

IX. DISINFLATING WITH INFLATION TARGETING: LESSONS FROM THE CZECH EXPERIENCE

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A. A Search for a Better Strategy to Disinflate

Inflation targeting is the monetary strategy of the 1990s. According to recent surveys, more than 50 percent of the central banks use explicit inflation targets when formulating their monetary policy.² Literature on inflation targeting in principle is based on the experience of developed economies, while monetary strategies of emerging economies are as a rule linked to monetary or exchange-rate targets.

This chapter argues that inflation targeting is a strategy that can be adopted by central banks in countries in transition even though the design of their monetary strategies have different aims than in developed economies. A typical goal of an economy in transition is to disinflate instead of stabilizing low inflation. Under certain conditions, inflation targeting may be a better monetary strategy than using intermediate targets, since it offers two important benefits: increased control over expectations and short-term flexibility. They are both attractive for an economy in transition,³ since the transitional process has several features that require an anchor for expectations in the medium term as well as flexibility for policymakers in the short term.

Specifically, in the Czech case, inflation was persistent for several years, and even in the later stages of transition, the economy had a tendency to experience periods of inflation.⁴ Several other points should also be made. Second, the relationship between the operational target

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² Fry et al. (1999) demonstrate that at the start of 1990 only four countries in their sample of 77 had explicit inflation targets. In 1998, 57 percent of the central banks in the sample had inflation targets.

³ Analogously to transitional factors, the great openness of the Czech economy had also made the property of short-run flexibility attractive in the Czech case.

⁴ The CPI inflation had the following record (annual average rates): 11 percent (1992), 21 percent (1993), 10 percent (1994), 9 percent (1995), 9 percent (1996), 8 percent (1997) and 11 percent (1998). In the second half of 1997, a new inflation episode had begun to develop. Various inflation forecasts signaled accelerating inflation expectations well above one-digit levels for the first time since 1994. In particular, the wage negotiations continued to be based on a double-digit assumption. The wage negotiations for 1998 were based on an inflation forecast of 14 percent (See Pohledy, 1997). For comparison, growth in average nominal wage was 25 percent in 1993, 19 percent in 1994, 19 percent in 1995, 18 percent in 1996, and 11 percent in 1997. Wages grew 9 percent in 1998.

(interest rates), money and inflation was not reliably predictable,⁵ since “transitional” innovations and increasing financial openness destabilized the relationship. Third, capital inflows and outflows started dominating exchange rate developments due to increasing financial openness. Hence defending the peg became more costly.⁶ Fourth, prior to the introduction of inflation targeting, the corrections of administered prices remained unfinished, and there was a great deal of uncertainty about the scale and speed of future corrections. It was important for monetary strategy policy to accommodate the primary impact of transition shocks on prices while smoothing their secondary effects, since tax reform and price corrections⁷ had a large impact on CPI inflation.⁸

It should be said that, similar to the experience of many countries, a search for better monetary strategy started after other strategies failed to secure the disinflation process.⁹ Since 1990, the stability of the Czech koruna has been the ultimate target of Czech monetary policy.¹⁰ Prior to 1997, the Czech National Bank (CNB) consecutively applied three monetary strategies in order to ensure disinflation under constraints given by a transitional process.¹¹ These

⁵ In addition to constraints observed elsewhere, transition made the analysis of monetary transmission more complicated. The institutional features of financial markets went through profound changes within a relatively short time span. Moreover, new financial assets, new types of transactions, and new market players emerged during the transition. See Allen and Šmídková (1998) for an analysis of the impact of voucher privatization on portfolio decisions.

⁶ The problem of capital inflows occurred on a large scale in the case of the Czech Republic. The ratio of the financial account to GDP was 8.4 percent in 1994, 16.2 percent in 1995, and 7.6 percent in 1996.

⁷ Apart from initial liberalization of majority of prices, a segment of administered prices, such as energy prices or rents, are gradually corrected by government decision during a transition.

⁸ This follows from comparison of the CPI inflation with changes in regulated prices, which were as follows: 9 percent in 1994, 9.7 percent in 1995, 11.2 percent in 1996, 19.7 percent in 1997 and 20.7 percent in 1998.

⁹ Fry et al. (1999) show that a typical reason for implementing inflation targets in nineties was either collapse of the exchange-rate regime or financial innovations that changed monetary transmission.

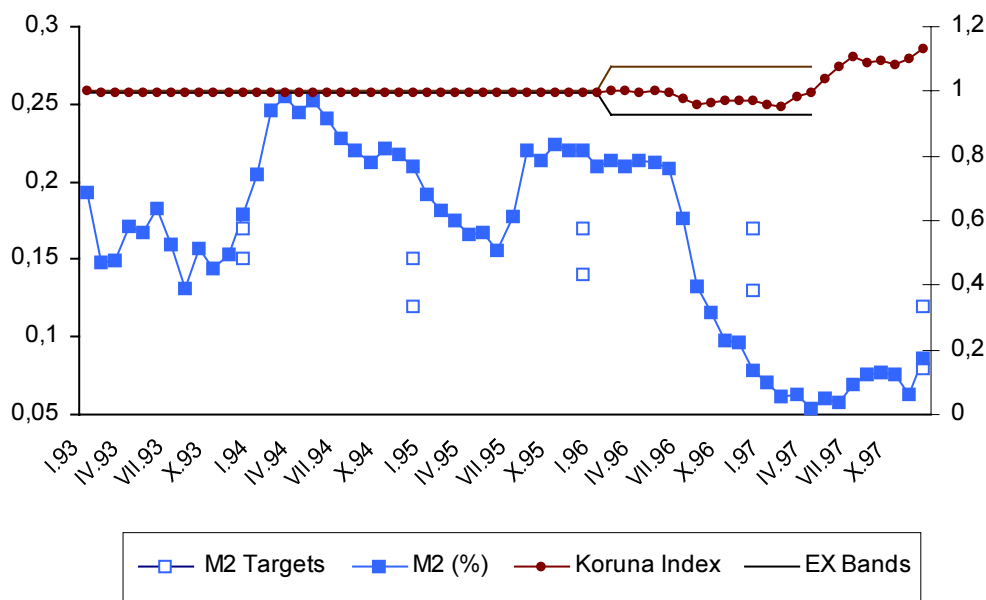
¹⁰ The Czech National Bank was established on January 1, 1993 after the dissolution of Czechoslovakia, and became a successor to the State Bank of Czechoslovakia (See Constitutional Act No.542/1992 Coll., on the Dissolution of the Czech and Slovak Federal Republic, adopted January 1, 1993). Act No. 130/1989 Coll., on The State Bank of Czechoslovakia, adopted on November 15, 1989, created the preconditions for emergence of the two-tier banking system.

