

**Monetary Policy in Japan:
Problems and Solutions***

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Introduction

The Japanese economy has been underperforming for more than a decade. The average growth rate of real GDP over the past 12 years has been just above 1 percent, and the nominal GDP has been shrinking since 1997 due to deflation. Nominal GDP for 2003 is 4 percent below what it was in 1997. In order to stimulate the stagnant economy, the government has cut taxes and increased expenditures. As a result the government debt/GDP ratio has risen to 150 percent, an unprecedented level for an advanced country in peacetime. The CPI has been declining since 1998, while the GDP deflator has been declining since 1995. Stock prices and land prices have been declining for the decade, with the Nikkei 225 index going down in the Spring of 2003 to a low below 8,000, one-fifth of the peak at the end of 1989. There is no doubt that the economy is in deflation. Important questions about the deflation are how much deflation is due to demand factors and how much to supply factors; and whether deflation is a result of stagnant economy or a cause of the stagnation.

The conduct of monetary policy by the Bank of Japan in the deflationary environment has been a source of the controversy for the last several years. Inflation or deflation is, in the long-run, ultimately a monetary phenomenon. In theory, when the growth rate is below potential and the prices are dropping, monetary policy should be eased without hesitation. This paper will review theoretical and practical issues surrounding the controversy will be reviewed. The paper is organized as follows. The first section will raise the issues on monetary policy during the deflationary period, 1998-2003. It will summarize and analyze the debate between critics of the Bank of Japan and defenders of the Bank of Japan. The second section will discuss possible solutions to the deflationary environment in Japan. A final section will contain concluding remarks.

1. Monetary Policy to Combat Deflation

1.1 Deflation

Figure 1.1 shows deflation measured by CPI and GDP deflator. Both measures move in parallel until the mid-1990s. They are adjusted to take out the temporary impacts of consumption tax rate increases in April 1989 and April 1997, so that the inflation rate shown in the graph is different from those shown elsewhere in the literature.¹ After that, the inflation rate measure by the GDP deflator has moved lower than the CPI inflation rate.

Although the CPI has been declining since 1998 (since 1995 for the GDP deflator), deflation worsened from 2001 to 2003, and the speed of deflation was about 1 percent for the CPI measure and more than 2 percent for the GDP deflator in 2003. Although 1 to 3 percent deflation may not be serious for a short period, the cumulative effects are due to the prolonged deflation. At the end of 2003, the level of CPI was about 4 percent lower than the peak in 1998, and the level of GDP deflator was about 10 percent lower than the peak in 1994. The magnitude of cumulative deflation has been becoming larger, and the concern about its effect has been voiced more frequently than before.

The reasons and possible cures for disinflation and deflation in Japan are controversial. In the beginning stage of deflation, from 1997 to 1999, some economists in Japan argued that deflation may be good for consumers and even for the macroeconomy. Advocates of good deflation theory cited that disinflation was a worldwide, supply-side phenomenon. Technological advances, especially in the information and communication technology (ICT) sector, have driven down prices

¹ To eliminate the effects of consumption tax rate increases (0% to 3% in April 1989; and 3% to 5% in April 1997), the following adjustment is applied. Inflation rate of CPI excluding fresh food are downward adjusted by 1.9 percentage point from 1989:II to 1990:I; and by 1.6 percentage point from 1997:II to 1998:I; and inflation rate of GDP deflator are downward adjusted by 1.4 percentage point from 1989:II to 1990:I and 1.3 percentage point from 1997:II to 1998:I. These amounts are inferred as the gap that would make the inflation rate of the quarter after the tax rate increase equalized to that of the quarter just before the tax rate increase.

in not only in the ICT sector but in other sectors through the use of cheaper ICT goods. For example, Governor Hayami repeatedly mentioned that price declines due to technological innovations and their use in the distribution sector is good for consumers.²

The New Economy argument in the United States provides an explanation for the combination of high economic growth without inflation. This argument has been used to support the view that deflation was the result of a beneficial supply-side effect. In addition, they cite the competitive pressures from China as a source of deflation. Moreover, the advocates of good deflation have argued that lowering prices would benefit consumers as their real income would grow. They also cited that Japanese consumer prices had been higher than those in comparable large cities in the world, so that declining prices were a natural process.

However, most economists regard the good-deflation view as inconsistent with economic theory. First, the good deflation argument citing the ICT revolution mistakenly generalizes the need for relative price changes among sectoral prices to macroeconomic inflation/deflation. It is true that innovation would bring down prices of ICT goods, but that is relative to all other goods. The average price of all goods and services can go up or down depending on all other economic factors, including monetary policy and household income. Second, if supply expansion was a major cause for the prices to decline, output should be expanding too. A shift of the aggregate supply curve to the right should cause prices to decline and output to rise. Therefore, the price decline should be accompanied by output expansion. This was clearly not the case in Japan. The average growth rate between in the past ten years was barely above 1 percent, much below the potential growth rate.

² “Though it is true that prices of a number of products have been declining, this is against the backdrop of various revolutionary changes including the so-called IT revolution, that is, the progress of technological innovation in information and telecommunications, as well as the revolution in distribution networks represented by the emergence of so-called "category killers." Such phenomena cannot necessarily be regarded as pernicious price declines.” (Speech given by Masaru Hayami, Governor of the Bank of Japan, to the Research Institute of Japan in Tokyo on March 21, 2000)

Figure 1.2 shows the relationship between the growth rate (defined by the change in quarterly GDP over the preceding four quarters) and the inflation rate (defined by the change in the GDP deflator over the preceding four quarters). In view of sticky responses of the prices to demand-supply conditions, the growth rate is lagged by four quarters. In other words, we assume that the growth rate of last year affects the prices of this year. The figure clearly shows the positive relationship between the growth rate and the inflation rate (a variant of the Phillips curve). Thus, the decline in growth is associated with deflation. This suggests that deflation is due to declining demand.

ICT effects may explain the productivity increase in the United States, but the comparable effects were not observed in Japan or in Europe. Productivity increases were not observed in the ICT industry, but also in other industries, unlike in the United States. Some rigidity in labor markets (layoffs are very difficult) in Japan may explain why ICT has not been widely employed to reduce costs and increase productivity in various industries. Imports from China explain only 2 to 3 percent of GDP and they alone cannot have a large impact on the GDP deflator to Japan. Moreover, these global impacts of ICT and Chinese imports are as important in the United States as in Japan, but the United States has not fallen into deflation.

1.2. Potential vs. Actual GDP

After examining both sides of arguments on whether deflation was due to insufficient demand or ever-expanding supply, our view is that it was the demand side that was more responsible for deflation and stagnation. **Figure 1.3** shows the yearly growth rate from 1973 to 2003. The average growth rate from 1973 to 1992 was about 4%, while the average growth rate from 1993 to 2003 was 1.2%. If one thinks that the trend growth rate reflects the supply side, then one concludes that the Japanese productivity suddenly declined sharply. Another possibility is that demand is

lower than otherwise, and the economy was not achieving its potential after the 1990s.

Economic common sense would lead to an educated guess that the US boom with high growth rates and disinflation was driven by the ICT industries, while the Japanese stagnation with deflation was more due to a lack of aggregate demand.

