VII. INFLATION TARGETING IN THE CZECH REPUBLIC
The Czech National Bank[1]

At the start of 1998, the Czech National Bank switched to direct inflation targeting. This new monetary policy regime replaced the previous scheme based on an exchange rate peg and money targeting. In contrast with these intermediate targets, inflation targeting implies a direct focus on price stability.

The objective of this chapter is to evaluate inflation targeting as a monetary policy strategy in the Czech Republic. Part 2 defines the monetary policy objective and describes the negative effects of high inflation. There follows a description of the most important monetary policy regimes, giving their main advantages and shortcomings and indicating which environment is most suitable for each particular regime. The next part provides a survey of monetary policy regimes *in the Czech Republic prior to the introduction of inflation targeting. It also explains the causes of the foreign exchange turbulence in May 1997. It goes on to give the main reasons behind the decision to adopt the inflation targeting scheme and gives the prerequisites* for *effective implementation of this scheme. This is followed by an explanation and survey of the CNB's inflation targets and a description of inflation and monetary policy developments in 1998 and 1999. The last part summarizes the main results of the analysis and the advantages of the inflation targeting regime.*

A. The Aim of Monetary Policy and the Central Bank's Objective

The aim of monetary policy and the central bank's objective are laid down in the provisions of Article 98 of the Constitution of the Czech Republic and of Article 2 of Act No. 6/1993 Coll., on the Czech National Bank. These charge the Bank with ensuring the stability of the Czech currency. Monetary stability has an internal dimension (price stability) and an external dimension (exchange rate stability). Achieving and maintaining monetary stability is the central bank's ongoing contribution to the creation of a pro-growth environment.

In recent years, the internal dimension of monetary stability—price stability—has become the primary objective of central banks. The task of ensuring price stability in the economy, that is, of helping to create a stable environment for entrepreneurial activities is, on the one hand, an expression of the increasing responsibility of central banks for sustainable economic growth. Central bank independence is, on the other hand, a prerequisite for the implementation of monetary policy leading to price stability.

The push towards price stability ensues from knowledge of the unfavorable effects of inflation. High and volatile inflation has a negative impact on economic growth. This is

[1] This chapter represents an official explanation of the Czech National Bank's adoption and use of the inflation targeting framework.

confirmed by long-term empirical experience from developments in the world economy. High inflation decreases the value of incomes and savings and leads to higher interest rates. It often also implies higher volatility of inflation, which substantially increases its costs. This is because higher inflation increases the uncertainty about future relative prices and about the price level. Domestic and foreign financial markets thus require a higher risk premium as compensation for the increased uncertainty. When inflation is high, there occurs a fixing of inflation and depreciation expectations in the decision-making of economic agents. Because of the greater inflation volatility, investors focus more on short-term financial investments (speculative activities) and on hedging against inflation, and less on longer-term investment projects in the real economy. Inflation also gives rise to other economic distortions which in the longer time horizon reduce the long-term growth potential of the economy by redistributing income from creditors to debtors, creating tax distortions and representing a hidden burden on savers, who are unable to safeguard the purchasing power of their incomes and savings. Another disadvantage of high inflation is high interest rates, which tend to attract short-term risk capital.

The disinflation process leading to price stability is often accompanied by short-term costs in the form of slower economic growth and increased unemployment. Such short-term costs are, however, more than offset by the long-term, favorable growth effects of price stability. Empirical studies show unambiguously that countries with low inflation achieve higher economic growth rates in the long term than those with higher inflation.

In addition to the generally valid conclusions about the negative influence of inflation on economic growth, another reason for the CNB's efforts to achieve monetary and price stability is the low inflation rate in EU countries, toward which the Czech Republic will have to converge in the long term if it wants to become part of European structures. EU accession in itself is not tied to any quantitative criteria for price and monetary stability. Nevertheless, it is desirable to create conditions for keeping the inflation and interest rate differentials as low as possible in the pre-accession period, so that the accession costs are also as low as possible. It is possible that there will not be a significant gap between the Czech Republic's accession to the EU and its entry into the EMU. The Czech Republic's readiness to participate in a single currency will thus depend on the fulfillment of a set of macroeconomic criteria, including price and monetary factors.

B. The Main Types of Monetary Policy Regime

As stated above, the main long-term objective of central banks' monetary policy in democratic countries with market economies is price stability. Individual monetary policy regimes serve as a means of achieving this objective. The difference consists in whether the monetary policy aims directly at its final target of price stability, as in the case of inflation targeting, or at an intermediate target—for example, the exchange rate or money supply—where a relatively stable, or at least fairly predictable, link between the intermediate and the final target is assumed.

This chapter deals with the four most frequently used regimes, giving their main features and the empirical experience with their application and describing the environment which is most appropriate for each. The basic feature of all the monetary regimes below is the existence of a nominal anchor (namely the exchange rate, a money target or an inflation target)—that is, a nominal macroeconomic variable anchoring price developments.

Exchange rate targeting

Under exchange rate targeting the central bank tries to ensure nominal exchange rate stability via interest rate changes and direct foreign exchange interventions, thereby "importing" low inflation from the anchor country. Maintaining the exchange rate is an obligation the fulfillment of which requires certain preconditions. These include above all an appropriate macroeconomic policy mix ensuring a low inflation differential vis-à-vis the "anchor" currency, a sufficient level of international reserves, and the maintaining of the country's competitiveness and overall credibility, including its institutional and legislative framework and political stability.

