

Is Direct Inflation Targeting an Alternative for Central Europe? The Case of the Czech Republic and Poland

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I Introduction

In the 1990s, following pioneering New Zealand (1989), a number of industrial economies (Canada, 1991; the United Kingdom, 1992; Finland, 1993; Sweden, 1993; Australia, 1994; Israel, 1994; Spain, 1994) adopted what was termed “direct inflation targeting” (DIT) as their monetary policy strategy.²) A distinctive feature of DIT is that it does not use an intermediate target. In most cases the adoption of this framework was a response to difficulties with either exchange rate targeting (pegging), e.g. in the UK, Finland and Sweden, or some monetary aggregate as an intermediate target, e.g. in New Zealand and Canada (Leiderman and Svensson, 1995). A common feature of the DIT countries is their relatively poor inflation record over recent decades compared to other industrial countries such as Germany, Switzerland, Japan and even the U.S.A.; the latter have never adopted inflation targeting. As the former group’s monetary policy credibility was poor, these countries wanted to provide a new nominal anchor for the economy. At the same time, monetary theory was stressing price stability as a desirable goal of monetary policy, deemphasizing its anticyclical role. Since the use of intermediate targets like the exchange rate or monetary aggregates did not succeed in bringing inflation down to targeted levels, which cast doubt on their applicability and the predictability of their influence on inflation in the given countries, policymakers considered passing them by and targeting inflation directly. The alternatives – either pure discretion, which has a number of caveats, in particular so-called time inconsistency, or other intermediate targets such as nominal GDP – were rather unappealing.³)

Small wonder then, that the adoption of a new monetary policy framework stimulated research and a lively economic debate on its merits and on practical issues such as the choice of a price index, point targets versus ranges, a time horizon, the accountability of the central bank etc. The experience of inflation-targeting economies has been closely watched. Furthermore, a flurry of papers on the subject in 1995 to 1997 preceded and later coincided with the time during which the European Monetary Institute (EMI) debated what kind of a monetary strategy the future ECB should adopt. As it seems that almost everything has been said on the subject, an additional paper on the topic needs a justification. This justification lies in the fact that, as the first of the transition economies, the Czech Republic and Poland have recently switched to DIT. The usual questions arise: Why did they choose this strategy, are these economies and transition economies in general institutionally fit to use this framework successfully, and under which conditions can they benefit from its use? These two transition economies follow disinflation targeting, as their inflation rates are still relatively

1 *Foreign Research Division, OeNB. Helmut Ettl wrote Section 2.4. We would like to acknowledge Olga Radzyner’s valuable remarks on the draft. The standard disclaimer applies.*

2 *In the case of Australia and Israel it is hard to pinpoint the exact dates (see Bernanke et al., 1999). Finland and Spain abandoned the framework when they joined EMU in January 1999.*

3 *Furthermore, a direct inflation target is highly visible to the general public, as inflation indices are frequently published while announcements about monetary aggregates are not transparent to the public at large. In turn, despite their visibility, fixed exchange rates entail the risk of collapsing before they succeed in transferring the low inflation of a country (countries) to whose currency the country pegs.*

high: They target the path of *disinflation* to low levels. Disinflation becomes even more important in the light of these countries' aspiration to join the EU and subsequently EMU in a few years.

The paper is organized as follows. Section Two discusses the theoretical background of inflation targeting based on the recent findings of mainstream monetary theory. Then it focuses on the mechanics of this monetary policy strategy and on a short comparison of inflation targeting with other monetary frameworks. Several practical issues are discussed subsequently. This part is completed by a concise analysis of four Western economies' experience with inflation targeting. Section Three of the paper describes the framework of inflation targeting in the Czech Republic and Poland pointing out the similarities and differences. Their first experiences are also discussed. Conclusions wrap up the paper.

2 Inflation Targeting in Theory and Practice

2.1 Underpinnings of Inflation Targeting

The recent conclusions of monetary theory formulate the underpinnings of inflation targeting. They state that price stability is a prime candidate for the ultimate target of monetary policy and deemphasize the countercyclical role of monetary policy. Mainstream economic theory these days establishes and explains the links between money and inflation in the following manner, depending on the time framework (see e.g. Mishkin, 1997):

First, in the long run, there is a systematic relationship between money and inflation, which is a purely monetary phenomenon. The quantity theory of money is valid, which implies that money is neutral in the long run, i.e. it does not influence real variables. Thus, in equilibrium (dynamic steady state), monetary policy can, at best, achieve price stability or, second best, a desired rate of inflation. Therefore price stability or a specific inflation rate are logical choices for final goals of monetary policy. However, in the long run, higher inflation has higher costs in real terms and no benefits in terms of lower unemployment, therefore a low target for the inflation rate is better than a high target. Price stability encourages an efficient allocation of resources because inflation is detrimental to long-term economic growth (see e.g. papers by Barro, 1995; Sarel, 1996; Bruno and Easterly, 1996). Furthermore, price stability also promotes financial stability (Mishkin, 1997).

Second, in the short run, money can influence prices and real variables such as output and unemployment, but in an unsystematic way, i.e. with long and variable lags and with varying effects that are not perfectly understood. Furthermore, activist and discretionary monetary policy with an aim to reduce unemployment in the short run results in the so-called inflationary bias of this policy, which means it mostly leads to higher inflation, but barely affects output (unemployment) if the central bank has incentives to renege on its pledges to deliver low inflation. Policy decisions are made assuming that expectations are given. With expectations fixed, the central bank can stimulate output by pursuing a more expansionary monetary policy than economic agents expect. However, the public also holds expectations of monetary policy and simply becomes aware that monetary authorities, if not constrained by rules, have an incentive to produce more inflation. Therefore the

public keys this possibility into inflation expectations, which implies that the stimulus affects only inflation but not the level of output. This is a result of the now classical time-inconsistency problem of monetary policy (Kydland and Prescott, 1977; Barro and Gordon, 1983).¹⁾ Since the theoretical analysis concludes that attempts to use monetary policy for anticyclical purposes are likely to be counterproductive, a central bank should pursue a goal of price stability (papers in Leiderman and Svensson, 1995; Mishkin, 1997).

The proposition that price stability be the final goal of central banks explains why countries with inflation targets are said to pursue direct targets as opposed to countries with intermediate-target strategies, which aim at a specific inflation range by adhering to a specified rule about the intermediate target, be it a monetary aggregate, an interest rate or an exchange rate, and by relying on the functional relationship between this intermediate target and the final goal.

2.1 Framework and Implications

In short, the inflation targeting strategy involves fixing an explicit quantitative inflation target for a chosen index of inflation. There is a tolerance interval around the target; the time frame during which the target is to be reached is specified and possibly the situations under which the target can be modified or even disregarded.²⁾ Inflation targeting breaks with the traditional division into ultimate and intermediate targets: The absence of an intermediate target is a distinctive feature, which explains the stress on the word “direct” inflation targeting, but there is nothing wrong with using an indirect monetary target as long as it does not conflict with the ultimate goal (Leiderman and Svensson, 1995). The difference between intermediate and final-target approaches in practice may be more a matter of appearance than an actual fact (Haldane, 1995; EMI 1997a and b), as intermediate targets are used to promote the final target of price stability. In fact, projected inflation serves as an intermediate target. In a useful simplification, inflation targeting is a monetary framework under which monetary policy decisions are guided by expected future inflation relative to an announced target. Thus, DIT is a forward-looking approach. Furthermore, a country pursuing a pure intermediate monetary target theoretically places a 100% weight on money growth relative to its target, but in the practice of monetary targeting additional financial and economic variables, such as domestic credit developments, exchange rates, underlying rates of inflation and real economic developments, are also monitored. Hence the reality of a monetary targeting country is quite close to that of a country pursuing direct inflationary targeting that uses several leading indicators of inflation, among them monetary aggregates or the exchange rate.

The role of inflation forecasts determines how DIT fits in the debate on rules versus discretion. Bernanke and Mishkin (1997) argue that DIT cannot be treated as a rule in the traditional sense, since it does not specify simple operating instructions to the central bank. It is indeed a look-at-everything

¹ See also Mishkin (1997) or Scarth (1988).

² The next section discusses these issues extensively.

approach, i.e. it attempts to use all the information the central bank deems relevant for formulating an appropriate monetary policy to achieve the assigned inflation target. This information may be based on formal models, but may be based on judgmental analysis as well. DIT, if placed in a proper time framework, leaves enough room for response to adverse developments in the short run, e.g. a rise in unemployment, excessive exchange rate fluctuations etc. Bernanke and Mishkin coined the term “constrained discretion” to describe the framework. Their interpretation squares with findings by Green (1997), who used a simple model of inflation to show that the ambitious expectation that inflation targeting eliminates the inflation bias is unwarranted (rules are supposed to do this). He pointed out that “... in view of the uncertainty with which policy instruments affect future inflation, establishing the policy rule might be difficult, thus leaving the authority with discretion over how to set policy instruments” (p. 782). Bernanke’s and Mishkin’s notion of constrained discretion is also close to the distinction between strict and flexible DIT introduced by Svensson (1996). Svensson demonstrated in a formal model that convergence to a target can either proceed optimally within the inflation forecast horizon or be more gradual if the weight on the deviations of output from its natural level is placed on the typical loss function of the central bank, if there is model uncertainty, or if instrument (e.g. interest rate) smoothing is involved.

However, inflation targeting becomes a rules-based strategy when it is transformed into inflation forecast targeting (Bowen, 1995; Svensson, 1996 and 1997). The central bank produces a forecast of the future path of inflation, the forecast is compared to the target inflation rate (a forward-looking procedure), and the difference determines the necessary adjustment of the policy. Thus, the inflation forecast plays the role of an intermediate target. The forecast should be made for a time horizon consistent with the lags of monetary policy (a so-called control lag), because for shorter periods inflation is predetermined. In this way a feedback rule transparent to the public is constructed (provided that forecasts are regularly published): If the rate of forecast inflation is higher than the target, the central bank will raise interest rates (or reduce money supply) and vice versa; in general, an instrument of monetary policy must be used to bring the inflation forecast in line with the inflation target. The tacit assumption is that the central bank possesses the technical and institutional capacity to model and forecast domestic inflation and has some knowledge or an estimate of the time it takes for inflation determinants to have a full effect on the inflation rate.