The Japanese economy measured by nominal GDP in 2003 is about 4% smaller than the peak of 520 trillion yen that was achieved in 1997. A shrinking economy results in problems in many aspects of macroeconomy. Tax revenues will decrease more than proportionately due to the nominally fixed tax brackets. The real burden of nominally-contracted debts will increase, so that major debtors in the economy, the government and corporations suffer from the ever-increasing real debt. As a consequence, deflation has caused a severe strain on the macroeconomy. Just to illustrate the point, suppose that nominal GDP in Japan had grown at 3% since 1997, the hypothetical economy in 2003 would have been 25% larger in nominal terms than the actual economy. Tax revenues would have been higher, corporate profits would have been higher, and nonperforming loans would have been lower.

1.3. Zero Interest Rate Policy and Monetary Policy

The nominal interest rate cannot become negative, because at a negative interest rate cash would dominate holdings of any debt instrument. Zero percent is thus a lower bound for the interest rate.³ When the rate of deflation rises, then the real interest rate, that is the difference between the nominal interest rate and the inflation rate, rises. The worse deflation becomes, the higher is the real interest rate, thus leading to an unintended tightening of monetary policy.

A higher real interest rate and expectation of future deflation discouraged investment and

³ Interest rates on extremely liquid debt instruments like Treasury bills can actually go very slightly negative because they may have liquidity advantages over cash. Indeed this actually happened in Japan in November 1998 when the interest rate on 6-month Treasury bills had an interest rate of -0.004 percent. However, for all practical purposes, the floor for interest rates is zero.

consumption in Japan. Lower aggregate demand widened the GDP gap, contributing to lowering prices. This is the first part of a deflationary spiral. Since the nominal interest rate cannot be lowered below zero, the traditional monetary policy instrument, that is, the short-term interest rate, loses its effectiveness in combating the deflationary spiral. In textbooks, this situation is described as a liquidity trap, but we prefer to refer to it as a deflationary trap, because we do not take the view, as will be clear below, that monetary policy, particularly of the nonconventional variety, is ineffective in this situation, as it is in the liquidity trap of the conventional Keynesian model.

Another part of a deflationary cycle that operates through the real burden of the debt is also important. Most debt contracts—bonds, bank loans, mortgages, for example—are contracts with nominal payments (denominated in a fixed amount of yen). Therefore, if the actual inflation rate turned out to be lower than the expected inflation rate at the time of the contract, then debtors have a windfall loss, since the real burden of the debt has increased. Although there is no precise measure of expected inflation, an educated guess suggests that from 1992 to 2003, the inflation rate continuously turned out to be lower than the expected inflation rate generated three or more years earlier. Debtors continuously suffered unexpected real burdens—lower rents, dividends, sales, or income to pay for the debts. Some went bankrupt due to deflation. The process is commonly known as debt deflation (Fisher, 1933).

Conventional monetary policy, using short-term interest rates as the policy instrument, is not effective in combating the deflationary cycle and debt deflation after the short-term interest rate has reached zero because the policy instrument cannot be lowered further. Should the central bank just watch things deteriorate in the cyclical process and hope that improvement in the economy occurs as a result of positive external shocks? Or should the central bank use tools that are beyond conventional policy instruments to get the economy out of a deflationary cycle? What are the probability of success and risk in employing unconventional policy tools? These are the

questions that have been hotly debated from 1998 to now.

1.4. Monetary policy of the Hayami regime, 1998-2003

When the newly independent Bank of Japan started in April 1998, hopes were high in that the Bank of Japan would improve its performance and return to what had been viewed as successful monetary policy in the preceding two decades. However, after five years under the Hayami regime, the Bank of Japan has lost credibility and suffered a serious confidence problem. What happened? The short answers to these questions are two-fold. First, the Policy Board members, led by Governor Hayami, misjudged the economic conditions, maybe because they were too eager to go back to the “normal” situation where the interest rate is positive. The interest rate hike in August 2000 was a clear mistake of this kind. Second, the Governor and fellow Board members took independence literally and refused to cooperate with the Government when the economic conditions called for such cooperation. Since independence and early establishment of credibility were considered so important, policy actions became conservative, timid, and tentative. Cargill, Hutchison, and Ito (2000: p. 173) called this the “independence trap.” Even when policy was finally directed toward quantitative easing, this policy was not explained adequately, especially because the Bank of Japan claimed that it was likely to be ineffective. Therefore the general public viewed the Bank of Japan as adopting a policy that the Bank did not believe in. That was hardly a good way of communicating with the market. (This point will be elaborated below in section 1.6.)

The old Bank of Japan, under the 1942 Law, was supposed to pursue monetary policy in order to maximize economic potential (not price stability), and the Governor could be replaced by the Minister of Finance, if the Governor did not follow the government instructions.⁴ A lack of

⁴ The 1942 Law specified that the Bank of Japan conducts its operation “in order that the general economic activities of the nation might adequately be enhanced” (Article 1). The objective of the Bank of Japan was “for achievement of national aims” (Article 2). These wordings should be

independence is often cited as a cause for an unusually high inflation rate, about 30%, in 1973-74, in the wake of the first oil crisis. After the inflation of 1973-74, the Bank of Japan had conducted prudent monetary policy, achieving a gradual decline in the inflation rate. Cargill, Hutchison, and Ito (1997; Chapter 8) have praised the conduct of the Bank of Japan, achieving a de facto independence based on reputation. Japan was known to have been an “outlier” in the relationship between the legal independence index and the historical inflation rate.

The new law, the Bank of Japan Law of 1998, guaranteed the independence of the Bank of Japan in its policy making and Board member appointments.⁵ The law became effective on April 1, 1998. Mr. Hayami was appointed as Governor, and Mr. Yamaguchi and Mr. Fujiwara two deputy governors. Two policy board members were carried over from the old law regime, but four new members were appointed in April 1998 to replace the old members and vacancy. Mr. Hayami, age 72 at the time of new Governor appointment, left the Bank of Japan, after serving for 34 years on the international side of the Bank, in 1981 (17 years earlier) to go to a general trading company. After serving as President and Chairman of the trading company, he had retired from the company for several years, until he returned to the Bank of Japan as Governor. Deputy Governor Yamaguchi had climbed up the ladder in the Bank of Japan, with a reputation for his knowledge about the core business of central banking. Deputy Governor Fujiwara was former journalist. Governor Hayami was brought back to the top position, partly because he was considered to be incorruptible in the wake of a scandal at the Bank of Japan.⁶

understood in the context of the war when the bill was passed. See Cargill, Hutchison, and Ito (2000: chapter 4) for detailed comparison of the old and new Bank of Japan Laws.

⁵ The 1998 Law specifies two pillars, “the pursuit of price stability, contributing to the sound development of the national economy (Article 2),” and “maintenance of an orderly financial system (Article 1).” The absence of mentioning full employment, economic growth, or exchange rate objectives suggests that price stability is the primary objective. Financial system stability is a shared responsibility with government.

⁶ Many Bank officials were implicated for inappropriate behavior of dining and golfing with private-sector people. The scandal hit the media particularly hard in the first three months of 1997. High salaries, high severance pay and large company housing were also became a target of criticism.

