

Japanese Monetary Policy: A Case of Self-Induced Paralysis?*

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The Japanese economy continues in a deep recession. The short-range IMF forecast is that, as of the last quarter of 1999, Japanese real GDP will be 4.6% below its potential. This number is itself a mild improvement over a year earlier, when the IMF estimated Japanese GDP at 5.6% below potential. A case can be made, however, that these figures significantly underestimate the output losses created by the protracted slump. From the beginning of the 1980s through 1991Q4, a period during which Japanese real economic growth had already declined markedly from the heady days of the 1960s and 1970s, real GDP in Japan grew by nearly 3.8% per year. In contrast, from 1991Q4 through 1999Q4 the rate of growth of real GDP was less than 0.9% per year. If growth during the 1991-1999 period had been even 2.5% per year, Japanese real GDP in 1999 would have been 13.6% higher than the value actually attained.¹

Some perspective is in order. Although, as we will see, there are some analogies between the policy mistakes made by Japanese officials in recent years and the mistakes made by policymakers around the world during the 1930s, Japan's current economic situation is not

¹ A major source of the difference in my calculation and the IMF calculation is that the IMF bases its potential output estimate on the actual current value of the capital stock. Relatively low investment rates throughout the 1990s have resulted in a lower Japanese capital stock than would have been the case if growth and investment had followed more normal patterns. I thank Paula DeMasi of the IMF for providing their data.

remotely comparable to that of the United States, Germany, and numerous other countries during the Great Depression. The Japanese standard of living remains among the highest in the world, and poverty and open unemployment remain low. These facts, and Japan's basic economic strengths--including a high saving rate, a skilled labor force, and an advanced manufacturing sector--should not be overlooked. Still, Japan also faces important long-term economic problems, such as the aging of its workforce, and the failure of the economy to achieve its full potential during the 1990s may in some sense be more costly to the country in the future than it is today. Japan's weakness has also imposed economic costs on its less affluent neighbors, who look to Japan both as a market for their goods and as a source of investment.

The debate about the ultimate causes of the prolonged Japanese slump has been heated. There are questions, for example, about whether the Japanese economic model, constrained as it is by the inherent conservatism of a society that places so much value on consensus, is well-equipped to deal with the increasing pace of technological, social, and economic change we see in the world today. The problems of the Japanese banking system, for example, can be interpreted as arising in part from the collision of a traditional, relationship-based financial system with the forces of globalization, deregulation, and technological innovation (Hoshi and Kashyap, forthcoming). Indeed, it seems fairly safe to say that, in the long run, Japan's economic success will depend largely on whether the country can achieve a structural transformation that increases its economic flexibility and openness to change, without sacrificing its traditional strengths.

In the short-to-medium run, however, macroeconomic policy has played, and will continue to play, a major role in Japan's macroeconomic (mis)fortunes. My focus in this essay will be on

monetary policy in particular.² Although it is not essential to the arguments I want to make--which concern what monetary policy should do now, not what it has done in the past--I tend to agree with the conventional wisdom that attributes much of Japan's current dilemma to exceptionally poor monetary policy-making over the past fifteen years (see Bernanke and Gertler, 1999, for a formal econometric analysis). Among the more important monetary-policy mistakes were 1) the failure to tighten policy during 1987-89, despite evidence of growing inflationary pressures, a failure that contributed to the development of the "bubble economy"; 2) the apparent attempt to "prick" the stock market bubble in 1989-91, which helped to induce an asset-price crash; and 3) the failure to ease adequately during the 1991-94 period, as asset prices, the banking system, and the economy declined precipitously. Bernanke and Gertler (1999) argue that if the Japanese monetary policy after 1985 had focused on stabilizing aggregate demand and inflation, rather than being distracted by the exchange rate or asset prices, the results would have been much better.

Bank of Japan officials would not necessarily deny that monetary policy has some culpability for the current situation. But they would also argue that now, at least, the Bank of Japan is doing all it can to promote economic recovery. For example, in his vigorous defense of current Bank of Japan (BOJ) policies, Okina (1999, p. 1) applauds the "BOJ's historically unprecedented accommodative monetary policy". He refers, of course, to the fact that the BOJ has for some time now pursued a policy of setting the call rate, its instrument rate, virtually at zero, its practical floor. Having pushed monetary ease to

² Posen (1998) discusses the somewhat spotty record of Japanese fiscal policy; see especially his Chapter 2.

its seeming limit, what more could the BOJ do? Isn't Japan stuck in what Keynes called a "liquidity trap"?

I will argue here that, to the contrary, there is much that the Bank of Japan, in cooperation with other government agencies, could do to help promote economic recovery in Japan. Most of my arguments will not be new to the policy board and staff of the BOJ, which of course has discussed these questions extensively. However, their responses, when not confused or inconsistent, have generally relied on various technical or legal objections--objections which, I will argue, could be overcome if the will to do so existed. My objective here is not to score academic debating points. Rather it is to try in a straightforward way to make the case that, far from being powerless, the Bank of Japan could achieve a great deal if it were willing to abandon its excessive caution and its defensive response to criticism.

