PRICE STABILITY AND ITS REALIZATION - THE CASE OF THE CZECH REPUBLIC AND POLAND

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Abstract: This article presents actions taken by the National Bank of Poland and the Czech National Bank to ensure price stability. Price stability is recognized as a primary goal of monetary policy, because it leads to sustainable economic growth in the long term. The importance of maintaining price stability has increased in the context of the global crisis, which caused that the inflation rate was periodically beyond the predetermined target. Realization of price stability is not only affected by macroeconomic conditions, but also by other variables like the nature of inflation expectations and the level of the central bank's credibility.

Keywords: inflation, inflation targeting, price stability.

1 Introduction

By the end of 1970s a consensus in economic theory was achieved, which came down among others to considering price stability as a primary goal of monetary policy. Price stability allows effective realization of the main goal of economic policy, which is to ensure sustainable economic growth in the long term. Therefore, many central banks around the world recognize price stability as the primary goal of their policy. That mandate has also been given to the National Bank of Poland (NBP) and the Czech National Bank (CNB). Both central banks undertake to conduct monetary policy aimed at stable and low inflation growth.

2 Price stability and its economic significance

Price stability can be simply defined as a stable general price level or a situation of avoiding both prolonged inflation and deflation[1]. Price stability is often identified with a durable and low inflation rate, but this approach is not quite correct. O. Issing talking about price stability distinguished between: steady-state deflation, a constant price level or zero inflation, and low inflation[2]. These approaches indicate a different direction of changes in price level, which is included in the concept of price stability. It means that prices are stable even when the average price level decreases, is constant or is slightly increasing[3].

Among many advantages of price stability, the European Central Bank emphasizes the growth in economic activity and employment growth, which arise from the increased transparency of the price mechanism, reduction of risk premium due to stable inflation, as well as ensuring the financial stability[4]. But above all, the effect of stable inflation on the growth is made by shaping inflation expectations. Thus, stable and low inflation expectations stimulate the decision-making processes influencing the economic growth. That point of view was expressed by A. Greenspan, when he said: "We will be at price stability when households and businesses need not factor expectations of changes in the average level of prices into their decisions"[5]

Central banks, aiming for goal defined as maintain price stability, usually use a precise definition of the inflation target. Central banks, introducing to monetary policy that inflation target, usually decide to use a regime, which is the inflation targeting strategy. According to F.S. Mishkin[6], the essence of this strategy includes a public announcement of the medium-term numerical inflation target and institutional commitment of monetary authorities to consider price stability as the primary objective of monetary policy. Furthermore, the implementation of inflation targeting is based on the use of any available information that comes from many macroeconomic indicators[7]. That information is used to streamline the decision-making process, especially concerning the selection of instruments of monetary policy, which may be commensurate with the actual economic situation. Given the fact that this strategy is based on many factors which affect the economy, it is often described as the *strategy of looking at everything*[8]. However, due to the fact that different central banks set their own levels of inflation targets, it is difficult to point to a universal quantitative definition of price stability. Furthermore, differences are also connected with the measure of inflation, which usually is the core inflation index or CPI index. The practice of modern central banks shows that they usually specify their purpose to keep inflation within 2% CPI index.

3 The realization of central bank's inflation target in the Czech Republic and Poland

In the Czech Republic the inflation targeting (IT) was formally launched in early 1998 in accordance with the decision of the the CNB Bank Board, taken in December 1997. In preparation for the new strategy, the CNB in December 1997 announced both the inflation target for the next year and the medium-term objective to be achieved at the end of 2000. In the first period of the strategy, the verification of the target was followed on the basis of the net inflation growth rate, realized at the end of December. During the course of the successful period of disinflation, in 2001 the CNB announced the transition to a new stage in monetary policy, aimed at ensuring a stable price level. The new assumptions were defined in the document *The Setting of the Inflation Target for 2002-2005*. According to this the inflation target was defined as the decreasing range of CPI from 3% -5% in January 2002 to 2% -4% in December 2005. The strict realization of price stability was started at the beginning of 2006. According to *The CNB's Inflation Target from January 2006,* the inflation target was set as 3% growth of year-on-year CPI with permitted fluctuations of ±1 percentage point. In this document the CNB stressed the importance of anchoring inflation expectations. It also claimed that this objective will be continued until accession to the euro area. But in March 2007[9], the CNB announced a new target from January 2010, which was determined as 2% growth of year-on-year CPI with permitted fluctuations of ±1 percentage point.

