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**ECONOMIC POLICY WHEN THE SHORT-TERM
NOMINAL INTEREST RATE IS STUCK AT THE
LOWER BOUND OF ZERO**

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Ralph C. Bryant is a Senior Fellow and the Edward M. Bernstein Scholar in the Economic Studies Program of the Brookings Institution. This paper, a revised version of comments on a paper by Marvin Goodfriend entitled "Overcoming the Zero Bound on Interest Rate Policy," was presented at the October 18-20, 1999 Federal Reserve System conference on "Monetary Policy in a Low-Inflation Environment" held in Woodstock, Vermont. The views expressed are those of the author alone and should not be attributed to the trustees, officers, or staff members of the Brookings Institution.

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Economic Policy When the Short-term Nominal Interest Rate Is Stuck at the Lower Bound of Zero

ABSTRACT

This paper is a revised version of comments presented at the October 1999 Federal Reserve System conference on "Monetary Policy in a Low-Inflation Environment." The comments focus on a paper by Marvin Goodfriend entitled "Overcoming the Zero Bound on Interest Rate Policy." Goodfriend's paper and these comments ask whether the zero lower bound on nominal interest rates -- the short-term nominal interest rate falling to zero and then getting stuck there for a temporary but perhaps lengthy period (for shorthand reference, a "liquidity trap") -- is a significant problem that requires rethinking the conduct of monetary policy. Both Goodfriend and I believe the liquidity-trap dilemma can be significant, as in Japan in the recent past. These comments assess the analysis that lies behind Goodfriend's policy recommendations and then conclude with my own views about how macroeconomic policies should deal with a liquidity trap and brief observations about the Japanese economic and financial situation in 1998-99.

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Two questions were on the table at the conference which gave rise to this volume. The first was whether there exists a risk in industrial economies of runaway deflations that can spiral downward out of control, such that conventional macroeconomic policies are unable to reverse the spiral. We know that various theoretical models can generate runaway deflations. Most of us believe, however, that the likelihood of this happening is very small in real-life economies. Marvin Goodfriend's paper is not about this first question. Nor will I say anything about small-probability, uncontrollable deflationary spirals.

The second question is whether the zero lower bound on nominal interest rates -- the short-term nominal interest rate falling to zero and then getting stuck there for a temporary but perhaps lengthy period (for shorthand reference, a "liquidity trap") -- is a real-life problem that requires rethinking the conduct of monetary policy. Marvin's analysis and my comments are directed to this second question.

In Marvin's view, the liquidity-trap problem is genuine. Moreover, he believes that the traditional instruments of monetary policy are not sufficient to deal with it. He thus proposes a tripartite package of policies for these circumstances: a carry tax on reserves and currency (a radical new measure); an emphasis in open-market operations on purchases of long-term rather than short-term government bonds; and "money transfers" to the public. Marvin labels the last two parts of his package "quantitative monetary policy."

Marvin focuses on the United States and the conduct of U.S. monetary policy by the Federal Reserve. Fortunately for the United States, the risk of a liquidity trap is potential, if not remote. With Japan today, however, the problem requires discussion in the present tense. Japan provides more than ample evidence that the liquidity-trap issues are genuine and warrant careful attention. Ideally, Marvin's paper would have devoted some attention to the issues as

they have concretely surfaced in the context of the Bank of Japan's conduct of monetary policy in 1998-99.

My overall reaction to Marvin's paper is favorable. Readers will find the paper a thoughtful, provocative contribution to the analysis of liquidity-trap issues. On first reading, I thought I had major differences of view with Marvin on substantive issues. As I re-read the paper, I came to think that my differences with the paper are more semantic than substantive. I conjecture that some other readers may also stumble on Marvin's language about, for example, "broadly defined liquidity services," "money transfers," and "quantitative policy." My comments address Marvin's recommendations and the analysis that lies behind them. I conclude with a summary of my own views about how macroeconomic policies should deal with a liquidity trap and brief observations about the Japanese economic and financial situation in 1998-99.

A Carry Tax on Reserves and Currency?

Marvin's proposed carry tax could only be available for use in a liquidity-trap crisis if legislation authorizing the tax is passed beforehand and the associated technology for implementing the tax is put in place in advance of need. A full analysis of the proposal thus needs to analyze the effects and problems of the tax in three situations: during the transitional period when the tax has to be politically agreed and legislation passed and the new technology adopted; during normal (non-crisis) times when the tax is residually available but is not being imposed at a high enough rate to be significant in directly influencing transactions and behavior; and during deflationary circumstances when the tax is in effect at a significantly high

rate. Marvin understandably concentrates on the last of these three. For my taste, he should also say more about the first two.