¹¹ See Hrnčíř, Šmídková (1999) for a more detailed discussion of the Czech experience with alternative monetary strategies.

strategies worked with intermediate targets (See Figure 1). At first, the koruna was pegged to a basket of currencies, and the money supply was used as a complementary intermediate target until 1995. Second, in February 1996, the relative importance of two intermediate targets was altered as a response to large capital inflows, financial innovations and liberalization. The koruna remained pegged to a basket, but the fluctuation band was widened from ± 0.5 to ± 7.5 percent, and interventions on the foreign exchange market became rare. Consequently, target for money supply growth gained significance. Third, in May 1997, after the exchange-rate crisis, the CNB let the koruna float.¹²

When the crisis was overcome and interest rates fell to levels comparable to the pre-crisis ones, an intensive policy debate took place on which strategy for monetary policy should be adopted. The previous experience showed that strategies based on an intermediate target were not efficient, since they did not guarantee disinflation or anchor inflation expectations. Moreover, money targeting itself could not provide a basis for the medium-term disinflation strategy owing to the instability in monetary transmission. Defending the peg became inconsistent with the strategy of disinflation due to the costly volatility of other variables in periods of capital flows. Also, the peg had lost its credibility during the May 1997 crisis.

Figure 1 - Intermediate Targets (1993–1997)



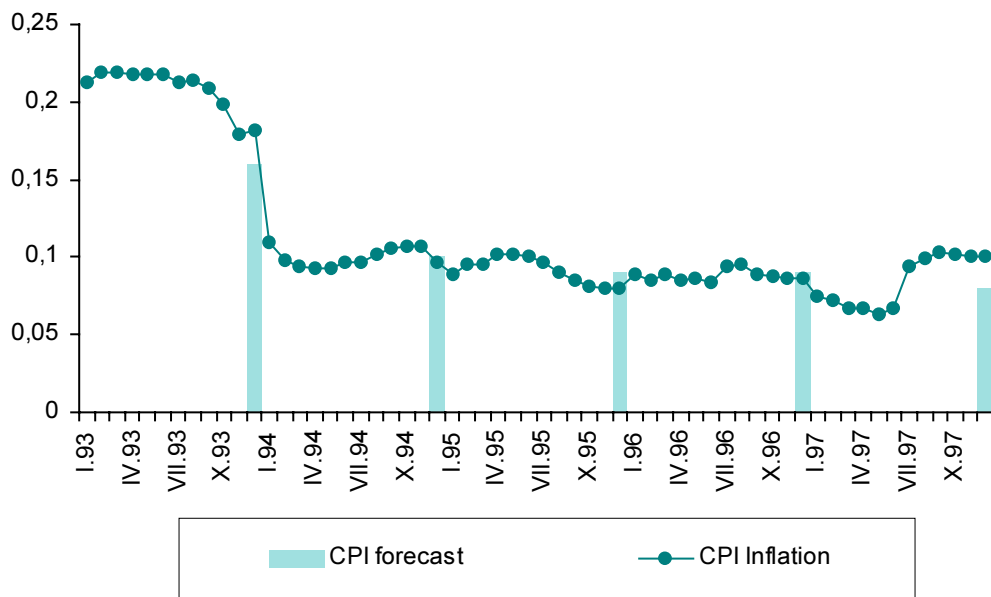
Note: Variables are defined as follows. *M2 targets* shows annual monetary targets (in percent, left axis) that were declared as intervals. The last target was set in 1996 for December 1997. *M2(percent)* shows annual growth of broad money (in percent, left axis). The *Koruna index* shows values of exchange-rate index (right axis). The koruna was pegged to a basket of currencies (65 percent DM, 35 percent USD). *EX Bands* show targeted fluctuation band (right axis) for this index with parity equal to one. The width was increased in 1996 to 7.5 percent. The band was abolished after the May crisis in 1997.

¹² The three strategies used a similar framework. Each year, a forecast of CPI inflation was projected in accordance with intermediate targets. For more information, see the *CNB Annual Reports* from 1993–98. For information on the May exchange rate turbulence, see the CNB working paper “*Koruna Exchange Rate Turbulence in May 1997.*”

It is important to note that there are certainly constraints imposed on monetary policy by the transitional period, as well as the openness of economy. However, the implied short-term costs of these constraints, such as the costs of reversals in capital flows are present no matter which monetary strategy is chosen by the central bank. Hence, these costs should not be attributed to a particular monetary strategy. We would like to stress that inflation targeting did not remove these costs. The advantage of inflation targeting was that it offered several attractive properties that other (already mentioned) strategies did not have. Some of the advantages inflation targeting offered were as follows:

- It was designed to gain effective control over the formation of inflation expectations. Unlike previous non-binding annual forecasts, inflation targeting implied the unambiguous declaration of the medium-term disinflation path as a public commitment of the CNB. Accordingly, economic agents were provided with a medium-term nominal anchor on which they could base their expectations and decision-making processes.
- It provided a framework that integrates a number of relevant economic indicators (including the previously used intermediate targets). As a result, decisions are based on a much broader set of information. Hence, the probability that monetary settings will be subject to errors resulting from the unstable relationship between the two variables (operative and intermediate targets) is much lower. Interestingly, prior to emergence of inflation targeting, the CNB was successful in forecasting inflation (See Figure 2) because inflation forecasts then used broader set of inputs than frameworks in which intermediate targets were derived.
- It provided a tool for screening out the primary transitional price shocks from “market” inflation pressures. In the Czech approach, the concept of *net inflation* excluded the primary impact of price corrections and the effects of changes in indirect taxes.
- Lastly, it provided a tool for dealing with external shocks. A mechanism of caveats has become available to policymakers, and increased flexibility in short-run.

