Driving Inflation Factors in the Countries Acceding the Eurozone

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Abstract

The risk of a rapid rise in inflation or long-standing higher inflation related to the process of the Euro adoption is often mentioned argument in discussions on the timing of Eurozone enlargement process. The proponents of late terms of joining the Eurozone mostly point out the risk of price shock in the acceding countries with respect to a loss of autonomous monetary policy after the European common currency adoption. The particular aspects of the convergence processes in the catching-up countries are often stressed too.

The paper sheds some light on the influence of the economic and monetary integration process on the inflation rate in the Czech Republic and other Central and Eastern European Countries (CEECs) aspiring for the membership in the Eurozone. The major inflation factors related to the economic integration process are characterized in the text. The analysis particularly focuses on the factors arising from relatively low comparative price level relative to gross domestic product per capita in the CEECs. The text also focuses on the process of the price convergence through the exchange rate and inflation channel. A possible problem of market prices rounding and psychological effects influencing the price level in the very moment of the Euro adoption are also mentioned in the text. The general purpose of the paper is to assess the possible risk of rising inflation after joining the Eurozone and evoke the discussion on the impact of the monetary integration process and Euro adoption upon the inflation in selected CEE countries.

Key words
Price Convergence, Inflation, Eurozone, Monetary Integration

JEL Classification: E31, F15, F33
Introduction

The membership of the Czech Republic and other Central and Eastern European countries (CEECs) in the European Union obligates the new member countries to adopt the common European currency in the forthcoming future. The Maastricht criteria represent the only conditions the countries must fulfil to be allowed to join the Eurozone. Considering no existing rule, which specifies the latest time horizon the countries have to adopt the Euro, the CEE countries usually take into account other alternative criteria of economic preparedness and risk factors of the Euro into account. The Optimum Currency Areas Theory provides most of the alternative criteria, which are used by the governments, central banks and academics to assess the preparedness of a country to adopt the Euro. The discussions on the appropriate timing of the Euro adoption in the EU member countries usually also include the arguments of possible impacts of the Euro on a domestic price level in new members of the Eurozone.

In the Czech Republic there is also a significant part of the economic public that fears of the rapid rise of the rate of domestic inflation in a national economy after joining the Eurozone. These economists obviously support the later date of the Euro adoption because of possible risk of related strong inflation pressures. The risk of inflation is also strengthened due to factual loss of national monetary policy after joining common monetary union. Accordingly the member country cannot control domestic inflation by means of the interest rates and other monetary policy devices.

Factually, it is not the process of the Euro adoption, but the processes of real and price convergence in the catching-up economies that produce the major and long-standing inflation pressures. Thus, it is important to analyze the inflation factors related to convergence processes meaning reducing the economic and price level gaps between less economically developed countries including the Czech Republic and other European economies. The act of the Euro adoption itself is just a necessary part of that process, which might not have a long term impact upon the inflation rates in the acceding economies.

To answer the question whether there is a significant risk of a rapid rise in domestic prices or long lasting galloping inflation connected to the Euro adoption in the Czech Republic and possibly in other CEE countries we should ask: “What are the factors determining the actual rate of inflation during the process of monetary integration and after the adoption of a common currency?” Accordingly, the purpose of the article is to contribute to the discussion on possible impacts of the monetary integration process in the Czech Republic and other candidate countries upon the rate of inflation and analyze the main factors, which might increase the domestic inflation pressures. The main aim is to identify and analyze the selected inflation factors arising from the real and price convergence processes, in

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2 The OCA theory is principally connected to R. Mundell (1961) and its pioneering article (see Mundell, 1961). For a review of a later development of the theory and the recent trends e.g. Tavlas (1993) or Mongelli (2002).
the Czech Republic towards the Eurozone, loss of monetary policy and others. The text also briefly focuses on the one-off determinants (such as rounding the prices in the very moment of the Euro adoption) despite its temporary impact upon inflation.