Could such a carry tax be legal in the United States? What about the legal status in other nations? Marvin suggests that constitutionality would not be an issue in the United States. He does not consider the status for other nations. I don't have enough background to venture a view about the legal aspects. My conjecture is that the legal complications would be major, not minor.

In any case, the biggest feasibility difficulties would be political rather than legal. Could the public –in any of the major industrial nations –be convinced to accept such a contingent tax in advance of need? And hence would it be possible to get Congressional or parliamentary authorization? Marvin acknowledges that the idea of “taxing money in a recession” would be a hard sell, but has persuaded himself that the hurdles might be surmounted in the United States with a lot of public education. I am much more doubtful.

Marvin identifies some other disadvantages of his tax during the deflationary periods when the tax, having been legislated, would be in force at a significantly high rate. The tax would hurt individuals especially hard who depend on interest income. Many people might not plan sufficiently in advance and take adequate precautions against the contingency of a negative nominal interest rate. The tax would be regressive in its distributional impacts. I believe Marvin is correct in worrying that these problems would be serious. Discussion of these issues during the time the tax was under legislative consideration would also undermine the chances of the tax legislation getting passed.¹

¹ Marvin's proposed exemption from the tax for a small amount of currency, motivated by a desire to mitigate the adverse distributional impacts, seems to me problematic on administrative grounds.

Marvin does not discuss the international complications associated with his tax proposal, but these complications too could be serious. Any tax imposed by one country but not by others sets up cross-border arbitrage possibilities. Such substitution effects across borders need to be considered in addition to the purely domestic incentive effects. One needs to ask whether the cross-border aspects could be economically significant and whether they could create additional political obstacles to adoption of the tax.

Even during the initial period when efforts are made to get the required legislation and technology adopted, the international dimensions could figure prominently in public debate. The politics within the United States of getting the tax and technology adopted would be less formidable if the European Union, Japan, and Canada were to agree to propose a similar contingent tax. But some foreign nations would probably refuse altogether to go along. Even among those who agreed to adopt the approach, some would move faster than others.

In the absence of adoption of the tax by all major nations, the cross-border substitution effects could become significant. Consider the case in which the United States government decides to try to get legislation for the carry tax and then actually succeeds in doing so while other major nations reject the idea. In post-adoption but pre-crisis periods, one could observe some anticipatory substitution away from dollar currency into, say, currency notes in Euros and yen. Economic actors holding large-face-value dollar bills and engaged in criminal activity or tax evasion for income earned from underground-economy transactions would have especially strong incentives to shift the denomination of their currency holdings. Since such a large fraction of U.S. currency is held outside the United States, foreign as well as U.S. residents would participate in this shift.² The more likely it seemed that the United States

² See Porter and Judson (1996).

could actually impose a significantly high rate of its carry tax, the larger would be such substitution effects. The worldwide seignorage gains of issuing large-face-value currency notes (which are small but non-negligible) might then accrue more to the European Union or Japan than to the United States.

In deflationary periods when the currency tax was actually imposed, substitution incentives of a more direct nature would exist. The size of shifts out of U.S. currency would depend on the height of the tax rate and anticipations of how long it would stay in effect at a positive rate. The shifts out of U.S. currency would add to pressures for depreciation of the dollar against other currencies. If the U.S. were suffering deflation whereas other countries were not, the additional dollar depreciation would be welcome (since a dollar depreciation in such circumstances would be desirable).

I do not mean to suggest that the cross-border substitution effects or the other international complications are issues that should decisively affect the case for a currency carry tax. But they deserve analysis alongside the other issues that Marvin highlights.

A brief digression: As I tried to think through the arguments for and against a carry tax, I found myself drifting away from consideration of liquidity-trap issues and focusing instead on the underground-economy and criminal-activity aspects. Marvin barely alludes to these in the paper, but for individuals or governments looking for ways to discourage crime and tax evasion, a currency carry tax has interesting and attractive features. Suppose, for example, that a carry tax were legislated and implemented purely as a device for inhibiting illegal economic activity. With this different motive as the driving force, the tax might be imposed only on high-face-value currency notes that actually circulated (e.g., only on bills with a face value of \$50, \$100, or higher). Low-value notes, vault cash in banks, and bank

reserves would be exempt. This different form of the tax would still entail significant administrative costs and would require changes in currency-handling technology (such as magnetic strips in the taxed bills). But these costs and technology changes would probably be much smaller than for the Goodfriend tax whose driving motive is to create an additional instrument for the conduct of monetary policy.³ I conjecture, too, that the public-opinion obstacles to getting approval for a currency tax would be less formidable if the motive were “inhibiting crime ”than “taxing all money in a recession. ” End of digression.

