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Policy Choices

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Guest Editor's Introduction

With the exception of a growth hiccup in 1996, the Japanese economy has been flatter than cola without carbonation for more than a decade. An export drive has fueled rising expectations, but still has not managed to stimulate domestic demand, restore business confidence, or put the unemployed back to work. If a recovery is underway, it remains weak, unimpressive. Here is just one indicator of how far Japan's economy has fallen: On the Tokyo stock exchange, the Nikkei index, which had soared to almost 39,000 at the peak of the financial bubble in December 1989, had dipped below 9,000 by December 2002. How did Japan fall into this swamp? And what must it do to get out?

Although answers are as abundant as they are complex, they can be grouped, roughly, into three general "schools" or "camps": the structural reformers, the fiscal stimulators, and the monetary stimulators.

The Structural Reformers

Japan's economy, according to this view, is woefully underperforming because it is constrained by a number of efficiency-impeding institutions, particularly industrial policies, regulations, and informal "guidance" designed to protect and nurture vested business interests. Countercyclical macroeconomic policies will provide only short-term relief, the reformers say. Without sweep-

The reason that the Japanese government and people have lost their way is that they have lost sight of their traditional values. Why must Japan discard values that focus not only on competition, but on helping one another and working together to achieve positive results? When market principles reign supreme all over the world, when the pursuit of profit and efficiency alone dictates the course of life in the twenty-first century, and when communities held together by blood ties and common traditions are torn asunder, what will become of the world? In all likelihood, arrogant superpowers, and the world's wealthy classes, will lose their basis of survival by continuing to destroy the natural environment, and will face a backlash in the form of terrorism, crime, and other pathologies.

Prime Minister Junichiro Koizumi, let me say bluntly: What you want to do is wrong. Feel free, if you wish, to call me one of those "forces of resistance." Indeed, I wish you would. How can you not see that every day nearly 100 people are taking their own lives, many of them managers in small and medium-sized businesses? It is my job to oppose efforts that attempt to discard the socially weak and throw Japan into chaos. I will not waver, even in the face of hints about the dissolution of the Diet. It is, after all, the mission of the politicians to rescue those who are faltering under uncertainty.

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RICHARD A. WERNER

The "Enigma" of Japanese Policy Ineffectiveness

The Limits of Traditional Approaches, Not Cyclical Policy

Japan's economic performance has been disappointing since the early 1990s. Actual growth largely has remained below potential. The economic loss, in the form of lost output and national income, amounts to trillions of yen.[1] Unemployment is one indicator of the degree of social dislocation. Another may be the suicide rate, which

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rose to postwar record highs in the 1990s, apparently largely recession induced.[2]

This underperformance occurred despite significant fiscal stimulation and interest rate reductions. It is said that "the usual countercyclical macroeconomic policies have not worked in Japan."[3] Why this is so remains unexplained by traditional approaches. Instead of determining why demand-side policies to boost *actual* growth have been ineffective, many observers instead now argue that supply-side reforms are needed to boost Japan's *potential* growth rate. This is usually defined to include far-reaching institutional changes in the labor market, corporate governance, and the regulatory environment. Put simply, it is said that to improve performance, Japan must shift from a Japanese-style "bank-centered and relationship-based system" to a U.S.–style "market-based and competitive system," or from "welfare capitalism" to "shareholder capitalism."[4]

This paper offers a theoretical and empirical answer to the "enigma" of the ineffectiveness of demand-stimulation policies. In brief, it shows that fiscal stimulation reduced private sector activity due to complete quantity crowding out, while monetary stimulation via low or even zero interest rates could not overcome the problem of insufficient commercial or central bank credit creation. The paper demonstrates, however, that monetary policy in the form of credit expansion would have been effective. It also suggests that the Japanese economy may not need to undergo the dramatic structural changes advocated by the Bank of Japan (BOJ). Indeed, Japan's ongoing economic woes are shown to be largely due to the misguided policies of the BOJ.

II. Cyclical Policies Evaluated by Traditional Approaches

Fiscal Policy

Since 1992, ten fiscal stimulation packages amounted to ¥146 trillion. These figures may have been exaggerated by politically motivated double-counting. The national income accounting data for government spending also show a significant increase from an aggregate of ¥705 trillion in the 1980s to ¥1,136 trillion in the 1990s. As a percentage of nominal gross domestic product (GDP), this represented an increase from 20.9 percent on average in the 1980s to 22.7 percent in the 1990s. The extent of fiscal stimulation becomes even more apparent when viewed on a growth basis: on average, government spending contributed almost half of the growth in the 1990s, while it only contributed a sixth of the growth in the 1980s.[5]

While the government contribution to growth increased, government revenues fell significantly, as the weaker economy reduced tax revenues. There are two options to fund the revenue shortfall: debt finance or money finance. In the former case, the government borrows from the private sector; in the latter, it either creates money directly, or borrows from the central bank, which pays by creating money.[6] In Japan's case, the issuance of legal tender has been delegated to the BOJ, which, since at least the late 1970s, has in practice independently decided the quantity of its credit creation (see monetary policy, below). Moreover, the Finance Law does not allow the central bank to directly underwrite government bonds.[7] Thus, the government borrowed from the private sector, mainly via bond and bill issuance.[8]

New government borrowing increased by ¥300.4 trillion during the 1990s (58.6 percent of 2000 nominal GDP). This raised total outstanding debt to ¥522.1 trillion by the end of 2000, amounting to 101.8 percent of GDP. Adding the new borrowing of ¥60.36 trillion during 2001, the national debt figures recorded a new high of ¥582.46 trillion, about 120 percent of GDP.

The Case for Fiscal Policy Effectiveness

Since many economists in Japan would call themselves Keynesian, government spending has many supporters. The need for, and usefulness of, fiscal stimulation has been argued by Nagatani (1996), Yoshitomi (1996), Koo (1995, 1998, 1999), Posen (1998), and Ito (2000), among others. The extreme position of a pure fiscalist stance is represented by Koo (1998, 1999) and Ito (2000).

Koo argues the general case for fiscal policy effectiveness: while money is neutral, fiscal policy is highly effective. Ito (2000) makes the special case for fiscal policy effectiveness in the event short-term nominal interest rates reach zero. He argues that the economy is in a liquidity trap.[9] Thus, monetary policy would be ineffective and fiscal policy unusually effective, without crowding out. Hence, Ito advocates fiscal stimulation in a zero interest environment (see below on monetary policy).[10] However, by arguing the case of short-term nominal interest rates that do not fall further, Ito's argument does not apply to much of the 1990s, when interest rates actually fell.

In discussing the expected impact of fiscal expenditures, many proponents of fiscal policy adopt a cautious interpretation of the Keynesian multiplier. They downplay second- and third-round effects, emphasizing instead the primary impact. To estimate the expected impact of fiscal policy, many government and private sector economists therefore often argue that a public works project worth ¥1 trillion would boost nominal GDP by ¥1 trillion. A spending package amounting to 2 percent of GDP is commonly expected to boost GDP by two percentage points.[11]

Nevertheless, few authors would argue that fiscal policy has been effective. The notable exceptions are Posen (1998) and Ito (2000). The former argues that actual fiscal spending was overreported, and hence a sufficiently large fiscal expansion would have been effective in ending economic stagnation and deflation. However, no empirical test—for instance, using the more reliable national income accounting data for fiscal spending—is offered in support of this argument. Using such data (see Section III below), it becomes clear that sizeable fiscal stimulation did take place, but no recovery.

Ito (2000) concedes that the unprecedented six fiscal stimulation packages that were implemented between 1992 and 1994 have had "little impact" (p. 102). But he argues this does not prove fiscal policy ineffectiveness, as defined by him. "Without any fiscal stimulus, the economy undoubtedly would have contracted. The underlying economy was so weak that fiscal stimulus did not bring the economy all the way to its potential growth rate but it arguably kept things from becoming worse" (p. 102). The ceteris

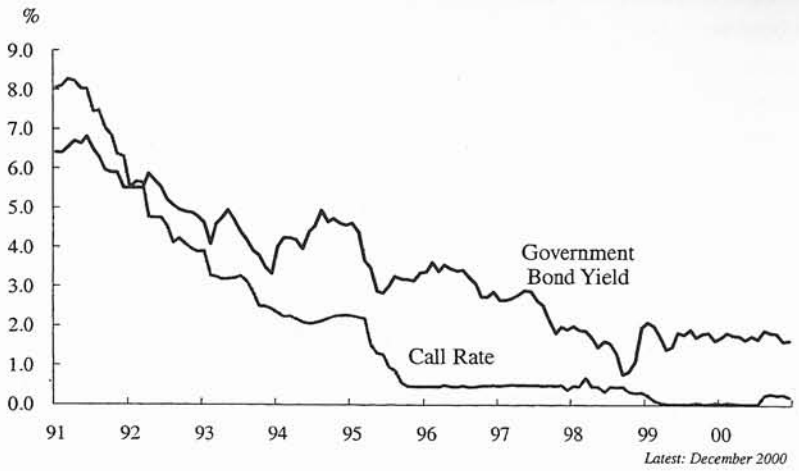
paribus condition is invoked, only to claim its violation. The argument relies on unspecified shocks, rendering economic growth exogenous to fiscal and monetary policy.[12] Since undefined exogenous shocks cannot be isolated or quantified, no falsification of the effectiveness claim is possible—it leaves the realm of testable hypotheses.[13] While supporters of the efficacy of fiscal spending feel that even more fiscal stimulation is the solution for Japan, they have not provided evidence that fiscal policy has been effective.[14]

The Case Against Fiscal Policy Effectiveness

Three arguments have been proposed as to why fiscal policy could not be effective in stimulating demand in Japan. The first, by the author, will be examined below in Section III. Second, it was argued that increased bond issuance to fund fiscal spending would lower bond prices, push up long-term interest rates, and negatively affect investment and economic activity. A proponent of this interest rate–based crowding-out argument is Yoshida (1996), who also warns that long-term rate increases would tend to strengthen the yen and hurt net exports. However, despite brief periods of rising long-term nominal rates, nominal short-term (as measured by call rates) and long-term interest rates (as measured by ten-year government-bond yields) have trended down during the 1990s. There are only two instances where they rose: from 4.3 percent on average in 1993 to 4.4 percent in 1994, and from 1.3 percent in 1998 to 1.8 percent in 1999. However, in both cases rates subsequently resumed their decline to new lows (see Figure 1).[15]

Calculating real interest rates as the difference between these nominal interest rates and consumer price inflation (measured by the CPI), we find that short-term real interest rates fell from 4.2 percent on average in 1991 to 0.11 percent on average in 2000, while long-term real interest rates fell from 3.0 percent on average in 1991 to 0.7 percent in 1998, though rising again to 2.5 percent on average in 2000. These real rates were lower than during the 1980s. These facts contradict interest-rate crowding-out arguments.[16]

Figure 1. **Ten-Year Government Bond Yield and Call Rate (uncol.o/n)**



Note: Nominal interest rates trended down in the 1990s.

Another case for a different kind of crowding out has been made by Krugman (1998c). Applying his model of intertemporally optimizing rational representative agents to Japan, he obtains Ricardian equivalence of the type Barro (1974) proposed: Japanese consumers believe that any fiscal spending funded by the issuance of government debt (as most of it has been) will require the debt to be fully paid off in the relevant future by raising taxes on individuals. For every yen in government spending, rational consumers would increase savings by one yen—preparing to repay the government in the future.

The problem with this model is that it does not allow for the possibility that the debt will be paid off by other means—such as money creation, higher corporate taxes, economic growth that boosts tax revenues without raising individual taxes, or asset sales to foreign investors. It is not clear why rational consumers would not consider these possibilities.[17] Most of all, proponents of this explanation of fiscal policy ineffectiveness have not provided any empirical evidence, as far as the author is aware.

Conclusion

There is no convincing evidence in favor of fiscal policy effectiveness. However, the question of just why this was the case has not been answered by traditional approaches—neither interest-rate crowding out, nor Ricardian equivalence. We will therefore return to this unresolved issue in Section III.

Monetary Policy

The BOJ has argued consistently during the 1990s that nominal short-term interest rates constitute its only practicable monetary policy tool. According to the BOJ, the repeated reduction of these rates demonstrates the central bank's resolve in attempting to stimulate the economy.[18] However, the weakness of the economy, despite "unprecedented" monetary stimulation, is seen as evidence that the true cause of that weakness lies in nonmonetary factors, especially problems with Japan's economic structure.[19] The onus, says the central bank, is thus on the government to implement such reforms.[20] While these may be deflationary and painful in the short run, they will create positive growth expectations, and hence growth itself, in the long run, we are told.

The central bank's policies have sparked debates, which we shall divide into those centering on the unusual circumstances surrounding the near-zero interest-rate policy (starting about 1998), and the earlier, more general debates (starting about 1992).

(a) The Special Case of Interest-Rate-Policy Ineffectiveness (Since 1998)

The lowering of the overnight call rate to about 0.3 percent in September 1998 coincided with a drop in ten-year government-bond yields to 0.7 percent. Both events triggered much talk about near-zero nominal interest rates in Japan and sparked the—hardly controversial—argument that interest rate policies had reached their limit.

The Liquidity Trap Argument

Choosing the definition that an "economy is in a liquidity trap if aggregate demand consistently falls short of productive capacity despite essentially zero short-term nominal interest rates," Krugman (1998a, 1998b, 1998c) finds Japan to be an example.[21] His explanation is as follows:[22] Exogenous expectations that future productive capacity will fall (for instance, due to exogenous demographic problems) result in deflationary expectations such that even with nominal interest rates close to zero, real interest rates are above their (negative) full-employment equilibrium level.[23] Since Krugman assumes that the central bank cannot lower nominal rates below zero, and since in his model monetary policy affects the economy via its influence on interest rates, there is a problem—a liquidity trap. As empirical evidence, Krugman musters the fact that short-term interest rates approached zero, and that the broad deposit aggregate M2 + CD was not growing significantly, despite substantial increases in high-powered money by the central bank.[24]

Inflation Targeting

The BOJ supports Krugman's analysis. It concludes from this that monetary policy is ineffective. Krugman dismisses fiscal stimulation for reasons of Ricardian equivalence (see above), as well as structural reforms, because they constitute a supply-side policy that cannot increase demand. Since real rates are defined as nominal rates minus inflation expectations, Krugman's recommendation is to raise inflationary expectations sufficient to render real interest rates negative. This can be done by the central bank, if it can make a credible commitment that it will pursue "irresponsible monetary policy" instead of price stability or deflation. Krugman argues that agents had considered interest rate reductions to be *temporary*—to be reversed the moment prices start to rise—and thus ineffective. A credible commitment to a *permanent* increase in prices, even when inflation appears, would reverse expectations. Krugman (1998c) thus suggests introducing an inflation target.

