
FRBSF WEEKLY LETTER

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The Credibility of Inflation Targets

In the last few years a number of countries—including Canada, New Zealand, Sweden, and the United Kingdom—have sought to increase their credibility as inflation-fighters by announcing inflation targets. But does announcing targets make people believe that the central bank really will do what is necessary to hit those announced targets?

In this *Weekly Letter* I discuss a simple test for credibility as well as the results from applying this test to three of these four countries. I then apply the same test to the U.S., where—even though no formal targets have been set—Chairman Greenspan as well as other members of the FOMC repeatedly have said that they would like to reduce inflation further.

A test for credibility

Svensson (1993) presents a relatively straightforward measure of the credibility of announced inflation targets. The key to this test is what he calls the “target-consistent real rate.” This is simply the difference between the nominal interest rate and the targeted inflation rate. For example, if the targeted inflation rate for the next three years is 2 percent and the nominal interest rate on a three-year, risk-free bond is 7 percent, then the target-consistent real rate is 5 percent.

The “target-consistent” real rate is similar to the more common concept of the expected real rate of interest, which is simply the difference between the nominal rate and the expected inflation rate. Indeed, Svensson’s test can be understood as a comparison between the target-consistent rate and the expected real rate. A target-consistent rate noticeably higher than the expected real rate suggests that the public is expecting an inflation rate above the central bank’s target range. In other words, it suggests that the inflation target is not credible.

A target-consistent rate that is close to the expected real rate generally suggests that the inflation target is credible. However, an un-

usually high target-consistent rate *by itself* may suggest that the target is not credible, even if it is close to the expected real rate. For instance, the public might think that while the central bank would like lower inflation, there could be some circumstances under which it would be unwilling to take the necessary action. Thus, the public could be uncertain about what the central bank would do in the future. The existence of uncertainty about future inflation would mean that lenders would demand a premium for inflation risk. An unusual amount of uncertainty would lead to an unusually high inflation risk premium, leading in turn to a high target-consistent rate—even if the public did not think it likely that inflation would exceed the central bank’s target.

Thus, an unusually high target-consistent rate suggests that we should reject credibility, even if this rate is the same as the expected real rate. Some judgment is involved in this decision, since the expected real rate can move around; for instance, rising credit demands over the course of an expansion are likely to push up this rate. The need for judgment is compounded by the fact that we cannot observe the expected real rate. Consequently, we must use some kind of proxy for it. The proxy used most often is the realized real rate. This rate is constructed by subtracting actual inflation over a given period from the nominal interest rate that prevailed at the beginning of the period.

Some examples

Svensson applies this test to three countries that have recently announced inflation targets: Canada, New Zealand, and Sweden. To illustrate his method, I will focus on his results for Canada, and then briefly discuss the others. In February 1991, the Bank of Canada announced an inflation target of 3 percent per year by the end of 1992, 2½ percent by mid-1994 and 2 percent by the end of 1995. Inflation was allowed to vary within 1 percentage point of these values. Inflation fell sharply in 1992; however, nominal rates were slower to decline. The minimum target-consistent

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rate on 5-year Canadian government bonds was around 5½ percent in early 1992 and the maximum was around 7½ percent. The minimum rate fell to around 5 percent after mid-1992 and fell below 4 percent after mid-1993.

Testing for credibility involves making a judgment about whether expected real rates on 5-year Canadian bonds can go as high as 5 to 6 percent per year. To answer this question Svensson looks at the realized real rate on these bonds since 1982. He finds that the rate has fluctuated between 4 and 9 percent per year, with a mean that exceeds 6 percent. Thus, the expected real return on 5-year Canadian bonds appears to be of the same magnitude as the target-consistent real rate, and we cannot reject inflation target credibility for Canada.

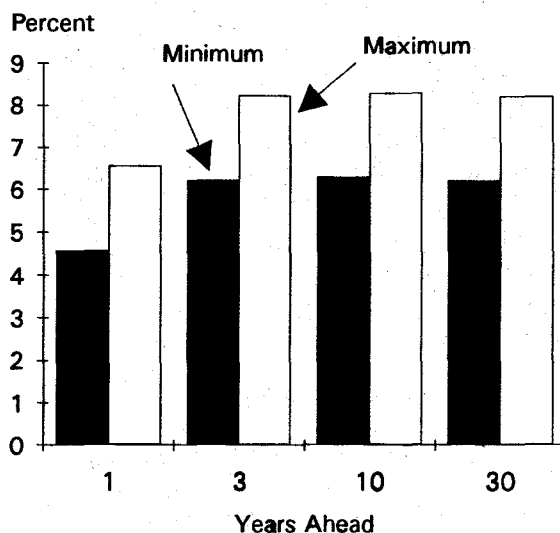
In the case of New Zealand, the target-consistent minimum real rate was as high as 9 percent when inflation targets were first announced in 1991. Svensson concludes that this level of rates is too high to be consistent with credible targets. However, the target-consistent real rate has fallen below 5 percent since then, suggesting that the inflation targets have become more credible over time. Finally, Sweden announced inflation targets in early 1993. While credibility can be rejected at a 5-year horizon for Sweden, the experience of Canada and New Zealand suggests that this is not unusual in the early stages after a target is announced.

