Price Convergence to the EU: Some Evidence for the Czech Republic

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Abstract: *The question of price convergence is highly topical especially before entry of a member state of EU into the Eurozone. Price convergence, respectively price stability is one of the Maastricht convergence criteria, whose fulfillment is exposed to a number of factors and wide issues of fiscal and monetary character. Reporting of price convergence and price stability is influenced by the composition of the consumer basket and the level of consumption. Some of the commodities in the Czech Republic have a higher price level than in the EU and vice versa. The rate and pace of price convergence are then directly influenced by the pace of economic growth and development of the exchange rate of the national currency against the euro. This paper deals with the main aspects of price convergence in the Czech Republic and analyzes the major influences acting on it and its future development.*

Key Words*: price, price level, inflation, central bank, the Czech Republic*

JEL Classification*: E 31, E 58.*

1. Introduction

The constant and constantly increasing debate on the issue of price-level targeting was enlivened at the beginning of 1990s. The topic was pursued by, among others, McCallum (1990), Lebow et al. (1992), Fillion and Tetlow (1994), Goodhart (1994), Duguay (1994), Fischer (1994) and Haldane and Salmon (1995). Most working papers dating from this time period regard lower uncertainty about the future price level as the main benefit of price-level targeting. On the other hand, increased output variability (and – according to some authors – increased inflation variability) is considered the primary disadvantage of the regime (Bohm et al., 2012).

Although a high degree of market integration is already achieved, price dispersion in the EU has considerably increased with the enlargement in 2004. Because of their lower income levels, price levels in the New Member States are as a rule substantially lower than in the Old Member States In addition, inflation rates in the New Member States exceed the average of the EU-15. The rapidity of the transition process can be seen, among others, by the development of inflation. At the beginning of the transition all countries faced high inflation rates. Liberalization by the removal of controls and quantity allocations, which repressed demand formerly, led to rapid adjustments to free market prices. In addition, fiscal and financial crises resulted in

periods of rapid monetary expansion since governments relied on seignorage to support public budgets as well as state owned enterprises.

Despite advances in the integration of markets, however, there is strong evidence that the pace of price convergence has slowed down in recent years, see several reports conducted by the EU Commission (2004a, 2005) and Eurostat (2003). Hence, other forces might be important to explain the development. Nevertheless, price level dispersion is higher for non tradables than for tradables, where the latter are clearly more affected by the process of integration. The dispersion of overall price levels has decreased after the inception of the Internal Market in the EU12, but stayed rather unchanged after the introduction of the EMU. Nevertheless, the dispersion of prices for tradables has been on a stable declining trend over the entire period. In this study, the EU12 benchmark is preferred over EU15 as it allows eliminating the effect of exchange rate fluctuations in the euro area countries. But, even with EU12 as a benchmark these fluctuations are inherent in the remaining EU member states (Dreger, 2007).

2. The price stability and inflation

The link between the long-run GDP and price convergence processes has been discussed for a long time by researchers and policy makers in the accession countries. The price convergence process may create challenges for monetary policy, as it means an appreciating real exchange rate trend (Balassa, 1964). This is particularly important for the accession countries, which will have to fulfil simultaneously the Maastricht inflation and exchange rate stability criteria in the future before joining the Eurozone (Holub, 2003). The fulfillment of Maastricht criteria with forecast in the Czech Republic is on the Figure 1.

Figure 1: The fulfillment of Maastricht criteria in the Czech Republic between 2001 – 2018 (forecast)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Reference value	3,1	2,6	2,7	2,2	2,5	2,9	2,8	4,1	1,5	2,4
Czech Republic	4,5	1,4	-0,1	2,6	1,6	2,1	3,0	6,3	0,6	1,2
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Reference value	3,1	3,1	1,8	1,3	1,0	2,4[f]	2,7[f]	2,9[f]		
Czech Republic	2,1	3,5	1,4	0,4	0,4[f]	1,0[f]	1,9[f]	**1,9[f]**		

Source: (Dedek, 2015)

A converging economy that achieves a growth differential compared to the EU of 2 percentage points a year, which might be realistic for the more advanced accession countries, can be expected to show a yearly real exchange rate appreciation of about 1.8 percentage points on average. This "benchmark convergence scenario" is close to the real exchange rate appreciation that some recent studies predict for Central European economies due to the Balassa–Samuelson effect (Halpern and Wyplosz, 2001; Begg et al., 2002; Deutsche Bundesbank, 2001).

