

Monetary Targeting

In many countries, exchange-rate targeting is not an option, because either the country (or bloc of countries) is too large or because there is no country whose currency is an obvious choice to serve as the nominal anchor. Exchange-rate targeting is therefore clearly not an option for the United States, Japan, or the European Monetary Union. These countries must look to other strategies for the conduct of monetary policy, one of which is *monetary targeting*.

Monetary Targeting in Canada, the United Kingdom, Japan, Germany, and Switzerland

In the 1970s, monetary targeting was adopted by several countries, notably Germany, Switzerland, Canada, the United Kingdom, and Japan, as well as in the United States (already discussed in Chapter 18). This strategy involves using monetary aggregates as an intermediate target of the type described in Chapter 18 to achieve an ultimate goal such as price stability. Monetary targeting as practiced was quite different from Milton Friedman's suggestion that the chosen monetary aggregate be targeted to grow at a constant rate. Indeed, in all these countries the central banks never adhered to strict, ironclad rules for monetary growth and in some of these countries monetary targeting was not pursued very seriously.

Canada and the United Kingdom. In a move similar to that made by the United States, the Bank of Canada responded to a rise in inflation in the early 1970s by introducing a program of monetary targeting referred to as “monetary gradualism.” Under this policy, which began in 1975, M1 growth would be controlled within a gradually falling target range. The British introduced monetary targeting in late 1973, also in response to mounting concerns about inflation. The Bank of England targeted M3, a broader monetary target than the Bank of Canada or the Fed used.

By 1978, only three years after monetary targeting had begun, the Bank of Canada began to distance itself from this strategy out of concern for the exchange rate. Because of the conflict with exchange-rate goals, as well as the uncertainty about M1 as a reliable guide to monetary policy, the M1 targets were abandoned in November 1982. Gerald Bouey, then governor of the Bank of Canada, described the situation by saying, “We didn't abandon monetary aggregates, they abandoned us.”

In the United Kingdom, after monetary aggregates overshot their targets and inflation accelerated in the late 1970s, Prime Minister Margaret Thatcher in 1980 introduced the Medium-Term Financial Strategy, which proposed a gradual deceleration of M3 growth. Unfortunately, the M3 targets ran into problems similar to those of the M1 targets in the United States: They were not reliable indicators of the tightness of monetary policy. After 1983, arguing that financial innovation was wreaking havoc with the relationship between M3 and national income, the Bank of England began to de-emphasize M3 in favor of a narrower monetary aggregate, M0 (the monetary base). The target for M3 was temporarily suspended in October 1985 and was completely dropped in 1987.

A feature of monetary targeting in Canada and especially in the United Kingdom was that there was substantial game playing: Their central banks targeted multiple aggregates, allowed base drift (by applying target growth rates to a new base at which the target ended up every period), did not announce targets on a regular schedule, used artificial means to bring down the growth of a targeted aggregate, often overshot their targets without reversing the overshoot later, and often obscured why deviations from the monetary targets occurred.

Japan. The increase in oil prices in late 1973 was a major shock for Japan, which experienced a huge jump in the inflation rate, to greater than 20% in 1974—a surge facilitated by money growth in 1973 in excess of 20%. The Bank of Japan, like the other central banks discussed here, began to pay more attention to money growth rates. In 1978, the Bank of Japan began to announce “forecasts” at the beginning of each quarter for M2 + CDs. Although the Bank of Japan was not officially committed to monetary targeting, monetary policy appeared to be more money-focused after 1978. For example, after the second oil price shock in 1979, the Bank of Japan quickly reduced M2 + CDs growth, rather than allowing it to shoot up as occurred after the first oil shock. The Bank of Japan conducted monetary policy with operating procedures that were similar in many ways to those that the Federal Reserve has used in the United States. The Bank of Japan uses the interest rate in the Japanese inter-bank market (which has a function similar to that of the federal funds market in the United States) as its daily operating target, just as the Fed has done.

The Bank of Japan’s monetary policy performance during the 1978–1987 period was much better than the Fed’s. Money growth in Japan slowed gradually, beginning in the mid-1970s, and was much less variable than in the United States. The outcome was a more rapid braking of inflation and a lower average inflation rate. In addition, these excellent results on inflation were achieved with lower variability in real output in Japan than in the United States.

In parallel with the United States, financial innovation and deregulation in Japan began to reduce the usefulness of the M2 + CDs monetary aggregate as an indicator of monetary policy. Because of concerns about the appreciation of the yen, the Bank of Japan significantly increased the rate of money growth from 1987 to 1989. Many observers blame speculation in Japanese land and stock prices (the so-called bubble economy) on the increase in money growth. To reduce this speculation, in 1989 the Bank of Japan switched to a tighter monetary policy aimed at slower money growth. The aftermath was a substantial decline in land and stock prices and the collapse of the bubble economy.

The 1990s and afterwards has not been a happy period for the Japanese economy. The collapse of land and stock prices helped provoke a severe banking crisis, discussed in Chapter 11, that has continued to be a severe drag on the economy. The resulting weakness of the economy has even led to bouts of deflation, promoting further financial instability. The outcome has been an economy that has been stagnating for over a decade. Many critics believe that the Bank of Japan has pursued overly tight monetary policy and needs to substantially increase money growth in order to lift the economy out of its stagnation.

Germany and Switzerland. The two countries that officially engaged in monetary targeting for over 20 years starting at the end of 1974 were Germany and Switzerland, and this is why we will devote more attention to them. The success of monetary policy in these two countries in controlling inflation is the reason that monetary targeting still has strong advocates and is an element of the official policy regime for the European Central Bank (see Box 2).

The monetary aggregate chosen by the Germans was a narrow one they called *central bank money*, the sum of currency in circulation and bank deposits weighted by the 1974 required reserve ratios. In 1988, the Bundesbank switched targets from central bank money to M3. The Swiss began targeting the M1 monetary aggregate, but in 1980 switched to the narrower monetary aggregate, M0, the monetary base.

Box 2: Global



The European Central Bank's Monetary Policy Strategy

The European Central Bank (ECB) has adopted a hybrid monetary policy strategy that has much in common with the monetary targeting strategy previously used by the Bundesbank but also has some elements of inflation targeting. The ECB's strategy has two key "pillars." First is a prominent role for monetary aggregates with a "reference value" for the growth rate of a monetary aggregate (M3). Second is a broadly based assessment of the outlook for future price developments with a goal of price stability defined as a year-on-year increase in the consumer price index below 2%. After critics pointed out that a deflationary situation with negative inflation would satisfy the stated price stability criteria, the ECB provided a clarification that inflation meant positive inflation only, so that the price stability goal should be interpreted as a range for inflation of 0–2%.

