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20. Communication and Commitment Strategies at Very Low Interest Rates

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Executive Summary

In this note, we consider strategies for FOMC communications that could generate additional macroeconomic stimulus in an environment in which the degree of conventional policy easing is constrained by the zero bound on nominal interest rates. We begin by analyzing two potential enhancements in Federal Reserve communications that could be implemented without requiring significant changes to the existing policy framework:

- The FOMC could provide quantitative information regarding policymakers' assessments of the mandate-consistent inflation rate and thereby help ensure that long-run inflation expectations remain firmly anchored. This approach might be particularly helpful during a protracted period of high unemployment and very low inflation, in which a lack of clarity about the Committee's longer-run strategy could be misconstrued as "opportunistic disinflation" and hence contribute to a downward drift in longer-run inflation expectations.
- The FOMC could start providing in the Minutes quantitative information regarding the anticipated trajectory for the federal funds rate accompanied by fan charts or alternative scenarios to highlight the uncertainty and conditionality associated with these projections. This approach might be helpful in addressing potential misalignments between the expectations of policymakers and those of financial market participants and professional forecasters.

We then consider more substantial changes in the policy framework that would establish a conditional commitment to maintain a relatively accommodative stance of policy for some period once the setting of the federal funds rate is no longer constrained by the zero lower bound. If the commitment strategy were sufficiently transparent and credible, investors would anticipate a lower trajectory for future short-term interest rates, leading to a decline in current longer-term real interest rates and thereby providing near-term stimulus to the macroeconomy. We discuss two strategies along these lines:

- The FOMC could commit to following a nonlinear variant of the Taylor rule, in which the degree of extra policy stimulus in future periods would depend on the extent to which the zero lower bound had constrained the near-term setting of the funds rate.
- The FOMC could establish an explicit target for the price level at a fairly long horizon. In this case, if actual inflation over the next several years fell below the desired long-run average rate, then policymakers would be more accommodative in subsequent years until the price level returned to its target path.

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Introduction

Over the past several decades, academic researchers and policymakers have emphasized the role of expectations formation in the evolution of the macroeconomy. Indeed, through this expectations channel, a central bank's communications about its policy strategy can have significant effects on current economic activity, even in the absence of any contemporaneous change in the setting of the monetary policy instrument. First, such communications can affect the level of aggregate demand by shifting investors' expectations regarding the future path of short-term nominal interest rates, because those expectations are reflected in the prices of medium- and longer-term assets (such as bonds and equities) that in turn influence the borrowing costs and spending decisions of households and firms. Second, monetary policy communications may have a direct effect on actual inflation by influencing the views of wage- and price-setters regarding the medium- and longer-term inflation outlook. Of course, the effectiveness of central bank communication depends on how private agents form their expectations and on the credibility of these communications in light of the historical context and the strength of the institutional framework. As discussed in Notes 2 and 6, however, the empirical evidence suggests that central bank communications can have significant effects on private sector expectations and hence on actual output and inflation.²

In this note, we consider strategies for FOMC communications that could generate additional macroeconomic stimulus in a context in which the federal funds rate is already very low and therefore the room for further conventional policy easing is constrained by the zero bound on nominal interest rates. We begin by discussing possible enhancements to current Federal Reserve communications that the FOMC could implement without making any significant changes to the existing policy framework. For example, policymakers could be more specific about their assessments of the mandate-consistent inflation rate, perhaps by extending the horizon of their inflation projections. Policymakers could also be more specific about the likely trajectory for the federal funds rate and its sensitivity to economic developments, perhaps using fan charts or alternative scenarios to highlight the uncertainty and conditionality of these interest rate projections. Both of these approaches could be useful in enhancing the information provided through existing modes of verbal communication, such as FOMC statements, minutes, congressional testimony, and speeches by FOMC participants.

We then proceed to consider more substantial changes in the policy framework that would involve establishing a conditional commitment to maintain a relatively accommodative stance of policy for some period once the setting of the federal funds rate is no longer constrained by the zero lower bound. If the commitment strategy were sufficiently transparent and credible, investors would anticipate a lower trajectory for future short-term interest rates, leading to a decline in current longer-term real interest rates and thereby providing near-term macroeconomic stimulus. While enumerating a full set of state-contingent commitments is not practical, this approach could be roughly approximated by establishing a price level target or by adopting a nonlinear variant of the Taylor rule as a policy benchmark.

² For additional evidence, see Bernanke, Reinhart, and Sack (2004) and Gürkaynak, Sack, and Swanson (2005).

Communication about Inflation Objectives

Recent research has highlighted the extent to which the firm anchoring of inflation expectations can be crucial for ensuring that a large contraction in aggregate demand does not push the economy into a liquidity trap. For example, Bullard and Cho (2005) showed that the effects of large contractionary shocks are typically compounded when agents face uncertainty about the central bank's inflation objective and hence must infer its value from recent economic outcomes.³ Similarly, Evans, Guse, and Honkapohja (2007) analyze a learning model in which low outcomes for actual inflation cause private agents to mark down their inflation forecasts; thus, when monetary policy becomes constrained by the zero lower bound, real interest rates start rising and choke off economic activity, leading to further downward revisions in the inflation outlook and in some cases to a full-blown deflationary spiral.