Figure 2 - Inflation Forecasts (1993–97)



Note: Variables are defined as follows. *CPI forecast* shows annual forecasts for the CPI inflation (in percent). As a part of its annual monetary programs, the Czech National Bank published forecasts for several key economic variables including CPI inflation. *CPI inflation* shows observed values of the CPI inflation (in percent).

B. Implementing Inflation Targeting in the Czech Republic

Recent comparative studies¹³ demonstrate that in all countries, implementation of inflation targeting has several common features, such as announcement of explicit targets or an increase in transparency. The Czech approach has these features as well. Specifically, inflation targets play the role of a commitment for the CNB towards the general public. The publication of key documents has increased transparency of monetary policy significantly.¹⁴ The comparative studies also show that there are features that are specific to each country such as the measure of inflation and identification of caveats. We would like to describe three specific features of the Czech approach to inflation targeting:

- The concept of *net inflation* filters out the primary impact of administered price corrections;
- the sequence of targets defines the disinflation path; and
- in the short run, caveats add flexibility in the case of exogenous shocks.

The concept of *net inflation* was introduced in order to exclude administered prices and changes in indirect taxes from the targeted index.¹⁵ As a result, interest rates are not set with respect to primary supply side shocks such as increases in regulated prices of energy. However, that does not mean that secondary effects are not considered during the decision-making process.

¹³ See Bernanke et al. (1999) and Fry et al. (1999) for a comparison of the various approaches to inflation targeting.

¹⁴ Inflation targeting was adopted at the Board meeting on December 21, 1997, and was announced with a press release explaining the new strategy. In April 1999, the CNB made public the *CNB Strategy*. In this document, the strategy of convergence to the EU inflation level in 2005 was explained. Apart from these strategic documents, the CNB started publishing quarterly Inflation reports. The first Inflation report was published in April 1998.

¹⁵ Details are elaborated in the first Inflation report. In December 1997, the net inflation index was calculated backwards for the purposes of inflation targeting by the Czech Statistical Office. The consumer basket was adjusted for items with regulated prices and prices affected by other administrative measures. According to this definition, the net inflation index represents approximately 82 percent of the consumer price index. It covers 663 of its 754 items. It is worth noting that due to this definition, the index of net inflation can be modified from year to year if there is a change in the government approach towards price corrections. For example, in 1997 taxis became a sector regulated by local authorities. Hence, taxi fares were excluded from the net inflation index.

The gradual specification of inflation targets has been used as an important tool of monetary policy in order to settle expectations on disinflation path (See Table 1). On one hand, it was clear that the long-term target for Czech monetary policy should be the EU inflation rate. On the other hand, in 1997 there was a significant gap between EU inflation and inflation in the Czech Republic.¹⁶ The CNB could have proclaimed EU inflation as its medium-term target and specified a time-horizon of several years during which inflation should converge to this target. However, under this strategy, inflation expectations would not have been efficiently anchored. There was a need to define a targeted disinflation path in order to demonstrate that inflation would not accelerate in the first period of inflation targeting and that each year inflation targets would be lowered, step by step, until they converge to the ECB target.

Table 1 – Inflation Targets

Target Specification	Net Inflation	Band	The Announcement
December 1998	6.00	+0.5	December 1997 (Introductory Press Release)
December 1999	4.50	+0.5	December 1998 (Press Release)
December 2000	4.50	+1	December 1997 (Introductory Press Release)
December 2005	2	+1	April 1999 (The CNB Strategy, Internet)

Note: In December 1997, the Board explained its new monetary strategy in the Introductory Press Release. Two explicit targets were announced: the “orientation target” for December 1998 and the medium-term target for December 2000. These two targets defined the slope of the disinflation path. The medium-term target was decisive for monetary policy decisions. The orientation target was implemented in order to anchor expectations. In December 1998, the Board announced the annual target for December 1999. In April, 1999, the Board released the document, *The CNB Strategy*, according to which the inflation targets will be set on a path converging to the long-term target up to December 2005, according to two rules: (i) targets will converge to the long-term target; and (ii) the CNB will not accelerate inflation.

The Czech economy is very open to both goods and financial flows. As a result, external shocks have a large impact on domestic developments. For this reason, a set of caveats¹⁷ has been applied that would justify deviations from the medium-term inflation target. Specifically, substantial deviations in commodity prices and major deviations in the exchange rate not connected to domestic economic fundamentals and natural disasters (or similar extraordinary events) were announced by the CNB as factors that would be costly if monetary policy reacted to them in the short run. However, once these shocks have unwound, inflation would be kept on track to meet the long-term target.

C. Experience of the First Two Years

¹⁶ This long-term target was declared by the *CNB Strategy*. In 1997, the inflation gap was 7 percent.

¹⁷ A list of caveats includes both external as well as some domestic factors such as large volatility in food prices.

Inflation targeting has given a new framework for decision making process. Internally, the decision-making process has come to focus squarely on inflation developments.¹⁸ Minutes of the meeting demonstrate that changes in the two-week repo (repurchase agreement) rate, which has been an operating instrument of the Czech monetary policy since 1995, have been based on deviations of the inflation outlook from the targeted disinflation path.¹⁹

This clear focus has eliminated the conflict between intermediate and long-term targets that was a disadvantage of earlier strategies. Under inflation targeting, the importance of various indicators is unambiguously (although implicitly) determined by their weight in transmission from the repo rate to the inflation outlook. From the minutes of the meeting, one can identify several important categories of factors that effect transmission and, consequently, the inflation outlook:²⁰

- efficiency and structural changes on financial markets;
- domestic demand for goods and growth in capacity of the economy;
- export and import of goods and capital;
- imported inflation (including structural changes in effective exchange rate);
- price correction in segment of administered prices; and
- changes in expectations of domestic economic agents.