There are problems with Krugman's argument. First, it is not obvious that a central bank cannot impose negative penalty–type interest rates, for instance, on excess reserves.[25] Second, Krugman's model does not answer the question of just how the liquidity trap situation developed—a question that may yield important insights.[26] As he admits, there are few solid reasons why there should be negative growth and inflation expectations.[27] Third, Krugman's transmission mechanism is based on interest rates and does not allow for quantity effects. For instance, he argues that "no matter how much money the BOJ prints *now*, it doesn't matter" (1998b, 4). We will see the relevance of this in Section III. Fourth, BOJ spokesmen, including Okina (1999), frequently point out that Krugman's argument is contradictory: If there is a liquidity trap and nothing more can be done (as they agree), how can the central bank possibly make a *credible* commitment to create inflation? Since the model describes no physical mechanism by which demand is stirred, it all depends on the credible commitment. But credibility is hindered by the knowledge that the central bank is merely trying to pretend to be credible, while it cannot affect the economy in any physical sense. Thus the policy is not credible. McKinnon (1999) takes the same stance by arguing that, due to the liquidity trap, inflationary expectations cannot be raised.[28] Instead of the attempt to create expectations of inflation, he suggests stirring expectations of yen depreciation "through joint action by the Japanese and U.S. governments" (p. 187). But it is not clear through what transmission mechanism in his model this depreciation should be achieved and why this policy would be any more credible than the policy to establish an inflation target.

Krugman's (1998c) initial defense is to argue that creating such expectations "is in a sense something outside the usual boundaries of economics" (p. 46). He suggests legal changes to impose an inflation target on the BOJ (his suggestion is 4 percent for fifteen years), with the aim to create "managed inflation." Cargill et al. (2000) agree, merely differing in the size of the recommended inflation target, suggesting a "1 to 3 percent target" as sufficient for the late 1990s.[29] Ito (2000) cites the modest growth of M2 com-

pared to faster growth of high-powered money as evidence of a "Keynesian" liquidity trap.[30] However, he does not share Krugman's conclusion that monetary policy remains relevant, and, like the BOJ, argues that fiscal policy can stimulate the economy. Moreover, Ito also disagrees with McKinnon's proposal to set an exchange rate target—not because the policy would be ineffective, but because it would have negative effects on Japan's trade partners, and hence on Japan.

The BOJ's Ueda (2001b) agrees with Ito's interpretation of the liquidity trap argument. Referring to the traditional equation of exchange MV = PY, and defining M as high-powered money, Ueda points out that its velocity V has fallen. He believes this is due to the liquidity trap, which he defines as a situation of near-zero short-term interest rates. Since increases in M coincide with further declines in V, there is no impact on nominal GDP (PY), and increases in the monetary base become "meaningless." As evidence, he points to the frequent incidents of money-market bids falling short of the total offer, reflecting a "lack of demand" for the money the central bank is trying to supply. There is no suggestion as to *why* velocity has fallen, especially in the pre-1998 period.

Other spokesmen for the BOJ also cite the liquidity trap to argue that the central bank already has done everything possible to stimulate the economy. Ueda (2001a) says that the central bank already uses a "weak form" of inflation targeting.[31] Any stronger version, with a clear time frame, he says would be counterproductive because it could not be met, thus reducing credibility.[32] Pressed on this point, Krugman (1998c) makes a surprising retreat: If the announcement of an inflation target doesn't work, Krugman concedes, there is nothing that can be done by monetary policy. "In this case the temporary fiscal jolt once again comes into its own" (p. 59).

What was Japan's situation before September 1998? Weberpals (1997) tested for the existence of a liquidity trap and found no empirical support. Instead, she concludes that Japan's experience has been "unique," leaving the enigma of interest-rate-policy ineffectiveness unsolved. More fundamentally, if the liquidity trap is

defined as either a situation in which short-term nominal interest rates are zero (as Krugman and others do), or in the Keynesian and Hicksian sense as a situation in which short-term interest rates cannot be lowered any further, then by definition no liquidity trap existed during the 1990s (not until March 20, 2001, since in earlier periods short-term nominal rates subsequently fell). Since the liquidity-trap argument only concerns the time period when there was a liquidity trap, it cannot explain why pre-trap interest-rate reductions have failed to stimulate the economy during the 1990s.[33] Thus the argument is incapable of addressing, let alone solving, the enigma of interest-rate-policy ineffectiveness. Upon closer inspection, the liquidity-trap argument implodes to the tautology that short-term nominal interest rates cannot fall further, because they have fallen by as much as they can fall.

Quantitative Easing

Since economists recognized that nominal short-term interest rates close to zero meant the end of interest-rate policy, several began to argue that the central bank might want to consider tools other than interest rates. After all, as Bernanke (2000) reminds us, even zero interest rates are not a sign that monetary policy is stimulatory, since "low interest rates may just as well be a sign of expected deflation and monetary tightness as of monetary ease" (p. 155). The unusual circumstance of near-zero interest rates has prompted even some economists who normally emphasize interest rates to abandon the price of money and instead use the quantity of money as the key operating target. For some, the transmission mechanism from such quantitative policy to the economy would operate indirectly, via expectations (Hayashi 1998). In that case, the credibility problem of Krugman's argument remains and their models cannot deliver a solution. Those who argue for a direct quantity effect on the economy have not solved the issue of velocity instability, raised by Ueda, and have also not explained the puzzle of the ineffectiveness of falling interest rates during the 1990s.

(b) The General Case of Interest-Rate-Policy Ineffectiveness

Even when interest rates were still far from zero, some economists argued that rate reductions would be ineffective. Their arguments follow one of three approaches. First, some critics argue that monetary policy cannot stimulate the economy, since money is neutral. In the debate over Japanese economic policy, Koo (1998, 1999) is a proponent of this view. While many theoretical models favor this approach, there is no empirical evidence that money is indeed neutral.[34] We will therefore not consider this case in greater detail.

The second school of thought argues that causation runs from economic activity to money. Money is endogenous, and hence monetary policy is powerless. This view is shared by Kaldor (1970) and many post-Keynesian economists.[35] In Japan, it has been embraced by Yoshikawa (1993), and was promoted by the BOJ in the 1990s.

The BOJ's Okina (1991, 1993a, 1993b) explains that the central bank fulfils the double function of conducting monetary policy and acting as the lender of last resort protecting the stability of the financial system. Currency in circulation, accounting for 93 percent of high-powered money at the end of 1992, is not supplied by the central bank at its discretion, but only on demand from the public (when bank deposits are withdrawn and turned into cash for spending). This demand is largely transaction based and hence closely related to nominal consumption. In the short run, the central bank cannot control currency in circulation unless it drives up short-term interest rates "dramatically" so as to affect nominal consumption. However, in its function as lender of last resort, the central bank cannot allow such interest rate fluctuations, as they might lead to financial instability. Furthermore, bank reserves, the other component of high-powered money, also cannot be controlled for a similar reason: as the deadline for banks to meet their reserve requirements approaches on the fifteenth of the month, the central bank may be forced to inject more money into the call market (or absorb money from it) to prevent volatility in short-term interest rates. Hence high-powered money is not under the control of the central bank and not an exogenous policy variable. It is "not the cause, but the result" (Okina 1993b, 104).[36] The central bank's activity is reduced to smoothing the call rate, which becomes the only viable operational target.[37]

The third school holds the opposite view: its adherents see monetary policy as exogenously determined by the central bank and capable of affecting output. Moreover, several proponents argue that the mechanism of transmission from money to the economy is not primarily via interest rates (the price of money), but also via its quantity. M. Friedman (1968, 1984), Poole (1982), Brunner and Meltzer (1983), McCallum (1985), and most economics textbooks argue that it is possible for the central bank to control high-powered money exogenously in order to implement monetary policy and manipulate the economy. McCallum (1993) notes that the BOJ admits it *could* control high-powered money, if it allowed greater interest-rate fluctuations. In line with this view, Iwata (1992b, 1992c, 1994) argues that the BOJ's explanation of monetary policy—what he termed the "BOJ Theory"—is fundamentally flawed. According to him, the central bank can exogenously manipulate the quantity of high-powered money, while there is a stable relationship between high-powered money and deposit aggregates (such as M2 + CD), and between deposit aggregates and GDP. Therefore, the central bank can manipulate economic growth by controlling high-powered money. Using this analysis, Iwata points out that the central bank tightened monetary policy too late into the bubble period, and then, in the early 1990s, waited too long to stimulate the economy.[38] (While interest rates had been falling since 1991, the supply of high-powered money contracted for most of 1992.) He therefore advised the central bank in 1992 to abandon its "BOJ Theory" and shift its operating target from interest rates to high-powered money. Since interest-rate reductions will not stimulate the economy, the central bank should actively increase the supply of high-powered money by bill- and bond-purchase operations, or else risk inviting a recession (Iwata 1992c).[39] The subsequent sharp increase in high-powered money and M1 silenced most proponents of this view.

Over the following years, the central bank maintained its "BOJ Theory," countering Iwata's and McCallum's arguments on the basis of the following points:

(1) The BOJ uses lagged reserve requirements. This renders control of high-powered money impossible.

(2) The stable relationship between high-powered money and broad deposit aggregates has broken down, since the credit multiplier is not constant.

(3) Broad deposit aggregates have no fixed link to short-term interest rates, so "controllability of the money supply is not something the BOJ's short-term money market operations can guarantee."[40]

(4) The stable relationship between broad deposit aggregates (such as M2 + CD) and GDP has broken down.

(5) Growth of high-powered money has picked up significantly since 1993.[41]

McCallum (1993) notes that Okina (1993a) fails to allow for a desirable institutional change to contemporaneous reserve requirements. While Yoshikawa (1993) agrees with the BOJ that money supply is largely endogenous to "real shocks" in the short run because "central banks smooth the nominal interest rate" (p. 122), he points out that in Japan, as elsewhere, Granger causality runs from money to output. His own empirical work finds that "monetary policy, represented by changes in the call rate, exerts substantial effects on real output in Japan mainly through its effect on fixed investment and imports" (p. 156). He offers this explanation: "When the BOJ changes its policy stance . . . it affects real output." It turns out that the real dispute appears to be over the definition of what constitutes the short run. Thus the BOJ's and Yoshikawa's endogeneity appears restricted to the very short-term, seasonal movement of the economy, within a medium- to long-term setting of exogenous monetary policy.[42] This, however, does not disable high-powered money control even in the short term,

since there is no reason why the base money targets could not be seasonally adjusted—as they indeed appear to be.

Despite the logical plausibility of the monetarist approach, its critics have grown in number since the mid-1980s, due to the apparent velocity decline and instability of the money demand function pointed out by Okina.[43] Additionally, monetarists who noticed the rise in M1 in 1992 and 1993 saw no further problems with Japan's economy and economists thus argued that there was no reason to fear a credit crunch or other monetary obstacles to growth.[44] Thus the public debate about the controllability of money aggregates abated for several years, during which the central bank emphasized the unreliability of monetary aggregates and maintained its view of endogenous money.[45] The old debate flared up again at the end of the 1990s, remaining equally indeterminate. To many observers, therefore, the enigma of interest-rate-policy ineffectiveness remains unsolved, just like the enigma of fiscal policy ineffectiveness.

III. Cyclical Policies Evaluated by an Alternative Framework

(a) The Model

Werner (1992, 1994b, 1995b, 1995c, 1997d, 1998c) has suggested an alternative framework to solve the puzzle. The first step is the original equation of exchange.[46] It states that the amount of money changing hands to pay for transactions during a given time period must equal the nominal value of these transactions:

$$(1) \quad M = T$$

where M stands for the amount of money that is exchanging hands for economic transactions and T stands for the value of these transactions. For economic growth to take place, the value of economic transactions during one time period must, by definition, exceed that of the previous period. In other words, there must be a net

increase in economic transactions during one time period. Thus considering net changes in variables yields:

(2) $\Delta M = \Delta T$

An increase in the value of transactions (and hence economic growth) can only take place if there has been an increase in the amount of money used to conduct these transactions.

Measurement of ΔM

The next step consists of identifying measurable data to represent these identities. First, consider how we can measure ΔM, the change in the net amount of nominal money used for all net new transactions. As illustrative exercise, it may help to initially consider a simpler financial system that does not have a central bank (such as the United States until 1913). As in any modern financial system, this one uses paper money, or else noncash transfers through the banking system, to pay for most transactions.[47] Since we are interested in the increase in the net amount of money used, we need to measure the increase in purchasing power created by the banking system during the observation period. The net amount of paper money issued by the banking system and net bank transfers within the banking system can only increase when banks issue new loans.[48] We thus know that ΔM is equal to the net increase in credit in the banking system (bank credit creation).[49]

Now we can introduce a central bank. It usurps the monopoly on the issuance of legal tender and it can create new purchasing power by extending loans. Its creation of new purchasing power can be measured by adding up all its transactions within a given time period.[50] In a financial system with a central bank, then, ΔM is simply the net credit creation of the central bank and the banking system.

Even at this stage, we can reach some uncontroversial conclusions: the decline in the value of economic transactions during the 1990s in Japan had to be accompanied by a decline in net credit creation. For the value of transactions to increase, and hence economic activity to pick up, there must be an increase in the amount of credit created by central bank and banks. To infer causation, we need to add information concerning bank and central bank behavior, and their interaction with their borrowers.

Measurement of ΔT

Before we do this, consider the measurement of the value of economic transactions during a given time period. One agency has access to the majority of the data on a daily basis: as BOJ governor Yasuo Matsushita reminds us, every day most of the country's transactions—¥300 trillion or 70 percent of annual GDP—are booked via its settlement system.[51] Unfortunately, the central bank refuses to publish such data. For this reason, proponents of the equation of exchange identity argued that the far cruder and older data on national income, output, or expenditure should be used as proxy. This has led to the formulation of the so-called quantity theory of money, which rewrites the right-hand side of (1) as PY (with P being the price level of GDP–based transactions, and Y referring to real GDP).

