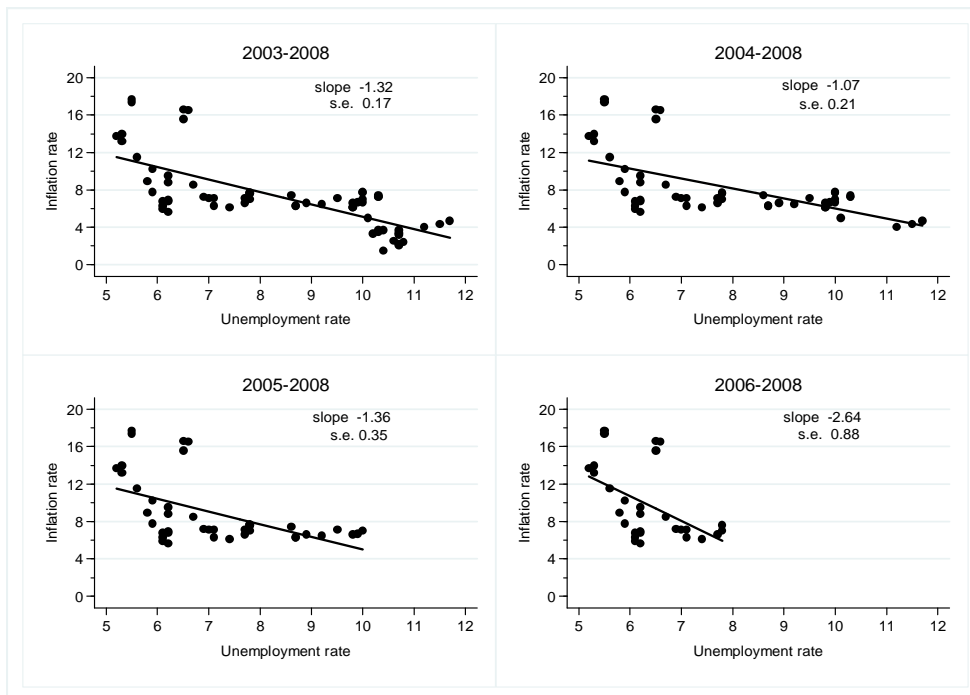
<sup>19</sup> Thus not HICP as in previous sections.

<sup>20</sup> Shifting from one short run Phillips curve to another short run Phillips curve.

However, the remarkably stable Phillips relationship observed in Latvia since 2003 is consistent with the presence of relatively stable inflation expectations over the period. If – and that is a big if – these inflation expectations continue to remain unchanged<sup>21</sup>, disinflation could be as rapid as inflation has been.

Figure 19 presents the relationship in a slightly different way, taking into account that the relationship is so obviously not linear. It can be seen from the estimates of slope coefficients that these are, in all cases, significant. Should – and still this is a big if – inflation expectations remain constant, a rough estimate of disinflation would be a 2.64 percentage point decrease in inflation per one percentage point increase in unemployment, using the 2006-2008 relationship. Or, a 10 percentage point reduction in the inflation rate is likely to be accompanied by a 4 percentage point rise in unemployment.

**Figure 19: Four Phillips curves, different starting points**



Whatever way one looks at this, a slowdown in wage growth is of paramount importance for disinflation to take place as also noted in our 2007 report. Below is a Phillips curve using wage inflation and the relationship between overheating in the labour market and wage growth is evident<sup>22</sup>.

<sup>21</sup> This seems, however, highly unlikely. Inflation is unquestionably the most discussed economic variable in the Latvian society today.

<sup>22</sup> As can be seen there has been a slowdown in wage growth recently without an increase in unemployment. This may be due to labour hoarding but a conclusion cannot be drawn yet.