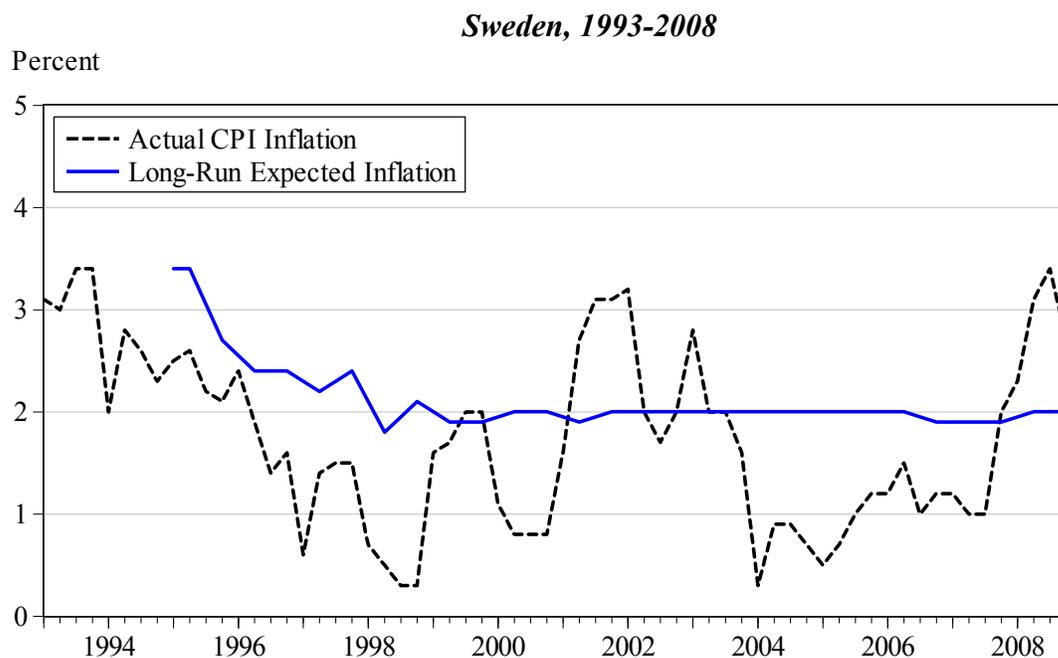
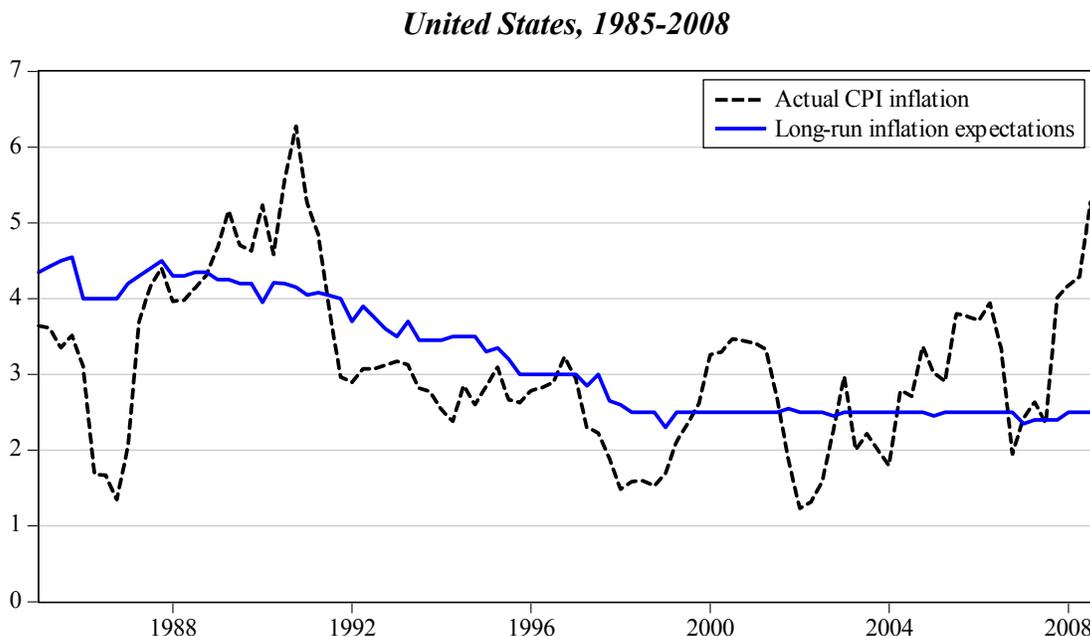
In practice, longer-term inflation expectations would be most likely to drift downward in response to a persistent drop in actual inflation, especially if this sequence of inflation outcomes were perceived as an "opportunistic disinflation" that reflected the implicit preferences of policymakers.⁴ For example, as shown in the upper panel of figure 1, expectations about the 10-year average U.S. CPI inflation rate (as measured by the Philadelphia Fed's Survey of Professional Forecasters) remained in a range of 4 to 4½ percent from 1985 to 1991, roughly similar to the average CPI inflation rate over that period, but then declined gradually through the 1990s. Actual CPI inflation was at or below 3 percent from 1992 to 1996, and long-run inflation expectations converged to that rate by the middle of the decade. Realized inflation dropped somewhat further with the onset of the "new economy" and contributed to a further decline in long-run inflation expectations to around 2½ percent by the end of the 1990s. Professional forecasters' long-run projections for U.S. CPI inflation have remained fairly stable at that level over the past decade—a period in which actual CPI inflation has been subject to some large but relatively transitory fluctuations.

