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Inflation Goals and Credibility

In the 1990s, central banks in many industrialized countries—such as Canada, Finland, Spain, Sweden, the U.K., and New Zealand—increased their emphasis on low inflation as a goal of monetary policy by adopting year-by-year numerical inflation targets. In the U.S., new policies were put in place in late 1979 to reduce inflation, and in the latter half of the 1980s, the Federal Reserve explicitly articulated a commitment to achieving “price stability” gradually over time, although it did not establish numerical targets for inflation.

While most economists believe that very high rates of inflation can undermine a country’s standard of living, they can differ about the value of reducing inflation from moderate to low levels. In part, this disagreement centers on the cost of reducing inflation, in terms of output and employment losses during the transition. An important element tending to mitigate this cost is the *credibility* of the anti-inflation policy—that is, the public’s belief that the central bank will adhere to the policy consistently. A more credible disinflation policy will translate more quickly into lower inflation expectations, which will reduce inflation directly and require a smaller sacrifice of output and employment in the transition to lower inflation.

Some economists argue that being more explicit about inflation goals and targets can enhance credibility. Others argue that there is no substitute for hard-won results—that credibility can be gained only by a sustained demonstration that the central bank is willing to take the steps necessary to achieve and maintain low inflation. This *Letter* examines evidence on the credibility of anti-inflation policies in the U.S. since the late 1970s, as well as those of several other countries that recently have announced numerical inflation targets.

The United States

To assess the credibility of the Fed’s present anti-inflation goal, it is useful to have an historical benchmark. We do so by dividing the postwar inflation experience in the U.S. into three re-

gimes. First, up to the mid-1960s, inflation was kept well under control, averaging only 1¾ percent annually from 1949 to 1964. Second, from 1965 to 1980, expansionary monetary and fiscal policies, as well as oil shocks, resulted in inflation rising to double digits. In response, the Fed instituted an anti-inflation policy that was successful in achieving its main goal: Between 1980 and 1983, CPI inflation fell from over 12½ to 3 percent—the cost was the most severe recession in postwar history.

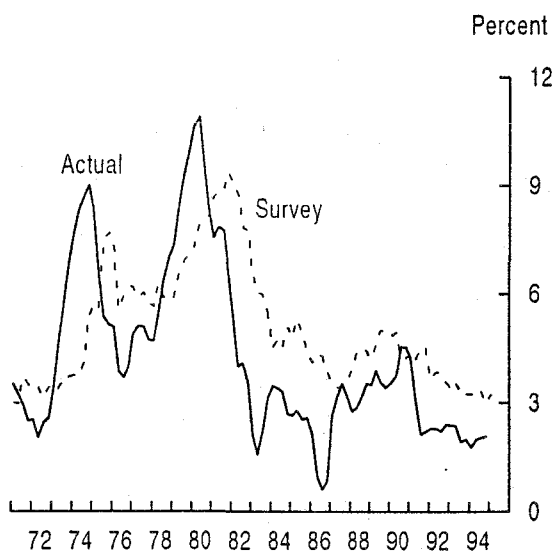
Inflation has been maintained at moderate rates from 1983 to the present (CPI inflation rose to over 5 percent in 1990; it fell back to under 3 percent in both 1993 and 1994). Although the Fed indicated that its policies were designed to control inflation during the early to mid-1980s, it did not explicitly recognize a long-term goal of “price stability” until Alan Greenspan became chairman in 1987. (The term “price stability” may encompass small positive rates of *measured* inflation because of biases in inflation indexes.)

In view of these developments since the late 1970s, is the Fed’s “price stability” goal credible with the public? A comparison of the public’s expectations of inflation with the Fed’s inflation goal provides evidence on this question. For this purpose, we use a survey of financial decision-makers constructed by the Federal Reserve Bank of Philadelphia, which shows that inflation expectations *ten years ahead* have declined gradually from around 8 percent for the 1980–1990 period to 3¼ percent for 1994–2004. These results suggest that the goal of price stability in the U.S. lacks full credibility. The same conclusion is suggested by inflation expectations *one year ahead*, which have consistently exceeded actual inflation for comparable periods ever since inflation began coming down in the early 1980s (see Figure 1).

Although these survey results suggest that the Fed’s price stability goal is not fully credible, it still would be useful to know if credibility has *improved* since 1979 compared with the prior period of rising inflation. Indirect evidence on

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Figure 1
Survey of Expected Inflation (one year ahead)
and Corresponding Actual Inflation



Survey: Philadelphia Federal Reserve Bank -
Financial Decision Makers Poll.

this question is provided by estimates of the so-called "sacrifice ratio." This ratio measures the percentage point change in real GDP typically associated in a given year with a 1 percentage point decline in inflation, where changes in both variables represent responses to a change in the aggregate demand for goods and services in the economy. For example, if contractionary monetary policy reduces inflation by 1 percent in a given year, the sacrifice ratio tells us how much of a decline in real GDP typically will occur *in that same year*. The sacrifice ratio measures the short-run, or temporary, cost of reducing inflation.

All else equal, greater credibility should be associated with a lower sacrifice ratio. Of course, the level of the sacrifice ratio in any given country will depend on a variety of factors other than credibility, including the flexibility of wages in that country as well as its openness to foreign trade. However, these factors tend to change only slowly, and thus are not likely to affect the tests for changes in the ratio that we discuss below.