Such a rate of real appreciation can be real, but may still be hard to achieve. On the one hand, the countries with currency boards may theoretically face problems with fulfilling the monetary Maastricht inflation criterion and criterion for national exchange rate. Inflation must be no more than 1.5 percentage points above the average rate of the three EU member states with the lowest inflation over the previous year and the

national currency is required to enter the ERM 2 exchange rate mechanism two years prior to entry. Their currency is confined within a set rate against the euro of plus or minus 15 percent.

This circumstances should be interpreted with a degree of caution, though, as it neglects other factors besides GDP growth which may influence the speed of price convergence. The other factors that effect price levels are in the wide are of cross-country differences in employment rates, non-trade productivity, the size of the non-tradable sector, government policies and the structure of foreign trade, for example (Holub, 2003).

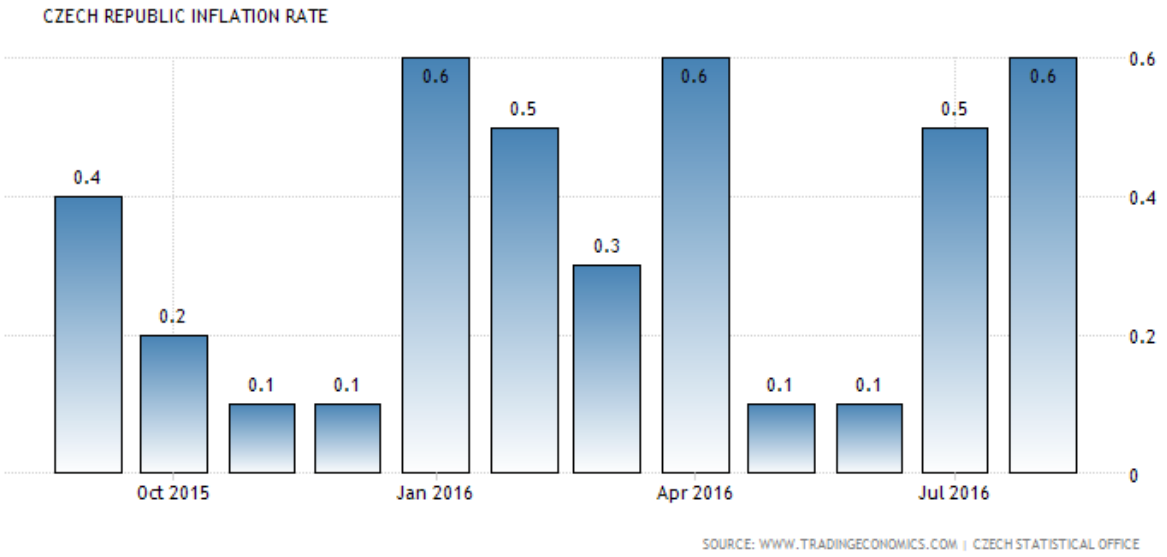
It should also be remembered that the international price differences do not concern average price levels only, but also – and perhaps even more importantly – relative prices. There are many prices in the Czech Republic which are less than 20 percent of the average EU level, such as rents, schooling, health care and transport services. On the other hand, communications, cars and alcoholic beverages have virtually the same price as in the EU. This means that relative prices (such as the price of cars in terms of rents) are significantly different in the Czech Republic – and other accession countries – compared with the EU. Moreover, we show that these differences in relative price structures are still much bigger than in the least developed EU countries. (Holub 2003).

In Czech Republic, the most important category in the CPI is Housing and Utilities (26.6 percent of total weight). Food and Non-Alcoholic Beverages accounts for 17.1 percent; Transport for 10.1 percent; Alcoholic beverages and Tobacco for 9.5 percent; Recreation and Culture for 8.8 percent and Miscellaneous Goods and Services for 6.8 percent. Furniture, Household Goods and Maintenance; Restaurants and Hotels; Clothing and Footwear; Communication; Health and Education account for the remaining 21.1 percent of total weight (Tradingeconomics, 2016).