One can categorize two years of inflation targeting in the Czech Republic into several episodes. The comparison of their different features illustrates the CNB's policy rule. Until March 1998, inflation expectations were not in line with the targeted disinflation path.²¹ This inconsistency was due to backward-looking expectations, as well as inflation signals sent by the January adjustment of administered prices, the secondary impact of deregulation, and increased exchange-rate uncertainty. As a result, in the beginning of 1998, the inflation outlook was revised upwards and indicated a possibility of overshooting the 1998 target. As a response, the repo rate was increased by 0.25 percent to 15 percent in March 1998 (See Figure 3).

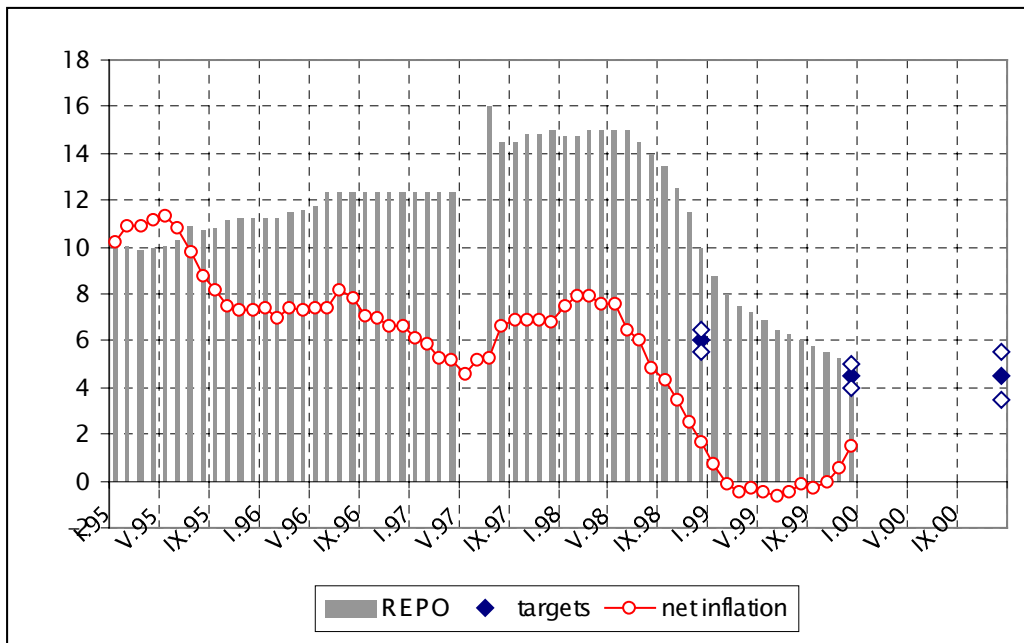
Figure 3 – Inflation Record: Net Inflation (1995–1999)

¹⁸ The survey on monetary strategies shows that this is the experience of other countries as well (See Fry et al., 1999).

¹⁹ Inflation reports include minutes of the meeting that record in a fairly detailed way the discussion of the Board on monetary policy issues. The minutes are placed on the Internet 12 days after the meeting.

²⁰ Some estimates of the Czech monetary transmission are presented in Mahadeva and Šmídková (1999).

²¹ This discrepancy can be seen that from inflation projections and forecasts made by various institutions such as the Czech National Bank's Ministry of Finance, trade unions, and analysts. Some of those making projections even increased their annual inflation projections that had been higher than the 1998 inflation target in February 1998. See *Prognóza makroekonomického vývoje v roce 1998* (Pohledy 1997, říjen), *Odhady ČNB se nezdaří být reálné* (HN, 26.2. 1998), and *Inflace poroste více, méně ministerstvo* (MF Dnes, 13.2.1998).



Note: In 1997, the key inflation target for the decision-making process was set for December 2000. The orientation target for December 1998 was also made public. The target for December 1999 was made public in 1998. The repo rate is an operational target of the CNB. In May 1997, during the koruna turbulence, it climbed to 75 percent. Net inflation has been the targeted variable since 1998, and the arguments for every change in the repo rate have been explained in the publicly available minutes.

During the second quarter of 1998, inflation stopped accelerating due to several factors. One was weaker domestic demand. At the same time, the koruna appreciated, owing to a falling current account deficit, as well as to the narrowing of the gap between productivity growth and wage increases. In addition, external factors started playing an important role. The exogenous reduction in inflation caused by the fall in world commodity and producer prices was called *borrowed disinflation*. Concerning the inflation outlook, the effect of borrowed disinflation was neutralized by wage cost pressures. Hence the inflation outlook was not modified, and the repo rate remained unchanged during this period.