In the basic variant of exchange rate targeting, we speak of an exchange rate "peg." This involves fixing the nominal rate to the currency of either one or several countries. As a rule, such an "anchor country" is a larger state with low inflation and a substantial share in mutual trade (e.g., the eurozone or the United States). This regime, however, has other variants. A band can be set for the nominal exchange rate. Within this band, the rate can float freely and the central bank intervenes only if there is a danger of the margins of the band being exceeded. In the case of an exchange rate band, speculative capital flows are reduced because of the increased exchange rate uncertainty, and this increases the autonomy of monetary policy. A "crawling peg" is a modification of exchange rate targeting. Here, the targeted nominal rate level is shifted (usually it is devalued in a controlled fashion), but generally by less than the inflation differential in the relevant period. This modification of the fixed exchange rate regime prevents the real rate from an excessive strengthening which would lead to erosion of the price competitiveness of domestic products. An extreme variant of exchange rate targeting is the so-called "currency board." Here, the domestic currency is issued only against growth in foreign exchange reserves and in a fixed ratio. The benefits of this form of rate targeting include its greater credibility and consequently greater resistance to speculative attack. This regime is frequently applied in crisis situations in order to stabilize the exchange rate, inflation and foreign exchange reserves.

The fundamental advantage of exchange rate targeting is the "import" of inflation from the anchor country, which as a rule is lower than in the domestic economy. Another advantage is that the nominal anchor is understandable to the public. A fixed exchange rate regime can also contribute to economic and political integration, as, for example, in the case of the ERM, which was in place in the EMU states prior to the introduction of the euro.

One of the main disadvantages of exchange rate targeting is that it weakens the autonomy of monetary policy, as domestic interest rates must in conditions of liberalized capital flows be set "in harmony" with the rates of the anchor country while at the same time taking credit

risk into account. In the case of domestic demand or supply shocks, the possibility of reacting via domestic rates is limited. Conversely, shocks occurring in the anchor country are transferred into the real economy through the imported monetary policy. The fact that domestic interest rates are tied to foreign rates leads to the loss of the signal on market forming of interest rates as the price of money. The disadvantage of exchange rate fixing (with the exception, to a certain extent, of the currency board) is the risk of speculative attacks on the domestic currency. This risk increases when long-term maintaining of an overvalued fixed exchange rate leads to erosion of the price competitiveness of domestic producers, thus feeding through into worsening external imbalance. The increased probability of exchange rate instability results in the raising of interest rates, with unfavorable effects on the domestic economy.

Exchange rate targeting is suitable for small open economies where the exchange rate is a significant determinant of domestic price developments. The exchange rate is relatively good as a nominal anchor in the case of capital flow regulation. The reduction in capital flows decreases the risk of exchange rate speculation and allows some other schemes of autonomous monetary policy regulation to be applied concurrently. On the other hand, it postpones the identification of economic problems within the country in question. Under conditions of liberalized capital flows, the main prerequisite for maintaining the exchange rate parity set in advance is an appropriate policy mix leading to balanced economic development. With the increasing liberalization of capital flows and globablizaton of financial markets, the world has been moving away from exchange rate targeting in recent years. The only exception is the shift to the currency board scheme in some unstable and emerging economies lacking credibility in the area of monetary and overall macroeconomic development.

Money targeting

Money targeting is based on the theoretical finding that, in the long term, price growth is affected by money supply growth. Within this regime, monetary policy is focused on ensuring an appropriate growth rate of the chosen monetary aggregate. According to the quantity equation of exchange, this variable is proportional to nominal output growth. The diversity of this regime shows up in the choice of monetary aggregate, the type of corridor for the target and in the manner of management of the chosen aggregate.

The advantage of this regime consists particularly in the possibility of pursuing an independent monetary policy and of reacting accordingly to specific problems arising in the domestic economy.[2]

[2]The European Central Bank (ECB) uses money targeting as one of the cornerstones of its monetary policy too. This stems from the German Bundesbank's long-term success in combining non-inflationary development with economic growth. The ECB, however, has simultaneously set its inflation target in the form of a harmonized consumer price index of no higher than 2 percent. Similarly, the Bundesbank did not concentrate in the past exclusively

(continued…)

On the other hand, money targeting has some limitations. One problem lies in the choice of an appropriate monetary aggregate itself. The aggregate should be relevant in terms of economic theory and at the same time have an econometrically justified stable link with prices or nominal output. In an environment of financial innovation and market computerization and globalization, this relationship is ever more volatile and therefore ever more difficult to predict. Another problem is that the central bank may not be able to manage the selected monetary aggregate with sufficient precision. A further disadvantage is that the money target is not fully understandable to the public. Moreover, both empirical analyses and theoretical findings show that excessively high monetary aggregate growth rates pass through into inflation with a long time lag. To influence future inflation, the central bank must therefore act well in advance.

The experience with money targeting differs in individual countries. The results were not satisfactory in the United States, Canada and the United Kingdom, where consistent management of the monetary base resulted in excessive volatility of short-term interest rates. In Germany and Switzerland, this regime was applied with relative success. The specific formulation of targets in individual countries depends on local conditions. In most cases, the money growth target is not a point one, but is defined as an interval for the year-end or as a corridor for the aggregate during the year. Money targets are increasingly being set not only for the following year, but also for several years ahead.

