

Concluding Panel Discussion: The Role of Monetary Policy under Low Inflation

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I. Introduction

I would like to start by thanking the Bank of Japan for organizing this conference on “The Role of Monetary Policy under Low Inflation” and especially for inviting me to participate in this policy panel. During the 1990s, there was a remarkable convergence across the frameworks used by different central banks around the world to define and implement monetary policy. In many cases, including Japan (in April 1998) substantial changes in the statute of the central bank were enacted: setting the goal for monetary policy, establishing (instrument) independence, and providing for accountability. Despite important differences remaining, there are a number of key common features across monetary policy frameworks. First and foremost price stability is, explicitly or implicitly, the primary goal of monetary policy. This may be explicit in the statute of the central bank or derive simply from the pragmatic recognition that low and stable inflation is a necessary condition for sustainable growth. From this viewpoint, the monetary policy framework has to be thought through in order to deliver price stability in a credible and lasting way while contributing to the overall stability of the economy.

Price stability is what monetary policy is about. It requires at least low and stable inflation. Low inflation is therefore the “bread and butter” of our trade as central bankers. There has been a lot of recent interest in this topic. To give just few examples, it was one of the main issues at the 1999 Federal Bank of Kansas City’s Jackson Hole Symposium. Further were two conferences with the same title, “Monetary Policy in a Low Inflation Environment”: the first organized by the Federal Reserve of Boston in October 1999, and the second organized jointly by the National Bureau of Economic Research (NBER), the Center for Economic Policy Research (CEPR), and the Tokyo Center for Research (TCR), here in Tokyo in December. The recent interest on this topic is justified for at least two reasons. First, after decades of fighting inflation a satisfactory degree of price stability has been reached in most of the world economy. In the euro area, the end of disinflation is recent. It was only in 1996 that, for the first time in recent history, inflation went below 2 percent for all the 11 countries that would integrate the euro area. Going back to 1990, it is striking to recall that all these

1. I wish to thank Sandrine Corvoisier, Patricia Kearns-Endres, Andrés Manzanares, and especially Oreste Tristani for their valuable cooperation. The views expressed are the responsibility of the author and do not necessarily reflect the views of the European Central Bank or the Eurosystem.

11 countries had inflation rates above 2 percent. Portugal, at the time, was still at the double-digit level. The situation looked even worse two years later. However, at the end of the decade all these countries could look back at a successful disinflation process. Second, there has been a revival of interest on the issue of possible constraints on the effectiveness of monetary policy under low inflation. In particular, there has been much debate on whether the zero lower bound on nominal interest rates may, in effect, limit the ability of monetary policy to affect the economy. This debate has been fostered by the recent experience in Japan with running monetary policy with nominal official interest rates at zero.

The full title of this conference is “Monetary Policy under Low Inflation: Deflationary Shocks and Policy Responses.” The debate showed, in my view, that it is crucial, when designing a monetary policy framework, to think through how to deal with extreme events. Lars Svensson expressed this view particularly well. He said that prudent central banks should try to think through how to deal with extreme even if low probability events. Marvin Goodfriend and Don Kohn have emphasized the same idea. Another main topic of discussion was how to conduct a preemptive monetary policy aiming at minimizing both inflationary and deflationary risks. Such policy contributes to make a binding zero lower bound on interest rates unlikely (albeit not impossible). Under low inflation, the risks of inflation and deflation have to be balanced.

The early experience with the conduct of monetary policy in the euro area clearly underlines this point. Therefore, the remainder of this discussion will be devoted to revisiting monetary policy decisions made in the euro area between late 1998 and the spring of 1999.

II. Downward Risks to Price Stability: The ECB Response

The main elements of the European Central Bank’s (ECB’s) stability-oriented monetary policy strategy were announced on October 13, 1998 (ECB [1998a]). Those included a quantified definition of price stability.² At the time, the euro area inflation rate measured by the Harmonised Index of Consumer Prices (HICP) was 0.9 percent. Inflation expectations were also low.

In the aftermath of the Asian crisis and the Russian crises, forecasts for growth in the world economy were being revised downward. Toward the end of the year, data signaling a slowdown in production in the euro area during the third quarter were becoming available. Industrial confidence indicators had already been weakening since the summer, reflecting the decline in international orders. Furthermore, the turmoil in financial markets spread concerns about a potential credit crunch.

During the four quarters of 1998, M3 had been growing steadily at rates between 4.4 and 4.9 percent.

2. Specifically, “price stability shall be defined as a year-on-year increase in the Harmonised Index of Consumer prices (HICP) of below 2 percent.” Price stability “is to be maintained over the medium term.” For a general presentation of the elements of the ECB strategy, see ECB (1999), or Angeloni, Gaspar, and Tristani (1999). Issing (2000a) provides a discussion of the implementation of the ECB’s strategy during the first year of the single monetary policy.

Overall, these developments were consistent with the possibility of further reductions of inflation from already low levels. After an agreement reached by the Governors at the meeting of the Governing Council of the ECB on December 3, 1998, the national central banks decided to reduce their key interest rates to 3 percent in a concerted way. The average three-month interest rate dropped 70 basis points between August 1998 and the end of the year. Half of the decline occurred after the December 3 move. The Governing Council meeting on December 22 confirmed the move to an interest rate level of 3 percent (ECB [1998b]). The first open market operation was launched on January 4, 1999. It was a two-week fixed rate repo tender at 3 percent.

At the beginning of 1999, the levels of nominal interest rates, in the euro area, were at their lowest levels since World War II. The short real rate, as measured by the three-month interbank rate minus the annual change in the HICP, moved to below 2 percent, the lowest level recorded in the 1990s. At the time, this low level of nominal (and real) money market interest rates was seen as making an increase in rates more likely than further declines. This perception was reflected in the decision of the Governing Council—also announced on December 22—to set the deposit facility rate at 2 percent while the marginal refinancing rate was set at 4.5 percent, defining an asymmetric corridor around the 3 percent main refinancing rate. The asymmetry signaled the view according to which there was more scope for increases rather than further declines in interest rates.

This leads us to the second policy move: the reduction of the main refinancing operation rate to 2.5 percent on April 8, 1999. At the same time, a symmetric corridor was defined by setting the deposit facility rate at 1.5 percent and the marginal refinancing rate at 3.5 percent. The analysis of the current situation and prospects for the euro area economy was particularly challenging. To understand this fully, the best way would be to focus exclusively on the information set available at the time. A little hindsight, however, enables us to make a long story shorter. The purpose of what follows is not to present an exhaustive account of the information and analysis behind the April 8 decision. It is to motivate it from the need to balance upside and downside risks to price stability. I have chosen to focus on this episode because it allows emphasis on downside risks.

Real quarterly GDP growth had been slowing down from the last quarter of 1997 to the last quarter of 1998. Inflation, measured according to the HICP, moved to 0.8 percent in December and stayed constant at that level until February 1999. This was the last monthly inflation figure for the euro area available at the time of the April 8 Governing Council meeting.

The very pronounced pattern of economic activity in the euro area during 1998 was closely linked to the behavior of the rest of the world. Most analysts and forecasters, including international organizations like the International Monetary Fund (IMF), the Commission, and the Organisation for Economic Co-operation and Development (OECD), expected the slowdown to be mild and short lived. The prospects for the world economy were seen as improving. Also, the euro area is a large and relatively closed economic entity. This led to the conclusion that growth would pick up during the course of 1999 and inflation would increase moderately

but continuously during most of 1999 and 2000. Throughout 1999 and 2000, inflation would remain safely well below the 2 percent ceiling. This was broadly consistent with the analysis made at the ECB concerning the most likely scenario. However, it was important to notice that there had been a prolonged pattern of downward revisions in forecasts. This may be illustrated by GDP and inflation consensus forecasts for the euro area (Figures 1 and 2).