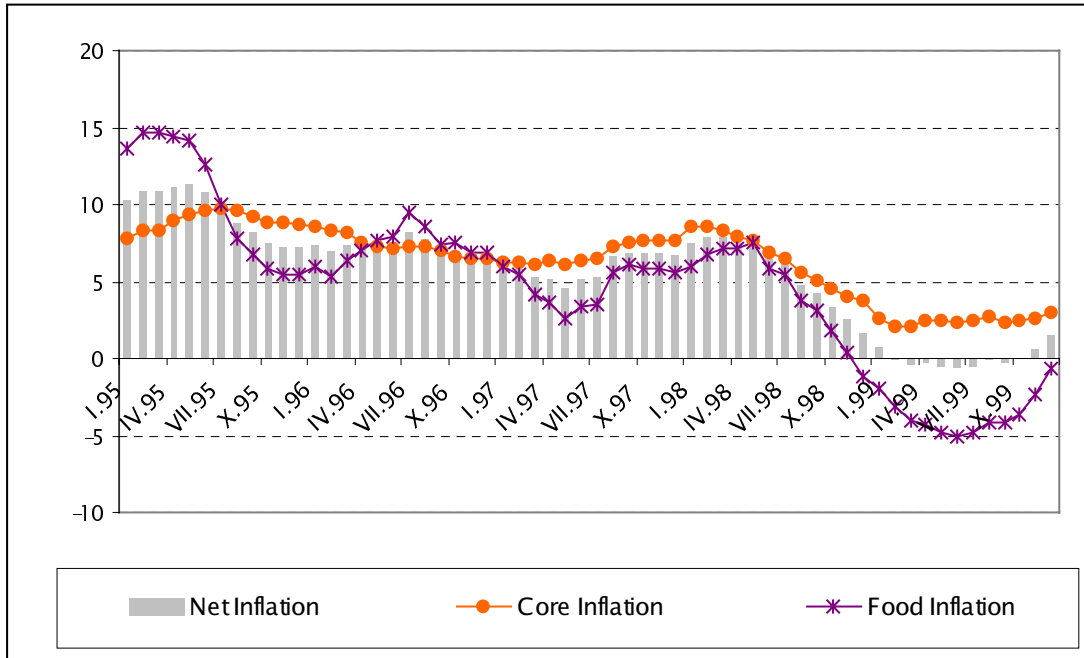
In the second half of 1998, domestic demand pressure was weak. A major disinflation impulse came from effects of borrowed disinflation. According to Czech National Bank estimates, the external price shock slowed net inflation by 1–2 percent in six months. There was an additional effect due to inflation expectations that were formed by this positive external shock. Consequently, the speed of disinflation was fairly rapid. In response to this new situation, the inflation outlook was revised downwards, and a possibility of underestimating the 1998 target emerged. Moreover, the revision to inflation outlook signaled that disinflation would be faster than a targeted path for net inflation required. In response to this development, the CNB started lowering the repo rate from level of 15 percent by several cuts. The last larger reduction came in January 1999 when the repo rate was at 8.75 percent.

In the first half of 1999, both demand and cost inflation pressures were weak. The process of disinflation slowed down significantly, since the effect of borrowed disinflation diminished. However, it was replaced to some extent with a shock to food prices (See Figure 4). As a result of this shock and of lags in transmission, the inflation outlook was revised downwards several times. The repo rate was lowered in a series of small reductions to a level of 6.5

percent. In the second half of 1999, domestic inflation pressures remained weak. Wage increases were moderate due to both expectations that adapted to low inflation as well as slow growth. On the other hand, the external environment was in a situation inverse to the one in 1998, and net inflation started to converge to targeted path. Hence interest rates arrived at a level of 5.25 percent in November 1999.

It is important to note that the size of the cutback did not fully reflect divergence of inflation outlook from the targeted path, since both the shock to commodity prices, as well as the shock to food prices were evaluated as typical “caveat” situations. The central bank intentionally compromised on credibility of its short-term targets in order to avoid an excessive volatility in domestic variables that would have been a consequence of full neutralization of the two positive price shocks. The central bank also took into account that if the inflation target is below the short-term target during disinflation, it does not imply that there is a danger of deflation. It implies that the inflation rate converges to a medium-term target faster. As a result of this approach, the 1998 and 1999 targets were not met.

Figure 4 - Caveats: Core versus Food Inflation (1995–1999)



Note: The net inflation is targeted by the CNB. The approximate weight of food inflation in net inflation is 40 percent. The approximate weight of core inflation in net inflation is 60 percent. In 1999, core inflation fluctuated between 2–4 percent while food prices continued falling.

D. Some Lessons from the Czech Experience

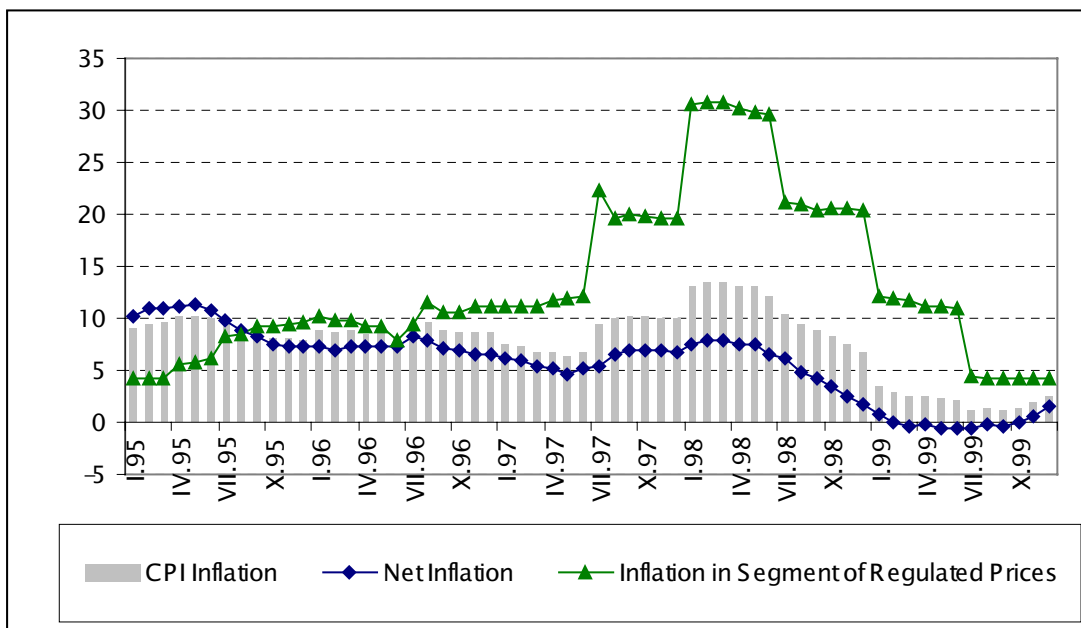
The Czech experience from disinflating with inflation targeting in years 1998–1999 offers several lessons to other potential inflation targeters. The first lesson is that disinflation may come in waves that are difficult to synchronize with end-year inflation targets. For example, in 1998 average annual net inflation (5.7 percent) was consistent with the 1998 target, but in December, net inflation was below the targeted interval by 3.8 percent. If there is a possibility

to introduce a targeted corridor instead of targets that must be hit every December, it is worth considering since credibility is less demanding to achieve within longer time span. In the Czech case, preference was given to end-year targets since they corresponded to previously used annual money targets as well as annual inflation forecasts. Consequently, they were comprehensible to general public, and they could anchor expectations more efficiently.