In Euro Area, the inflation rate is calculated using the weighted average of the Harmonised Index of Consumer Price (HICP) aggregates. The main components of the HICP are: food, alcohol and tobacco (19 percent of the total weight), energy (11 percent), non-energy industrial goods (29 percent) and services (41 percent). The HICP aggregates are computed as the weighted average of each country's HICP components. The weight of a country is its share of household final monetary consumption expenditure in the total of the country's group. The local HICPs are supplied to the Eurostat by the National Statistical Institutes (Tradingeconomics, 2016).

Czech consumer prices increased by 0.6 percent year-on-year in August of 2016, following a 0.5 percent growth in the previous month and in line with market expectations. It was the biggest rise since April this year, mainly due to higher prices for alcoholic beverages and tobacco (+0.5 percent from +0.4 percent in July). Additional upward pressure came from: Housing and utilities, clothing and footwear and restaurants and hotels (each rose 0.1 percent, the same as in July). In contrast, cost of transportation fell 0.3 percent (from -0.2 percent in the previous month). On a monthly basis, consumer prices fell 0.2 percent. Inflation Rate in Czech Republic averaged 4.52 percent from 1993 until 2016, reaching an all time high of 21.90 percent in February of 1993 and a record low of -0.40 percent in January of 2003. The inflation rate in the Czech Republic within last two years is on the Figure 2.

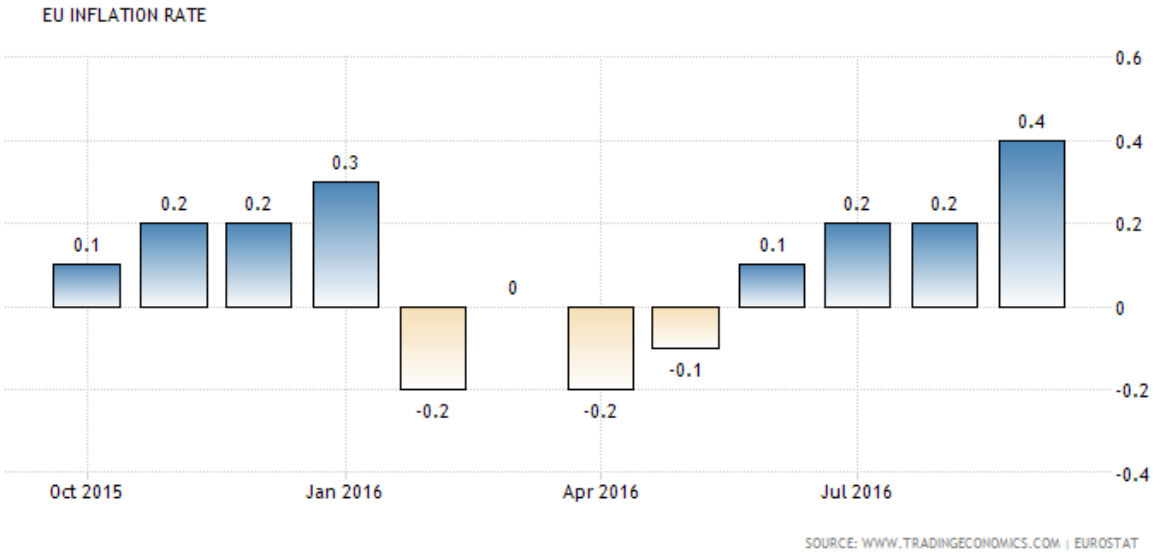
Figure 2: The inflation rate in the Czech Republic in 2015 and 2016



Source: Tradingeconomics

Consumer prices in the Euro Area are expected to increase 0.4 percent year-on-year in September of 2016, following 0.2 percent growth in the previous month and in line with market expectations. It was the highest inflation rate since October 2014, as prices rose for services, food and energy cost fell at a slower pace. Inflation Rate in the Euro Area averaged 2.01 percent from 1991 until 2016, reaching an all time high of 5 percent in July of 1991 and a record low of -0.70 percent in July of 2009. The inflation rate in the EU within last two years is on the Figure 3.

Figure 3: The inflation rate in the EU in 2015 and 2016



Source: Tradingeconomics

3. The price level adjustment

In such a situation, a smooth price adjustment to the EU level would require companies and labour unions to adjust their behaviour to the circumstances of low inflation, nominal exchange rate appreciation and falling prices of tradable goods. Policy makers can contribute in this respect by communicating more actively to the private sector the implications of the announced inflation targets and the process of real economic convergence. This could help overcome the behavioural aspect of the downward rigidity of prices and its real

macroeconomic costs which may stem from the companies' and labour unions' lack of experience with the low-inflation environment, the appreciating nominal exchange rate and the falling prices of tradable goods. (Holub, 2003).

