Concluding Comments and Questions

If the Fed has specific objectives, why not specify a loss function and optimal policy for this loss function (under commitment or discretion)? The assumptions of a known model, credible policies, and rational expectations seem rather strong for the Great Inflation period. Nevertheless, that a major explanation for the Great Inflation could be a small weight on inflation stabilization and a drifting inflation target does not seem so far-fetched.

In the model presented, is trend inflation a predetermined inflation target determined by the Fed or a forward-looking variable determined by the private sector? It is not clear (at least not to me) that there is determinacy if trend inflation is not a predetermined variable. The eigenvalue configuration of the system needs to be clarified. A unit root is OK for a predetermined variable but not for a forward-looking variable. The assumption that trend inflation is a random walk seems to imply that the variable has a unit root, which means that it cannot be a forward-looking variable determined by the private sector.

Generally, explicit out-of-equilibrium behavior by the Fed may be needed to ensure equilibrium. This is the case as shown earlier when trend inflation is a predetermined variable. But if the Fed's behavior is described by an implicit instrument rule, a simultaneity problem makes the implementation problematic.

Reference

Svensson, Lars E. O., and Michael Woodford. 2005. "Implementing Optimal Policy through Inflation-Forecast Targeting." In *The Inflation-Targeting Debate,* edited by Ben S. Bernanke and Michael Woodford, 19–83. Chicago: University of Chicago Press.

Discusion

Olivier Blanchard started the questions: What if interest is moving rather than predictable? What if the Federal Reserve, instead of computing the output gap using the natural rate, adjusted it slowly to movements in the natural rate, thus being behind the curve? When the natural rate goes down, it takes a while to adjust.

Andrew Levin was concerned that the magnitude of the inflation drift generated from this model is of the order of 1 to 2 percent, and there has to be some other mechanism generating such a drift given that movements in the natural rate of interest are not sufficient from results using models at the Federal Reserve.

Michael Woodford proclaimed that this chapter has an example of a model that attributes increases in inflation to negative supply shocks. The way it happens here is different from conventional wisdom. The typical view is that you have a shock that lowers potential GDP, and it is likely that the central bank is not willing to lower output as much as potential is falling, and secondly is not willing to raise interest rates as much as it would need to in order to lower output. Therefore, inflation rises. In the model shown here, the central bank wants to be sure it lowers output as much, as potential has gone down and the problem is that it is not willing to cut interest rates in equilibrium as much to keep inflation stable, and thus in order to avoid cutting nominal interest rates it raises long-run inflation expectations so it can cut output as much as it wants without cutting nominal interest rates. Isn't this unintuitive?

Athanasios Orphanides was puzzled about the motivation of the interest-rate continuity objective. Is it the desire to avoid surprising markets when changing interest rates? Can't the central bank, rather than change interest rates today, just announce they will change rates tomorrow? Or is there a deeper explanation? Lars Svensson disagreed, because such an announcement would cause surprise in the markets. But this is what Orphanides was puzzled by. Is it continuity of the short rate, or does it include forward rates?

Christina Romer wanted to know how well the predictions of this model performed. She and Matthew Shapiro remember that the Romer-Romer policy dates were not predictable for inflation, but they were predictable for interest rates. This could be a problem for this chapter. Romer thinks the reason the dates are predictable for interest rates is that there is a recognition lag, and the Federal Reserve has often started moving down the path of monetary tightening before it was recorded in the minutes that they were tightening policy. The second issue Romer raised was with regards to symmetry. If there are positive shocks to potential output, does that mean there should be periods of deflation in the 1950s, 1960s, and late 1990s?

Robert King provided the rebuttal. First, he thanked Orphanides for providing an earlier review of a paper that contained the chapter presented here as an exercise. They were encouraged to work more on it. The objective of this chapter from the authors' points of view was to start understanding the preconditions to the Volcker disinflation. Why did inflation run up? Calvo pricing was used, but with imperfect credibility, and thus one can trace out the real output costs associated with imperfect credibility. Also, the use of long-term interest rates was useful to gauge the sense that there was sluggish adjustment of long-term inflation expectations in that time interval. As Blanchard pointed out, a major feature of the time period was the higher level of long-term interest rates. The previous paper Orphanides reviewed had started here and tried to move forward, and relied heavy on historical documents. King also addressed the inflation process in the model, pointing out that the authors wanted inflation to have a random walk, which is

possible under Calvo pricing when output is at capacity. Some portion of a random walk in inflation is essential. The authors were intrigued by the fact that long-term interest rates are stationary, yet inflation has a random walk component. The simple model provided here can do that. Svensson wanted the authors to be more precise on how inflation is a martingale process, yet the Calvo model itself with the assumption of output at capacity generates a martingale, and innovations can be anything. King admits Woodford is correct in that the model is unorthodox in terms of Federal Reserve response, yet Woodford assumed that the Federal Reserve would act as it always had. Orphanides questioned the interest-rate continuity factor, and King interpreted it as a postulate for many things, including (not surprisingly) the markets. Lastly, in reference to comments by Romer, one element of the Romer-Romer dates that sticks out to King is that every time there is a disinflation attempt described by a Romer-Romer date, inflation is higher than it was at the onset of the disinflation about two to three years later. This is why agents might have been skeptical about Volcker when forming expectations. Lastly, the model should be symmetric in its reactions.