Following Judd and Beebe (1993), econometric techniques were used to estimate average sacrifice ratios for the U.S. economy over various time

periods, after standardizing for factors that might distort the observed relationship—for example, the stage of the business cycle and large oil shocks. We found a large and statistically significant increase in the sacrifice ratio from 1.1 percent in the period of low inflation in 1949–1964 to 2.7 percent in the period of rising inflation from 1965–1979. Not surprisingly, when inflation was kept well under control in the earlier period, the sacrifice ratio was far smaller than when inflation was rising in the late 1960s and the 1970s.

The evidence for a possible decline in the sacrifice ratio in the 1980s and so far in the 1990s is less obvious. Although the estimated sacrifice ratio fell from an average of 2.7 percent in 1965–1979 to 1.9 percent in 1980–1994, this difference is not statistically significant. The test suggests that there is a 16 percent probability that this decline in the sacrifice ratio occurred by chance, and is not related to any fundamental change in the relationship.

Canada, New Zealand, and the United Kingdom

The results for the U.S. are not surprising in view of the experiences of Canada, New Zealand and the U.K. All three countries adopted year-by-year numerical inflation targets in the early 1990s, and thus have gone considerably further than the U.S. in instituting procedures that might enhance credibility. Nonetheless, evidence for greater credibility under the inflation targets is mixed, at best.

Among the three countries, New Zealand took the strongest steps to enhance credibility. "Price stability" has been established by law as the central objective of monetary policy, and the government is legally barred from instructing the central bank on monetary policy operations. However, in New Zealand (as well as Canada and the U.K.), specific annual inflation targets are a matter of discretion to be determined jointly by the central bank and the government. Unlike New Zealand, inflation targeting has *not* been accompanied by new measures to enhance central bank independence in either Canada or the U.K.

Up to the latter part of 1994, all three central banks were successful in achieving their targets. In New Zealand, CPI inflation has remained within the current 0 to 2 percent target range from late 1991 until late 1994 (although so far in 1995 inflation has gone above the range). Inflation in Canada and the U.K. also was within the

somewhat higher ranges established in those countries in recent years.

All of these targets were introduced during recessions, so that inflation probably was headed down anyway (Ammer and Freeman 1994). And while New Zealand and Canada established targets that required further declines in inflation, the U.K.'s first range had an upper bound that was above actual inflation at the time. These conditions meant that the chances of success were enhanced (and ensured for a time in the U.K.). They also meant that the central banks did not have as much of a chance to demonstrate a strong resolve to maintain low inflation. This "opportunity" is only now clearly at hand, since all three countries currently have been in economic expansions in the past few years, a time when inflationary pressures normally would be expected to build.

In all three countries, surveys of expected inflation have remained above actual inflation throughout the period of inflation targeting, suggesting a lack of full credibility. However, there is some indication that the targets may be helping with credibility in New Zealand and Canada, where the central banks have more legal independence and where the inflation targets required declines from the prevailing rate. In those two countries, expected inflation is fairly close to actual inflation, and it is much closer than in the U.K., where the gap exceeds 2 percentage points. In Canada, expected inflation was within the established target range in late 1994.

Conclusion

The experiences of the four countries discussed in the *Letter* suggest that credibility of low inflation goals is not easy to establish. After 15 years of maintaining substantially lower (though not zero) inflation, there is only weak evidence of enhanced credibility in the U.S. The experiences of Canada, New Zealand, and the U.K. suggest that establishing and achieving year-by-year numerical inflation targets is not likely to be sufficient to establish credibility, even in the context of substantial central bank independence and a legal mandate for low inflation (as in New Zealand). However, there is some evidence that by bringing inflation down to within *ex ante* inflation target ranges and keeping it there for a few years, the credibility of targets in New Zealand

and Canada may have been enhanced, though not fully established.

Why is it difficult to establish credibility? While a full analysis is beyond the scope of this *Letter*, some observations are warranted. The fundamental factor may be the public's knowledge that central banks face an ever present temptation to stimulate the economy for immediate, though temporary, output and employment gains, while discounting the distant inflationary consequences (Barro 1986). Inflation goals, and especially numerical inflation targets, may help to assuage the public's doubts by establishing clear accountability for the central bank. However, it may not be desirable for the central bank to make an airtight pre-commitment to low inflation, since fixed rules cannot account for all contingencies that policy may need to deal with in the future (Spiegel 1995). Thus while pragmatic inflation targets may help in gaining credibility, it may take many years of achieving low inflation before the public becomes convinced that the central bank's resolve has become institutionalized. The world's most credible central banks—for example, the German Bundesbank and the Bank of Japan—have been achieving low inflation for decades.

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References

- Ammer, John, and Richard T. Freeman. 1994. "Inflation Targeting in the 1990s: The Experiences of New Zealand, Canada and the United Kingdom." Board of Governors of the Federal Reserve System *International Finance Discussion Papers*, No. 473.
- Barro, Robert J. 1986. "Recent Developments in the Theory of Rules Versus Discretion." *Economic Journal* (Supplement), pp. 23–37.
- Judd, John P., and Jack Beebe. 1993. "The Output-Inflation Trade-off in the United States." Federal Reserve Bank of San Francisco *Economic Review*, No. 3, pp. 25–34.
- Spiegel, Mark. 1995. "Rules vs. Discretion in New Zealand Monetary Policy." *FRBSF Weekly Letter* No. 95-09 (March 3).

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