The Japanese economy in the spring of 1998 was in the process of falling into a serious recession and financial instability. In November 1997, financial instability became prominent: a large and a small bank, a large securities firm, and a medium-size securities firm all failed, and credit lines among the Japanese financial institutions, and between western financial institutions and Japanese financial institutions became severely limited. The Asian financial crisis was spreading from Thailand to Indonesia, to Korea, and to the region in general. Demand was falling and it was clear that the economy was heading into a recession.⁷ The overnight call rate, the market rate corresponding to the Federal Funds rate in the United States, at the time was about 0.4-0.5%. This stance was maintained until September 9, 1998, when the target of the call rate was reduced to 0.25%.⁸ By that time, the decline in economic activity became clearer – the instability of the Japanese financial system became acute as the Long-term Credit Bank teetered on bankruptcy; bills to strengthen the financial system were debated in the Diet; and the international financial system was shaken by the de facto default of the Russian debts in August.⁹

Another major step was taken in February 12, 1999. The Board decided to lower the

One Bank official was arrested for taking bribes in return for leaking information to a securities firm. Governor Matsushita and, Deputy Governor Fukui (who returned as Governor five years later) resigned to take responsibility in March 1998, days before the new BOJ law took effect. The official who took bribes was dismissed from the Bank on April 3, 1998.

⁷ In the spring of 1998, it was announced that the economy had just experienced the two-consecutive quarters of negative growth rates: -0.7% in 1997:IV and -0.3% in 1998:I. The currently available new SNA93 (System of National Accounts, following a United Nations recommendation of 1993) (<http://www.esri.cao.go.jp/jp/sna/qe034-2/gdemenuja.html>) does not show this: +0.7% in 1997:IV and -1.0% in 1998:I. The difference is due to the differences in the base year, the estimation methods, and the seasonal adjustment method. The point is that the Bank of Japan and the government should have had a more negative assessment of the economy at the time of Spring 1998.

⁸ “The Policy Board determined to further ease the stance of money market operations for the inter-meeting period ahead as follows: The Bank of Japan will encourage the uncollateralized overnight call rate to move on average around 0.25%. (Bank of Japan, Announcement of Decisions, September 9, 1998).

⁹ Some speculate that there was also implicit political pressure from the meeting between the Finance Minister of Japan and the US Treasury secretary on September 4.

overnight call rate as low as possible, with an immediate action to lower it to 0.15%.¹⁰ This is the beginning of the so-called zero interest rate policy (ZIRP). It was clear that the economy was in a very weak state. At the time, the GDP growth rate was thought to have shrunk for five consecutive quarters since 1997:IV.¹¹

After ZIRP was adopted, the Board members were divided into three groups, according to the disclosed minutes. Ms. Shinotsuka, who opposed adopting ZIRP, thought that the interest rate should be raised, partly to help pensioners. Mr. Nakahara, who had proposed lowering the interest rate more aggressively than other members before February, frequently put forward a motion to adopt quantitative easing and inflation targeting, as actions beyond ZIRP. Both proposals were voted down. The majority did not adopt any further actions between February and September.

Since the economy was not responding to the low interest rate, the government and business sectors began to press the Bank of Japan to adopt more aggressive quantitative easing. Just before the September 21, 1999 meeting of the Policy Board, speculations were abundant in press predicting that the Policy Board would adopt some sort of quantitative easing, possibly non-sterilized intervention in the foreign exchange market in cooperation with the Ministry of Finance. The market regarded that non-sterilized intervention to be a signal that the Bank of Japan would fight deflation with unconventional measures. The markets also focused on whether the Bank of Japan would increase the amount of money market liquidity on the day that was two days

¹⁰ “The Bank of Japan will provide more ample funds and encourage the uncollateralized overnight call rate to move as low as possible. To avoid excessive volatility in the short-term financial markets, the Bank of Japan will, by paying due consideration to maintaining market function, initially aim to guide the above call rate to move around 0.15%, and subsequently induce further decline in view of the market developments.” (Bank of Japan, Announcement of Decisions, February 12, 1999)

¹¹ At the time of spring 1999, the growth rates of five quarters from 1997:IV through 1998:IV were estimated as negative. The current (spring of 2004) estimates for the same period are 0.7, -1.0, -1.1, 0.8 and 0.1. The reasons for the difference are explained in the earlier footnote.

after the intervention (settlement).

The Policy Board reacted strongly to this speculation in the press. The Board issued the statement, in addition to a brief announcement of the monetary policy decision, at the conclusion of the meeting instead of waiting for quick minutes to be released two days later. In the announcement, the Board emphasized that monetary policy would not respond to exchange rate movements, that non-sterilized intervention was not a useful policy, and that the press was greatly mistaken in its reports on what would happen at the up-coming meeting. The Board indicated that it had done enough in easing monetary conditions, and it barely concealed the desire to go back to the positive interest rate by emphasizing the “side-effects” of ZIRP.

The Board challenged the market expectation that non-sterilized intervention was to be pursued. It took a position that the exchange rate was one of the variables to be monitored, but monetary policy should not particularly respond to the exchange rate movement, *per se*.¹² The Board then explained that non-sterilized intervention was not a useful concept for the central bank that watches total funds in the market, whatever various sources it came from.¹³ In addition, the Board statement contained cautionary comments on the side effects of ZIRP, a forerunner to ending the ZIRP eleven months later.¹⁴

¹² “The foreign exchange rate in itself is not a direct objective of monetary policy. One of the precious lessons we learned from the experience of policy operations during the bubble period is that, monetary policy operations linked with control of the foreign exchange rate runs a risk of leading to erroneous policy decisions. Having said this, it does not mean that monetary policy is pursued without any consideration to the development of the foreign exchange rate. The Bank considers it important to carefully monitor the development of the foreign exchange rate from the viewpoint of how it affects the economy and prices.” (Bank of Japan, “On the Current Monetary Policy” September 21, 1999)

¹³ “In relation to the foreign exchange rate policy, we have heard arguments in favor of non-sterilized intervention. In the reserve market, however, there are various flows of funds such as currency in circulation and Treasury funds other than those resulting from the intervention. The Bank conducts its daily market operations taking into account all the money flows, in order to create ample reserves to such an extent as described above. This strong commitment of fund provision is consistent with the government's current foreign exchange rate policy” (Bank of Japan, “On the Current Monetary Policy” September 21, 1999)

¹⁴ “The Bank views the current state of the Japanese economy as having stopped deteriorating with some bright signs, though a clear and sustainable recovery of private demand has yet to be seen. In

The Board expressed displeasure on press reports and market reaction in strong words: “In the past few days, the market has substantially fluctuated by speculations on monetary policy. What should be clear is that the conduct of monetary policy is exclusively decided by majority vote at the Monetary Policy Meeting, a regular meeting of the Policy Board. It is never the case that our policy is determined in advance or in consultation with outside bodies. We would like to emphasize this point.” (Bank of Japan, “On the Current Monetary Policy” September 21, 1999)

The quotes from the statement vividly illustrated the position of the Board. Any reporting of the expected decision was considered to be a challenge to independence. The Board successfully extinguished any expectation in the market that the Bank would be accommodative in response to desires from the government or the market. Any doubt about independence was erased on September 21, 1999.

Between the fall of 1999 and the summer of 2000, there was no additional easing, except for liquidity injections to deal with Y2K concerns. The government wanted some sort of additional measures of monetary easing, while the Governor increasingly mentioned the possibility of lifting ZIRP. At this point, the Bank explained that the Bank would continue ZIRP “until deflationary concerns subside”. The economy started to show some sign of recovery in the spring of 2000, ICT-related stock prices went up and the Nikkei 225 increased by 30% between March 1999 and March 2000. Corporate profits rose and corporate investment showed signs of recovery. There was an argument that these corporate earnings would trickle down to households to stimulate consumption sooner or later.¹⁵ This argument was dubbed the “dam theory”: water was filling the

pursuing the zero interest rate policy, we need to carefully examine its adverse side-effects, but deem it important to support the economic recovery by continuing easy monetary policy for the periods ahead.” (Bank of Japan, “On the Current Monetary Policy” September 21, 1999)

¹⁵ “Currently, it is our judgment that Japan's economy is at the stage where the number of firms taking the offensive has started increasing, that is, the economy is moderately recovering parallel with structural adjustment. ... with respect to the recovery of private demand, it seems natural that the corporate sector,

corporate dam and would overflow sooner or later. Governor Hayami, believing that this was communication with the market, frequently suggested that there were bright signs in the economy and, as a consequence, there would be a possibility of raising the interest rate. Critics thought it was premature to talk about lifting the interest rate, and any mention of it itself diminished the effect of ZIRP by limiting its effects through expectations that easing would continue into the future.