Monetary policy management through money targeting is particularly appropriate in an environment with a stable, reliable and predictable link between the targeted monetary aggregate and inflation. Financial innovation and the liberalization of capital flows, however, are substantially decreasing the stability of this link, resulting in an erosion of the scheme's benefits. A prerequisite of effective monetary aggregate management is the existence of a functioning credit channel in which credit creation reacts to interest rate changes.

Regime with an implicit nominal anchor

A regime with an implicit nominal anchor involves targeting a certain nominal variable not announced explicitly, but adopted only internally within the central bank without any specific parameter or criterion being declared. This regime gives the central bank substantial room and autonomy. The problem here is lower transparency, as it is not entirely clear how to assess the central bank's monetary policy and predict its behavior.

A prerequisite for successful functioning of this regime is high credibility of the central bank built on a relatively long history of monetary and price stability in the country. The practice of the U.S. Federal Reserve System, where this scheme is applied, is showing a shift from

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on monetary aggregate growth, but used a multi-criteria approach with an emphasis on expected future inflation.

money targeting via a certain implicit anchor to a form comprising some elements of inflation targeting.

Inflation targeting

During the 1990s, more and more central banks introduced the historically youngest monetary policy regime—inflation targeting. One of the main features of this regime is the public and explicit announcement of an inflation target or succession of targets. In most cases, the targets are set for a certain period, but they may also be defined as intervals in the form of running (falling or horizontal) bands. Also publicly declared is the determination to achieve long-term price stability. This involves active and direct shaping of inflation expectations.

In its decision-making scheme, inflation targeting involves the use of much more information than do the exchange rate or monetary aggregate regimes. In addition to the main inflation factors, analysis is conducted of labor market variables, import prices, producer prices, the output gap, nominal and real interest rates, the nominal and real exchange rate, public budgets, etc. This regime assumes a good ability to predict future trends for the above macroeconomic variables and their implications for inflation.

The targeted price index is chosen as sufficiently wide and representative to provide a good approximation of overall inflation. However, those items whose prices are subject to exogenous factors beyond the reach of monetary policy instruments are excluded.

The merit of inflation targeting consists in the possibility of autonomous conduct of monetary policy, even in a world of continuing globablizaton, financial innovation and liberalized capital flows. Its multi-criteria nature allows the maximum amount of information to be incorporated into the decision-making process. Another advantage of inflation targeting is monetary policy transparency, which makes policy more understandable to the public and allows for better prediction of the central bank's intentions. This is reflected favorably in an improvement in credibility—an important prerequisite for effective functioning of a scheme that uses influencing of inflation expectations. Another benefit of inflation targeting is its medium-term focus, consistent with the relatively long lag between monetary policy measures and their effects on inflation.

The disadvantage of this monetary policy scheme is that the central bank is not as a rule able to influence all the items included in the consumer price index, which is the primary anchor of inflation expectations. The success of the inflation forecast also depends on exogenous inflation factors and, in the Czech Republic, on changes in regulated prices and indirect taxes. The risk of inflation deviating from the prediction requires better central bank communication with the public.

Monetary policy regimes in the 1990s

Monetary policy regimes saw two significant trends in the 1990s. The first was a clear inclination towards introducing explicit monetary policy targets (an inflation target, a money growth target, an exchange rate target or a combination thereof). The second was a rapidly growing number of countries in which monetary policy is based on inflation targeting or where inflation targets are at least declared together with other monetary policy objectives. The above trends are apparent in advanced as well as emerging and transition economies. One of the most recent Bank of England studies,[3] comprising 91 central banks from all types of economies and covering the 1990s, provides the following information. The number of countries which introduced some form of exchange rate targeting increased from 30 to 47 in the 1990s. The number of countries with money targets during the period increased from 18 to 39, whereas the number of countries with inflation targets grew almost seven-fold, from 8 to 54. Of those 54, 13 had inflation as their sole target. For comparison, at the start of 1990, only 8 countries had inflation targets and only one (New Zealand) claimed inflation to be its key target.

On the other hand, 17 countries abandoned or changed their explicit monetary policy targets during the 1990s. In ten cases, some form of exchange rate targeting was abandoned (e.g., the United Kingdom, Finland, Croatia, the Czech Republic, Sweden). In most economies, this was a reaction to exchange rate crises. Seven economies dropped money targeting (e.g., the United Kingdom, Spain, Poland, the Czech Republic). The most frequent reason was the breakdown of the relationship between money supply growth and inflation due to financial innovation and financial deregulation. No country abandoned inflation targeting during the 1990s.

C. Monetary Policy Regimes in the Czech Republic Prior to Inflation Targeting

The monetary policy regimes applied since the establishment of the Czech Republic can be divided into three stages. In the first period, from the start of the transformation up to the foreign exchange turbulence at the end of May 1997, a strategy was used which combined an exchange rate peg (partially relaxed at the end of February 1997) with a monetary policy based on money targeting. During the short period, following the exchange rate turbulence until the end of 1997, when the exchange rate peg was replaced by a managed floating one, money supply was the only target. In the third period, since the beginning of 1998, monetary policy has been conducted within an inflation targeting scheme.

Exchange rate and money targeting under the conditions of economic transformation and liberalization of capital flows

[3] See G. Stern, "The Use of Explicit Targets for Monetary Policy: Practical Experiences of 91 Economies in the 1990s," *Quarterly Bulletin*, Vol. 39, No. 1 (August 1999) (London: Bank of England).