**Figure 20: Phillips curve for Latvia, 2003-I – 2008-V, Wage inflation vs. unemployment**

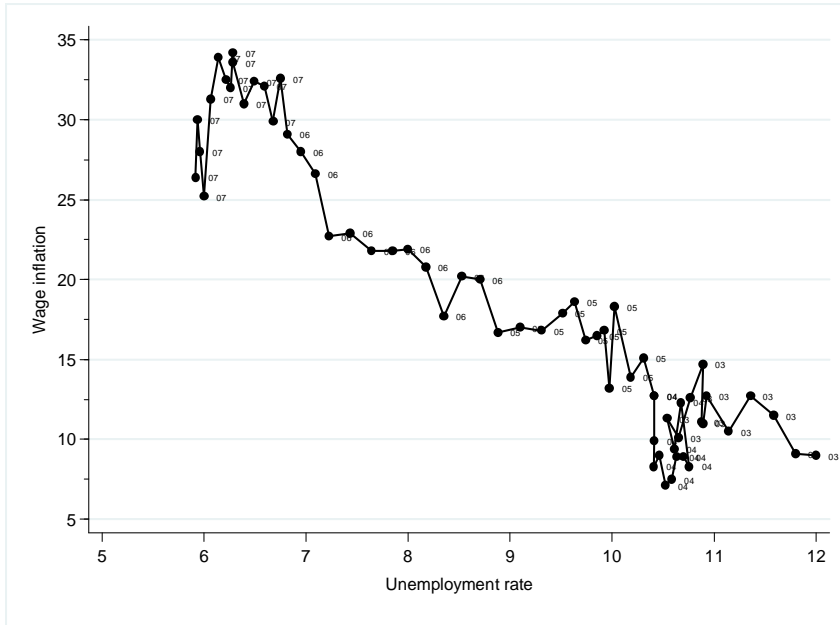
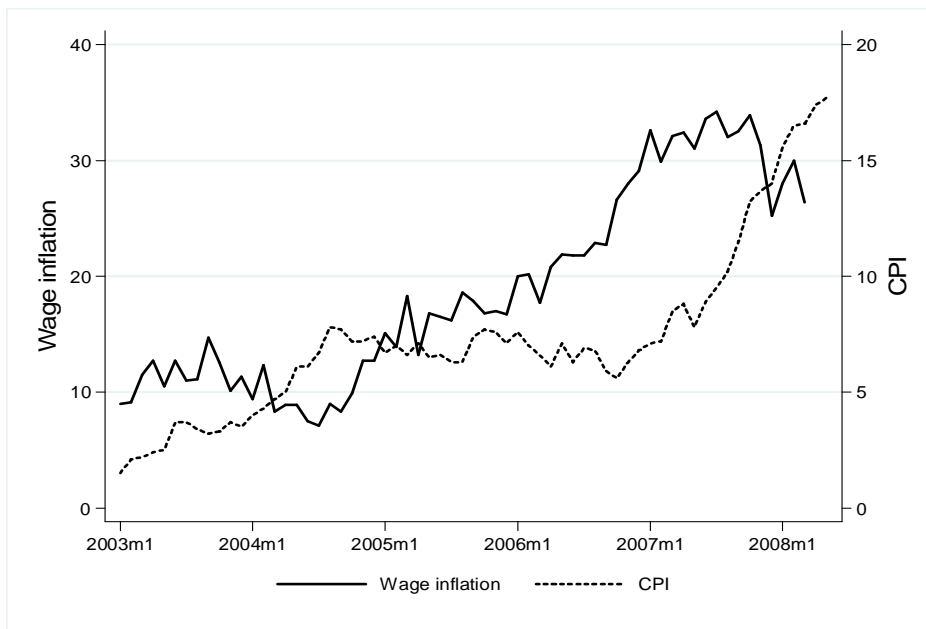


Figure 21 shows the close relationship between wage growth and inflation in Latvia. While external events such as food prices and energy have been drivers of Latvian inflation, the labour market has surely been the main culprit. Wage growth precedes inflation so the recent small decline in wage growth should translate into a lowering of inflation in the future but, even so, second quarter wage growth of 23.6% year on year or 5.3% against the first quarter is surely not yet enough.

**Figure 21: CPI inflation and wage inflation in Latvia**



Summing up, a look at the Phillips curve cannot reject that inflation expectations may have been roughly constant since 2003. Should they remain so, even if that seems improbable, relatively rapid disinflation will be possible, given that unemployment will rise in the current economic downturn. If inflation expectations have increased it may be a different story altogether. At the moment of writing there is insufficient data to provide a conclusion.