According to the general features of a “good target” as outlined by theorists (see e.g. Cukierman, 1995 a; or Haldane, 1995), a target should be controllable, highly visible and transparent to the public, display a strong and predictable link with the final target as its leading indicator and be observable at short time intervals. In this respect, the inflation forecast is a suitable target. An inflation forecast is fully controllable and correlated with the target (Svensson, 1996), and is transparent if explanations about the methodology of the forecast are attached. At this point it is useful to compare DIT and strategies based on intermediate targets which it replaces, i.e. monetary targeting and exchange rate targeting. The rationale for intermediate

targets rests on lags in the transmission of monetary impulses to final demand and to prices. The relationship between the intermediate and the final target should be predictable, and the intermediate target should be a leading indicator of future nominal variables, i.e. the price level (Haldane, 1995). In theory, inflation forecast targeting uses all relevant information to predict future inflation while theoretical monetary targeting involves information on monetary aggregates and their possible deviations from targets only. A special case of DIT would boil down to monetary targeting, i.e. when money supply is a sufficient indicator for future inflation, or to exchange rate targeting if future inflation is fully correlated with exchange rate movements.

Problems with regard to the implementation of DIT and its monitoring by the public are serious (Svensson, 1996 and 1998). Inflation targeting may be hard to implement because central banks have little control over the inflation process, as current inflation is predetermined by previous contracts and decisions. Thus, central banks' efforts may influence only future inflationary outcomes. However, "long and variable lags" in the effects of monetary policy on future inflation compound the choice of a central bank's reaction. Future inflation is also affected by shocks which occur within the "control lag," i.e. the shortest time span in which inflation can be affected by a policy reaction. The imperfect control of inflation makes the monitoring and evaluation of monetary policy by the public inherently difficult, since observed inflation is the result of several other factors besides monetary policy. A central bank may argue that a deviation of inflation from the targeted level is caused by factors beyond its control, therefore it cannot be held accountable for this deviation.

A further issue is which authority assigns the inflation target. Central bank independence does not necessarily have to mean that the central bank has the freedom to establish its own final goals. On the one hand, central bank independence is enhanced when it has the right to determine these goals. On the other hand, the central bank is an agent acting on behalf of society (a principal), which is represented by the democratically elected government.

2.3 Practical Issues

A description of more down-to-earth details related to the DIT framework follows. These issues are: what measures of inflation to choose, what target value should be adopted and by whom, should it be a point target or a range, what time horizon should targeting cover and how accountable can a central bank be for inflation performance (see Bernanke and Mishkin, 1997; Debelle, 1997; EMI, 1997b; Haldane, 1995).

The authorities have to decide on inflation versus price level targeting. Price level targeting – for the sake of convenience, let us suppose the price level is stable – would imply that shocks to the price level have to be reverted over time. This could introduce instability into instruments, and via their changes more instability into the real economy in the short run, as periods of surprise inflation should be compensated by periods of deflation. In the economics jargon, price level targeting reduces low-frequency, long-run uncertainty about the price level; a so-called "base drift" is eliminated, as

all shocks are reversed. However, this comes at a cost: Price level targeting leads to high-frequency short-run inflation variability, so it may raise output variability, e.g. suppose a supply shock, which tends to raise the general price level and which will call for the tightening of monetary policy. This, in turn, will reinforce the adverse impact on domestic output. On the other hand, inflation targeting implies that results of shocks are never offset (bygones are bygones), so the variability of the price level is higher. Inflation targets accommodate one-off price shocks, introducing a trend into the price level, so uncertainty about the price level builds up over time. This involves costs, because price level uncertainty will be harmful to those entering nonindexed long-term contracts, inducing front-end loading of debt repayments and eroding the role of money as a unit of account.

The next step is to decide on the price index which will be targeted. There is a consensus in the literature on the subject that it should be the broadest measure possible, such as the GDP deflator or the CPI, which reflects inflationary developments best. Central banks have very imperfect control of inflation, and their response to temporary price shocks may not always be desirable, e.g. in the case of seasonal food and energy price fluctuations. This issue boils down to choosing a headline inflation measure or an index of underlying inflation (also called base or core inflation). A headline inflation index such as the CPI is most transparent to the public. However, the index should exclude at least first-round effects of changes in regulated prices or taxes (one-off increases in the price level), trade shocks and the like. The purpose of focusing on underlying inflation is to exclude the non-monetary determinants of inflation from the inflation rate. Focusing on underlying inflation may be problematic if wage decisions are made on the basis of headline (published) inflation. Allowing for exemptions involves some credibility risk. The choice of an index should be clearly explained to the public in order to prevent the public from thinking that the index was selected in a biased way.

There are pros and cons to adopting a point target as opposed to a target range. According to the prevailing view, this choice involves a tradeoff between credibility and flexibility. A range diminishes the risk of deviations which could cause a loss of face, but the wider the range is, the less commitment to a specific inflation rate on the part of the central bank is communicated to the public. An important consideration in determining the bandwidth of the target is that adopting a narrow band may induce instability in monetary policy instruments. For example, if the band is too narrow, necessary oscillations of interest rates may be destabilizing for financial markets. Furthermore, the narrower the band is, the more difficult it is not to exceed, as shocks beyond the control of the central bank are likely to drive inflation outside the targeted narrow range. On the other hand, the damage to credibility caused by missing a wider range is greater than the damage of missing a point or a narrow target. Cukierman (1995b) argued that people with rational expectations would expect a point target to be missed more often than not, because of the obvious difficulties in hitting the point target, so the cost to credibility would be negligible provided that the deviation is small.

The choice of a numerical value for the target is equally controversial. The implicit aim of DIT is to ensure “price stability,” which was inscribed as a final goal of central banks in numerous countries, in particular the EU economies.¹⁾ A strict definition of price stability would suggest inflation rates close to zero. However, there are statistical and economic reasons why adopting a low positive rate of inflation would be more appropriate. A number of recent studies have shown that the broadly used fixed-weight CPIs are biased upward (see, e.g. Boskin Report, 1996; Hoffmann, 1998).²⁾ They do not take into account the substitution effect. Moreover, these indices usually fail to account for quality changes as well, whereas price rises due to improved quality should not be considered inflation.

Economic factors are at least as important as the statistical aspects listed above. Summers (1991) argued that negative real interest rates may be required to boost an economy, but if inflation is zero, there can be no negative real interest rates, as nominal rates cannot be set negative. Akerlof et al. (1996) point out that a possible downward rigidity of nominal wages allows for wage reduction only by means of inflation (money illusion). If inflation is nonexistent, a decline for labor demand in certain industries or regions will not lead to a fall in real wages, so it will not induce a reallocation of labor to expanding sectors or regions and will raise unemployment instead. According to Bernanke et al. (1999), a more decisive argument against targeting zero inflation is the danger of tipping the economy into unanticipated deflation, in particular into debt deflation. Persistent deflation could create liquidity and solvency problems in the financial sector which could evolve into a full-blown financial crisis.

The selection of a time horizon also merits serious attention, as it determines the speed of convergence to the target if the inflation rate is outside the targeted range even if this range is de facto a point. The rule is that the horizon should be long enough to make the reaction of the central bank to inflationary developments meaningful, i.e. the horizon should coincide with lags of monetary policy. Due to lags in monetary policy, targets for periods shorter than one year do not make much sense. However, despite the fact that the longer the targeting horizon is, the more flexibility in its policy the central bank will enjoy, distant targets will have little credibility, because the public will treat them like fig leaves of discretionary policy. Therefore long-term targets should be supplemented with shorter-term targets if a central bank engages in a disinflation process, above all if it wants to keep the process gradual in order to avoid excessive costs of disinflation (Yates, 1995).

Another practical issue is how accountable the central bank should be for achieving the target (Bernanke et al., 1999). One role of inflation targeting is to anchor inflationary expectations and to make disinflation less costly in terms of output, another is to provide a yardstick against which the actions of the central bank can be evaluated. Since the controllability of inflation tar-

¹ See Article 105 (1) of the Maastricht Treaty and Article 2 of the ECB Statute.

² Studies in various countries have generally found a possible CPI upward bias of up to one percentage point, for example in Germany 0.5 to 1, the UK 0.35 to 0.8, Canada 0.5 to 0.7, and around 1.1 percentage points in the U.S.A.

gets is low, it is hard to determine whether a breach is caused by policy errors or by exogenous shocks. This provides an argument in favor of escape clauses, which, however, must be formulated clearly enough to enable the public to objectively evaluate the central bank's performance. The central bank has to grapple with such questions as when, if ever, it is legitimate to miss a target on purpose and when, if ever, the target should be reset prior to the end of the announced time horizon. A temporary supply shock will generally justify missing or revising the target if no contingencies are included in the targeting framework.¹⁾ It is important for the public not to see a divergence of the actual outcome from the targeted value as the abandonment of the whole strategy, otherwise the central bank's credibility would be undermined. This brings us to the issue of communicating the central bank's strategy and policy to the public.