The speed of adjustment of price level toward the longer term trend in EU was influenced by two institutional factors: the absolute size (depth) of the market and the degree of liberalization of the foreign exchange market and financial account of the balance of payments. Moreover, both factors tended to reinforce each other. Our findings have some attractive policy implications. Early liberalization of prices may pay off in terms of market liquidity and, hence, faster adjustment of the exchange rate to the longer-term trend. However, early liberalization is a necessary condition for liquidity, not a sufficient one, as shown by some currencies.

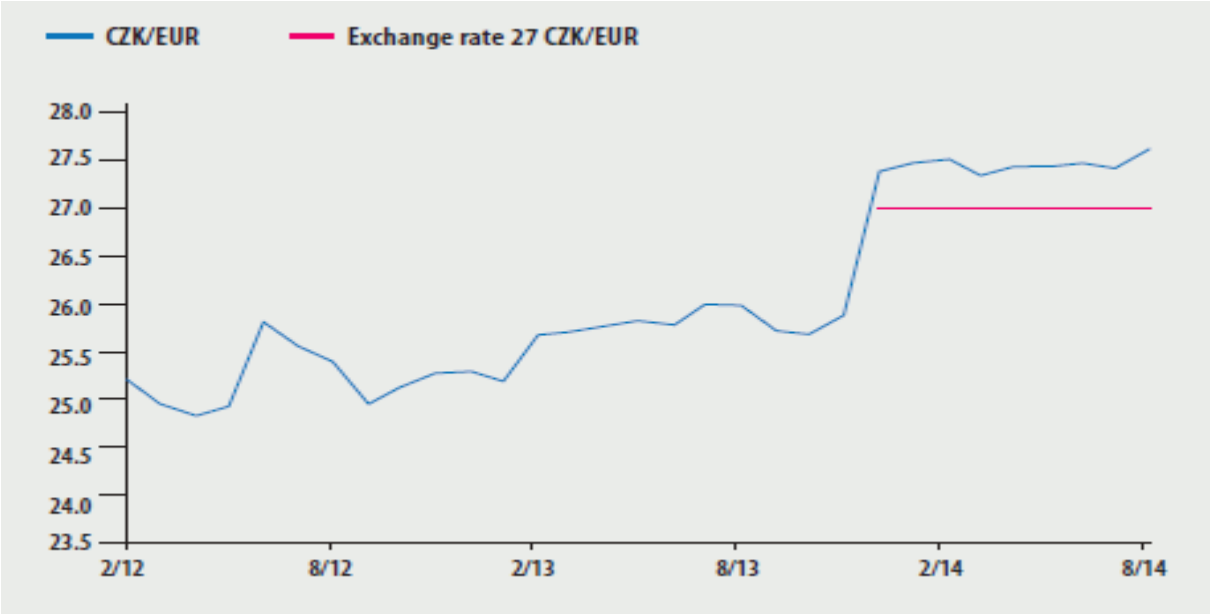
We conclude that it may take about 15 years for the Czech aggregate price level to reach 60 percent of the EU price level, and it would take about the same time to reach the same degree of relative price differences as observed in the least developed EU countries. This corresponds to an average rate of real exchange rate appreciation of 2.5–3.5 percent a year, which is above the "benchmark" estimate based on the aggregate cross-country regressions, but still somewhat below the trend observed in the Czech Republic over the past decade.

This process is within last 3 years hugely affected by depreciation of the Czech koruna. Prices for many items in the consumer basket had been decreasing for a long time and there was a danger that Czech consumers and companies would take falling prices for granted, and that these prices would be reflected in price and wage expectations and negotiations. At the same time, this would spark a tendency to put off purchasing certain consumer and investment goods, which would happen despite record- low nominal interest rates. The consequence would be the additional reinforcement of anti-inflationary pressures in the economy. Without a further easing of monetary policy by the CNB, the hi it to relatively stable exchange rate development could be interrupted and the koruna could start to significantly appreciate. There was a much higher risk that the Czech economy would slide into a long-term price level fall. (Holub, 2014).