Werner (1992, 1997d) has questioned the assumption that nominal GDP is always a close approximation of the value of all transactions, pointing out that some transactions, such as those involving real estate or financial assets, are not part of GDP. This is not problematic when their value grows in line with GDP. However, when their value rises faster, this will cause GDP to be an unreliable proxy. Then we must expect the traditional quantity theory of money, MV = PY, to give the appearance of a fall in velocity (V), as money is used for transactions other than nominal GDP (PY). This explains why in many countries experiencing a boom with rising asset prices, economists have puzzled over an apparent "velocity decline," a "breakdown of the money demand function," or a "mystery of missing money"—issues that severely hampered the monetarist approach to monetary policy implementation. According to Werner, if GDP is used to represent Y in (1), and if there is an indication that non–GDP transactions increase or fall, the equa-

tion of exchange must be disaggregated into transactions that are part of GDP ("real transactions") and those that are not (non-GDP or "financial transactions").[52]

In theory, we can disaggregate the transaction data of equation (2) any way we wish. It will become an empirical issue whether we can find statistical data to proxy the theoretical breakdown. We proceed with the following disaggregation of (2), by dividing both the amount of money changing hands and the value of transactions into those that are part of the GDP definition (ΔM_R and ΔT_R) and those that are not (ΔM_F and ΔT_F).

$$(3) \quad \Delta M = \Delta M_R + \Delta M_F$$

$$(4) \quad \Delta T = \Delta T_R + \Delta T_F$$

At the same time:

$$(5) \quad \Delta M_R = \Delta T_R$$

$$(6) \quad \Delta M_F = \Delta T_F$$

Since we defined ΔT_R as the value of all GDP–based transactions, we also know that the following holds:

$$(7) \quad \Delta T_R = \Delta(P_R Y),$$

where P_R refers to the GDP deflator. Together with (5), we can say that the rise (fall) in the amount of money used for GDP–based transactions is equal to the rise (fall) in nominal GDP:

$$(7') \quad \Delta M_R = \Delta(P_R Y)$$

Endogenous Money, Exogenous Credit

We now need to address the issue of causality. As we have seen, there is a school of thought that argues that money, defined as deposits, is endogenous. When considering the credit creation process, it is clear that deposit money is always endogenous to the creation of credit. The more interesting question is therefore whether credit creation is endogenous or exogenous. While the central bank may at times choose to conduct certain transactions in response to market demand or seasonality (such as parts of its call market transactions or issuance of paper money), there is no doubt that it can still exogenously determine its total credit creation (any transaction it might feel forced to undertake due to short-term interest-rate smoothing can be sterilized by other transactions, such as outright bond sales, that may not affect short-term interest rates). Central bank credit creation is therefore exogenous. However, it only accounts for a fraction of total credit creation. The dominant question is therefore whether bank credit is endogenous or exogenous.

To reject the hypothesis of endogeneity (which is equivalent to a demand-determined credit market), we need evidence that banks do not always lend to everyone as much as demanded. Much empirical evidence has been gathered in studies to the effect that at one time or another credit has been rationed (especially to small firms).[53] Anyone who has ever applied for a bank loan and was turned down can confirm that banks do not always lend to everyone who wants to borrow.

Deductive logic also provides an answer. On the basis of a large number of restrictive assumptions, including perfect information, a Walrasian-style equilibrium is postulated in the credit market. Relaxing the assumption of perfect information or an all-knowing price-setting auctioneer, we find that markets cannot be expected to clear. Nonclearing markets are rationed. Rationed markets are determined not by the price, but by the quantity—according to the "short principle" that says that the smaller of demand or supply will determine the outcome.[54] Since the very existence of money testifies to the existence of less than perfect information, we have no evidence for the claim of perfect information. The credit market is therefore likely to be rationed.

Stiglitz and Weiss (1981) come to the same conclusion. Due

to the limited liability of directors, entrepreneurs with risky projects will still attempt to obtain bank loans. Since the actual demand for credit is thus relatively large, it is not rational for banks to raise interest rates until credit demand and supply curves meet: adverse selection and moral hazard would raise their default risk. As a result, profit-maximizing banks will ration credit.[55]

Given the above considerations, as well as empirical evidence, we must conclude that the credit market is supply determined, and causation will run from the credit variable (M) to the transaction variable (T)—just as most empirical studies of Granger causality have found. The total amount of credit creation constitutes the ultimate budget constraint in an economy that is quantity rationed.[56] Werner (1992, 1997d) has used the behavioral relationship derived from equations (5) and (6) to explain theoretically and empirically the movement of asset prices, capital flows, and nominal GDP of Japan in the 1980s and early 1990s.[57]

This also settles the dispute about whether Japan and other countries have experienced a credit crunch at one time or another: If a credit crunch is defined as credit rationing, then it always exists. The issue becomes one of ascertaining the degree of rationing.[58] Light is also shed on the debate about the existence of a "credit channel" of monetary transmission, which has been hampered by the erroneous definition of banks as mere financial intermediaries.[59] When we recognize that banks are unique creators of purchasing power (something capital markets cannot do), we can see that a "credit channel" not only exists, but is the main channel of transmission.

The BOJ agrees that credit aggregates are important.[60] Moreover, our finding is consistent with other econometric evidence, such as that provided by Bayoumi (1999). He concluded that "changes in bank lending help to explain the rise in output in the early to mid-1980s and more recent weakness in activity, indicating that shocks to bank lending can also generate significant movements in output" (p. 14).[61]

Based on our model, the "asset bubble" of the 1990s is recognized as being due to excessive credit creation for non–GDP transactions, driving up asset prices (equation (6)). Once credit creation tightened, excess lending had to turn into bad debts, resulting in a credit crunch and subsequent recession (see Werner 1991 and 1992 for such a warning, which is now less controversial than a decade ago). Falling credit creation implies that the total amount of transactions in the economy must shrink, creating unemployment and deflation. This increases bankruptcies and in turn exacerbates the bad-debt problem, rendering banks more risk averse, thus reducing their supply of credit further. Werner (1992, 1994b, 1995a, 1995c, 1997d) argued that neither increases in high-powered money, nor the money supply, nor reductions in interest rates, nor fiscal stimulation were necessary or sufficient conditions to stimulate the economy—while an expansion in net credit creation was.[62]

The Ineffectiveness of Interest-Rate Policy

We notice that in this framework there is no role for interest rates.[63] Thus, it was already clear in the early 1990s that even zero interest rates could not support the economy, if bad debts prevented banks from lending and if the central bank did not increase its credit creation to compensate. This is immediately visible from equation (7'): nominal GDP growth is constrained by the net creation of credit. The ineffectiveness of interest-rate policy is therefore not a special phenomenon of the zero-interest-rate environment. It is a general phenomenon.

The Ineffectiveness of High-Powered Money

One of the prescriptions of our model is to increase central bank credit creation. However, as noted above, an increase in banks' voluntary excess reserves with the central bank, for instance, would constitute an increase in high-powered money, but may not coincide with an increase in the central bank's (or, indeed, banks') credit creation.

The Ineffectiveness of Deposit Aggregates

We have seen that the breakdown of the correlation between "money supply" deposit aggregates and nominal GDP in many countries in the 1980s and 1990s is due to (a) the violation of the assumption that Y represents all transactions in equation (1), and (b) measuring the money that changes hands for transactions during a given time period by deposit aggregates. Since there are many different ways of aggregating private sector assets, it is a priori not clear which subset of possible savings measures (e.g., M1, M2, M3, M4, etc.) would accurately proxy the increase in purchasing power that is due to credit creation. Shifts in asset holdings (due to various factors, such as changes in institutional arrangements and regulations) across the defined domains of the various savings aggregates render any correlation with credit creation unreliable. Attempting to accelerate the growth of any arbitrary deposit aggregate is therefore neither necessary nor sufficient for an increase in economic activity. The BOJ has correctly pointed this out.[64]

The Ineffectiveness of Fiscal Policy

Our framework also provides insights into the effectiveness of fiscal policy. Pure fiscal policy that is not linked to credit creation cannot boost economic growth.[65] We can see this immediately by breaking equation (7') further down into its components (assuming, for sake of simplicity, that net exports remain equally large each period):[66]

$$(8)\quad \Delta M_R = \Delta(P_R Y) = \Delta(C + I + G)$$

where C, I, and G stand for *nominal* household expenditure (including housing investment), private sector investment (including inventory), and government expenditure (including inventory). If banks do not increase lending for GDP–based transactions, and if the central bank fails to compensate for this, so that its credit to the economy remains unchanged, then there cannot be an increase in nominal GDP:

$$(9)\quad \Delta M_R = 0 = \Delta(C + I) + \Delta G$$

In other words, nominal GDP growth will be zero, because there is no credit creation. The national income "pie" remains unchanged. If under these circumstances the government increases its nominal spending G (its share of the pie), we know that this must be met by an equally large decline in private sector activity:

$$(9')\quad \Delta G = -\Delta(C + I)$$

As the government issues bonds to fund increased fiscal stimulation, private sector investors (such as life insurance companies) that purchase the bonds must withdraw purchasing power elsewhere from the economy. The same applies (more visibly) to tax-financed government spending. With unchanged credit creation, every yen in additional government spending reduces private sector activity by one yen.

The Failure of Interest-Rate Crowding Out and Ricardian Equivalence

With an unchanged national income pie (restricted by ΔM_R, the budget constraint on the economy), any increase in government spending must shrink the private sector share of the pie. We observe a different kind of crowding out than has been postulated so far: unlike Keynesian crowding out, and like Ricardian equivalence, it is quantity based and does not require any particular movement in interest rates. It therefore fits the observation of the 1990s that interest rates did not rise. Unlike Ricardian equivalence, it does not depend on restrictive assumptions about unobservable expectations and their formation. Moreover, it does not operate via a change in household savings. Instead, crowding out occurs due to the lack of new credit.

(b) Evaluation of the Model

In order to evaluate this model, it is useful to determine criteria for deciding among competing explanations. The two most important criteria accepted in science are empirical evidence and the principle of parsimony. The latter, better known as "Occam's razor," is the criterion suggested by formal logic: one should always choose the simplest explanation of a phenomenon, the one that requires the fewest leaps of logic—or, as economists would say, the least restrictive set of assumptions.[67] M. Friedman (1953) also suggested the accuracy of forecasting as a criterion. We will apply all three criteria.

(i) The Principle of Parsimony

Our model requires far fewer assumptions than alternative models (specifically, it requires no perfect information). According to Occam's razor, our model is preferable.

(ii) Forecasting Ability

The model was not proposed at the end of the 1990s, with the benefit of hindsight, but near the beginning of the 1990s. Its forecasting abilities have been tested over most of that decade, in the original meaning of "forecasting." For instance, in the first half of the 1990s, the author predicted that fiscal policy would crowd out private activity, that interest-rate reductions, even to zero, would not stimulate the economy, and that credit creation was necessary and sufficient for a recovery. No competing models made these predictions, and also forecast the surprise recovery of 4 percent real GDP growth in 1996 (see Werner 1994c and 1995d).

(iii) Econometric Evaluation

Following Werner (1992, 1997d), we employ bank credit used for real estate transactions to represent ΔM_F.[68] However, simply estimating (7') would imply a weak test of our framework, since we would allow our theoretical knowledge to bias our choice of variables. We therefore adopt the Hendry methodology of sequential downward reduction of a general model to its parsimonious form (see Hendry and Mizon 1978; Hendry 1979, 1986, 1987, 2000). This approach provides the strictest empirical test of a model, since it ignores the model and lets the data speak in objective application of Occam's razor to econometrics.

The Determinants of Nominal GDP

We therefore formulate a general empirical ADL model of nominal GDP, with a general lag structure, based on quarterly statistics:

$$(10)\ \Delta GDP_t = \alpha_j + \Sigma\beta_j\Delta GDP_{t-j-1} + \Sigma\gamma_j\Delta M_{Rt-j} + \Sigma\delta_j\Delta WPI_{t-j} + \Sigma\phi_j\Delta MS_{t-j} + \Sigma\omega_j\Delta HPM_{t-j} + \Sigma\rho_j\Delta Short_{t-j} + \Sigma\tau_j\Delta Long_{t-j} + \Sigma\phi_j\Delta ODR_{t-j} + \varepsilon_t$$

All variables are in year-on-year percentage differences, with
GDP = nominal GDP
M_R = credit used for GDP transactions
WPI = wholesale price index
MS = money supply, M2+CD
HPM = high-powered money
Short = call rate
Long = ten-year JGB yield
ODR = official discount rate

Using the PC-Give software, we sequentially drop the insignificant variables. The final parsimonious model resulting from this process is:

$$(11)\ \Delta GDP_t = \alpha_j + \beta_1\Delta GDP_{t-1} + \beta_3\Delta GDP_{t-3} + \gamma_0\Delta M_{Rt} + \varepsilon_t$$

The regression results are shown in Table 1. We find that traditional explanations of nominal GDP, such as high-powered

Table 1
Estimation Results of GDP Model

The estimation sample is: 1990 (1) to 2000 (4)
Dependent variable: ΔnGDP

	Coefficient	Std. error	t-value	t-prob.	Part.R^2
Constant	0.00381350	0.002228	1.71	0.095	0.0683
ΔnGDP_1	0.326688	0.1293	2.53	0.016	0.1376
ΔnGDP_3	0.222120	0.1059	2.10	0.042	0.0991
ΔM_R	0.406689	0.09980	4.08	0.000	0.2934

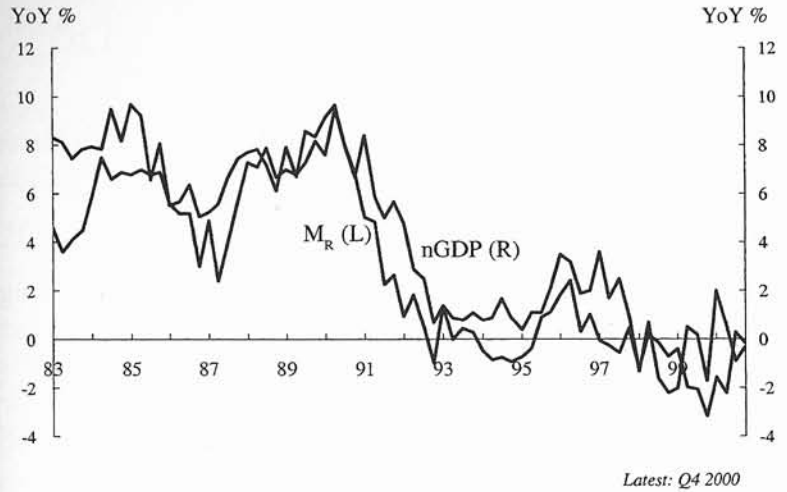
Sigma	0.00995221	RSS	0.00396186124
R^2	0.88463	F (3,40) =	102.2 [0.000]*
log-likelihood	142.502	DW	1.87
no. of obsv.	44	no. of parameters	4
mean (ΔnGDP)	0.0211887	var (nGDPYoY)	0.000780463

AR 1–3 test:	F (3,37)	= 0.45124 [0.7179]
ARCH 1–3 test:	F (3,34)	= 0.93630 [0.4338]
Normality test:	χ^2	= 0.13829 [0.9332]
hetero test:	F (6,33)	= 0.20716 [0.9721]
hetero-X test:	F (9,30)	= 0.55406 [0.8229]
RESET test:	F (1,39)	= 0.00046236 [0.9830]

Note: * is significant at 1%.

money, money supply, short-term interest rates, or long-term interest rates, drop out of the model as insignificant. Lowering (or raising) interest rates alone does not have any significant impact on economic growth. What remains is the variable that our theory indicated: credit creation used for GDP transactions. The model is robust and well defined, without visible statistical problems. The findings confirm that we have found useful empirical proxies for our model. For illustration purposes, Figure two plots the growth rates of M_R against nominal GDP. We can now proceed to test the quantity crowding out that the model has identified.

Figure 2. **Credit Used for GDP-Transactions (M_R) and Nominal GDP**



Notes: An objective downward reduction to the parsimonious model has left us with credit used for GDP transactions (M_R) as the sole explanation of nominal GDP. Interest rates, high-powered money, and money supply variables dropped out as insignificant.