The Swedish experience suggests that a transparent and credible inflation objective may be helpful in providing an anchor for long-run inflation expectations, especially during a period of persistent low inflation. The lower panel of figure 1 shows the evolution of Swedish CPI inflation since 1993 in comparison with the longer-run projections of professional forecasters (as measured by Consensus Economics semiannual surveys that have been conducted since 1995). When the Sveriges Riksbank's governing board announced the adoption of an inflation target in January 1993, the target was initially specified as a range of 1 to 3 percent, but the Riksbank subsequently placed greater emphasis on the midpoint of this range, and long-run inflation expectations gradually converged to the inflation target of 2 percent. Notably, these expectations remained firmly anchored during the period from 2004 to mid-2007 when Swedish inflation outcomes were also persistently low, suggesting that, by then, the inflation target was well understood and credible.

³ In the framework of Bullard and Cho (2005), agents perceive that the central bank's inflation objective is subject to variation over time and hence make inferences about the current value of the inflation objective by running least-squares regressions that place relatively greater weight on recent economic outcomes.

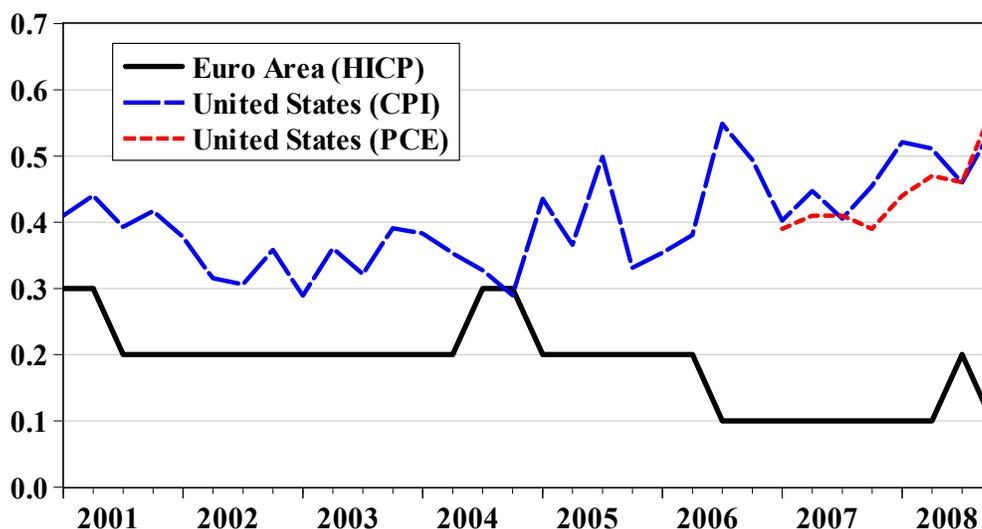
⁴ Meyer (1996) describes the origin of this phrase as follows: "A couple of years ago, I gave the name 'opportunistic disinflation' to an alternative strategy for bridging between short-run policy and long-run goals, a strategy that I observed the Federal Reserve to be following at the time." For further analysis and discussion, see Bomfim and Rudebusch (2000), Orphanides and Wilcox (2002), and Aksoya, Orphanides, Small, Wieland, and Wilcox (2006).

Figure 1: Inflation Outcomes and Long-Run Inflation Expectations



Note: In the upper panel, long-run expected inflation (solid line) denotes the median projection of the 10-year average rate of inflation of the U.S. consumer price index (CPI) from the Federal Reserve Bank of Philadelphia’s Survey of Professional Forecasters, and actual inflation (dashed line) denotes the four-quarter average U.S. CPI inflation rate. In the lower panel, long-run expected inflation (solid line) denotes the median projection of Swedish CPI inflation 6-to-10-years ahead in the Consensus Economics semiannual survey of professional forecasters, and actual inflation (dashed line) denotes the four-quarter average Swedish CPI inflation rate, excluding household mortgage interest and the direct effects of changes in value-added taxes and subsidies.