Diagnosis: An Aggregate Demand Deficiency

Before discussing ways in which Japanese monetary policy could become more expansionary, I will briefly discuss the evidence for the view that a more expansionary monetary policy is needed. As already suggested, I do not deny that important structural problems, in the financial system and elsewhere, are helping to constrain Japanese growth. But I also believe that there is compelling evidence that the Japanese economy is also suffering today from an aggregate demand deficiency. If monetary policy could deliver increased nominal spending, some of the difficult structural problems that Japan faces would no longer seem so difficult.

Tables 1 through 3 contain some basic macroeconomic data for the 1991-99 period that bear on the questions of the adequacy of aggregate demand and the stance of monetary policy. The data in Table 1 provide

the strongest support for the view that aggregate demand is too low, and that the net impact of Japanese monetary and fiscal policies has been and continues to be deflationary. Columns (1)-(3) of the table show standard measures of price inflation, based on the GDP deflator, the PCE deflator, and the CPI (ex fresh food), respectively. Considering the most comprehensive measure, the GDP deflator, we see that inflation has been less than 1.0% in every year since 1991 and has been negative in four of those years. Cumulative inflation, as measured by the GDP deflator, has been effectively zero since 1991: In

Table 1. Measures of inflation in Japan, 1991-1999

Year	(1) GDP deflator (% change)	(2) PCE deflator (% change)	(3) CPI deflator (% change)	(4) Nominal GDP (% change)	(5) Monthly earnings (% change)
1991	2.89	2.43	2.30	6.36	2.84
1992	0.94	1.44	2.08	2.74	1.78
1993	0.44	0.96	0.91	0.92	1.82
1994	-0.62	0.60	0.50	0.81	2.70
1995	-0.38	-0.90	0.07	0.82	1.87
1996	-2.23	0.34	0.30	3.48	1.87
1997	0.82	1.55	2.23	1.85	0.81
1998	0.01	0.33	-0.32	-2.21	-0.10
1999	-0.66	-0.38	0.00	-0.97	NA

Notes: Columns (1)-(4): Alternative inflation rates and nominal GDP growth are measured fourth quarter to fourth quarter, except for 1999, which (due to data availability) is second quarter over second quarter for (1)-(2) and third quarter over third quarter for (3)-(4). The CPI excludes fresh foods. Column (5): The rate of change of nominal monthly earnings is measured fourth quarter to fourth quarter. Data in all tables are from public sources.

the fourth quarter of 1991 the GDP deflator stood at 106, compared to a value of 105 in the second quarter of 1999, the latest number I have available.

Inflation has been slightly higher in the consumer sector, as measured by the rate of change of the PCE deflator and the CPI, but even there since 1991 inflation has exceeded 1% only twice, in 1992 and in 1997. Moreover, according to all three inflation indicators, the rate of price increase has slowed still further since 1997. Taken together with the anemic performance of real GDP, shown in Table 2, column (5), the slow or even negative rate of price increase points strongly to a diagnosis of aggregate demand deficiency. Note that if Japan's slow growth were due entirely to structural problems on the supply side, inflation rather than deflation would probably be in evidence.

As always, it is important to maintain a historical perspective and resist hyperbole. In particular, the recent Japanese experience is in no way comparable to the brutal 10%-per-year deflation that ravaged the United States and other economies in the early stage of the Great Depression. Perhaps more salient, it must be admitted that there have been many periods (for example, under the classical gold standard or the price-level-targeting regime of interwar Sweden) in which zero inflation or slight deflation coexisted with reasonable prosperity. I will say more below about why, in the context of contemporary Japan, the behavior of the price level has probably had an important adverse effect on real activity. For now I only note that countries which currently target inflation, either explicitly (such as the United Kingdom or Sweden) or implicitly (the United States) have tended to set their goals for inflation in the 2-3% range, with the floor of the

range as important a constraint as the ceiling (see Bernanke, Laubach, Mishkin, and Posen, 1999, for a discussion.)

Alternative indicators of the growth of nominal aggregate demand are given by the growth rates of nominal GDP (Table 1, column 4) and of nominal monthly earnings (Table 1, column 5). Again the picture is consistent with an economy in which nominal aggregate demand is growing too slowly for the patient's health. It is remarkable, for example, that nominal GDP grew by less than 1% per annum in 1993, 1994, and 1995, and actually declined by more than two percentage points in 1998. Again, as with the inflation measures in columns (1)-(3), there is evidence of even greater deflationary pressure since 1997.