Second, caveats should be introduced ex ante, and they should reflect how an open economy affects the flows of goods and capital. In the Czech case, by coincidence, inflation targeting was introduced in a period of very low inflation abroad. In addition, prices of some important commodities, such as oil prices, dropped unexpectedly in 1998. Their dampening impact on net inflation was intensified by the fall in food prices in 1999. Although disinflation was the aim of monetary policy, the experience of positive price shock was difficult to explain. Although formal caveats were introduced a year later, a partial loss of credibility already burdened the whole strategy of inflation targeting.

Third, during transition, it helps to exclude administratively regulated prices. In the Czech case, the targets have been specified in terms of net inflation. It helped to reduce volatility in key economic variables. Figure 5 illustrates that corrections of administered prices were extensive during the first year of inflation targeting. In addition, the changes in pace of corrections proved to be relatively sizable in respective fiscal years. In the absence of a medium-term fiscal plan, it would have been hardly feasible to specify the inflation targets several years in advance in terms of the CPI inflation. The cost of an accepted solution was that the CPI inflation was not directly anchored and that it took several months to explain the new concept of net inflation to the public.

Figure 5 – Price Corrections: CPI versus Net Inflation (1995–1999)

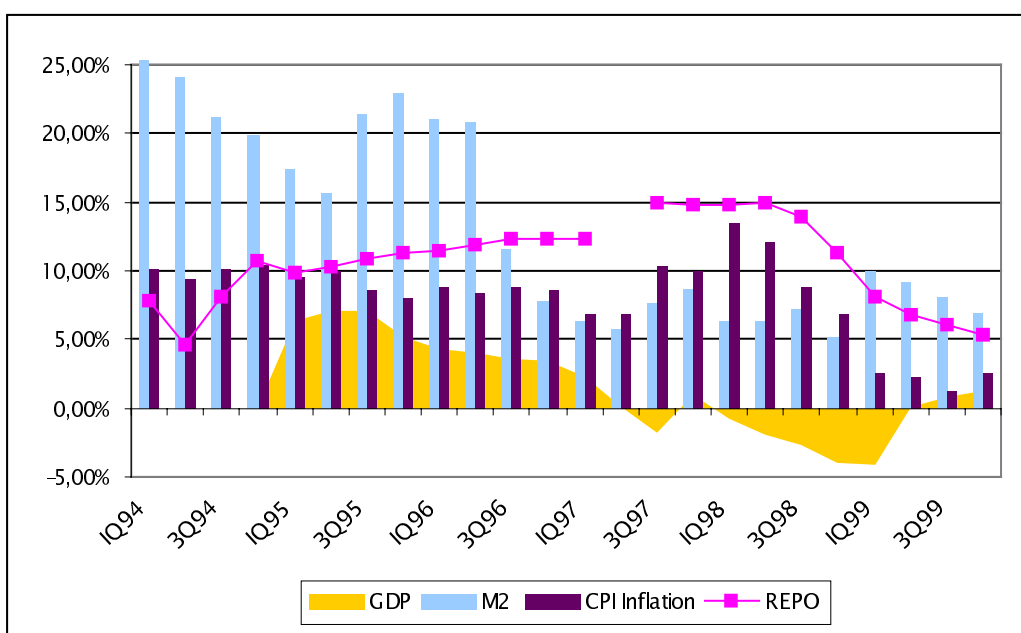


Note: The net inflation is targeted by the CNB. The approximate weight of net inflation in CPI inflation is 81.7 percent. The weight of inflation in the segment of regulated prices in CPI inflation is 18.3 percent.

Fourth, economic indicators confirmed that it would have been very difficult to base monetary decisions on relationships between the operational target, money, and prices. Figure 6

illustrates that there were periods during which the repo rate remained unchanged, while growth in the money supply either slowed down or increased due to other factors such as a change in exchange rate risk, financial innovations and regulatory rules. More important, after inflation targeting had been introduced, broad money started signaling a need for monetary restriction while prospects for inflation indicated a need for easing of the policy. Such a need implies that pure money targeting would have been a controversial strategy. As was mentioned previously, uncertainty about monetary transmission would have been costly in any monetary framework. Inevitably, it reduced the quality of inflation forecasts. One of the reasons why the 1998 target was underestimated was that the impact of fiscal restriction on demand was also underestimated.²² However, under inflation targeting, uncertainty was reduced, because a wider range of economic relationships was considered during the decision-making process, and some of them were more stable than those used in pure monetary targeting.