Figure 2: Dispersion in the Long-Run Inflation Expectations of Professional Forecasters in the Euro Area and the United States



Note: This figure depicts the dispersion in the views of professional forecasters' long-run inflation outlook for the euro area and the United States, as measured by the standard deviation across the individual projections at each date. For the euro area (solid line), these data are taken from the ECB's quarterly survey of professional forecasters and refer to the 5-year-ahead projected inflation rate for the harmonized index of consumer prices (HICP). For the United States, these data are taken from the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters and refer to expected inflation over the next 10 years for the CPI (long dashed line) and the total PCE deflator (short dashed line).

In recent years, Federal Reserve communications have provided significant information about policymakers' long-run inflation goals. For example, in spring 2003, the FOMC noted that further substantial declines in inflation would be "unwelcome," and in summer 2006 the FOMC referred to recent outcomes for core inflation as "elevated." These communications, together with the FOMC's policy actions, were viewed as indicating that policymakers preferred to keep inflation within a range of about 1 to 2 percent over time. In the first Summary of Economic Projections (SEP), published in conjunction with the minutes of the October 2007 FOMC meeting, participants' inflation projections for 2010 had a central tendency of 1.6 to 1.9 percent and a range of 1.5 to 2 percent. These projections were described as "importantly influenced" by participants' judgments about the measured rates of inflation consistent with the dual mandate, leading many commentators to conclude that the Federal Reserve's 'comfort zone' for inflation was about 1½ to 2 percent.

Nevertheless, the empirical evidence indicates that the degree of uncertainty regarding the longer-run outlook for U.S. inflation is substantially higher than in other major industrial economies.⁵ For example, as shown in figure 2, the standard deviation across individual long-run inflation projections in the Philadelphia Fed survey has had an average value of about 0.4 percentage points over the past eight years, underscoring the dispersion in views even among professional forecasters who are presumably paying close attention to Federal Reserve policies

⁵ See Gürkaynak, Sack, and Swanson (2003), Levin, Natalucci, and Piger (2003), Gürkaynak, Levin, and Swanson (2007), Gürkaynak, Levin, Marder, and Swanson (2007), and Beechey, Johannsen, and Levin (2008).

and communications. Indeed, in the latest SPF that was published in early November, the degree of dispersion in long-run inflation projections reached its highest level in a decade. In contrast, since the European Central Bank (ECB) clarified its policy strategy as aimed at keeping inflation “below, but close to, 2 percent in the medium term” (ECB 2003), forecasters’ longer-term projections for the euro area have become very tightly clustered around the average forecast of about 1.9 to 2 percent, even in the latest ECB survey that was published in mid-November.⁶

In light of the global financial crisis, the FOMC could face a significant challenge in preventing a gradual downward drift in longer-run inflation expectations, especially if global economic activity deteriorates further and inflation falls close to or below zero for an extended period. For example, in the latest SEP, participants’ projections for core PCE inflation in 2011 had a central tendency of 1.3 to 1.7 percent and a range of 0.8 to 1.8 percent, and these projections were described as “close to or a bit below” participants’ assessments of the mandate-consistent inflation rate. Moreover, participants might now perceive the outlook for economic activity and inflation as having deteriorated significantly since those projections were made in late October, and they might also see substantial risks of an even more precipitous downturn. In such circumstances, participants’ inflation projections for 2011 might deviate even further from their longer-run inflation goals, and a sense of those goals might become increasingly difficult to convey solely using verbal descriptions.

The potential difficulty in communicating participants’ assessments of the mandate-consistent inflation rate within the timeframe of the current SEP underscores the potential benefits of extending the projections to a longer horizon over which the economy would be likely to converge to its balanced-growth path. In effect, such longer-run projections would more clearly provide information about participants’ assessments of the mandate-consistent inflation rate as well as their estimates of sustainable rates of output growth and unemployment. This approach could also be quite helpful in explaining further changes in the economic outlook and in elucidating the Committee’s policy strategy over the next few years.

Communication about the Likely Path of Policy

Investors’ expectations regarding the future path of short-term nominal interest rates play a key role in determining the prices of medium- and longer-term assets—such as bonds and equities—that influence the borrowing costs and spending decisions of households and firms. When the setting of the policy instrument is close to the zero lower bound, the anticipated path of short-term interest rates—and hence the current levels of other asset prices—will be sensitive to investors’ perceptions about the likely timing and pace of future monetary policy tightening. Moreover, in a highly uncertain macroeconomic environment, these perceptions may exhibit substantial volatility and might even diverge markedly from the views of policymakers.

Thus, the rationale for the central bank to provide information about the likely path of monetary policy may be particularly strong under circumstances in which the current stance

⁶ It seems reasonable to attribute these contrasting patterns to differences in policy communication rather than to differences in the policy framework, because recent econometric studies by Smets and Wouters (2005), Christiano, Motto, and Rostagno (2007), and Uhlig (2007) found that the policy reaction functions for the euro area and the United States were broadly similar.

of policy is constrained by the zero lower bound. Such communication can provide clarification about the length of time that policymakers anticipate keeping rates close to zero and about the speed at which they expect to tighten once aggregate demand begins to recover.