The ZIRP temporarily ended in the Policy Board meeting of August 11, 2000.¹⁶ At this point, the continuation of a recovery of the Japanese economy was at best doubtful. First, the ICT bubble had ended and stock prices in the United States and Japan were heading down, suggesting investment and consumption would be adversely affected in the near future. Second, the US economy was beginning to show weakness, and Japanese exports to the United States were expected to decline in the future. Third, the inflation rate was still negative, and there was no sign of an end to deflation. Critics of the Bank thought that ending ZIRP was a mistake. Indeed, the government exercised an option, specified in the Bank of Japan Law, to put forward a motion for delaying voting of the proposal of raising the interest rate until the next meeting. The government motion was overruled by the Board by an 8 to 1 vote, and then the lifting of the zero interest rate policy was decided by a 7 to 2 decision.

Almost as soon as the interest rate was raised in August, the Japanese economy entered into a recession. It was not known at the time, but the official date for the peak of the business cycle was October 2000. The growth rate of 2000:III turned negative, which was offset to some

which has regained profitability as a result of restructuring, should take the lead by increasing investment followed by the household sector as income conditions gradually improve. This is the development we are now witnessing". (Speech given by Masaru Hayami, Governor of the Bank of Japan, at the Japan Center for Economic Research on May 29, 2000, <http://www.boj.or.jp/en/press/00/ko0005b.htm#0103>)

¹⁶ Governor Hayami intended to raise the interest rate in July. However, a large department store, SOGO, failed and the economy showed some weakness. The plan of lifting the interest rate was postponed without being submitted to the meeting.

extent by a brief recovery in 2000:IV. But, as the economy turned into a recession, the criticism of the Bank of Japan actions became stronger.

The economy weakened substantially toward the end of 2000. Many urged changes in monetary policy. Some economists had recommended the return to ZIRP and others recommended quantitative easing and unconventional monetary policy including increasing the amount of regular purchases of long-term government bonds, and newly purchasing listed mutual funds of stocks, foreign bonds, and even real estate funds. These unconventional monetary tools had been rejected by Bank of Japan economists earlier.

As 2001 started, many indicators were showing weakness and the Bank of Japan decided to ease. The question then was whether to go back to the ZIRP or to introduce a new framework, quantitative easing. In February, the Bank introduced the so-called Lombard lending facility as well as cutting the official discount rate from 0.5% to 0.35%. The Lombard lending facility was to lend automatically to banks with collateral at the official discount rate, so that the interest rate would be capped at 0.35%. However, the market rate was at around 0.2 – 0.25%, so there was little real impact from the introduction of the Lombard facility. Pressure to ease monetary conditions did not because of these measures.

The Policy Board meeting of March 19, 2001 turned out to be the beginning of quantitative easing as well as further easing in terms of the interest rate. The target inter-bank rate was lowered immediately to 0.15 percent, and would go down to zero, as conditions warranted. The official discount rate was cut to 0.25%. However, the policy was not regarded as just a return to ZIRP. It was billed as a change in the monetary policy instrument. The instrument was changed from the short-term interest rate to the balance of current accounts at the Bank of Japan. The target of the current account was set at 5 trillion yen. However, by targeting an amount beyond required reserves (about 4 trillion yen), it effectively meant that the interbank rate (i.e., the call rate) would go

to zero. This amounted to excess reserve targeting.¹⁷ In September 2001, the official discount rate was cut to 0.1 percent, but this did not have any impact.

The Bank has also made clearer the conditions when it would lift ZIRP in the future. When the Bank of Japan adopted ZIRP in February 1999, the condition for lifting ZIRP was when deflationary concerns had subsided or were dispelled. When the ZIRP was effectively reintroduced in March 2001, the condition became more concrete: ZIRP would not be abandoned until the CPI inflation rate became stably above zero. Later, the condition would be further clarified in October 2003, to be explained later.

From March 2001 to March 2003, quantitative easing was expanded in several steps.

- In August 2001, another measure of quantitative easing was employed. The amount of BOJ outright purchases of long-term government bonds was raised from 400 billion yen per month to 600 billion yen per month. At the same time, the current account target was raised to 6 trillion yen (or about 2 trillion yen excess reserves).
- In December 2001, the monthly purchase of long-term bonds was increased from 600 billion yen to 800 billion yen, the current account target was raised to 10-15 trillion yen.
- In February 2002, the monthly purchase of long-term bonds was increased from 800 billion yen to 1 trillion yen.
- In October 2002, the monthly purchase of long-term bonds was raised to 1.2 trillion yen from 800 billion yen, and the current account target was raised to 15-20 trillion yen

There have been mixed reviews on these steps. Although these steps expanded quantitative easing, especially in the amount of long-term bonds from 400 billion yen per month in September

¹⁷ Earlier than it was adopted in March 2001, BOJ economist, Mr. Okina (1999) reviewed the excess reserve targeting as a possibility of next step of further monetary easing. He pointed out a few problems with this option. First, “what kind of function can be expected of excess reserves” is not known with certainty and it was identified as a problem. Second, excess reserves is not reliable “as an indicator for monetary easing.” Third, Dr. Okina points out an operational hurdle.

2001 to 1.2 trillion yen per month in October 2002, deflation worsened. However, defenders of the Bank would say that these actions prevented a major decline in economic activities.

These measures are summarized in the **Figure 1.4**. The top chart shows the expansion of purchase of long-term bonds and current account target, while the bottom chart shows the movements of the official discount rate and the call rate.

1.5. Inflation Targeting

Earlier suggestions for inflation targeting to help raise inflation expectation in order to get out of the deflationary trap now were raised (See Krugman, 1998 and Ito, 1999.) Advocates of inflation targeting also suggested that it would be an appropriate monetary policy framework for an independent central bank in order to enhance accountability and transparency of its policy. Ito (1999) further argued that inflation targeting probably enhances instrument independence. Cargill, Hutchison, and Ito (2000: ch. 5) and Ito and Hayashi (2004: ch. 5) also reviews major issues in the debate on inflation targeting in Japan.

The Bank of Japan was not warm to inflation targeting. Many Policy Board members expressed skeptical views in recorded minutes of the Policy Board meetings (See Okina, 1999, and Ueda, 2000, for a succinct view). The skeptics argued that there was no credible tool, beyond ZIRP, to raise the inflation rate. Inflation expectations in the market would not respond to a mere announcement of the target. Therefore, committing to a target when the Bank did not have the tools to achieve it would cause the Bank to lose credibility.¹⁸

At the earlier stage, that is 1999-2000, there was also an argument that the definition of

¹⁸ “[T]he BOJ argues, as is recorded in the minutes of Monetary Policy Meetings, that ‘since we cannot explicitly show the way to achieve the desired inflation rate, such action would most likely result in the BOJ losing credibility’.” (Okina, 1999, p.165) Critics argued that there are non-conventional monetary policy measures that surely make the inflation rate to go from negative to positive, the credibility argument is based on incorrect assumptions.

deflation was not clear: which prices should be used and what numbers should be looked at in defining deflation.¹⁹ The Bank of Japan was also responding to new calls for more careful definitions of price stability. On October 13, 2000, two months after raising interest rates, the Policy Board issued a report called “On Price Stability.” In the document, price stability was defined as a state that is neither deflation nor inflation. Its apparent tautology did not help settle the problem.