To reiterate, the DIT framework is supposed to enhance the transparency of monetary policy in order to influence the public's expectations in the right direction. This requires an open and active information policy, since the evaluation by the public of whether a breach of a target is a result of errors or whether it is due to shocks outside the control of the central bank will often prove difficult because of the imperfect link between instruments and the inflation rate. To facilitate this unwieldy task, comprehensive information is necessary. The publication of inflation reports serves this purpose. There is a broad consensus about what such a generic report should contain (Debelle, 1997; Bernanke et al., 1999). It should explain principles by which monetary policy will be conducted, provide a description of the central bank's inflation forecasts and the methodology used, describe measures that will be used if the interim inflation rate does not meet the forecasts, explain past action (and inaction) of the bank and how it might affect the central bank's future policy and the probability of meeting the inflation target; finally, it should describe perceived risks. An important element of the central bank's communication policy is a timely announcement of policy changes and the explanation of reasons for these changes to the public. The publication of minutes of the monetary policy decision-making body's meetings on a nonattributed basis to allow for a free discussion can serve such a purpose. These minutes would provide coverage of all arguments put forward for and against the decisions actually taken. The disclosure of the record of any vote is found to encourage the quality of the individual decision for or against an action, because members of the body face prospects of defending their stance in public.²⁾

1 A large permanent shock may also lead to a temporary deviation due to the real cost of staying on target.

2 This is the practice of the Bank of England, for example.

2.4 The Experience of Inflation-Targeting Countries

The main factor which the countries choosing to use explicit inflation targets have in common is a history of a higher-than-average inflation. In some cases, they had previously used monetary aggregates and/or a fixed exchange rate regime without or with only limited success. And, unlike countries with a history of relatively low inflation, the history and consequent problems of policy credibility in inflation-targeting countries meant that they were unable to rely upon a general qualitative commitment to low inflation (Ettl, 1996).

Between 1990 and 1993 several OECD countries adopted official inflation targets. The countries we deal with in this paper are Canada, New Zealand, Sweden and the United Kingdom, as they have the longest experience with this specific monetary strategy.¹⁾ As these countries instituted their inflation targets with substantially different legislative provisions and targeting procedures, their experiences should eventually provide useful information on the design of effective central bank arrangements.

2.4.1 New Zealand

By far the most ambitious of the four arrangements is that of New Zealand, which features a degree of formal institutionalization that goes well beyond the extent found elsewhere. The Reserve Bank of New Zealand Act 1989, enacted by Parliament, specifies that “stability of the general level of prices” shall be the overriding objective of monetary policy – indeed, it is the only objective mentioned. This Act requires the Bank’s Governor and the Minister of Finance to make periodic Policy Target Agreements (PTAs) regarding the price index to be targeted and the target range.

The switch of the monetary regime came after a period of considerable disinflation. Since 1990 six PTAs have been in force. The first PTA was signed in March 1990 and defined a 0% to 2% inflation band as the target to be achieved in December 1992 but specified a less ambitious range for a transition period, since the inflation rate at the time was above 6%. Thus, New Zealand followed disinflation targeting in the beginning. Up to 1996 the basic requirement was to keep the twelve-month inflation rate in the 0% to 2% range. In 1996 this range was broadened to 0% to 3% due to problems controlling inflation. The pros and cons of widening the range were hotly debated. In a skeptical statement about the wider target range Donald T. Brash, Governor of the Reserve Bank of New Zealand (RBNZ), found two reasons for the new target: First, a wider target range requires less policy activism to meet the target and, second, the number of occasions on which the target is missed can be reduced (and, as a result, central bank credibility enhanced).²⁾

Since 1990, the target variable has also changed. Originally, the consumer price index (CPI) was targeted. The December 1997 PTA defined a new index, the CPIX, which excludes credit services, as the target variable. Whereas the basic requirement is to keep twelve-month increases in the

¹ Australia also has a direct inflation target. Finland and Spain had pursued inflation targets before they both joined EMU.

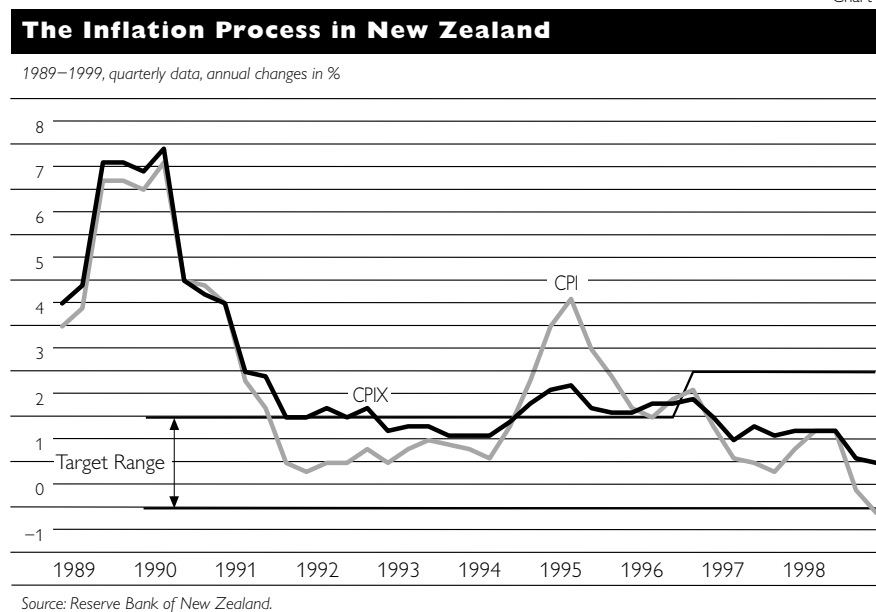
² See Brash (1997).

CPIX in the 0% to 3% range, there are some important exceptions or caveats. Specifically, the 1997 PTA recognizes that “there is a range of events that can have a significant temporary impact on inflation as measured by the CPIX, and mask the underlying trend in prices which is the proper focus of monetary policy. These events may even lead to inflation outcomes outside the target range. (...) When disturbances (...) arise, the Bank shall react in a manner which prevents general inflationary pressures emerging.” Each PTA was explicit in listing the shocks to inflation to which the central bank should respond in order not to allow the transitory changes to prices to impact on the trend inflation.

Inflation forecasts play an important role within the DIT framework. In terms of its policy feedback procedure for achieving the inflation rate targets, the RBNZ adjusts monetary conditions in response to discrepancies between expected future inflation rates and the target midpoint. If the inflation rate forecast for a period of two to six quarters in the future is above 1.5%, for example, the bank will tighten monetary conditions. Following the Bank of Canada, the central bank of New Zealand constructed a monetary conditions index (MCI) and has used it since late 1996 as a means to assess the overall stance of monetary policy. The main indicator variable used in gauging monetary conditions is the trade-weighted exchange rate, which has a weight of two, while the 90-day interest rate has a weight of one. Among the quickly responding variables, the exchange rate is believed to have the greatest predictive and explanatory power for the inflation rate. One should recall that New Zealand is a small, open economy that exports commodities.

The DIT framework puts a strong emphasis on the accountability of the central bank. Whenever inflation outcomes are outside the target range, the Bank must explain in Policy Statements why such outcomes have occurred and what measures it has taken to ensure that inflation is brought back within the range. A notable feature of the framework is the provision whereby the

Chart 1



Governor, who must report on inflation performance to Parliament twice a year, may be dismissed prior to the end of his five-year term if the inflation rate moves outside its specified target band. While this target has been over-shot, this clause has been invoked to date.

The extent of information provided to the public by the RBNZ is quite impressive. In addition to quarterly Monetary Policy Statements, the Bank publishes quarterly forecasts and expository articles on monetary policy in its quarterly Bulletin.

Chart 1 shows New Zealand's inflation process measured both in terms of the CPI and the new target variable, the CPIX. Since 1991, the behavior of the CPI has been much more volatile than that of the CPIX. In terms of the CPI, inflation remained consistently within the then 0% to 2% target from 1991 until December 1994, despite economic growth in 1993 to 1995 which, by New Zealand standards, was exceptionally high. Between March 1995 and September 1996 the inflation target was strongly exceeded, in part because of a very sharp hike in the prices of fruit and vegetables. In the year to March 1999 CPI inflation excluding interest rates was slightly below the middle of the target range (at 1.0%). Since the broadening of the target range to 0% to 3% and the redefinition of the target variable, the RBNZ has been able to meet the target without any problem.

2.4.2 Canada

Canada's formal and explicit inflation target scheme began in February 1991, when the Bank of Canada and the Minister of Finance jointly announced a series of targets.

Participation by the latter was significant because it signaled "that the government was supportive of the price stability goal" (Freedman, 1995). As in the case of New Zealand, the shift to DIT was preceded by a period of substantial disinflation.

The specific price index utilized in the Bank of Canada's target scheme is the CPIX, the Consumer Price Index (CPI) excluding food, energy, and the contribution from changes in indirect taxes. The rationale for these exclusions is that the components in question are frequently subject to sharp temporary movements that, because of their transitory nature, should not be responded to by monetary policy.

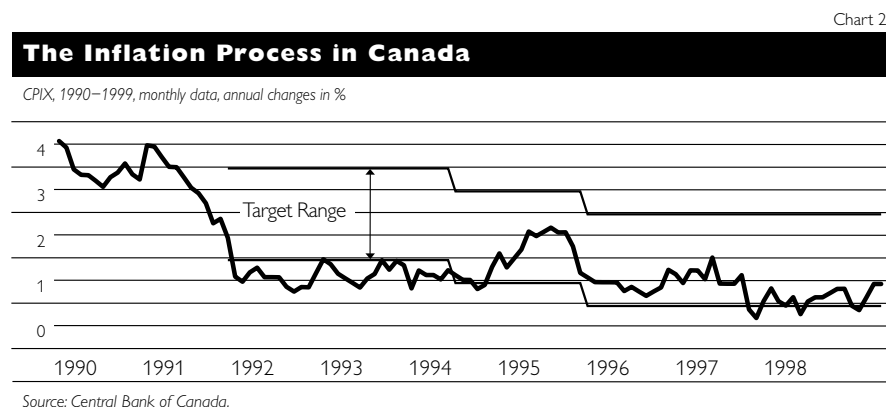
The series of targets announced in February 1991 were target bands, with a width of two percentage points. Unlike in New Zealand, the midpoint of the range plays the role of a focal point. As in the case of New Zealand, DIT was initially used to achieve further disinflation. The band's midpoint was specified to fall to 3% at the end of 1992 (this was consistent with the central bank's own assessment of monetary policy lags extending from six to eight quarters), then to 2.5% as of mid-1994, and finally to 2.0% at the end of 1995. Subsequently, in December 1993, the government and the Bank agreed to maintain the latter target unchanged to the end of 1998. In February 1998 the existing inflation targets were extended to the end of 2001.