Indeed, in mid-2003, when the federal funds rate stood at 1 percent and policymakers became concerned about the possibility of an unwelcome further decline in inflation, Federal Reserve communications began providing an unprecedented degree of policy guidance. During the summer and fall of 2003, FOMC statements indicated, “In these circumstances, policy accommodation can be maintained for a considerable period.” During winter 2004, the Committee stated that it expected to be “patient” in removing policy accommodation, and from spring 2004 through the end of 2005, FOMC statements indicated that policy accommodation would be removed “at a pace that is likely to be measured.” As discussed in Note 2, FOMC communications during this period appear to have been reasonably successful in aligning the policy expectations of financial market participants with those of the FOMC.

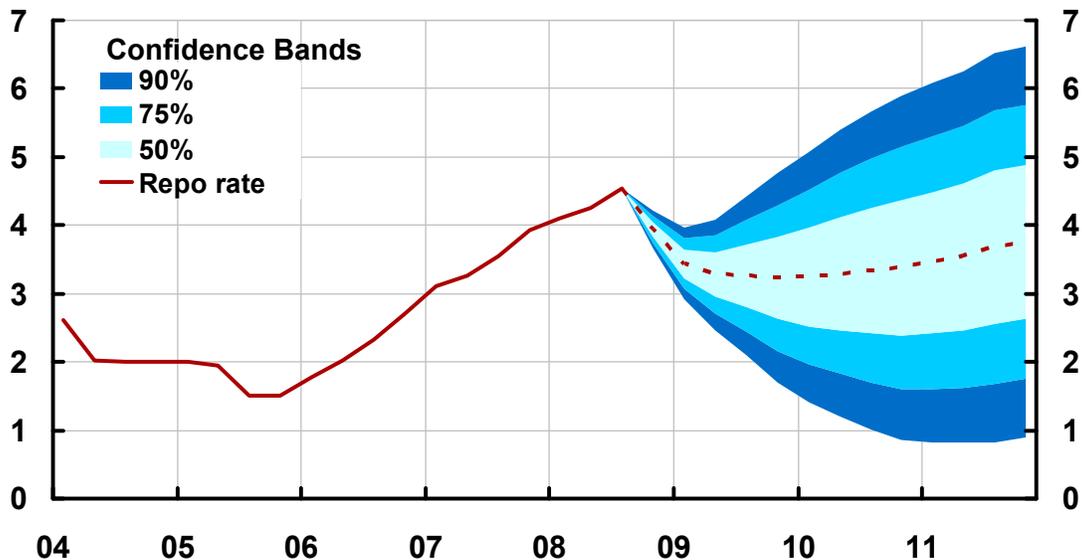
Although the policy guidance provided by the FOMC from mid-2003 through late 2005 has occasionally been characterized as a set of unconditional commitments, the language of these statements and from other Federal Reserve communications (including FOMC minutes, testimony, and speeches) clearly seems to indicate that the policy guidance was intended to convey information about the Committee’s *conditional expectations*. From August 2003 through May 2004, each FOMC statement employed the phrase “in these circumstances” or similar words. And from June 2004 through December 2005, each statement concluded by emphasizing that “the Committee will respond to changes in economic prospects as needed to fulfill its obligation to maintain price stability.” Nevertheless, the very low level of implied volatility in forward markets does suggest that investors may have placed insufficient odds on the possibility of a shift in the economic outlook that could have led to a markedly different pace of policy tightening; hence, in retrospect this episode might be viewed as underscoring the challenges and pitfalls of giving policy guidance solely through verbal descriptions.⁷

If the Committee perceives that some quantitative information about the likely path of policy might be helpful under present circumstances, it might wish to follow an approach similar to the communication strategies adopted by several other central banks in recent years. For example, figure 3 reproduces fan charts from the latest inflation reports of the central banks of Sweden (upper panel) and Norway (lower panel). Both of these exhibits use progressive shading to denote confidence intervals, which effectively highlights the degree of uncertainty surrounding the modal forecast. The Norges Bank chart also includes two alternative scenarios (labelled as “lower demand” and “higher demand”), underscoring the conditionality of the benchmark forecast and conveying potentially significant information about how the stance of policy would be adjusted in response to plausible deviations from the baseline outlook. Of course, these exhibits are accompanied by extensive discussion of the factors shaping the outlook and the risks to that outlook, thereby illustrating the notion that verbal and quantitative forms of communication may be viewed as complements rather than substitutes.

⁷ As emphasized by Moessner and Nelson (2008), the level of realized volatility was also very low over this period, reflecting the extent to which the forward policy guidance succeeded in minimizing the incidence of surprises in the actual path for the federal funds rate.