Table 2 provides some additional macroeconomic indicators for Japan for the 1991-99 period. Columns (1) and (2) of the table show the nominal yen-dollar rate and the real yen-dollar rate, respectively. The yen has generally strengthened over the period, which is consistent with the deflationist thesis. As I will discuss further below, even more striking is the surge of the yen since 1998, a period that has coincided with weak aggregate demand growth and a slumping real economy in Japan. As column (2) shows, however, the fact that inflation in Japan has been lower than in the United States has left the real terms of trade relatively stable. My interpretation is that the trajectory of the yen during the 1990s is indicative of strong deflationary pressures in Japan, but that a too-strong yen has not itself been a major contributor to deflation, except perhaps very recently.

Columns (3) and (4) of Table 2 shows rates of change in the prices of two important assets, land and stocks. As is well known, the stock market (column 4) has fallen sharply from its peak and has been quite volatile. The behavior of land prices (column 3), which is less often cited, is particularly striking: Since 1992 land prices have

Table 2. Additional economic indicators for Japan, 1991-1999

Year	(1) Yen/\$ rate	(2) Real Yen/\$ rate	(3) Land prices (% change)	(4) Stock prices (% change)	(5) Real GDP (% change)
1991	129.5	72.2	0.55	2.38	2.41
1992	123.0	69.4	-5.11	-32.03	0.14
1993	108.1	62.4	-5.13	16.91	0.47
1994	98.8	58.5	-3.82	0.47	0.66
1995	101.5	61.5	-4.30	-4.90	2.49
1996	112.8	71.2	-4.43	5.47	4.66
1997	125.2	79.6	-3.62	-20.85	-0.61
1998	119.8	77.0	-4.38	-15.37	-2.94
1999	113.6	78.3	-5.67	23.00	0.91

Notes: Columns (1)-(2): Exchange rates are fourth-quarter average, except for 1999, for which nominal exchange rate is for third quarter and real exchange rate is for second quarter. Real exchange rate is relative to 1978:1 = 100. Columns (3)-(5): Land price is nationwide index, stock prices are TOPIX index. Percentage changes are fourth quarter over fourth quarter, except for 1999 which is third quarter over third quarter.

fallen by something between 3% and 6% *in every year*. To be clear, it is most emphatically *not* good practice for monetary policymakers to try to target asset prices directly (Bernanke and Gertler, 1999). Nevertheless, the declining nominal values of these assets, like the behavior of the yen, are also indicative of the deflationary forces acting on the Japanese economy.

So far we have looked at broad macroeconomic indicators. Table 3 provides some measures more directly related to the stance of monetary policy itself. The first three columns of Table 3 show fourth-quarter values (1991-99) for three key nominal interest rates: the call rate (the BOJ's instrument rate), the short-term prime rate, and the long-

Table 3. Monetary indicators for Japan, 1991-1999

Year	(1) Call rate	(2) Prime rate, short-term	(3) Prime rate, long-term	(4) Monetary base (% change)	(5) M2 + CDs (% change)
1991	6.45	6.88	6.95	2.89	2.14
1992	3.91	4.71	5.59	1.39	-0.54
1993	2.48	3.29	4.05	3.94	1.56
1994	2.27	3.00	4.90	4.12	2.64
1995	0.46	1.63	2.80	6.20	2.93
1996	0.48	1.63	2.74	6.78	3.17
1997	0.46	1.63	2.35	8.18	3.22
1998	0.23	1.50	2.29	6.34	4.43
1999	0.03	1.38	2.20	5.61	3.51

Notes: Columns (1)-(3): Interest rates are fourth-quarter averages, third-quarter average for 1999. Columns (4)-(5): Percentage changes are fourth quarter over fourth quarter, except for 1999, which is third quarter over third quarter.

term prime rate. Prime rates are affected by conditions in the banking market as well as monetary policy, of course, and they may not always fully reflect actual lending rates and terms; but they are probably more indicative of private-sector borrowing costs than are government bill and bond rates. Columns (4) and (5) show, respectively, the fourth-quarter-to-fourth-quarter growth rates of the monetary base and of M2 plus CDs, the broader monetary aggregate most often used as an indicator by the Japanese monetary authorities.

A glance at Table 3 suggests that the stance of monetary policy has been somewhat different since 1995 than in the 1991-94 period. As mentioned earlier, there seems to be little debate even in Japan that monetary policy during 1991-94 was too tight, reacting too slowly to

the deflationary forces unleashed by the asset-price crash. Interest rates came down during this period, but rather slowly, and growth of both narrow and broad money was weak. However, one can see that there has been an apparent change in policy since 1995: In that year the call rate fell to under 0.5%, on its way down to effectively a zero rate today, and lending rates fell as well. The fall in the nominal interest rate was accompanied by noticeable increases in the rates of money growth, particularly in the monetary base, in the past five years.

Monetary authorities in Japan have cited data like the 1995-99 figures in Table 3 in defense of their current policies. Two distinct arguments have been made: First, that policy indicators show that monetary policy in Japan is today quite expansionary in its thrust--"historically unprecedented accommodative monetary policy", in the words of Okina quoted earlier. Second, even if monetary policy is not truly as expansionary as would be desirable, there is no feasible way of loosening further--the putative liquidity trap problem. I will address each of these two arguments in turn (the second in more detail in the next section).