Testing for Quantity Crowding Out

We now proceed to test the fiscal policy ineffectiveness proposition of our model. Unlike the case of equations (9) and (9'), credit creation was not zero during the 1990s. There were periods of significant credit contraction (such as in 1992 and 1997) and significant credit expansion (such as in 1996). As we saw, they were closely related to nominal GDP growth, irrespective of fiscal policy. To control for those changes in credit creation, we solve (9) for the dependent variable, domestic demand:

$$(12)\quad \Delta(C+I) = \Delta M_R - \Delta G$$

We expect the coefficient of ΔG to be –1. Similarly, in our empirical model for an open economy we note that

$$(13)\quad \Delta GDP_t = \Delta C_t + \Delta I_t + \Delta G_t + \Delta NX_t$$

Substituting (13) into (11) and solving for nongovernment demand, we obtain:

$$(14)\ \Delta(C_t + I_t + NX_t) = \beta_1 + \beta_2 \Delta GDP_{t-1} + \beta_3 \Delta GDP_{t-3} + \beta_4 \Delta M_{Rt} + \beta_5 \Delta G_t + \varepsilon_t$$

If we have found suitable empirical proxies for our model, a regression would yield the following coefficient for government expenditure:

$$\beta_5 = -1$$

We use year-on-year change in all variables. Figure 3 shows change in government spending and private demand. Eye inspection indicates that there is some degree of negative correlation. The precise results of our regression are shown in Table 2.

The coefficient for government expenditure (β_5) is –0.95697. Rounding to one digit, we obtain:

$$\beta_5 = -1.0$$

The test confirms that for every yen in government spending that is not monetized (and hence not supported by credit creation), private demand must shrink by one yen. Fiscal policy was almost perfectly ineffective. The empirical evidence supports our conclusion that an economic recovery can only take place if there is an increase in credit creation. Neither interest rate nor fiscal policies can be expected to be useful. What kind of policies should be taken to render monetary policy effective is discussed below in section (c).

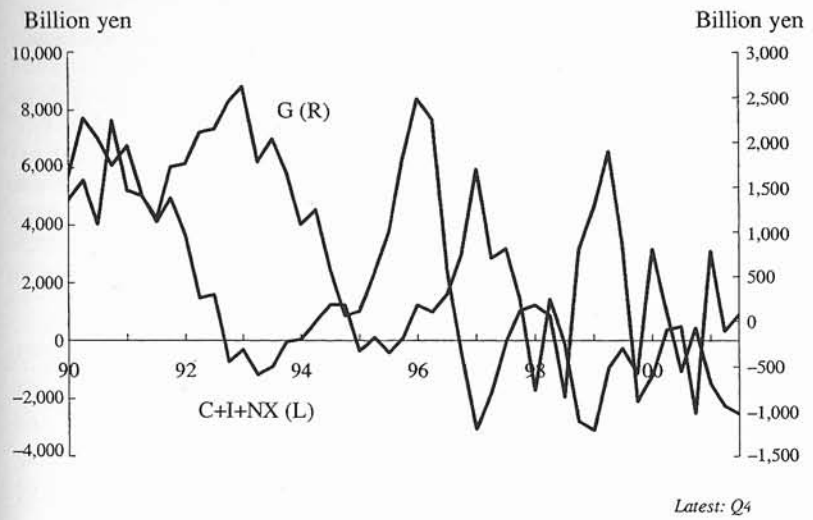
Conclusion of Evaluation

By all three criteria our model must be considered preferable to other theories. In addition, it is the only framework that simultaneously explains all the puzzles of the Japanese economy in the 1990s.

(c) Policy Implications

Our simple framework suggested that interest-rate reductions and pure fiscal policy would not be helpful, and that increases of high-

Figure 3. **Private and Governmental Demand**



Notes: When considering the absolute year-on-year change in private demand and government expenditures, eye inspection indicates that there already appears to be some degree of negative correlation between the two variables.

powered money and M2 + CD would not provide the necessary spark. Werner pointed out that, with the ability of banks to create credit severely impaired by bad debts, a policy of aggressive expansion of both central bank and bank credit could promote economic recovery.[69] Werner (1995c) referred to such a policy of broadly expanded credit creation as *ryōteki kin'yū kanwa* (quantitative money easing), in line with the traditional BOJ nomenclature.[70]

Expanding Central Bank Credit Creation

The BOJ's argument that monetary policy is powerless with zero interest rates, as well as its explanation of how it has been conducting monetary policy, hinges on interest rates being the only mechanism for transmission.[71] We have shown that monetary policy does not work mainly via interest rates, but rather through more

Table 2
Estimation Results of Private-Demand Crowding-Out Model

The estimation sample is: 1990 (1) to 2000 (4); Dependent variable: Δprivate

	Coefficient	Std. error	t-value	t-prob.	Part.R^2
Constant	430.797	323.8	1.33	0.191	0.0434
ΔnGDP_1	0.369348	0.1275	2.90	0.006	0.1770
ΔnGDP_3	0.203399	0.1110	1.83	0.075	0.0792
ΔM_R	0.0151281	0.004390	3.45	0.001	0.2334
ΔG	–0.956970	0.2057	–4.65	0.000	0.3570

Sigma	1233.28	RSS	59317732.9
R^2	0.823256	F(3,40)	= 45.41 [0.000]**
log-likelihood	–372.946	DW	1.77
no. of obsv.	44	no. of parameters	5
mean (Δprivate)	1406.38	var (Δprivate)	1406.38

Solved static long-run equation for Δprivate:

	Coefficient	Std. error	t-value	t-prob.
Constant	430.797	323.8	1.33	0.191
ΔnGDP	0.572747	0.1048	5.46	0.000
ΔM_R	0.0151281	0.004390	3.45	0.001
ΔG	–0.956970	0.2057	–4.65	0.000

Long-run sigma = 1233.28

ECM = Δprivate - 430.797 + 0.95697*ΔG - 0.572747*ΔnGDP - 0.0151281*ΔM_R;
WALD test: $\chi^2(3)$ = 179.476 [0.0000] **

AIC	14.3415	SC	14.5443
HQ	14.4167	FPE	1.69380e + 006

When the log-likelihood constant is included:

AIC	17.1794	SC	17.3821
HQ	17.2546	FPE	2.89293e + 007

AR 1–3 test:	F-form F (3,36)	=	0.58896 [0.6262]
ARCH 1–3 test:	F (3,33)	=	1.4770 [0.2387]
Normality test:	$\chi^2(2)$	=	0.68778 [0.7090]
hetero test:	F (8,30)	=	1.5833 [0.1717]
hetero-X test:	F (14,24)	=	1.7418 [0.1123]
RESET test:	F (1,38)	=	0.056661 [0.8131]
Skewness			–0.17285
Excess Kurtosis			–0.025167
Asymptotic test:	$\chi^2(2)$	=	0.22026 [0.8957]

Note: * is significant at 5%.

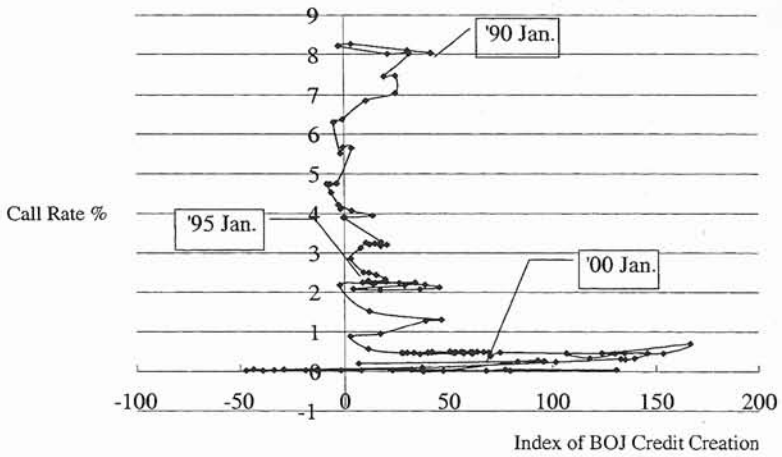
** is significant at 1%.

straightforward quantity effects. Instead of high-powered money, preferred by monetarists, Werner recommends as operating target the net quantity of credit creation, measured by the sum of all central bank transactions, including those outside the money-market operations.

Against the central bank's argument that money is endogenous and monetary policy "cannot directly generate demand" (Hayami 2001), Werner (1995c, 1996c, 1997a) points out, first, that there has been excess demand for money (though largely from institutions and individuals that had no direct access to the "closed" call market, where the so-called open market operations are conducted); second, even if there was no demand for money, the central bank could simply create more money and inject it into the economy through its purchase operations, which would increase demand and stop deflation; third, the central bank should conduct true open-market operations—that is, not just with the small number of participants in the restricted call market, but directly with the nonbank sector of the economy. Iwata (1999, 2000a) supports this argument.

The central bank can increase purchasing power in the economy by engaging in net purchase transactions of assets (not only those arbitrarily defined as "money-market transactions"). The central bank's counterargument in the pre–zero-interest era was that increased asset purchases might unduly reduce interest rates. But this has no merit because (a) it is not clear that interbank rates would

Figure 4. **Bank of Japan Credit Creation and Call Rate**



Notes: The quantity of central bank credit creation appears to be in no particular relationship to the price of short-term credit (the call rate). This would be expected in a disequilibrium environment, where prices are not necessarily related to quantity changes.

fall proportionately with asset purchases of various types (including government bonds and bills, bills of exchange, commercial paper, foreign currency etc.), and (b) if rates do fall, there is little conceivable negative impact on the economy during times of recession.

Figure 4 shows the central bank's total credit creation (on a year-on-year basis, shown as an index; thus, seasonality is already taken care of, plotted against the call rate. The evidence is consistent with our model: there is no clear relationship between the call rate and the quantity of money the central bank injects into the economy. At any chosen call rate, the BOJ has been able to inject more money (as in early 1998, when its credit creation was at a twenty-five-year high) or less (as in much of 1999, when its credit contracted by the largest amount in the postwar era). While some minor components of its total credit creation may be partly endogenous due to smoothing operations, this is not true for the total of

its transactions.[72] Among the policy proposals to increase central bank credit creation, Werner included aggressive purchases of financial assets (bills, government bonds, corporate bonds, equities, foreign exchange, preferred bank stocks, the bad debts of the banks at face value), real assets (real estate, creating "BOJ parks" in Tokyo) and direct central bank lending to the corporate sector.[73] Since about 1998, other analysts have seconded several of these policy recommendations.[74]

The policy implication is that the BOJ could have stimulated the economy by further increasing the quantity of credit at almost any given call rate.

It was pointed out that the BOJ was largely sterilizing, at times even oversterilizing, the foreign-exchange intervention ordered by the Ministry of Finance (MOF), such as in 1994 and 1995, and again in 1999. In order to increase credit creation, the central bank needed to refrain from sterilization.[75] Hamada (1999) has supported this argument. In addition, Iwata (2000a) has backed Werner's argument that the correct way to measure the central bank's currency intervention is total credit creation, and that therefore there is no economic difference between bond purchases and foreign-exchange intervention.

Another way to increase credit creation is for the central bank to create money and transfer it to each taxpayer in the country.[76] Unlike tax reductions, this present would constitute monetary policy and hence not crowd out private activity. In general, the central bank should target its own and banks' credit creation in order to achieve a nominal GDP growth target.[77] Since the central bank was granted independence in terms of its operational and policy goals from the democratically elected government in 1998, it may in practice not be easy to implement any of these suggestions. Therefore, Werner (1997b, 1999g, 2002b) suggests revision of the BOJ Law to enable government imposition of a nominal GDP growth target that the central bank is required to meet within a given period (within a predetermined error margin and severe, credible penalties on all senior staff for noncompliance).

Expanding Bank Credit Creation

For bank credit creation to rise, banks' risk aversion needs to be lowered. This can be achieved by writing off the bad debts, for which banks require money. Where should the money come from? A nonexhaustive list would be: taxpayers/the government, the central bank, private investors. These providers might put up enough money to make up for the book value (face value) of the loans, and obtain nothing in return; or they might put up less money, and get a lot in return (including ownership of the banks). Since various interest groups, including the central bank, are involved, the choice of the particular scheme becomes a question of political economy.

Economists can, however, suggest the most efficient scheme from the viewpoint of the entire economy. Werner has suggested that the central bank, in fulfillment of its function, solve the bad-debt problem in the banking system by conducting a one-off purchase of all declared bad debts from the banks at the original book value.[78] The banks' balance sheets would immediately be among the strongest in the world and they could begin to engage in their normal credit business again. Unlike a fiscal bailout, this would not burden the taxpayer, and thus would also not crowd out the private sector. Moreover, it would be a "free lunch," since there would be no cost to the economy.[79]

The moral hazard argument strengthens the case for this scheme: tax-funded bank-rescue schemes have been proposed, despite the fact that the taxpayer has not been responsible for the banks' problems. Is it justified to make the banks or their shareholders pay? B. Friedman (2000) asks this same question:

> Is it fair to treat Japanese banks as strictly private firms, whose shareholders and managers should appropriately be subject to market discipline when their institutions' affairs go badly? Under Japan's traditional system of administrative guidance of the entire financial sector . . . perhaps the banks, in lending so aggressively against rapidly inflating real estate and equity values, were merely acting as agents of public policy. If so, then the conventional rationale underlying the argument for exposing these institutions and their managers to market discipline would not apply.

Werner (1999a, 2002a) has shown that the BOJ (and officials who have remained in charge of BOJ policy during much of the 1990s) ordered the banks' excessive credit creation. Given the central bank's responsibility, to avoid moral hazard implies that it must foot the bill for the bailout.[80]

Other proposals to increase bank-credit creation include the creation of profits through bond-market operations, measures to introduce zero-risk borrowers to banks (government and central bank guarantees on loans to small and medium-sized enterprises, direct lending to the central government), and measures to relieve market pressure on banks (exemption from BIS capital adequacy; relaxation of accounting standards).[81]

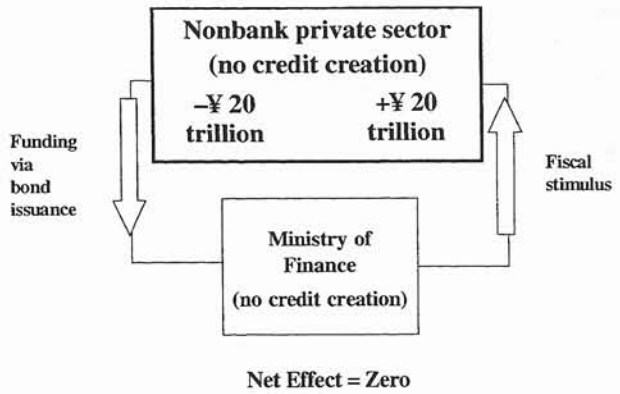
Linking Fiscal and Monetary Policy

As we have seen, fiscal policy was ineffective during the 1990s because it was not supported by monetary policy. Monetization could easily have occurred if the central bank had significantly increased its bond purchases earlier in the 1990s, as Werner argued.[82] The lack of incentives to coordinate monetary policy with the government's fiscal policy is one of the disadvantages of central bank independence.[83]

Werner (1994b, 1998b, 1999e, 2000c) has suggested a policy for governments to monetize fiscal policy even without cooperation from an independent central bank. The method renders fiscal policy effective.[84] As we empirically confirmed above, during the 1990s, fiscal spending was ineffective because it resulted in one-to-one quantity crowding out of private-sector activity. This was due to the fact that total credit creation did not increase, thus preventing—according to equation (8)—a rise in nominal GDP.

