

General Discussion: Monetary Policy and Asset Price Volatility

Chair: Ian Macfarlane

Mr. Macfarlane: The floor is now open for questions and we have one straight away.

Mr. Kaufman: The chairman this morning indicated the great difficulty in looking at asset bubbles and he also pointed to the fact that modeling is very difficult; although, modeling of risk is increasing very significantly. And, therefore, the system moves to increasing risk taking because if you are in a highly competitive financial environment, it is always the more liberal model that will capture the opportunity.

At the same time, we are in the process of conglomerating financially and the area that has not been really covered, and I thought Rudi was going to get into it, is what happens to the lender of last resort responsibility? How broadly should that responsibility be defined in view of the experience of last year and in some other instances? Aren't we talking about spreading the safety net and having a very complex situation as a lender of last resort?

Mr. Hale: There was a question missing, I thought, from your first page when you identified the three key issues we should be focusing on and that is: Should the central bank be focusing on the financial underpinnings of an asset inflation? And I can think of three recent examples that would have quite different policy consequences. The

Japanese asset inflation of the 1980s was driven by bank lending. It went from 70 percent of GDP to 110 percent. As a result, today, Japan has now performing bank loans of a quarter of GDP.

Australia and Asia in the 1980s and 1990s had a similar asset inflation, but it was financed by an arrival of foreign banks. In the case of Australia it was domestic currency lending. In the case of Asia, it was foreign currency lending.

In 1929, in the United States, there was a huge expansion of bank lending from margin debt. But the recent asset gains we have seen in New York have not been financed by bank lending directly. We have had a massive expansion of defined contribution pension plans. The major roles of banks have been to finance huge increases in merger acquisition activity, which is really a kind of restructuring.

It would seem to me that it is hard to have a policy conclusion unless you focus on what are the financial dynamics of the asset inflation itself because there are quite separate policy consequences in terms of both monetary policy and bank supervision.

Mr. Goldstein: I wanted to press Ben and Mark a bit on the implications of this aggressive flexible inflation targeting for emerging economies. Let us go back to mid-late-1997 and consider Thailand, Indonesia, and the rest. These countries are headed into deep recession. There is widespread financial fragility. There are large unhedged foreign currency exposures by banks and corporates. The exchange rate is crashing. The equity market is crashing. Does your model tell me that these countries should have been lowering interest rates immediately because of the huge perspective output gap? Or should they have been raising interest rates to slow the fall in the exchange rate?

Mr. Mussa: I mainly have two points. When I look at Charts 8 and 10 and I compare them with Charts 7 and 9, we say with a lag term “everything fits fine.” Without it, the signal looks very different from what the actual policy was. I think it is overfitted. But my main concern is when we look at the U.S. chart in the early 1990s, and this was mentioned, the rule was telling the Federal Reserve not to ease below

4.5 percent on the federal funds rate. And the decision was taken in 1991 and 1992, when the recovery began to slow down and inflation was not a problem, to go for an additional monetary easing of 150 basis points. That suggests to me that discretion is important and that the weights shift. That is, inflation is important in influencing the conduct of monetary policy when inflation is the problem. When inflation is not a problem and the economy is performing weakly, then the emphasis shifts to the economy and a fixed rate rule does not make a great deal of sense as the description of the way in which the Federal Reserve has conducted its policy in fact.

I think it probably also does not make sense as a way to describe a policy rule except in John Taylor's sense that it provides a kind of guideline, and you need to decide how much you want to adhere to it or deviate from it in particular circumstances.

My second point concerns asset prices. There, I think I disagree with the consensus. I think asset prices do, from time to time, merit separate attention from monetary policy, beyond and above their identifiable impact on inflation over the normal horizon.

As Chairman Greenspan suggested today, when there is sudden disruption on the downside, then the central bank takes account of that as it did last autumn and as it did in the autumn of 1987. I think the question needs to be asked, Is not there some need for symmetry if asset markets are proceeding to irrational heights on the upside and further progress in that direction threatens an even larger correction should not monetary policy take some account of that phenomenon in an earlier effort to choke it off before it becomes excessively dangerous?