Only in March 2001 did the Bank of Japan identify the price index relevant in policy discussions as the CPI index excluding fresh food (CPIexFood). The relaxed monetary policy would continue until inflation rate measured by the CPIexFood would become stably above zero. In October 2003, “stably” was further defined as above zero for a few months and when there would not be no risk of falling back into deflation.

It is not immediately clear to us why the Bank of Japan was so negative toward non-conventional monetary policy and inflation targeting under the Hayami regime. One possible answer was that inflation targeting was interpreted as a strategy to inflate away the nonperforming loans problem. Governor Hayami repeatedly cautioned that economic boom and inflation would make problem firms survive longer: inflation would delay structural reform.²⁰ This smacked of the view that “cleansing” was needed, which has a strong resonance to what Federal Reserve officials said during the Great Depression in the 1930s. This view clearly misinterpreted what inflation targeting is about.

¹⁹ “Price indicators such as the GDP deflator, CPI, and Wholesale Price Index (WPI) often move differently. Even when these indicators exhibit the same movement, the extent to which the sound development of the national economy will be achieved may depend on such factors as whether property prices are stable or rising sharply.” (Okina, 1999, p.164)

²⁰ “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. In addition, when the shadow of structural reform becomes conspicuous, for example in employment, calls to reverse such reform and pressure for additional macroeconomic policy measures such as the expansion of aggregate demand are very likely to intensify. ... Structural problems cannot be solved solely by macroeconomic policy measures such as monetary and fiscal policy. Now that financial and capital markets are highly globalized, any attempt to wipe out past problems by generating inflation will never be successful”. (Speech given by Masaru Hayami, Governor of the Bank of Japan, at the Japan Center for Economic Research, <http://www.boj.or.jp/en/press/00/ko0005b.htm>, May 29, 2000)

Second, another possibility is that the BOJ fell into the “independence trap,” as it was called by Cargill, Hutchison, and Ito (2000). Namely, the Bank of Japan was afraid to take bold actions when it had just gained independence. Before independence, a usual argument not to lower the interest rate quickly was that once it was lowered, it would be very difficult, politically, to raise the interest rate. Achieving independence was supposed to solve this problem. Flexible adjustments and bold actions were supposed to have become possible. On the contrary, the BOJ became much more conservative in the sense that it became reluctant to take actions, especially unprecedented ones, that might be judged a failure later, arguing that it would be important to establish credibility early. If this is the case, the BOJ was given independence precisely at the moment that it should not be given independence, because the economy called for unprecedented monetary policy.

Third, one more possible interpretation is that the Bank genuinely was worried about possible deterioration of its balance sheet. Purchasing a large amount of long-term government bonds would put the balance sheet at risk if they later declined in value. A question is whether stopping non-conventional monetary policy on the ground of a concern about the balance sheet is desirable from the point of view of avoiding deflation and maximizing potential output. The Bank of Japan is part of the public sector, and any losses on the Bank’s balance sheet would be counterbalanced by gains on the central government’s balance sheet. Since the Bank of Japan should be considered as a part of the government from an accounting point of view, concern about these losses is unwarranted, unless they created political problems for the Bank. The balance sheet of the Bank of Japan should be guaranteed by the government if it makes sense for the BOJ to take risk in its operations.²¹ In this sense, independence came at a wrong moment in history.

²¹ Under the old Bank of Japan law, before 1998, heavy losses on the balance sheet incurred by the Bank of Japan were automatically filled by the Ministry of Finance. In the new law of 1998, since policies of the Bank of Japan were subject to direction of the Minister of Finance. The clause was

1.6. Taylor Rule in Japan

The Taylor rule has been a popular tool to measure whether monetary policy is too tight or too lax, based on information of the GDP gap and deviation of the inflation rate from the target inflation rate. In the simplest version of the Taylor rule regression, the interest rate is regressed on the constant term, the GDP gap, and the inflation deviation, and in some cases the asset prices or the exchange rate. The fitted value of the left hand side variable is considered to be target interest rate (normal interest rate). When the actual interest rate is below the target rate at period t , then the monetary policy is judged to be more relaxed, compared to other periods. If the central bank is conducting monetary policy optimally, on average, then monetary policy that is more relaxed was judged as too lax. Similarly, when the actual interest rate is above the target rate at period t , then monetary policy at t is judged to be too tight.

It is of great interest to examine the target and actual interest rates from mid-1980s to most recent years to examine the following questions: (1) whether monetary policy in late 1980s was too lax so that bubbles were created; (2) whether monetary policy in the beginning of the 1990s was too tight so that bubble burst became unnecessarily too much, laying the ground for long-term stagnation; (3) whether monetary policy was too tight in mid-1990s, hesitating to adopt ZIRP earlier than actual; (4) whether the end of ZIRP in August 2000 was mistake; and (5) whether target rate remains negative, indicating the serious effect of the zero bound of the nominal interest rate.

Bernanke and Gertler (1999) showed that monetary policy was too lax in 1989-1990, and too tight from 1992 to 1996. Okina and Shiratsuka (2002) criticized Bernanke and Gertler (1999) for their recommendations of early tightening in the mid 1980s to prevent asset inflation was impractical. Okina and Shiratsuka think that the forward-looking inflation rate (with rational expectation assumption) is a source of problem.

eliminated in the new law that emphasizes independence of the Bank of Japan.

Okina and Shiratsuka (2002, 2004) and Okina, Shirakawa, and Shiratsuka (2001) have examined monetary policy from the mid-1980s to 2002 and explored several policy options. They tend to show that monetary policy in the mid-1980s was a mistake in the sense the bubble was formed, but monetary policy in the mid- to late-1990s was basically right, and monetary policy after ZIRP does not have policy options.

Reifschneider and Williams (2000) quantified the effects of the zero bound on macroeconomic stabilization capability. They argue that under a severe contraction, open-market operations alone may be insufficient to restore equilibrium. The Taylor rule should be modified to take into account the zero bound.

Harrigan and Kuttner (this volume) applied the coefficients from the US and simulated the path of the interest rate, and came to a conclusion: Had the overnight rate been set according to the Fed's policy rule, it would have been reduced to zero by mid-1993, and remained there at least through 1995.

Indeed, learning lessons from the Japanese situations was a popular exercise in the United States with an intention to avoid deflation. Clouse, et al (2000) went through a menu of options that the central bank can think of adopting at the zero interest rate, and Ahearne et al. (2002) critically evaluated the Bank of Japan policy. The latter came down to a conclusion that the Japanese monetary policy was too tight from 1992 to 1995. Jinushi et al. (2000), Kuttner and Posen (2004), McCallum (2000), and Taylor (2001) obtained a similar conclusion that monetary loosening after 1992 was too slow.

Kamada (2004) shows various estimates depending on various assumptions on output gap and data availability for decision making. Most of the simulated results show that the target rate in 2000 remained negative, suggesting that lifting ZIRP in August 2000 was a mistake, although he refrains from such an interpretation.