The argument that current monetary policy in Japan is in fact quite accommodative rests largely on the observation that interest rates are at a very low level. I do hope that readers who have gotten this far will be sufficiently familiar with monetary history not to take seriously any such claim based on the level of the *nominal* interest rate. One need only recall that nominal interest rates remained close to zero in many countries throughout the Great Depression, a period of massive monetary contraction and deflationary pressure. In short, low nominal interest rates may just as well be a sign of expected deflation and monetary tightness as of monetary ease.

A more respectable version of the argument focuses on the *real* interest rate. With the rate of deflation under 1% in 1999, and the call rate effectively at zero, the realized real call rate for 1999 will be under 1%, significantly less than, say, the real federal funds rate in the United States for the same period. Is this not evidence that monetary policy in Japan is in fact quite accommodative?

I will make two responses to the real-interest-rate argument. First, I agree that the low real interest rate is evidence that monetary policy is not the primary source of deflationary pressure in Japan today, in the way that (for example) the policies of Fed Chairman Paul Volcker were the primary source of disinflationary pressures in the United States in the early 1980s (a period of high real interest rates). But neither is the low real interest rate evidence that Japanese monetary policy is doing all that it can to offset deflationary pressures arising from other causes (I have in mind in particular the effects of the collapse in asset prices and the banking problems on consumer spending and investment spending). In textbook IS-LM terms, sharp reductions in consumption and investment spending have shifted the IS curve in Japan to the left, lowering the real interest rate for any given stance of monetary policy. Although monetary policy may not be directly responsible for the current depressed state of aggregate demand in Japan today (leaving aside for now its role in initiating the slump), it does not follow that it should not be doing more to assist the recovery.

My second response to the real-interest-rate argument is to note that today's real interest rate may not be a sufficient statistic for the cumulative effects of tight monetary policy on the economy. I will illustrate by discussing a mechanism that is highly relevant in Japan today, the so-called "balance-sheet channel of monetary policy"

(Bernanke and Gertler, 1995). Consider a hypothetical small borrower who took out a loan in 1991 with some land as collateral. The long-term prime rate at the end of 1991 was 6.95% (Table 1, column 3).³ Such a borrower would have been justified, we may speculate, in expecting inflation between 2% and 3% over the life of the loan (even in this case, he would have been paying an expected real rate of 4-5%), as well as increases in nominal land prices approximating the safe rate of interest at the time, say 5% per year. Of course, as Tables 1 and 2 show, the borrower's expectations would have been radically disappointed.

To take an admittedly extreme case, suppose that the borrower's loan was still outstanding in 1999, and that at loan initiation he had expected a 2.5% annual rate of increase in the GDP deflator and a 5% annual rate of increase in land prices. Then by 1999 the real value of his principal obligation would be 22% higher, and the real value of his collateral some 42% lower, than he anticipated when he took out the loan. These adverse balance-sheet effects would certainly impede the borrower's access to new credit and hence his ability to consume or make new investments. The lender, faced with a non-performing loan and the associated loss in financial capital, might also find her ability to make new loans to be adversely affected.

This example illustrates why one might want to consider indicators other than the current real interest rate--for example, the cumulative gap between the actual and the expected price level--in assessing the effects of monetary policy. It also illustrates why zero inflation or mild deflation is potentially more dangerous in the modern environment than it was, say, in the classical gold standard era. The modern economy makes much heavier use of credit, especially longer-term

³ And note that this rate was still 4.90% at the end of 1994.

credit, than the economies of the nineteenth century. Further, unlike the earlier period, rising prices are the norm and are reflected in nominal-interest-rate setting to a much greater degree. Although deflation was often associated with weak business conditions in the nineteenth century, the evidence favors the view that deflation or even zero inflation is far more dangerous today than it was a hundred years ago.

The second argument that defenders of Japanese monetary policy make, drawing on data like that in Table 3, is as follows: "Perhaps past monetary policy is to some extent responsible for the current state of affairs. Perhaps additional stimulus to aggregate demand would be desirable at this time. Unfortunately, further monetary stimulus is no longer feasible. Monetary policy is doing all that it can do." To support this view, its proponents could point to two aspects of Table 3: first, the fact that the BOJ's nominal instrument rate (column 1) is now zero, its lowest possible value. Second, that accelerated growth in base money since 1995 (column 4) has not led to equivalent increases in the growth of broad money (column 5)--a result, it might be argued, of the willingness of commercial banks to hold indefinite quantities of excess reserves rather than engage in new lending or investment activity. Both of these facts seem to support the claim that Japanese monetary policy is in an old-fashioned Keynesian *liquidity trap* (Krugman, 1999).

It is true that current monetary conditions in Japan limit the effectiveness of standard open-market operations. However, as I will argue in the remainder of the paper, liquidity trap or no, monetary policy retains considerable power to expand nominal aggregate demand. Our diagnosis of what ails the Japanese economy implies that these actions could do a great deal to end the ten-year slump.