In Poland, the decision about implementing the IT was taken by the Monetary Policy Council (MPC) in 1998 and assumptions of this strategy were formulated in *Medium-Term Strategy of Monetary Policy (1999-2003)*. This strategic document stated that the medium-term goal of the NBP would be to reduce the consumer price growth rate below 4% by the end of 2003. During 1999-2003 verification of the goal was made by comparing the CPI index with the target announced in monetary policy guidelines for each year. In 2004 the NBP started to implement a new target in monetary policy aimed at stabilizing the price level. The new inflation target was defined in the *Monetary Policy Strategy beyond 2003*. After 2003, the target set by MPC was to attain a stable inflation growth of 2.5% CPI with permissible volatility bandwidth of ±1 percentage

[1] According to the European Central Bank, http://www.ecb.europa.eu.
[2] O. Issing, Why Price stability?, an article from *Why price stability?*, First ECB Central Banking Conference, 2 and 3 November 2000, Frankfurt am Main, Germany, p. 187-192, http://www.ecb.int [access 26.11.2011].
[3] See: ibidem.
[4] According to the European Central Bank, http://www.ecb.europa.eu.
[5] A. Greenspan, *Testimony before the Subcommittee on Economic Growth and Credit Formation of the Committee on Banking, Finance and Urban Affairs,* U.S. House of Representatives, February 22, 1994, p. 5., http://fraser.stlouisfed.org/historicaldocs/805/download/27973/Greenspan_19940222.pdf, [access: 26.11.2011].

[6] F.S. Mishkin, *Inflation Targeting in Emerging Market Countries,* NBER Working Paper no. 7618, Cambridge 2000, p. 1-2.
[7] Ibidem.
[8] J. Drop, A. Wojtyna, *Strategia bezpośredniego celu inflacyjnego: przesłanki teoretyczne i doświadczenia wybranych krajów*, Materiały i Studia, zeszyt nr 118, Narodowy Bank Polski, Warszawa 2001, p. 4.
[9] *The CNB's new inflation target and changes in monetary policy communication;* www.cnb.cz [access 26.11.2011].

point. Due to continuous targeting, it is possible to evaluate the new target at any time during the year, not only at the end of a given calendar year (like under the *Medium-Term Strategy of Monetary Policy (1999-2003)*).

Figure 1. CPI y/y (year-on-year) compared to the inflation target in the years 2006-2011 (left side) and percentage deviation of the inflation index CPI y/y outside the target range (right side) in the Czech Republic
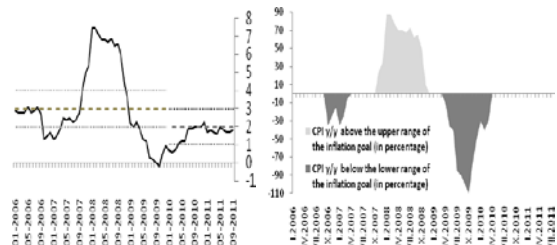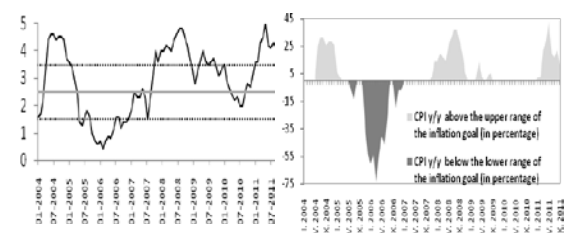

Source: own calculations based on the Czech National Bank data (www.cnb.cz)

The left side of the figure above shows the CPI in the Czech Republic and the CNB's inflation target. As already mentioned, in 2006-2009 the target of the CNB was 3% CPI with range of ± 1 percentage point while in January 2010 it was lowered to 2% CPI with ± 1 percentage point. During the analyzed period, the CNB showed in monetary policy fairly strong determination in achieving the inflation target. Significant deviation from the target was during the financial crisis (2007-2009). Moreover, in late of 2009, in the Czech Republic was appeared the threat of deflation, significantly associated with the crisis in the real economy. In October 2009, the percentage deviation of CPI from the lower limit of the inflation target (announced as 2% CPI) was roughly 110% (in October in the Czech Republic was deflation: -0.2% CPI). During 69 analyzed month in 13 cases (about 19% of observations) inflation went beyond the upper permissible variations. These high rates of CPI were connected with the initial part of the global financial crisis.