Mr. Blinder: I have one minor point and a major point. The minor point is that, if you believe 4 cents on the dollar is the wealth effect, I would not call that a small effect, but rather a large effect. If you work the numbers through with about an 18 percent annual standard deviation in stock prices and the current value of the stock market, a 4 cent wealth effect could account for a very large share of the fluctuations of GDP—all by itself. That is my minor point.

The major point pertains to the main theme of the paper. I agree about 85 percent with the proposition that price stability and financial stability are highly consistent and mutually reinforcing goals. But I want to just take a second and talk about the other 15 percent—where I think they might not be. My doubts stem from phenomena like the following two hypothesis. One, which Alan Greenspan mentioned this morning, is that as the business cycle gets less virulent, that raises the juices of stock marketed investors. The second is that stock market investors get irrationally exuberant when inflation gets low. Back in the 1970s, this was known as the Modigliani and Cohn hypothesis, and I think the data have been very consistent with it.

Now, put those two together if you have a central bank that is doing exactly what it should do, that delivers low inflation and smooth output performance. The central bank may, therefore, unwittingly—and not because it is doing the wrong thing—contribute to a financial bubble. Indeed, that is the way a lot of people characterize the United States today.

I would not deduce from this conundrum that the central bank should then forsake the macroeconomic stability. That is, of course, its central job. The main point is that here is a place where there is a potential conflict between macroeconomic stability and financial stability, and I think it is real.

Where do you go from here? I think there are a variety of ways to go. I tend to go more or less in the direction that Rudi was speaking about. But you have got to watch out when you fall off the cliff. That is when the central bank has to spring into action.

Mr. Visco: I understand that there are two possibilities that Rudi has clarified. There are the cliffs and there is the standard policy rule or reaction function that has been considered in the paper. I would like to focus on the latter, and I have two questions. First, with flexible inflation targeting, you have these large interest rate responses to deviations from the inflation target. These deviations may come from effects that asset prices have on economic activity and through that on inflation. There is a problem in summarizing these effects properly.

There is also a problem in measurement. What you have with the estimated coefficient of your policy rule is that even a small deviation, which is hard to justify and difficult to communicate, might require a substantial movement in the interest rate. Assume the projected deviation is a half percent over the next few years, that may require a response today of a 1 percentage point change in the interest rate. But we see the Fed moving substantially slower. So, in a sense, one would think that the Fed is not being aggressive enough.

My second point concerns the intercept of the policy rule that you have. The intercept that Mervyn King has fixed at 3 percent as if it were the “natural rate of interest.” Now, this intercept may change over time, and I would like to know whether you have some idea about how much it would change. I think this may work in a steady-state environment with a constant intercept equal to the real interest rate. But if there is an ongoing bubble in the asset market, this probably is not a steady-state situation, and maybe some understanding of what “average” real interest rate the central bank should target might become a relevant issue.

Mr. Hausmann: I enjoyed the paper very much, specifically your stress on the balance sheet effects. You conclude by talking a little bit about exchange rate arrangements for emerging markets, but you do not adjust your model to incorporate some of the relevant features of such economies. I wondered if you were to think through what would be the implications of the following assumptions?

First, if your external liabilities are in foreign currency, what would the balance sheet effect do to the economy when the exchange rate moves?

Second, what happens if you change the balance of shocks between supply shocks and demand shocks, making the former more important? Would credibility be harder to establish leading monetary policy to be more pro-cyclical? What would that do to asset prices and to the balance sheet effects?

Third, what happens if you incorporate a significant feedback

between exchange rate movements and inflation? Would the central bank need to have a much stronger interest rate response? How volatile would interest rates become? I wonder if, assuming those structural elements in your model, you would find that inflation targeting would have the stabilizing features in emerging markets that you imply in your paper?