How to Get Out of a Liquidity Trap

Contrary to the claims of at least some Japanese central bankers, monetary policy is far from impotent today in Japan. In this section I will discuss some options that the monetary authorities have to stimulate the economy.⁴ Overall, my claim has two parts: First, that--despite the apparent liquidity trap--monetary policymakers retain the power to increase nominal aggregate demand and the price level. Second, that increased nominal spending and rising prices will lead to increases in real economic activity. The second of these propositions is empirical but seems to me overwhelmingly plausible; I have already provided some support for it in the discussion of the previous section. The first part of my claim will be, I believe, the more contentious one, and it is on that part that the rest of the paper will focus. However, in my view one can make what amounts to an arbitrage argument --the most convincing type of argument in an economic context--that it must be true.

The general argument that the monetary authorities can increase aggregate demand and prices, even if the nominal interest rate is zero, is as follows: Money, unlike other forms of government debt, pays zero interest and has infinite maturity. The monetary authorities can issue as much money as they like. Hence, if the price level were truly independent of money issuance, then the monetary authorities could use the money they create to acquire indefinite quantities of goods and assets. This is manifestly impossible in equilibrium. Therefore money issuance must ultimately raise the price level, even if nominal interest rates are bounded at zero. This is an elementary argument,

but, as we will see, it is quite corrosive of claims of monetary impotence.

Rather than discuss the issues further in the abstract, I now consider some specific policy options of which the Japanese monetary authorities might now avail themselves. Before beginning, I add two more caveats: First, though I discuss a number of possible options below, I do not believe by any means that all of them must be put into practice to have a positive effect. Indeed, as I will discuss, I believe that a policy of aggressive depreciation of the yen would by itself probably suffice to get the Japanese economy moving again. Second, I am aware that several of the proposals to be discussed are either not purely monetary in nature, or require some cooperation by agencies other than the Bank of Japan, including perhaps the Diet itself. Regarding the concern that not all these proposals are "pure" monetary policy, I will say only that I am not here concerned with fine semantic distinctions but rather with the fundamental issue of whether there exist feasible policies to stimulate nominal aggregate demand in Japan. As to the need for inter-agency cooperation or even possible legislative changes: In my view, in recent years BOJ officials have--to a far greater degree than is justified--hidden behind minor institutional or technical difficulties in order to avoid taking action. I will discuss some of these purported barriers to effective action as they arise, arguing that in many if not most cases they could be overcome without excessive difficulty, given the will to do so.

⁴ For further discussion of monetary policy options when the nominal interest rate is close to zero, see Clouse, Henderson, Orphanides, Small, and Tinsley (1999).

Commitment to zero rates--with an inflation target

In February 1999 the Bank of Japan adopted what amounts to a zero-interest-rate policy. Further, to the BOJ's credit, it has since also announced that the zero rate will be maintained for some time to come, at least "until deflationary concerns subside", in the official formulation. Ueda (1999) explains (p. 1), "By the commitment to maintain the zero rate for some time to come, we have tried to minimize the uncertainties about future short-term rates, thereby decreasing the option value of long-term bonds, hence putting negative pressure on long-term interest rates." The announcement that the zero rate would be maintained did in fact have the desired effect on the term structure, as interest rates on government debt up to one-year maturity or more fell nearly to zero when the policy was made public. Government rates up to six years' maturity also fell, with most issues yielding under 1%.

The BOJ's announcement that it would maintain the zero rate policy for the indefinite future is a positive move that may well prove helpful. For example, in a simulation study for the United States, using the FRB/US macroeconometric model, Reifschneider and Williams (1999) found that tactics of this type--i.e., compensating for periods in which the zero bound on interest rates is binding by keeping the interest rate lower than normal in periods when the constraint is not binding--may significantly reduce the costs created by the zero-bound constraint on the instrument interest rate.

A problem with the current BOJ policy, however, is its vagueness. What precisely is meant by the phrase "until deflationary concerns subside"? Krugman (1999) and others have suggested that the BOJ quantify its objectives by announcing an inflation target, and further that it be a fairly high target. I agree that this approach would be

helpful, in that it would give private decision-makers more information about the objectives of monetary policy. In particular, a target in the 3-4% range for inflation, to be maintained for a number of years, would confirm not only that the BOJ is intent on moving safely away from a deflationary regime, but also that it intends to make up some of the "price-level gap" created by eight years of zero or negative inflation. Further, setting a quantitative inflation target now would ease the ultimate transition of Japanese monetary policy into a formal inflation-targeting framework--a framework that would have avoided many of the current troubles, I believe, if it had been in place earlier.