In Poland, during the analyzed period from January 2004 to October 2011, the NBP had quite big problems with keeping inflation close to the central level of the target (2.5% growth of consumer price index) and also was not able to maintain the long-term fluctuations of inflation in the permitted bandwidth. It should be noted that during the first stage of the financial crisis (2007-2009), the deviation of inflation outside of the permissible fluctuations was much lower in Poland than in the Czech Republic (compare figure 1 with 2). During mentioned period, inflation in Poland slightly exceeded the upper limit of the target. Despite the lower level of inflation deviations outside the permitted bandwidth, the NBP was not able, like the NBC, to guarantee the return of inflation to the announced target path. While inflation in the Czech Republic, as a result of complex of conditions, returned to the borders of the central values of the inflation target, then in Poland, during the same period, we could observe a significant acceleration of inflation. In a result, in May 2011, inflation reached 5% of the CPI. Last time, similar situation was at the end of 2001. In Poland, during 93 monthly observations of the CPI in 36 cases (approimately 39%) the CPI was exceeded the upper limit of the tolerance range, while in 14 months – the lower limit of the target. Altogether, in Poland in roughly 54% of monthly observations, inflation was outside the permitted bandwidth but in the Czech Republic similar situation occurred in 45% of observations.

Figure 2. CPI y/y compared to the inflation target in the years 2004-2011 (left side) and percentage deviation of the inflation index CPI y/y outside the target range (right side) in Poland

Source: own calculations based on data of the National Bank of Poland data (www.nbp.pl) and the Central Statistical Office (www. stat.gov.pl)

4 Macroeconomic performance of monetary policy in Poland and the Czech Republic

The IT takes into account all kinds of information that can be considered in decisions about monetary policy instruments. This section of the article presents the conditions that accompanied the implementation of IT in Poland and the Czech Republic and also determined the effectiveness of monetary policy and influenced on the decisions taken by both central banks.
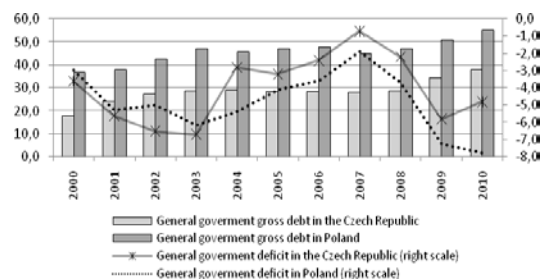
Figure 3. Quarterly year-on-year growth rate of the GDP in Poland and the Czech Republic

Source: based on the Eurostat data (www.eurostat.ec.europa.eu)

The condition of the economy may be evaluated by analyzing the growth rate of GDP. During the period 1998-2011 the quarterly GDP growth rate developed more stable in the Czech Republic than in Poland. From the fourth quarter of 2002 in the Czech Republic we can observe a period of relatively stable economic growth, lasting until the second quarter of 2007. This period was accompanied by low and stable inflation growth. Following the global financial crisis, both Poland and the Czech Republic, experienced a fall in the rate of economic growth. The resistance to the crisis was bigger in Poland than in the Czech Republic. Polish economy managed to maintain a positive economic growth throughout all the analyzed period. Although in the second quarter of 2009 the Czech economy contracted by 4.8% in comparison to the second quarter of 2008, but in Poland the growth rate was still positive. The economic crisis in the Czech Republic was accompanied by short-term deflation observed over the third and fourth quarter of 2009 (see figure 3).

Figure 4. Public debt and budget deficit as a % of GDP in Poland and the Czech Republic

Source: based on the Eurostat data (www.eurostat.ec.europa.eu)

The condition of the public finances has also a big impact on monetary stability. Figure 4 presents the public debt and the budget deficit as GDP % in both analyzed countries. In Poland and the Czech Republic, prior to EU accession, the essential problem was to reduce the budget deficit to the size adopted in the Maastricht Treaty. In terms of the fiscal criteria, the Czech economy is more well-balanced than Polish economy. However, a significant deterioration in the public finances indicators is observed in both countries in the context of the financial crisis. During that period the larger instability still applied to Polish than Czech economy. The instability of the public finances is a significant problem in Poland. In 2010 the government anti-crisis measures significantly increased the size of the public debt (to 54.9% of GDP) and the budget deficit (to 7.8% of GDP). In the same time in the Czech Republic, despite the economic slowdown, the public debt was roughly 37.6% of GDP and the deficit roughly 4.8% of GDP. The relative improvement of the public finances in the Czech Republic during the years 2009-2010 (mainly the reduction of budget deficit) helped to reduce the inflationary pressure and contributed to return of inflation to a designated path. In the case of Polish public finances, including a growing deficit, the NBP had some problems with stopping inflationary processes. Moreover, at the beginning of 2011, the inflation growth in Poland was associated with increasing burden of the VAT and increasing inflation expectations of households.