Descriptive analysis, comparison and the scenarios method were the main methods applied in the paper to fulfill the defined goals. The descriptive figures and tables were also used for illustration the results. The Eurostat, Czech National bank and Czech Ministry of Finance were the major sources of statistical data – time series of Gross Domestic Product (GDP) in Purchasing Power Standard (PPS), Comparative Price Levels (CPL) and Labour Productivity. The correlation and regression analysis were used to provide evidence on existing relation between GDP per capita and CPL in current EU member countries.

**Inflation in the Eurozone member countries**

Before analysing the impact of the Euro adoption upon inflation in the current candidate countries it is useful to remind the inflation trends in the traditional Eurozone member countries in the period before and after establishing the common monetary union. The figure 1 shows some evidence of increasing similarity in a long term due to monetary integration process. The average rate of inflation varies closely around 2 %, which is consistent to the price stability definition of the European Central Bank.

![Figure 1: Inflation (% change in HICP) in the Eurozone member countries in the period 1996 - 2007](image-url)

Source: Eurostat
Despite obvious long-term inflation similarity in all the selected countries after joining the monetary union (see the figure 1), many Eurozone member countries reveal significant inflation differentials from the very moment of the Euro adoption (see the figure 2.)

Figure 2: National inflation rates vs. Eurozone average

![Graph showing inflation rates]

Source: Eurostat

The reasons of the inflation differentials differ in individual countries. A long-term dynamic economic growth is a justification of higher inflation for the Irish economy.

On the contrary, the rationale for inflation differentials in Spain or Portugal is different and it is not based on economic growth differentials. Comparison between Spanish and Irish economic performance and related inflation could serve as an illustrative example of persisting inflation differentials in the Eurozone. The figure 2 shows the positive inflation differentials of the Spanish and Irish economies relative to the Eurozone average though with different circumstances.

The Irish economy is performing well with higher productivity and inflation. On the contrary the Spanish economy suffers from lower productivity growth relative to the Eurozone average during the whole analysed period.
Although the real and price convergence processes are not finished, the reasons of resisting inflation differentials can not be justified by the Balassa-Samuelson effect. The reasons of Spanish inflation differentials are rather structural and arise from the labour and production markets rigidities. The firms with higher monopoly power can keep the prices above the level close to marginal costs i.e. competitive prices. Particularly, the mark-ups in the non-tradable sectors (services) produce the “dual inflation” and contribute to the overall inflation significantly. The wage rise is incompatible to the labour productivity growth relative to the Eurozone average is a partial inflation driving factor.
The brief case study of the Irish and Spanish inflation and economic performance give evidence on persisting differences in Eurozone even among the original member countries after a decade of the common monetary union. As for the Central and Eastern European countries aspiring to join the Eurozone in forthcoming future some of the reasons for potential inflation pressures might be different from the current members. Particularly price and real convergence processes in the catching-up economies should be taken into account.

Loss of autonomous monetary policy: Inflation Targeting by the Czech National Bank

After joining the Eurozone the central banks of the candidate countries give up conducting the autonomous monetary policy. Looking at the Czech example also the Czech National Bank (CNB) will lose its function of keeping domestic price stability. European Central Bank (CNB) and the domestic governments will be responsible for controlling the inflation pressures. The differences in ways of influencing the domestic prices by the ECB and CNB could be summarized in two main points. Firstly, the CNB conducts inflation targeting as its official monetary policy regime. The two-pillar monetary strategy of the ECB does not include inflation targeting officially, although the definition of price stability is considered as the inflation target by the ECB. The second difference is more important and relates to the operability and ability of the Central bank to control inflation pressures in particular areas within the Eurozone. In case of increased inflation threats in a region or a country of the monetary union, the European Central Bank will not take any action such as change in the interest rates because such measure would influence also the rest of the union which is not affected by any similar inflation pressures. In that case the national governments have to reduce the fiscal expenditures or control the wage-setting process in a country actively in terms of possible restrictions.

The regime of inflation targeting is principally based on continual process of the positive inflation expectations fixation within economic public. The CNB periodically sets the inflation targets for the future time periods. Such targets are considered an obligation of the Czech central bank to keep the inflation rate within the explicitly published zone. The CNB mainly sets the interest rates as a main monetary device that serves as another signal of the next inflation trends for the economic agents. The more successfully the central bank fulfils its goals (inflation targets) the higher credibility it gets and the policy is efficient.

