

## General Discussion: Monetary Policy in the Information Economy

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*Chair: Stanley Fischer*

**Mr. Fischer:** We are running short of time and there are lots of people with channel systems that they probably want to comment on. Murray Sherwin, Chuck Freedman, Alan Meltzer. Why don't we start with those three? Right there in the middle.

**Mr. Sherwin:** To borrow an old line, Michael, I'm not sure whether our monetary policy structure works in theory, but in practice it seems just fine. What I should say as a disclaimer right up front is that Michael spent about a month or more with the RBNZ last year. I suspect that is why our system gets rather undue prominence. I should also declare that we borrowed the system from Australia and Canada. I'll leave Chuck and David to argue about who got there first. But it is a fine system.

Transparency. We certainly put a very high store on transparency and would generally expect markets to well anticipate our various monetary policy decisions. That anticipation is aided, no doubt, by the number of former RBNZ staffers who now occupy chief economist positions all around the financial markets. But there is a question about the optimal degree of transparency and it goes to an issue of how best to communicate uncertainty. Mervyn touched on this as well. It is easy to slide over the divide and find yourself communicating noise on occasions, rather than valuable information. I agree with Mervyn about the nature of the conversation that we aim to have with markets.

That is the essence of effective communication as we all grope toward a better understanding of the evolving structure of the economy and toward appropriate policy settings.

Do we always need to meet market expectations? Well, no. But we certainly need to understand where we will be surprising markets, to be very clear about why, and to have a compelling story to tell. As we and others have found in a small open economy, there is not much point in trying to tighten monetary policy unexpectedly and discovering that the markets, for whatever reason, don't accept that that is the sensible thing to be doing. If markets react with a depreciated exchange rate, we may be no closer to our policy objective. So, having a credible story to justify decisions is always important.

Finally, a comment on an interesting doctrinal debate which has been emerging around our shop on what is the essence of central banking and what gives us the capacity to operate monetary policy effectively. These issues will be canvassed in a forthcoming discussion document by Bruce White, which is referred to in Michael's paper. It really goes to the issue of what happens in a world where you didn't have the government account at the central bank and if you didn't have a requirement, for instance, that taxes are paid in the local currency. Could you still continue to operate a monetary policy and would the central bank continue to be relevant? It's an ongoing doctrinal debate and quite an interesting one. I dare say we will see a bit more of it, at least from our shop.

*Mr. Fischer:* Thanks, Murray. Chuck Freedman, please.

*Mr. Freedman:* Use of the channel for the policy interest rate has become rather central in some of this discussion. I first of all have to apologize to Bob Hall. When we introduced it in 1994, I hadn't actually read your stuff. Sorry about that!

What we have arrived at now in Canada is the quintessential version in which the banks or the participants in the settlement system do have complete certainty. We have complete control over the supply of

settlement balances (and control over these is simply a technical issue). Therefore, what we actually have in terms of Mike's picture is a central bank with the interest rate channel, and overlaying the vertical part of the supply of balances is the participants' demand function for balances. That raises a very interesting question. Where in that 50 basis point range do you end up?

Unlike Michael's model, which has a demand curve with a slope, in the Canadian context it becomes a convention of the system that trading goes to the center of the range. We have not always had that. There are oligopolistic elements. We have gone from zero to 50 million dollars of settlement balance at the request of the banks. That is because, after the markets closed, the cash managers don't always want to sit around trying to find their counterparts who have a surplus to offset the deficit. They would rather leave it with us if it is a small amount, even if it costs them something. That said, the system does work very effectively, as Murray said. And it is very different from the exposition in most textbooks, which does not really reflect what actually happens in central banks. I hope that we move in the direction where textbooks become more reflective of reality.