The application of a monetary policy scheme combining exchange rate targeting with money targeting was probably the only possible solution at the very start of the transformation. It should be emphasized that at the time of the fundamental reforms (extensive and rapid price and foreign trade liberalization) this solution was very effective. The fixed exchange rate served as an effective stabilizing nominal anchor of the economy. This anchor at the same time helped improve the credibility of the central bank and its monetary policy. Money targeting made it possible to react directly to specific economic developments. Inflation, the reduction of which was the primary monetary policy task, fell from about 20 percent during 1993 to 10 percent in the first quarter of 1994 in year-to-year terms.

The following period saw increasing imbalances in the economy. The key problem was the insufficient response of domestic output to the pick-up in demand. The low flexibility on the supply side was due to incomplete restructuring in the corporate sector, incomplete privatization of major sectors of the economy, and the existence of microeconomic, institutional and legislative barriers to economic activity.

The upturn in demand in this period was attributable to an accumulation of several factors, in particular rapid wage growth substantially outpacing labor productivity growth in 1994–96. The wealth effect ensuing from voucher privatization also played a role in stimulating domestic demand through household consumption. Major investment projects in the state sector led to an acceleration of fixed capital formation and a high rate of investment.

In this situation, moreover, the inflow of capital from abroad strengthened, creating an additional demand stimulus. The capital inflow was favorably affected by the gradual liberalization of capital flows, the existence of an interest rate differential in conditions of a fixed exchange rate, and by the results of the economic transformation, which at that time were positively evaluated by both international organizations and investors. However, the ability of the economy to absorb additional funds was limited and money supply growth (accelerated by the capital inflow) outpaced that of nominal output, signaling longer-term inflationary pressures.

The pick-up in economic growth in the first half of both 1994 and 1995, driven by the accelerating demand, was thus built on shaky foundations. In 1994–96, the gap between supply and demand in the economy gradually fed through into increased external imbalance. The problems on the supply side showed up in a gradual decline in economic growth as early as in the second half of 1995 H2—that is, long before the adoption of the macroeconomic stabilization measures specified below.

This trend was not sustainable in the long term and required a tightening of macroeconomic policies to restore the balance between domestic demand and output. However, within the then mix of economic policies, monetary policy had to substitute to a large extent for the insufficiently rigid fiscal and income policies. Amid accelerating capital inflow, increasing demand pressures and an overheating of the economy, public finances should have been oriented towards fiscal surpluses. The wage area required a trend corresponding with that of labor productivity. In reality, however, the fiscal and wage developments were very

expansive. The overall public budgets deficit moved between 1 percent to 2 percent of GDP in 1994–96, and the so-called "hidden" deficits also rose. The structural component of the public finance deficit gradually increased to more than 2.5 percent of GDP in 1996, indicating a rising fiscal expansion. Real unit wage costs in 1994, 1995 and 1996 rose by 3.6 percent, 1.2 percent and 3.9 percent respectively—another indication of the unbalanced inflationary influence of wages.

In an effort to help restore macroeconomic stability, the CNB adopted several monetary policy measures during 1996. The widening of the fluctuation band of the koruna from ±0.5 percent to ±7.5 percent was of fundamental significance. This measure was adopted to prevent the inflow of short-term speculative capital. It was this type of capital which had considerably accelerated money supply growth and had fostered the excessive domestic demand expansion. The aim was to increase the exchange rate risk, thereby reducing at least partially the profits of foreign investors arising from the high interest rate differential.

The relaxing of the exchange rate created space for a more autonomous monetary policy allowing more effective interventions in the area of domestic money creation. In this context, the CNB in mid-1996 adjusted its monetary policy interest rate and reserve requirements. Bank lending, despite these measures, remained relatively dynamic up to 1997, showing year-on-year increases of about CZK 100 billion annually in that period. The monetary policy measures that did not generate any substantial restriction of domestic lending. Despite a slightly higher interest rate differential, the pace of capital inflow slowed, resulting in a corresponding slowdown in money supply growth.

The widening of the fluctuation band for the koruna's exchange rate alone, however, could not solve the problem of growing macroeconomic imbalances. It was only a partial contribution to subduing one of the factors of this unbalanced trend.

The currency shock, loss of the nominal anchor, rising inflation and worsening inflation expectations

At the beginning of 1997, the macroeconomic imbalances continued widening. Real wage growth was still excessive and was out of line with labor productivity growth. The state budget posted an unexpected deficit in the first months of the year. As a result, demand accelerated amid ongoing rigidity on the supply side, causing a widening of the external imbalance. The current account deficit reached values of above 8 percent of GDP at the beginning of 1997, well above the generally acknowledged critical level (5 percent). In this situation, the conviction gradually strengthened among investors that the macroeconomic trend was unsustainable, and depreciation expectations mounted. Elements of instability in the domestic political situation and the "currency contagion" from foreign exchange crises in Southeast Asia also played a role in the exchange rate turbulence.

The above factors resulted in May 1997 in strong pressures on the koruna. Using foreign exchange interventions and interest rate adjustments, the CNB succeeded in handling the attack against the koruna so that its consequence was, compared with the currency shocks in

some other countries, only a modest depreciation of the exchange rate. As a result of the exchange rate turbulence, the fixed exchange rate was replaced by managed floating. Money supply growth decelerated during 1997 back to within the set bandwidth . At the same time, interest rates returned relatively quickly to lower levels.

