

General Discussion:
How Should Monetary Policy Respond to Shocks
While Maintaining Long-Run Price Stability?
—Conceptual Issues

Chairman: Andrew Crockett

Mr. Crockett: Thank you very much, Lars. We have had from the discussants and the papers, one or two of the elements of the consensus that seemed to be emerging yesterday questioned. It is now time for the discussion period. First is Mike Darby.

Mr. Darby: An excellent session, an excellent discussion on an excellent paper. So my comments are in the form of a series of quibbles, primarily about the history of the 1960s-1970s—the onset of the Great Inflation. I think that, John, you gave insufficient allowance for the dynamics of the money growth. It was not immediately reflected in the price level during the catch-up period that Dave Mullins referred to. You had to have more inflation to get the price level up to the P^* , as it sometimes was called in the Fed. On the other hand, in work with Jim Lothian, Anna Schwartz, and others, we saw a very direct relationship between what was happening in money and inflation in the United States and Europe because of the Bretton-Woods system. So I think your using Europe as a way of getting out of that one point was maybe a little too facile, because Europe was basically, until 1973 or at least until 1971-73, so much influenced by U.S. monetary policy. And, just one comment for Dave (Mullins): As I recall, Bob Solow went to the Council of Economic Advisers right after writing a very persuasive paper which he presented at the American Economic Association meetings with Samuelson on the Phillips curve. I suspect he was as persuasive in Washington as he has been with the rest of us. Thanks.

Mr. Crockett: Bob Heller.

Mr. Heller: I enjoyed the paper, as well. Let me add two items on the discussion of the Great Inflation. Mike Darby started talking about personalities already. First of all, Arthur Burns was the Chairman of the Fed during most of the period of most of the high inflation, and I don't think that he has ever been accused of being a neo-Keynesian. Arthur Burns also has never been accused of abandoning the goal of price stability; and if you read any of his speeches and papers, that is always goal number one of the Fed during the period. So what went wrong with all these good intentions? Second, I do not think we have talked about the abandonment of the gold standard, which happened right at the beginning of that period of Great Inflation. Yesterday we said that one of the good ways to bring down high inflation rates in a country like Argentina—or any other country—would be to adopt an external anchor for the currency. In the early 1970s, the United States got rid of gold as its external anchor. If Argentina got rid of its external parity tomorrow, you would see an acceleration of inflation. Well, maybe that is what we were seeing in the United States in the 1970s as well.

Mr. Crockett: John Makin.

Mr. Makin: Actually David Mullins almost made me hesitate to bring these points up, but I do want to suggest a topic for a future conference, which comes out of the discussion of these papers. And it is: Having Achieved Price Stability, What Next? When one looks around the G-7, I think six of seven, or maybe all seven, have inflation rates reliably within the 1 to 3 percent inflation range. Having achieved price stability puts central banks in an awkward position. Because if they have what they said they wanted, they are forced to be reactive rather than preemptive. It is very awkward to keep saying, "We want price stability." Suppose inflation is in the 1 to 3 percent range. The central bank sees a shock coming down the road that it knows is going to be trouble. It is very difficult to step out and do something in advance of the actual appearance of inflation. I have one country particularly in mind, but I will not mention which one it is.

Second question: What do you do if you get deflationary shocks? Again, here running the experiment about price-level targeting and inflation targeting becomes very interesting. If you have price-level targeting and you get a deflationary shock, you have to have a period when you run inflation faster than probably you would like to do. This could be awkward. I think that when we are this close to being where we want to on the inflation front, central banks probably ought to start thinking about what they are going to say to the public when and if a deflationary accident occurs. One form of deflationary action, of course, could be incipient fiscal stringencies, such as is planned in Europe and Japan today. If we look at the stated fiscal plans that are present there and look at the state of demand growth now, we could actually see, I think, some deflationary behavior in those countries. Japan has been mentioned frequently as a case where we have already seen a deflationary accident occur. In my own view, the deflationary action in Japan last year at this time was close to a disastrous deflationary accident.

My third point is that we are all so used to running the dynamic experiment in an accelerating inflation environment, I suggest a little bit of practice in thinking about accelerating deflationary environments—definitely something we want to avoid. Thank you.

Mr. Crockett: Ben McCallum.