## 5 Can we learn from the 1970s?

In 1973-1974 and 1979-1980 the world economy experienced two oil price shocks that are widely regarded as responsible for the so-called stagflation of the period – rising inflation and stagnant or falling economic activity. While no historical episode is exactly like another, arguably, the 1970s represent the closest historical parallel to the present. Today, as then, both the dollar price and the real price of oil have risen by 100% or more, other commodity prices have also risen sharply and, after resisting significant pressure inflation rates are on the rise – in the EU in July 2008 four countries (including all three Baltic states) had double digit inflation rates and another nine had inflation rates in excess of 5%. This is the most widespread inflation surge since the 1970s shocks. Today, in addition to the oil and commodity price increases falling property prices and a fragile financial system are also contributing to downward pressure on real economic activity.

Questions of interest include: By how much and for how long did output decline in the 1970s episodes? How long did it take inflation to come down from the peak? Can we translate this experience to the present?

Table 1 shows the cumulative decline in GDP relative to trend for a selection of countries<sup>23</sup>. We see that for the UK, Japan and US, as well as for the OECD as a whole the decline was in double figures for the 1973-4 episode reflecting the fact that for many countries growth declined from somewhere in the region of 6-8% a year to up to two years of negative growth at around -1.0%. The second oil shock had a smaller impact.

**Table 1: Cumulative output effects of the 1970s oil shocks**

	<b>1973-4</b>	<b>1979-80</b>
<b>Canada</b>	-8.3	-1.0
<b>Germany</b>	-9.6	-3.5
<b>France</b>	-7.6	-4.4
<b>U.K</b>	-16.4	-9.2
<b>Italy</b>	-8.6	0.4
<b>Japan</b>	-16.1	-4.4
<b>U.S.</b>	-13.3	-11.8
<b>G7</b>	-12.6	-7.7
<b>Euro12</b>	-9.1	-2.9
<b>OECD</b>	-11.2	-6.5

Source: Blanchard and Gali (2007)

<sup>23</sup> Specifically it shows the decline in the GDP over the eight quarters following what Blanchard and Gali call the benchmark date, which is the first quarter of 1974 for the 1973-4 shock and the third quarter of 1979 for the 1979-80 shock, as compared with the preceding eight quarters.

**Table 2: Post shock output effects**

	<b>Peak inflation 1973-1977</b>	<b>GDP growth in the two worst post shock years</b>		<b>Peak inflation 1980-1982</b>	<b>GDP growth in the two worst post shock years</b>	
Austria	9.5%	3.9	-0.36	6.8	1.78	-0.15
Belgium	12.8%	4.2	-1.33	8.7	-0.28	0.59
Denmark	15.3%	-0.82	-1.22	12.3	-0.36	-0.89
Finland	17.8%	0.27	0.33	11.6	1.27	3.02
France	13.6%	4.47	-0.97	13.6	1.68	0.92
Germany	7.0%	0.89	-0.87	6.3	0.53	-0.39
Greece	26.6%	-6.43	6.36	24.7	-1.55	-1.13
Ireland	13.5%	5.65	1.39	20.4	2.28	-0.24
Italy	19.2%	5.5	-2.09	21.1	0.84	0.41
Luxembourg	10.7%	4.2	-6.57	9.4	0.84	-0.55
Netherlands	10.2%	4.25	0.12	6.7	-0.70	-4.29
Portugal	25.1%	1.14	-4.34	29.8	-0.17	-1.87
Spain	24.5%	5.61	0.54	15.6	-0.13	1.24
Sweden	11.4%	1.05	-1.59	13.7	-0.19	1.24
United Kingdom	24.2%	-1.35	-0.62	18.0	-2.08	-1.45
United States	11.1%	-0.47	-0.17	13.5	-0.24	-1.97

While there is no scientific way of applying these figures to Latvia today, a pessimistic (realistic?) interpretation might be that Latvia too will experience up to two years of negative growth at say minus 1% leading to a cumulative GDP decline relative to trend of perhaps 22%. The years prior to 2008 were marked by very fast growth of between 9% and 11% per year. Now, two years of GDP decline of 1% would imply a total 'GDP setback' or cumulative decline, that will temporarily reverse Latvia's hitherto impressive GDP convergence.