Figure 6 - Monetary Transmission: Repo and M2 Prices (1994–1999)



Note: The indicators are defined as follows: GDP is the annual growth rate of real GDP. M2 is the annual growth rate of broad money. CPI inflation is the annual inflation rate. REPO is operational instrument of the Czech monetary policy

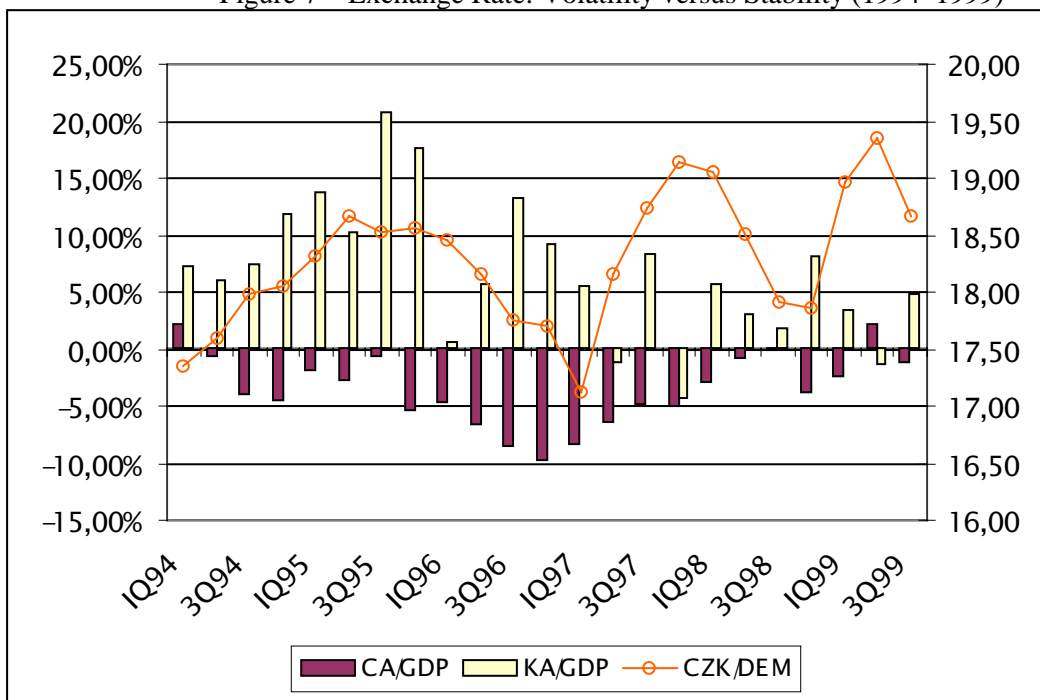
A fifth point is that after financial liberalization, the transitional economy enters a group of emerging-market economies and becomes subject to capital flows. Figure 7 illustrates the scope of the problem in the Czech case. It was one of the benefits of inflation targeting that the volatility of the koruna exchange rate could cushion the impact of these flows on the domestic economy to some extent.²³ This does not imply that exchange rate developments hamper currency stability over a longer horizon. In a period of six years (1994–1999), the

²² See Inflation Reports (1999) for a more detailed analysis.

²³ In periods of large flows, there must be some adjustment in either the exchange rate or other nominal variables. For example, after the exchange-rate band was broadened in February 1996, money growth became more stable. However, since the koruna was pegged to a basket of currencies, the CZK/DM rate fluctuated, even in 1995.

koruna depreciated vis-à-vis the DM by 7 percent (the average rate was 18.3 CZK/DM), and the imbalance on the current account which peaked to unsustainable level in 1997 was corrected. However, this does bring up the question of whether the monetary condition index should be used as a short-term indicator of monetary policy stance rather than the repo rate alone and whether foreign-exchange interventions should be used to smooth volatility in the exchange rate.

Figure 7 – Exchange Rate: Volatility versus Stability (1994–1999)



Note: The indicators are defined as follows: CA/GDP is the ratio of current account to nominal GDP. KA/GDP is the ratio of capital account to nominal GDP. CZK/DM is the koruna exchange rate vis-à-vis the DM. The DM is used as a reference currency since Germany is the major trading partner of the Czech Republic.

E. Preconditions for Using Inflation Targeting in Transition

In previous sections, we argued that inflation targeting had been a good strategy to achieve disinflation according to the Czech experience. In this section, we would like to stress that several important preconditions were met in the Czech case. It may be the case that these same conditions have not been met in other countries in transition, and hence, the Czech experience may not be transferred a priori. We find it useful to classify factors that determine the success of inflation targeting in a transitional country into three categories:

- (i) preconditions: preference to price stability, an adequate macroeconomic and institutional framework, sufficiently accumulated know-how of the central bank;
- (ii) domestic constraining factors: an insufficient legal framework, incomplete information on the medium-term reform strategy; and
- (iii) external constraining factors: international financial turbulence, large changes in world prices.

Public support giving high priority to a stable currency is a very important precondition. A distinguishing feature of the Czech reform strategy has been the priority attached to domestic price stability²⁴ while some other transitional economies had adjusted their framework to the requirements of external competitiveness.²⁵ The respect for a stable currency “built into” Czech economic developments was compatible with inflation targeting. General preferences of society have helped to introduce this strategy, although it could appear costly in the short run.

The second precondition that had been met in the Czech case is consistency of macroeconomic and institutional framework in which the CNB operates with inflation targeting. The CNB is independent of the government and has sole responsibility for the conduct of monetary policy. And even more important, in the course of the entire transition, this independence has been put into practice and demonstrated in the domain of both monetary instruments and goals. Inflation remained moderate during the transitional period. The independence of monetary policy has not been undermined by a loss of fiscal discipline. The principle of a balanced central budget was followed throughout the transitional period, and public sector borrowing remained moderate.²⁶ Hence, there was neither a problem of fiscal dominance nor of hyperinflation in the Czech case.

Third, a certain level in the development of financial markets required for inflation targeting had been reached before 1998. The money market, as well as the foreign-exchange market, also had overcome its embryonic stages and had become well-developed. Thus, the foreign exchange market could help cushion short-term volatility under the floating regime. Similarly, money market instruments had become available to the central bank.²⁷ Fourth, the CNB had acquired sufficient know-how on forecasting activities so important for inflation targeting. It is worth mentioning again the quality of inflation forecasts shown in Figure 1.

There were two groups of limiting factors that had reduced the credibility of inflation targeting. As was pointed out previously, these factors are likely to have affected outcomes of any monetary strategy. The first group consisted of domestic factors. In this case, the legal framework had not been sufficiently developed. Some important laws (e.g., bankruptcy law) had been introduced only at later stage of the transition process, as had been some important

²⁴ Not only has the koruna enjoyed remarkable stability in the course of past developments, after World War I, the currency of the newly formed Czechoslovak Republic was the only one in the region that had avoided hyperinflation. The relatively modest monetary overhang was a favorable feature of the macroeconomic situation also in the post World War II era.