An important component of any monetary policy targeting arrangement is the feedback procedure that is used in selecting instrument settings, based

on inflation rate forecasts. The Bank of Canada's procedure is basically to use an econometric model to calculate, given experts' assessments regarding future values of exogenous variables, the time path of a "monetary conditions index" (MCI) that will be required to achieve an inflation path near the midpoint of the target range. The MCI, introduced in 1995, is defined so that its changes reflect the changes in exchange rates and interest rates, both in nominal terms, with three times as much weight given to the changes in interest rates as to the changes in exchange rates. When the MCI needs to be increased in value, the Bank of Canada takes action to adjust the level of liquidity in the system, thereby producing an appropriate rise in interest rates.

There is no legal procedure like in the case of New Zealand by which the central bank is held accountable for its inflation performance. There are no explicit sanctions if it misses the target. The Minister of Finance, who acts as the "principal," cannot dismiss the Governor, but can issue a "policy directive," e.g. an order to raise interest rates, with which the central bank has to comply. No such action has ever been taken, however. Biannually, the Bank publishes a Monetary Policy Report, which offers a detailed assessment of the economic outlook. After each issue is released, senior Bank officials appear before the Finance Committee of the House of Commons to discuss the Report. Since 1996, press releases providing an explanation of the Bank's actions have accompanied each change in the official interest rate.

The possibility of enhancing commitment to the inflation targeting arrangement arose in early 1992, after the government proposed amendments to the Bank of Canada Act that would have changed the Bank's mandate to focus exclusively on price stability. But although the proposal was supported by the Governor of the Bank, it was rejected by a parliamentary committee. In their testimony to this committee, academic economists were almost unanimously opposed to the proposed changes, as they preferred a broader range of central bank objectives.



Following the initial announcement of targets in February 1991, inflation fell rapidly. Indeed, for much of 1992 it was below the bottom of the target range. Since then, with the exception of a brief period in 1995, the trend of inflation has been in the lower half of the target range. The speed of the decline in inflation during 1991 was surprising. It reflected a much more

severe economic slowdown than the Bank of Canada and most other forecasters had expected. In part, the depth of the 1990 to 1991 recession was due to international factors, such as lower-than-expected growth in the United States and an unexpectedly sharp decline in raw material prices. But in Canada, it also reflected the unwinding of distortions in asset prices and debt accumulation associated with the preceding period of inflationary pressures.

In the first half of the 1990s, unprecedented corrective actions were required to put public finances onto a sounder path after two decades of continuous fiscal deficits and public-sector debt accumulation in Canada. These resulted in sluggish domestic demand and a weaker-than-expected recovery in the economy. Monetary conditions were easing through much of this period. However, for quite a long time the Bank of Canada was unable to provide as much monetary stimulus as it would have liked because of fiscal, political, and international developments that, at times, caused financial markets to be nervous and volatile. It was only after 1995, with improved credibility on the fiscal front and subsequent to the Quebec referendum campaign, that the Bank was able to achieve a durable reduction in short-term interest rates. As the credibility of both monetary and fiscal policy improved, Canadian interest rates across the maturity spectrum moved to levels below comparable interest rates in the United States. In response to easier monetary conditions, domestic demand in Canada recovered, with a strong expansion beginning in mid-1996 and continuing through 1998.

2.4.3 United Kingdom

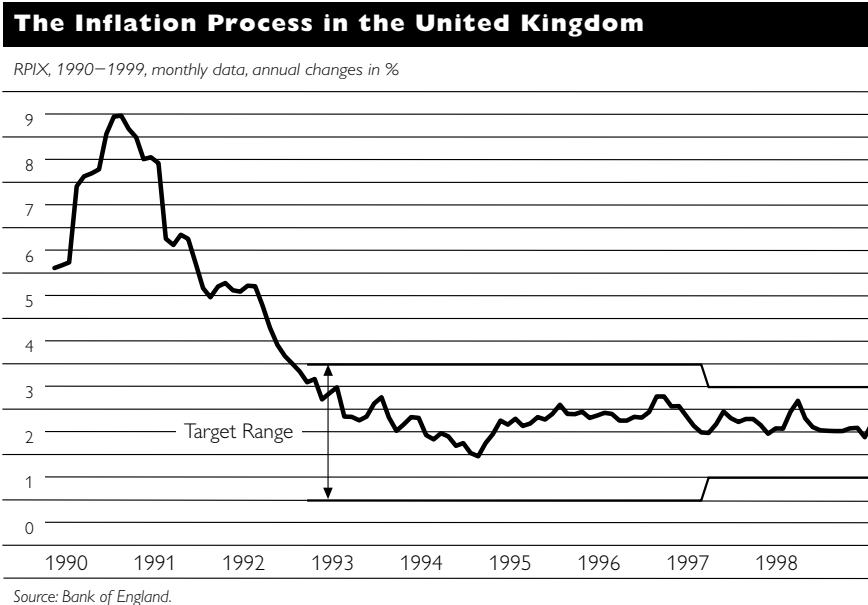
The United Kingdom, like Sweden, turned to inflation targeting after exiting the European exchange rate mechanism in September 1992. There was more governmental involvement, however, since the Bank of England (BoE) had very little independence from the Treasury at this time; the Treasury controlled the instruments of monetary policy, specifically the interest rates. Thus, the initial announcement of inflation targets in October 1992 was made by the Chancellor of the Exchequer, acting in a sense as a “principal.” The target bands specified for the retail price index excluding its mortgage interest component (RPIX) were 1% to 4%, with the target rate to be below 2.5% by “the end of the present Parliament,” i.e. by spring 1997 at the latest. Since September 1992 significant institutional changes have taken place, which have led to the current working framework. In May 1997, the new Chancellor announced that he was handing over the operational responsibility for setting interest rates to the Bank of England. The current framework for monetary policy is provided by the 1998 Bank of England Act. The Bank’s final goal is to deliver price stability. Without prejudice to the objective of price stability, the Bank has to support the Government’s economic policy, including its objectives for growth and employment. A newly established Monetary Policy Committee, which comprises representatives of the Bank as well as independent experts in monetary policy, works as a decision-making body for interest rate setting. In this new setup, the government holds responsibility for setting the objectives of economic policy and therefore it sets the inflation target. In June 1997, the Chancellor announced a

new inflation target for the RPIX of 2.5%, which was later confirmed. In this way the UK formally switched from a range target to a point target. However, the BoE must report why the target is breached only if the deviation is more than ± 1 percentage point from this target, so de facto it still follows a range.

Increased accountability of the Bank is achieved through various arrangements. If inflation is more than 1 percentage point above or below the target, the Bank is required to publish an open letter explaining why inflation has deviated from the target and what actions it intends to take to get prices back on target. Under certain circumstances the Treasury is allowed to give instructions to the Bank for a limited period of time. These powers can, however, only be used if the Treasury is convinced that they are required in the public interest because of “extreme economic circumstances.” The publication of the nonattributed minutes of the Monetary Committee Meetings and of the quarterly Inflation Report enhances the accountability to the broad public. Initially, the minutes were published six weeks after the meeting, in October 1998 this time period was reduced to two weeks. The Inflation Reports contain forecasts of inflation.

Inflation forecasts play a crucial role in the DIT framework, and the BoE seems closer to a theoretical concept of inflation forecast targeting than any other inflation targeter. The Bank evaluates inflationary performance by comparing a two-year inflation forecast which assumes unchanged monetary policy with the intended range. If the forecast does not fall in the targeted range, changes to monetary policy are considered and their impact on future inflation is estimated. There is no strict feedback rule, but the course of monetary policy is much more predictable. Much work has been invested to improve the techniques of inflation forecasting. The Bank has stopped publishing a point forecast, but publishes the probability distribution of future inflation outcomes in order to account for the uncertainty of economic forecasts.

Chart 3



In this way the BoE wants to stress the scope of upward and downward risks of the inflation process.

Since the inflation target was formulated, the Bank of England has held the inflation rate within the band. But there was one major complication. From around the autumn of 1996 the sterling's exchange rate appreciated very sharply against the core European currencies. This apparently had little to do with relative monetary conditions. The effect was to introduce a pronounced imbalance into the British economy. The strong exchange rate threatened to dampen demand for UK exports and had a direct restraining effect on cost and price inflation, but domestic demand was unsustainably strong and, in terms of aggregate demand, the economy was approaching full capacity utilization.

This situation confronted policymakers with an uncomfortable choice. Tightening policy to prevent the entire economy from overheating would have pushed the exchange rate up even further, aggravating the pressures on the international sectors of the economy. On the other hand, not tightening at that stage and thus heading off an acceleration of inflation would have put the whole economy at risk. This episode rather vividly illustrated the point that in targeting the inflation rate, the central bank can only target the economy as a whole, and other economic variables like the exchange rate can react very strongly.