<table>
<thead>
<tr>
<th>Targeted period</th>
<th>Inflation target in % (tolerance ±1 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2006 - December 2009</td>
<td>3</td>
</tr>
<tr>
<td>January 2010 – joining the Eurozone</td>
<td>2</td>
</tr>
</tbody>
</table>

*Source: CNB*
The Table 1 expresses the CNB’s inflation targets. The target for the period between 2010 and joining the Eurozone is almost identical to the ECB’s target.

The figure 5 illustrates the inflation goals (defined as the zone with the upper and lower limits) and the actual inflation rate. During the whole analyzed period the actual inflation was below the lower limit including the deflation periods in 2003. The recent trends reveal fulfilling the targets.

Figure 5: Inflation target and actual inflation in the Czech Republic

Considering the main principle of the inflation targeting in the Czech Republic the question arises: “Who will determine the inflation expectations after the Euro adoption?”

A possible increase in inflation expectations after the act of Euro adoption would undesirable. The national bank would not be able to influence such inflation signals by any devices e.g. verbal interventions or change in interest rates. Potential threat of uncontrolled rise in inflation expectations could be mitigated by the fact that the ECB explicitly announced the price stability definition which basically means the inflation target. The short and middle term targeting of the macroeconomic indicators including price indices and regular publishing of the inflation analysis and predictions by the ECB could serve as a guideline for the inflation expectations creation within the Eurozone. However a possible threat of asymmetric shock\(^3\) such as asymmetric inflation rise in individual countries or areas within the Eurozone might be a problem that should be solved through restrictive fiscal measures of the national governments.

When evaluating the significance of the monetary policy loss of the Czech Republic the autonomy and independence of the CNB’s strategy on the neighboring or main trade

\(^3\) Probability of an asymmetric shocks occurrence decrease with higher long-term similarity of the business cycles. Fidrmuc–Korhonen (2004) provide with a descriptive meta-analysis of the most influential recent works on business cycles similarity measuring.
partner economies should be taken under consideration. The Czech Republic is a relatively small and open economy and the economic performance including the inflation strongly depends upon the main trade partner economies. Thus, we could ask how much the monetary policy of the CNB is pulled by the ECB’ policy right now.

**The real and price convergence processes in the CEE countries**

The Czech Republic and other Central and Eastern European countries (CEECs) including Hungary, Poland and Slovakia are considered “the catching-up” economies with currently higher average GDP growth rate in comparison with the other more developed European countries. The GDP growth differential results in the real convergence process, which means reducing the gaps in GDP per habitant between the CEECs and the Eurozone. The process of real convergence is conditioned by higher average annual GDP growth in the acceding countries. Figure 6 illustrates the annual GDP growth rate in the CEE countries and the Eurozone. The chart gives an obvious evidence of continuing process of real convergence in the candidate countries in the past decade.

Figure 6: Annual GDP growth rates in selected CEE countries and the Eurozone

The figure shows the positive growth differential of all chosen CEE countries, namely Slovakia, Poland and the Czech Republic. Despite slowing growth tendencies Hungary is still considered a catching up economy with respect to higher average growth in GDP relative to average of the Eurozone in the past years.

Data in the table 2 describe the recent real convergence process of the acceding countries aspiring for adoption the Euro and the average of the Eurozone. All selected countries converge towards the Eurozone during the whole time period. Except from the factors of convergence such as net foreign investment inflows due to low cost labour force and rising consumption and gross investments of firms, the actual economic stagnation in the leading countries in the Eurozone is also a very important convergence factor. The results in the table
show Slovenia to reach the highest level of convergence among the other CEE countries\(^4\). The Czech Republic also shows a remarkable convergence process and currently reaches the level of Portugal and other poorer Eurozone member countries. Despite relatively low level of GDP per capita in the case of Slovakia, the current dynamics of the GDP growth and realized fiscal reforms should support the real convergence process in Slovakia. Hungary shows a low real convergence dynamics in last years.