Figure 1 Evolution of Consensus GDP Growth Forecasts in the Euro Area before April 1999

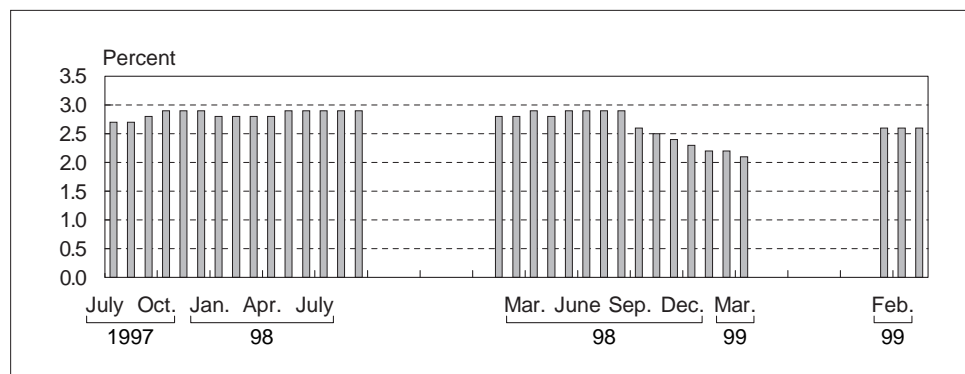
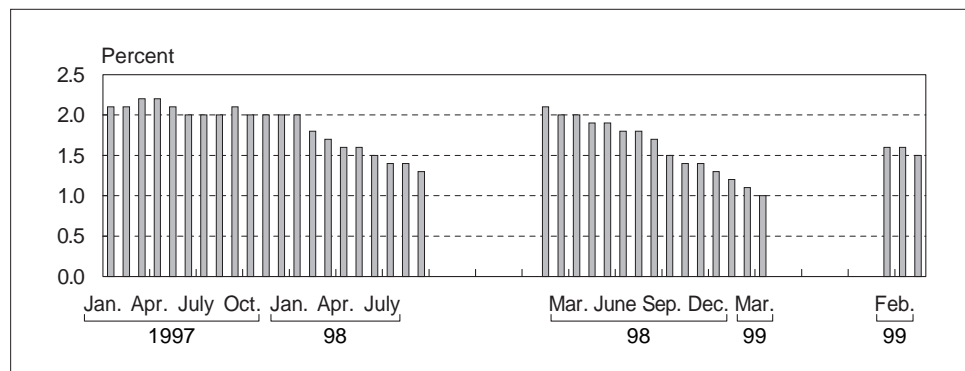
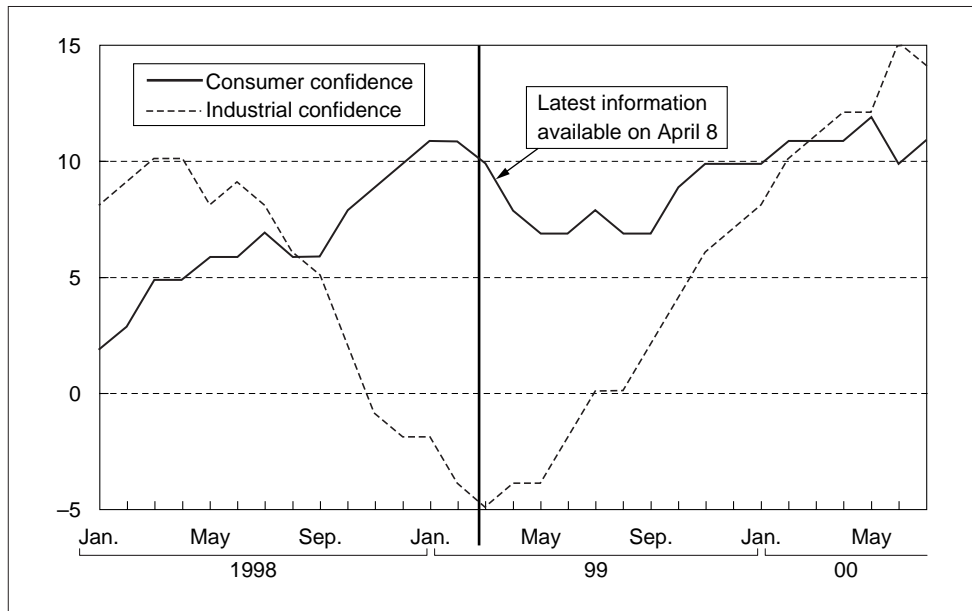


Figure 2 Evolution of Consensus Inflation Forecasts in the Euro Area before April 1999



Some indicators were giving contradictory signals. For example, while industrial confidence continued its monotonic downward slide that had started in mid-1998, consumer confidence had been increasing and, in February, the latest number available when the Governing Council met stayed at the highest level registered since the start of the series in 1985 (Figure 3). This suggested that private consumption would remain strong in the coming months. However, according to an alternative argument it was important to recognize that markedly divergent trends in the two indicators are rare. Therefore, it was crucial to look more deeply at the details of the respective questionnaires. Doing so showed that the industrial confidence indicator could be seen as more forward-looking (but also more sensitive to international developments and perceived prospects).

Figure 3 Confidence Indicators for the Euro Area

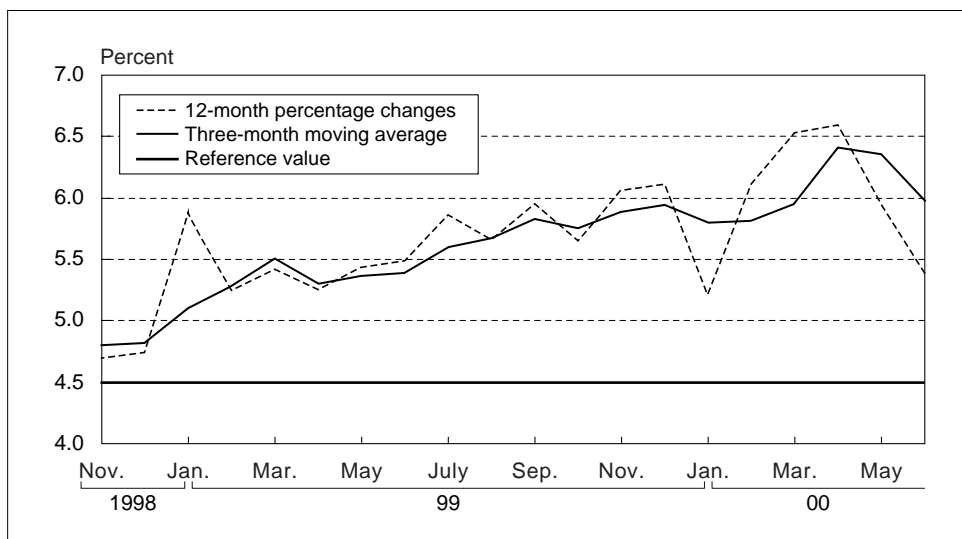


It is interesting to recall that a sizeable oil price increase was under way. Oil prices started to increase in February. In March, they were already (in U.S. dollars) about 40 percent higher than the February average. This, however, occurred after a period when energy prices had actually contributed to lower inflation in the euro area. In February 1999, headline inflation was significantly lower than the inflation measure excluding unprocessed food and energy prices.