As mentioned, inflation also depends on the inflation expectations of households and business. In IT strategy very important are also inflation forecasts, formulated in advance for the coming years. Their aim is to anchor inflation expectations and help to reduce inflationary pressures in future years. Anchoring inflation expectations is oriented towards stabilization of inflation at a low level in the long run. Thus, the monetary policy is more transparent, the more likely to maintain price stability. The significant role in shaping inflation expectations, and thereby maintaining price stability, is played by central bank's credibility. "A central bank is credible if people believe it will do what it says.[10]" The reputation of the central bank is important in shaping price stability and it is also an essential part of its institutional framework. In order to increase the credibility of monetary policy, the central banks strive for maintaining the increased communication with market participants, increasing the degree of policy transparency and taking responsibility for its implementation. Most of the central bank's reputation is built by a public announcement of the realization of their inflation target and explaining the reasons and circumstances that influenced the degree of its fulfillment. One of the tools of building reputation are reports publications. Both the CNB and the NBP regularly publish documents like: reports on inflation, reports of MPC meetings or annual reports.

Figure 5. Inflation expectations of financial markets (left side) and non-financial sector (right side) in the Czech Republic (year-on-year CPI)

current CPI y/y   .... inflation expectations formulated year ago   —— inflation expectations formulated 3 years ago
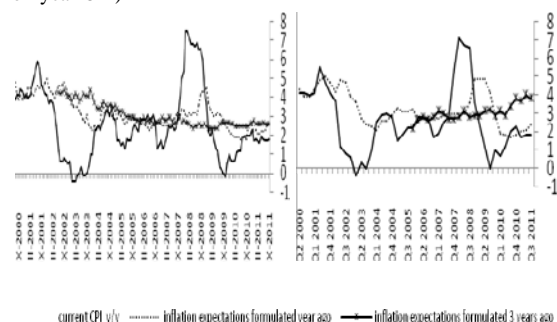
Source: based on the data of the Czech National Bank (www.cnb.cz)

According to the above figure 5, the period of macroeconomic stability was connected with the low inflation expectations, formulated by both non-financial sector and financial sector. Expectations of financial markets were more stable and anchored at the level of the announced inflation target. Moreover, the long-term inflation expectations (formulated three years ahead) were close to the target. It should be noted that in the case of financial markets, high inflation fluctuations from the years 2007-2009 had a small influence on inflation expectations, formulated by participants of this markets. In the case of non-financial sector (right side of figure 5) the relationship between inflation and inflation expectations is a bit clearer, but also the expectations seem to be firmly anchored in the bandwidth of inflation target.

Figure 6. Inflation expectations of private sector in Poland based on CPI y/y

.... inflation expectations formulated year ago   —— current CPI y/y
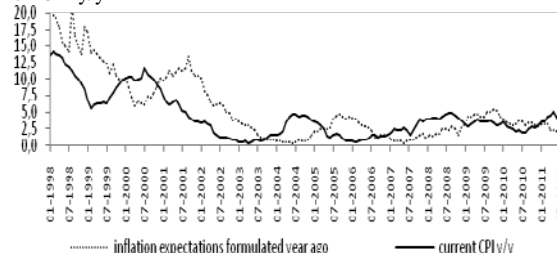
Source: based on the data of National Bank of Poland (www.nbp.pl)

In Poland, the period of disinflation, conducted in the framework of the *Medium-Term Strategy of Monetary Policy (1999-2003)*, was accompanied by a significant reduction in inflation expectations of the households. A new stage in Polish monetary policy, aimed at ensuring price stability, was carried out at a lower, but quite a significant impact of the private inflation expectations. Although, the continuous inflation target helped to reduce the size of formulated expectations, but it wasn't able to exclude their fluctuations. Analysis of inflation expectations in Poland shows that they clearly have an adaptive character. Despite the regular publications of the inflation reports, the guidelines of monetary policy for the next years and the public announcements of inflation projections and projections of GDP, households still formulate their expectations based on the realized inflation rates. Thus, in Poland the problem of anchoring inflation expectations at the target level (2.5% CPI) is an important issue, especially because of the potential effectiveness of the IT strategy, as well as due to the determination of the NBP to maintain price stability.