1.7. Assessment of the Hayami Regime

In the initial stage of the Hayami regime until ZIRP was adopted (April 1998 to March 1999), many Bank of Japan officials expressed a negative view toward further easing (zero interest rate and quantitative easing including base money expansion, government bond and equity purchases), indicating that it was either ineffective or would have undesirable side effects, the including risk of inflation.²² The call for easing by scholars was being rebuffed. (See Krugman (1998), Meltzer (1998), McKinnon and Ohno (1997) for the calls for monetary easing; and Okina (1999a, b) for the rebuff.) When ZIRP was adopted in the spring of 1999, the Bank maintained the view that no further steps were needed. The Bank strongly resented any pressure or even suggestion from outside on further easing, as shown in the episode of their complaining about the speculation of easing before the Meeting in September 1999. In the spring of 2000, Governor Hayami started to suggest ending ZIRP. Most likely, he wanted to communicate with the market on the Bank's future intentions, in order to avoid a "surprise" reaction of the market and resulting volatility in the money and capital market. However, this suggestion certainly diminished any beneficial effects of ZIRP

²² One such cautious opinion was expressed in July 1999 by Kazuo Ueda, a former University of Tokyo professor, a newly appointed Policy Board member. "The policy to increase the money supply would first create some decline in the call rate, but automatically create further rate declines if the economy worsens and the demand for money declines. In this sense the commitment to avoid deflationary forces is stronger with money supply targeting. ...To the extent that the money supply works through interest rates, the commitment money supply targeting delivers is already contained in the current policy stance. ...The argument that an increase in the growth rate of the money supply increases inflationary expectations and stimulates aggregate demand by lowering real interest rates sounds attractive. It is unclear again, however, how this mechanism works when the nominal interest rate has been already driven down to zero. ...How about a policy of letting the monetary base grow at 20 or 30% then? Inflation does not seem to be on the horizon. One can tighten after the inflation rate reaches 1 or 2%. We think such a policy would have a small chance of success for reasons already mentioned. When it does succeed, it will probably generate a much higher rate of inflation than 1 or 2%. Because of lags in the effects of policy, the 20-30% money growth will continue to generate inflationary pressure even after the tightening starts." (Kazuo Ueda, Member of the Policy Board of the Bank of Japan, at the Meeting on Economic and Financial Matters in Kagoshima, on July 1, 1999, <http://www.boj.or.jp/en/press/99/ko9907a.htm>)

because it created expectations of higher interest rates in the future. The interest rate was raised in August 2000 despite the opinions by many scholars and the government of the need for further easing. In an international conference sponsored by the Bank of Japan in July 2000, many scholars and foreign participants were critical of the past and current policy of the Bank of Japan: Meltzer (2001), Goodfriend (2001), Svensson (2001) (note the publication date of these papers was 2001, but the conference took place in July 2000, one month before the ZIRP was reversed). The Bank of Japan rebutted these arguments in Oda and Okina (2001) .

When the ZIRP returned with quantitative easing (current account balance of 5 trillion yen implying the excess reserve of 1 trillion yen) in March 2001, the Bank did not explain why the change in policy would be effective, and this was particularly important because the Bank had not been positive on its effectiveness in the past. In the summer to fall of 2001, there were calls for further easing by raising the current account target increase, increasing bond purchases, and purchasing equities and foreign bonds. Bank economists were negative on these suggested actions, saying that it was impossible to raise the current balance target (no buyers of short term paper with zero interest rates), or no effect beyond stabilizing the financial system, and that risk of possible deterioration of balance sheets would be serious.²³ The policy started to change in December 2001, when the current account target was raised and long-bond purchases were raised in several steps. What was branded impossible was now possible, and the concern about the balance sheet,

²³ “Three options for further monetary easing can be considered when money market interest rates are near zero. ...Third, the BOJ can carry out unconventional operations by purchasing assets other than short-term Japanese government securities. ...The third policy option is for a central bank to purchase non-traditional assets such as government bonds, foreign currencies, corporate bonds, stocks, or real estate which are more imperfectly substitutable for base money than are short-term government securities. As stated above, central bank operations that amount to the exchange of perfect substitutes produce little effect on the economy. Such non-traditional operations are effective because they directly alter the prices of the assets in question. Possible benefits and costs of this monetary policy option, however, are extremely uncertain.” (Kazuo Ueda, Member of the Policy Board, at the semi-annual meeting of the Japan Society of Monetary Economics held at Fukushima University in Fukushima City on September 29, 2001, <http://www.boj.or.jp/en/press/01/ko0112a.htm#0301>)

emphasized earlier by the Bank itself, was buried without addressing it formally.

In September 2002, the Bank started to purchase equities that the commercial banks held but wanted to dispose of in light of declining stock prices. Earlier, the Bank had denied any possibility of purchasing stocks.²⁴ The action was justified by the Bank on the ground that it would reduce the risk of commercial banks' balance sheets, and it was made clear that it was not intended as monetary policy, but rather as financial market stabilization policy. (The decision was not made by the monetary policy Board Meeting –equivalent of FOMC—but the regular Board Meeting.) However, it was not explained why the resulting risk to the BOJ balance sheet due to financial stabilization policy was not a big concern, while it was for monetary policy.

In October 2000, the Bank paper “on Price Stability” emphasized that it would be difficult to focus on a particular price index as a guide to policy. Earlier, the Bank was quite negative on the idea of inflation targeting. However, in March 2001, the Board decided to adopt the ZIRP plus quantitative easing until the CPI excluding fresh food showed a positive inflation rate “stably above zero.” This seemed to be a welcome switch from negative to a positive attitude toward selecting a price index and targeting a numerical number, but the switch was not explained.

In sum, the Bank has been changing its position and action, but the switch was not explained well, and contributed to the decline in the credibility of the bank.

1.8. Fukui Regime

²⁴ Governor Hayami denied the possibility of purchasing stocks as early as 1998, and repeatedly opposed to this saying that it violates the law. “There is intrinsically a very strict limit as to the extent to which a central bank can take on private sector risk. By shouldering such risk and seeing a subsequent deterioration in our assets, we might lose the confidence placed in us to fulfill our fundamental mission. Hence, the new Bank of Japan Law (effective April 1998) prohibits the Bank from purchasing equities bearing large credit and price risks. We thus do not think it appropriate to purchase corporate debt and equity. (A summary of the speech given by Masaru Hayami Governor, the Bank of Japan to the Kisaragi-kai meeting in Tokyo on December 22, 1998)<http://www.boj.or.jp/en/press/98/ko9812a.htm>. The switch in fall of 2002, why Governor changed the opinion and the purchase became possible without changing the law, was not explained.

The new Governor Toshihiko Fukui took over the leadership of the Bank of Japan at the maturity of the five year term of Governor Hayami in March 2003. Two deputy governors were also replaced. One of the two new Deputy Governors is Mr. Toshiro Muto who was earlier Vice Minister of Finance; and the other Dr. Kazumasa Iwata, a former professor of economics. Dr. Iwata has been known to favor inflation targeting.

The new regime moved quickly to increase the current account balance at the Bank of Japan. The target amount was raised from 15-20 trillion yen, at the time of March 2003 to 30-35 trillion yen as of January 2004. The amount of long-term bond purchases was not changed.

The biggest change has been the rhetoric. Governor Fukui has made it explicit that the Bank should maintain ZIRP until the inflation rate was stably above zero. He seems to indicate commitment of ZIRP into the future, a sort of commitment recommended by inflation target advocates.