The ECB's strategy is somewhat unclear and has been subjected to criticism for this reason. Although the 0–2% range for the goal of price stability sounds like an inflation target, the ECB has not been willing to live with this interpretation—it has repeatedly stated that it does not have an inflation target. On the other hand, the ECB has downgraded the importance of monetary aggregates in its strategy by using the term "reference value" rather than "target" in describing its strategy and has indicated that it will also monitor broadly based developments on the price level. The ECB seems to have decided to try to have its cake and eat it too by not committing too strongly to either a monetary or an inflation-targeting strategy. The resulting difficulty of assessing what the ECB's strategy is likely to be has the potential to reduce the accountability of this new institution.

The key fact about monetary targeting regimes in Germany and Switzerland is that the targeting regimes were very far from a Friedman-type monetary targeting rule in which a monetary aggregate is kept on a constant-growth-rate path and is the primary focus of monetary policy. As Otmar Issing, at the time the chief economist of the Bundesbank has noted, "One of the secrets of success of the German policy of money-growth targeting was that ... it often did not feel bound by monetarist orthodoxy as far as its more technical details were concerned."² The Bundesbank allowed growth outside of its target ranges for periods of two to three years, and overshoots of its targets were subsequently reversed. Monetary targeting in Germany and Switzerland was instead primarily a method of communicating the strategy of monetary policy focused on long-run considerations and the control of inflation.

The calculation of monetary target ranges put great stress on making policy transparent (clear, simple, and understandable) and on regular communication with the public. First and foremost, a numerical inflation goal was prominently featured in the setting of target ranges. Second, monetary targeting, far from being a rigid policy rule, was quite flexible in practice. The target ranges for money growth were missed on the order of 50% of the time in Germany, often because of the Bundesbank's concern about other objectives, including output and exchange rates. Furthermore, the Bundesbank demonstrated its flexibility by allowing its inflation goal to vary over time and to converge gradually to the long-run inflation goal.

²Otmar Issing, "Is Monetary Targeting in Germany Still Adequate?" In *Monetary Policy in an Integrated World Economy: Symposium 1995*, ed. Horst Siebert (Tübingen: Mohr, 1996), p. 120.

When the Bundesbank first set its monetary targets at the end of 1974, it announced a medium-term inflation goal of 4%, well above what it considered to be an appropriate long-run goal. It clarified that this medium-term inflation goal differed from the long-run goal by labeling it the “unavoidable rate of price increase.” Its gradualist approach to reducing inflation led to a period of nine years before the medium-term inflation goal was considered to be consistent with price stability. When this occurred at the end of 1984, the medium-term inflation goal was renamed the “normative rate of price increase” and was set at 2%. It continued at this level until 1997, when it was changed to 1.5 to 2%. The Bundesbank also responded to negative supply shocks, restrictions in the supply of energy or raw materials that raise the price level, by raising its medium-term inflation goal: specifically, it raised the unavoidable rate of price increase from 3.5% to 4% in the aftermath of the second oil price shock in 1980.

The monetary targeting regimes in Germany and Switzerland demonstrated a strong commitment to clear communication of the strategy to the general public. The money growth targets were continually used as a framework to explain the monetary policy strategy, and both the Bundesbank and the Swiss National Bank expended tremendous effort in their publications and in frequent speeches by central bank officials to communicate to the public what the central bank was trying to achieve. Given that both central banks frequently missed their money growth targets by significant amounts, their monetary targeting frameworks are best viewed as a mechanism for transparently communicating how monetary policy is being directed to achieve inflation goals and as a means for increasing the accountability of the central bank.

The success of Germany’s monetary targeting regime in producing low inflation has been envied by many other countries, explaining why it was chosen as the anchor country for the exchange rate mechanism. One clear indication of Germany’s success occurred in the aftermath of German reunification in 1990. Despite a temporary surge in inflation stemming from the terms of reunification, high wage demands, and the fiscal expansion, the Bundesbank was able to keep these temporary effects from becoming embedded in the inflation process, and by 1995, inflation fell back down below the Bundesbank’s normative inflation goal of 2%.

Monetary targeting in Switzerland has been more problematic than in Germany, suggesting the difficulties of targeting monetary aggregates in a small open economy that also underwent substantial changes in the institutional structure of its money markets. In the face of a 40% trade-weighted appreciation of the Swiss franc from the fall of 1977 to the fall of 1978, the Swiss National Bank decided that the country could not tolerate this high a level of the exchange rate. Thus, in the fall of 1978, the monetary targeting regime was abandoned temporarily, with a shift from a monetary target to an exchange-rate target until the spring of 1979, when monetary targeting was reintroduced (although not announced).

The period from 1989 to 1992 was also not a happy one for Swiss monetary targeting, because the Swiss National Bank failed to maintain price stability after it successfully reduced inflation. The substantial overshoot of inflation from 1989 to 1992, reaching levels above 5%, was due to two factors. The first was that the strength of the Swiss franc from 1985 to 1987 caused the Swiss National Bank to allow the monetary base to grow at a rate greater than the 2% target in 1987 and then caused it to raise the money growth target to 3% for 1988. The second arose from the introduction of a new interbank payment system, Swiss Interbank Clearing (SIC), and a wide-ranging revision of the commercial banks’ liquidity requirements in 1988. The result

of the shocks to the exchange rate and the shift in the demand for monetary base arising from the above institutional changes created a serious problem for its targeted aggregate. As the 1988 year unfolded, it became clear that the Swiss National Bank had guessed wrong in predicting the effects of these shocks, so that monetary policy was too easy, even though the monetary target was undershot. The result was a subsequent rise in inflation to above the 5% level.

As a result of these problems with monetary targeting Switzerland substantially loosened its monetary targeting regime (and ultimately, adopted inflation targeting in 2000). The Swiss National Bank recognized that its money growth targets were of diminished utility as a means of signaling the direction of monetary policy. Thus, its announcement at the end of 1990 of the medium-term growth path did not specify a horizon for the target or the starting point of the growth path. At the end of 1992, the bank specified the starting point for the expansion path, and at the end of 1994, it announced a new medium-term path for money base growth for the period 1995 to 1999. By setting this path, the bank revealed retroactively that the horizon of the first path was also five years (1990–1995). Clearly, the Swiss National Bank moved to a much more flexible framework in which hitting one-year targets for money base growth has been abandoned. Nevertheless, Swiss monetary policy continued to be successful in controlling inflation, with inflation rates falling back down below the 1% level after the temporary bulge in inflation from 1989 to 1992.

There are two key lessons to be learned from our discussion of German and Swiss monetary targeting. First, a monetary targeting regime can restrain inflation in the longer run, even when the regime permits substantial target misses. Thus adherence to a rigid policy rule has not been found to be necessary to obtain good inflation outcomes. Second, the key reason why monetary targeting has been reasonably successful in these two countries, despite frequent target misses, is that the objectives of monetary policy are clearly stated and both the central banks actively engaged in communicating the strategy of monetary policy to the public, thereby enhancing the transparency of monetary policy and the accountability of the central bank.