Above, we have discussed methods to increase credit creation (via the central bank and by addressing the bad-debt problem). However, the MOF can fairly directly trigger the creation of new money, and thus increase transactions and growth, by changing the method of funding the public sector borrowing requirement. So far, the majority of the borrowing requirement has been covered through bond

Figure 5. **Fiscal Stimulation Funded by Bond Issuance**

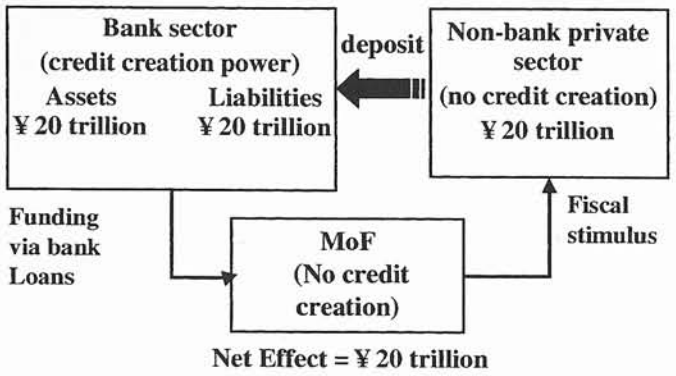


Notes: During the 1990s, most government spending was funded not through money creation, but through borrowing from the private sector. Such spending must crowd out private activity. Fiscal policy becomes a zero-sum game that merely reallocates existing resources.

issuance. Only a fraction of public borrowing has taken the form of borrowing from banks. Although the central government funded parts of the 1998 budget from banks, this has remained negligible. With the majority of bond issuance taken up by the nonbank private sector (which does not have the power to create credit), government spending had to crowd out private activity.

By replacing bond financing with borrowing from the commercial banks via simple loan contracts, credit creation will be stimulated.[85] Unlike bond markets, banks create new purchasing power when they lend. This means that overall economic activity can be boosted (via fiscal policy), without any of the quantity crowding out that rendered fiscal policy ineffective during the 1990s.[86] Figures 5 and 6 are used to illustrate the difference between stimulatory fiscal policy (here, a government spending package) that is funded via bond issues taken up by investors, such as life insurers, and stimulatory fiscal policy that is backed by credit creation.

Figure 6. **Fiscal Stimulation Funded by Bank Borrowing**



Notes: Government spending not backed by credit creation (monetization) crowds out private sector activity. The central bank can monetize (for instance, through bond purchases), but so can the government: by shifting funding from bond issuance to loan contracts, bank credit creation increases. Unlike fund raising via the capital markets, borrowing from banks will not withdraw purchasing power from other parts of the economy, as banks can create new money out of nothing.

Conclusion

The proposed alternative model has solved the puzzle of fiscal and interest-rate-policy ineffectiveness. It further demonstrated that the cause of Japan's recession has been the sharp reduction in credit creation that began in 1992 and was triggered by the bad debts in the banking system. We have also found that this problem could easily have been solved through monetary policy. The central bank could have taken the bad debts off the banks' balance sheets, without costs. Even without bank lending, the BOJ could have spurred a recovery a decade ago by significantly increasing its own credit creation. In other words, Japan's recession of the 1990s was the result of the BOJ's policies.[87]

However, our research also raises a new question: If the solution to Japan's problems has been relatively straightforward and

virtually costless, then why has the responsible authority not implemented such or similar policies? Incompetence is sometimes suggested. The defendant would have to show that it was ignorant of the key problem, namely that bad debts in the banking system reduced credit creation. However, this is not easy.

First, the central bank has been competent enough to seek the good advice of leading international monetary and financial experts throughout the 1990s. It has spent considerable resources on its visiting scholar program and its conferences and seminars. Many have consistently criticized the central bank and described how it could stimulate the economy. However, this advice has been consistently ignored.[88] The central bank's elaborate efforts over a decade to fend off any suggestion to increase credit creation has led many observers to the conclusion that it is making excuses to implement its predetermined policy.[89]

Second, it is apparent that key BOJ officials have from early on been aware of the credit shrinkage problem, as well as the possible solutions through the central bank.[90] The BOJ's Sawamoto and Ichikawa (1994) do not deny that the central bank could have acted, but argue that "the basic principle is that overall monetary policy should not be turned into a bank-rescue operation, except in very dire circumstances. At present, Japan is certainly not in such a situation" (p. 99). The assessment of whether circumstances are "dire" enough to warrant more aggressive monetary stimulation depends on the goal of monetary policy. This, then, becomes the next question we must ask: Just what is the goal of monetary policy? We will consider this issue in greater detail below, in the context of our discussion of structural policies.

IV. Structural Policy and the Goal of Monetary Policy

The New Classical View

Adherents of the real business cycle approach or similar new classical theories argue that the economy always operates at its full

employment potential. The deductivist equilibrium models of this type focus on allocative efficiency within perfectly competitive markets, and are defined such that any intervention disturbs that efficiency. By definition, government policies cannot boost output. Government policy should therefore focus on supply-side reforms that change the economic structure to boost the potential growth rate.

The Japanese economy, whose structure appears far removed from this free-market ideal, has always seemed a likely candidate for such supply-side reforms. Naturally, for the first forty-five years after World War II, it was difficult to convince Japanese policymakers that the very system that outperformed its European and North American competitors in terms of growth, unemployment, and inequality measures was an obstacle to even better performance and needed to be abandoned. The experience of the 1990s changed the picture. Japan's economy apparently has failed to respond to seemingly vigorous attempts at cyclical demand management—just as the full employment models would have predicted. The record-high unemployment also does not pose an empirical problem for the full-employment models. Instead, it is reinterpreted as corroboration: since, by definition, unemployment could only be due to the full-employment-potential output level being too low, any observed unemployment is seen as proof that the economic structure is holding back the potential growth rate. The problem is those structural peculiarities of Japan's economy that one had been suspicious of for decades. The policy advice is therefore clear: instead of cyclical stimulation, Japan needs structural reform.

This view has been favored by U.S. trade negotiators, who have argued since the 1970s that Japan's economic structure not only hurt U.S. companies, which ostensibly could not penetrate the Japanese market, but also harmed Japanese consumers and Japan's economic performance in general.[91] In Japan, it has been supported by a number of U.S.-trained economists. An example is Takenaka (1996), who argues that the "untransparent" government intervention and economic system of the postwar era is to blame for Japan's

recession of the 1990s, and thus favors far-reaching structural reform, including deregulation, liberalization, privatization, and administrative reform (such as a reduction in the power of the MOF). Similar proposals have been made by Ikeo (2001), who argues that Japan's recession is due to low productivity, which can only be raised by structural changes (while monetary easing would harm the economy).[92] As the economy failed to recover in the 1990s, more and more economists became convinced by this argument, including some proponents of cyclical stimulation policies who agreed to place priority on the structural policy agenda.[93]

By the end of the 1990s, many critics of government policy had begun to agree with the view that the main cause of the Japanese recession has been the bad-debt problem in the banking system.[94] However, this finding was often interpreted to mean that neither fiscal nor monetary policy could work. This stimulated a number of studies that focused on the crisis in the financial system and the structural changes that it triggered or necessitated.[95] The structural reform view also found support among finance experts that do not consider banks special, but mere financial intermediaries. In this view, even if banks shut down for all practical purposes, investors should be able to raise funds in the capital markets. Thus a credit crunch or imperfect substitutability of bank funding with other forms of financing is thought to demonstrate that the capital market structure is not efficient enough.[96] Hoshi and Kashyap (2000), for instance, advise Japan to "fully open the markets now, most importantly to foreign financial institutions." This argument not only ignores the reality that small firms depend on bank financing in most countries, but the more fundamental fact that capital market financing can never be a substitute for bank lending in a macroeconomic sense, since the latter creates new purchasing power, but the former merely reallocates it.

The most consistent proponent of structural reform in Japan, however, has been the BOJ and its staff. The reports by commissions headed by former key BOJ governors, namely the Sasaki Report of 1983 and the Maekawa Reports of 1986 and 1987, attracted much attention.[97] They reiterated many of the views of U.S.

trade negotiators. Somewhat less known, though closely resembling those reports in content, are the frequent statements made by past or present BOJ officials during the 1990s. Their speeches and statements are remarkably consistent in asserting that the central bank had done all it could, and that it was up to the government to implement far-reaching structural reform.[98] Governor Hayami has said frequently that structural changes are necessary for economic recovery to occur. Deputies and colleagues have echoed this sentiment.[99] BOJ spokesmen have not been shy in making detailed suggestions for "needed" structural reforms.[100]

This view has become the consensus view, adopted by Prime Minister Junichiro Koizumi. His administration has, accordingly, scaled back fiscal stimulation and adopted a less interventionist approach to monetary policy. Key policy initiatives have centered instead on a program of structural supply-side reform, including deregulation, liberalization, privatization, and institutional reforms to increase the influence of shareholders and reduce that of employees and civil servants. Given the high popularity rating of the Koizumi administration during much of its first year, as well as the calls by the media for "badly needed" reforms, it can be said that there is a consensus that cyclical policies have failed and structural policies are needed.[101]

Evidence for the Structural Change View

Let us first consider the short-term evidence for the structural reform view. The Koizumi government is not the first to shift emphasis from cyclical to structural policies; the Hashimoto administration also argued that structural problems were the cause of the recession. In 1997, it tightened fiscal policy and de-emphasized monetary policy, while implementing structural reforms, including granting the Bank of Japan legal independence from the government, dismantling the Ōkurashō MOF, establishing an independent Financial Supervisory Agency, and rendering key government agencies directly responsible to the prime minister. Hashimoto's reforms also included a sweeping financial sector

deregulation program ("Big Bang"), beginning in 1998.[102] Given the extent of such reforms, by the end of the decade even proponents referred to them as "remarkable."[103] But Hashimoto's structural reforms did not yield improved economic performance. To the contrary, *before* the reforms, in 1996, growth reached 4 percent. The 1997 reforms were immediately followed by the largest postwar contraction of nominal GDP and consumer prices. In 2001, the economic outlook was once again anything but rosy. Thus, it is difficult to dismiss the 1997/1998 downturn as a temporary phenomenon.

Second, considering the long-term evidence about the link between economic structure and performance, most observers would agree that, since the 1950s, Japan's economic structure has slowly but steadily undergone deregulation and liberalization. Reforms have become particularly pronounced since the 1980s. The number of cartels, for instance, has dropped from over 1,000 in the early 1960s, to close to zero by the mid-1990s.[104] Meanwhile, we also notice that the trend of nominal GDP growth since the 1950s has been declining. An economic structure that was far more regulated and still closely resembled the controlled economy of the wartime era produced mostly double-digit growth in the 1950s and 1960s. As deregulation increased, growth dropped steadily, culminating in negative growth in the era of "remarkable" deregulation in the 1990s. A time-series regression of growth and cartels (or other indicators of the former lack of "free markets") would probably yield a positive correlation.

Third, considering international evidence, where the United States and the United Kingdom serve as role models of deregulated and liberalized economies, it is apparent that these economies still suffer from business cycles that can be explained with cyclical, demand-based models. This shows that new classical or supply-side arguments are insufficient. Finally, a comparison of the long-term macroeconomic performance of the German, Japanese, and Korean economies in the twentieth century suggests that economic structures that do not conform to the U.S./U.K. model can be highly successful, or surpass the U.S./U.K. model, especially when measured by certain indicators of social welfare (such as indicators of inequality, social stability, or basic needs, including access to health services, welfare, and education).

We must conclude that changes in economic structure cannot explain Japan's postwar GDP growth rate. If anything, structural reform toward deregulation and liberalization has been accompanied by reduced economic growth, both in the short term and in the long run. Most economists would therefore prefer to analyze cyclical and structural issues separately. However, the BOJ has raised the intriguing idea that there is a link between cyclical and structural policies, which we will examine below.

The Goal of Monetary Policy

Proponents of cyclical policies frequently assume that the central bank shares their desire for cyclical stimulation and, besides avoiding inflation, aims at raising demand and lowering unemployment. However, there is no evidence that such goals can be inferred in the case of Japan. Abandoning his previous stance that the BOJ cannot control the money supply, Deputy Governor Yamaguchi recently said: "By and large, it might be true that, if a central bank continues purchasing all kinds of assets, almost by definition, inflation can be created in the end" (Yamaguchi 2001b). In other words, he agrees that a central bank can fight deflation by purchasing assets. This could be the result of the previously expressed view by the BOJ that output is at the full-employment level defined by the economic structure, so that, according to the traditional quantity theory of money, increases in the money supply will not increase output, but only prices. However, this is not the view of Yamaguchi. In the same speech he pointed out that inflation can only come about after the economy has recovered. He therefore agrees that resources are unemployed and increased money creation would not first trigger inflation, but a recovery. Unfortunately, the central bank has different plans: "However, our goal is not to cause inflation, but to realize a sustainable growth."