My overall conclusion about the Goodfriend carry tax is negative. Marvin writes that “if a cost of carry were imposed on money, then expansionary open market operations could make nominal interest rates negative ”and central banks could then cope deftly with a liquidity trap. But this if-then statement is in the same category as the proposition that if cabbages were horses, then we could all ride like kings. Alas, cabbages are not horses. Though attractive in the abstract, Marvin’s tax just is not feasible on political grounds. Trying to get the idea accepted by the general public and getting the required legislation through the U.S. congress -- all well in advance of any occasion actually to use the tax -- would be a formidable task. Even if the requisite political will could be mobilized, furthermore, the nation has a more urgent need for other types of new legislation. Marvin’s proposed tax would be least problematic, and the political difficulties less overwhelming, if all the major nations would together adopt the tax. But there also exist limited resources for international cooperation, and the United States has objectives for intergovernmental cooperation that have a higher priority than agreement on a contingent currency tax.

³ For example, if ATM machines were to dispense only low denomination notes, their technology would not have to be replaced.

Conduct of Open-Market Operations in a Liquidity Trap

In my comments on Goodfriend's analysis of open-market operations, I will several times refer to papers by members of the Federal Reserve Board staff that have just been made public. A five-author paper by Clouse, Henderson, Orphanides, Small, and Tinsley (1999) insightfully summarizes the analysis of monetary-policy actions when the zero lower bound for short interest rates is binding. Small and Clouse (1999) review the limits that the Federal Reserve Act places on monetary policy. A third paper by Johnson, Small, and Tryon (1999) covers similar ground to the two other papers. These Board staff papers make some basic analytical points at greater length than I have space to do in my comments here.

Consider first the case of "normal" open-market operations in short-term government debt (Treasury bills). The Board staff papers carefully explain why open-market purchases in Treasury bills in the circumstances of a liquidity trap are tantamount to pushing on a string. If the nominal short-rate is stuck at zero, cash and Treasury bills become perfectly substitutable at the margin. The central bank therefore cannot achieve the expansionary stimulus from open-market purchases of Treasury bills that it could otherwise achieve in normal times. Marvin and the Board staff agree in their analysis of this case. Marvin's awareness of the inefficacy of normal open-market operations explains why he emphasizes operations in long-term rather than short-term government bonds.

So now consider the case of open-market purchases of long-term government bonds when the short-term nominal interest rate is stuck at zero. Marvin discusses such open-market operations as "quantitative policy" and emphasizes transmission channels for monetary policy other than the traditional effects that work through interest rates. Marvin's label of "quantitative policy" at first made me think we disagreed on substance, but on further

reflection I believe our differences are just differences of language. Like Marvin, I believe that monetary policy can influence the external finance premium (EFP) in the sense of Bernanke-Gertler (1995). I share the view that the so-called “credit-channel(s)” of transmission for monetary policy –working through wealth and real-balance effects, portfolio rebalancing, and adjustments in bank lending -- can be significant in normal times when nominal rates are well above the lower zero bound. These channels can presumably be even more important in abnormal, liquidity-trap times.⁴

The Board staff papers also discuss the possible importance of non-interest-rate channels for the transmission of monetary policy. And those papers identify qualitatively the conditions under which one could expect such effects to be empirically important. Essentially, there are two classes of ways that non-traditional channels could work. Purchases of long bonds could change expectations of future policy through signaling effects. Alternatively, provided that short-term and long-term government bonds are imperfect substitutes (because, for example, different economic agents have preferred-habitats), purchases of long bonds could trigger portfolio-rebalancing effects.

An open-market purchase of long bonds can be thought of as having two components (see the Board staff papers for a fuller discussion). The first component is a purchase of long bonds matched by the sale of a corresponding amount of Treasury bills (so to speak, an

⁴ Marvin’s language about liquidity services “broadly defined” is another semantic stumblingblock for me. He wants to define liquidity very broadly as “a service yield provided by assets according to how easily they can be turned into cash, *either by sale or by serving as collateral for external financing*” (my italics). So Marvin argues that even unimproved land provides liquidity services because a sizable fraction of its value can be used as collateral to borrow external funds. Most economists, I believe, are accustomed to thinking of the liquidity of an asset as determined by how easily the asset can be converted into cash by sale or transfer alone. Unimproved land is scarcely a liquid asset in common parlance. For my taste, therefore, Marvin stretches the notion of liquidity and liquidity services too broadly.

“Operation Twist ” transaction that changes the relative supplies of short governments and long governments but leaves the supply of reserves unchanged). The second component is an open-market purchase of the same amount of Treasury bills that increases bank reserves (in the circumstances of a liquidity trap, excess reserves). The key analytical point to emphasize is that if the short-term nominal interest rate is already stuck at the zero lower bound, it is only the first component –the Operation Twist -- that can have significant effects on aggregate demand in the economy.