As we will see in the next section, these key elements of a successful targeting regime—flexibility, transparency, and accountability—are also important elements in inflation-targeting regimes. German and Swiss monetary policy was actually closer in practice to inflation targeting than it was to Friedman-like monetary targeting, and thus might best be thought of as “hybrid” inflation targeting.

Advantages of Monetary Targeting

A major advantage of monetary targeting over exchange-rate targeting is that it enables a central bank to adjust its monetary policy to cope with domestic considerations. It enables the central bank to choose goals for inflation that may differ from those of other countries and allows some response to output fluctuations. Also, as with an exchange-rate target, information on whether the central bank is achieving its target is known almost immediately—figures for monetary aggregates are typically reported within a couple of weeks. Thus, monetary targets can send almost immediate signals to the public and markets about the stance of monetary policy and the intentions of the policymakers to keep inflation in check. In turn, these signals help fix inflation expectations and produce less inflation. Monetary targets also allow almost immediate accountability for monetary policy to keep inflation low, thus helping to constrain the monetary policymaker from falling into the time-consistency trap.

Disadvantages of Monetary Targeting

All of the above advantages of monetary aggregate targeting depend on a big *if*: There must be a strong and reliable relationship between the goal variable (inflation or nominal income) and the targeted aggregate. If the relationship between the monetary aggregate and the goal variable is weak, monetary aggregate targeting will not work; this seems to have been a serious problem in Canada, the United Kingdom, and Switzerland, as well as in the United States. The weak relationship implies that hitting the target will not produce the desired outcome on the goal variable and thus the monetary aggregate will no longer provide an adequate signal about the stance of monetary policy. As a result, monetary targeting will not help fix inflation expectations and be a good guide for assessing the accountability of the central bank. In addition, an unreliable relationship between monetary aggregates and goal variables makes it difficult for monetary targeting to serve as a communications device that increases the transparency of monetary policy and makes the central bank accountable to the public.

Inflation Targeting

www.ny.frb.org/rmaghome/econ_pol/897fmis.htm

Research on inflation targeting published by the Federal Reserve and coauthored by the author of this text.

Given the breakdown of the relationship between monetary aggregates and goal variables such as inflation, many countries that want to maintain an independent monetary policy have recently adopted inflation targeting as their monetary policy regime. New Zealand was the first country to formally adopt inflation targeting in 1990, followed by Canada in 1991, the United Kingdom in 1992, Sweden and Finland in 1993, and Australia and Spain in 1994. Israel, Chile, and Brazil, among others, have also adopted a form of inflation targeting.

Inflation targeting involves several elements: (1) public announcement of medium-term numerical targets for inflation; (2) an institutional commitment to price stability as the primary, long-run goal of monetary policy and a commitment to achieve the inflation goal; (3) an information-inclusive strategy in which many variables and not just monetary aggregates are used in making decisions about monetary policy; (4) increased transparency of the monetary policy strategy through communication with the public and the markets about the plans and objectives of monetary policymakers; and (5) increased accountability of the central bank for attaining its inflation objectives.

Inflation Targeting in New Zealand, Canada, and the United Kingdom

We begin our look at inflation targeting with New Zealand, because it was the first country to adopt it. We then go on to look at the experiences in Canada and the United Kingdom, which were next to adopt this strategy.³

New Zealand. As part of a general reform of the government's role in the economy, the New Zealand parliament passed a new Reserve Bank of New Zealand Act in 1989,

³For further discussion of experiences with inflation targeting, particularly in other countries, see Leonardo Leiderman and Lars E. O. Svensson, *Inflation Targeting* (London: Centre for Economic Policy Research, 1995); Frederic S. Mishkin and Adam Posen, "Inflation Targeting: Lessons from Four Countries," Federal Reserve Bank of New York, *Economic Policy Review* 3 (August 1997), pp. 9–110; and Ben S. Bernanke, Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen, *Inflation Targeting: Lessons from the International Experience* (Princeton: Princeton University Press, 1999).

which became effective on February 1, 1990. Besides increasing the independence of the central bank, moving it from being one of the least independent to one of the most independent among the developed countries, the act also committed the Reserve Bank to a sole objective of price stability. The act stipulated that the minister of finance and the governor of the Reserve Bank should negotiate and make public a Policy Targets Agreement, a statement that sets out the targets by which monetary policy performance will be evaluated, specifying numerical target ranges for inflation and the dates by which they are to be reached. An unusual feature of the New Zealand legislation is that the governor of the Reserve Bank is held highly accountable for the success of monetary policy. If the goals set forth in the Policy Targets Agreement are not satisfied, the governor is subject to dismissal.

The first Policy Targets Agreement, signed by the minister of finance and the governor of the Reserve Bank on March 2, 1990, directed the Reserve Bank to achieve an annual inflation rate within a 3–5% range. Subsequent agreements lowered the range to 0–2% until the end of 1996, when the range was changed to 0–3%. As a result of tight monetary policy, the inflation rate was brought down from above 5% to below 2% by the end of 1992 (see Figure 1, panel a), but at the cost of a deep recession and a sharp rise in unemployment. Since then, inflation has typically remained within the targeted range, with the exception of a brief period in 1995 when it exceeded the range by a few tenths of a percentage point. (Under the Reserve Bank Act, the governor, Donald Brash, could have been dismissed, but after parliamentary debate he was retained in his job.) Since 1992, New Zealand's growth rate has generally been high, with some years exceeding 5%, and unemployment has come down significantly.

Canada. On February 26, 1991, a joint announcement by the minister of finance and the governor of the Bank of Canada established formal inflation targets. The target ranges were 2–4% by the end of 1992, 1.5–3.5% by June 1994, and 1–3% by December 1996. After the new government took office in late 1993, the target range was set at 1–3% from December 1995 until December 1998 and has been kept at this level. Canadian inflation has also fallen dramatically since the adoption of inflation targets, from above 5% in 1991, to a 0% rate in 1995, and to between 1 and 2% in the late 1990s (see Figure 1, panel b). As was the case in New Zealand, however, this decline was not without cost: unemployment soared to above 10% from 1991 until 1994, but then declined substantially.