This is indeed the repeatedly stated goal of monetary policy: to

achieve "sustainable growth."[105] But what does the BOJ mean by "sustainable growth" and what measures are thought necessary to achieve it? It is tempting to interpret this as referring to cyclical demand management. However, quite strikingly, the central bank has never clearly stated that it aims at stimulating the economy in any immediate sense, nor has it taken such policies in a consistent fashion. Quite to the contrary, the central bank told us that "sustainable growth" might require a short-term deterioration in the economy. Governor Mieno (1993) has indicated: "As we pass through the current adjustment phase, *the most important goal we have adopted for guiding policy* management is *not the attainment of short-term improvements in economic conditions, but the long-term objective* of achieving noninflationary, sustainable growth without any bubbles" (p. 12, italics added). How can "sustainable growth" be achieved? The BOJ has frequently told us that in its view the "prerequisite" for sustainable economic growth is "structural reform."[106]

The BOJ realizes what critics such as Krugman (1998b) have pointed out, namely that structural reforms will not stimulate demand. The bank's Ueda (2001a) agrees that "such efforts may produce deflationary forces in the short run, but will generate a much more efficient economy after a while" (p. 3). So, given a choice between cyclical, short-term growth, and structural changes in the long run, which goal should be given priority? Many people, Governor Hayami admits, feel that "bringing the economy back to the recovery phase of the business cycle is an important challenge." But, like Mieno before him, he does not place priority on this goal: "Furthermore, *it is more important* that Japan goes beyond this by regaining economic dynamism by steadily pursuing structural reform" (italics added).[107]

But how can structural reform be achieved? Is it not a political agenda, unrelated to the clearly cyclical monetary policy tasks of a central bank? The BOJ does not think so. Shirakawa (2001) explains that, given the vested interests and political obstacles to such far-reaching changes, "it is not easy to change the institutional framework and promote structural reform since it necessarily involves the vested interests of all the related individual economic agents" (p. 10). This is apparently where the BOJ feels it has a role to play. Governor Mieno said that, thanks to the recession, everyone was becoming "conscious of the need to implement such transformation."[108] The bank's Shirakawa pointed out that "further easing [of monetary policy] would not contribute to economic recovery, but would rather delay the progress of structural reform that is a prerequisite for sustainable economic growth" (p. 1). And Okina (1999) said: "Couldn't the current low interest-rate policy cause some harm? The answer is yes. It could cause some harm . . . low interest rates as a pain reliever may induce a further delay in the progress of structural adjustment. When the economy recovers, nonperforming loans could become collectable, excess inventories could be sold, and excess equipment could become operational" (p. 181).

The BOJ seems to think that monetary policy can be helpful by not being helpful. This is why Deputy Governor Yamaguchi can tell central bank colleagues that the BOJ had faced the "big dilemma" that monetary easing would produce a "mitigation of immediate risks," which in turn would result in a "delaying of adopting ultimate solutions" (1999, p. 5). This is why Toshihiko Fukui can say that "Considering the gap in supply-and-demand conditions in the economy, it's easy to think of a policy of decisive monetary easing. . . . But we must be wary of the risks associated with further easing through such means as purchasing more Japanese government bonds or setting inflation targets."—What are the risks?— "It's dubious to think that monetary policy alone could lead to a sustainable recovery. . . . As the financial markets tell us, what is also important are Prime Minister Koizumi's structural reforms."[109] This is also why the media have frequently reported that the BOJ is determined: "[Governor] Hayami is convinced that Japan needs to undergo radical corporate restructuring and banking reforms before it can recover"—and that he has a duty to promote this. "Mr. Hayami's passion for reform also has a flavor of austerity. On paper, most economists—and politicians—think it would be sensible to offset the pain of restructur-

ing with ultra-loose monetary policy. But Mr. Hayami fears that if he loosens policy too quickly, it would remove the pressure for reform."[110]

In other words, it must be concluded, as Werner (1996a, 1996b) has, that the central bank has been aware that providing serious monetary stimulation would create a recovery, but it has chosen for a decade not to do so, because doing so would delay its structural reform agenda.[111] Posen (2000) agrees with this conclusion: "Between a process of elimination, and careful reading of the statements of BOJ policy board members, I am led to the conclusion that a desire by the BOJ to promote structural change in the Japanese economy is a primary motivation for the Bank's passive-aggressive acceptance of deflation" (p. 22).[112]

This explains why the central bank has consistently and puzzlingly opposed what appears to be a sensible idea to supporters of structural reform: "If this structural policy has a depressive or a stimulative effect on the economy, it must be accompanied by the appropriate macroeconomic policy to offset this effect" (Mikitani 2000). To this type of argument, Governor Hayami (2000b) countered in May 2000: "When the economy recovers, as is now happening, it might well be the case that efforts for structural reform might be neglected due to a sense of security" (p. 8). Indeed, only when one has fully understood the BOJ's definition of "sustainable growth," namely the implementation of a far-reaching structural reform agenda, does it become apparent why most of the central bank statements have denied the need for further monetary stimulation in the "short run": such stimulation is deemed inimical to achieving "sustainable growth" precisely because it would create short-term growth—and hence reduce the pain and pressure necessary to achieve the structural reform goal.[113]

Monetary policy is capable of creating, exacerbating, and prolonging crises. If the ultimate objective is a long-run structural reform agenda, then it may be rational from the viewpoint of the reformers to use cyclical policies in order to implement the structural reform agenda. In other words, if we agree with the BOJ's

structural reform agenda, then it might be tempting to feel that it has been taking the right policies.

However, this conclusion cannot follow. First, the logic is flawed: the BOJ argues that stimulative monetary policies would be counterproductive to its long-term goal of structural change precisely because they *would* be effective in creating a recovery. This recognizes the effectiveness of suitable cyclical policies, and hence admits that new classical, real-business-cycle, or other supply-side theories do not apply to Japan's economic situation. If such theories do not apply, then the long-term goal of structural change cannot be logically justified. In other words, by admitting that a short-term downturn may be necessary to implement structural changes, proponents of structural reform deprive themselves of the very justification for such reform. By making the above arguments, the BOJ effectively agrees that the economy, in an unreformed state, could have produced higher growth than has been the case for much of the 1990s. If this is the case, then just why does it want to change Japan's economic structure at all? Higher growth cannot be the motivation.

Second, cost-benefit analysis is stacked against the BOJ's large-scale live experiment. Cyclical policies aim at economic growth, hence at boosting the size of the national income pie. Structural policies aim at efficiency, which is the ease with which a given pie is allocated. While structural reform may succeed in increasing the efficiency of the economy as measured by certain indicators, the enormous economic and social costs of the ten-year recession have greatly outstripped any potential benefits. To prolong the recession for the sake of implementing structural change is like shrinking a cake to tiny size, only to be able to cut it up more easily.

There is therefore no good economic rationale for pursuing the types of policies that the BOJ has pursued over the past decade. This leaves us with the fact that the decision about structural reform is ultimately a political one. Irrespective of the central bank's ultimate motivation, the implementation of a long-term structural change agenda affecting income and wealth distribution, social and economic institutions, and society at large may not be the job

of unelected central bankers. In Posen's (2000) words: "no Japanese citizen elected the BOJ to pursue this policy of promoting restructuring, and in fact no elected official delegated this task to the BOJ or put the goal of 'encouraging creative destruction' into its mandate" (p. 206). Further, it must constitute an abuse of power to create the—empirically unfounded—impression of a "need" for structural reform by purposely triggering a recession.[114] Does the Japanese population really want to be manipulated in such a costly and dishonest manner?[115]

The Need for Further Research

We have found answers to the apparent enigma of Japan's long recession. The central bank has prolonged the recession to implement deep structural changes, including, it claims, a reduction in government intervention, more transparency in financial markets, and greater accountability of agents. Without exception, our research has found no evidence that any of these reforms are necessary to achieve economic recovery. The one area where our research has indicated a need for structural change concerns the role of the central bank. It has acted against declared government policies over much of the 1990s and engaged in activities outside its mandate for monetary policy and financial sector stability. Considering recent evidence that key central bank staff who implemented the recession policies of the 1990s were also involved in the creation of the bubble of the 1990s (Werner 1999a, 2002a, 2003b), it is reasonable to argue that the central bank has been excessively independent, unaccountable for its actions, nontransparent in its policy implementation, and overly interventionist. The Japanese case adds to the growing body of literature that finds economic arguments for removing central banks from control by democratically elected institutions compelling on neither theoretical nor empirical grounds (see, for instance, Forder 1998a, 1998b, 1999). As long as we have a preference for a democratic institutional environment, political arguments for central bank independence are even less compelling. Milton Friedman,

experienced in dealing with the world's central banks, recommends subordinating them to direct supervision by the government.[116] Further research is needed into the conduct of monetary policy and the objective functions of central banks in other countries, and the implications for the legal status of central banks.

Notes

1. See Mikitani 2000 for estimates of the cumulative output gap from 1992 through 1998.

2. In 1998 suicides reached a record high of 31,755 (National Police Agency). In 1999, the figure rose to 33,048. Both figures are about 30 percent higher than in the early 1990s and more than twice as high as thirty years earlier. The majority is by men between the age of forty and sixty years. The Police Agency estimates that every fifth suicide is due to debts or the loss of employment.

3. Ito 2000: "The usual counter-cyclical macroeconomic policies have not worked in Japan in the second half of the 1990s, or at least not well enough" (p. 85). Krugman 1998b: "And the usual remedies for inadequate demand aren't working. Interest rates have been pushed down almost as far as they can go. . . . The big public spending projects the Japanese government launches every now and then do create some jobs, but they never seem to yield enough bang for the yen: The economy keeps relapsing, while government debt keeps mounting" (2).

4. The former is from Hoshi and Patrick 2000, xi.

5. For details, see Werner 2003.

6. Dornbusch and Fischer (1987) emphasize that "the distinction between selling debt to the public and selling it to the central bank is essential. The distinction between money and debt financing can be further clarified by noting that Treasury sales of securities to the central bank are referred to as *monetizing the debt*, meaning that the central bank creates (high-powered) money to finance the debt purchases" (p. 584).

7. The central bank can purchase government bonds in the secondary market one year after issuance. Economically, this is equivalent to primary market purchase. The political circumstances are different, since the government may not be able to determine the extent to which bonds are purchased by the central bank. Despite lack of legal independence, since the 1970s the central bank has independently made this decision. See our discussion of monetary policy below.

8. Indeed, the government's borrowing is another measure of the stance of fiscal policy.

9. Ito argues that the demand for money is perfectly interest-elastic and the LM curve horizontal. Since interest reductions have not stimulated investment, he argues that investment is perfectly interest-inelastic and the IS curve vertical.

10. "So far, a straight Keynesian prescription applies" (Ito 2000, 102).

11. This was the most common calculation, used by Japanese private sector

research institutions, as well as key government agencies. See, for instance, the Economic Planning Agency's Nagatani (1996), who argued in favor of fiscal stimulation, because "Even when the ripple-on effect is zero, fiscal stimulation policy will still at least have the 'direct effect,' which is that ¥1 trillion of increase in public investment will result in a ¥1 trillion in GDP increase."

12. Ito recognizes this, but leaves the questions raised unanswered. "The question remains as to what prevented the economy from getting back on a self-sustained growth path. Was it the series of bad shocks? Or has the dynamic spill-over effect of fiscal packages become smaller in the 1990s? Or was the amount of actual stimulus smaller than generally recognized?" (Ito 2000, 102). No attempts at answers follow.

13. This line of reasoning may well be in the tradition of deductive economics, which takes little interest in empirical evidence and concludes from any gap between theory and reality that the latter needs changing, not the former. However, it defies common sense. Nevertheless, even in the absence of omniscience concerning exogenous shocks, it is possible to test hypotheses concerning the *cause* of potential fiscal policy *in*effectiveness (see Section III).

14. Ito follows Posen's (1998) recommendations and suggests further stimulation in the form of lasting income tax cuts and tax incentives to stimulate private housing investment (Ito 2000, 103ff.). However, even permanent income tax cuts may not be effective, as they suffer from the credibility problem arising from the record-high and still rising national debt. To many observers, this makes tax increases likely.

15. Moreover, the annual average of the prime lending rate declined every year during the 1990s.

16. Invoking a violated ceteris paribus definition, proponents of interest-rate crowding out could argue that the decline in interest rates happened *despite* the crowding out. Again, we would be faced with the difficulty of having to isolate the exogenous shocks needed to justify the absence of interest-rate rises. McKibbin (1996) engages in this exercise, making use of a multicountry structural model to endogenize shocks to the Japanese economy. Pointing out the anticipated nature of the fiscal spending packages (and their partial overstatement), he concludes: "Rather than stimulating the economy, these fiscal measures acted to further slow economic activity as well as appreciate the real exchange rate" (p. 37). In McKibbin's model, the announcement effect of fiscal stimulation occurs immediately, appreciating the exchange rate and real long-term interest rates, while the positive effect occurs later, or to a lesser extent than announced (due to overstatement of the package). However, only data through 1995 is used, thus missing much of the 400-basis-point drop in long-term interest rates over three-and-a-half years, from about 4.7 percent in February 1995 to 0.7 percent in October 1998. It can therefore be said that many observers do not seriously entertain the interest-rate crowding-out argument.

17. The argument that debt could be paid for by noninflationary money creation cannot be handled by the type of models Krugman refers to, because due to further assumptions, including perfect information, they do not allow for the possibility of less than full employment output. With record-high unemployment and a ten-year recession in Japan, the relevance of such models is not obvious.

18. The BOJ lowered the ODR ten times in the decade of the 1990s, beginning with the first reduction in July 1991, before which it stood at 6 percent. Until September 1993 it was lowered seven times, reaching 1.75 percent. The ODR was further lowered to 1.0 percent in April 1995 and to 0.5 percent in September 1995. In October 1995, the uncollateralized overnight call rate (officially declared the operational "target rate") was "guided" below the ODR for the first time. Three years later, in October 1998, the BOJ lowered the call rate to a new low of 0.33 percent. In February 1999, it fell to 0.1 percent—at the time called a "zero interest rate policy." After a temporary hike in August 2000, the call rate was lowered again to 0.12 percent in March and 0.02 percent in April 2001. In September of that year, the ODR was lowered to 0.1 percent and the call rate to 0.003 percent.

19. See, for instance, the BOJ's Okina (1999).

20. The BOJ feels that "the power of monetary policy to affect the level of prices is currently very limited. . . . Policy choices by other authorities will affect the time it will take to end deflation. . . . Of course, the government has other policy options to be combined with our monetary policy." The demand side "is influenced by not only monetary policy but also by fiscal policy. . . . At one extreme, the government can implement drastically expansionary fiscal measures, such as the so-called non-Ricardian fiscal policy, if it considers the cost of the current deflation to be very serious. . . . Alternatively, the government can speed up its reform efforts. . . . [Needed are] serious efforts at structural reforms by the government" (Ueda 2001a).

21. Krugman is careful not to imply that he is referring to Keynes's original definition of a liquidity trap. Kregel (2000) explains the differences between this and Hicks's interpretation. In a strictly Keynesian sense the solution to a liquidity trap would be to peg long-term interest rates (as was done in the United States during World War II when near-zero rates were recorded; see Friedman 1982). Kregel argues that instead of being in a liquidity trap, Japan is in an underemployment equilibrium with deficient aggregate demand.

22. Krugman's stylized model assumes, among others, identical, eternally living individuals who have the same time preference. There is no banking system, and no credit. Cash is created by open-market operations by the government—there is no independent central bank. There is perfect information and hence no market rationing. However, prices are sticky.

23. "The problem is . . . that the full-employment real interest rate is negative. And monetary policy therefore cannot get the economy to full employment unless the central bank can convince the public that the future inflation rate will be sufficiently high to permit the negative real interest rate. That's all there is to it" (Krugman 1998c).

24. The supply of high-powered money increased 25 percent from 1994 to 1997, while M2 + CD grew only 11 percent, according to Cargill, Hutchison, and Ito (2000, 116).

25. The Swiss central bank briefly lowered short-term interbank rates into negative territory in early 1979 (Kugler and Rich 2001).