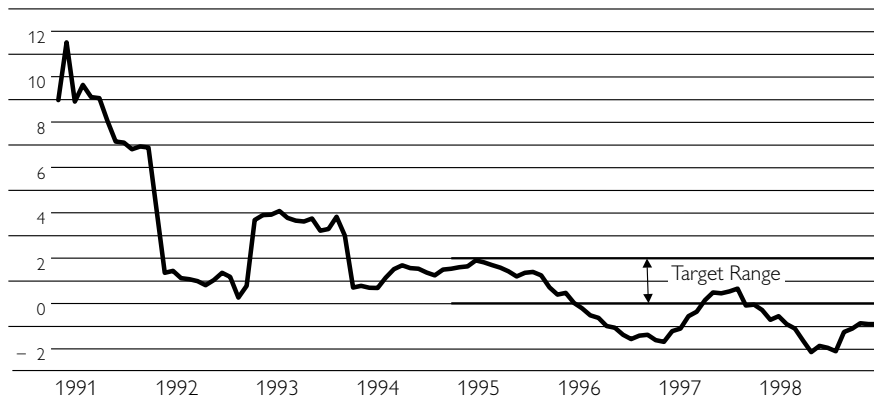
2.4.4 Sweden

Sweden's adoption of inflation targets, unlike in the UK, New Zealand and Canada, was announced solely by the central bank, the Riksbank, in January 1993. It followed the breakdown in November 1992 of the krona's exchange rate peg to the ECU. Sweden chose to target the all-item CPI. The target rate was set at 2%, with a tolerance band from 1% to 3%. This target was scheduled to apply to the twelve-month inflation rate of the CPI starting in 1995, as inflation outcomes in 1993 and 1994 were seen to be predetermined to a large extent. Compared to that of Canada, New Zealand and the United Kingdom, the inflation targeting scheme in Sweden is not as highly institutionalized. In particular, the Riksbank's 1993 announcement was made by its Governing Board without any accompanying statement from the government. However, in the recent past, some additional elements of inflation targeting arrangements in other countries have been implemented in Sweden. The latest reform steps specifically aimed at improving transparency and accountability. The Riksbank publishes a quarterly Inflation Report in which it analyzes all relevant economic variables and releases an inflation forecast. The role of the inflation forecast within the whole strategy framework is gaining more and more importance. The inflation forecast shows the Bank's numerical assessment of future inflation. Against this statement, the public can evaluate the Bank's policy steps and judge its credibility. In 1998 the Swedish parliament passed legislative amendments with the aim of strengthening the independence of the Riksbank. This new legislation defines maintaining price stability as the main objective of monetary policy. Since the beginning of 1999, the Riksbank has published the minutes of the Executive Board's monetary policy meetings with a time lag of six to eight weeks.

Chart 4

The Inflation Process in Sweden

CPI, 1991–1999, monthly data, annual changes in %



Source: Sveriges Riksbank.

In the period from 1996 to 1998 the annual rates of inflation, measured by the CPI, were 0.8%, 0.9% and 0.4%, respectively. This means that in each of these years the change in the CPI was below the lower tolerance limit of 1%. Since 1996 there have been two sharp downward deviations. For several months the headline inflation rate fell below zero. The central bank did not react to these developments, pointing out that – excluding more transitory price effects (altered indirect taxes and falling commodity prices) that monetary policy neither can nor should try to fully counter – the inflation rate has been inside the stipulated tolerance interval. Thus, although core inflation is not considered an official measure, the central bank used this index in the explanation of its inaction. However, these developments motivated the Riksbank to clarify the inflation target formulation in January 1999: “Monetary policy is normally conducted so as to be on the target, defined in terms of the CPI, one to two years ahead. Departures from this general rule may be warranted for two reasons. One is that the CPI can be pushed upwards or downwards in the relevant time perspective by one or more factors that are not considered to affect inflation more permanently. Changes in interest expenditure, indirect taxes and subsidies are examples of such factors. The other reason for departing from the rule can be that a quick return to the target in the event of a sizeable deviation can sometimes be costly for the real economy. In the event of either of these situations occurring, the magnitude of the deviation from the inflation target, defined in terms of the CPI, that may be motivated 1 to 2 years ahead will be clarified by the Riksbank in advance” (Sveriges Riksbank, 1999).

2.4.5 Comparative Analysis of Experiences

All four inflation targeting countries have four strategy elements in common:

- the public announcement of medium-term numerical targets for inflation;
- an institutional commitment to price stability as the primary, long-run goal of monetary policy, which is operationally defined by the inflation target;

- increased transparency of the monetary policy strategy through communication with the public and the markets about the plans and objectives of monetary policy;
- increased accountability of the central bank for attaining its inflation objectives.

All four countries introduced inflation targeting after the former monetary policy strategy failed and the countries experienced a time of high inflation rates. This aspect of timing is well known in other fields of economics. In times of crisis, it is easier to convince the public to adopt a broad package of economic reforms. In all countries reviewed, the new strategy was implemented with some fanfare, in a way that made clear to the public that a distinctly new approach was being adopted. In order to gain credibility for the new strategy, the central bank and the government made a joint announcement (the Swedish case is the exception). In order to be credible, all countries analyzed here tried to meet their initial inflation targets with the help of medium-term targets announced together with short-term transitory targets.

Since the implementation of the initial frameworks in the early 1990s, some gradual reform steps have been taken and we can observe some kind of convergence among the countries. As monetary policy measures have a long time lag, inflation rate forecasting techniques have been gaining increasing importance. Meanwhile, all four central banks publish their forecasts to give the public an orientation about the future direction of monetary policy. As the public has the opportunity to compare the central banks' assessments and actions, monetary policy can build up reputation and credibility in a continuous manner.

The general principle of transparency is, indeed, one of the cornerstones of all inflation-targeting countries. In all four countries, the central banks have intensified their information policy. The monetary policy officials explain the reasoning for their policy in numerous public statements and articles. Additionally, two countries – the United Kingdom and Sweden – publish the minutes of the discussions in the decision-making bodies soon after the sessions. The rationale behind enhanced transparency is on the one hand to facilitate private-sector planning by reducing uncertainty about monetary policy, interest rates and inflation. On the other hand, transparency has an educational purpose. The central banks explain to the public what they can and cannot achieve using monetary policy measures. Transparency in tandem with active communication enhances central banks' accountability.

So far, no country has chosen the level of prices as a target variable, but have rather opted for the rate at which prices change over time. The reason is that policymakers in all four countries are concerned about the effect a price-level target might have on short-run economic stability (see Section 2.3). The fear of deflation is the main reason why all four countries have chosen inflation targets above zero. In addition, Sweden, Canada and the United Kingdom have explicit or implicit lower interval limits above zero. In the view of the monetary authorities of all four countries, the inflation rate compatible with price level stability is not zero, but rather marginally above

zero.¹⁾ With the somewhat unclear exception of Sweden, the central banks in the examined countries target a “CPIX” (the CPI excluding food, energy, and the effect of changes in indirect taxes). The operational focus on the core rate of inflation makes it clear that the focus of monetary policy is on the trend of inflation and not on temporary fluctuations. It also means an attempt to make the target more controllable by the central bank and enhances its accountability. On the other hand, the general public feels the impact of transitory changes on the headline CPI, requiring a great effort on the part of the monetary authorities to explain their target and motives.

The legal frameworks under which the four central banks are working are quite different, ranging from the original formulation of the new strategy in the United Kingdom in 1992, when the Bank of England was merely an operational unit of the Treasury, to the highly independent approach of the Riksbank, which announced the new strategy alone. Meanwhile, the consensus that operational and instrumental central bank independence is a precondition for inflation targeting seems to be emerging. The target may be set by the government. In such a formulation of the framework, inflation targeting can solve the traditional conflict between democracy and central bank independence.

Taking into account the economic record of the four countries since the adoption of direct inflation targeting, the new framework of monetary policy seems to have been a success. The inflation rates in all four countries have come down to historically low levels. Since the mid-1990s, economic growth performance has been quite favorable as well. A final conclusion, however, is not possible. The 1990s have been a period of declining inflation rates in all industrialized countries. Other countries with bad inflationary experiences in the past have also reduced their inflation rates substantially without adopting direct inflation targets. Recent empirical work (Bernanke et al., 1999) finds evidence that in the case of Canada, New Zealand, Sweden and the United Kingdom, inflation levels and inflation expectations have fallen below, and remain below, “what would have been expected based on extrapolations of the past.” Two qualifications, however, are added. First, nobody can “know precisely what would have happened had they not adopted inflation targeting”; the economic performance of nontargeters is not appreciably different from that of inflation targeters. Second, the proposition “that the costs of disinflation would decline as a result of inflation targeting was not fulfilled during the first post-adoption disinflations.” The adoption of DIT does not in itself establish immediate credibility for monetary policy, nor is the announcement of the shift to DIT enough to ensure success. Inflationary expectations are slow to fall to the targeted range.

1 Several arguments which are given in favor of a low inflation rate rather than a zero inflation rate were discussed in Section 2.3.

3 DIT and Economies in Transition

So far inflation targeting has proved successful in the Western economies which have adopted it. The countries in transition are still searching for appropriate frameworks for their monetary policies,¹⁾ and DIT is one of the options considered, especially as most of the countries still face further disinflation. On comparing the merits of DIT with the actual conduct of monetary policy, Orłowski (1998) suggested that advanced transition economies could find monetary strategies based on DIT to be superior to other strategies, as they would discipline their efforts to reach rates of inflation compatible with those of EU member countries.

Inflation targeting calls for a number of institutional prerequisites. The two general prerequisites of IT as perceived by economists are rather self-explanatory: the absence of so-called fiscal dominance, and no commitment to maintaining another nominal anchor (Debelle, 1997; Masson et al., 1997). Lack of fiscal dominance means that the central bank is capable of conducting its monetary policy with a free choice of instruments to attain some nominal objective without being constrained by developments of a fiscal nature. Translated into a blunt statement, this means the absence of fiscal sources of inflation. For example, an excessively large stock of public debt may create expectations of higher inflation in the future, which may prevent the central bank from reaching its target in the short run. The central bank may then be forced to react with higher nominal interest rates, which in turn will tend to raise debt service costs for the government and induce further borrowing (a case for “unpleasant monetarist arithmetic”). To eliminate fiscal dominance, public-sector borrowing from the central bank should be prohibited. Moreover, the government should count on a broad revenue base to avoid excessive reliance on seigniorage, while financial markets should be developed enough to have the capacity to absorb placements of public debt.

As concerns the second requirement, any other goal can be pursued to the extent that it does not conflict with the inflation target (Svensson, 1995; Debelle, 1997; Masson et al., 1997). In general, inflationary targeting is inconsistent with fixed exchange rates, since it is not possible to target an inflation rate that differs strongly from that of the country to which the domestic currency is pegged. Variants of crawling bands may relax these strictures to some extent, but preference should be given to the inflation target if a conflict arises. A goal of full employment does not have to be incompatible with DIT provided that a proper time framework is considered, i.e. when flexible DIT is used (Svensson, 1996). The goal of financial stability of the banking sector does not have to be in conflict with DIT either, though if the banking sector is fragile, instrument (interest rate) flexibility may be hampered, leading to what is referred to as the smoothing of interest rates. Such a situation again calls for flexible inflation targeting.