United Kingdom. Once the U.K. left the European Monetary System after the speculative attack on the pound in September 1992 (discussed in Chapter 20), the British decided to turn to inflation targets instead of the exchange rate as their nominal anchor. As you may recall from Chapter 14, the central bank in the U.K., the Bank of England, did not have statutory authority over monetary policy until 1997; it could only make recommendations about monetary policy. Thus it was the chancellor of the Exchequer (the equivalent of the U.S. Treasury secretary) who announced an inflation target for the U.K. on October 8, 1992. Three weeks later he “invited” the governor of the Bank of England to begin producing an *Inflation Report*, a quarterly report on the progress being made in achieving the target—an invitation the governor accepted. The inflation target range was set at 1–4% until the next election, spring 1997 at the latest, with the intent that the inflation rate should settle down to the lower half of the range (below 2.5%). In May 1997, after the new Labour government came into power, it adopted a point target of 2.5% for inflation and gave the Bank of England the power to set interest rates henceforth, granting it a more independent role in monetary policy.

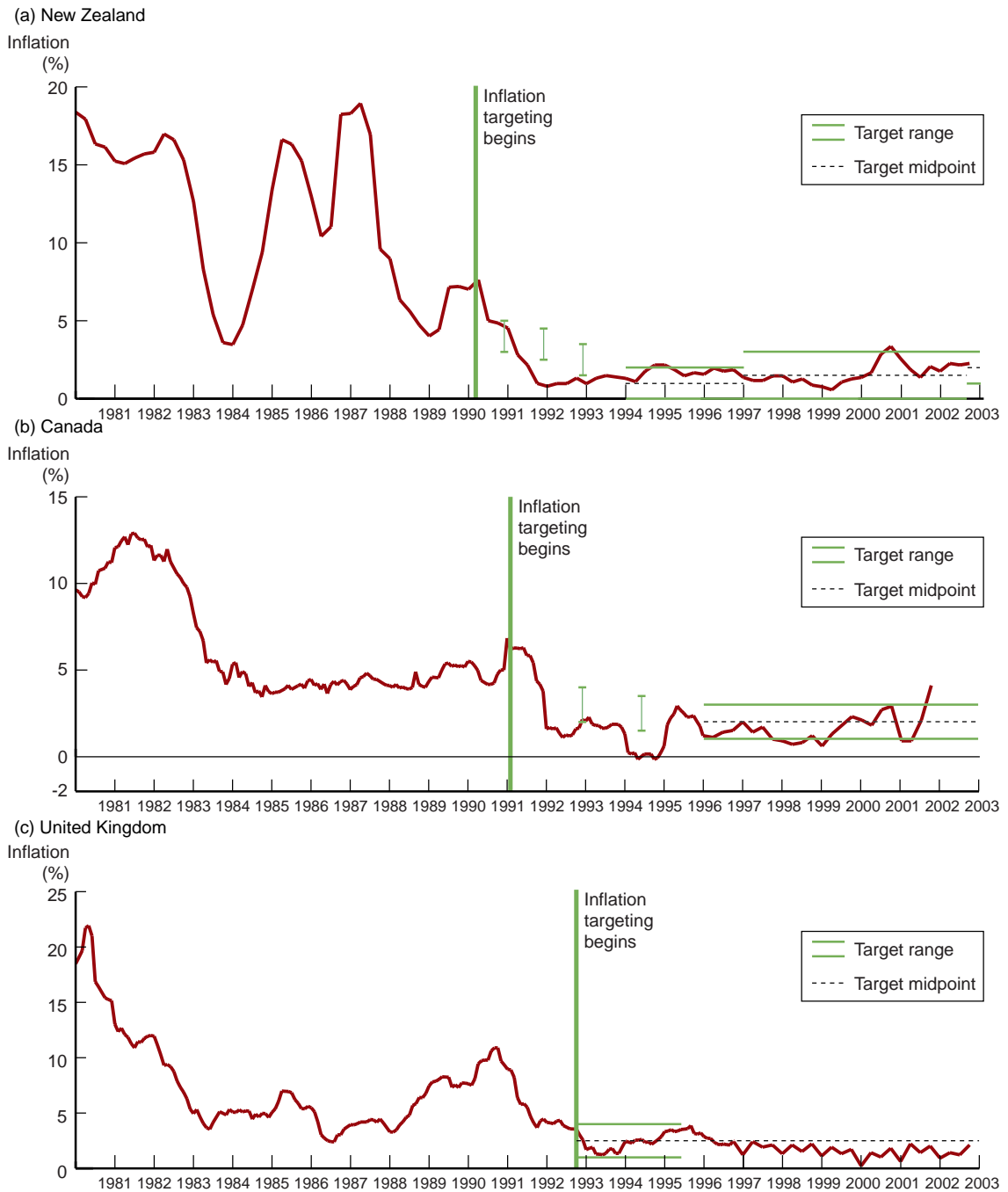


FIGURE 1 Inflation Rates and Inflation Targets for New Zealand, Canada, and the United Kingdom, 1980–2002

(a) New Zealand; (b) Canada; (c) United Kingdom

Source: Ben S. Bernanke, Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen, *Inflation Targeting: Lessons from the International Experience* (Princeton: Princeton University Press, 1999), updates from the same sources, and www.rbnz.govt.nz/statistics/econind/a3/ha3.xls.

Before the adoption of inflation targets, inflation had already been falling in the U.K. from a peak of 9% at the beginning of 1991 to 4% at the time of adoption (see Figure 1, panel c). After a small upward movement in early 1993, inflation continued to fall until by the third quarter of 1994, it was at 2.2%, within the intended range articulated by the chancellor. Subsequently inflation rose, climbing slightly above the 2.5% level by 1996, but has remained around the 2.5% target since then. Meanwhile, growth of the U.K. economy has been strong, causing a substantial reduction in the unemployment rate.

Advantages of Inflation Targeting

Inflation targeting has several advantages over exchange-rate and monetary targeting as a strategy for the conduct of monetary policy. In contrast to exchange-rate targeting, but like monetary targeting, inflation targeting enables monetary policy to focus on domestic considerations and to respond to shocks to the domestic economy. Inflation targeting also has the advantage that stability in the relationship between money and inflation is not critical to its success, because it does not rely on this relationship. An inflation target allows the monetary authorities to use all available information, not just one variable, to determine the best settings for monetary policy.

Inflation targeting, like exchange-rate targeting, also has the key advantage that it is readily understood by the public and is thus highly transparent. Monetary targets, in contrast, are less likely to be easily understood by the public than inflation targets, and if the relationship between monetary aggregates and the inflation goal variable is subject to unpredictable shifts, as has occurred in many countries, monetary targets lose their transparency because they are no longer able to accurately signal the stance of monetary policy.

Because an explicit numerical inflation target increases the accountability of the central bank, inflation targeting also has the potential to reduce the likelihood that the central bank will fall into the time-consistency trap, trying to expand output and employment by pursuing overly expansionary monetary policy. A key advantage of inflation targeting is that it can help focus the political debate on what a central bank can do in the long run—that is, control inflation, rather than what it cannot do, which is permanently increase economic growth and the number of jobs through expansionary monetary policy. Thus, inflation targeting has the potential to reduce political pressures on the central bank to pursue inflationary monetary policy and thereby to reduce the likelihood of time-consistent policymaking.