Factors other than demand started to predominate among inflationary pressures. The demand factors had been considerably subdued by the adoption of the restrictive fiscal and wage measures of the two "government packages" in April and May 1997, as well as by the 1996 monetary measures. The more marked increase in price indices was attributable to relatively extensive changes in regulated prices in mid-1997 and again at the start of 1998, which were moreover accompanied by indirect tax adjustments. The depreciated koruna (down by about 10 percent against the former currency basket) also played a role. The year-to-year CPI, which was just above 6 percent in May, reached 10 percent at the end of 1997 and more than 13 percent in the first quarter of 1998. In this situation, inflation expectations accelerated.

D. The Inflation Targeting Regime—Arguments and Reasons for Its Introduction in the Czech Economy

The choice of inflation targeting at the end of 1997 was a way out from the situation in which the economic and monetary policy had lost, following the exchange rate turbulence, its nominal anchor in the form of the exchange rate. At the same time, it was obvious that any return to the pegged exchange rate regime was quite unrealistic and that even the other alternative – money targeting – could not, in the given conditions, provide a sufficiently functional criterion for monetary policy orientation.

In this respect, the Czech economy followed the experience of numerous countries that were also forced to abandon a fixed exchange rate prior to introducing inflation targeting. Forced exit from the EMS exchange rate regime directly preceded the introduction of inflation targeting in the United Kingdom in October 1992. Similarly, the breakdown of a fixed exchange rate regime was the principal reason behind the choice of inflation targeting in Sweden and Finland at the start of 1993. Inflation targeting was meant to provide a new cornerstone for monetary policy and substitute for the loss of a nominal anchor in the form of the fixed exchange rate.

The second key argument for introducing inflation targeting was the inertia of the relatively high level of inflation in previous years. The Czech economy was one of the first Central and Eastern European countries to achieve single digit inflation. Nonetheless, from 1994, when the CPI reached the 10 percent level, no further reduction in price indices could be achieved. Conversely, from the second half of 1997 H2, the inflationary pressures picked up significantly and price indices rose. The CPI reached 13.4 percent in March 1998 and the inflation expectations for the end of 1998 on the part of, among others, trade union representatives and most analysts were even higher, at up to 15–16 percent. The shift to inflation targeting was therefore also associated with an intention to overcome the inertia of the relatively high inflation and to employ more effective stimuli for renewing the disinflation process. The shaping of inflation expectations was of key significance in this

context. In the specific conditions of the Czech economy at the end of 1997 and the start of 1998, it was essential to convince market participants that no further acceleration of inflation would occur. An inflation targeting regime based on effective influencing of inflation expectations was therefore an appropriate strategy and a promising solution.

The experience of the world economy was an important argument as well. Although inflation targeting as a formalized monetary policy strategy for achieving price stability is in essence a product of the early 1990s, it has been spreading quite rapidly. The pioneer countries were advanced market economies such as New Zealand, Canada, the United Kingdom, Sweden, Finland, Australia and Spain. However, these have been followed by economies from less developed parts of the world. During the expansion of inflation targeting, it has been significant that the countries applying this regime which were not part of the "club" of low-inflation countries have registered a substantial shift to low inflation levels during the 1990s. After the exchange rate turbulence, the Czech economy's task was to break the inertia of 10 percent inflation and gradually achieve the characteristics of a low-inflation economy. The option of inflation targeting was therefore considered a justified choice for the Czech economy.

E. The Prerequisites for Effective Implementation of Inflation Targeting

Although inflation targeting has spread rapidly across the world economy, certain prerequisites need to be met for its effective implementation. The official introduction of inflation targeting on 1 January 1999 was preceded by a detailed assessment of these prerequisites in the Czech economy in the second half of the 1990s.

The general prerequisite is for the priority of price and monetary stability to be shared by the main market participants and by individual tiers of society. In this direction, it was possible to continue the traditions of the interwar and postwar periods. After the First World War, the former Czechoslovakia was the only country in the region to avoid hyperinflation. Moreover, before the transformation started in the 1990s, the degree of money overhang and suppressed inflationary potential was very low compared with neighboring countries.

The central issue in considering the justification of introducing inflation targeting was, however, to what extent the existing macroeconomic and institutional framework was consistent with the principles of inflation targeting. In this context, the positive prerequisites in particular included:

- the legally stipulated and actually implemented independence of the central bank in pursuing monetary policy,
- the observance of fiscal discipline. (Foreign experience has shown that inflation targeting is unsustainable without discipline in public finances), and
- the existence of sufficiently developed financial markets and their infrastructure so that effective transmission of monetary policy measures can be ensured.

These prerequisites were the key precondition for the existence of an inflation targeting regime. They were important not only for its introduction but are also a condition for its effective implementation.

In addition to the above characteristics of the macroeconomic and institutional framework, the successful implementation of inflation targeting is conditioned by a whole range of other dimensions, including factors of a technical nature. These include in particular the requirement that no other nominal variable be targeted along with inflation or price indices. This applies in particular to the exchange rate. This requirement was met in the Czech economy with the shift from the fixed exchange rate to managed floating at the end of May 1997.