If we use Marvin’s language rather than more customary language (for example, the language used in the Board staff papers), we can observe that an open-market purchase of long bonds can cause the external finance premiums of borrowers to decline relative to what they would otherwise be. And banks’ willingness to extend further loans could increase relative to what it would otherwise be. Thus in principle there is scope for the open-market purchase of long bonds to have a stimulative effect on borrowing and hence on real economic activity.

In a deflationary period causing the economy to fall into a liquidity trap, however, it needs to be remembered that the large gross moves in external finance premiums and in banks’ willingness to lend would be large increases. The Bernanke-Gertler analysis makes it explicit that the balance-sheet channel works precisely because the external finance premium facing a borrower should and does depend on the borrower’s net worth position. But in a liquidity trap, the preceding deflationary shock would have played havoc with the private sector’s net worth positions in the opposite direction from what the central bank wants to accomplish with its easing actions. There is an analogous issue with the bank-lending channel. Bernanke and Gertler emphasize that banks’ access to funds and their abilities to practice liability management are endogenous to monetary policy. Thus on the asset side of banks’ balance

sheets, there is an endogeneity to the spread of their lending rates over the Fed Funds rate. But in the liquidity trap, those credit-risk spreads would have increased dramatically prior to the central bank's efforts to reduce them. As an illustration of how credit-risk spreads can increase and confidence can deteriorate in a crisis, it is instructive to remember the turbulent period in August-October 1998 after the Russian devaluation and default.

More than Marvin does, therefore, I would emphasize that the effects of open-market operations in long bonds on external finance premiums and on credit-risk spreads would be uncertain and possibly unreliable in a liquidity-trap crisis. After such monetary-policy actions, external finance premiums and credit-risk spreads would be less adverse than they would otherwise be. The main issue, however, is how much less adverse, and how confidently the central bank could estimate the effects. The Board staff papers point out that, to get noticeable reductions in the interest rate on long-term government bonds (relative to what they would otherwise be), the volume of long-bond purchases might have to be very large. Past experience with Operation-Twist-like exchanges of long governments for short governments (which is admittedly limited) does not provide assurance that modest-sized operations could have sizable effects. Even if the term premiums on long-term government bonds could decline noticeably, moreover, there would still be substantial uncertainty whether those reductions could induce noticeable declines in the credit-risk spreads for private debt.

Marvin correctly stresses that the central bank enters into risks to its own balance sheet by purchasing long bonds in a liquidity-trap situation. Later on, after the liquidity-trap crisis has past and nominal interest rates have risen above the low crisis levels, central-bank sales of the long bonds could result in capital losses. Marvin wants the Treasury to reimburse the central bank for any such capital losses. I have not thought carefully about this

recommendation. But I conjecture that it might be difficult to separate capital losses eligible for this treatment from other capital gains and losses. In any event, the arrangements for such Treasury compensation would be complex and politically problematic.

Now consider the case of foreign-exchange intervention (in effect, open-market purchases of debt denominated in foreign currencies, typically the debt of foreign governments). Marvin says little about foreign-exchange intervention in a liquidity-trap situation. But for an open economy, foreign-exchange intervention may be just as, if not more, important than open-market purchases of long government bonds.

The effects of foreign-exchange intervention can be analyzed in an analogous way to purchases of long bonds. Again, two types of channel could come into play, cause a depreciation of the currency, and hence have a stimulative effect on aggregate demand (through incremental increases in exports and incremental reductions in imports). First, purchases of foreign-currency assets through exchange-market intervention could change expectations of future monetary policy through signaling effects. Second, provided that domestic-currency-denominated and foreign-currency-denominated assets are imperfect substitutes, the purchases of foreign-currency assets -- by changing the relative supplies of domestic-currency and foreign-currency assets available to the world private sector -- could trigger portfolio-rebalancing effects.

Many discussions about foreign-exchange intervention in a liquidity trap (including some at the conference itself) fail to appreciate the analytical point that the usual conceptual distinction between sterilized and unsterilized foreign-exchange intervention is not meaningful if the short-term interest rate is stuck at the zero lower bound. In effect, all foreign-exchange

intervention in a liquidity trap has to be analyzed as sterilized intervention. (For more detailed discussion, see again the Board staff papers.)

Ben McCallum's paper for this conference (1999) proposes that the central bank should, in a liquidity-trap situation, use the exchange rate as the actual instrument of monetary policy and thereby rely on currency depreciation to stimulate the economy. Marvin argues in his paper that this is not a good idea. I share Marvin's doubts about the reaction-function rule that Ben espouses. The McCallum approach, if used literally and aggressively by a nation, would open up some of the risks we associate with excessive rigidity in the exchange rate. Ben insists that his approach is not tantamount to fixing the exchange rate over a lengthy period, which it is not. But implementation of McCallum's approach over shorter periods could still, I believe, lead to difficulties analogous to, albeit milder than, those where the exchange rate is pegged for long periods. Exiting from McCallum's strategy as the liquidity-trap crisis eases could be problematic.