Inflation-targeting regimes also put great stress on making policy transparent and on regular communication with the public. Inflation-targeting central banks have frequent communications with the government, some mandated by law and some in response to informal inquiries, and their officials take every opportunity to make public speeches on their monetary policy strategy. While these techniques are also commonly used in countries that have not adopted inflation targeting (such as Germany before EMU and the United States), inflation-targeting central banks have taken public outreach a step further: not only do they engage in extended public information campaigns, including the distribution of glossy brochures, but they publish documents like the Bank of England's *Inflation Report*. The publication of these documents is particularly noteworthy, because they depart from the usual dull-looking, formal reports of central banks and use fancy graphics, boxes, and other eye-catching design elements to engage the public's interest.

The above channels of communication are used by central banks in inflation-targeting countries to explain the following concepts to the general public, financial

market participants, and the politicians: (1) the goals and limitations of monetary policy, including the rationale for inflation targets; (2) the numerical values of the inflation targets and how they were determined, (3) how the inflation targets are to be achieved, given current economic conditions; and (4) reasons for any deviations from targets. These communications have improved private sector planning by reducing uncertainty about monetary policy, interest rates, and inflation; they have promoted public debate of monetary policy, in part by educating the public about what a central bank can and cannot achieve; and they have helped clarify the responsibilities of the central bank and of politicians in the conduct of monetary policy.

Another key feature of inflation-targeting regimes is the tendency toward increased accountability of the central bank. Indeed, transparency and communication go hand in hand with increased accountability. The strongest case of accountability of a central bank in an inflation-targeting regime is in New Zealand, where the government has the right to dismiss the Reserve Bank's governor if the inflation targets are breached, even for one quarter. In other inflation-targeting countries, the central bank's accountability is less formalized. Nevertheless, the transparency of policy associated with inflation targeting has tended to make the central bank highly accountable to the public and the government. Sustained success in the conduct of monetary policy as measured against a pre-announced and well-defined inflation target can be instrumental in building public support for a central bank's independence and for its policies. This building of public support and accountability occurs even in the absence of a rigidly defined and legalistic standard of performance evaluation and punishment.

Two remarkable examples illustrate the benefits of transparency and accountability in the inflation-targeting framework. The first occurred in Canada in 1996, when the president of the Canadian Economic Association made a speech criticizing the Bank of Canada for pursuing monetary policy that he claimed was too contractionary. His speech sparked a widespread public debate. In countries not pursuing inflation targeting, such debates often degenerate into calls for the immediate expansion of monetary policy with little reference to the long-run consequences of such a policy change. In this case, however, the very existence of inflation targeting channeled the debate into a discussion over what should be the appropriate target for inflation, with both the bank and its critics obliged to make explicit their assumptions and estimates of the costs and benefits of different levels of inflation. Indeed, the debate and the Bank of Canada's record and responsiveness increased support for the Bank of Canada, with the result that criticism of the bank and its conduct of monetary policy was not a major issue in the 1997 elections as it had been before the 1993 elections.

The second example occurred upon the granting of operational independence to the Bank of England on May 6, 1997. Prior to that date, the government, as represented by the chancellor of the Exchequer, controlled the decision to set monetary policy instruments, while the Bank of England was relegated to acting as the government's counterinflationary conscience. On May 6, the new chancellor of the Exchequer, Gordon Brown, announced that the Bank of England would henceforth have the responsibility for setting interest rates and for engaging in short-term exchange-rate interventions. Two factors were cited by Chancellor Brown that justified the government's decision: first was the bank's successful performance over time as measured against an announced clear target; second was the increased accountability that an independent central bank is exposed to under an inflation-targeting framework, making the bank more responsive to political oversight. The granting of operational independence

to the Bank of England occurred because it would operate under a monetary policy regime to ensure that monetary policy goals cannot diverge from the interests of society for extended periods of time. Nonetheless, monetary policy was to be insulated from short-run political considerations. An inflation-targeting regime makes it more palatable to have an independent central bank that focuses on long-run objectives but is consistent with a democratic society because it is accountable.

The performance of inflation-targeting regimes has been quite good. Inflation-targeting countries seem to have significantly reduced both the rate of inflation and inflation expectations beyond what would likely have occurred in the absence of inflation targets. Furthermore, once down, inflation in these countries has stayed down; following disinflations, the inflation rate in targeting countries has not bounced back up during subsequent cyclical expansions of the economy.

Inflation targeting also seems to ameliorate the effects of inflationary shocks. For example, shortly after adopting inflation targets in February 1991, the Bank of Canada was faced with a new goods and services tax (GST), an indirect tax similar to a value-added tax—an adverse supply shock that in earlier periods might have led to a ratcheting up in inflation. Instead the tax increase led to only a one-time increase in the price level; it did not generate second- and third-round increases in wages and prices that would have led to a persistent rise in the inflation rate. Another example is the experience of the United Kingdom and Sweden following their departures from the ERM exchange-rate pegs in 1992. In both cases, devaluation would normally have stimulated inflation because of the direct effects on higher export and import prices from devaluation and the subsequent effects on wage demands and price-setting behavior. Again, it seems reasonable to attribute the lack of inflationary response in these episodes to adoption of inflation targeting, which short-circuited the second- and later-round effects and helped to focus public attention on the temporary nature of the inflation shocks. Indeed, one reason why inflation targets were adopted in both countries was to achieve exactly this result.

Disadvantages of Inflation Targeting

Critics of inflation targeting cite four disadvantages/criticisms of this monetary policy strategy: delayed signaling, too much rigidity, the potential for increased output fluctuations, and low economic growth. We look at each in turn and examine the validity of these criticisms.

Delayed Signaling. In contrast to exchange rates and monetary aggregates, inflation is not easily controlled by the monetary authorities. Furthermore, because of the long lags in the effects of monetary policy, inflation outcomes are revealed only after a substantial lag. Thus, an inflation target is unable to send immediate signals to both the public and markets about the stance of monetary policy. However, we have seen that the signals provided by monetary aggregates may not be very strong and that an exchange-rate peg may obscure the ability of the foreign exchange market to signal overly expansionary policies. Hence, it is not at all clear that these other strategies are superior to inflation targeting on these grounds.

Too Much Rigidity. Some economists have criticized inflation targeting because they believe it imposes a rigid rule on monetary policymakers, limiting their discretion to respond to unforeseen circumstances. For example, policymakers in countries that adopted monetary targeting did not foresee the breakdown of the relationship between monetary aggregates and goal variables such as nominal spending or infla-

tion. With rigid adherence to a monetary rule, the breakdown in their relationship could have been disastrous. However, the traditional distinction between rules and discretion can be highly misleading. Useful policy strategies exist that are “rule-like,” in that they involve forward-looking behavior that limits policymakers from systematically engaging in policies with undesirable long-run consequences. Such policies avoid the time-consistency problem and would best be described as “constrained discretion.”