Mr. Poole: On the discussion of problems that central bankers face in dealing with asset bubbles, Mike Mussa's argument has logic to it. But the problem is that if markets are departing from what is justified by the fundamentals, as incorporated in the efficient markets model, for example, then by definition there is something that is irrational or non-rational—something that we do not understand that we cannot model with the tools that economists ordinarily use. And it seems to me that we are treading on very dangerous ground in trying to figure out how we could have any predictable and helpful reaction in the markets from a monetary policy adjustment. If we are concerned about a crash, then we also need to be concerned about the precursor of the crash, which is that prices are going too high. But trying to have any regular and predictable response of the markets in a situation like that is extraordinarily difficult, and I think it's a very dangerous ground for central banks to get into.

Mr. Sinai: Just one quick comment on Bill Poole's remarks. I would underscore what he said. It is very dangerous for a central bank to take a chance of knowing more than the markets do because that can trigger severe reactions, more volatile reactions, which are beyond anything that they might want to have. So, trying to figure out when you might intervene in a rising market as a precursor to a later crash would practically be impossible.

Looking at sources of that rising market is a different story in the sense of the balance sheet effects that are in Mark and Ben's paper, which I think was excellent. It gives insight regarding how the financial mechanism can surprise policy-makers, especially the notion of a financial accelerator when you magnify so many things that are going on.

One minor comment related to Alan Blinder's remark. We should be careful about downplaying the wealth effect. I think there is some research and recent evidence that has shown in this episode we may have had about a percentage point of extra growth from the cumulative stock market boom since the end of 1994. I think that is the Federal Reserve's results, in addition to my own results. You can make the same point, without speculating on the wealth effect. The standard literature is missing balance sheet effects. Considering both the wealth effect and a balance sheet effect together, it is quite predominant.

Mr. Greenspan: I just wanted to make a very simple point that should be obvious but that I suspect is not—that there is a form of asymmetry in response to asset rises and asset declines but not if the rate of change is similar. In other words, central banks do not respond to gradually declining asset prices. We do not respond to gradually rising asset prices. We do respond to sharply reduced asset prices, which will create a seizing up of liquidity in the system. But you almost never have the type of 180-degree version of the seizing up on the up side. If, indeed, such an event occurred, I think we would respond to it. The actuality is that it almost never occurs, so it appears as though we are asymmetric when, indeed, we are not. The markets are asymmetric; we are not.

Mr. Macfarlane: I think we will end the questions at this point and give the authors an opportunity to respond.

Mr. Gertler: I would like to thank everybody for those comments. There is no way I can respond to everyone, so just let me select a few.

First, I would like to thank Rudi for his good and very thoughtful comments. I agree with most of what he said, but there is one point I really want to take strong issue on. Rudi emphasized the issue of market liquidity and suggested we did not address it in the paper, and I would argue that, in fact, we did. This is the sort of falling-off-the-cliff possibility that Alan mentioned as well. In fact, we took very seriously this issue of how to think about what the Fed did in the fall of 1998. There was this asset market contraction, rise in spreads, and the Fed responded. We tried to model it in the following way, and this is actu-

ally treated in Chart 6 of the handout. We actually consider a shock to the credit mechanism, which has the effect of increasing the spread. So this is not a bubble shock. This is a rise in the spread, which is due to some imperfection in the credit mechanism, which we say, was caused by the events in the Russian default. We argue that you can still think about how to respond to this and to this sort of Taylor Rule or flexible inflation targeting framework. This rise in the spreads increases the cost of credit, and this is going to create a deflationary force. So, if you think about it in terms of a formal model, the shock to the terms of credit is going to create a deflation and the right policy response is to respond in the opposite direction, and that is exactly what the simulation says.

So, I think we have in mind also thinking about these off-the-cliffs scenarios, and we are not going to say that it is always that simple to figure out what is going on. In fact, we suggest that what the Fed should do is what it always does. You make it a range of indicators. You see a movement in asset prices, but then you look at the credit markets and see what is going on in the credit markets. Are spreads increasing? That is what happened in the fall. Terms of credit were tightening.