As to monetary developments, in January and February 1999 M3 growth was, respectively, 5.6 and 5.2 percent, well above the reference value of 4½ percent (Figure 4). Buoyant money growth points to upward rather than downward risks to price stability. However, the interpretation of the behavior of M3 was fraught with difficulties associated with the transition to the single monetary policy. Three factors may be highlighted: (1) the liquidity preference of economic agents may have increased in connection with learning about the new environment in the money market; (2) the full implementation of the statistical reporting system; and (3) the new regime of remunerated reserve requirements. The link between monetary developments at the beginning of the year and the transition to the single monetary policy was clearly highlighted in ECB (1999). Credit to the private sector was, in January and February of 1999, growing at an annual rate of about 10 percent. This was hard to reconcile with prospects for weaker economic activity and subdued inflationary pressures.

While all central banks constantly take decisions in a world of uncertainty, the conditions of uncertainty faced by the ECB in the first months of Stage Three of European Monetary Union (EMU) were particularly severe. The transition to the single monetary policy represented an almost textbook case of regime shift. In the first months of 1999, the transmission mechanism of the “new” single monetary policy was

Figure 4 Rate of Growth of M3



only understood in its broad contours, and likely to be evolving in parallel with the ongoing restructuring and transformation of the banking and financial systems. The uncertainty surrounding the data was magnified by the lack of area-wide time series.³

To summarize: the prospects for price developments, according to the most likely scenario, pointed to inflation rates well within the range compatible with price stability. However, there were other (less likely) scenarios that had also to be taken into account. It seemed especially important to look at the *possibility* of further decreases in inflation rates—and economic activity.

The expected pattern of the pickup in economic activity in the euro area was obtained in a context in which an overall increase in world economy growth was foreseen. There were signs of recovery coming from most of Asia. However, in Japan the preliminary figures for the fourth quarter of 1998 showed a year-on-year fall in GDP of 2.8 percent. Economic recession in Russia was expected to deepen. The financial turmoil associated with Brazil contributed to heighten uncertainty. The overall perception was that risks coming from the world economy prospects were tilted to the downside. Furthermore, consumer confidence could deteriorate rapidly.

Given that inflation stood as low as 0.8 percent, further significant downward moves would take it outside the range compatible with price stability. The Governing Council definition of price stability excludes both inflation and deflation. This was particularly the case given the possibility of a (positive) measurement bias associated with the HICP. It was felt that deflationary shocks could potentially bring the economy into uncharted territory.

In this context, the decision to lower interest rates was not based on the expected prospect of deflation. There were no expectations or forecasts of deflation for the

3. See Issing (2000b) for a vivid account of the uncertainties associated with the introduction of the euro as perceived by a policy maker.

euro area. However, there was a perception of a significant downside risk to price stability. The decision to lower interest rates has, therefore, to be seen as insurance against these downside risks. This may be seen as an attempt to improve the situation that would occur in a “worst case” scenario. In this sense, the episode just described relates to the paper at this conference by Hansen and Sargent in particular, in view of Tiff Macklem’s comment.

In the end, the euro area economy evolved during 1999 very much in accordance with the pattern foreseen in the most likely scenario.

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Board of Governors of the Federal Reserve System

I want to start by thanking the Bank of Japan for holding this conference and including me in it. The Bank faces as difficult a set of circumstances as any central bank today. It’s a sign of a confident and open institution that it has undertaken to sponsor a wide-ranging discussion of its policies and approaches to these circumstances—and not years later but while the difficulties persist.

I’m also grateful that this experiment in monetary policy at the zero interest rate bound is being run in some laboratory other than the United States. Whenever I feel a little stressed dealing with issues in U.S. monetary policy, I cheer myself up by thinking about what Deputy Governor Yutaka Yamaguchi is facing!

Of course, the first duty of any central bank not in this situation is to design policies to minimize the risks that it will face the Deputy Governor’s problems. And

4. The views expressed are those of the author and should not be taken as the views of the Federal Reserve Board or other members of its staff.

in that regard, it has been helpful to hear the analysis of what occurred in Japan and the suggestions for policy design, even if I'm not quite as certain as most of the other participants that it doesn't matter what the question facing monetary policy might be—the answer is always and everywhere inflation targeting. Nonetheless, I didn't think I had much to add about monetary policy at low inflation that you couldn't get elsewhere; certainly most of our problems in the United States have centered more around keeping inflation low than avoiding deflation. Moreover, whatever the policy design, there are no guarantees of success. A 100-year flood, the perfect storm, a combination of external events, and perhaps policy misjudgments, and any central bank could be facing the problems of the zero bound on nominal interest rates, especially as we are all starting from lower inflation rates these days.

So I thought I would take this opportunity to think about one aspect of the issues confronted once the zero bound has been hit. We've heard a lot of advice for the Bank not only at this conference but over the last few years. I can't help but be struck by what seems to be a level of frustration between the Bank and its critics—especially its U.S. academic critics. Those critics have identified two channels that might be exploited under these circumstances, both primarily intended to move asset prices along the transmission mechanism in a more stimulative direction. The first channel would be through affecting expectations about future interest rates, asset prices, inflation rates, or the price level. The second would work by exploiting imperfect substitutability among assets by changing relative supplies to affect their prices.

I think most of us probably agree these are at best probably relatively weak, tentative channels for monetary policy once the policy interest rate is at zero and their ability to work open to question. Actions to change expectations must be credible; importantly, to be effective in many of these proposals, it is expectations about the period after the zero rate is not required that must be changed. But it must be difficult to convince people that the central bank will operate policies that might not be optimal—for example, higher inflation than would be ideal—under the circumstances that would then prevail. Actions to exploit imperfect asset substitution may not be very effective in highly liquid global capital markets—at the very least, they could well require massive purchases or sales for uncertain outcomes. And nonstandard policies may be difficult to implement governmentally because they often require unprecedented understanding and cooperation between the monetary and fiscal authorities.

Still, the critics ask, why not try these policies. The Bank's response has three aspects. First, they won't work. Second, we don't need them, the economy is doing just fine, be patient. Third, there are potential adverse consequences from these policies, often manifest only in the longer run, that your advice does not take into account. I used my invitation here to think about this last point—the potential adverse consequences; even if the Japanese economy doesn't need nonstandard policies, another economy some day might, and it's important to understand these possible complications. I'm sure I don't have a complete list of the possible costs of implementing the proposed nonstandard policies that have been cited by the Bank from time to time, but I hope I've included the main ones. I've tried to put myself in the shoes of the Japanese central banker, as relieved as I am not literally to be there. I admit that in some cases

I may not have understood the arguments or have done them justice. This is inevitable from an outsider who does not know the particular circumstances—political and economic—here in Japan, and I want to emphasize that I am trying to evaluate the arguments as an outsider, and it is not my intention to second-guess policy actions or inactions. To foreshadow my discussion: I believe the Bank has identified some legitimate concerns—costs that have needed to be weighed against potential benefits of nontraditional actions—but other problems are less apparent to me.

One potential cost sometimes cited of nontraditional steps has been the possibility that such actions would embed inflationary impulses that could become difficult to contain. With lags in policy, and massive buildups of the central bank's balance sheet in some of these proposals, the risk is that at some point, which is difficult to anticipate and to forestall, the larger monetary base or lower interest or exchange rates will begin to make themselves felt in the economy. Political pressure will make it far easier to buy bonds than to sell them, or to depreciate the currency rather than to let it rise in value. Moreover, some of the proposals involve giving up future policy flexibility to affect expectations now.