Table 2: Convergence in GDP per capita of the acceding countries towards the Eurozone

<table>
<thead>
<tr>
<th>Year</th>
<th>Eurozone (12)</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>60,9</td>
<td>60,2</td>
<td>62,0</td>
<td>62,7</td>
<td>65,8</td>
<td>68,5</td>
<td>69,4</td>
<td>72,0</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td>71,0</td>
<td>73,6</td>
<td>68,7</td>
<td>70,8</td>
<td>70,2</td>
<td>68,3</td>
<td>68,5</td>
<td>68,4</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>42,5</td>
<td>42,5</td>
<td>42,0</td>
<td>43,0</td>
<td>43,8</td>
<td>45,7</td>
<td>45,9</td>
<td>48,1</td>
<td></td>
</tr>
<tr>
<td>Slovakia</td>
<td>44,6</td>
<td>44,2</td>
<td>46,2</td>
<td>48,3</td>
<td>49,3</td>
<td>51,0</td>
<td>53,9</td>
<td>56,8</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>68,7</td>
<td>69,1</td>
<td>69,4</td>
<td>72,0</td>
<td>73,6</td>
<td>76,5</td>
<td>78,0</td>
<td>80,5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Eurostat

The price convergence, which is basically a reduction of a gap between comparative price levels in the member and non-member countries, also relates to the real convergence process. The figure 4 illustrates the existing mutual correlation between GDP per capita (in PPS Purchasing Parity Standard) and Comparative Price Level (CPL) in the EU member countries.

\(^4\) Slovenia joined the Eurozone in the beginning of 2007.
Figure 7: GDP per capita (in PPS) and comparative price level in the Eurozone and selected acceding countries in 2006

Source: Eurostat and own calculations

Note: Luxembourg was excluded from the analysis because of its extreme values of GDP per capita resulting from specific character of the economy with respect to the number of inhabitant relative to the Eurozone.

The domestic prices in the countries near to the regression line in the figure 7 relatively correspond to the economic performance of the economy. Looking at the figure 7 we can see that the Czech Republic, Slovakia and Hungary are situated below the regression line. In addition the Czech Republic shows one of the largest gaps between the relative CPL and GDP per capita. This means that its price level is relatively undervalued relative to reached level of GDP per inhabitant. The living standard (measured by GDP per capita) grows faster than the comparative price level. In terms of future price convergence process, which could be fostered by higher inflation expectations, labour union claims and elimination of the flexible exchange rate after joining the Eurozone, the current position of the Czech Republic and other CEE countries might forecast a significant inflation factor.

y = 0.7199x + 23,007
R² = 0.8295

Source: Eurostat and own calculations

Note: Luxembourg was excluded from the analysis because of its extreme values of GDP per capita resulting from specific character of the economy with respect to the number of inhabitant relative to the Eurozone.

5 Similar results proving the evidence of existing correlation can be also found in Čihák-Holub (2003a).
Two channels of price convergence

Real and price convergence are closely related processes in the catching-up economies. The real appreciation pressures arise from the real economic convergence process in a converging country. Real domestic assets appreciation pushes up the comparative price level and thus the domestic price level also converges towards the developed Eurozone member countries.

The gap in comparative price levels between the Eurozone member and non-member countries is being reduced through two channels now. Higher domestic inflation in the converging country relative to the more developed country (positive inflation differential) is the first way. The second channel comes through nominal exchange rate appreciation. Considering the case of the Czech Republic, the current monetary policy strategy determines the price convergence process in the country. The Czech National Bank (CNB) conducts the inflation targeting strategy since 1998. The temporary inflation aim of the CNB is 3 % (± 1 %) and the aim of 2 % of targeted inflation rate since 2010 oblige the central bank to pursue strictly the desinflationary monetary policy.