The level of the credibility of the central bank stimulates the range of the public inflation expectations. Shown in figure 5 and figure 6 formations of inflation expectations have confirmation in many studies, which show that both the level of credibility and the level of reputation of the CNB is greater than the NBP[11]. What is more, the importance of the central bank credibility affects not only the current monetary policy, but its importance is increasing in the face of the economic turmoil. As noted by M. Singer, in the current financial crisis, "numerous central banks have negative equity yet have no problems operating if they are credible enough. The real capital of a central bank is its credibility and reputation, not a figure on its balance-sheet"[12]. The credibility of monetary authorities can determine the stability of entire the financial system and economy. The more credible the central bank is, the higher range of anchoring inflation expectations at the target level, and the greater is the efficiency of monetary policy, as well as the greater transparency

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[10] A. S. Blinder, *Central-Bank Credibility: Why Do We Care? How Do We Build It?*, American Economic Review; December 2000, Vol. 90 Issue 5, p. 1422.

[11] For example: P. Arestis, K. Mouratidis, *Credibility of Monetary Policy in Four Accession Countries: A Markov Regime-Switching Approach*, Levy Economics Institute Working Paper No. 371, February 2003.
[12] M. Singer, *The Czech Republic outside EMU – a success story born from painful lessons. A Czech view on resolving the euro crisis*, Speech at Official Monetary and Financial Institutions Forum, Reform Club, London, 28 June 2011, p. 3; http://www.bis.org/review/r110630a.pdf?frames=0

in decision-making process, and thus the higher degree of the economic stability in the long term.

The basic tools in implementing IT are interest rates. In the case of monetary policy implemented under IT, the one goal (inflation target) is connected witch the one instrument responsible for its realization (interest rate). The direction of interest rates, especially the change of the main central bank's interest rates, shows the character of monetary policy – for example: periods of increasing inflationary pressure generally are connected with more restrictive policy of interest rate.

Figure 8. The CNB selected interest rates and the exchange rate of the national currency
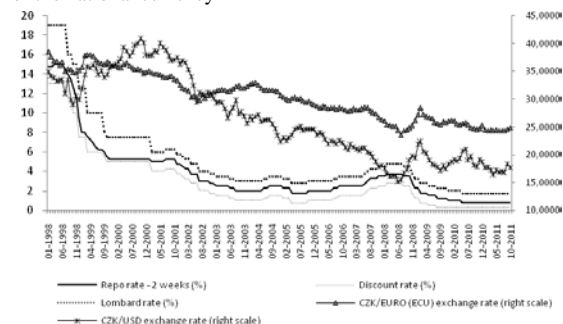
Source: based on the data of the Czech National Bank (www.cnb.cz) and the Eurostat database (www.eurostat.ec.europa.eu)

Both the CNB and the NBP similarly responded to inflationary processes arising from the financial crisis. They mainly affected by raising interest rates. However, in 2009 the financial crisis shifted to the real economy, forcing central banks to stimulate the appropriate economic growth, initially by adjustments in interest rates. But during the financial crisis there appeared quite problematic issue. It referred to the phenomenon of relatively low inflation under conditions of simultaneous low interest rates. This problem was greater in the Czech Republic than in Poland. Therefore, stimulating economic growth by interest rates was limited, e.g. from August 2009 to October 2011, the CNB's discount rate was 0.25% while the main money market rate (2W REPO) during May 2010 to October 2011 amounted to 0.75% (see figure 8). In Poland in the same period, the character of monetary policy, due to increasing inflationary pressure, was more restrictive. The significant exceeding the inflation beyond permitted bandwidth was an impulse to make a decision to increase interest rates and next maintain them at the invariable level (see figure 9).

Figure 9. The NBP selected interest rates and the exchange rate of the national currency
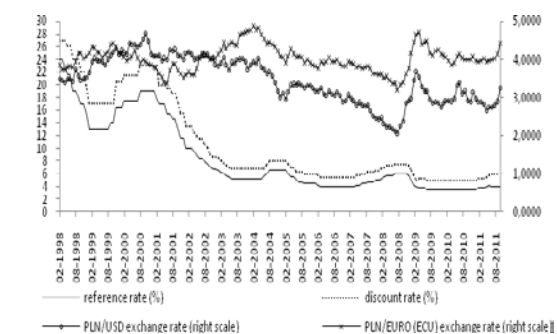
Source: based on the National Bank of Poland data (www.nbp.pl) and the Eurostat (www.eurostat.ec.europa.eu)