Some of these would seem to be legitimate concerns that would need to be addressed or at least recognized before the policies were undertaken. Tightening policy is rarely easy politically, and massive sales of government securities or foreign exchange, reversing previous price supporting operations, and imposing capital losses on investors won't make it any easier. Clarifying the Bank's intentions from the outset and warning people that the purchases being undertaken now may be reversed at some point would help to reduce the legitimacy of any adverse reaction, but such warnings risk undermining the effects of the policies to the extent that such effects depended on changing expectations—a comment some observers are making about the recent signaling of the end of the zero rate policy. And, as noted, some of the pre-commitment strategies involve the Bank pledging to follow policies in the future that might not look so attractive when the time comes—for example, allowing inflation to run a little to the high side. Among other things, the success of such policies depends on their credibility, and the incentives to go back on the commitment would be substantial.

I understand less well some of the other reasons for fearing an inflationary outbreak. Inflationary impulses do not spring without warning from large monetary bases as people suddenly decide to spend their deposits or currency. Rather, they are much more likely to show up in rising resource utilization, asset prices, or other normal early indicators of building price pressures. To be sure, conducting a forward-looking monetary policy is never easy, and uncertainties about underlying relationships will be exacerbated when the economy has been operating in the unaccustomed territory of deflation. However, it's not clear to me that the large size of the central bank's balance sheet or its commitment to particular security or foreign exchange prices would make it any more difficult than normal to identify the needed actions, though to be sure the political process might complicate taking those actions.

A second class of problems involved in implementing nontraditional policies is the mixing of fiscal and monetary elements they often involve. Purchasing large amounts of long-term bonds or foreign currency assets exposes the central bank to

sizeable capital losses as the economy recovers. Buying domestic private securities could also involve credit risk, and perhaps a subsidy. Commonly, central banks try to avoid putting the taxpayers' money at risk. By leaving fiscal policy to the fiscal authorities, we hope that they will leave monetary policy to the monetary authorities. So this concern is not so easy to dismiss, in my view. At the very least, a central bank undertaking such operations would want an explicit understanding with the fiscal authorities about the risks being assumed and their potential consequences.

An aspect of this concern about mixing monetary and fiscal policy and about the balance-sheet consequences of some nontraditional policies is their effect on central bank independence. Conceptually, a weakened financial condition might undermine confidence in the central bank and also leave it dependent on the fiscal authorities for budgetary support. A key to whether this is a legitimate concern would seem to be the seigniorage franchise. A central bank with that franchise should have a steady stream of income, since most of its liabilities are interest free. This income flow should assure those looking at its financial condition, whatever the state of its balance sheet, except in the most extreme circumstances.

Additional concerns about independence arise because some nontraditional policies involve other parts of the government driving monetary policy in important ways: unsterilized intervention would be controlled by the Ministry of Finance here and the Treasury in the United States; the size of money-financed tax cuts would be controlled by the fiscal authorities. If such plans were implemented, an understanding that they were temporary and under what conditions they would end would be crucial.

For a number of reasons, then, to preserve independence over time and contain inflation, for many of these nontraditional policies, the central bank would seem to need to agree in advance with the other parts of the government about how they would end. As was noted yesterday, an inflation target has the potential to provide the needed framework for mutual understanding about the rationale and circumstances under which more normal procedures would be resumed. In practice, though, these policies may need to be stopped long before inflation or a projection of inflation two years or so in the future began to approach such a target, so political difficulties are unlikely to be entirely avoided.

The central bank also may be concerned that its effectiveness over time will be impaired by the perception that it has bowed to political pressure, even when its actions are in the best interest of the country, as Professor Cargill discussed. Obviously, if there is a clear consensus on the right course of action, pressure would not be necessary and the central bank would follow the agreed-on course. Uncomfortable situations arise, pressures are applied, and accusations about giving into those pressures are made, when disagreements exist. A central bank may need to decide when the national interest suggests that it risk spending some its independence and credibility coin through an easing action not all perceive to be warranted. Moreover, in the United States the most serious legislative threats to independence have come when policy was seen to be easing too slowly, rather than when it was tightened.

Another objection to nontraditional policies has been concern about the reputation of the central bank and confidence in its actions. The bank needs to be able to tell a reasonable, understandable, and credible story about why it is taking the actions it is.

Only this way will the “signaling” function described by Märten Blix operate effectively. Central banks don’t like to be seen rolling the dice with public policy. Especially if the *ex ante* story is not convincing, if the policy doesn’t work, the failure can feed back in the political sphere and on public confidence in future policies, perhaps undermining their effectiveness. I have some sympathy for this concern as well. On a much less important scale in the United States, we have faced a similar kind of situation with respect to margin requirements. A number of observers have been urging us to raise these requirements to stem speculation in the stock market and perhaps as a substitute for tightening. Theory and experience tell us that such an action, by itself, would be ineffective, and the Board has been unwilling to try something it doesn’t think will work. Clearly, the risk of trying a potentially unsuccessful strategy must be weighed against the depth of the problem being faced and the consequences if it might not work out without unusual actions. Situations with potentially serious adverse effects, like a prolonged recession, may merit taking large risks with the central bank’s reputation if other policies are not working.

The final class of concerns about nontraditional policies, or remaining at zero interest rates, is their effect on other objectives held by the central bank. John Taylor has demonstrated how the central bank can accomplish more than one thing at once, even with one policy instrument, provided the goals are compatible. A monetary authority following a Taylor rule achieves both its inflation target and stabilizes output around potential. But Taylor has also shown us that there are trade-offs. In response to some kinds of shocks, the more you dampen inflation variability the more output fluctuations you must accept.

To these standard macroeconomic objectives, the Bank of Japan seems often to have added others, which may be important to economic welfare, but which also can affect policy choices, including the willingness to try nontraditional policies. One such objective has seemed to be fiscal discipline. Policy makers have expressed concern that monetizing large volumes of debt will encourage the continuation of deficit spending. A second supplemental objective has appeared to be the restructuring of corporate businesses and business practices. Some policy makers seem to be concerned that maintaining very low interest rates will relieve pressures on firms to carry through on much-needed reforms which will make them and the Japanese economy more efficient and competitive. And a third goal has involved the sustainable level of asset prices. Concern about reflating the bubble may have played a role in restraining the pace of easing in the first half of the 1990s; worries about misleading investors about their risks of capital loss as rates rise is said to have been a factor behind the recent warnings that the zero rate policy may be near an end.

These are important goals, and ultimately compatible with, if not essential for, the best possible performance of the Japanese economy. The questions are whether monetary policy is the best way to pursue these goals and how they comport with the basic mission of the central bank. Although all these goals are complementary in the long run, pursuing them probably involves intermediate-term trade-offs in the form of greater output and inflation variability. Moreover, gauging these trade-offs is quite problematic, in part because it is difficult to assess how fiscal discipline, corporate restructuring, and asset prices respond to monetary policies.

I'd like to digress for a second to say a few additional words about the role of asset prices in monetary policy. Asset price movements inevitably have an important place in policy. Asset prices are examined for their information content; sudden, large movements in asset prices can be seen as having implications for financial stability and the distribution of possible economic outcomes; and past and projected future asset price movements have an important influence on forecasts. Still, central banks have generally resisted, for a variety of reasons, taking a view on the appropriate level of asset prices and allowing that view to affect policy instrument settings, concentrating on the effect of asset prices on overall macroeconomic balance. But the *Economist* magazine and various international financial organizations disagree. The Federal Reserve has been criticized not only for failing to tighten to prick a stock market bubble that is evident to everyone but the owners of equity, but also for—it is said—creating moral hazard over the last 13 years by leaning against asset price declines in trying to stabilize the economy. Tightening to prick or prevent a bubble or failing to respond judiciously to asset price declines would, in my view, be especially troublesome in a low-inflation economy, when it is important to ease promptly and forcefully against negative shocks. Moral hazard problems will work themselves out over time as asset prices adjust; central banks concerned about moral hazard could find themselves performing experiments in that zero-bound laboratory we'd all like to avoid.