Transition economies share some institutional features and characteristics of the inflation process which distinguish them from advanced economies that

¹ Poland is a ready example, as it started with exchange rate targeting. Subsequently, it switched back and forth from interest rate targeting to monetary targeting while maintaining a crawling peg system, not to mention targeting domestic credit expansion at times.

have switched to inflation targeting. At the beginning of transition, fiscal dominance was rather the rule than the exception: Direct government borrowing from central banks was prevalent, as financial markets were practically nonexistent. The inflation process in these countries is dotted with one-off increases in price levels caused by the liberalization of prices, large increases in administered prices or the introduction of indirect taxes such as VAT and excise taxes, which tend to generate large swings of relative prices. These factors complicate the inflation process, so looking at measures of underlying inflation makes even more sense than in the case of stable market economies (Christoffersen and Wescott, 1999) in order to identify trends in inflation by eliminating one-off increases of the price level or other temporary influences. However, these measures are poorly developed.¹⁾ Thus, the predictability of the inflation process is impaired as compared to stable Western economies.

At the outset, the economies in transition experienced high inflation after they had liberalized prices, so stabilization became a priority. Only recently has the CPI inflation come down to single digits in a number of these economies. Disinflation is usually costly in terms of output foregone. Therefore the adoption of the DIT framework implicitly assumes further disinflation in these economies. This requires the time horizon to be set long enough to avoid excessive output costs. Medium-term frameworks that assume low inflation or short-term frameworks that assume a gradual reduction of inflation are appropriate from this angle. Inflation targeting becomes de facto disinflation targeting, and it falls under flexible inflation targeting.

Furthermore, the DIT strategy assumes that the central bank uses all information relevant to price formation. Among other things, the central bank uses a model (or models) of the economy. Due to the (rather) rapid structural changes, model uncertainty in transition countries is higher than in advanced economies. Short time series often do not allow for valid statistical inference, as data from before the start of transition cannot be used or do not exist in the first place. Issues such as how shifts in the monetary policy instruments, i.e. interest rates, exchange rates or monetary aggregates influence inflation, what lags monetary policy has, how inflation responds to changes in other economic variables such as wages, the unemployment rate or capacity utilization, are mostly weakly identified. For example, Christoffersen and Wescott (1999) conclude their work on Poland as follows: "... the statistical power of inflation forecasting models in Poland still appears to be modest, especially when the forecast horizon extends for periods of one year or longer." In short, a quantitative framework linking policy instruments to inflation is largely missing, e.g. the authors quoted above did not find a clear (negative) statistical link between changes in the short-term interest rate and inflation in Poland, as both variables have been trending downward for years due to successful disinflation. All this impairs

¹ The work of Christoffersen and Wescott (1999) is an attempt to develop various measures of underlying inflation and show relationships among them and the headline inflation in Poland. The authors provide a short introduction into the literature of measuring underlying inflation. The discussion of these problems is beyond the scope of this paper.

the capacity to model and forecast domestic inflation, which usually requires an adequately long and extensive historical database. Model uncertainty provides another argument for flexible inflation targeting, to round off the discussion of the prerequisites of DIT.

Finally, inflation targeting calls for a high degree of framework and policy transparency to influence the general public's inflation expectations and to make the central bank accountable. However, transparency has never been a strong suit of continental European central banks, which have had a strong penchant for secrecy. It is not the strongest suit of central banks in transition economies, either. A DIT framework calling for comprehensive information requirements may help improve information and communication policies.

So far two countries belonging to the leading group of transforming economies have made the decision to switch to monetary strategies based on inflation targeting. Inflation targeting in the Czech Republic and Poland could be labeled disinflation targeting, in order to distinguish them from countries which have already achieved low inflation and which mostly make efforts to maintain inflation rates within a generally accepted range. Leading transition economies still have to disinflate in order to reduce their inflation rates to levels compatible with those of the EU economies, a prerequisite for joining EMU in the future. This task requires good coordination of macro-economic policies and determines which body should be responsible for setting an inflation target: the central bank, the government or both. The preference in the literature (Orlowski, 1998) is given to an equally shared responsibility for achieving the target, as this diminishes the risk of fiscal dominance.

3.1 The Czech Case

Let us start with the two prerequisites for successful DIT: the absence of fiscal dominance and the lack of other monetary anchors. The risk of fiscal dominance in the Czech Republic is rather low. The Czech National Bank (CNB) has been granted a high degree of independence, many aspects of which are comparable with those in other countries which have adopted the DIT framework.¹⁾ The CNB is legally endowed with monetary policy independence by the Central Bank Act (Article 9). In fact, the CNB enjoys target independence, as it autonomously fixes the inflation targets. The ultimate goal is the "stability of the Czech national currency," as defined by Article 2, but the choice of monetary strategy rests with the central bank. The financing of government deficits by the CNB is not altogether prohibited, but the law contains safeguards that limit this kind of operation to a specified amount, form and maturity: The CNB may purchase Treasury bills with a three month maturity for up to 5% of the previous year's state budget revenues at most (Article 30 of the Central Bank Act). The Czech government has not taken recourse to direct borrowing from the central bank despite a considerable worsening of its fiscal position in 1997 and 1998 when a recession ensued, so the risks appear to be limited.

1 See Radzyner and Riesinger (1997) for a detailed coverage of central bank independence issues in selected transition economies.

Furthermore, the CNB has no other nominal anchor: a managed floating system has been operational since May 1997. On occasion, the monetary authorities attempt to influence the market, but primarily to smooth exchange rate fluctuations. One reads that “the CNB intervened on the foreign exchange market not to maintain the exchange rate at a certain level or to influence the trend, but to moderate exogenous effects and, through foreign exchange interventions, to ensure relatively smooth shifts in foreign exchange trading between different exchange rate levels.”¹) The introduction of DIT came at a time when the current account deficit had already started improving from a ratio to GDP which was hardly sustainable.

The main motivation for introducing DIT in the Czech Republic was the May 1997 collapse of the fixed exchange rate regime. The search for new monetary policy anchors led to the adoption of an inflation target. The CNB explained the choice of its new monetary strategy by pointing to the evidence that money is neutral in the long run, i.e. affects only prices, and that stable prices also support long-term economic growth. According to the CNB, the inflation target is transparent; it has an impact on inflationary expectations and will make “convergence of domestic inflation with EU inflation smoother” (CNB, 1998 a).

The framework of DIT in the Czech Republic is the following. The central bank in the Czech Republic targets a “net inflation” index (NII), defined as a rate of increase in consumer prices excluding administered and regulated prices as well as the impact of indirect tax increases. The NII is not seasonally adjusted. Administered prices represented around 18% of the CPI basket in 1998 (i.e. the NII basket is about 82% of the CPI) and they include water and heating (directly set by the authorities), electricity and gas and telephone costs, rents (maximum prices), taxi and parking rates (set by local authorities), as well as insurance fees and charges (including health insurance and vehicle insurance). Seen from another angle, 85% of the net inflation basket consists of tradables (of which food is 42%) and nontradables are 15% (but some 60% of all nontradables are included). As a result, the net inflation index is more sensitive to exchange rate movements than the CPI, in which tradables account for around 67%. Thus, the NII is a complex formula which does not seem transparent enough to the public at large. The credibility of target calculations is enhanced by the fact that since February 1998 the net inflation estimates have been produced by the Central Statistical Office. The goods and services excluded from the CPI are listed annually in the Ministry of Finance’s Price Bulletin. The choice of the NII as a targeted measure of inflation illustrates the problems of an economy in transition in which changes in the relative price structure have not been completed yet. This choice enhances the accountability of the central bank for inflation performance on the one hand, as the NII is more controllable than the CPI, but on the other hand, the NII is newly constructed and consequently its targeting tends to reduce the transparency of the monetary strategy. Furthermore, Orłowski (1998) rightly points out that regulated prices strongly affect the costs of

1 CNB (1998 b) p. 32.

production, so they have an indirect impact on unregulated prices anyway. Hence, a higher controllability of NII inflation is more apparent than real.

The NII target is formulated as a range. The CNB constructed a three-year medium-term target, i.e. a fall of the NII inflation rate to between 3.5% and 5.5% in 2000. This target was supplemented by a short-term, one-year target: The central bank fixed NII growth at 6% year on year in December 1998, with a ± 0.5 percentage point margin. At the time the target was set, the NII was up by 6.8% year on year in December 1997, so the target did not look overly ambitious. The CNB did not explain why it chose this specific pace of disinflation and this particular width of the band for 1998 or for 2000. No escape clauses were announced to the public in 1998. This target was actually undershot (more later), which prompted the CNB to include contingencies while fixing the 1999 target for the NII at 4.5% ± 0.5 percentage point year on year in December 1999. If monetary policy has a lag of up to two years, as the CNB asserts (CNB, 1998a), then establishing a target for one year is much less meaningful, because at this time horizon inflation is predetermined. Determining a target with a one-year horizon to a certain extent puts the credibility of the strategy at risk, as inflation may deviate from the targeted range for reasons beyond the control of the central bank. However, the public will hold the CNB accountable for this. The achievement of the lower edge of the medium-term range does not mean that the process of disinflation will be over, since price stability is defined by the ECB as a CPI rise of below 2%. The CNB has recently formulated a draft of its five-to-seven-year monetary strategy, which will clarify how it intends to proceed with further disinflation.¹⁾

Along with the 1999 target, due to uncertainties with regard to raw material and commodity prices and the exchange rate of the koruna, the central bank announced an inflation forecast with a much wider range of possible outcomes of 2.5% to 5.5% year on year in December 1999. This forecast will be updated in the course of the year. The Bank did not elaborate on the role of this forecast, pointing out only that it will serve as the main guide for monetary policy. Nothing was said about the potential role of inflation forecasts as intermediate targets, and no feedback rule was formulated, leaving a potential reaction to the discretion of the central bank. From the start of DIT, the CNB has been vague on the methodology of how it produces inflation forecasts. It is unclear whether, how and how fast the CNB will respond to deviations of inflation forecasts from its inflation target. Nor is there an announced timetable for preparing and publishing inflation forecasts. Hence, the CNB framework would fit the description of inflation targeting as “constrained discretion” (see Section 2).