Indeed, inflation targeting can be described exactly in this way. Inflation targeting, as actually practiced, is far from rigid. First, inflation targeting does not prescribe simple and mechanical instructions on how the central bank should conduct monetary policy. Rather, it requires the central bank to use all available information to determine what policy actions are appropriate to achieve the inflation target. Unlike simple policy rules, inflation targeting never requires the central bank to focus solely on one key variable. Second, inflation targeting as practiced contains a substantial degree of policy discretion. Inflation targets have been modified depending on economic circumstances, as we have seen. Moreover, central banks under inflation-targeting regimes have left themselves considerable scope to respond to output growth and fluctuations through several devices.

Potential for Increased Output Fluctuations. An important criticism of inflation targeting is that a sole focus on inflation may lead to monetary policy that is too tight when inflation is above target and thus may lead to larger output fluctuations. Inflation targeting does not, however, require a sole focus on inflation—in fact, experience has shown that inflation targeters do display substantial concern about output fluctuations. All the inflation targeters have set their inflation targets above zero.⁴ For example, currently New Zealand has the lowest midpoint for an inflation target, 1.5%, while Canada and Sweden set the midpoint of their inflation target at 2%; and the United Kingdom and Australia currently have their midpoints at 2.5%.

The decision by inflation targeters to choose inflation targets above zero reflects the concern of monetary policymakers that particularly low inflation can have substantial negative effects on real economic activity. Deflation (negative inflation in which the price level actually falls) is especially to be feared because of the possibility that it may promote financial instability and precipitate a severe economic contraction (Chapter 8). The deflation in Japan in recent years has been an important factor in the weakening of the Japanese financial system and economy. Targeting inflation rates of above zero makes periods of deflation less likely. This is one reason why some economists both within and outside of Japan have been calling on the Bank of Japan to adopt an inflation target at levels of 2% or higher.

Inflation targeting also does not ignore traditional stabilization goals. Central bankers in inflation-targeting countries continue to express their concern about fluctuations in output and employment, and the ability to accommodate short-run stabilization goals to some degree is built into all inflation-targeting regimes. All inflation-targeting countries have been willing to minimize output declines by gradually lowering medium-term inflation targets toward the long-run goal.

⁴CPI indices have been found to have an upward bias in the measurement of true inflation, and so it is not surprising that inflation targets would be chosen to exceed zero. However, the actual targets have been set to exceed the estimates of this measurement bias, indicating that inflation targeters have decided to have targets for inflation that exceed zero even after measurement bias is accounted for.

In addition, many inflation targeters, particularly the Bank of Canada, have emphasized that the floor of the target range should be emphasized every bit as much as the ceiling, thus helping to stabilize the real economy when there are negative shocks to demand. Inflation targets can increase the central bank's flexibility in responding to declines in aggregate spending. Declines in aggregate demand that cause the inflation rate to fall below the floor of the target range will automatically stimulate the central bank to loosen monetary policy without fearing that its action will trigger a rise in inflation expectations.

Another element of flexibility in inflation-targeting regimes is that deviations from inflation targets are routinely allowed in response to supply shocks, such as restrictions in the supply of energy or raw materials that could have substantial negative effects on output. First, the price index on which the official inflation targets are based is often defined to exclude or moderate the effects of "supply shocks"; for example, the officially targeted price index may exclude some combination of food and energy prices. Second, following (or in anticipation of) a supply shock, such as a rise in a value-added tax (similar to a sales tax), the central bank would first deviate from its planned policies as needed and then explain to the public the reasons for its action.

Low Economic Growth. Another common concern about inflation targeting is that it will lead to low growth in output and employment. Although inflation reduction has been associated with below-normal output during disinflationary phases in inflation-targeting regimes, once low inflation levels were achieved, output and employment returned to levels at least as high as they were before. A conservative conclusion is that once low inflation is achieved, inflation targeting is not harmful to the real economy. Given the strong economic growth after disinflation in many countries (such as New Zealand) that have adopted inflation targets, a case can be made that inflation targeting promotes real economic growth, in addition to controlling inflation.

Nominal GDP Targeting

The concern that a sole focus on inflation may lead to larger output fluctuations has led some economists to propose a variation on inflation targeting in which central banks would target the growth rate of nominal GDP (real GDP times the price level) rather than inflation. Relative to inflation, nominal GDP growth has the advantage that it does put some weight on output as well as prices in the policymaking process. With a nominal GDP target, a decline in projected real output growth would automatically imply an increase in the central bank's inflation target. This increase would tend to be stabilizing, because it would automatically lead to an easier monetary policy.

Nominal GDP targeting is close in spirit to inflation targeting, and although it has the advantages mentioned in the previous paragraph, it has disadvantages as well. First, a nominal GDP target forces the central bank or the government to announce a number for potential (long-term) GDP growth. Such an announcement is highly problematic, because estimates of potential GDP growth are far from precise and change over time. Announcing a specific number for potential GDP growth may thus imply a certainty that policymakers do not have and may also cause the public to mistakenly believe that this estimate is actually a fixed target for potential GDP growth. Announcing a potential GDP growth number is likely to be political dynamite, because it opens policymakers to the criticism that they are willing to settle for long-term growth rates that the public may consider too low. Indeed, a nominal GDP target may lead to an accusation that the central bank or the targeting regime is anti-growth, when the opposite is true, because a low inflation rate is a means to pro-

mote a healthy economy with high growth. In addition, if the estimate for potential GDP growth is higher than the true potential for long-term growth and becomes embedded in the public mind as a target, it can lead to a positive inflation bias.

Second, information on prices is more timely and more frequently reported than data on nominal GDP (and could be made even more so)—a practical consideration that offsets some of the theoretical appeal of nominal GDP as a target. Although collecting data on nominal GDP could be improved, measuring nominal GDP requires data on current quantities and current prices, and the need to collect two pieces of information is perhaps intrinsically more difficult to accomplish in a timely manner.

Third, the concept of inflation in consumer prices is much better understood by the public than the concept of nominal GDP, which can easily be confused with real GDP. Consequently, it seems likely that communication with the public and accountability would be better served by using an inflation rather than a nominal GDP growth target. While a significant number of central banks have adopted inflation targeting, none has adopted a nominal GDP target.

Finally, as argued earlier, inflation targeting, as it is actually practiced, allows considerable flexibility for policy in the short run, and elements of monetary policy tactics based on nominal GDP targeting could easily be built into an inflation-targeting regime. Thus it is doubtful that, in practice, nominal GDP targeting would be more effective than inflation targeting in achieving short-run stabilization.