Just one point on this question of whether, in the long run, we need central banks. Mervyn King and I have had this debate over some years. What tends to be forgotten is that when people talk about alternative methods of settling imbalances in payments systems, the central bank does have a natural advantage. It is the only player out there that is totally riskless. If you say, "Well, why can't Citibank be the player on whose books everyone settles?" The answer is that there is some risk to other players of settling on Citibank's books. Although there are other riskless instruments out there that can be used for settlement, such as Treasury bills, that approach raises the question of lender of last resort, how much in Treasury bills participants you have to hold, and so on. While I can, by dint of hard work, come to Mervyn's world in which there is no central bank and it is all done on super computers, I think probably Mervyn would agree that this is so far in the future that it is not at all clear whether it is of any relevance to current discussion. It also has some implications in terms of what

sort of lending could happen because it has to be a perfectly riskless system that we are talking about. There is still an interesting debate on precisely what happens in that world. I do agree with Mike that even if the central bank were not the locus of the settlement of imbalances, it could still impose its will on the system by offering an infinitely elastic deposit supply at a particular rate.

*Mr. Fischer:* Thanks, Chuck. Alan Meltzer, please.

*Mr. Meltzer:* I too think this is a very interesting paper, which means, of course, that it fits my predispositions but goes beyond that by giving me new reasons that I had not thought of before. I congratulate the author for doing that.

I would just like to add one point that supplements to some extent things that other people have said. Government currency is available at low cost to the user and has high marginal utility or productivity in some transactions. Contrast that to a series of smart cards that was able to reduce itself to one single smart card that would be used generally. That in itself is a long step. Even if one could think of that, one might ask the question: What would happen? What would be the effect of better information and the speed of information flow on these two different types of transaction media—one being the government's currency and the other one being the smart card? I suggest that ATM machines reduce the cost of using currency because you can get it when you need it. At the same time, the ATM's efficiency reduces float, which is the source of the revenue that people who use smart cards depend upon. Therefore, the advantage in the future would be to move to the government's brand of currency rather than to the smart card. On top of that, for reasons that Chuck Freedman and others mentioned, it is unlikely that the marginal product of government currency is going to go to zero. So, both on the demand side and the supply side, government currency and base money will continue to be here for quite a long time.

I'd like to make one other brief comment and that is: Michael used ambiguity as an example of the argument for discretion. He pointed to

a paper that I wrote with Alex Cukierman. Alex Cukierman is a very determined, very persuasive person, but he neither tried nor was able to convince me to favor discretionary policy. Our paper on ambiguity and transparency is a positive analysis of how many central banks used ambiguity to shift objectives and undertake discretionary actions. It was not intended, nor was it, a normative analysis of what we wanted them to do.

**Mr. Fischer:** Thanks. Philipp Hildebrand, please. The list is closed now. There will be John Haltiwanger and Martin Barnes.

**Mr. Hildebrand:** A short point on transparency. To notion that the case against transparency is demented is, of course, a strong case for transparency. Needless to say, most financial market participants are in favor of transparency. It is important to add one thing, though. In order to be transparent, you need a transparent and understandable monetary framework. A central banker may or may not be a skilled communicator. However, even the best communicator will find it exceedingly difficult to be transparent about policy and policy objectives if the monetary policy regime is inherently difficult to convey. The monetary framework itself must be understood by the public and the financial markets. Most recently, the case of the ECB and the Bank of Japan have demonstrated that, regardless of whether or not central bankers are skilled communicators, communication is difficult when the monetary policy framework lacks clarity.

**Mr. Fischer:** Thanks very much. John Haltiwanger, please.

**Mr. Haltiwanger:** Like others, I think there is much to like about this paper. There are some areas of omission, particularly in reference to the IT environment, that we should pay attention to. Mike, in the first half of the paper when he tried to put forward his views of the monetary transmission mechanism, and Bob Hall touched on this a little bit, pushes that Calvo model. The Calvo model is itself more of a descriptive model than truly a structural model. In this discussion, we care a lot about how prices are set. As Bob said, we really don't understand this process very well. There is certainly a sense that in a new economy

the way the prices are set themselves may be changing in profound ways. One of these equations that you lost people with, 1.13, the very nature of that equation may be changing in fundamental ways in the new economy.