Table 2 above shows the GDP growth for the countries that eventually became the EU 15 plus the United States in the two worst performing years following the two 1970s oil price shocks. Firstly, it should be mentioned that all countries experienced a slowdown following the shocks and that in the 1973-4 shock three countries (Denmark, UK and US) and in the 1979-80 shock 6 countries (Denmark, Greece, Netherlands, Portugal, UK and US) experienced two years of negative GDP growth.

In the earlier period another 9 countries experienced one year of negative growth while in the second episode another 7 countries had one year of negative growth. Thus the typical experience was one year of negative growth. While there is no very clear relationship between the inflation rate and the severity of recession there is a loose relationship – low inflation countries such as Germany and Austria had shorter GDP declines than some high inflation countries such as UK, Greece, Portugal and Denmark. This kind of experience suggests that a 'guesstimate' for the duration of Latvian negative growth might be 18 months.

The 1970s experience can also give us some clues as to the time it takes to get inflation down from its peak. Here we ask how long it did take inflation to return to its 1972 level. Of the countries in Table 2 the Netherlands achieved its 1972 inflation rate two years after the peak. For Austria, Belgium, Germany and Luxembourg it took three years and for the other countries the 1972 level was not achieved before the second shock hit in 1979. This illustrates the persistence of an inflation shock for many countries. Again, an optimistic translation of this experience to Latvia would suggest that it might take 3 years from the 2008 inflation peak to achieve a 2007 inflation rate. In other words it might take until 2011 to get inflation back to the 6-7% level.

Summing up the evidence from 1970s suggests that in the present downturn Latvia can expect to cumulatively to lose perhaps two years worth of double digit growth relative to trend implying that the duration of the downturn will be up to two years. However, the depth and duration of the recession may be less and the speed of disinflation faster if structural factors in present day Latvia are more favourable than was the case in the 1970s.

## **6 Conclusions**

During the previous four sections we have tried to address the five questions we raised in the introduction and which we believe are of major interest for the development of the Latvian economy in the coming years:

- 1) Has inflation indeed spiked?
- 2) Is disinflation likely to be fast or slow?
- 3) Why has the Latvian inflation experience been so much worse than in e.g. the two other Baltic countries?
- 4) How deep a recession will Latvia experience?
- 5) How long will it take for the economy to recover?



Before summing up our responses to these questions yet another issue should be added. The Latvian economy, having entered recession in September 2008, is in a state not previously experienced in post-Soviet Latvia. Neither the setbacks and slowdowns from the Banka Baltija crisis in 1995 nor the Russian crisis in 1998-99 are comparable to the current situation where a particularly nasty cocktail of a bursting credit bubble, bursting property bubble, soaring energy and food prices and a world economic slowdown has the Latvian economy facing a very grim near future. The economy is at a unique turning point and previous evidence, from Latvia or from abroad, can offer only limited clues as to where we are heading. The degree of uncertainty implicit in this is also important when discussing the appropriateness of policy interventions.

As to the five questions:

While 1) has not been explicitly discussed we believe that inflation has indeed spiked, bar some “freak” developments in energy or food prices. The slowing economy and with it slowing wage inflation are likely to suffice for that conclusion.

2) On the speed of disinflation we provide somewhat contradictory evidence – previous experience from other countries point to a slow disinflation but a flexible labour market in Latvia combined with static inflation expectations could provide a rather fast disinflation, albeit at the cost of higher unemployment.

3) We have offered evidence suggesting that Latvian inflation has been so overwhelmingly home grown because of a more overheated labour market than in Estonia or Lithuania and possibly also because of a belated policy response to the overheating.

On 4) and 5) we believe the best evidence comes from the oil price shocks of the 1970s which suggests that cumulatively the Latvian economy may lose more than two years worth of GDP growth relative to its previous trend, though the downturn may be shallower and shorter and the disinflation faster if the Latvian economy proves to be sufficiently flexible.

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