²⁵ For example, Hungary and Poland used crawling-peg regimes.

²⁶ The ratio of public debt to GDP decreased from 19 percent in 1993 and to 14 percent in 1998 (See CNB *Inflation Report*, April 1999).

²⁷ In the first half of the 1990s, interest rates could not have been effective instruments for the CNB, owing to the embryonic stage of the money market.

regulatory bodies (e.g., the securities commission).²⁸ As a consequence, in the first two years of inflation targeting, some important mechanisms of monetary transmission had been weaker or slower than expected. For example, the sensitivity of credit supply to decreasing interest rates had been reduced by gradual changes in the legal framework in which banks had allocated their portfolios.²⁹

This group also had insufficient information on transitional strategy. Due to the absence of a medium-term fiscal plan that would include the scenario of price corrections and targets for fiscal deficits, monetary policy was confronted with a higher degree of uncertainty. In particular, administered price corrections and changes in the tax system were usually announced during preparatory work on the annual budget. Moreover, the scale of expected price corrections was sometimes changed during the fiscal year.³⁰ This was in sharp contrast to a monetary strategy that maintained publicly announced medium-term inflation target. This contrast implied that one important source of information for monetary decisions was missing, since fiscal and wage medium-term projections were not available from the government and trade unions.

These examples demonstrate that the central bank may be confronted with additional uncertainty during transition because the central bank has to predict what other important players such as the government and trade unions, are going to do instead of using their own publicly announced plans. The assessment of economic situation has been further complicated by the problem of a “hidden debt.” In 1998, the level of official debt declared previously was inflated by the preliminary estimates of fiscal costs of transition process. Including debts of transitional institutions with the contingent government liabilities has been estimated to lead to a doubling of the official public debt.³¹ This implies that the central bank learned about the true size of the fiscal deficit ex post. Again, although “fiscal surprises” made inflation targeting more difficult, they would, nevertheless, be costly in any monetary framework.

The second category of constraining factors was the external environment. The late 1990s had not provided a stable international environment since international financial turbulence, as

²⁸ Two important laws were adopted as late as April 1998: the Act on Bankruptcy and Settlement and the Act on the Securities Commission, which functions as a regulatory body for the capital market.

²⁹ Banks were subject to changes in legal framework as well as in regulatory rules that increased their need for building up reserves. Hence money supply grew slowly even in a period of cuts in nominal interest rates rates.

³⁰ Figure 4 shows that in 1998, the care-taker government proceeded with price corrections faster than the social democratic government did the following year.

³¹ According to the press release of the Ministry of Finance (July 1999), during transition the government directed some expenditures outside the budget system to transformation institutions. Off-budget operations, together with a large number of state guarantees that were issued without creating reserves, have built up a hidden and implicit public debt. Hidden public liabilities were estimated to be about 15 percent of GDP.

well as sizable changes in world prices, had affected open economies. It is generally recognized that extensive openness presents a dilemma to small open economies that target inflation, since external shocks have a large impact on the domestic economy, and they imply either the costly volatility of some important variables or temporary deviation of inflation from the target. Typically, the dilemma is overcome by the mechanism of caveats. Caveats help the public distinguish a policy error from a desirable, temporary deviation of inflation from the target. If external shock is temporary, the central bank does not react with its instruments. In the case of permanent shock, changes in both instruments and caveats are resorted to.

The Czech experience should provide a clear lesson that in a very open economy, the central bank should from the very beginning build inflation targeting credibility on both the history of successfully made targets, as well as on transparent, well-focused communication strategy. It is important that communication strategy works with caveats that have been introduced ex ante since in very open economy, the width of the inflation target cannot cover volatility of external variables. Communication strategy should carefully explain the evaluation of external developments and their consequences for monetary decisions. In the period from 1998–1999, external factors sent favourable impulses and helped set inflation expectations on targeted disinflation path. However, the credibility of the new monetary strategy was reduced because in the first year of inflation targeting it was very difficult to explain why the 1998 target was undershot.

F. Inflation Targeting Moves the Central Bank to the Policy Frontier

In policy discussions about the Czech approach to inflation targeting, it has been claimed to be a bold strategy since there are important constraining factors that may reduce its credibility.³² With the benefit of hindsight, we would like to modify this statement in the following way. Constraining factors implied by transition make monetary decisions in any framework more difficult. The costs imposed by them should not be linked directly to inflation targeting. However, inflation targeting makes these constraints more visible and, as a result, requirements on the quality of decisions as well as on communication strategy are more demanding.

A switch to inflation targeting has an effect analogous to increasing the independence of the central bank since it moves the central bank to the centre of economic discussions.³³ In this strategy, formal independence of the central bank is fully realised. Specifically, the CNB announced inflation targets according to its own assessment on what would be the least costly disinflation path for ensuring convergence to EU inflation. In 1997, there was no medium-term reform plan that would give sufficient guideline in that respect. Hence, inflation targeting

³² See proceedings from *The CNB Workshop on Inflation Targeting* (1999).

³³ Goodhart (1994) argues that enacting the central bank independence places the central bank into the political arena, since its actions must be better justified and presented.

has been linked to some extent to realizing goal independence.³⁴ This step has been balanced from the side of the CNB with a significant “voluntary” increase in transparency that has not been required by the legal framework.

The Czech experience shows that in a transitional economy, inflation targeting can move the central bank to the edge of the policy frontier. It is worth noting that if the inflation target is declared ahead of other medium-term policy targets, such as the fiscal plan or consensus on moderate wage increases, the central bank explicitly or implicitly initiates coordination of economic policies and the emergence of important institutions. This is not a standard role for the independent central bank in developed democracies. However, in emerging democracies, it appears warranted that the central bank carries part of the burden of reform.

³⁴ It is not complete goal independence, because the long-term target is derived from the convergence criteria towards the EU.

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