I think Marvin is wrong, however, in paying so little attention to the external aspects of monetary policy. I support McCallum's general emphasis on the exchange rate and his view that an open economy stuck in a liquidity trap should try to use depreciation of its currency (or at the least, avoidance of appreciation of its currency) as a way of encouraging revival of the domestic economy.

Here is how I would summarize the analysis of open-market operations in long bonds and foreign-currency assets (foreign-exchange intervention) in a liquidity trap: Yes, purchases of long bonds or foreign-currency assets can, in principle, have positive effects on aggregate demand and help the economy recover. In particular, effects through signaling and the conditioning of expectations can be significant. If short-term and long-term government bonds

are imperfect substitutes because of preferred-habitat behavior, or if domestic-currency and foreign-currency assets are imperfect substitutes because of home-currency biases, then portfolio-rebalancing effects can be significant. Hence monetary policy is not powerless in a liquidity-trap situation. On those basic points, Marvin and I have no disagreement.

I am less optimistic than Marvin, however, about how sizable these effects would turn out to be in practice. And I am more worried than he seems to be about how unreliable and quantitatively uncertain the effects might be. On balance, I would nonetheless favor foreign-exchange intervention or open-market purchases of long domestic-currency bonds when the short-term nominal rate is stuck at zero. For example, I tend to believe that the Bank of Japan could appropriately have adopted such policies during 1998, including after the sharp appreciation of the yen against foreign currencies in the late summer of 1998. Yet I am also concerned that such operations might have to be quantitatively very large in order to have desired effects. In normal times, central banks rightly eschew aggressive operations with quite uncertain effects. A liquidity trap is sufficiently unusual to justify an unusual policy response.⁵

Fiscal Policy and Debt Management, and Linkages with Monetary Policy

I now come to the third category of Marvin's recommendations, which he terms

Can we imagine money transfers taking place literally as a "money rain" -- newly printed currency notes being dropped out of helicopters operated by the Federal Reserve or the

⁵ Unlike Marvin, I would not characterize open-market purchases of long bonds or foreign-exchange intervention as "quantitative monetary policy." Rather, I think of these actions as adaptations of open-market operations for the difficult and abnormal circumstances when short interest rates are at the zero lower bound.

Bank of Japan? Such money rains would certainly have wealth effects, portfolio-rebalancing effects, and distributional effects. But Chris Sims reminded us at this conference that even if Congress or the Japanese Diet operated the helicopters, such money rains would be more appropriately interpreted as fiscal policy, not monetary policy. In any case, Marvin believes that money transfers in this form are infeasible and undesirable, just as we all do.

What about the central bank choosing to conduct its open-market operations by direct purchases of the debt obligations of various private-sector firms or financial institutions (another type of transaction which Marvin characterizes as money transfers)? Here too there could be wealth and portfolio-rebalancing effects, and there would certainly be distributional implications. These operations would put the central bank squarely in the middle of making assessments of private credit risks; difficult issues would arise about whether the central bank can and should take some part of private credit risk in the economy onto its own balance sheet.⁶ In my view, the central bank should eschew practices that require it to make decisions about private credit risks that have explicit distributional implications. Marvin appears to feel this way too. So with the possible exception of extreme emergencies, we can rule out the extension of open-market operations into private securities.

What, then, can we be talking about when Marvin suggests that the third prong of his recommended package take the form of “money transfers”? In my view, we are talking about policy actions that are much more clearly described as fiscal policy and debt management.

To analyze the money-transfer operations Marvin has in mind, I want to separate the fiscal-monetary actions into their separate components. Suppose, for example, that the economy is in a liquidity trap and that the fiscal authority cuts personal income taxes, while the

⁶ These issues are carefully discussed in Small and Clouse (1999).

central bank “monetizes” the incremental budget deficit of the government. We ought to separate this combination of policy actions into two components. The first is the tax reduction, which reduces government revenues and leaves more disposable income with households, with the incremental budget deficit financed through issuance of new government securities. The second component is the central-bank purchase of additional government securities, thereby monetizing the incremental budget deficit.

The second component, the open-market operation of the central bank that supplies more high-powered money to the economy through incremental purchases of government debt, by itself can have no effects on aggregate demand (when the short-term nominal interest rate is stuck at zero) if the additional open-market operations take the form of purchases of short-term treasury bills. As just discussed, there is some possibility of effects –but uncertain, and perhaps not so large –if the incremental open-market purchases are of long government bonds. Hence the real punch in this so-called money-transfer operation comes from the first component, the fiscal side. In a liquidity-trap crisis, the monetary-policy side of the combined action at worst will have no significance and at best has only secondary importance.