The short record of DIT in the Czech Republic showed that the CNB encountered a few problems with the new strategy, and this experience prompted some ramifications of the monetary policy framework.²⁾

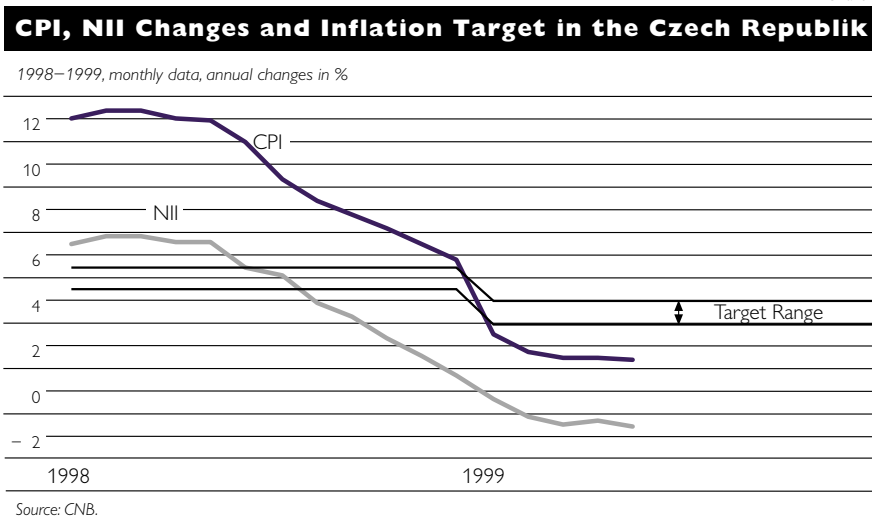
1 It has not been released to the public as of writing. The press release of the CNB on this matter reads: “...the document which deals with the manner of setting inflation targets and monetary policy principles in the horizon of the next five to seven years, will be published after it has been submitted to the Government” (CNB homepage: www.cnb.cz).

2 For a relatively detailed description of inflationary developments see Jonas (1999).

First, the need to raise regulated prices led to large discrepancies between the NII and the CPI year on year in each month of 1998, which amounted to 5.7 percentage points on average in 1998. This exemplifies one of the problems of inflation targeting in transition economies. Large gaps between the targeted index, in this case the NII and the CPI, may give rise to questions about the credibility of the target despite the well-known causes. This is so because the general public usually builds inflationary expectations on the basis of the CPI, as this is the index which most accurately approximates the “true” cost of living and is most widely published. Under such circumstances announcements that inflation is on target would sound hollow to the general public, especially if the two indices exhibited divergent trends. This shows that striving for greater controllability of the target has its effective limits, because the public may not be convinced that one-time hikes in the CPI do not necessarily imply renewed inflationary pressure, and that such pressure is more accurately indicated by the price index used as a target by the central bank than by the CPI. Therefore inflation targeting can be difficult to implement when the process of relative price adjustments is still incomplete, which was the case in the Czech Republic in 1998 and could be the case in other, less advanced transition economies if they considered switching to a monetary strategy based on DIT.

Second, as mentioned before, the actual NII undershot the targeted inflation rate in 1998; the NII came to 1.7% year on year in December 1998 (the CPI was up 6.8% year on year at the end of 1998). The central bank had not foreseen such a course of events when it initially embraced the framework of DIT. Inflationary expectations were biased upward at that time, as headline inflation was accelerating due to increases in administrative prices. The situations in which the target is missed raise questions about the extent to which the central bank is to be held accountable for such an outcome. The central bank was subject to criticism in 1998 that disinflation had come about too fast, claiming too high a price in terms of output. In 1999, indirectly responding to such criticism and accounting for such cir-

Chart 5



cumstances, the CNB defined “escape clauses” under which it cannot be held responsible for inflation outcomes that diverge from the specified target. These contingencies include significant differences between projected and actual world prices of commodities, significant differences between projected and actual exchange rates that do not reflect developments of domestic economic fundamentals and monetary policy, considerable changes in conditions in agriculture which affect agricultural producer prices and natural disasters and similar extraordinary events that produce demand-led and cost-push price shocks.¹⁾

Communications policy is an important part of a generic DIT strategy. The introduction of DIT was announced rather laconically by the CNB. For example, the CNB did not explain why it opted for a two-percentage-point range of its three-year target. The CNB started publishing quarterly Inflation Reports in April 1998. It also publishes the minutes of its board meetings. The CNB’s information policy has improved, though crucial information on the methodology of forecasts and the transmission mechanism of monetary policy is still rather scant. In 1999, the CNB delivered more information about why it chose a one-percentage-point interval for deviations from its short-term target. According to the CNB, the interval bandwidth reflects the volatility of economic and monetary variables, the inaccuracy of inflation forecasts and the imperfect knowledge of the transmission mechanism, including the relevant and varying lags.²⁾

3.2 Poland

In January 1999, Poland joined the group of countries targeting inflation. Again, it is a good starting point to remark on the two general prerequisites of inflation targeting. Fiscal dominance does not seem to be a problem in Poland. The central bank is independent with regard to the instruments and strategy with which to achieve the final goal, which is derived from the Maastricht Treaty (price level stability). The 1997 Central Bank Act eliminated the possibility of direct lending by the National Bank of Poland (NBP) to the government. The capacity of financial markets to finance government expenditure recently passed its first serious test: At the beginning of 1999, the Polish government suffered from liquidity problems when, following the introduction of administrative, health care and pension reforms, the budget deficit reached over 72% of the 1999 plan in the first quarter. This shortage of funds was financed on the domestic market without a significant increase in government paper yields.

The condition of noncommitment to another monetary anchor is less well satisfied, as Poland still maintains the crawling band system. However, the band of feasible fluctuations is wide: $\pm 15\%$ from the center parity rate against the basket consisting of the euro (55%) and the U.S. dollar (45%). To comply with the requirements of the DIT strategy, the NBP widened the band to $\pm 15\%$ from $\pm 12.5\%$ in March 1999. The central bank intends to replace this system with the managed floating regime, though no date has

1 CNB (1999) p. 46.

2 CNB (1999) p. 46.

been announced (NBP, 1998 b).¹⁾ The central bank has not intervened on the foreign exchange market since July 1998, so as to allow the market to determine the value of the domestic currency. The Russian crisis put this policy to a positive test, as the exchange rate depreciated rapidly against the then currency basket of five currencies, which gained about 9% in one week in August 1998, but the depreciation stopped when the exchange rate fell to the center of the band. One of the preparatory steps for the switch to managed floating is the planned elimination of the daily exchange rate fixing sessions in June 1999; the aim is to boost the development of the foreign exchange market and to eliminate speculation at these sessions.

The history of monetary strategies based on intermediate targeting is rather varied in Poland despite the fact that transition started only ten years ago. The 1990 stabilization program used a fixed nominal exchange rate to the U.S. dollar as the main monetary anchor. Later, the central bank alternately targeted interest rates and money. Right before switching to the DIT framework, the central bank targeted a monetary aggregate (M2) within the framework of the crawling band system. The NBP missed the money supply target most of the time, but inflation fell consistently. These frequent changes of the monetary policy framework did not feature prominently in the central bank's explanations about why it decided to switch to inflation targeting (NBP, 1998 b). The argumentation why it rejects the two most frequently used alternatives – exchange rate strategy and monetary targeting – is standard, but includes elements typical of transition or developing economies. The NBP argued against disinflation based on a fixed exchange rate, because it has no knowledge of the equilibrium exchange rate, especially amid conditions of strong external shocks, the continued liberalization of capital flows and structural changes in the economy. Furthermore, monetary policy cannot react to internal shocks, the domestic economy is subject to the transmission of disturbances from the anchor country, and finally the fixed regime is inappropriate in the case of liberalized capital movements because it runs the risk of collapsing under a speculative attack. The alternative of monetary targeting requires other preconditions, which, according to the document the Polish economy hardly satisfies, however. Monetary targeting is not appropriate, because the relationship between monetary aggregates and inflation is not stable for three reasons: the excess liquidity of the banking sector, unstable capital inflows and the ever-changing degree of the monetization of the Polish economy due to the ongoing development of financial markets.

Thus, like in the Czech case and elsewhere, inflation targeting can be considered a default solution, but the central bank pointed to its merits as well (NBP, 1998 b). They include universally cited positive properties, such as the transparency of the inflation target for the public, so the performance is easy to verify by the public, and the clear visibility of the costs of short-term fixes in the real economy. The central bank emphasized the flexibility of instruments under DIT, which allows the central bank to find the proper

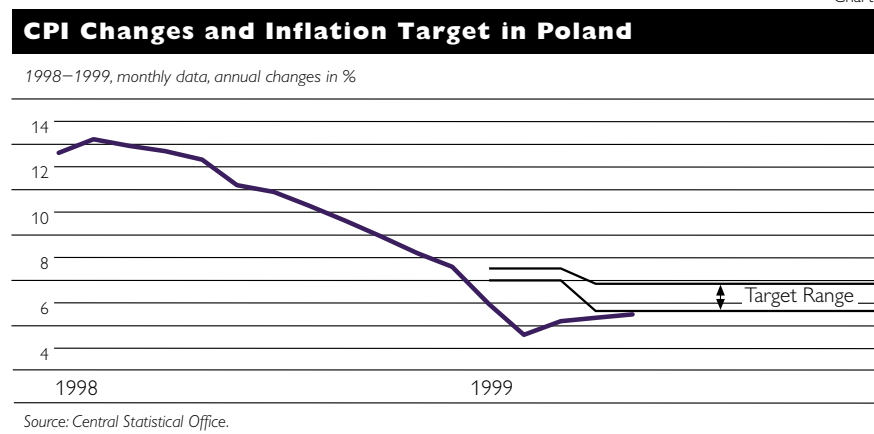
1 The date of introducing the managed floating system of the exchange rate will hinge on the development of the foreign exchange market and the extent of the liberalization of foreign exchange.

mix for reacting to various shocks. It is interesting to note that both the CNB and the NBP hope that DIT will dampen inflationary expectations relative to other monetary strategies.