F. Limiting Factors in Monetary Policy Implementation in the Conditions of the Czech Economy

As follows from the above conclusions, the Czech economy fulfilled the basic prerequisites for inflation targeting. The introduction of this regime at the end of 1997 was, nevertheless, confronted with some specific circumstances and limitations:

- In contrast with maintaining an already achieved low level of inflation, which was the standard problem in most advanced countries, the Czech case involved disinflation from two-digit price indices to a low-inflation level; moreover, inflation was accelerating at that time,

- The Czech economy was still in transition, with all the attributes of incomplete restructuring and ongoing institutional changes. The main limitation with respect to inflation targeting was the unfinished process of regulated price adjustment; moreover, there existed no scenario or time schedule for this process,

- The high degree of openness of the Czech economy in the real and financial sectors predetermined that exchange rate changes and external shocks would have a major impact on the domestic price level. With the benefit of hindsight, it should be stated that these effects on domestic price indices were exacerbated by the substantial fluctuations in the world economy, in commodity prices and on financial markets, due among other things to the Asian and Russian crises, which were typical of that particular stage.

From time to time, the above problems are presented as arguments casting doubt on the wisdom of introducing inflation targeting as well as on its further application in the Czech economy. This is, however, a fundamental misunderstanding. These specific circumstances, inherent in a small open economy and moreover in an economy in transition, undoubtedly represent limiting or complicating factors for the effectiveness of monetary policy. Nonetheless, these factors are, by definition, limitations for monetary policy in any regime, (i.e., not only under inflation targeting).

G. The Aims of Monetary Policy: Specification and Implementation

As stated in Section 2, the central bank's long-term and fundamental objective is to achieve and maintain monetary and price stability. The CNB's monetary policy has always been founded on the principle that balanced and sustainable economic growth must be based on macroeconomic stability. Achieving and maintaining monetary and price stability is the central bank's essential contribution to the creation of a pro-growth environment.

The shift to an inflation targeting strategy did not mean a change in this core monetary policy orientation. The change occurred only in the regime under which it is implemented. Compared with previous regimes, inflation targeting aims at price stability directly, not indirectly via a certain indicator such as the money supply or the exchange rate. At the same time, inflation targeting allows the whole range of relevant variables of both the real and fiscal sectors to be integrated into the decision-making process and into the setting of monetary policy instruments. Thanks to this, the effectiveness of monetary policy instruments in the pursuit of the primary objective – price stability – is strengthened.

For the current stage of the Czech economy, this means achieving the standard of a low-inflation environment consistent with the criteria of the country's integration into the EMU. The long-term monetary strategy approved by the CNB Board on 8 March 1999 and submitted to the Czech Government and the public was also formulated to this end.

The long-term inflation target for year-to-year net inflation is specified in the above document at 2 percent ± 1 percentage point; this target should be hit in 2005 or thereabouts. When setting individual steps along this trajectory, the CNB is guided by the principle that the setting and implementing of targets for individual time horizons must not:

- generate an acceleration in inflation (allowing for exogenous and temporary influences),

- be directed below the price stability level, defined as 2 percent ± 1 percentage point.

A comparison of the proposed long-term target for 2005 (2 percent ± 1 percentage point) and the current target for the year 2000 (4.5 percent ± 1 percentage point) shows that the long-term target establishes only a very slow trajectory toward price and monetary stability. A linear trajectory would mean net inflation falling by about 0.5 percentage points a year.

The proposed mid-value for the long-term inflation target, and consequently the definition of price stability for the Czech economy, establishes gradual convergence to the inflation level in the eurozone. However, it is slightly higher than the target declared by the European Central Bank, according to which growth in the harmonized consumer price index should not exceed 2 percent. This primarily reflects the fact that the probable extent of the distortion of price indices due to changes in the quality and range of goods and services, as well as to the more intense adjustment of relative prices in the still transforming Czech economy, will continue to be larger than in eurozone countries.

The principles of the long-term monetary strategy were incorporated into the document of the Czech Government, "Economic Strategy of the Accession to the European Union," which is the fundamental document for economic policy orientation in the run-up to EU accession. These principles then also became part of a joint document of the Czech Government and the European Commission "Joint Assessment of the Economic Policy Priorities of the Czech Republic." On this basis, it can be stated that the long-term monetary strategy objectives have been accepted and supported not only by the Czech Government, but also by the highest EU authorities as an appropriate monetary policy strategy in the run-up to EU accession and subsequent entry into the EMU.

Achieving a consensus between the Government and the CNB on the price and monetary stability target was one of the major objectives of the long-term monetary strategy. The CNB's strategy assumes that price and monetary stability is for the small and very open Czech economy a basic precondition for sustainable growth and that sharing the monetary policy strategy with the Government increases its credibility, positively influences inflation expectations and reduces the costs of the disinflation process.

Together with the long-term anchoring of the disinflation trajectory, progress targets have also been identified for specific time horizons. In particular these include a target for the end of 2000, which was adopted when inflation targeting was introduced at the end of 1997 and which currently represents a fundamental CNB commitment towards the public. The three-year horizon of this target takes into account the time lags in transmission of monetary policy measures and is consistent with standard procedures in countries with inflation targeting.

In addition to the above medium-term target, orientation values were also specified for price indices in an annual horizon—that is, for the end of 1998 and 1999, as target indicators for the progress of the disinflation process. These were justified mainly by the initial conditions of the switch to inflation targeting combined with the institutional characteristics of the Czech economy. As mentioned above, the end of 1997 and the start of 1998 were characterized by accelerating inflationary pressures resulting in an unfavorable increase in inflation expectations accompanied by the risk of an inflation-depreciation spiral: prices-wages-exchange rate-prices. The identification of a target variable for the disinflation process in the not-too-distant horizon was therefore justified, particularly in a situation where wage bargaining in the Czech Republic is still limited to a one-year period.