Mr. McCallum: John did not explicitly mention his proposed policy rule in his talk, but it was clearly present in his discussion, and I wanted to report on a use of his formula in thinking about a case that keeps cropping up in our discussion—namely, the case of Japan during the last few years. Yesterday it was suggested that this case is an example of the danger of setting an inflation target too low, and that low interest rates might interfere with the application of monetary stimulus when it is needed. Well, I have in the past thought, on the basis of my own favorite indicators, that Japanese monetary policy was very tight during 1990 through 1994. So I checked this last night with John's formula, and it agreed. It said that interest rates should have been considerably lower than they were during those years. Now I don't know, possibly it is true that the

low-by-absolute-standards interest rates kept the Bank of Japan from being more aggressive. But in 1995, they finally did lower rates even more, in April and again in September. This did lead to a major pick-up, a major increase, in the growth rates of narrow money, and then, in the last quarter of the year and the first quarter of this year, a pick-up in GDP growth rates. Now this seems to me to indicate rather clearly that the low inflation rates in Japan did not keep monetary stimulus from working nicely in the classical way when applied. The example seems to me to work against the argument that low inflation targets should be avoided.

Mr. Crockett: Stephen Axilrod.

Mr. Axilrod: John, I am not sure whether I have an extended footnote or a contrast to your explanation of the Great Inflation. I think I have a contrast, but I could see how you could interpret it as an extended footnote. In any event, from a worm's eye policy viewpoint—which was mine—I would say it came about because of an interaction of a culture of extreme policy caution and a number of unanticipated changes in the economic environment. That is, in the culture of the time the policy instrument, say, the funds rate, was adjusted very carefully—slowly and in small increments. Under those conditions, when you have a curve, to use a metaphor that is now prevalent—which it is hard for me to interpret but it seems to represent the economic environment and attitudes—when you have a curve that is moving and you do not even know it is moving, you are in deep trouble. Sometimes the curve moves and you know it, but you do not know the pace and extent. There were a number of things happening in that period where the curve moved and we did not fully grasp its extent. One was military spending in the late 1960s. Personally, I felt in a way responsible. Estimating government expenditures was part of my job at that time as head of the government finance section. We could not get timely, adequate data on the amount of military spending. So, the policymakers never really knew how the curve was moving in terms of spending.

Secondly, in the mid-1970s, depositors were beginning the shift away from M1 as a result of structural changes under way in banking

and finance. It took us as a staff a rather long time to make sure what was happening, and to quantify it with any certainty for interpreting M1 policy objectives. And it takes an even longer time to convince the policymakers. By the time we had convinced them—if they ever got convinced, you never can be sure—maybe a year or so had passed. So we had a curve that moved in that sense, and no one was reacting to it or even could in the policy atmosphere of the period, until it was too late.

A third unanticipated exogenous factor in the 1970s was, of course, the huge oil price shock. I just do not think it was tolerable in the political and social atmosphere of the time to contemplate an extended period of unemployment as a response to keep inflation very low. It just did not seem practically possible to keep the oil price rise from showing through into the overall inflation rate or to have a one-time increase in the price level and then go back to a much slower rate of inflation. I am not sure how much real debate there was. In practice, we split various differences in a very cautious way that permitted a rise in the rate of inflation but did not keep the employment rate from also rising.

In that context, you can think about the policy approach of 1979-82 as an effort to break the culture of excessive policy caution. There were a lot of reasons for the 1979-82 policy shift, but I would interpret it very importantly as an effort to break with the old culture and restore the central bank's credibility.

Now if you think of the about fifteen years since 1982, policy has been both very fortunate and very shrewd. I do not think the Fed has been faced with the kinds of exogenous shocks faced during the Great Inflation period that made it so difficult to control inflation in a culture of policy cautiousness. I think policy is probably less cautious now, but it is still fortunate that the so-called curve does not shift about so violently as it earlier did.

Mr. Crockett: We will have maybe three or four more brief comments and then allow responses. I think Stan Fischer was asking for the floor.

Mr. Fischer: Thanks. Just a couple of observations and then two questions for John. First let me defend the model of dynamic inconsistency. It implies that a society gets more inflation than is socially optimal because of pressures to push output beyond the natural rate. That model seems to me to capture an essential insight. Look around at the inflationary pressures from legislatures, governments, and populists and think about how that works through into inflationary pressure: that's the insight, and it's something we should carry around in our heads as a way of thinking about the world. Even though there are ways of getting around these pressures, such as independent central banks, the pressures are still real. So we should not dismiss the model. On the issue of price level versus inflation targeting—the subject for our conference in ten or fifteen years—we really have to ask what adjustment inflation is helping implement when it takes place. We cannot answer whether you should undo the inflation that happened after a shock, without asking what adjustment took place as a result of that rise in the price level. Were the costs optimally distributed? Or should they be reversed? That's the way to answer the question of whether you want to go back to the original price level path, or just forget about what happened and assume those are one-time costs that were borne more or less optimally. A third observation, and then two questions: On Japan, I don't have any doubt that the fact that nominal interest rates are getting down to zero has inhibited Japanese monetary policy. Now, the two questions. John, on supply shocks, I could not figure out what you actually want to happen. When there is an oil price shock and it has no permanent impact on potential output growth, but potential output is going to be lower for two years, what should the Fed do? And, the other question, when you favor policy rules, do you want them publicly announced or do you just want the Fed to have them and to have good econometricians figure out what they are doing? Or should the Fed announce them and then explain why it is deviating when it deviates? Thanks.