The direction of changes of the exchange rate exerts influence on the achievement of price stability. In Poland, a fully floating

exchange rate, as a condition for the effective implementation of the IT, was introduced in April 2000, while in the Czech Republic in May 1997. During the financial crisis the exchange rate was one of the tools of influencing the effects of the economic growth. Due to the fact that the Czech economy is increasingly dependent on exports than is the Polish economy[13], the strong appreciation of the Czech crown in relation to the USD and EURO in August 2008 adversely affected the trade and restricted the dynamics of the GDP growth. Also in Poland in 2008 was quite big appreciation of PLN in relation to the USD and EURO. The strong appreciation of the domestic currency was accompanied by the periods of monetary policy tightening, which was increasing the restrictive character of the activity of both central banks (see figure 8 and figure 9). The appreciation of national currency was also reflected in the real effective exchange rate (REER). Both the Czech Republic and Poland had the strongest appreciation of the REER in July 2008 (the REER of Czech Republic was 133.59 while the REER of Poland was 124.82)[14]. Following a significant appreciation in August 2008 the difference between the REER in both countries has significantly increased. From middle of 2008 the REER of Polish zloty was weakened in comparison to the REER for the Czech crown. The stronger appreciation of the Czech crown affected the size of exports, fairly declining in the GDP growth in 2009.

5 Conclusions

This article presents the attempt to evaluate the activities of the NBP and the CNB to conduct and maintain price stability. The article also presents selected conditions of monetary policy, that influence the efficiency of price stability realization.

In the late 1990s, both central banks introduced the IT. This strategy allowed for effective disinflation and after a period of lowering the inflation rate, central banks oriented monetary policy towards inflation stabilization at a low level. This strategy made it possible to implement the next stage of monetary policy - to ensure price stability. The analysis indicates that a relatively higher level of maintaining price stability was in the Czech Republic than in Poland. This effect was a result of a number of conditions, especially those that were beyond the control of national central banks.

The CNB policy was stimulated by relatively stable economic growth and well-balanced fiscal policy. Including the proper response to changes in the macroeconomic indicators, as well as strong determination to join the European Union and the euro zone, allowed the NBC to achieve a high degree of reliability and stability of inflation expectations at a level close to the announced inflation target. The high degree of the CNB confidence, which is formulated by financial markets and the private sector, meant that even in times of financial crisis current expectations insignificantly reacted to actual inflation. As a result of a number of conditions that initially threw inflation beyond the upper limit of the target range, the NBC in a fairly short time managed to reduce inflation to the level of the inflation target. It should be noted that it was done after a short term of deflation and in terms of relatively low levels of interest rates.

In Poland, inflation expectations of the private sector have a definitely adaptive character, connected with the realized inflation rate. The relatively lower, in comparison to the CNB, level of credibility of the NBP is quite a significant problem in the stabilization of inflation expectations, especially when the expectations influence the effectiveness of policy of price stability. On the other hand, efforts to maintain price stability in Poland are restricted, among other things, by the imbalance of

public finances. The efforts to ensure a monetary balance should be accompanied by sustainable public finances, in order to affect the processes of economic growth in the long term. In Poland the degree of public finance discipline is rather weak. As the analysis, in terms of the global crisis and unstable public finances, the Polish economy is more threatened by macroeconomic instability. Under these circumstances, maintaining price stability at the level of the central point of the inflation target may be difficult to reach, especially when the mandate of credibility for the NBP is quite limited. Moreover, in Poland, the risk of exceeding the fiscal criteria of convergence increases and, in result, the fiscal policy will not be able to ensure anti-crisis measures. Although the relatively lower real effective exchange rate of the Polish zloty than the Czech crown will be able to respond to economic development, it can also become one of the factors determining the size of public debt, resulting in the need to strengthen financial discipline. Due to that reason, fiscal policy without any reforms can slow down economic development.

An increasingly perspective of the second phase of the crisis in Europe causes a considerable degree of uncertainty about the ability of both NBC and the NBP to reach their targets. Now monetary policy is entering an area of uncertainty, associated with the operation under the conditions of financial turmoil, and in terms of relatively low inflation and low interest rates. Under these new conditions the effectiveness of the central bank's policy may depend strongly on its credibility. Given the relative adaptive nature of Polish inflation expectations and a relatively low level of confidence of the monetary institutions, the current distance of the NBP, compared to NBC, in relation to achieving price stability can be maintained and even the distance can widen.

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