So, if you think this through formally, these are deflationary forces, and I think our analysis is entirely consistent with what the Fed did in the fall of 1998. I think this allows for that. And, I should say, I think we deserve the same leeway that John Taylor gets. I mean we do not think of a Taylor Rule as a mechanical rule for policy. We think of it as an operating guideline. And what we have to offer is not a mechanical rule but a guideline. And this brings me to Mike Mussa's point. He is correct in observing that if you look at the reaction functions in the United States, our estimated reaction function, you see the part that during this period of financial head winds, the interest rates are actually below target. But here is the case where I think a reasonable adjustment was made. It is reasonable to believe that over this period, interest elasticities of spending fell because of the problems in the banking system. It is reasonable to believe that to get a given amount of spending you needed a bigger adjustment of interest rates. So, in light of the circumstance, a bigger adjustment was made. But you can

still think of this in terms of the kind of framework we are talking about. You just need to think of the adjustments that you have to make.

In response to the comments that David Hale and Henry Kaufman were making about changing financial markets and the micro structure of financial markets, I would like to point out that some of the issues they raised deal with prudent regulation, which is really beyond the scope of our paper. But we do emphasize the fact that prudent regulations are important because if leverage gets out of hand, that can have a bad macro effect on the economy. In our model we illustrate the effects of over leveraging and how this can create greater instability.

But, again, the other point I would emphasize is that if you look at all these micro problems, they will be mitigated to the extent that you have a more stable macroeconomic environment. A more stable macroeconomic environment is likely to reduce the likelihood of financial panics.

The last point regards Ricardo Hausmann on flexible exchange rates. I agree. We should think through all of the details that you mentioned, and we should also have a model in terms of making policy recommendations. The one issue that I wonder about is if you move to a regime of flexible exchange rates would you still see all debts denominated in foreign currency or might there be some adjustment?

Mr. Bernanke: I just want to say a couple of quick things. I want to correct the impression that Rudi's comment might have made that Mark and I are somehow against lender-of-last-resort activities, which is absolutely wrong. I have studied the depression quite a bit in my career, and I think there are two distinguishing mistakes that the Federal Reserve made. The first was to allow a serious deflation, which an inflation targeting regime would not have permitted. And the second was to allow the financial system to collapse, and I absolutely agree with, for example, what happened in October 1987 and other interventions. Of course, there is a whole set of issues associated with that, but I certainly did not mean to imply that I am against lender-of-last-resort activities. One advantage of the inflation targeting approach as opposed, for example, to a Currency Board, is it gives you considerably more scope for lender-of-last-resort activities.

I want to be a little stronger than Mark. I realize we have not done the work yet, but I predict that modulo institutional immaturity, etc., etc., that middle income developing countries will move very strongly toward flexible inflation targeting in the next ten years and away from fixed exchange rates. Fixed exchange rates are known to promote banking panics and banking crises. They are the source of a lot of external debt being denominated into foreign currencies. They are not, in general, a very stable way of running an economy.

The supply shock issue is not really an issue. Mike Woodford and some of his students have shown that defining the inflation rate in terms of an appropriate weight on core versus non-core inflation can deal very effectively with supply shock issues.

Finally, I am very skeptical that we can take the toys away and put in a Currency Board. I think that, somehow, the institutional credibility and fiscal credibility that was not there before will suddenly appear because we created a Currency Board. I think that Currency Boards themselves require quite a bit of maturity—institutional, fiscal, and otherwise—before they can become effective. So, I will make the forecast that we will see more and more countries, those that have the infrastructure to do that, to move toward various versions of flexible inflation targeting.

Mr. Macfarlane: I can see that everyone wants to talk about tomorrow's subject today. Rudi, you may say something as long as it is not on tomorrow's subject.

Mr. Dornbusch: I will stay far from it and I apologize for having raised the issue, but I will not change my mind. When I talked about liquidity, I did not talk about spreads. I talked about markets ceasing to exist. That is not your model. I think that is where you want to go when you ask, "How does monetary policy, that usually operates with a broad interest rate instrument, get into the fine-tuning of the financial market when you get the vertical?"

You say flexible is our sort of general expression to cover all of that, but that is not really enough. I think that to say every time there is a

problem you suspend the rule is the kind of thing that gets you into trouble. That is why I would like more modeling of the plumbing of the credit market rather than just have an equity spread link.