When all is said and done, inflation targeting has almost all the benefits of nominal GDP targeting, but without the problems that arise from potential confusion about what nominal GDP is or the political complications that arise because nominal GDP requires announcement of a potential GDP growth path.

Monetary Policy with an Implicit Nominal Anchor

In recent years, the United States has achieved excellent macroeconomic performance (including low and stable inflation) without using an explicit nominal anchor such as an exchange rate, a monetary aggregate, or an inflation target. Although the Federal Reserve has not articulated an explicit strategy, a coherent strategy for the conduct of monetary policy exists nonetheless. This strategy involves an implicit but not an explicit nominal anchor in the form of an overriding concern by the Federal Reserve to control inflation in the long run. In addition, it involves forward-looking behavior in which there is careful monitoring for signs of future inflation using a wide range of information, coupled with periodic “pre-emptive strikes” by monetary policy against the threat of inflation.

As emphasized by Milton Friedman, monetary policy effects have long lags. In industrialized countries with a history of low inflation, the inflation process seems to have tremendous inertia: Estimates from large macroeconomic models of the U.S. economy, for example, suggest that monetary policy takes over a year to affect output and over two years to have a significant impact on inflation. For countries whose economies respond more quickly to exchange-rate changes or that have experienced highly variable inflation, and therefore have more flexible prices, the lags may be shorter.

The presence of long lags means that monetary policy cannot wait to respond until inflation has already reared its ugly head. If the central bank waited until overt signs of inflation appeared, it would already be too late to maintain stable prices, at least not without a severe tightening of policy: inflation expectations would already

be embedded in the wage- and price-setting process, creating an inflation momentum that would be hard to halt. Inflation becomes much harder to control once it has been allowed to gather momentum, because higher inflation expectations become ingrained in various types of long-term contracts and pricing agreements.

To prevent inflation from getting started, therefore, monetary policy needs to be forward-looking and pre-emptive: that is, depending on the lags from monetary policy to inflation, monetary policy needs to act long before inflationary pressures appear in the economy. For example, suppose it takes roughly two years for monetary policy to have a significant impact on inflation. In this case, even if inflation is currently low but policymakers believe inflation will rise over the next two years with an unchanged stance of monetary policy, they must *now* tighten monetary policy to prevent the inflationary surge.

Under Alan Greenspan, the Federal Reserve has been successful in pursuing a pre-emptive monetary policy. For example, the Fed raised interest rates from 1994 to 1995 before a rise in inflation got a toehold. As a result, inflation not only did not rise, but fell slightly. This pre-emptive monetary policy strategy is clearly also a feature of inflation-targeting regimes, because monetary policy instruments are adjusted to take account of the long lags in their effects in order to hit future inflation targets. However, the Fed's policy regime, which has no nominal anchor and so might best be described as a "just do it" policy, differs from inflation targeting in that it does not officially have a nominal anchor and is much less transparent in its monetary policy strategy.

Advantages of the Fed's Approach

The Fed's "just do it" approach, which has some of the key elements of inflation targeting, has many of the same advantages. It also enables monetary policy to focus on domestic considerations and does not rely on a stable money–inflation relationship. As with inflation targeting, the central bank uses many sources of information to determine the best settings for monetary policy. The Fed's forward-looking behavior and stress on price stability also help to discourage overly expansionary monetary policy, thereby ameliorating the time-consistency problem.

Another key argument for the "just do it" strategy is its demonstrated success. The Federal Reserve has been able to bring down inflation in the United States from double-digit levels in 1980 to around the 3% level by the end of 1991. Since then, inflation has dropped to around the 2% level, which is arguably consistent with the price stability goal. The Fed conducted a successful pre-emptive strike against inflation from February 1994 until early 1995, when in several steps it raised the federal funds rate from 3% to 6% even though inflation was not increasing during this period. The subsequent lengthy business-cycle expansion, the longest in U.S. history, brought unemployment down to around 4%, a level not seen since the 1960s, while CPI inflation fell to a level near 2%. In addition, the overall U.S. growth rate was very strong throughout the 1990s. Indeed, the performance of the U.S. economy became the envy of the industrialized world in the 1990s.

Disadvantages of the Fed's Approach

Given the success of the "just do it" strategy in the United States, why should the United States consider other monetary policy strategies? (If it ain't broke, why fix it?) The answer is that the "just do it" strategy has some disadvantages that may cause it to work less well in the future.

One disadvantage of the strategy is a lack of transparency. The Fed's close-mouthed approach about its intentions gives rise to a constant guessing game about what it is going to do. This high level of uncertainty leads to unnecessary volatility in

financial markets and creates doubt among producers and the general public about the future course of inflation and output. Furthermore, the opacity of its policymaking makes it hard to hold the Federal Reserve accountable to Congress and the general public: The Fed can't be held accountable if there are no predetermined criteria for judging its performance. Low accountability may make the central bank more susceptible to the time-consistency problem, whereby it may pursue short-term objectives at the expense of long-term ones.

Probably the most serious problem with the “just do it” approach is strong dependence on the preferences, skills, and trustworthiness of the individuals in charge of the central bank. In recent years in the United States, Federal Reserve Chairman Alan Greenspan and other Federal Reserve officials have emphasized forward-looking policies and inflation control, with great success. The Fed's prestige and credibility with the public have risen accordingly. But the Fed's leadership will eventually change, and there is no guarantee that the new team will be committed to the same approach. Nor is there any guarantee that the relatively good working relationship that has existed between the Fed and the executive branch will continue. In a different economic or political environment, the Fed might face strong pressure to engage in over-expansionary policies, raising the possibility that time consistency may become a more serious problem. In the past, after a successful period of low inflation, the Federal Reserve has reverted to inflationary monetary policy—the 1970s are one example—and without an explicit nominal anchor, this could certainly happen again.

Another disadvantage of the “just do it” approach is that it has some inconsistencies with democratic principles. As described in Chapter 14, there are good reasons—notably, insulation from short-term political pressures—for the central bank to have some degree of independence, as the Federal Reserve currently does, and the evidence does generally support central bank independence. Yet the practical economic arguments for central bank independence coexist uneasily with the presumption that government policies should be made democratically, rather than by an elite group.

In contrast, inflation targeting can make the institutional framework for the conduct of monetary policy more consistent with democratic principles and avoid some of the above problems. The inflation-targeting framework promotes the accountability of the central bank to elected officials, who are given some responsibility for setting the goals for monetary policy and then monitoring the economic outcomes. However, under inflation targeting as it has generally been practiced, the central bank has complete control over operational decisions, so that it can be held accountable for achieving its assigned objectives.