Mr. Crockett: At the back.

Mr. Kudlow: A couple of points. First, on the issue of price-level stability, there is a period of American history that might be worth

looking at. More or less from the Civil War to the beginning of World War I, the dollar (the Greenback) was tied to gold and silver. It was not a perfect period, but it was a commodity price rule and it was a period of extraordinary economic growth with price stability. And, in fact we had periods of deflation; the economy still expanded nicely; and interest rates behaved themselves. Second point: to John Taylor and, I think, to David Mullins, I fully agree with the importance of clarity and simplification in policymaking and also accountability. I think all branches of government need to be accountable and central banks are no exception. That leads me to my third point, which is, today's market setting strikes me as odd. Short-term interest rates appear to be steadier than long-term interest rates. Or put another way, the long end of the market is more volatile than the short end. I raise that because it strikes me if participants and economic agents—not just professional traders or even professional investors, but just ordinary people—were convinced that the United States was embarked in a credible, long-term price stability program, then long-term rates ought to be much less volatile, since, after all, inflation is the primary determinant of long-term rates. The business cycle bobs up and down; real rates may bob up and down; and, hence, short-term rates may bob up and down. But why would a holder of a 30-year bond be concerned that more people are working or building houses or even, perish the thought, buying houses. So, if the business cycle is heating up, I would expect to see rising short-term rates, but relatively steady long-term rates, if—*if*—long-term inflation expectations are truly anchored by a policy that is both credible, simple, easily understood, and in tune with real-world events. My concern with some of the dialogue is that we are debating price-level stability versus an inflation target. I tend to lean more toward the price-level stability. But we really do not have, at the moment, in the United States any real targeting, either long-term or intermediate-term. And, I think, despite the good inflation performance—it has been an excellent low-inflation performance in recent years—I think markets have nagging doubts which appear in these risk premiums and these volatility measures, particularly in the long end of the curve, which I think would run counter to what we might expect if the credibility was really there.

Mr. Crockett: I am afraid we have run out of time. With apologies to those whom I nodded to but did not get around to calling on, let me now ask John and then the two discussants if they would very briefly give their reactions to the points that have been made and answer the questions. John first.

Mr. Taylor: I will focus on a number of things. The price level versus inflation targeting has been raised by a number of people. I agree this is something we need a lot more research on. I do not disagree with that at all. I basically was asked in the paper to give an opinion on it. My opinion is that where we are currently, if there is a focus on price targeting, we may face some unfamiliar instabilities. In any case, I agree with everyone that we have a ways to go before we have the inflation goals in mind, especially with the questions of what the measurement bias is, and things like that. But it is a judgment call at this point. And I made a judgment. The issue, which Lars raised and David also mentioned, targeting an inflation rate versus the rules for the instruments, is a very big issue. In other words, Lars, for example, is indicating that he would prefer to have a target rule for the inflation rate and leave the instrument settings up to the central bankers. It seems to me that we want a target for inflation; we agree to that; but then, it also seems to me that we would like to have some description of what policymakers should do to achieve the target. The rules for the instruments are basically that. They are basically trying to describe what central bank policy ought to be in order to achieve an inflation target. So they are not contradictory. I have a preference for stating the rules in terms of instruments, because ultimately that leads to more accountability. The inflation rate itself adapts with a lag; therefore, it is not as good for accountability purposes. I used the example of teaching. I could be held accountable for the success of my students, but we do not know their success for twenty years after I teach them. So ultimate success is not a very good accountability measure. And the same is true with inflation. Forecasts of inflation are better in that respect, because they respond more rapidly to the actions that policymakers take. Bob Heller mentions the abandonment of the gold standard and Bretton-Woods as another candidate for the explanation of the Great Inflation. I think that is certainly a possibility. I tend to think that