BOJ officials have strongly resisted the suggestion of installing an explicit inflation target. Their often-stated concern is that announcing a target that they are not sure they know how to achieve will endanger the Bank's credibility; and they have expressed skepticism that simple announcements can have any effects on expectations. On the issue of announcement effects, theory and practice suggest that "cheap talk" can in fact sometimes affect expectations, particularly when there is no conflict between what a "player" announces and that player's incentives. The effect of the announcement of a sustained zero-interest-rate policy on the term structure in Japan is itself a perfect example of the potential power of announcement effects.

With respect to the issue of inflation targets and BOJ credibility, I do not see how credibility can be harmed by straightforward and honest dialogue of policymakers with the public. In stating an inflation target of, say, 3-4%, the BOJ would be giving the public information about its objectives, and hence the direction in which it will attempt to move the economy. (And, as I will argue, the Bank does have tools to move the economy.) But if BOJ officials feel

that, for technical reasons, when and whether they will attain the announced target is uncertain, they could explain those points to the public as well. Better that the public knows that the BOJ is doing all it can to reflate the economy, and that it understands why the Bank is taking the actions it does. The alternative is that the private sector be left to its doubts about the willingness or competence of the BOJ to help the macroeconomic situation.

Depreciation of the yen

We saw in Table 2 that the yen has undergone a nominal appreciation since 1991, a strange outcome for a country in deep recession. Even more disturbing is the very strong appreciation that has occurred since 1998Q3, from about 145 yen/dollar in August 1998 to 102 yen/dollar in December 1999, as the Japanese economy has fallen back into recession. Since interest rates on yen assets are very low, this appreciation suggests that speculators are anticipating even greater rates of deflation and yen appreciation in the future.

I agree with the recommendations of Meltzer (1999) and McCallum (1999) that the BOJ should attempt to achieve substantial depreciation of the yen, ideally through large open-market sales of yen. Through its effects on import-price inflation (which has been sharply negative in recent years), on the demand for Japanese goods, and on expectations, a significant yen depreciation would go a long way toward jump-starting the reflationary process in Japan.

BOJ stonewalling has been particularly pronounced on this issue, for reasons that are difficult to understand. The BOJ has argued that it does not have the legal authority to set yen policy; that it would be unable to reduce the value of the yen in any case; and that even if it could reduce the value of the yen, political constraints prevent any

significant depreciation. Let's briefly address the first and third points, then turn to the more fundamental question of whether the BOJ could in fact depreciate the yen if it attempted to do so.

On legal authority, it is true that technically the Ministry of Finance (MOF) retains responsibility for exchange-rate policy. (The same is true for the U.S., by the way, with the Treasury playing the role of MOF. I am not aware that this has been an important constraint on Fed policy.) The obvious solution is for BOJ and MOF to agree that yen depreciation is needed, abstaining from their ongoing turf wars long enough to take an action in Japan's vital economic interest. Alternatively, the BOJ could probably undertake yen depreciation unilaterally; as the BOJ has a legal mandate to pursue price stability, it certainly could make a good argument that, with interest rates at zero, depreciation of the yen is the best available tool for achieving its legally mandated objective.

The "political constraints" argument is that, even if depreciation is possible, any expansion thus achieved will be at the expense of trading partners--a so-called "beggar-thy-neighbor" policy. Defenders of inaction on the yen claim that a large yen depreciation would therefore create serious international tensions. Whatever validity this political argument may have had at various times, it is of no relevance at the current moment, as Japan has recently been urged by its most powerful allies and trading partners to weaken the yen--and refused! Moreover, the economic validity of the "beggar-thy-neighbor" thesis is doubtful, as depreciation creates trade--by raising home-country income--as well as diverting it. Perhaps not all those who cite the "beggar-thy-neighbor" thesis are aware that it had its origins in the Great Depression, when it was used as an argument against the

very devaluations that ultimately proved crucial to world economic recovery.

The important question, of course, is whether a determined Bank of Japan would be able to depreciate the yen. I am not aware of any previous historical episode, including the periods of very low interest rates of the 1930s, in which a central bank has been unable to devalue its currency. Be that as it may, there are those who claim that the BOJ is impotent to affect the exchange rate, arguing along the following lines: Since (it is claimed) domestic monetary expansion has been made impossible by the liquidity trap, BOJ intervention in foreign exchange markets would amount, for all practical purposes, to a sterilized intervention. Empirical studies have often found that sterilized interventions cannot create sustained appreciations or depreciations. Therefore the BOJ cannot affect the value of the yen, except perhaps modestly and temporarily.

To rebut this view, one can apply a *reductio ad absurdum* argument, based on my earlier observation that money issuance must affect prices, else printing money will create infinite purchasing power. Suppose the Bank of Japan prints yen and uses them to acquire foreign assets. If the yen did not depreciate as a result, and if there were no reciprocal demand for Japanese goods or assets (which would drive up domestic prices), what in principle would prevent the BOJ from acquiring infinite quantities of foreign assets, leaving foreigners nothing to hold but idle yen balances? Obviously this will not happen in equilibrium. One reason it will not happen is the principle of portfolio balance: Because yen balances are not perfect substitutes for all other types of real and financial assets, foreigners will not greatly increase their holdings of yen unless the yen depreciates, increasing the expected return on yen assets. It

might be objected that the necessary interventions would be large. Although I doubt it, they might be; that is an empirical question. However, the larger the intervention that is required, the greater the associated increase in the BOJ's foreign reserves, which doesn't seem such a bad outcome.