Here again I suspect that Marvin and his readers will disagree slightly, if at all, on how to analyze the effects of such combinations of fiscal and monetary actions. The primary difference is semantic. Marvin’s money transfers will be labeled by most readers as fiscal policy.

What Target for the Inflation Rate?

Marvin is concerned about what he perceives as a difficult tradeoff facing policymakers. He worries about the central bank targeting a low rate of inflation in normal

times –for example, a rate of zero -- but thereby running the risk, with unacceptably high probability, that deflationary shocks could push the short-term nominal interest rate to zero and prevent the central bank from stabilizing the economy. At the same time, he is worried about targeting an annual rate of inflation as high as 3 or 4 percent, even 2 percent. In normal times, he fears, this approach would impose large distortionary costs on the economy from the higher inflation. Yet that approach would not yield sufficient insurance against the potentially disastrous outcome of a deflationary impetus that pushed the short interest rate down to its lower bound. Marvin's strong recommendation for the contingent carry tax on currency is driven by his concern about this tradeoff. In his view, it is urgent to find another instrument for monetary policy that can be used in a liquidity trap to supplement the then-weakened effects of open-market operations.

I am much less worried than Marvin about this tradeoff. What causes me to feel more relaxed is that I believe the central bank can follow guidelines for monetary policy that target a low rate of inflation while nonetheless keeping very low the probability of falling into a liquidity trap (see below). Properly conceived, the tradeoff may be much less of a dilemma than Marvin asserts.

Even if one takes a relaxed attitude to Marvin's tradeoff, there of course still remains the issue of what target value for the inflation rate is most appropriate. The well-known measurement-bias issues argue for some non-zero rate, though these biases have recently been partly corrected in the United States. My Brookings colleagues George Akerlof, Bill Dickens, and George Perry (1996, 1999) argue against a target rate as low as zero, or even 1 percent; they emphasize the tendency for nominal wages to be rigid downwards. and also believe that

decisionmaking agents tend to ignore low rates of inflation, thereby creating an opportunity to increase output that can be exploited by the central bank.

Ben Bernanke suggested at this conference that virtually everybody agrees on a “new consensus” of 2 percent as the appropriate central bank target for inflation. I can feel comfortable with the 2 percent figure, but I do not yet see strong evidence of a new consensus. For example, Marvin does not agree with that alleged new consensus; if he did, he would be better able to keep his enthusiasm for the carry tax in check. Feldstein (1997) and others worried about tax distortions don't seem to agree. Quite a few central bankers, including (I suspect) a number in this room, haven't yet signed up.

Macroeconomic Policies for a Liquidity Trap

I conclude with a brief sketch of my own views about appropriate macroeconomic policies for a liquidity-trap situation. My sketch is divided into two parts: suggestions for preventive measures that policymakers can take to reduce the probability of a liquidity trap occurring, and then some general guidelines to be followed if, despite preventive policies, the nominal short-term interest rate does nevertheless get stuck at zero.

Preventive Policies. The basic advice about preventive policies, of course, is the sailor's catechism about hurricanes. To the question “What do you do if you find yourself to the windward of an island in a hurricane?”, the appropriate answer is “you do NOT find yourself to the windward of an island in a hurricane!”

For a preventive approach to the general conduct of monetary policy, the central bank should employ presumptive guidelines that take into account not only intermediate variations in inflation and real activity but also the possibility of sharp breakouts of inflation on the upside

and the possibility of deflationary shocks that push activity and nominal interest rates sharply downward. For shorthand, we can speak of such guidelines as a reaction-function “rule.” Policy should retain the scope for discretionary departures from this rule in situations of especially severe or unusual shocks; the guidelines are thus, strictly speaking, a quasi-rule. The central bank should clearly announce and explain its presumptive guidelines. Should the central bank feel obliged to use its residual capacity for discretionary departures, furthermore, it should provide a careful public explanation of the circumstances and reasons why it is doing so.

The general class of presumptive guidelines I have in mind entail what have come to be known as “change” or “first difference” rules for targeting the inflation rate and the output gap.⁷ In the comparative research several of us did in the early 1990s, this type of rule was termed “inflation plus GNP targeting”; the label now widely used is “Taylor-type” rules. The “change” or “first-difference” variants of such rules permit a significant degree of smoothing of the interest-rate instrument of monetary policy.

Reifschneider and Williams (1999) show in their interesting paper for this conference that adjustments to this type of rule can make the approach more robust to large deflationary shocks and hence can reduce the likelihood of the economy’s falling into a liquidity trap. In particular, if the monetary-policy reaction function rule allows for some degree of targeting of the price level rather than merely its rate of change, the performance of this class of rules in preventing a liquidity trap is significantly improved.

Some recent theoretical work on monetary-policy reaction functions suggests that Taylor-type rules could aggravate rather than reduce instability. For example, Benhabib,

⁷ For highly open national economies, additional target variables might also be included.