Figure 8: Rate of inflation in the Czech Republic and the Eurozone (% change in HICP)

The figure 8 illustrates an increased similarity in Inflation rates of the Czech Republic and the Eurozone. The Czech National Bank succeeds in fulfilling the inflation targets recently and keeping the price stability. Average low inflation during the running process of real and price convergence in the past decade has a significant impact on the nominal exchange rate. The figure 5 shows a continual trend of nominal exchange rate appreciation, which is clearly the main way of converging comparative levels in the recent period. The nominal exchange rate CZK/EUR appreciated annually by 4 % in average relative to EUR in the period 2000 till 2006.

Source: Eurostat
The inflation and exchange rate recent trends provide obvious evidence that the price convergence process is mainly allowed through the exchange rate channel in the Czech Republic. However this is to be changed after joining the Eurozone. Provided that the processes of real and nominal convergence will continue due to existing GDP and CPL gaps, the positive inflation differential will be the only way of price convergence after joining the Eurozone. Irrevocably fixed exchange rates and common currency adoption will not allow the nominal appreciation of the exchange rate in the monetary union. Table 3 presents the current price convergence process in the selected acceding countries towards the Eurozone.

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eurozone (12)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>45.4</td>
<td>47.8</td>
<td>49.4</td>
<td>56.4</td>
<td>52.6</td>
<td>52.9</td>
<td>56.5</td>
<td>59.1</td>
</tr>
<tr>
<td>Hungary</td>
<td>46.0</td>
<td>48.9</td>
<td>52.3</td>
<td>56.7</td>
<td>56.2</td>
<td>59.3</td>
<td>61.5</td>
<td>58.4</td>
</tr>
<tr>
<td>Poland</td>
<td>50.7</td>
<td>57.6</td>
<td>64.0</td>
<td>60.5</td>
<td>52.5</td>
<td>51.3</td>
<td>60.0</td>
<td>61.2</td>
</tr>
<tr>
<td>Slovakia</td>
<td>39.6</td>
<td>44.1</td>
<td>42.9</td>
<td>44.3</td>
<td>48.9</td>
<td>52.9</td>
<td>54.3</td>
<td>56.7</td>
</tr>
<tr>
<td>Slovenia</td>
<td>72.4</td>
<td>72.5</td>
<td>73.0</td>
<td>73.5</td>
<td>73.6</td>
<td>72.6</td>
<td>73.5</td>
<td>73.8</td>
</tr>
</tbody>
</table>

As for the data in table 3 indicating a significantly deep gaps in CPL of the CEE countries relative to the average of the Eurozone, lets recall that after joining the Eurozone the exchange rate channel of the price convergence will be closed. Thus, the gap in comparative price levels will be reduced solely through the inflation differentials in the converging countries relative to the countries with higher price level. Accordingly, contemporary low
comparative price levels present one of the significant long-term inflation factor related to the monetary integration process in the Czech Republic and other candidate countries.

**Balassa-Samuelsson effect**

Balassa-Samuelson effect (B-S effect) belongs among factors determining inflation in the countries aspiring to the membership in the Eurozone. The B-S model (Balassa, 1964; Samuelson, 1964) explains the sources of inflation pressures in the converging countries with higher GDP and productivity growth relative to the Eurozone countries. The mentioned model becomes a popular subject of its analytical testing, developing and applying to the EU countries nowadays\(^6\). The basic presumption of the model is a strict distinguishing between tradable and non-tradable goods in the economy. The model also assumes that the productivity rises faster in the tradable sector, which results in adequate growth rate in wages in that sector. The wage growth spreads into the non-tradable sector, where the growth in productivity is much slower. Higher rise in wages than the productivity pushes up the price level and produces inflation. Accordingly the final growth in total price level arises from the wage growth in non-tradable sector (services) that is not based on adequate growth in productivity.