In short, there is a strong presumption that vigorous intervention by the BOJ, together with appropriate announcements to influence market expectations, could drive down the value of the yen significantly. Further, there seems little reason not to try this strategy. The "worst" that could happen would be that the BOJ would greatly increase its holdings of reserve assets.

Money-financed transfers

Suppose that the yen depreciation strategy is tried but fails to raise aggregate demand and prices sufficiently, perhaps because at some point Japan's trading partners do object to further falls in the yen. An alternative strategy, which does not rely at all on trade diversion, is money-financed transfers to domestic households--the real-life equivalent of that hoary thought experiment, the "helicopter drop" of newly printed money. I think most economists would agree that a large enough helicopter drop *must* raise the price level. Suppose it did not, so that the price level remained unchanged. Then the real wealth of the population would grow without bound, as they are flooded with gifts of money from the government--another variant of the arbitrage argument made earlier. Surely at some point the public would attempt to convert its increased real wealth into goods and services, spending that would increase aggregate demand and prices. Conversion of the public's money wealth into other assets would also be beneficial, if it raised the prices of other assets.

The only counter-argument I can imagine is that the public might fear a future lump-sum tax on wealth equal to the per capita money transfer, inducing them to hold rather than spend the extra balances. But the government has no incentive to take such an action in the future, and hence the public has no reason to expect it. The newly circulated cash bears no interest and thus has no budgetary implications for the government if prices remain unchanged. If instead prices rise, as we anticipate, the government will face higher nominal spending requirements but will also enjoy higher nominal tax receipts and a reduction in the real value of outstanding nominal government debt. To a first approximation then the helicopter drops will not erode the financial position of the government and thus will not induce a need for extraordinary future taxes.

Note that, in contrast, a helicopter drop of government bonds would not necessarily induce significant extra spending. Even if government bonds pay essentially zero interest, as they do today in Japan, if they are of finite maturity then at some point the debt they represent must be refinanced, possibly at a positive interest rate. The usual Ricardian logic might then apply, with the public realizing that the "gift" of government debt they have received is also associated with higher future tax obligations. Money is in this sense special; it is not only a zero-interest liability, it is a perpetual liability. Money-financed transfers do have a resource cost, which is the inflation tax. But 1) this cost comes into play only as prices rise, which is the object the policy is trying to achieve, and 2) again, to a first order the real cost is borne by holders of real balances, not the government.

Of course, the BOJ has no unilateral authority to rain money on the population. The policy being proposed--a money-financed tax cut--

is a combination of fiscal and monetary policies. All this means is that some intragovernmental cooperation would be required. Indeed, the case for a tax cut now has already been made, independent of monetary considerations (Posen, 1998); the willingness of the BOJ to purchase government securities equal to the cost of the tax cut would serve to reduce the net interest cost of the tax cut to the government, possibly increasing the tax cut's chance of passage. By the way, I do not think that such cooperation would in any way compromise the BOJ's newly won independence. In financing a tax cut, the BOJ would be taking a voluntary action in pursuit of its legally mandated goal, the pursuit of price stability. Cooperation with the fiscal authorities in pursuit of a common goal is not the same as subservience.

Nonstandard open-market operations

A number of observers have suggested that the BOJ expand its open-market operations to a wider range of assets, such as long-term government bonds or corporate bonds; and indeed, the BOJ has modest plans to purchase commercial paper, corporate bonds, and asset-backed securities under repurchase agreements, or to lend allowing these assets as collateral (Ueda, 1999, p. 3). I am not so sure that this alternative is even needed, given the other options that the BOJ has, but I would like to make a few brief analytical points about them.

In thinking about nonstandard open-market operations, it is useful to separate those that have some fiscal component from those that do not. By a fiscal component I mean some implicit subsidy, such as would arise if the BOJ purchased nonperforming bank loans at face value, for example (this is of course equivalent to a fiscal bailout of the banks, financed by the central bank). This sort of money-financed "gift" to the private sector would expand aggregate demand for the same reasons that any money-financed transfer does.

Although such operations are perfectly sensible from the standpoint of economic theory, I doubt very much that we will see anything like this in Japan, if only because it is more straightforward for the Diet to vote subsidies or tax cuts directly. Nonstandard open-market operations with a fiscal component, even if legal, would be correctly viewed as an end run around the authority of the legislature, and so are better left in the realm of theoretical curiosities.