In Japan right now, goals for policy in addition to variations in output and inflation would complicate an already very complex decision on when to abandon the zero rate policy. Formulating and implementing a strategy for this step would seem to be quite difficult with just macro imbalances in an objective function. The Bank has said that it will wait until the threat of deflation has passed. But the relationship between the output gap and prices in the last few years has been unusual; deflation has not gotten worse in spite of an apparent, large continuing output gap. Perhaps it shouldn't be surprising that in an unprecedentedly prolonged recession and deflation, historical relationships are breaking down. As a consequence, avoiding deflation alone may not ensure that the output gap will be closing, especially since such a closing will likely need to rely on impetus from private demand as fiscal policy retrenches.

In sum, I think the Bank of Japan has identified some longer-run problems associated with adopting nontraditional policies that many critics perhaps do not take sufficiently into account. But some of the problems identified are difficult to understand, and the Bank probably needs to do a more convincing job of explaining them.

Moreover, all interesting policy making is about choices and trade-offs. The question for any central bank that finds itself with its normal policy instrument as accommodative as possible is whether to take some additional risks with non-traditional policies—to discard the mantle of conservative central banker—and incur the possibility of long-run costs for the possibility of short- and intermediate-run gains. Obviously, such a decision depends on weighing the odds on realizing the costs and benefits, and on the potential seriousness of each. And steps may be available to reduce some of the legitimate longer-run concerns, though such steps may well require joint action with the other parts of the government. The same sorts of

calculations must go into deciding when to end the zero interest rate policy. None of these calculations are simple or obvious, and the Bank has helped by trying to define the issues in its public pronouncements and studies as well as at this conference.

I will end as I began; I'm glad I'm not a Japanese central banker, I thank them for the opportunity to contemplate some issues I hope we never have to face, but since I can't be sure, I also thank them for going first.

Yutaka Yamaguchi⁵
Bank of Japan

I. Introduction

One year and four months have passed since the Bank of Japan (BOJ) decided to reduce the key policy rate to zero—the first such decision in the 300-year history of central banking. The zero rate is the natural extension of extremely low rates that had preceded it, but I will talk primarily on our experiences under the zero rate. What follows is my “personal” account, because the BOJ is still maintaining the same policy and the Policy Board is in no mood to review it as something of the past yet.

II. Some Concerns at February 1999

Let me begin with the technical aspect by presenting a couple of operational concerns we had in mind when we decided on the zero interest rate.

The first was that the zero rate might hamper the proper functioning of money markets, where interest rates work as signals for resource allocation. In fact, it was because of this concern that, in the directive to the Open Market Operations Desk, the Policy Board explicitly instructed it to pay “due consideration to maintaining market function.”

The second concern was that the zero interest rate might invite a kind of moral hazard on the part of financial institutions, since their incentive to properly manage liquidity risk was likely to be weakened as a result of infusion of excess reserves day by day.

Of these two concerns, the first one turned out to be less serious than we expected. The size of the call money market was almost halved from ¥35 trillion at the beginning of February 1999 to the current ¥20 trillion. However, transactions did continue at the interest rate of two to three basis points, which is virtually zero net of transaction costs. At least so far, the basic market function has been maintained even under the virtually zero rate.

The moral hazard concern, on the other hand, became reality. Financial institutions quickly lost their incentive(s) to pursue prudent and efficient cash management. They started to think that “since the cost of holding excess reserve was negligible, why not

5. The views expressed are those of the author and do not necessarily reflect the official views of the Bank of Japan.

hold as much as possible when liquidity risk was envisioned at all.” A case in point was the occasion of the potential Y2K problem toward the end of 1999, when excess reserves reached ¥24.4 trillion, which amounted to six times the required reserves. Of course, this is a very rational reaction for financial institutions; it also illustrates the degree of flexibility inherent in the zero rate regime.

The technical problems above might have caused concern on the part of the director of the Financial Markets Department. However, my tentative conclusion so far is that the adverse impact of the zero interest rate has not been so large as to force us to reconsider it on the ground of either operational difficulty or moral hazard.

III. Experiences of the Zero Interest Rate

Following the decision on the zero rate on February 12, 1999, Governor Hayami made it clear on April 13 that the BOJ was committed to maintaining the zero rate “until deflationary concerns are dispelled.” This statement was received by the financial markets as a signal that the BOJ would continue the zero rate for a considerable period of time. Reflecting such market expectations, interest rates for term instruments declined rapidly, and the yield curve became extremely flat. At this point, we confirmed that the zero rate with future commitment had a powerful automatic easing effect when activity tended to soften.

In the meantime, in order to maintain the overnight call rate at effectively zero, the BOJ provided daily about ¥1 trillion excess reserves from late May 1999 onward. As the excess reserves stayed at around ¥1 trillion for several weeks, some market participants started to consider small changes in this excess amount as a signal indicating the future course of monetary policy. The Policy Board never gave specific instructions regarding the amount of excess reserves. The fact that excess reserves stayed at ¥1 trillion was a mere consequence of market operations to achieve and maintain the zero rate. We ourselves were surprised that such a technical aspect was emitting unintended and unfounded signals about policy intentions. At any rate, this was an indication of the market’s concern if the Bank was not moving toward some “quantitative easing.”

IV. What Did We Find under the Zero Interest Rate?

Next, let me turn to some of the findings by implementing the zero interest rate.

What has impressed me is that the easing effect of the zero interest rate is more powerful than we expected. At the initial stage, it effectively arrested the contractionary trend in the stock, bond, and exchange markets. The strength of the zero rate has partly to do with the then-prevailing extreme fragility of Japan’s financial system and markets, where liquidity was drying up. The banks with insufficient capital base were facing a serious liquidity shortage. The zero interest rate policy forcefully supplemented the effect of the public injection of capital by its strong liquidity effect. Any upward pressure on the overnight rate was contained even when such pressure was associated

with the liquidity demand at relatively weak institutions. Thus, in collaboration with capital injection, monetary policy succeeded in changing market expectations and mitigating deflationary pressures generated by the financial system. This was most clearly evidenced in the disappearance of the “Japan premium” by March 1999. In contrast, the “cost effect” of the 25-basis-point reduction in short-term interest rates was perhaps not very large by itself. Careful analysis to distinguish these cost, liquidity, and capital injection effects will have to be done in the future.

Another aspect of this policy is its flexible capacity to respond to any demand for reserves—as long as demand is there. I already mentioned the Y2K episode, when precautionary demand literally exploded but was easily accommodated by us. An important implication is that the zero regime would be able to accommodate the vast financing needs of the government if it chose to conduct what was much discussed today (i.e., unlimited currency market intervention).

Still another aspect that needs to be emphasized is the importance of our commitment to maintain the zero rate until the deflationary threat is behind us. Since the zero rate cannot be maintained without providing substantial excess reserves, it is a commitment for future ample quantity; which then is incorporated into the *present* yield curve; which in turn gives impetus to the *present* activity. If what is vaguely called “quantitative ease” intends to produce stimulus *today* by committing *future* growth of some quantitative variables, then the essential part of such effects might already be exploited by our current strategy. This commitment has served us well. Given this feature of the zero rate policy, it is small wonder that market participants increasingly questioned us to clearly define “deflationary concerns.”

Recently, the Economic Planning Agency identified April 1999 as the trough of the recession. It became increasingly clear from around the turn of the year that Japan’s economy was above water. Instead of the possibility of additional monetary easing, the focus of public interest is now on the timing of the termination of the zero interest rate.