occurred because of the abandonment of price stability, which began for other reasons, and we just could not stay on the Bretton-Woods system at that point. So, it was abandoned, and there were other reasons that it was abandoned as well, but it just was not consistent at that point. On John Makin's question about the deflation shock: I think of inflation targets not simply as a lower bound by any means. Especially if you are below the target, it is bad policy; if you go above it, it is bad policy. So, if your target for inflation is zero, adjusting for measurement, then deflation is a bad policy and should be corrected. Then, regarding Ben McCallum's point: I personally think that when you are in a situation where there is deflation or hyperinflation, that interest rate rules have a lot of problems. Therefore, that is why I emphasize the similarity between money rules and interest rate rules. When you move into these regions which are incredibly unstable—deflation or hyperinflation—you need to look at quantities again. And, I think in Japan it would have been useful to bring the quantities back into play when the nominal interest rate got so low as to be not a very good guide for policy. I thought Steve Axilrod's points are very important to make. I think we should have more study of this period. The data on military spending, the reasons for that could have been very well based on views in decisionmakers not releasing the data about this tradeoff, about the Phillips curve, about monetary policy. So I think that needs to be studied more carefully. But, I think appointments, actions, relationships between the central bank and the government are things to study during that period. Just two more things: Stanley Fischer mentions we should keep time inconsistency in mind. I agree. I certainly teach that to all my students. I just question, is it more of a technical point—taken literally, the model leaves something to be desired as positive economics. As a metaphor for the legislative issues you indicate, it is fine. It does indicate the pressures that are put upon monetary policy. With respect to price shocks versus supply shocks, again, to me, a supply shock is the change in potential GDP. To the extent you can measure those through looking carefully at productivity, the central bank—whether it is using money growth targets or interest rate targets—should accommodate those changes in the growth rate of potential GDP. They are hard to measure. We had discussions about that yesterday. But, it seems to me, that is how you should

view the supply shocks, so to speak. With respect to the oil price shocks, I think you can look and see to what extent those are temporary, coming out of the system; then it is certainly a reason to look carefully at a policy rule. In looking at the policy rule that I proposed, and how it applied in the case of the oil shock of 1990, it seemed to me there was evidence from futures markets that was temporary and could very well therefore have called for an adjustment of the policy rule. And finally, Larry Kudlow's point about the volatility of long-term rates: I think there are still questions in financial markets about the long-term viability of price stability. We should be happy that we are making the progress we are; but in terms of establishing that as a principle for four years, five years, ten years, twenty years, thirty years—what, effectively, long-term interest rates are affected by—I think we need to be working hard to make sure the price stability goal is embedded in our system.

Mr. Mullins: First, I think Steve Axilrod raised a good point. This is another type of shock when these dependable relationships change. I very much agree with Stan Fischer on the plausibility of the time inconsistency hypothesis. It is consistent with what it feels like being a Fed official in the early 1990s testifying before Congress. This has a certain ring of truth to it. John Makin, on worrying about the specter of fiscal stringency: This is perhaps a problem for Japan and Europe, but I think we are safe here in the United States. And finally, Larry Kudlow's point: I think the problem is that we are on the cusp of a regime shift. For ten years beginning in the early 1980s, we had 4 to 5 percent inflation. Now, we have had three or four years with inflation coming in around 3 percent. The opportunity for a sustainable downward shift in the inflation regime comes along once in a decade. The market is uncertain as to whether we are going to reverse the rise in long rates from the 1970s. In October 1993, the long bond rate was 5.78 percent; November 1994, 8.25 percent; December 1995, a little below 6 percent; now, a little above 7 percent. So this is an important crossroads, and the market is very uncertain in this long-term outlook where we are going to settle down; the low-inflation, low-interest regime of the 1950s and early 1960s or the higher rate environment of the 1970s and 1980s. If we were for some reason to revert to the 4 or 5 percent inflation range

for a couple of years, then I think it will be awhile before we get back to this stage. Thank you.

Mr. Crockett: Lars.

Mr. Svensson: I would like to reiterate the point about basing accountability on the instrument rule. I think it is in the nature of instrument rules that they will be very temporary. Whenever the bank re-estimates its model, it wants to revise the coefficients in its instrument rule, so there will be frequent revisions. Occasionally, there will be new variables added, new information taken into account. Therefore, instrument rules will be inherently unstable and I think it will be problematic to base accountability on them. Therefore, I am more in favor of basing accountability on target rules, which are likely to be much more stable over time.

Mr. Crockett: Thank you very much.