Schmitt-Grohé, and Uribe (1998) argue that if the zero lower bound on nominal short interest rates is taken into account, active interest-rate reaction functions can “easily lead to unexpected consequences.” Chris Sims expressed some sympathy with this view at the conference. Such a pessimistic view may be germane for the theoretical case of small-probability, uncontrollable deflationary spirals. But for less extreme situations, my view is that the class of reaction functions investigated in the Reifschneider-Williams paper is more likely to promote stability than instability in the presence of large shocks (deflationary or inflationary).⁸

In principle, guidelines for the conduct of fiscal policy and debt management designed to prevent the emergence of a liquidity-trap situation are just as important as preventive guidelines for monetary policy. Good preventive policies for fiscal policy and debt management have to have at least three elements: rejection of genuinely bad rules of thumb (insistence on a balanced budget is a prominent example of a terrible fiscal rule); adoption of some built-in macroeconomic stabilizing mechanisms that operate over short and medium runs (for example, unemployment insurance benefits); and an effective way of ensuring intertemporal government budget consistency over longer runs. Chris Sims reminded us again at the conference that the economics profession has done much less careful research on fiscal-policy guidelines than for monetary policy. Sims is surely right that more research should be devoted to this important topic.

Because the effects of fiscal policy depend crucially on how monetary policy is conducted, and the effects of monetary policy depend crucially on fiscal-policy behavior, sound policies for preventing the emergence of liquidity-trap conditions also require a fairly high

⁸ John Taylor also voiced this latter view at the conference.

degree of cooperation -- we should not shrink from saying coordination -- between the fiscal and the monetary authorities. The type of coordination I have in mind would include, but would not be restricted to, detailed exchanges of forecasts, of best guesses about current and prospective expected shocks hitting the economy, and of "what if" policy simulations.

Guidelines If a Nation Does Get Caught in a Liquidity Trap. If preventive policies prove insufficient so that the ship of state is in fact to the windward of an island in a bad storm, what to do? The first point to emphasize is again about the interrelationships between monetary policy and fiscal policy. In circumstances where the zero lower bound on short-term nominal interest rates is binding, monetary policy alone is unlikely to be able to get the economy back on a recovery path. Expansionary fiscal policy will be more effective than conceivable remedial actions with monetary policy. This will be even more so if the national economy is not very open to the rest of the world and, hence, if depreciation of the nation's currency cannot be expected to play a major role in stimulating the recovery of economic activity.

In situations of actual or threatened deflation, the cooperation between fiscal policy and monetary policy has to be even closer than in non-crisis times. Ideally, both the government and the monetary authorities should have a clear, shared understanding of the greater relative power of fiscal actions in liquidity-trap circumstances.

For monetary policy itself, despite the weakening of its powers when the short rate is stuck at zero, the central bank should not be reluctant to push excess reserves into the financial system through open-market operations. Big increases in excess reserves in the liquidity-trap situation will probably have to be matched in the future by sizable open-market operations to withdraw reserves (reversing expansionary actions after the trap situation has passed and

nominal short rates have risen above zero). But the likely need for subsequent reversal of expansionary actions is not a convincing reason to refrain from the expansion when the trap situation is binding.

If the trap situation seems likely to be protracted, with no assurance that a recovery of the economy is likely, the central bank should be willing -- in addition to supplying excess reserves through open-market purchases of short-term government securities -- to take more aggressive action by purchasing long-term government bonds or by purchasing foreign-currency-denominated bonds through exchange-market intervention. The case for aggressive foreign-exchange intervention is especially strong if the nation's currency threatens to appreciate rather than depreciate.

As the earlier discussion makes clear, there is almost no likelihood that incremental increases in excess reserves through open-market purchases of Treasury bills will have significant effects in stimulating aggregate demand when the nominal short-term interest rate is stuck at zero. Even aggressive purchases of long bonds or foreign exchange may not have significant effects. Over the shorter run, however, there probably will not be any significant disadvantages of such actions either. There is a modest chance, worth taking, that the actions may have a helpful signaling effect about central-bank intentions. Such portfolio-rebalancing effects as do occur will work in the right direction.

To maximize chances that the open-market purchases of foreign exchange or long domestic-currency bonds will have the desired effect in stimulating aggregate demand, the volume of such purchases may have to be quite large. In my view, if the central bank does decide to venture into this uncertain territory, it should be bold rather than timid. To be sure, there exists a nontrivial risk that the central bank's balance sheet could suffer significant capital

losses in the future after nominal interest rates rise back to non-trap levels (or if the nation's currency subsequently appreciates above the levels at which the foreign-currency assets were purchased). Given the assumed circumstances, however, those risks seem to me worth taking.