V. Was the Zero Interest Rate Effective Enough?

Now I would like to touch upon the question of whether the zero interest rate was adequate. It has often been suggested that we pursue a more aggressive “quantitative easing” by expanding the monetary base further.

Let me first point out that, once short-term interest rates have come down to zero, it is not easy to expand the monetary base—that is, with “usual” operations in the money market. Cases such as the Y2K-related dates are exceptions; concerns about liquidity generated strong demand for short-term reserves. But demand was quite subdued on other days. In fact, undersubscription of the BOJ’s purchase offers has often been observable in the money market since the summer of 1999. Even though the BOJ is willing to provide additional funds at virtually zero interest rate, financial institutions do not show an appetite for them.

Suggestions have been made as to how we can circumvent this problem by going beyond the traditional tools of money market operations and taking measures

such as unlimited intervention in the foreign exchange market and massive outright purchase of long-term government bonds. Given considerable uncertainty or downside risk in the Japanese economy around spring 1999, that there were such voices was understandable. However, I personally could not agree to further monetary easing beyond the zero interest rate.

Among the long list of policy options, let me focus on the increase in the outright purchase of long-term government bonds, which are mostly recommended by domestic academia. I have mainly two reasons why this policy could not be agreeable. First, I thought that the suggested measures would inevitably have to become too large to have any meaningful effect; and second, they would mean an excessively extensive commitment with regard to future policy. Thus, their long-run impact and accompanying risks would be too great.

Any meaningful measure would have to be large in scale, because the present zero interest policy has already created a vast pool of money-like assets. As of end-March 2000, total outstanding short-term government securities (that is, the total of treasury bills and financing bills) amounted to ¥78 trillion. This exceeded the average monetary base during March 2000, which stood at ¥66 trillion. The zero interest rate policy converts these risk-free, short-term securities into almost perfect substitutes for the monetary base. In addition, the impact of this policy is automatically strengthened if some deflationary shock arises, by pushing back the expected timing of its termination and leading to a flatter yield curve.

Taking into account the sheer size of the monetary base and its substitutes, the question is whether we commit ourselves to continuous purchasing of bonds of a magnitude that vastly exceeds the size of the usual market operation in the money market. The immense scale of operation might (with uncertain time lags) succeed in altering market expectations; however, the risks involved would be considerable.

First there is a risk of committing ourselves to a large-scale operation in the existence of high uncertainty on economic outlook. With hindsight, it is now clear that the Japanese economy has been recovering since the beginning of 1999 more steadily than we had expected. The average private forecast at the end of 1998 for fiscal 1999 was that real GDP and consumer price index (CPI) inflation would both be slightly negative, and wholesale price index (WPI) inflation, which tends to reflect more sensitively the demand-supply gap, would be minus 2 percent. It turned out that CPI inflation was roughly in line with this forecast; however, the WPI became more or less stable as early as spring 1999, and real GDP growth slightly positive at 0.5 percent. The most notable difference between the forecast and the actual outcome was observed in the development of private investment, which started to recover against the majority view in the course of 1999. The desirability of intentionally creating inflation by large-scale operations and a very strong commitment concerning future policy should be assessed by taking due account of the possibility of an upside deviation even at the bottom of a deep recession.

The second risk is that a large-scale purchase of government bonds by the central bank might be incorporated into the formulation of fiscal policy stance, resulting in further deterioration of fiscal balance and potential upward pressure on long-term interest rates. Admittedly, the implication of central bank operation on budgetary

policy could differ depending on the climate in a particular country. I thought this was a real risk in this case.

If the central bank had to cope with a deflationary spiral as severe as the U.S. Great Depression, the reservations I presented would be of relatively minor importance. We have always said that if the risks to the economy clearly outweighed the costs, we would go to “unusual” policy measures. In fact, although the Japanese economy was in a difficult state in early 1999, it was by no means close to that of the Great Depression. Prices were more or less stable, the fiscal deficit was already very large, and there was rising concern in the market about the sustainability of the budgetary position. Aggressive and massive purchase of government bonds should be assessed in the light of economic reality.

VI. A Tentative Evaluation of the Zero Interest Rate Policy

In concluding my talk, let me make four brief impressionistic remarks, which are based on the experience of the zero interest rate.

First is the simple fact that deflation is more difficult to cope with than inflation. I have no disagreement with the argument that our policy should do its utmost to avoid a deflationary situation in the first place.

Second, the zero interest rate regime with future commitment has turned out to be more powerful than we originally thought. Its potential is worth further examination.

Third, if some further monetary easing is required in addition to the zero interest rate policy, it is not clear *a priori* which policy action would be most appropriate. The effects and risks of each option have to be examined in the light of the financial and economic conditions prevailing at the time. In this connection, it is my impression that the debate in academic circles tends to focus on the possible (positive) effects of further monetary easing, and does not seem to pay enough attention to the risks or to the (negative) side effects.

Finally, as we begin to think and discuss “what comes after the zero interest rate policy” (to borrow John Taylor’s phrase), we are revisiting a series of issues on prices and inflation. We find many puzzles there. A major puzzle relevant to the context of this conference is the seemingly inconsistent behavior of prices vis-à-vis growth or output gap. In 1999, the CPI held up fairly well in the face of the large and moderately widening output gap. In 2000, growth is coming back, the output gap is beginning to shrink, and profit is rising—with CPI moderately falling.

My own feeling is as follows:

- (1) Some reference to price or inflation would perhaps be constructive.
- (2) However, given the ongoing performance of our economy, further study is necessary before arriving at a conclusion whether to present a specific number, be it a target, forecast, or staff projection.

We will focus more on these issues in the coming weeks.

Allan H. Meltzer
Carnegie Mellon University, and the American Enterprise Institute

I will use my few minutes to comment on the main issues at this conference. It is an easy conference to summarize, because with a few exceptions the papers fall into two broad groups and the issues have been sharply drawn.

I can only echo Don Kohn (and others who expressed the view privately) that the Bank has shown a commendable openness in having this discussion. The Bank was not obliged to hear the views of its critics. It could have chosen a different topic. Nor was it surprised by the views it heard.

I particularly want to express my appreciation to Deputy Governor Yamaguchi both for his courtesy and for the attention he gave to these issues. This may come as a greater surprise to many of you than to me. For me, it is one of many examples—albeit an outstanding example—of the openness and willingness to consider other views that I have experienced repeatedly in the nearly 16 years since Mr. Taguchi and several colleagues from the Institute for Monetary and Economic Studies first met my wife and me on our arrival in December 1984.

I would like, as well, to thank the Bank of Japan and the organizers, Dr. Okina and his staff, for their traditional, perfect hospitality. It would be an error if I said that this is a nontraditional way to increase the monetary base, because outstanding hospitality is a tradition of the Bank. I know I speak for everyone when I express appreciation for your generous, traditional hospitality.

I want to take a few minutes to respond to the principal arguments made by the Bank against what are called *untraditional* policies. The policies that are called *traditional* would be better described as “low-risk” policies. The history of central banking gives no support to the idea that a central bank buys only very short-term Treasury bills. I cannot speak for all countries, but in the United States short-term Treasury bills became a regular instrument of government finance only in the 1930s.

Open market operations as a means of influencing the money market did not begin until the 1920s. I venture a guess that, during its first 50 years, the Bank of Japan did not operate principally by buying government bills. I know for certain that in the 1950s the issue of whether the Federal Reserve should operate a “bills only” policy—that was what it was called—had not been settled.

What did a traditional central bank buy? It bought bills of exchange, commercial paper, gold, and foreign exchange. It helped to finance its government in wartime. The Bank of England was founded for that purpose. The Bank of France made “*avances provisoire*” to its government many times and then forgave the obligation when its charter was renewed. And I expect the same was true elsewhere.