**Table 4: Annual growth rate [%] of labour productivity in converging CEE countries relative to EU-15**

<table>
<thead>
<tr>
<th>Year</th>
<th>Czech Republic</th>
<th>Poland</th>
<th>Hungary</th>
<th>Slovakia</th>
<th>EU-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>4,1</td>
<td>-</td>
<td>0</td>
<td>2,5</td>
<td>1,5</td>
</tr>
<tr>
<td>2000</td>
<td>4</td>
<td>-</td>
<td>7</td>
<td>2,5</td>
<td>2,8</td>
</tr>
<tr>
<td>2001</td>
<td>6,6</td>
<td>4,1</td>
<td>6</td>
<td>3,3</td>
<td>0,8</td>
</tr>
<tr>
<td>2002</td>
<td>1,7</td>
<td>4,3</td>
<td>4,9</td>
<td>7,8</td>
<td>1,5</td>
</tr>
<tr>
<td>2003</td>
<td>3,9</td>
<td>4,8</td>
<td>4,3</td>
<td>6,8</td>
<td>1,3</td>
</tr>
<tr>
<td>2004</td>
<td>3,7</td>
<td>4</td>
<td>5,6</td>
<td>3,6</td>
<td>1,5</td>
</tr>
<tr>
<td>2005</td>
<td>-</td>
<td>0,6</td>
<td>4,4</td>
<td>2,6</td>
<td>1</td>
</tr>
</tbody>
</table>

*Source: Eurostat*

Recent empirical studies generally do not doubt an existence of B-S effect. However they agree with its relatively small impact (insignificant contribution) upon the total inflation in the converging countries. Schadler et al. (2005) summarize the results of selected analytical papers and assumes the contribution of the B-S effect to the total inflation in the amount of 1-2 % a year (1,6 % in the Czech Republic).

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\(^6\) See Čiháč-Holub (2003b), who provide few modifications of the B-S model related to modern theories of economic growth.
One-off inflation factors: rounding and psychological effects of the Euro adoption

The Euro has been considered a reason for increasing consumer prices in the member and recently even in the candidate countries. The strongest critical voices complaining on “the expensive Euro” could be heard from the developed economies of Germany, Italy and other Eurozone countries. A bad mood in Europe connected to the discontent of people with the common European currency resulted from alleged impact of the very moment of the Euro adoption upon the market prices. Such a mood refusing Euro due to related possible increase in inflation has already been noticeable in the candidate countries recently.

What are the facts? The rate of inflation measured by Harmonized Indices of Consumer Prices (HICP) did not increase significantly after the act of Euro adoption by the establishing member countries of the Eurozone in 1999 and 2002 respectively. In fact prices of selected good items increased. It included mainly food, goods and services of daily use, which are very sensitive to the consumers’ inflation perceptions. This was likely the cause of prices rounding or price increases due to profit seeking by the merchants allegedly justified by the supposed Euro adoption costs. On the other hand, some items, such as electronics, became cheaper. The total HICP varied moderately – see the figure 10.

Figure 10: Inflation (% annual change in HICP) in selected member countries in the period before and after joining the Eurozone.

Source: Eurostat

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7 Even the Slovenian inflation increase during the first year after the Euro adoption has been attributed to a new currency by the Euro-sceptics and general public. In fact, the world rise in inputs and commodity prices have been the main reason of higher inflation. It is quite difficult to separate the influence of the Euro on prices in Slovenia. In addition to that, In these days the significant rise in inflation is also apparent in the countries that have not adopted the Euro yet (including the Czech Republic).
ECB estimates that the price-rounding effect contributed by 0,2-0,3 % to total HICP in the act of the Euro adoption in the member countries\textsuperscript{8}. The price-rounding effect has also been widely considered a temporary and short term inflation factor. The psychological effects of the perceived inflation are the rationale for the bad mood about the Euro adoption in terms of possible negative impact upon domestic prices. A common people generally perceive even the moderate increase in traditional consumable items (food, beverages etc.). Decrease in prices is usually not been taken into account significantly. In case of the increase in perceived inflation in the Eurozone the consumers based their overall perception of price level increase on the experience of the price rises of the goods items of the daily use. Such items, however, do not make up a major share of total monthly spending of households. The next rationale for high inflation perceptions is a permanent effort to recount the new prices into the initial national currency (fixed to the year of 2001 – the factual conversion of national cash for Euro.) The regular public meaning surveys (Eurobarometers) give a constant evidence of a significant percentage of the Eurozone inhabitants who still recount the prices. It results in spurious numbers of actual prices in national currencies, and thus, a bad inflation perceptions in the member countries of the Eurozone. Such an inflation perceptions spread through the all Europe and produce an argument for the later adoption of the Euro in the current candidate countries.