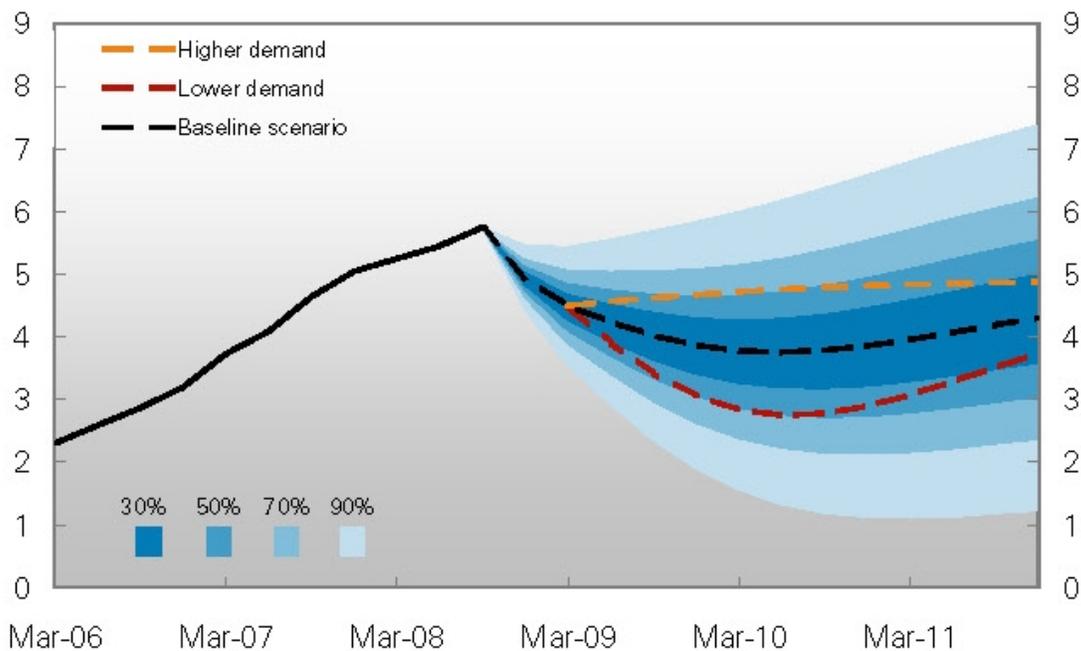
Figure 3: Policy Projections of Other Central Banks

Sveriges Riksbank



Source: Figure 1 from *Monetary Policy Report*, Sveriges Riksbank, October 2008.

Norges Bank



Source: Figure 1.23a from *Monetary Policy Report 3-08*, Norges Bank, October 2008.

Optimal Policy under Commitment

Monetary policymakers can potentially stimulate the economy and thereby mitigate the impact of the zero bound constraint by making commitments about the future course of policy. In particular, monetary policy can influence current long-term real interest rates and expected inflation by making commitments about the future path of short-term real interest rates.

An obvious question concerns the framework that should be adopted to formulate such commitments. One useful perspective, adopted in the FRB/US simulations discussed in Note 21, applies optimal control theory to derive an “optimal” policy rule. This rule is obtained by minimizing a specific loss function (e.g., one that depends on the output gap, inflation gap, and perhaps other factors) subject to a particular behavioral model of the economy. This approach takes full account of intertemporal tradeoffs, including the possibility of influencing current expectations about future short rates and inflation through making promises about future policy, assuming that the monetary policy rule is both well understood by the public and is fully credible.

A significant difficulty with “optimal” rules derived in this framework is that such rules tend to be very complex and their performance may be quite sensitive to specific features of the modeling environment. Nevertheless, a considerable body of research suggests that several robust features characterize optimal rules that are derived in the presence of an explicit zero bound constraint.⁸ This characterization is useful in evaluating the merits of some alternative simple rules considered below.

The first feature of an optimal rule is that it promises that *future* policy will be more expansionary than usual after the economy no longer faces a binding zero bound constraint. To be specific, the optimal policy consists of a commitment to pursue a policy that is expansionary relative to the policy that the central bank would follow if it faced similar macroeconomic conditions, but had made no prior commitments. Policymakers communicate this promise by indicating to markets that they expect to push output above potential for an extended period after the economy no longer faces a zero bound constraint, and to allow inflation to rise above target for some time (rather than aiming to keep output at potential, and inflation at its long-run target, as would be done in the absence of such a commitment).

Assuming full credibility, markets will interpret the commitment as implying a lower expected path for future short-term real interest rates. This serves to reduce current long-term real interest rates, which boosts current output even when the economy faces a zero bound constraint. The stimulus to current activity would be amplified to the extent that the promise of expansionary policy also raised near-term expected inflation, as this would reduce real interest rates even in the near-term. Nonetheless, an important consideration is that while the optimal policy can benefit the economy in the near-term by keeping output and inflation closer to target, this policy also entails the cost of running positive output gaps and inflation gaps once the economy no longer faces the zero bound constraint.

⁸ Eggertson and Woodford (2003) and Eggertson (2008) provide excellent discussions of the optimal policy under commitment in the presence of a zero bound constraint.

A second feature of the optimal policy is that it is “history dependent,” so that the extent and duration of policy stimulus in the period after the economy exits the liquidity trap depends on the evolution of output and prices during the period in which policy was constrained. Intuitively, as an economy facing a zero bound constraint becomes mired in a deeper recession, an optimal policy would promise even more stimulus in the future in order to reduce long-term real interest rates. This type of policy framework, which conditions heavily on past outcomes, contrasts with the typical maxim advocating that central bank’s allow “bygones to be bygones.”