The great, classic book on central banking, *Lombard Street* by Walter Bagehot, discusses what a central bank should buy in a period of distress or crisis. I cannot quote precisely, but Bagehot quotes the Governor of the Bank of England’s description of what they bought. After listing Exchequer bills and commercial paper, he adds that they took in securities of types that they had never known heretofore. Clearly, Bagehot believed that a central bank should take risk when required to meet the needs of the country. Bagehot warned against a policy of protecting the central banks’ reserves.

Let me try to connect this bit of history and tradition to a larger issue than the issue of tradition. A central issue that divides many of us at this conference is the type of risk and extent of risk that a central bank should undertake.

This difference comes out most clearly, on one side, in the comments by Deputy Governor Yamaguchi, the papers by Oda and Okina, and by Mori, Shiratsuka, and Taguchi, but it is present also in the opening comments by Governor Hayami in his references to preemptive actions by the Bank of Japan. These papers point to the risks to the central bank from more aggressive actions and use of currently less conventional instruments.

On the other side are papers by Taylor, Goodfriend, Svensson, and Cargill that suggest in one way or another that the Bank of Japan should be bolder, either by buying assets other than short-term bills or in announcing targets for the inflation rate or the price level. Even the very abstract Hansen-Sargent paper should be looked at as a formal way of clarifying this issue.

My position on the issue is well known to the conference participants and to the Bank. I will not repeat it. Instead, I would like to spend a few minutes on an issue that has not been discussed.

The reason we have central banks is that a central bank supplies public goods. One of those public goods is managing risks that can be avoided by collective action. The central banker must be willing to lend when the market closes in a liquidity crisis. It should contract, raising interest rates, when the demand for credit threatens to produce excess money growth. These are only two examples of public goods. Providing a secure, stable currency and payments system are others.

Because these are collective problems that profit-maximizing bankers cannot be counted on to resolve properly, central banks are no longer private institutions as many once were. Because there is conflict between political expediency and proper decisions, central banks in many countries are independent of immediate political pressures—so-called central bank independence.

This peculiar structure gives central bankers a special responsibility to use an objective function that does not minimize the risk to the bank. Their objective should be to reduce risks to society to the minimum inherent in nature and trading practices.

Let me illustrate that role in a specific context. Everyone here is familiar with the Asian crisis. Although problems remain in several Asian economies, the worst of the crisis is over.

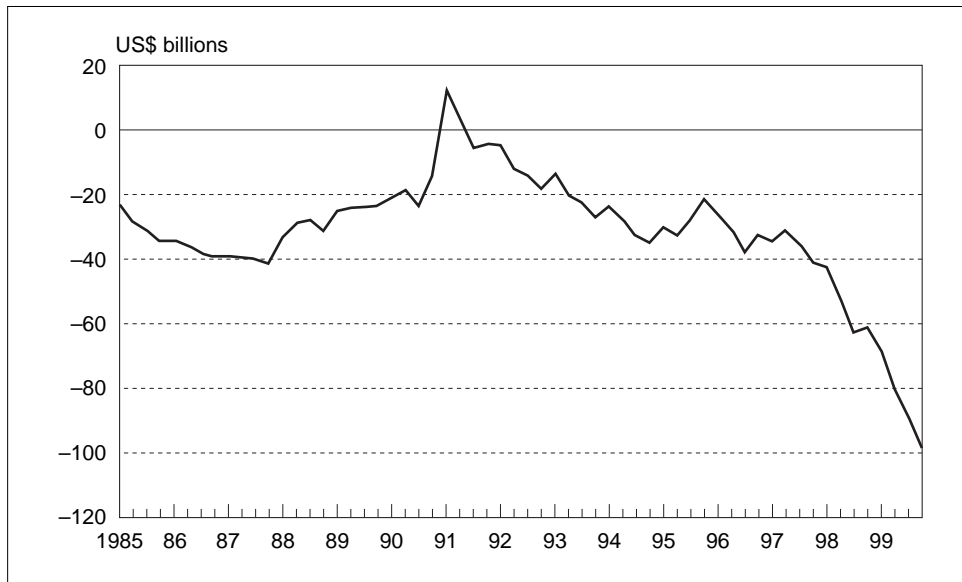
The figure I distributed showing the U.S. current account deficit (Figure 1) shows quarterly values of the deficit. Multiply the left scale by four to get annual rates. The chart tells a simple story. The Federal Reserve expanded the U.S. economy, and by doing so, the United States did two things.

- (1) It absorbed additional net imports (about US\$250 billion).
- (2) It attracted capital, mainly from private investors.

It did this while allowing exchange rates to appreciate despite several reductions in interest rates.

One can quarrel with the details, with the size of the domestic expansion and with the long delay before the policy began to reverse. Qualitatively, it was the proper response. Imagine how different the outcome would have been if the Federal Reserve

Figure 1 U.S. Balance of Payments, 1985/I–1999/IV, Quarterly Data



had not acted. Its actions in 1998 should be contrasted with the experience in 1929–33 that Tom Cargill discussed yesterday.

The Federal Reserve supplied a public good to the world economy. As the discussion this morning noted, and as Tiff Macklem brought out, the reason was mainly domestic. There, too, it did not ask: What is the risk to the Federal Reserve? It asked instead: What is the risk to the U.S. financial system and the U.S. economy?

The results of those actions must now be unwound. The U.S. current account deficit at 4 percent of GDP (and approximately 4 percent of total world exports) is unsustainable. As my late American Enterprise Institute colleague Herbert Stein often said, “Unsustainable events end.”

Perhaps the problem will go away. Perhaps the flow of capital to the United States will decline at the same rate that the United States reduces its (net) imports from the rest of the world. But even in this optimistic case, what replaces exports to the United States in the aggregate demand of the Asian countries? What maintains the Asian countries’ expansion?

By expanding, Japan would make a contribution to its own economy, to the Asian region, and to the world, as Lars Svensson argued so clearly earlier. But neither he nor I urge that this be done as a public service to Asia. Expansion in Japan would

- (1) raise asset prices, including real estate prices;
- (2) thereby improve the balance sheets of banks, corporations, and households;
- (3) increase domestic demand;
- (4) end the costly deflation of wages and prices; and
- (5) reduce the excessive reliance on government spending and debt.

This is an argument for considering the benefits as well as the costs.

Two years ago, and several times before, I tried and failed to convince the Bank that the opposite of currency depreciation is deflation. Depreciation may have a

short-run cost to your neighbors and trading partners, but so does slow growth and deflation in Japan.

Finally, let me turn to the question hinted at in several statements—that the Bank of Japan will end its zero interest rate policy. Higher interest rates would force more deflation. It is right to think about what comes next; it is costly to act prematurely.

I agree with Deputy Governor Yamaguchi when he points out that the Bank of Japan took bold action when it stopped the rush to currency after financial failures in late 1997 and when it took the overnight interest rate to zero. The latter is bold not only because no one has done that since the Federal Reserve in the 1930s but because the effects on the money market and reserve holding were unknown. But deflation has continued, so zero is not low enough. Deflation means that the public wants more real balances than you have supplied. It gains them at heavy cost by forcing deflation. It is in everyone's interest, especially yours, to end the deflation.

John B. Taylor
Stanford University

I. Introduction

I want to thank the Bank of Japan for inviting me to participate in this panel with distinguished monetary policy makers from Japan, Europe, and the United States. I do so with humility. Monetary policy makers have to make very difficult decisions that affect people's lives. They make these decisions in real time and in an environment where many noneconomic issues—sometimes political or bureaucratic—come into play. In contrast, I'm just an economic advisor. But in that role I feel that I have a responsibility to try to separate out political, bureaucratic, and other noneconomic issues, and to give straight economic advice. Sometimes straight economic advice may sound too straightforward, but I think that's the most helpful thing I should do under the circumstances.