For fiscal policy in a liquidity trap, aggressive actions for macroeconomic stabilization are, again, still more important. The high-priority need is to stimulate private spending through increases in government expenditures or cuts in government revenue. Monetary policy can be accommodating by monetizing the incremental budget deficits. But as already discussed, by itself that monetization will have marginal effects at best.

Should fiscal stimulus take the form of expenditure increases or revenue cuts? That choice obviously depends on many subtle considerations, some economic and others blatantly political. The choice will thus inevitably differ for different countries and different circumstances. And if tax cuts are chosen, should the cuts be temporary or sustained? The well-known problem with temporary instead of permanent tax cuts is that a higher proportion of the temporary cuts may be saved rather than spent. In a deflationary situation that has severely undermined confidence, the saved proportion of a temporary tax cut might be still higher. But the basic goal in a deflationary situation complicated by a liquidity trap is to alter the intertemporal pattern of spending (shifting consumption out of the future into the present), not necessarily to increase total spending over future time. That observation points to temporary tax cuts.

A final point deserves emphasis. Because the world economy has become increasingly integrated, there is a need for more cross-border cooperation among national governments than would otherwise prevail. The potential benefits from international cooperation are especially

pertinent if governments and central banks in individual nations plan to make heavy use of exchange-market intervention.⁹

If several nations should ever simultaneously fall into deflationary situations where the zero lower bound for interest rates threatens to become binding, the desirability of intense intergovernmental consultations would be still greater. For the worst-off nations in such circumstances, depreciation of their currencies would probably be appropriate. But attempts by each of the several nations to emphasize currency depreciation could be damaging for all together. It is a mantra of international cooperation that competitive, beggar-thy-neighbor policies should be avoided. That mantra has a solid analytical foundation.

Japan in 1998-99

I am not sufficiently familiar with the details of the Japanese economic and financial situation in recent years to hold confident views about Japanese policies during this period. But to give specificity to the preceding generalizations and to provoke discussion, here are three observations about Japan in 1998-99. First, the short-term nominal interest rate in Japan has been essentially stuck at the zero lower bound. Although Japan has certainly not been in a downward deflationary spiral, the situation in 1998-99 does appear to warrant the label liquidity trap.

Second, tax cuts seem to have been preferable in Japan in 1998-99 to still more public spending on infrastructure, especially because some of the additional infrastructure is said to have low priority apart from the motive to encourage economic recovery and because

⁹ The potential benefits and costs of intergovernmental cooperation about macroeconomic policies are reviewed in Bryant (1995).

construction spending can be partly captured by corrupt local interests (e.g., more fishing ports in localities where there are few if any fishing boats). In particular, I believe that temporary but large tax cuts would have been appropriate. For example, imagine that the Japanese government had adopted a temporary tax cut for consumption spending, ideally perhaps applicable just to spending on consumer durables. The announcement of an immediate cut in the tax rate on consumer durables might have been combined with an announced schedule of how the tax rate would have been gradually raised again over, say, the following three years. With political commitment to the measure and emphasis in public statements on its temporary nature, spending on consumer durables might have been significantly shifted into the present out of the future. Political constraints of course inhibited adoption of such a measure. With the wisdom of hindsight, however, such a tax cut seems an attractive option.

Third, I surmise that the Bank of Japan (BoJ) may have been too timid in its conduct of expansionary open-market operations during parts of this period. The fact that much of the excess reserves in the Japanese financial system in 1999 has been accumulating in the funds brokers (Tanshi companies) rather than in the banks is an indication that the problems of “pushing on a string” at the zero lower bound have in fact been empirically quite significant.¹⁰

Despite the undermining of expansionary BoJ actions caused by the zero lower bound on short-term interest rates, despite the failure of most public commentary to understand the effects of the zero lower bound constraint, and despite the acknowledged risks of aggressive further actions to purchase long government bonds or foreign-currency assets through exchange-market intervention, a case can be made that the Bank of Japan should have acted to

¹⁰ Okina (1999) has an interesting discussion of criticisms of the BoJ’s policies, and then a rejoinder to comments on his paper by Ronald McKinnon and Allan Meltzer. For Meltzer’s views, see also Meltzer (1998).

increase excess reserves by still larger amounts. I have some empathy with the BoJ's concerns about the risks of more aggressive action (specified in its unusual public statement "On the Current Monetary Policy" on September 21, 1999). I regret the clumsy public pressure on the Bank of Japan from the Japanese Ministry of Finance and from some foreign governments, which made it more politically difficult for the BoJ to act on their advice. I do not share the underlying analysis of monetarist economists who seem to believe that further expansionary BoJ actions were certain to reliably stimulate aggregate demand. But I do believe the situation in Japan may have been sufficiently unusual and worrisome to justify -- based on the cautious, non-monetarist rationale summarized earlier in these comments -- a still bolder expansion of excess reserves.

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