Conclusion

The paper focused on the possible impacts of the monetary unification process, which could produce the inflation pressures in the Czech Republic and other converging Central and Eastern European countries aspiring for the Eurozone membership. An important note must be stressed at the moment. The most of the inflation factors relate to the process of real an price convergence in the CEE countries that attempt the catch up the economic level of Europe. The monetary integration process should be considered a necessary part of the actual inevitable process of economic and monetary integration in Europe. It would be damaging for the transforming economies to stay outside this process due to the need of usage of the common trade area in Europe providing the investment inflows, technological progress, economies of scale and other advantages for all participating economies. The very act of Euro adoption is an obligation for the EU members and represents a natural milestone on the way to comparable standards of living in the countries converging to the rest of economically developed Europe.

The analysis concentrated on the long-term factors such us low comparative price level relative to GDP per capita, inflation and exchange rate channels of the price convergence and Balassa-Samuelson model. Despite analyzing the long-lasting factors, we could also remind the widely accepted formal factors reducing the inflation pressures listed in the table 5. The first two factors of price transparency improvement, strengthened competition and reduced

\textsuperscript{8} ECB estimates 0,3 % of contribution to total HICP increase in Slovenia due to adoption of the Euro. (ECB, Monthly Bulletin, June 2007)
costs on exchange risk hedging belong to long term and often cited benefits of the monetary union. Despite their low impact upon overall inflation they are mentioned for maximum complexity of the list. The Stability and Growth Pact prevents the government from irresponsible fiscal policy conduct and leading to increased deficits and potential inflation pressures in the Eurozone member countries.

The one-off inflation factors such as rounding and psychological effects related to the very moment of the Euro adoption also taken into account despite their possible temporary effects upon inflation. The total contribution of price-rounding effect could be lower by appropriate information campaign and overall strategy aimed to public price control (similarly to the Slovenian case) in the period before and after the Euro adoption.

The important inflation driving factors related to the monetary unification and convergence processes are summarized in the table 5:

<table>
<thead>
<tr>
<th>Inflation factor</th>
<th>Direction rise(+)/decline(-)</th>
<th>Duration Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price transparency improvement</td>
<td>-</td>
<td>Long-term</td>
</tr>
<tr>
<td>Exchange rate risk elimination</td>
<td>-</td>
<td>Long-term</td>
</tr>
<tr>
<td>Stability and Growth Pact</td>
<td>-</td>
<td>Long-term</td>
</tr>
<tr>
<td>Purpose-built increase in prices by firms</td>
<td>+</td>
<td>Short-term</td>
</tr>
<tr>
<td>Rounding effect</td>
<td>+</td>
<td>Short-term</td>
</tr>
<tr>
<td>Autonomous monetary policy loss</td>
<td>+</td>
<td>Long-term</td>
</tr>
<tr>
<td>Low CPL relative to GDP per head</td>
<td>+</td>
<td>Long-term</td>
</tr>
<tr>
<td>Closing Exchange rate channel</td>
<td>+</td>
<td>Long-term</td>
</tr>
<tr>
<td>Balassa-Samuelsson effect</td>
<td>+</td>
<td>Long-term</td>
</tr>
</tbody>
</table>

Source: Author

Despite continuing price convergence process the results show still very deep gap between CEE countries and the Eurozone comparative price levels. Related risk of higher inflation could be even strengthened by fast joining the Eurozone due to a loss of exchange rate channel for the price convergence in the converging countries.

On the other hand, there is no evidence for a shocking rise in prices in the very moment of the Euro adoption. The price convergence might continue even after joining the eurozone through long-lasting positive inflation differentials in the converging countries. Such inflation does not need to be harmful provided that it is in line with higher growth in GDP and labour productivity relative to current Eurozone members.
Literature


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