Inflation targets are defined using the concept of "net inflation." This is a compromise between the intention to use as wide a price index as possible, but at the same time to target only the items of "standard" price developments, not the consequences of administrative and tax changes which are completely beyond the reach of monetary policy. The net inflation index is derived from the overall CPI adjusted for regulated prices, prices affected by administrative interventions and for indirect tax changes. The CPI at present consists of 754 items, with regulated prices comprising 91 items and net inflation 663 items. The ratio of the two price groups, taking into account their current weights in the consumer basket, is about 82.2:17.8, that is, with a significant preponderance of net inflation items. The net inflation

indices are processed and published by the Czech Statistical Office, an independent institution—a desirable attribute for the credibility and reliability of indices.

The exclusion of some items or influences from overall price movement when setting an inflation target is also quite common in other countries, including the advanced nations. Along with changes in indirect taxes, these items usually include changes in prices of imported commodities, food and agricultural products. These are items which are subject to substantial deviations and fluctuations and which at the same time show low sensitivity to central bank monetary policy instruments. In contrast to some other countries, the net inflation index targeted by the CNB is not adjusted for these volatile items, even though they complicate the preparation of inflation forecasts. For example, food prices account for about one-third of the CPI. If they were to be excluded, the breadth and reach of the targeted index would narrow significantly.

The setting and implementing of inflation targets by means of monetary policy measures must take into account a number of complicating factors. The aforementioned monetary policy targets and measures aim at the nearer or more distant future, and this is always connected with a high degree of risk and uncertainty. Forecasts, by definition, are of a probability nature only. Knowledge of the monetary policy transmission mechanism is always imperfect; moreover, this mechanism is subject to changes, as are the time lags of its individual channels.

The institutional framework of inflation targeting in the Czech economy responds to these uncertainties at two levels, similarly as in numerous other countries, by:

- identifying inflation targets in the form of an interval that should make it possible to adapt to the normal degree of fluctuation of variables in both the real and fiscal sectors; and

- defining a set of “exceptions,” including unforeseeable sudden changes, fluctuations and shocks whose occurrence lies completely or largely outside the reach of monetary policy measures and which at the same time significantly affect price indices. The establishment of such exceptions authorizes monetary policy not to react immediately to such shocks, as such a response would be costly in terms of the real economy and its performance as well as counterproductive for the disinflation process itself.

The exogenous and unforeseeable factors that fulfil the exceptions criterion are defined as follows:

- substantial deviations of global prices of raw materials, energy sources and other commodities from the prediction;

- major deviations of the koruna’s exchange rate from the prediction that are not connected with domestic economic fundamentals and domestic monetary policy;

- marked changes in the conditions for agricultural production having an impact on agricultural producer prices; and

- natural disasters or similar extraordinary events having cost and demand impacts on prices.

Although with the benefit of hindsight the net inflation concept seems fully justified for the initial phase of regulated price adjustment, it unquestionably has its limitations. These primarily include a differing trend for the CPI and the net inflation index and the consequences of this for the effectiveness of monetary policy, shaping of inflation expectations and communication with the public. For this reason, it is desirable to switch in the future to targeting a wider CPI. In this context, it comes as positive news that the Government has presented a scenario for further regulated price adjustment, committing itself to complete this process by the end of 2002. Assuming that this convergence of the CPI and the net inflation index occurs, it will be possible to switch smoothly to CPI targeting.

H. Price Indices in 1998 and 1999 and the Monetary Policy Response

The monetary and price developments during 1998 and 1999 can be divided into three periods:

- The first half of 1998 was characterized by a relatively high price index level, with the CPI reaching two-digit values. The level of key interest rates was consistent with this, with the 2-week repo (repurchase agreement) rate reaching 15 percent in March 1998. From the second quarter, the rise in both the net inflation index and the CPI slowed and the unfavorable inflation expectations were gradually corrected.

- In the second period, from mid-1998 to mid-1999, the Czech economy saw a marked disinflation process. The year-to-year CPI dropped from 10.4 percent in July 1998 to 1.1 percent in July 1999. Following a drop in the levels of conditional inflation forecasts consistent with the unwinding of inflationary pressures, the 2-week repo rate was gradually lowered from 15 percent in July 1998 to 6.5 percent in June 1999. This reduction was accompanied by cuts in the discount and Lombard rates and by a narrowing of the spread between them. In July 1998, a gradual process of reducing the minimum reserve requirements on primary deposits was started. Between July 1998 and October 1999, the requirements were cut in three steps from 9.5 percent to 2 percent, which is now consistent with the level in EMU countries.

- Since mid-1999, the year-to-year changes in the CPI and net inflation index have stabilized at a relatively low level. This stabilization has been achieved despite a certain increase in inflationary pressures, mainly in the form of imported inflation connected with the sizeable upward correction in oil prices. The CPI showed year-to-year growth of 1.9 percent in November 1999 and the year-to-year net inflation index rose by 0.6 percent in the same period. Monetary policy again reacted with an interest

rate lowering, although with less intensity than in the previous period. The 2-week repo rate fell from 6.5 percent in July 1999 to 5.25 percent in November 1999.

In general, it can be stated that price indices in this period have been falling faster than assumed by the targets for the end of 1998 and 1999. This is the result of a unique combination of concurrent external and internal factors.

The external environment in the last two years has been characterized by extraordinarily strong fluctuations associated with the financial crises in Southeast Asia and Russia. Commodity and food prices, as well as relative exchange rates, have undergone abrupt changes from their previous values. The major fall in prices of numerous imported commodities, specifically oil, and the absolutely unique decline in food prices alone have contributed to a 2–3 percent reduction in price indices according to calculations.