Inflation targeting thus can help to promote operational independence of the central bank. The example of the granting of independence to the Bank of England in 1997 indicates how inflation targeting can reduce the tensions between central bank independence and democratic principles and promote central bank independence. When operational independence was granted to the Bank of England in May 1997, the chancellor of the Exchequer made it clear that this action had been made possible by the adoption of an inflation-targeting regime, which had increased the transparency of policy and the accountability of the bank for achieving policy objectives set by the government.

The Fed's monetary policy strategy may move more toward inflation targeting in the future. Inflation targeting is not too far from the Fed's current policymaking philosophy, which has stressed the importance of price stability as the overriding, long-run goal of

monetary policy. Also, a move to inflation targeting is consistent with recent steps by the Fed to increase the transparency of monetary policy, such as shortening the time before the minutes of the FOMC meeting are released, the practice of announcing the FOMC's decision about whether to change the target for the federal funds rates immediately after the conclusion of the FOMC meeting, and the announcement of the "balance of risks" in the future, whether toward higher inflation or toward a weaker economy.

Summary

1. A nominal anchor is a key element in monetary policy strategies. It helps promote price stability by tying down inflation expectations and limiting the time-consistency problem, in which monetary policymakers conduct monetary policy in a discretionary way that produces poor long-run outcomes.
2. Exchange-rate targeting has the following advantages: (1) it directly keeps inflation under control by tying the inflation rate for internationally traded goods to that found in the anchor country to whom its currency is pegged; (2) it provides an automatic rule for the conduct of monetary policy that helps mitigate the time-consistency problem; and (3) it has the advantage of simplicity and clarity. Exchange-rate targeting also has serious disadvantages: (1) it results in a loss of independent monetary policy and increases the exposure of the economy to shocks from the anchor country; (2) it leaves the currency open to speculative attacks; and (3) it can weaken the accountability of policymakers because the exchange-rate signal is lost. Two strategies that make it less likely that the exchange-rate regime will break down are currency boards, in which the central bank stands ready to automatically exchange domestic for foreign currency at a fixed rate, and dollarization, in which a sound currency like the U.S. dollar is adopted as the country's money.
3. Monetary targeting has two main advantages: It enables a central bank to adjust its monetary policy to cope with domestic considerations, and information on whether the central bank is achieving its target is known almost immediately. On the other hand, monetary targeting suffers from the disadvantage that it works well only if there is a reliable relationship between the monetary aggregate and the goal variable, inflation, a relationship that has often not held in different countries.
4. Inflation targeting has several advantages: (1) it enables monetary policy to focus on domestic considerations; (2) stability in the relationship between money and inflation is not critical to its success; (3) it is readily understood by the public and is highly transparent; (4) it increases accountability of the central bank; and (5) it appears to ameliorate the effects of inflationary shocks. It does have some disadvantages, however: (1) inflation is not easily controlled by the monetary authorities, so that an inflation target is unable to send immediate signals to both the public and markets; (2) it might impose a rigid rule on policymakers, although this has not been the case in practice; and (3) a sole focus on inflation may lead to larger output fluctuations, although this has also not been the case in practice. The concern that a sole focus on inflation may lead to larger output fluctuations has led some economists to propose a variant of inflation targeting, nominal GDP targeting, in which central banks target the growth in nominal GDP rather than inflation.
5. The Federal Reserve has a strategy of having an implicit, not an explicit, nominal anchor. This strategy has the following advantages: (1) it enables monetary policy to focus on domestic considerations; (2) it does not rely on a stable money–inflation relationship; and (3) it has had a demonstrated success, producing low inflation with the longest business cycle expansion in U.S. history. However, it does have some disadvantages: (1) it has a lack of transparency; (2) it is strongly dependent on the preferences, skills, and trustworthiness of individuals in the central bank and the government; and (3) it has some inconsistencies with democratic principles, because the central bank is not highly accountable.



Key Terms

currency board, p. 492
dollarization, p. 493

nominal anchor, p. 487
seignorage, p. 493

time-consistency problem, p. 488



Questions and Problems

Questions marked with an asterisk are answered at the end of the book in an appendix, “Answers to Selected Questions and Problems.”

1. What are the benefits of using a nominal anchor for the conduct of monetary policy?
2. Give an example of the time-consistency problem that you experience in your everyday life.
3. What incentives arise for a central bank to engage in time-consistent behavior?
- *4. What are the key advantages of exchange-rate targeting as a monetary policy strategy?
5. Why did the exchange-rate peg lead to difficulties for the countries in the ERM when German reunification occurred?
- *6. How can exchange-rate targets lead to a speculative attack on a currency?
7. Why may the disadvantage of exchange-rate targeting of not having an independent monetary policy be less of an issue for emerging market countries than for industrialized countries?
- *8. How can the long-term bond market help reduce the time-consistency problem for monetary policy? Can the foreign exchange market also perform this role?
9. When is exchange-rate targeting likely to be a sensible strategy for industrialized countries? When is exchange-rate targeting likely to be a sensible strategy for emerging market countries?
- *10. What are the advantages and disadvantages of a currency board over a monetary policy that just uses an exchange-rate target?
11. What are the key advantages and disadvantages of dollarization over other forms of exchange-rate targeting?
- *12. What are the advantages of monetary targeting as a strategy for the conduct of monetary policy?
13. What is the big *if* necessary for the success of monetary targeting? Does the experience with monetary targeting suggest that the big *if* is a problem?
- *14. What methods have inflation-targeting central banks used to increase communication with the public and increase the transparency of monetary policymaking?
15. Why might inflation targeting increase support for the independence of the central bank to conduct monetary policy?
- *16. “Because the public can see whether a central bank hits its monetary targets almost immediately, whereas it takes time before the public can see whether an inflation target is achieved, monetary targeting makes central banks more accountable than inflation targeting does.” True, false, or uncertain? Explain.
17. “Because inflation targeting focuses on achieving the inflation target, it will lead to excessive output fluctuations.” True, false, or uncertain? Explain.
- *18. What are the most important advantages and disadvantages of nominal GDP targeting over inflation targeting?
19. What are the key advantages and disadvantages of the monetary strategy used in the United States under Alan Greenspan in which the nominal anchor is only implicit?
- *20. What is the advantage that monetary targeting, inflation targeting, and a monetary strategy with an implicit, but not an explicit, nominal anchor have in common?



Web Exercises



1. Many countries have central banks that are responsible for their nation's monetary policy. Go to www.federalreserve.gov/centralbanks.htm and select one of the central banks (for example, Norway). Review that bank's web site to determine its policies regarding application of monetary policy. How does this bank's policies compare to those of the U.S. central bank?
2. The web provides a rich source of information about international issues. The topic of dollarization has many references. Go to www.imf.org/external/pubs/ft/fandd/2000/03/berg.htm. Summarize this report sponsored by the International Monetary Fund about the value of dollarization.