26. Like many observers, Krugman attempts to explain the situation of interest rates already at zero; he is not primarily concerned with why they dropped so low without stimulating the economy.

27. He suggests capital and credit market imperfections as a possibility, but argues that "demography seems to be the leading candidate" (p. 9). If this is so, then why are other countries with similar demography not suffering from a liquidity trap?

28. "The BOJ's helplessness is particularly evident in the liquidity trap with a zero interest rate and unchanged foreign exchange expectations. Thus, Dr. Okina is perfectly right in saying that simply announcing a high inflation target (as called for by Krugman 1998a, 1998b) would not be credible as long as the BOJ has not the means to implement it" (185f.).

29. They support inflation targeting because (1) it enhances transparency and accountability; (2) the task of explaining monetary policy would become easier; (3) the parameters of the central bank's independence would be well defined: it would have operational or instrument independence, though not goal independence; (4) the imposition of an inflation target "likely would have a positive impact on financial markets and the economy as a whole" by helping to "dispel the deflationary uncertainties that prevailed at the end of the 1990s" (Cargill, Hutchison, and Ito 2000, 133).

30. He actually uses a Hicksian description of the liquidity trap, based on a horizontal LM and vertical IS curve. He notes that an "expansion in the monetary base (it is increasing at around 9 percent) has not resulted in much increase in M2 (it is increasing at around 3 percent). A situation like this is termed a liquidity trap in Keynesian economics" (p. 101). It is not obvious why these diverging growth rates should be unambiguous evidence in favor of the liquidity trap argument. The latter requires an increase in monetary aggregates that is not translated into greater bond holdings, and hence no fall in long-term interest rates. What the suitable actual measures of money are to represent money in IS-LM models remains subject to dispute. Moreover, the IS-LM-based definition of the liquidity trap means that zero short-term interest rates per se cannot be used as evidence of a liquidity trap.

31. The BOJ stated in 1999 that it will maintain near-zero interest rates until "deflationary fears subside," and in 2001 it said that it will maintain them until there is no more deflation.

32. "With severe limitations on instruments to ease monetary policy, however, I fear that an announcement of the target date by which to achieve, say, zero percent inflation, would have either no effects on the market or be counterproductive. The market may lose confidence in a central bank announcing a hard-to-hit target" (Ueda 2001a).

33. Krugman ultimately blames exogenous expectations of declining growth in the future. Those who adopt the Hicksian IS-LM version of the liquidity trap argument are also handicapped by its static nature. We do not learn why the demand for money *became* perfectly elastic with respect to interest rates. Moreover, a perfectly interest-elastic money demand would not allow subsequent increases or decreases in nominal interest rates, which all happened during the observation period.

34. For an overview, see Blanchard 1990. For recent empirical work on the monetary determinants of nominal GDP in the Japanese case, see, for instance, Werner 1997d.

35. For a survey of the money supply exogeneity-endogeneity debate, see Jao 1989.

36. The central bank made a U-turn with its March 19, 2001, decision to target indicators of the quantity of money. There were no obstacles to the implementation of the bond-purchase targets, nor was financial-sector instability increased, as the bank had previously argued. Thus the central bank has delivered empirical evidence against its earlier view.

37. The BOJ is also aware of the limitations of the call rate, which "cannot exert substantial influence on corporate or household expenditures" (p. 87), since it has to work through other, longer-term interest rates, which eventually might have some impact on the economy.

38. Iwata (1992a) also argues that the BOJ is responsible for the asset-price bubble of the 1980s—not because of its interest-rate policy, but because of its excessive supply of high-powered money.

39. Iwata also predicted that "if the Bank of Japan does not discard its 'BOJ Theory,' then even if it does not make errors in assessing the business cycle, it is apparent that the risk is large that henceforth there will also be economic dislocation caused by monetary policy of the type that caused the great inflation of 1973/4, or the asset price surge and collapse this time" (Iwata 1992b, 124).

40. Okina 1993b, 172. Indeed, there is little the central bank does guarantee.

41. To avoid giving the impression that the central bank cannot do anything of use at all, Okina (1993b) points out that "over a long time period, a reduction in interest rates, through stimulation of economic activity, increases income and raises asset prices, which can be expected to increase the appetite to hold money. Through this route, the central bank can control the money supply" (p. 174).

42. Beyond seasonality, Yoshikawa concedes that the BOJ "at times . . . even actively changes the interest rate during the business cycle" (p. 157).

43. See Werner 1997d for a brief overview of surveys about the "puzzle" of a velocity decline.

44. See, for instance, Morgan 1994a, 1994b.

45. The BOJ unceremoniously abandoned its view of the endogeneity of the money supply on March 19, 2001, when quantitative excess reserve and bond-purchase targets were introduced. This has not stopped its staff, including the governor, from continuing to argue that the money supply cannot be controlled.

46. See Newcomb 1885.

47. The paper money takes the form of bank notes, drafts, or certificates of deposit issued by the commercial banks, or else bills of exchange endorsed by banks. In the case of the United States, paper money was occasionally also issued by the government, but we don't consider those time periods here. We also assume that, if gold is still used for transactions, during the observation period its supply remained constant and its use was stable. As a result, considering only net

changes in the amount of money, gold drops out as a constant. Finally, we abstract from international transactions. All these assumptions are made for expositional purposes and can be relaxed later.

48. It is sometimes thought that the amount of paper or bank money increases when deposits are made. This misconception is probably due to the fact that historically, paper money was assumed to be some form of "certificate of deposit." But when a deposit is made, there is no net change in the amount of the total of paper and bank money (or gold holdings). On the other hand, when banks issue a loan, they book a deposit balance in the account book of the customer who can then withdraw the money and turn it into cash at leisure, or the bank pays the loan with issuance of bank notes. In this case, the money for the loan is not transferred from any other part of the economy. It is newly created ("credit creation").

49. Bank deposits would not be an accurate measure of ΔM, since the definition of M in the equation of exchange (1) is the amount of money changing hands to pay for transactions during a given time period. Deposits measure the amount of money retired from circulation at any moment in time. Credit growth has the additional advantage of greater information value concerning the use money is put to, which will be necessary for the disaggregation suggested below.

50. High-powered money or reserves do not fully capture the creation of net new purchasing power by the central bank and hence may be misleading indicators. For example, a central bank can increase credit creation by purchasing U.S. Treasuries. This will not necessarily be reflected in high-powered money (the sum of cash in circulation and banks' deposits with the central bank).

51. "[A] large part of the daily transactions of households, firms, and investors are settled by means of funds transfers and remittances between banks. In turn, banks' balances are settled across their accounts held with the Bank of Japan. In other words, the majority of transactions conducted throughout the country is eventually concentrated and settled at the Bank [of Japan]. As a result, the amount settled across the current accounts at the Bank [of Japan] totals more than ¥300 trillion per day. This means that an amount equivalent to approximately 70 percent of Japan's annual GDP is transferred each day through the accounts at the Bank [of Japan]" (Matsushita 1996, 7).

52. Keynes (1930) similarly proposed to disaggregate money by its use. By focusing on deposit aggregates as a definition for M, such disaggregation was practically impossible.

53. For an overview, see Werner 1996c.

54. For examples of disequilibrium models with non-Walrasian outcomes, see, for instance, Clower 1965, Barro and Grossman 1976, Muellbauer and Portes 1978, and Quandt and Rosen 1986.

55. See also Keeton 1979. Williamson (1989) also proposes a model of credit rationing due to monitoring costs.

56. This explains why research on disequilibrium economics has yielded such promising results. As Muellbauer and Portes (1978) have pointed out, rationing in one market implies rationing in other markets. Quantities become the most important macroeconomic variable, delivering exogenous budget constraints to

any microeconomic market. In terms of the structure of economic models, this clearly favors a top-down approach, where a macrofoundation is imposed on micro models.

57. To complete the model for non–GDP transactions: the majority consists of asset market transactions. If we assume, for sake of simplicity, that the amount of assets is constant (certainly true in the case of land), then the rise (fall) in the amount of money used for asset transactions is equal to the increase (decline) in asset prices (P_F):

(8) $\Delta T_F = \Delta P_F$

(8') $\Delta M_F = \Delta P_F$

58. For a survey on the credit-crunch literature relevant to Japan, as well as empirical evidence, see Werner 1996c and Woo 1999. See also Yoshikawa, Eto, and Ike 1994, and Matsui 1996.

59. Even Bernanke (1993) defines credit creation as "channeling of savings to investors." However, bank credit creates new money, which can be used for new investment, without any savings having taken place. Probably the cause of the neglect of this fact and its implications is the standard representation of the credit multiplier, which does acknowledge credit creation, but presents it as a process of successive lending of already existing purchasing power: A bank receives a $100 deposit. With a 1 percent reserve requirement, it lends $99 and keeps one. The next bank does the same, etc., until the total lent based on the $100 deposit is $9,900. Further, the way it is presented gives the impression that the process starts with the deposit. This facilitates sustaining the micro/finance view of the bank as a financial intermediary. It is more useful to present the bank credit multiplier as follows: when a bank receives a $100 deposit, it keeps $100 as deposit, and at the same time lends out the same $100 to ninety-nine different people, thus lending $9,900. Where does this one bank get the extra $9,900 from? It creates them out of nothing.

60. Okina (1993b) admits: "The Bank of Japan has in the past already shown interest in the usefulness of credit aggregates. [Here he may refer to Bank of Japan 1988, which denies the usefulness of credit aggregates.] One reason for that is because, as touched upon in chapter 4 [of Okina 1993b], the view is also influential that not money but credit exerts influence on the economy. Therefore analysis on the subject of credit aggregates is in the future also necessary" (p. 171). Okina recognizes that credit aggregates have lead time over money-supply aggregates. However, he argues that they are not practical because observers receive credit information far too late (p. 171). Okina neglects to mention that the delay between fact and announcement is due to the BOJ, which releases key credit figures up to three months after the fact—a delay that has not changed in thirty years, despite the fact that the central bank itself now has real-time access to the data. Most importantly, as Werner (1999a, 2002a) has shown, the central bank has used the quantity of credit creation as its central monetary policy operating and target variable at least throughout the period from 1942 to 1991.

61. See also Morsink and Bayoumi 1999.

62. See also Werner 1997a, 1997c, 1998c.

63. This is not surprising for two reasons: quantity rationing and the fallacy of

composition. Concerning the latter: while interest rates are an exogenous variable for an individual agent, this is not the case for all agents together.

64. See also Werner 1994b and 1996b for some empirical evidence on the weak correlation between the popular deposit aggregate M2 + CD and nominal GDP, compared to an alternative measure of credit. See Werner 1992 and 1997d for a comparison of the velocity of traditional money-supply aggregates (falling in the 1980s and 1990s) and the stable velocity of credit used for GDP transactions (M_R).

65. See Werner 1994b, 1995c, 1996b, 1998c.

66. In the case of Japan's economy, with net exports accounting for between 1 to 2 percent of GDP, this is not an unrealistic simplification—but will later be relaxed.

67. *Pluralitas non est ponenda sine necessitas.* William of Occam (1285–1347), the Oxford University philosopher, was a famous logician who emphasized this principle of parsimony. Earlier proponents include Aristotle in his *Physics*.

68. As Werner (1992, 1994a, 1997d) has shown, bank credit to the real estate sector, nonbank financial institutions, and construction companies was used mainly for financial transactions. Its rise during the 1980s is a good empirical explanation of asset prices and net long-term capital flows in the 1980s and early 1990s. Moreover, using the remainder of bank credit to substitute for M_R delivers a constant "real circulation" velocity, demonstrating that it is a good empirical proxy.

69. See Werner 1994b, 1995a, 1995c, 1996b, 1997a, 1997c, 1997d. Increases in lending by the formerly twelve government-owned financial institutions (such as the Japan Development Bank, Small Business Finance Corporation, etc.) do not create credit; neither does lending by nonbank financial institutions, such as life insurers. They are not client institutions of the central bank and merely act as financial intermediaries, similar to investment funds.

70. The BOJ used to refer to its extralegal window guidance credit controls as "quantitative policy" (see the interview with BOJ executive director Toshihiko Fukui in *Nihon keizai shimbun*, December 26, 1992, p. 5).

71. The BOJ's argument is seconded by Cargill, Hutchison and Ito (2000), who concede that there is demand for bank loans, but argue that a credit crunch implies that injections of liquidity (base and narrow money expansion) do not increase credit and aggregate lending, despite the existence of demand for bank loans by corporations at prevailing interest rates (p. 121). They thereby neglect the possibility that the central bank, just like a private bank, can also extend credit and hence alleviate any credit crunch, if it so wishes, as Werner (1994b, 1995a, 1995c) has argued.

72. According to Werner (1995c, 1996b, 1997a, 1997c, 1998a), the goal to prevent surges in call rates around the fifteenth of the month does not prevent the central bank from implementing exogenous monetary policy by increasing the amount of its credit creation (through increased asset purchases).

73. The central bank has engaged in most of these transactions in the past, demonstrating that they are all technically feasible and deliver the desired impact. See the experience of the BOJ in the early postwar era, when the banking system was faced with an even larger nonperforming loan problem than during the 1990s. Purchasing idle real estate and turning it into parks for public use would support the real estate market, help the banks (that use real estate as collateral), increase credit in the economy (and hence boost economic activity), and, finally, increase quality of life in Tokyo, a city which has the lowest per capita park surface area of the world's major cities. All this would carry no costs to anyone.

74. McCallum (2001b) agrees "it is important to recognize that purchase of non-traditional assets is necessary for monetary policy to be helpfully stimulative." Meltzer (1998) and Hayashi (1998) recommend abandoning call rates as the operating target and substitution with high-powered money. Similar to Krugman (1998a), Hayashi argues that an inflation target should also be introduced—suggesting 1 percent growth of the CPI. Hayashi's transmission mechanism is also similar to Krugman's, namely not via direct quantity effects but inflation expectations, triggered by the inflation target, which will lower real interest rates, which in turn will stimulate the economy. Hamada (1999) advises central bank expansion of bond purchases. Fukao (1999) rejects using high-powered money as the operational target due to its large seasonal fluctuation, and suggests targeting banks' excess reserves, calculated by subtracting required reserves from total reserves. It remains unclear, though, why seasonally adjusted high-powered money cannot be used. Moreover, the proposals that aim at increasing banks' reserve holdings do not explain how increased reserve holdings by the banks affect the economy positively. Meltzer (1999) and McCallum (2001a) recommend that the BOJ attempt to weaken the currency by substantial open-market sales of yen and purchases of foreign government bonds (thus presumably arguing less for direct quantity effects, but indirect stimulation of the economy via net exports). Bernanke (2000) argues that the central bank can still stimulate the economy by creating money and purchasing more assets. The transmission, however, operates via higher asset prices—while it is unclear how these higher asset prices would necessarily boost economic demand.

75. Werner 1996a, 1996b, 1997e, 1999c, 1999d, 1999f.

76. Technically, this could be done easily through the same channels used to settle income and corporate taxes—only in reverse direction.