Internal factors, such as the domestic demand contraction, the longer-than-expected period of economic decline and the koruna's appreciation tendency, have been acting in parallel.

Given the above character of the factors contributing to the higher-than-targeted drop in price indices, it would be irrational for monetary policy to try to directly correct their influence and return price indices to the targeted values of the short-term annual horizon. The side effects of the volatility generated in the real economy and in the size of its output would be an excessive cost. Recognizing these facts, it is necessary to interpret and evaluate the hitting of short-term inflation targets in an appropriate manner and with adequate flexibility and to avoid the schematic conclusions of the "planner's" assessment of percent and tenths of percent. The reasonableness of this approach is moreover underlined by the choice of the target variable as the end point of the relevant time horizon, e.g. December 1998 or December 1999. It would be not only costly but also counterproductive to try to return the actual price trend as fast as possible to the targeted value prior to the end of the year in the case of the occurrence of an unforeseen shock.

Although price indices stabilized at a low level in the second half of 1999, it cannot justifiably be said that the characteristics of a low-inflation economy have been attained, nor can it be assumed that these characteristics will be sustainable in the future. Numerous factors which in the past contributed to the fall in price indices are now acting, or must be expected to act, in the opposite direction, i.e. towards an upward correction. These include rising oil prices and changes in the external environment as a whole, the ongoing recovery in the domestic economy and the renewal of the process of regulated price adjustment.

I. Advantages of the Inflation Targeting Regime and its Results in the Czech Economy

Inflation targeting has meant a departure from the application of explicit intermediate targets. This departure is due to substantial changes in the world economy, particularly financial market globablizaton and massive capital flows, which greatly reduce the effectiveness and relevance of intermediate targets. The advantage of inflation targeting is that the unilateral character of one or another intermediate target is replaced by the integration and synthesis of a whole range of indicators from the fiscal and real sectors of the economy. In fact, inflation

targeting thus develops and arranges into a consistent system the previous spontaneous tendencies of monetary policies in individual countries toward a comprehensive evaluation of a greater number of indicators and data. This was indeed the case for the Bundesbank, notwithstanding its "nominal" adherence to money targeting. In reality, even the Bundesbank tolerated fairly large deviations from its money supply target range. In this sense, the Bundesbank was rather an example of long-term, albeit implicit, implementation of inflation targeting. The explicit inflation target is also the cornerstone of the monetary strategy and policy of the European Central Bank.

Inflation targeting has introduced a certain order, rules and discipline into the decision-making of the central bank. This has led to better predictability of its reactions to economic developments. Thanks to this, the "news" consists increasingly of the announcement of the relevant statistical data, according to which financial markets and analysts anticipate these decisions—not just of the decisions of the monetary institution itself.

Another feature of the shift to inflation targeting is the increased transparency of monetary policy and better central bank communication with the public. The CNB has made good progress in this direction. Since the start of 1998, the public has been acquainted with monetary developments and with the concrete implementation of monetary policy through quarterly inflation reports. The minutes of CNB Board meetings on monetary issues are published within 12 days. Other forms of the CNB's improved communication with the public include regular meetings of CNB representatives with journalists, domestic and foreign analysts and trade union representatives. The information published on the CNB's web site has also been expanded considerably. The IMF report on the transparency of monetary and financial policy in the Czech Republic states that the shift to inflation targeting in the Czech Republic was transparent and that "the presentation and disclosure of information underlying the inflation outlook and related monetary policy decisions is close to the standards of industrial countries."

Another considerable benefit of the shift to the inflation targeting strategy is the announcement of a quantitatively defined target by which the central bank makes known its commitment toward the public. Such a public commitment creates conditions for much more intensive influencing of the inflation expectations of market participants. Given the key significance of inflation expectations for the disinflation process and for its costs, inflation targeting is an appropriate strategy for countries, including the Czech Republic, striving to achieve disinflation.

The monetary and economic developments in 1999 show that adhering to money targeting could have been very controversial. In the recent period, there has been a pick-up in money supply growth which has not corresponded to nominal GDP growth. If money supply had been taken as the deciding criterion, this would have implied a requirement for a tightening of monetary policy. Such action would not have been justified in a situation where only the first signs of a modest recovery were being felt.

The conditional inflation forecast for the end of 2000, that is, the upper band of the inflation target, is currently heading toward the lower limit of the target range, with its mid-value slightly below the inflation target. This testifies to the success of the disinflation process to date, despite the highly unstable external environment. The increasing credibility of the CNB together with the much greater transparency of monetary policy within the inflation targeting regime has made a major contribution to a positive change in inflation expectations. Recently, the inflation expectations of the CNB, the Government, trade unions and analysts have converged considerably. This contrasts sharply with the situation in 1997 and 1998. The period of low inflation has at the same time generated a downward shift in the “inbuilt level” of expectations. This is of key importance for minimizing the total costs of the progress toward a low-inflation economy.

The European Central Bank uses money targeting as one of the cornerstones of its monetary policy too. This stems from the German Bundesbank's long-term success in combining non-inflationary development with economic growth. The ECB, however, has simultaneously set its inflation target in the form of a harmonized consumer price index of no higher than 2 percent. Similarly, the Bundesbank did not concentrate in the past management of the monetary base resulted in excessive volatility of short-term interest rates.