I want to briefly mention four points that have been touched on by the policy makers on this panel and have been discussed during the conference as well. First, the importance of the major countries having common targets for inflation and price stability goals; second, the role of the output gap in monetary policy decisions and output; third, the use of monetary aggregates in policy analysis, and; fourth, the zero interest rate policy.

II. Common Inflation Targets

The policy makers on this panel are from central banks responsible for the three largest single currency areas of the world, representing about two-thirds of world GDP. That is a huge amount of responsibility. Thus, this panel gives us an opportunity to think a little bit about the relationship between the countries' monetary policies. There has been much discussion in the sessions at this conference about the

advantages of a country having a target for inflation. When you consider exchange rates and currency movements between countries, I think there are additional advantages to having a common target for inflation, especially in the three largest currency areas in the world.

The European Central Bank (ECB) has indicated that an inflation rate somewhere around 1 percent or 2 percent is a reasonable goal; let me assume for the sake of argument that it is simply 2 percent. The Federal Reserve System has no explicit number announced, although some members of the Federal Open Market Committee have suggested that 2 percent is a reasonable goal. The notion that the inflation rate should be low enough that it does not interfere with individual consumer and business decision-making has also come to be interpreted as something near 2 percent. Taking account of errors in measuring inflation also suggests that 2 percent might be close to a reasonable definition of price stability.

In any case, taking these inflation target values as given, it seems to me that it would be good if Japan, as the third large country, has a target for the inflation rate near these values. That, of course, is well above the negative inflation recently experienced in Japan, almost three percentage points above, so it would be a big difference.

I think it would be best if central banks could be explicit about such targets, but I don't think, based on the discussion I've heard at this conference, that we know exactly what "framework" should go along with the statement about that goal for inflation. The comments at the conference about being explicit, transparent, and rule-like make a lot of sense. The important thing is to have a goal for price stability; although the frameworks are different, that seems to be about 2 percent in the United States and Europe.

If such a goal for all three regions were to become credible, you wouldn't see this constant expectation of appreciation of the yen, which, as I discussed in my opening address at the conference, seems to have persisted for a very long time. Assuming that price measures don't differ too much between countries, with similar inflation targets, the currencies would not be expected to change much over time. Of course, the exchange rate would move around; but you would not have the constant appreciation pressure on the Japanese exchange rate or the constant deflationary pressure on Japanese price levels.

Another advantage of a common inflation target is that countries in the rest of the world, in deciding whether to have currency boards or other kinds of fixed exchange rate systems, would not have to worry so much about which major currency to peg to. So it seems to me that a common policy toward price stability and inflation has huge long-term benefits for the world economy; and in the shorter run, it would directly benefit the Japanese economy as well.

III. Uncertainty and the Output Gap

The second thing I want to discuss is the role of the output gap, or what some at the Fed have been referring to as the gap between aggregate demand and potential output. The output gap has been explicitly mentioned in the conference a number of

times. Governor Hayami alluded to it, and talked about it as a factor determining how long the zero interest rate policy should last. Don Kohn mentioned the output gap in his remarks also as a factor in the zero interest rate policy. Marvin Goodfriend emphasized the role of the output gap in preemptive strikes. There was also the discussion of the late 1980s in Japan; several people at the conference thought that the interest rate movements were not timely enough; they referred to the evidence that there was a large output (positive) gap (at least from our current vantage point).

The problem with the output gap, of course, is that it is very uncertain. But in my view, this uncertainty does not mean policy makers should ignore the gap. It probably does mean that the reaction coefficient should be a little smaller than it otherwise would be. Frank Smets of the ECB showed this in a widely cited paper several years ago. In Lars Hansen's paper at this conference, the uncertainty (in the sense that we do not know the model) would raise the coefficient; that is, it would raise the general reaction to the gap between aggregate demand and potential GDP. I think there are still some questions about how uncertainty affects the reaction coefficient. The most important thing is to get the best estimate possible for the gap. That means getting a good estimate for potential GDP.

IV. The Role of Monetary Aggregates

The third thing I want to mention is the use of quantitative measures of monetary policy—or the monetary aggregates. I think it is fair to say that during the two days of the conference, the two keynote speakers did not convince many people at the conference about the importance of money growth, whether it's M2+CDs or the monetary base, in Japan in the current situation or recent years. Maybe we should try to do a better job! But I want to come back to that, because I still think that the monetary aggregates are very relevant when the interest rate is zero. Let me give some numbers of what I would like to have seen in terms of M2+CD growth. Again, take the 2 percent inflation goal as the measure of price stability; suppose that potential GDP growth is 3 percent, which I don't think is unreasonable; suppose that velocity grows around 2 or 3 percent. Then, I suggest that M2+CD growth should be in the 7 to 8 percent range, somewhat less than the latter part of the 1980s but much higher than the 1990s in Japan. I would be very surprised if M2+CD numbers like that were sustained for a number of years and we did not see a much healthier Japanese economy.

Deputy Governor Yamaguchi makes some very good points about the difficulty of achieving that kind of quantitative policy target, and his remarks force one to think carefully about the operation of the money market at zero interest rates. One problem that he pointed out is that it's very hard to provide more high-powered money at the zero interest rate. For example, the offers for reserves (buying treasury bills) appear to be undersubscribed. But even in this case, there are other ways to provide more liquidity by buying other securities. That's why I think buying some foreign exchange is a reasonable thing to do. Another point made by Deputy Governor Yamaguchi is that with the zero interest rate you might want to think of

the treasury bills as part of the money supply, to add that back in. Note that, if in fact the zero interest rate policy is truncated in the near future, both of those arguments will no longer be valid.

V. The Zero Interest Rate Policy: An Emergency Measure or an Extension?

The fourth thing I want to touch on is the zero interest rate policy. We have learned a lot about that policy at this conference, and I've learned even more from listening to Deputy Governor Yamaguchi in the last few minutes at this panel. I think it's useful to think about the zero interest rate policy in two alternative ways. One is that it's an *emergency measure* to deal with a crisis situation in Japan the last couple of years. In that sense, two or three basis points is something really special, a quantum jump down compared with 10 or 15 basis points. The other way to think about it, which is more natural to me, and the way I had thought about it before the conference, is that it really is an extension of a policy that lowers interest rates as inflation comes down or as the output gap output declines. The extension occurs when the interest rate settings would otherwise go negative. But since the interest rate cannot go negative, you set the interest rate at zero.

If you think about the policy this way, the settings for the interest rates that now come out of any reasonable benchmark monetary policy rule are still quite negative. I think the figures in my keynote address show this. Japan is now below the zero interest rate line. On the other side of the line, you start to raise the interest rate above zero. So that line is kind of like the transition between the zero interest rate policy and a non-zero interest rate policy. As I understand the situation in Japan now, the output gap is at least 5 percent (negative) and there is still some deflation. Thus, we are quite far away from a situation of raising interest rates, if you view the policy in this extended way.

But if you think about the zero interest rate policy as an emergency measure, something special, then there is something much different about two basis points than 20 basis points; a quantum change rather than a continuum. But even then I think the change to a new (non-zero) interest rate policy has to be done in a way that clearly conveys policy intentions in the future. For example, suppose it is a "20 basis point" interest rate policy. Then it should be made clear that the 20-basis-point interest rate policy will continue until inflationary concerns are dispelled. It may sound a little unusual to think about the policy that way, but I think that would prevent the tightening at the long end that Allan Meltzer expressed concerns about in his remarks.