A third feature of the optimal policy is that the timing and size of adjustment in policy rates after the economy leaves the liquidity trap depends crucially on the evolution of economic conditions. Thus, if the recovery turns out to be unexpectedly robust, policy rates could be adjusted upward relatively quickly and by a substantial amount, though to a degree that still leaves an expansionary tilt to policy.

Finally, because the benefits of the optimal policy are front-loaded—hence serving to reduce long-term real interest rates—while the costs are paid later, policymakers may have a strong incentive to renege on their commitments. Thus, the credibility of the central bank’s commitment is a critical question because the efficacy of strategies that rely on commitment hinge on whether the private sector believes that the central bank will carry through on its promises. The credibility problem may be exacerbated by governance issues, especially if the economy remains in prolonged recession and the central bank does not have to deliver on its promises for several years. Without an institutional framework that reinforces the commitment, the central bank cannot guarantee that promises made by one group of central bankers will be heeded by their successors.

Commitment Strategies in Practice

These considerations provide a useful benchmark against which to evaluate several alternative “commitment-based” strategies that might be adopted in practice to help mitigate the impact of a zero-bound constraint.

One strategy is to commit to holding the nominal funds rate at zero for a prolonged period after exiting the liquidity trap. A seeming advantage is that this strategy would appear to be easy to communicate to markets. However, a key shortcoming is the lack of conditionality of interest rate adjustment, in sharp contrast with optimal policy. Nominal short-term rates would have to remain frozen even if the recovery was characterized by booming output and escalating inflation. A second difficulty is that this strategy leaves open the question of what considerations would govern the adjustment of policy rates after the extended period of zero interest rates had ended. In principle, policy could be sufficiently aggressive subsequently to keep output at potential and inflation at target, which would be inconsistent with the commitment to keep policy expansionary. Thus, at the least, the success of this policy would seem to hinge on a careful articulation of the monetary policy strategy after the extended period with low nominal rates had ended.

A second strategy is to follow a history-dependent Taylor rule along the lines of that proposed by Reifschneider and Williams (2000). The basic idea is that policy follows a Taylor rule in normal times, but the rule is modified to allow for a lower intercept term (implying more stimulative policy) in periods in which the economy is constrained by the zero bound. This rule captures all of the key features of optimal rules noted earlier. First, the time-varying intercept indicates that policy promises to be expansionary relative to what it would usually be when faced with similar conditions for output and inflation. Second, because the adjustment to the intercept depends on the length and severity of the recessionary period associated with the zero-bound constraint, this strategy takes account of history-dependence in roughly the same way as the optimal rule. Thus, policy promises to be more stimulative in the future as the current recession becomes more severe. Third, this rule only modifies the intercept of the Taylor rule and hence implies that interest rates will be adjusted in a conditional way that takes full account of pressures on inflation and the output gap once recovery is under way. Finally, the extra stimulus fades over time, because the adjustment to the intercept is reduced as the economy recovers.

From a practical perspective of implementation, a very desirable feature of the Reifschneider-Williams rule is that its implementation does not require any major departure from the usual decision-making framework of central banks. The greater history dependence relative to a standard Taylor rule is confined to periods around the unusual situation of a liquidity trap. During most other times, monetary policy follows a standard Taylor rule that focuses on the near-term evolution of inflation and the output gap, with minimal consideration of how those variables behaved a year or more in the past.

A key practical challenge presented by using this framework to communicate future policy intentions is that the Federal Reserve does not describe its policy actions in normal times in terms of a reference rule such as the Taylor rule, even if the Taylor rule seems to capture quite well the historical evolution of policy rates. This consideration would seem to preclude making specific promises about future behavior using the standard Taylor rule as a rigid benchmark. Instead, such promises would need to be less precise, essentially conveying that the Federal Reserve would commit to leaving interest rates considerably below the level that would normally be set given the prevailing outlook for inflation and output. In the spirit of the Reifschneider-Williams rule, some rough guidance might be provided about the magnitude of initial stimulus and how this stimulus would diminish through time. Given the imprecise nature of the promise, markets would likely face difficulties in making quantitative assessments about the magnitude of future easing. Even so, this approach could well have a noticeable and positive effect on market expectations, especially if accompanied by tangible actions such as large-scale quantitative easing that could be regarded as bolstering the credibility of the commitment to remain expansionary.

From the standpoint of communication, it is worth pointing out that a time-varying intercept in the central bank's reaction function has the alternative interpretation of a time-varying inflation target. In particular, promising to follow a Taylor rule with a temporarily low intercept (as in the Reifschneider-Williams rule) has the same macroeconomic effects as setting an inflation target in the near- to medium-term that is higher than the central bank's long-run inflation objective.⁹ Although it is conceivable that there would be some benefit of

⁹ Note 21 uses the FRB/US model to assess the impact of a highly persistent rise in the Federal Reserve's inflation target.

communicating a commitment to remain expansionary in terms of a time-varying inflation target, characterizing strategy in these terms may also appear inconsistent with a dual mandate.