In contrast to the CNB, which targets an index of core inflation, the NBP targets headline CPI. The NBP explained that this measure of inflation is most transparent to the broad public. The central bank gave precedence to transparency over a better controllability of the target. However, it signaled that a measure of core inflation (the term “base inflation” index is used) excluding the impact of administered prices, seasonal influences and supply shock effects will be elaborated by the Central Statistical Office to enhance the controllability of the targeted index. The CPI is calculated by the CSO. To make CPI targeting credible, the government should provide the central bank with a firm schedule for increases in regulated prices and taxes. This was the case in Poland, where the government had drafted the 1999 budget before the NBP decided about inflationary targets.

The NBP, like the CNB, assumes a gradual reduction in inflation and has specified a multi-year inflationary target (five years), which it supplemented with a one-year target. The choice of the one-year period for a short-term target is designed to take account of lags in the effects of monetary policy and to give the policymakers leeway to react to various potential shocks. The NBP’s formulation of the medium-term target’s value differs from the CNB’s. It assumes a reduction of the CPI inflation rate “below 4% by 2003”¹) and the range is open-ended at the lower edge, so the central bank could not be charged for missing the target on the downside. In 1999, the central bank initially targeted CPI growth of between 8% and 8.5% year on year in December. This target was in line with the assumptions underlying the state budget, so the central bank de facto acted as an agent for the democratically elected government. This was a coincidence, as there are no regulations specifying an agent-principal relationship like in New Zealand. In March 1999, the target range was revised downward to a range between

Chart 6



¹ The formulation of the respective statement (NBP, 1998b, p. 12) is unclear and may refer to the year-on-year inflation in December 2002 or 2003.

6.6% and 7.8% year on year, as unexpected disinflation took place; in February 1999, the downtrending CPI inflation rate year on year was 5.6%.

Despite the stance that too narrow a target range could lack credibility because the central bank may easily miss it, the NBP initially adopted a very narrow band of only 0.5 percentage point for its 1999 target. Later, it somewhat made up for this by widening the range to 1.2 percentage points when it revised its inflationary target downward, but the range is still narrow. Inflation performance in the fourth quarter of 1998 (the CPI rose by 8.6% year on year in December 1998) and in the first two months of 1999 signaled that the target for 1999, which had first been proposed in the assumptions for the 1999 state budget in early fall 1998, might be undershot.¹⁾ The Monetary Policy Council of the NBP was confronted with three choices at that time: to relax monetary policy in an attempt to meet the target, to lock in unexpected disinflationary gains or to undershoot the target. It chose to target a lower inflation rate by revising the target downward, which actually implies faster disinflation. The exchange rate policy was also subordinated to this task, as the MPC of the central bank reduced the rate of the crawling devaluation of the zloty's central parity rate against the basket to 0.3% from 0.5% monthly at the same meeting. This illustrates a potential contradiction between inflation targeting and a crawling peg mechanism. The NBP's move was consistent with the logic of DIT, under which it should give precedence to inflation. However, cutting the crawling peg rate involves certain risks for current account developments, as the deficit was a relatively large 4.5% of GDP in 1998 and is projected to widen in 1999.

Concerning its information policy, Poland, in contrast to the Czech Republic announced the introduction of the DIT framework in a separate document entitled "Middle-Term Monetary Strategy" (NBP, 1998b), which broadly explained the reasons for the change, the merits of the new framework and the reasons for adopting the particular value of the middle-term target. The NBP promised to publish an inflation report, which would appear semiannually and later quarterly without specifying when the publication would be launched. In consistency with the Central Bank Act, information on MPC members' voting behavior is published in the legal journal *Monitor*. Like the CNB, the NBP has provided little information on the methodology of inflation forecasts and their role as well as on the bank's reaction to the forecast of inflation in excess of targeted inflation (feedback rules). Hence, DIT will remain a framework of constrained discretion for the time being.

¹ Later the inflation rate started creeping upward. In May 1999, the CPI was up 6.4% year on year.

4 Conclusions

This paper started by outlining the theoretical underpinnings and technical issues of direct inflation targeting to proceed to a summary of the experience of four Western, pioneering economies. The aim was to present DIT frameworks and the first experiences of the two transition economies, the Czech Republic's and Poland's, in a broader perspective. Empirical evidence is still scarce, as the Czech Republic switched to DIT in January 1998, while Poland adopted the strategy in January 1999. Both countries meet the general prerequisites for DIT, i.e. inflation targeting is not jeopardized by fiscal dominance, and there are no interfering other nominal anchors. Poland maintains a crawling band system, but the band is wide and will be dismantled in the near future, as the central bank intends to introduce a managed float.

There are similarities and differences between Poland's and the Czech Republic's monetary policy frameworks. The targets are announced and adopted by the central banks which consequently assume the sole responsibility for lowering inflation; this is the second best solution next to a joint announcement by the government and the central bank. An important common feature of the two DIT frameworks is disinflation targeting, which is compatible with Svensson's concept of flexible DIT, i.e. gradual disinflation allowing for less output variability than under strict inflation targeting and for accommodating model uncertainty or instrument smoothing. While both central banks have decided on medium-term targets of lower inflation, their achievement will not mark the end of disinflation in these countries, because these targets do not correspond to a notion of price stability. The ultimate inflation targets should lie below 2%, assuming this range remains the ECB definition for price stability, since both countries intend to join EMU in the future.¹⁾ The CNB target horizon is three years ending in 2000, and the lower end of the net inflation rate range is 3.5%. If the central bank decides to stick to inflation targeting after that period, it will most likely opt for a more ambitious target value to bring inflation down to levels more compatible with a prospective EMU entry. The Polish strategy is longer, covering a time horizon of five years and putting a 4% ceiling on the CPI rate for 2003, but does not specify any lower limit to disinflation. This formulation leaves room for further disinflation, if the target value achieved lies within a 2% to 4% range.

Table 1

Main Components of the DIT Frameworks				
in the Czech Republic and Poland				
Country	Target index definition	Target level (inflation in percent)	Time horizon	Escape clauses
Czech Republic (1998)	CPI excluding administered and regulated prices, indirect taxes	3.5 to 5.5 4.5 ± 0.5	3 years (2000) one year (1999)	Yes (1999)
Poland (1999)	CPI	below 4 6.6 to 7.8	end 2003 end 1999	None

1 Assuming that the actual inflationary performance of the EU-11 will be compatible with this aim.

Both countries announced one-year targets as focal points of their strategies. In the short run, they target ranges, and these ranges are narrow even judging by the standards of the advanced economies which pioneered inflation targeting. Both countries share the optimism that DIT will be well suited to influence inflationary expectations, but as the experience of Western economies has shown, this comes rather later and only once the central banks have built a reputation for meeting their targets (Bernanke et al., 1999).

The CNB published an inflation forecast for 1999 while the NBP has yet to do so as of the writing of this text. In both banks' strategies the role of inflationary forecasts is rather vague. No feedback rules linking inflation forecasts and actual inflation outcomes were specified, but this is common practice in Western economies, too. Such an approach increases the degree of discretion inherent in the DIT framework if inflation forecast targeting is not used. Therefore it is safe to describe the CNB's and NBP's strategies as "constrained discretion" following Bernanke and Mishkin.

The Czech and Polish central banks have chosen to target different types of inflation indices: The NBP targets headline CPI inflation, while the CNB targets core inflation, i.e. the "CPIX." This important distinction between two frameworks points to the major difficulty of inflation targeting, that inflation is imperfectly controllable, i.e. CPI inflation is less a monetary phenomenon than core inflation. The degree of imperfect control rises in the case of transition economies, as their relative price adjustment is still incomplete. Assuming that the central bank knows the regulated price hikes and tax change schedules before it determines its inflation target and can evaluate the impact of these changes on the headline inflation index, under the still incomplete adjustment of relative prices the issue of whether a DIT strategy based on headline inflation is more effective than a DIT strategy based on core inflation remains open. A serious drawback of core inflation targeting during the phase of disinflation is that wide discrepancies between headline inflation (usually observed by the general public) and core inflation may arise. This was the case in the Czech Republic as of writing. Under such circumstances core inflation will not gain the role of an anchor for the public's inflationary expectations, because it has no relevance to measuring the cost of living; besides, the public may claim that the central bank chose the core inflation index to make its life easy. Low inflation controllability is a compelling case for the inclusion of escape clauses allowing the central bank to deviate from the target because of various temporary shocks or hikes in regulated prices and taxes. Contrary to that logic, Poland has not included any escape clauses, but the CNB, which undershot its target in 1998, did so after its first year of experience. These comparisons suggest that both countries still have scope to refine their DIT strategies, in particular with regard to accountability and transparency. The UK's and New Zealand's frameworks are ready examples of how these problems are solved in practice.

A number of crucial questions will have to await answers until the experience of the Czech Republic and Poland with DIT is long enough. One such question is whether the DIT framework has actually helped disinflation. The Czech inflation record would suggest that the switch to the DIT framework indeed did so. However, the adoption of DIT coincided with recessionary

developments in the Czech economy and a worldwide fall in commodity prices. To reiterate the results cited in Section 2.4.5, Bernanke et al. (1999) applied a simple VAR model in order to figure out whether a switch to the DIT regime could be distinguished in the inflation performance but could not reach conclusive answers because countries which did not adopt DIT also considerably improved their inflation performance. Their empirical framework is not free from caveats, but it prepares the ground for more firm conclusions. Their exercise could theoretically be applied to the Czech Republic, but the time series on NII start only in 1995 eliminating the use of time series analysis. The Polish experience amounts to just a few months, so far.

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