77. McCallum (1985) shows that this would be possible without inducing extreme volatility of short-term interest rates, especially if the intermediate target is the path of nominal GDP, and not money stock. This is in line with other authors who have favored nominal GDP targeting of monetary policy, including Meade (1978), Tobin (1980), and Bean (1983). Werner (1995c, 2001a) favors nominal GDP growth as the target because it represents the variable that the government, consumers, investors, and businesses care about. Moreover, it does not suffer from as many measurement problems as other potential targets (such as prices or real variables). As mentioned above, many proponents of the "special case" of interest rate policy ineffectiveness support the imposition of an inflation target. By contrast, Svensson (1999), echoing Friedman's (1982) advice, argues in favor of a price-level target.

78. Technically, this would be trivial, since all banks settle online with the central bank. The transaction could take place in one morning.

79. The central bank could keep those assets on its books at face value ad infinitum. As long as the market value of the assets was higher than zero, the central bank would still gain, as it purchases assets with some value for money that it had created for free. If the value of the assets dropped to zero, the central bank would still break even. While the central bank could freely choose to treat such transactions differently in its accounts (by reporting a loss), there is no logical reason why it should do so (except as a sectarian political argument against conducting this transaction in the first place).

80. This alone would not suffice according to the moral hazard principle, since the central bank faces no budget constraint or cost in conducting the bank bailout. This is why it would still be necessary to review the legal status and accountability of the central bank, as is argued below.

81. On the latter, see for instance Werner 1998d.

82. Werner 1994b, 1995c, 1996a, 1996b. Hayashi (1998) argues that the central bank is essentially an agency to which the government has delegated certain functions. In this case, it does not make sense for the government to issue bonds and pay interest for its borrowing, if it could instead (ask the central bank to) print money and pay for fiscal policy through costless, interest-free money creation. Hence the government could "exchange interest-bearing government bonds with interest-free reserves through the central bank's purchase of government bonds," as paraphrased by Okina (1999, 172).

83. Independence is not necessarily an obstacle, since a central bank can voluntarily cooperate to support the government's policy. As Bernanke (2000) pointed out, "Cooperation with the fiscal authorities in pursuit of a common goal is not the same as subservience" (p. 163). Unfortunately, there are few examples of such cooperation by independent central banks.

84. The proposal will be useful in cases where resources are unemployed and actual economic activity is below potential. See also Werner 2000a, 2000b, 2001a.

85. This is effectively the policy combination adopted by the Reichsbank from 1933 to 1937. Its president, Hjalmar Schacht, appeared to have been well aware of the quantity-crowding-out problem of unmonetized fiscal policy. In addition to stepping up the credit creation of the Reichsbank (by purchasing various forms of assets, including government bonds and bonds of other government institutions), Schacht called for the establishment of government institutions that implemented fiscal spending programs and were funded by the issuance of bills of exchange that were purchased by the banks and the central bank. Funding fiscal expenditure with money creation, as opposed to public bond auctions, is called silent funding (*geräuschlose Finanzierung*) in the German tradition. See Werner 2002b.

86. This proposal has found several supporters, such as Congdon (2001), Smithers (2001), and the *Financial Times*'s Martin Wolf (2002).

87. This finding is also consistent with other empirical work, such as Bernanke and Gertler 1999 and McKibbin 1996. Bernanke (2000) attributes "much of Japan's current dilemma to exceptionally poor monetary policymaking" (p. 150).

88. Hamada (2002) laments how the BOJ invited leading economists from all over the world in 2000 to ask for their advice concerning the conduct of its monetary policy. "It is a pity that [the BOJ] has hardly made use of this advice" (p. 71). Some participants might have been reminded of the conclusion by another famous expert on central bank policy, based on his experience in the United States: "I attended many such meetings of so-called academic consultants. . . . However, I finally concluded that the meetings were called purely for window-dressing purposes" (M. Friedman 1982, p. 105).

89. The central bank's behavior has followed a pattern: its spokesmen propose a set of often legalistic and technical arguments. As soon as the flaws and contradictions of one argument are pointed out in public, the spokesmen react, not by correcting their mistakes and their policy, but by correcting their line of argument and deploying an entirely different, usually unrelated argument that happens to come to the same conclusion. The ever-shifting explanations and counterarguments by the central bank have entangled it in contradictions which are happily ignored by the next spokesperson. This pattern is suggestive of a predetermined policy that spokesmen are required to market to the public. Bernanke (2000) complains that "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" (p. 158f.). A useful summary of some BOJ staples is Okina 1999. These arguments have since been countered, and were subsequently upgraded by central bank spokesmen such as Yamaguchi (2001a, 2001b, 2001c).

90. In 1992, a journalist asked a key BOJ official whether the central bank should complement its interest-rate reductions with "quantitative easing" or expansions in the money supply. The official responded: "It used to be our commonsense approach to watch both the interest-rate side and the quantity side, and then make decisions, while quite widely employing methods of imposing limits, such as window guidance. Now liberalization has moved forward and also the Bank of Japan has abolished window guidance. To decide whether easing is sufficient or not, we can just determine if interest rates have fallen enough. Completely unrelated to that, I think that in the future the question will become important whether in a situation where financial institutions hold nonperforming assets, bank behavior will start to change completely, compared to the past—in other words, whether the behavior of banks will differ from the past, when the Bank of Japan implements the same interest-rate reductions as monetary policy, and whether the transmission mechanism of monetary policy is changing or not" ("Kin'yū fukyō wo kataru (4): Nihon ginkō riji fukui toshihiko shi," *Nihon keizai shimbun*, December 26, 1992: 5). The interview was with Toshihiko Fukui, at the time executive director of the Bank of Japan. His familiarity with the "window guidance" credit controls—the central bank's most important postwar monetary policy tool—was not accidental: from 1986 to 1989, as director of the banking department, he was in charge of window guidance, setting the excessive bank-loan quotas to the real-estate sector which created the bubble (see Werner 2002a, 2003b). Moreover, Fukui did not lose touch with the central bank after his interview in 1992. From 1994 to 1998, as senior deputy governor of the BOJ, he was

the highest internal BOJ member of staff and oversaw the quantitative tightening of the central bank's credit-creation policy, despite the sharp reduction in bank credit.

91. For detailed suggestions of U.S. structural reform demands, see, for instance, the reports by the bilateral Structural Impediments Initiative (SII), which was launched in July 1989, with a final report released on July 28, 1990.

92. See also Katz 2001.

93. For an example of a "fiscalist" economist who believes in the fundamental importance of deep structural reforms of Japan's system, see Koo 1995; for an example of a "monetarist" economist who shares this view, see Shinpo 1996.

94. This view had been formulated by, for instance, Werner (1991, 1992, 1994b, 1995a, 1995c).

95. Hoshi and Patrick (2000) argue convincingly that "a sense of impending crises" has triggered a "major transformation" of the Japanese financial system, shifting it "from a bank-centered and relationship-based system to a market-based and competitive system" (p. xi) and triggering "the most surprising and fascinating events of the tumultuous 1990s," namely the "sharp decrease in the power and position of the hitherto seemingly omnipotent Ministry of Finance, the most powerful and elite central government bureaucracy in a country where bureaucrats rule and politicians simply reigned" (p. 22).

96. The IMF, the World Bank, and the Asian Development Bank also made this argument in the context of the Asian crisis. See, for instance, Kawai and Takayasu 2000. Please also note Werner 2000a, 2000b, contradicting this argument and providing an alternative explanation of the Asian crisis.

97. Maekawa was the chairman of a research group that reported to Prime Minister Nakasone and delivered its report on April 7, 1986. Two more reports followed, one a year later, and another in June 1988. See Werner 2003b.

98. The BOJ's Okina (1999), for instance, warned: "What monetary policy alone can do is limited . . . the BOJ has taken the utmost efforts to promote monetary easing . . . But monetary policy alone cannot guarantee a return of the economy to a sustainable growth path. To this end, it is essential to solve structural problems" (p. 181). The BOJ's Shirakawa (2001) argues for the need to create positive expectations, which can only emerge through structural reform. See also Deputy Governor Yamaguchi (2001c): "In this environment, structural policies are important. . . . Expectations for future growth may well be enhanced as structural adjustments take hold" (p. 6).

99. Deputy Governor Fukui argued in 1995 that, to achieve economic recovery, "several deep-rooted structural problems must be solved. . . . To explain the viewpoint of the BOJ in extremely general terms, one must thoroughly deal with the competition-limiting environment that still remains in Japan's economy and society" ("Nichigin fukusōsaikaiken," *Nikkei kin'yū shimbun*, November 24, 1995: 7). See also various former BOJ staff, including Saito (1996), Inoue (2000), and Kimura (2001). Fukao (1999) is a notable exception.

100. The structural reform agenda always included change in the central bank law to make the BOJ independent and unaccountable. This goal was achieved in 1998. Mieno explained: "In many countries today . . . monetary policymaking is entrusted to an independent central bank. This reflects the human wisdom that has been nurtured by history" (Mieno 1994, 11). On later reform goals, see, for instance, Deputy Governor Yamaguchi: "The role that the government should play in this is also quite large . . . it is important to deregulate, to review the taxation system drastically, and to ensure that reform of public corporations progresses steadily. Another important challenge is to relieve the anxiety of households about the future by reviewing the social security system, including pension benefits" (Yamaguchi 2001c, 11). As structural reform proceeded, the central bankers simply moved the goal posts. Ultimately, Hoshi and Patrick's definition appears accurate: the goal of structural reform is the introduction of a U.S.–style economy. Despite having achieved "remarkable structural reforms," Toshihiko Fukui pushed for more: "The tasks that cannot be neglected include a sharp reduction in public works projects, drastic reforms of universities, and promotion of academic-industry cooperation, corporate reorganization, creation of a society valuing individual achievement, and improvement of the social safety net."

101. For a typical example of the viewpoint of the leading foreign media, see, for instance, Gillian Tett, "A Bang or a Whimper? An Inefficient System for Allocating Capital Is the Issue at the Heart of Japan's Decision to Launch Today's Big Bang," *Financial Times*, March 31, 1998.

102. They included, among others, liberalizing foreign exchange transactions, deregulating the sale of investment trust funds, and liberalizing the licensing of security companies.

103. Hoshi and Patrick (2000) argue: "The magnitude of the transformation is remarkable. During most of the postwar period, Japan's financial system was characterized by the dominance of bank financing, close relations between banks and their corporate clients, and heavy regulation by the government. That is now becoming what seems to be the opposite: a system where financial institutions compete in capital and other financial markets without heavy intervention from the government" (p. 1).

104. Fair Trade Commission, Number of Cartels, various editions.

105. Already in 1994, Governor Mieno said that "the Bank of Japan will continue to do all it can to put the Japanese economy on the right track for a noninflationary sustainable growth in the medium to long term" (Mieno 1994, 12).

106. See the BOJ's Shirakawa (2001) or the increasingly open statements by other spokesmen since about 1999.

107. Masaru Hayami, "The Role of Japan amid the Changing International Environment," speech at the meeting of the Executive Board of Directors of the Japan Foreign Trade Council, June 7, 2000, p. 4, available at www.boj.or.jp/en/press.

108. Governor Mieno, a former member of the committee that produced the second Maekawa report, referred to the need for a "structural transformation," and hinted at the need to use monetary policy for these goals: "In my description of how I would like the economy to look, you can see that there is a very close resemblance to the economy Japan was aiming at following the Plaza Agreement and during the subsequent period of the rapid appreciation of the yen. In hindsight, I feel that the structural transformation which Japan committed itself to at

that time gradually receded into the background during the recent economic boom and the bubble phenomenon. Now, once again, Japan is becoming conscious of the need to implement such transformation. . . . I do wish to reiterate that it is very important that these medium- to long-term objectives [to implement a structural transformation] be kept in mind when managing the nation's monetary policy" (Mieno 1993).

109. "Ex-BOJ Fukui Negative on Further Monetary Easing," Dow Jones, Tokyo, Thursday, December 13, 2001.

110. Reporters often approve of the intentions of the central bank, such as in this case. Gillian Tett, "A Hard Choice for Japan," *Financial Times*, December 2, 2001.

111. See also Werner 2001a, 2003b.

112. Posen concludes that these are examples of a "broadly held view at the bank." What is the policy intention of the BOJ? "It is clear that 'creative destruction,' invoked and praised repeatedly in Hayami's speeches, is the motivating ideology" (p. 206).

113. Some private-sector economists, especially at foreign financial institutions, appear sympathetic to the central bank's misuse of monetary policy to push through its structural reform agenda, despite its costs. As late as July 2000, the chief economist of the Tokyo Branch of U.S. investment bank Morgan Stanley Dean Witter lauded the Bank of Japan for its costly policy: "I think we should go through hardships first before reaching a comfortable situation. . . . I'm of the opinion that economic stimulant measures should not really be continued. In a sense, I regard economic recovery as a hazard for structural reforms. We should reduce the effort to stimulate the economy. . . . This will gradually increase the pressure for reform in every field, including labor and the public and private sectors" (Robert A. Feldman, as quoted in the *Daily Yomiuri*, "Is Japan on the Threshold of Fiscal Breakdown?" July 20, 2000: 20). Leading politicians also appear to agree with the central bank's idea of purposely creating hardships: at the Geneva Summit in July 2001, when asked how he was going to balance cyclical and structural reform policies, Prime Minister Jun'ichiro Koizumi replied: "I say: 'no growth without reform'. . . . Because we have decided 'no growth without reform,' we cannot postpone reform and take cyclical stimulation policies. Some say recovery comes first, without reforms. But if the economy recovers, the will to reform will disappear. . . . After the elections I will continue with the plan of 'no growth without structural reform'" (Geneva Summit, International Press Conference of Prime Minister Junichiro Koizumi, July 22, 2001).

114. Until April 1998, the Bank of Japan Law, Article 1, required the central bank to support government policy objectives. For most of the 1990s, governments made it clear, and backed their words with action, that their goals were cyclical stimulation of the economy. The BOJ was legally obliged to implement stimulatory cyclical policies. It has failed to do so.

115. To argue that people are too stupid to have democratic rights and that key decisions should, therefore, be made by unelected technocrats is similar to arguments justifying some totalitarian regimes.

116. "The Fed is not subject to an effective budget constraint. It prints its own money to pay its expenses. The Federal Reserve does not have to face the voters" (Friedman 1982, 114). Increased oversight by Congress has not worked in the case of the Fed. A Fed economist says: "It appears safe to conclude that increased congressional oversight has not altered the conduct of monetary policy" (Pierce 1978, 369). Pierce shows how the Fed has responded to any attempts at oversight with highly technical and confusing argumentation. That is why Friedman suggests to "either make the Federal Reserve a bureau in the Treasury under the secretary of the Treasury, or to put the Federal Reserve under direct congressional control. Either involves terminating the so-called independence of the system. But either would establish a strong incentive for the Fed to produce a more stable monetary environment than we have had" (Friedman 1982, 118).

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