A third option is price-level targeting. This strategy also captures the salient features of optimal rules mentioned above and has been shown to be the optimal policy in the context of a stylized New Keynesian model by Eggertson and Woodford (2003). The distinctive feature of price-level targeting is the promise to maintain a positive output gap for an extended period after the economy no longer faces a binding zero bound constraint until prices rise back to their “trend” level. Thus, if the price level fell by 3 percent in absolute terms over a three-year period and the target price level increased 2 percent per year, policy would commit to eventually making up the 9 percent “price level gap” that emerged. For instance, if policymakers found it desirable to close this gap over a period of three years, they would target policy at an inflation rate averaging 5 percent per year over that interval.

Thus, price-level targeting goes beyond policies that simply promise only to be expansionary in the post-recession future. In particular, price-level targeting pledges that policy will remain expansionary until any gap between the actual and target price level is eliminated. Provided that inflation expectations are significantly forward-looking, and the policy is viewed as highly credible, this strong commitment to reflate could play a very constructive role in stabilizing expected inflation during the period in which the economy was in a liquidity trap and thus help keep real rates relatively low in the near-term as well as at longer horizons.¹⁰ Indeed, simulations of the FRB/US model under model-consistent expectations tend to find an important stabilizing role for price-level targeting, at least under some conditions, despite the high degree of intrinsic inertia in inflation in that model; whether such gains would accrue in practice over the horizon currently in play is more questionable, as it is not obvious that expectations formation would adjust to a shift in policy regime quickly.

From a communication perspective, an attractive feature of price-level targeting is that the ultimate goal of keeping prices stable relative to a deterministic trend would seem quite straightforward to communicate to the public (even if, as noted below, it remains a nontrivial task to establish a timeframe and operational approach for achieving this goal). Indeed, the simplicity of the objective and relative ease in verifying the success of policymakers in attaining it have made price-level targeting attractive to economists for nearly two centuries, dating at least to John Rooke in the early 19th century.¹¹ Even aside from the modern argument that price-level targeting can help anchor inflation expectations, another intuitive conclusion is that keeping prices stable can help avoid the unanticipated changes in the distribution of wealth that invariably occur due to price level surprises (given that most contracts, including financial contracts, are denominated in nominal terms).

However, formal adoption of price-level targeting would entail a major shift in the Federal Reserve’s framework for conducting monetary policy by making policy much more history-dependent. Policy would have to focus heavily on correcting past mistakes (departures of the price level from target) even in normal times, in contrast with the Reifschneider-Williams

¹⁰ In the context of a model that embeds these assumptions, Eggertson and Woodford (2003) show that the expectation that the authorities would reverse any price level gap in the future is sufficient to largely forestall any price decline from occurring in response to a negative aggregate demand shock, notwithstanding that the same shock would have sizable contractionary effects if policy followed a standard Taylor rule.

¹¹ A discussion of Rooke’s contributions may be found in Fisher (1934).

rule that introduces history dependence only under restricted conditions. Such a shift in the conduct of monetary policy implies tackling the important issue of how to accommodate the goal of stabilizing prices near their desired trend with the Federal Reserve's legislated objective of a dual mandate. Because reconciling the two objectives entails balancing the cost of returning the price level to target quickly against the impact on the real economy, it poses a significant challenge to for the design and communication of policy.

Somewhat more broadly, how price-level targeting would perform in practice is an open question, given that no major industrial country has adopted price-level targeting for a sustained period. While price-level targeting clearly performs very adeptly in stabilizing inflation expectations and output in simple models in which expectations are highly forward-looking and the monetary regime is fully credible, the robustness of these results to alternative and perhaps more realistic settings is unclear. In reality, when the economy faced a zero bound constraint, prices could conceivably fall considerably even under price-level targeting either because inflation expectations were not very forward-looking, or due to credibility problems. Under these conditions, price-level targeting could fail in the objective of stabilizing inflation expectations, but would still saddle the policymaker with the commitment to pursue a sufficiently expansionary policy to push prices back to trend. Fulfilling such a commitment could require a large positive output gap if the Phillips Curve slope was fairly flat.

Given these considerations, a shift to price-level targeting might be reserved for more extreme circumstances than we are currently anticipating—a situation in which the business downturn became even more severe and protracted, and was accompanied by a declining price level and shift in expected inflation into negative territory. Such circumstances might warrant a major departure from our current policy framework. In particular, if the price level did decline markedly, the private sector would plausibly regard a commitment to reverse this decline in the context of a new regime of price-level targeting as quite credible and desirable. Price-level targeting might well prove efficacious in boosting inflation expectations, as well as in alleviating the adverse effects of debt deflation on the real economy. Overall, although price-level targeting appears to offer significant benefits, the success of the Federal Reserve's existing policy framework in keeping inflation low and stable over the past quarter century provides a rationale for being cautious about shifting to a new regime.

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