Along those lines, Bob Hall pointed out as well we just don't have very much evidence, in part because the kind of data we collect on prices—particularly micro data on prices—we don't collect it in a way that lends itself to test these kinds of theories, to really look at the price dynamics at the micro level. We need to look at those price dynamics both for continuing businesses but also for all the entering and existing businesses. The data requirements here are severe to try to understand this price-setting process.

*Mr. Fischer:* Thanks, John. Martin Barnes, please.

*Mr. Barnes:* We've heard that countries like the United Kingdom and Sweden have become the models of transparency with inflation targets and inflation reports. The United States has clearly moved toward more transparency but not that far. Can we detect anything from the index-linked securities markets or maybe survey information that there has been a payoff to the United Kingdom relative to the United States in terms of a bigger decline in inflation expectations or more stability in terms of inflation expectations, suggesting that the United States should go as far as the United Kingdom, and there would be a payoff for doing that?

*Mr. Fischer:* Thanks. Let's turn now to the panel to make concluding comments. Bob, did you want to say something?

*Mr. Hall:* Yes, just one brief comment. Many people raised this question of, in the far future when you have this completely deregulated advanced system in which the monetary unit is just some security that is floated out by the government, does the government have to participate in settlement? The answer to that is reasonably clear. First of all, there is a great desire to settle in the security or the commodity that actually is the unit. For example, banks in the gold standard settled

in gold. The role of that security in settlement would continue. However, the services don't have to be provided by the government. If you had a large bank that simply offered transactions in book entries, where the book entries were claims on the federal government, that would satisfy both the free market desire to get the government out of the settlement business and retain a monetary unit defined as the security, where the security was the claim on the federal government which is an absolutely safe claim. There is a reasonably clear answer to how settlements would occur in an advanced economy.

**Mr. Fischer:** Were they settling claims in gold or in gold-denominated claims?

**Mr. Hall:** Actually, they took bags of gold to settlement, according to the books I have read. I wasn't alive then, believe it or not.

**Mr. Fischer:** We have a difference of views across the aisle here, which we can have another conference on later. Mervyn, anything you'd like to add? Final word to Michael?

**Mr. Woodford:** I don't have too much more to say either. I certainly can't find too many arguments to pick with my discussants. I suspect that the degree of agreement reflects the amount I've learned from their own past writings already.

One issue that has come up, both with the discussants and from several people in the audience, has to do with the question of whether this is arguing that the role of central banks will actually disappear. The fact that I mentioned Hayek near the end of the paper wasn't intended to suggest that I was promoting currency competition or proposing that central banks should actually disappear. The point of that was to say that it doesn't seem to me that there is a reason for actual legislation that requires people to use a government-managed unit of account or to prevent this sort of competition. Even in a completely deregulated setting, a most likely outcome would be the dominance of a single unit of account for the reasons that Bob was mentioning. A single standard does seem very convenient, rather than having people all think

about how to do multiplication and division constantly and having to convert between different standards.

As to the question of whether a central bank is needed to manage the kind of system I was describing working in a frictionless environment, this may be a semantic issue. I was imagining this government-sponsored unit of account as necessarily managed by a central bank. By calling it the central bank, I don't mean it has to be continuing to supply clearing services, for example, or that this has to be bundled with the other current functions of the central bank. I suspect this may be semantic. When Bob talks about supplying a "security," I think he means something that would most naturally take the form of accounts at the central bank. This means that there is still going to be something that we currently recognize as a central-bank function being supplied by a public entity. You are absolutely right that the clearing services could be supplied by private institutions that hold these accounts at the central bank.

**Mr. Hall:** The central bank would have one employee, one person to decide what the interest rate is. Alan Greenspan by himself would be the central bank. But that one person is critical.

**Mr. Woodford:** Right. But again, as I said, that is the function of central banks that I am talking about in this paper—the function of making that very important call.

**Mr. Fischer:** This is all fine, as long as you allow there to be a Kansas City Fed, as well. Thanks very much.