Although the new policy is a big improvement over the last regime, there is some room for improvement. The tolerance of inflation is not indicated with precise numbers. Therefore, it is less credible than otherwise. One answer to such a criticism is the policy announcement of October 2003. It laid out the conditions for raising the interest rate:

“First, it requires not only that the most recently published core CPI should register a zero percent or above, but also that such tendency should be confirmed over a few months.

Second, the Bank needs to be convinced that the prospective core CPI will not be expected to register below a zero percent. This point will be described in such materials as the analysis and the forecasts of Policy Board members in the Outlook Report. To be more specific, many Policy Board members need to make the forecasts that the core CPI will register above a zero percent during the forecasting period.

The above conditions are the necessary condition. There may be cases, however, that the Bank will judge it appropriate to continue with quantitative easing even if these two conditions are fulfilled.” (Bank of Japan, Monetary Policy Committee announcement, October 13, 2003)

Despite the good performance in the GDP growth rate in 2003:IV, the financial and capital market participants expect that ZIRP will continue for a long time. This is a big change from the Hayami regime. So far, credibility of the Bank of Japan to maintain ZIRP seems to be on the rise.

The recent history of Japanese monetary policy has created two basic problems for the Japanese monetary authorities today. First, the Bank of Japan’s policies have left Japan in a prolonged deflationary environment in which conventional monetary policy through lowering the short-term interest rate is no longer effective because the policy rate has hit a floor of zero. Second, past Japanese monetary policy, particularly under the Hayami regime, has left the Bank of Japan with a severe credibility problem in which the markets and the public are unconvinced that Japanese monetary policy can be committed to future expansion that would return the economy to health. Both of these problems present the Bank with particular challenges in getting the economy out of deflation quickly. We address how they can do this in the next section

2. Solutions

Despite recent growth rates of the aggregate economy of around 2.7% (annual growth rate, 2003), the Japanese economy has fallen far behind where it would have been if it had not experienced the deflation and financial instability problems of recent years. Given the problems zero-bound and credibility problems of the Bank of Japan, how can the monetary policy be used to help return the economy to health. Here we propose a hybrid strategy of both price level and inflation targeting, which goes several steps further than the current policies of the Bank of Japan.

After describing this strategy, we then go on to consider a key feature of implementation of this strategy given that the policy interest rate cannot go below a floor of zero: nonconventional policies that use central bank purchase of other assets besides short-term bonds.

2.1 Price Level and Inflation Targeting

At first blush, it might appear as though monetary policy cannot be effective in escaping the deflation trap because there is no way to drive the standard interest-rate instrument below zero. Indeed, as we have seen, this claim has been raised repeatedly by the BOJ to explain why it was unable to stimulate the economy (e.g., Okina, 1999, Oda and Okina, 2001). However, recent literature (Krugman, 1998, and Eggertson and Woodford, 2003, Auerbach and Obstfeld, 2003, and Svensson, 2003) suggests that there is a solution to this problem: management of expectations. If the central bank can convince the markets and the public there will be higher inflation in the future, then even with the interest rate at a floor of zero, the real interest rate will fall and this will stimulate aggregate demand through the usual channels (Mishkin, 1996). But how is the central bank to do this?

One way to manage expectations to stop a deflation is by having the central bank announce a positive inflation target as has been suggested by Krugman (1998), Posen (1998) and Bernanke (2000). Clearly, an announcement of a positive inflation target by itself is far from sufficient because it may not indicate to the markets that the central bank has a strong commitment to stopping deflation and thus may leave inflation expectations unchanged. This is why advocates of inflation targets stress that central banks need to do much more than announce an inflation target to make it credible. Successful inflation-targeting, central banks have put a lot of effort into increasing transparency and improving communication by publishing inflation forecasts, testifying publicly and putting out *Inflation Reports* in which the central bank explains how it is to

achieve its inflation target in the future and why it has or has not been able to achieve its inflation target in the recent past (Bernanke, Laubach, Mishkin and Posen, 1999). An inflation targeting regime thus can be helpful in managing expectations and preventing deflation

However, once an economy has entered a prolonged deflation as it has in Japan, lowering the real interest rate to stimulate the economy requires a substantial increase in expected inflation. This is why Krugman(1998) made the radical suggestion for the BOJ to adopt an inflation target of 4% for a fifteen-year period. However, a high inflation target, as suggested by Krugman, is unlikely to be credible for two reasons. First, a commitment to a high inflation target may not be credible because it is too much at variance with a goal of price stability. As documented in Bernanke, Laubach, Mishkin and Posen (1999), no inflation targeting central bank in an industrialized country has chosen an inflation target above 3%, whether makes use of a core or a headline CPI measure. Indeed, we suspect that the Krugman proposal may have increased the Bank of Japan's resistance to inflation targeting because this level of inflation was well above what officials in the Bank believed was consistent with price stability. Furthermore, once the economy has emerged from a deflationary spiral and starts to recover, the central bank will be tempted to renege on its commitment to a high inflation target because it would like the economy to return to an inflation rate consistent with price stability. Thus as pointed out by Eggertsson (2003), a central bank in a deflationary environment is subject to a time-inconsistency problem: it cannot credibly commit to "being irresponsible" and so continue to shoot for high inflation. The result of time-inconsistency problem is that the markets would not be convinced the inflation would remain high, inflation expectations would not be sufficiently high to lower real rates sufficiently to stimulate the economy out of the deflation trap.

Another problem with an inflation target is that it is not "history-dependent" because it is purely forward-looking (Woodford, 2000, 2003). An inflation target is not adjusted depending on

the past outcome of inflation: in other words it lets bygones be bygones. As Eggertsson and Woodford (2003) have shown, such a purely forward-looking target will not be effective in extricating an economy from a deflation trap. When the interest rate has hit a floor of zero, a deflationary shock which lowers the price level and puts the economy even farther below its potential output requires an even higher expected inflation in order for the real interest rate to be lowered and be even more stimulative. Since an inflation target is not revised when it is undershot because of the deflationary shock, it will not generate the required increase in expected inflation.

On the other hand, a price level target does generate higher expected inflation when a deflationary shock hits. A price level target means that monetary policy is attempting to hit a particular set path of the price level and bygones are not allowed to be bygones. Thus when a deflationary shock occurs the price level has to rise even further in order to get back to the target. In other words, the price level target is “history dependent” because the desired medium-term inflation rate is affected by what has happened in the past. Thus with a price level target when there is a deflationary shock, inflation will be expected to be higher, and this produces exactly the right response of a lower real interest rate and more stimulative monetary policy.

The theoretical argument for a price level target when an economy is in a deflationary environment is thus quite strong. But there is a further reason why a price level target is needed in the current environment in Japan. Japan is currently experiencing a severe balance-sheet problem that prevents the financial system from working properly (e.g., Posen, 1998, Mishkin, 1998, Hoshi and Kashyap, this volume). Non-performing loans have weakened bank balance sheets, and the lack of capital has meant that banks have been forced to cut back on lending, particularly for new investment. The result is that the financial system is unable to allocate capital to productive investment opportunities, and this is a key element in the stagnation in Japan.

The deflation has also weakened corporate balance sheets who have found their debt increase in value in real terms while their assets have not (the debt-deflation phenomenon described by Irving Fisher, 1933). The resulting loss in net worth makes lenders less likely to lend to firms, particularly small and medium sized-ones for whom information about their activities is harder to get, because with less at stake in these firms, they are more likely to engage in risky (moral hazard) behavior (Mishkin, 1997). As a result, even if these firms have productive investment opportunities they may not be able to get the funds to pursue them. Thus restoring both financial and non-financial balance sheets is crucial to helping the Japanese economy to achieve a more efficient allocation of capital that will restore it to health.