During 2012, the Czech economy saw domestic inflation fall gradually, for both external and domestic macroeconomic reasons, from above the target level of 2% annually to below it. Towards the end of the year, the CNB's forecasts for the next several quarters started to signal that, in order to keep inflation from falling below 1%, that is, from leaving the 1 percentage point target band around the target level, the monetary policy stance should be eased enough to bring market interest rates just a few tenths of a percentage point above zero. On top of that, however, official CNB communication flagged – for the first time in a decade – the possibility of implementing the rest of the needed monetary policy easing "by influencing the exchange rate of the koruna. Then in 2013, new forecasts indicated that inflation would most likely fall even lower than had been expected, reaching zero or even a slightly negative level for a short time at the beginning of 2014. The probability of several quarters of negative inflation ceased to be negligible, implying the threat of a subsequent deflation spiral not unlike the one observed some 10 years earlier in Japan (Hampl and Skorepa, 2014).

Throughout 2013, the Bank Board kept emphasising the possibility of forex interventions, but the impact of these verbal initiatives seemed to wane gradually. Under those circumstances, on 7 November 2013, the Bank Board decided to initiate actual forex interventions immediately, with the publicly announced objective of weakening the exchange rate so that it would not fall below €1 = CZK27. Given the doubts that quite a few market participants initially had about the CNB's resolve to achieve the stated aim, it took several hours before the exchange rate actually reached the €1 = CZK27 level. Within about three days, the volume of the Czech currency that the CNB had to sell in the market to keep the exchange rate from falling below €1 = CZK27 dropped to almost zero. The resulting rise in the CNB's holdings of forex reserves between end-September and December 2013 was about 20% (almost €7 billion). The CZK/EUR exchange rate before and recently after the interventions is on the Figure 4.

Figure 4: The CZK/EUR rate in the period of the beginning of interventions



Source: Czech National Bank

Analyses and simulations conducted by the CNB clearly showed that a depreciation of the exchange rate would have a positive effect in terms of achieving price stability and promoting economic recovery. In the initial phase, depreciation leads to an increase in the price of imported goods and thus to headline inflation, which prevents a fall in inflation expectations far below the central bank's target or into the deflationary zone. Households and businesses accordingly conclude that it is not worth waiting for a further price drop, and some of them start to consume more and invest. At the same time, the weaker exchange rate leads to the increased price competitiveness of Czech producers in international markets, which is then reflected, with a slight time delay, in an increase of exports. The weaker exchange rate simultaneously encourages demand for domestic goods also in the Czech market. Czech companies sell more and generate higher revenues, workers will have longer working time and there will be renewed growth in wages.

A weakening of the exchange rate of the koruna leads to an increase in import prices and thus also in the domestic price level. To a lesser extent, it also boosts domestic economic activity. The rise in import prices can be expected to reduce households' purchasing power, but households' demand may be redirected towards domestic goods and services to a greater extent and additionally supported by lower real interest rates as a result of higher inflation expectations. At the same time, the weaker exchange rate supports Czech exports and the profitability of corporations and their willingness to invest. The recovery in production then contributes to a rise in employment and wages, which increases the purchasing power of households.

4. Conclusions

Two principal forces are crucial to explain the process of price convergence in the Internal Market. On the one hand, the catching up process of low income countries leads to a rise in the price levels and higher inflation over a transition period. The increase in overall price level affects consumption and production patterns. This tendency is based on market reforms, the composition of value added and an increase in the variety and quality of goods. On the other hand, the rise in competition exerts a downward pressure on prices because of lower mark ups.

The negative relation between the initial price level and subsequent price increases is evident. Countries with lower initial price levels tend to have higher inflation rates thereafter. Convergence of price levels will gradually occur. Catching up and competition seems to be important drivers to explain the path of price convergence. Catching up appears to be the most important regressor, especially for the New Member States.

Competition exerts a downward pressure on prices, most notably in the New Member States. For the Old Member States competition may have increased especially during the 1990s. Finally, the removal of price controls will lead to a decrease in relative prices in the Old, but to an increase in the New Member States. The

opposite effects can be explained by the different degrees of price regulation in the Old and New Member States.

To sum up, there is some evidence that price convergence takes place in the Internal Market. Due to the enlargement, the speed of convergence has increased. Both catching up and competition factors are relevant to explain the process of price convergence, especially for the New Member States. However, it should be noted that the time series dimension of the regressions is too short for definitive conclusions. This is particularly true in the case of basic headings, and might explain some inconclusive results of the analysis.

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