A nonstandard open-market operation without a fiscal component, in contrast, is the purchase of some asset by the central bank (long-term government bonds, for example) at fair market value. The object of such purchases would be to raise asset prices, which in turn would stimulate spending (for example, by raising collateral values). I think there is little doubt that such operations, if aggressively pursued, would indeed have the desired effect, for essentially the same reasons that purchases of foreign-currency assets would cause the yen to depreciate. To claim that nonstandard open-market purchases would have no effect is to claim that the central bank could acquire all of the real and financial assets in the economy with no effect on prices or yields. Of course, long before that would happen, imperfect substitutability between assets would assert itself, and the prices of assets being acquired would rise.

As I have indicated, I doubt that extensive nonstandard operations will be needed if the BOJ aggressively pursues reflation by other means. I would hope, though, that the Japanese monetary authorities would not hesitate to use this approach, if for some reason it became the most convenient. It is quite disturbing that BOJ resistance to this idea has focused on largely extraneous issues, such as the possible effects of nonstandard operations on the Bank's balance sheet. For example, BOJ officials have pointed out that if the BOJ purchased large quantities of long-term government bonds, and interest rates later rose, the Bank would suffer capital losses. Under

current law these losses would not be indemnified, even though they would be precisely offset by gains by the fiscal authority. This concern has led the BOJ to express reluctance to consider engaging in such operations in the first place.

Perhaps the Bank of Japan Law should be reviewed, to eliminate the possibility that such trivial considerations as the distribution of paper gains and losses between the monetary and fiscal authorities might block needed policy actions. An alternative arrangement that avoids the balance-sheet problem would be to put the Bank of Japan on a fixed operating allowance, like any other government agency, leaving the fiscal authority as the residual claimant of BOJ's capital gains and losses.

Needed: Rooseveltian Resolve

Franklin D. Roosevelt was elected President of the United States in 1932 with the mandate to get the country out of the Depression. In the end, the most effective actions he took were the same that Japan needs to take--namely, rehabilitation of the banking system and devaluation of the currency to promote monetary easing. But Roosevelt's specific policy actions were, I think, less important than his willingness to be aggressive and to experiment--in short, to do whatever was necessary to get the country moving again. Many of his policies did not work as intended, but in the end FDR deserves great credit for having the courage to abandon failed paradigms and to do what needed to be done.

Japan is not in a Great Depression by any means, but its economy has operated below potential for nearly a decade. Nor is it by any means clear that recovery is imminent. Policy options exist that could greatly reduce these losses. Why isn't more happening? To this outsider, at least, Japanese monetary policy seems paralyzed, with a paralysis that is largely self-induced. Most striking is the apparent unwillingness of the monetary

authorities to experiment, to try anything that isn't absolutely guaranteed to work. Perhaps it's time for some Rooseveltian resolve in Japan.

References

- Bernanke, Ben and Mark Gertler, 1995, "Inside the Black Box: The Credit Channel of Monetary Transmission", *Journal of Economic Perspectives*, 9, no. 4 (Fall), 27-48.
- Bernanke, Ben and Mark Gertler, 1999, "Monetary Policy and Asset Price Volatility", presented at a conference of the Federal Reserve System, Jackson Hole, Wyoming, August.
- Bernanke, Ben S. Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen, 1999, *Inflation Targeting: Lessons from the International Experience*, Princeton NJ: Princeton University Press.
- Clouse, James, Dale Henderson, Athanasios Orphanides, David Small, and Peter Tinsley, 1999, "Monetary Policy When the Short-term Interest Rate is Zero", Board of Governors of the Federal Reserve System, October.
- Hoshi, Takeo and Anil Kashyap, forthcoming, "The Japanese Banking Crisis: Where Did It Come From and How Will It End?", in B. Bernanke and J. Rotemberg, eds., *NBER Macroeconomics Annual*, vol. 14.
- Krugman, Paul, 1999, "It's Baaack: Japan's Slump and the Return of the Liquidity Trap", *Brookings Papers on Economic Activity*, vol. 2, 137-205.
- McCallum, Bennett, 1999, "Theoretical Analysis Regarding a Zero Lower Bound on Nominal Interest Rates", Carnegie-Mellon University, September.
- Meltzer, Allan, 1999, "The Transmission Process", prepared for The Monetary Transmission Process: Recent Developments and Lessons for Europe, Deutsche Bundesbank, Frankfurt, March 25-27.
- Okina, Kunio, 1999, "Monetary Policy Under Zero Inflation--A Response to Criticisms and Questions Regarding Monetary Policy", Institute for Monetary and Economic Studies, Bank of Japan, Discussion paper no. 99-E-20.
- Posen, Adam S., 1998, *Restoring Japan's Economic Growth*, Washington D.C.: Institute for International Economics.
- Reifschneider, David and John C. Williams, 1999, "Three Lessons for Monetary Policy in a Low Inflation Era", Board of Governors of the Federal Reserve System, September.
- Ueda, Kazuo, 1999, Remarks presented at FRB-Boston Conference, "Monetary Policy in a Low-Inflation Environment", Woodstock VT, October 20.