The U.S. experience

As mentioned earlier, the Federal Reserve does not have explicit target ranges for inflation. Yet Federal Reserve officials often have stated their desire for an inflation rate below the current 3 percent rate. For instance, in recent testimony before the Senate, Chairman Greenspan stated that most members of the FOMC would like to see further progress towards price stability over the medium term (Greenspan 1994). The Chairman has spoken of attaining price stability on other occasions as well, defining it as a situation where the inflation rate does not enter into the calculations made by economic agents. For the purposes of this *Letter*, I interpret the desire to reduce inflation below the prevailing rate, as well as these statements in favor of price stability, as implying an inflation target of between 0 and 2 percent. I then ask whether markets believe the Fed will take the actions required to achieve this inflation rate.

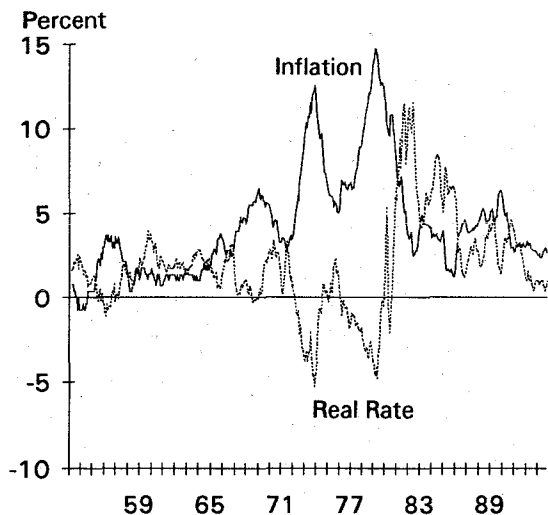
To answer this question I use 1-year rates expected to prevail at various points in the future, specifically, the 1-year rate expected to prevail next year, 3 years ahead, 10 years ahead and 30 years ahead. For each of these horizons I calculate the minimum and maximum target-consistent real rates. Looking at rates at specific points in the future allows us to be more explicit about when (if ever) markets expect the Fed to bring the inflation rate down to between 0 and 2 percent. The market's expectations as of November are plotted in Figure 1, which shows that the minimum target-consistent rate is around 6 percent once we move beyond the 1-year horizon while the maximum is around 8 percent. These are unusually high levels; expected real rates around 2 to 3 percent seem closer to conventional wisdom.

Figure 1
U.S.: Target-Consistent 1-Year Real Rates



To provide some perspective on this, Figure 2 plots the realized real rate on the 1-year Treasury bill since the early 1950s. It turns out that the realized real rate has averaged roughly 1.8 percent over this period. However, it has been noticeably higher since the 1980s, averaging 4.2 percent. The only time the real rate rose above 6 percent was in the early 1980s. However, as also shown in Figure 2, inflation declined extremely rapidly over this period. Since it is likely that such a

Figure 2
U.S.: Realized 1-Year Real Rate and Inflation



rapid decline was unexpected, it also is likely that the realized real rate is too high an estimate of the expected real rate over this period.

Figure 2 suggests that an expected real rate above 6 percent was extremely unlikely in the past. Could the expected real rate have moved up recently? Some commentators have suggested that unusually high credit demands resulting from unusually rapid growth in East Asia as well as the restructuring in Eastern Europe are likely to have pushed up real interest rates. While this is a plausible hypothesis, it is hard to make a judgment on it without supporting evidence. In any event, even if these developments have pushed

the expected real rate above the average realized real rate of 1.8 percent over the post-war period, it is unlikely that they have pushed it above the 4.2 percent realized return of the 1980s. Thus, the minimum target-consistent rate shown in Figure 1 seems too high, which suggests that markets do not think it likely that the Fed will push inflation below 2 percent in the foreseeable future. And even if markets were predicting a 2 percent inflation rate, the inflation risk premium implied by the prevailing target-consistent rate suggests that markets are extremely uncertain about this forecast.

Conclusions

In this *Letter* we have discussed a simple test of inflation target credibility. The experience of several countries that have explicit inflation targets suggests that it takes a while for these targets to become credible. In the case of the U.S., while Fed officials often have expressed a desire for price stability, at this point markets do not appear convinced that this desire will translate into inflation rates between 0 and 2 percent.

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