A price level target that would get the price level to what it would have been if the Japanese economy had not experienced deflation in recent years is one way to help restore Japanese balance sheets. A higher price level would lead to lower real indebtedness of Japanese firms and would thereby increase their net worth, making it more attractive to lend to them if they have productive investment opportunities. The improvement in firms' balance sheets would also help reduce non-performing loans which would have a positive knock-on effect on bank balance sheets, thus making it easier for them to lend.

Furthermore, both the BOJ and commentators on the Japanese economy have stressed the need for restructuring of the Japanese economy if it is to return to health. Indeed, the BOJ has continually argued that the economy cannot recover without restructuring and has worried that expansionary monetary policy may be seen as an alternative to the needed restructuring and thus may be counterproductive. Closing down inefficient firms and financial institutions may be exactly what the economy needs in the long run, but in the short-run it might lead to severe dislocations and unemployment. Indeed, this is probably why there has been so much resistance to the restructuring process on the part of Japanese politicians. Here is where a price level target

to raise the price level comes in. As we have seen, a higher price level would help restore financial and non-financial balance sheets due to unexpected deflation, and would help the financial system to start working again to allocate capital, which is critical to a restructuring process.²⁵ Also to the extent that a commitment to a higher price level by the monetary authorities helps raise aggregate demand, this would help cushion the short-term negative effects of the restructuring process. A price level target which encourages more expansionary monetary policy is thus more sensibly viewed as a complement to restructuring rather than an impediment.

The logic of our analysis leads us to the following recommendation for the conduct of Japanese monetary policy.

(Recommendation) The Japanese monetary authorities should announce that monetary policy would be conducted to raise the price level to the path that it would have achieved if deflation had not set in starting in October 1997.

Note that since October 1997, the CPI excluding fresh food has fallen by 3.5% to the present, while annual averages, the CPI has fallen by 2.5% between 1998 and 2003. This certainly understates the amount of deflation because, as is well known, measured inflation is likely to be an upward biased measure of true inflation.²⁶ Most estimates of measurement error in CPI inflation in industrialized countries is around 1%. In Japan, Shiratsuka (1999) estimated that the bias in Japan as about 0.9%. We regard 1% in measured CPI increase as absolute price

²⁵ At the press conference after deciding the end of ZIRP in August 2000, Governor Hayami mentioned of the side effects of ZIRP as not taking up innovative production process or not restructure due to freely borrowing money. (see Hayami, <http://www.boj.or.jp/press/00/kk0008a.htm>, only in Japanese.)

²⁶ The CPI excluding fresh food was 101.1 in October 1997, that turned out to be a peak. In February 2004, the index is 97.5, after a 3.5% decline from the peak. In an annual average, the peak was 1998, with the index level of 100.4. The annual average of 2003 was 98.0, the level that is 2.4% less than the peak.

stability. So this would suggest that a target for the CPI would be at least 7.5% over current levels.²⁷ However, because the price level target is a moving target it would continue to rise at the 1% rate and so the cumulative price increase when the target is reached would necessarily be higher in the future.

An illustration of how this might work is illustrated in Figure 2.1. Suppose that the price level target was reached by the end of 2008, as is shown by the hypothetical CPI in the figure, then the cumulative increase from now (June 2004) to December of 2008 would be 13%, or an inflation rate of 2.5% per year over the period. If this target was credible, this would mean that even with a nominal interest rate of zero, the real interest rate would fall to -2.5% which would be highly stimulative, exactly along the lines that Eggertsson and Woodford (2003) suggest would be appropriate.

But what should be done once the price level target is achieved? One strand of the literature suggests that it would be optimal to continue with the price level target. In models with a high degree of forward-looking behavior (e.g., Svensson, 1999, Woodford, 1999, 2003, Svensson and Woodford, 2003, Clarida, Gali and Gertler, 1999, Dittmar, Gavin and Kydland, 1999, Dittmar and Gavin, 2000, Vestin, 2000, and Eggertson and Woodford, 2003) a price level target produces less output variance than an inflation target. However, empirical evidence (e.g., Fuhrer, 1997) does not clearly support forward-looking expectations formation, and models with forward-looking behavior have counterintuitive properties that seem to be inconsistent with inflation dynamics (Estrella and Fuhrer, 1998).

The traditional view, forcefully articulated by Fischer (1994), argues that a price-level target might produce more output variability than an inflation target because unanticipated shocks to the price level are not treated as bygones and must be offset. Specifically, a price-level target

²⁷ The gap is estimated as the 2.4% (measured index decline) plus the inflation bias ($1\% \times 5$ years), that results in about 7.5 percent.

requires that an overshoot of the target must be reversed and this might require quite contractionary monetary policy, then with sticky prices this could lead to a sharp downturn to the real economy in the short run. Indeed, if the overshoot is large enough, returning to the target might require a deflation, which could promote financial instability and be quite harmful to the economy. Our suspicion is that this traditional view has strong supporters in central banks in most countries and this is why no central bank currently has adopted a price level target.²⁸ Note that this criticism of a price level target does not argue against it when an economy is in a deflation trap and is far from the appropriate price level target as Japan is currently. Then the price level is necessarily below the target, and so the price level target promotes higher expected inflation which lowers real interest rates, and this then works in exactly the right direction to get the economy back on track.²⁹

Taking the traditional view into account suggests that a conservative strategy is to abandon the price level target once it is achieved, and replace it with a more conventional inflation target.³⁰ Indeed, this is close to the position advocated by Governor Bernanke (2003) who is agnostic about keeping a price level target or going to an inflation target once the price level target

²⁸However, a price level target was used in the 1930s in Sweden (Berg and Jonung, 1999).

²⁹See Ito and Mishkin (2004) for a more detailed discussion of the choice between an inflation or a price level target.

³⁰What the optimal level of inflation for the inflation target should be is not obvious. One of the authors (Bernake, Laubach, Mishkin and Posen, 1999) has been associated with a target for true inflation of 1% (which would be a 2% CPI inflation target if CPI inflation was subject to a measurement bias of 1 percentage point). He has advocated a true inflation rate above zero in order to provide a cushion against deflation which he believes has potentially harmful effects on the economy.

in Japan is achieved. There is one further reason why an inflation target at this stage may be more desirable. An inflation target is a little easier to explain to the public because it is not a moving target. Because increased transparency and accountability is a highly desirable attribute for the conduct of monetary policy, it seems sensible to follow the so-called KISS principle (“Keep it simple, stupid”).

However, there is the issue of what numerical value of the inflation rate should be adopted and this requires taking a stance on what price stability means. Alan Greenspan has provided a widely-cited definition of price stability as a rate of inflation that is sufficiently low that households and businesses do not have to take it into account in making everyday decisions. This definition of price stability is a reasonable one and operationally, any inflation number between 0 and 3% seems to meet this criterion. Some economists, Martin Feldstein (1997) and William Poole (1999) being prominent examples, argue for a long-run inflation goal of 0%, which has the psychological appeal of the "magic number" of zero. Indeed one concern is that an inflation goal greater than zero might lead to a decline in central bank credibility and instability in inflation expectations which could lead to an upward creep in inflation. However, evidence in Bernanke et al. (1999), suggests that maintaining a target for inflation, above zero, but not too far above (less than 3%), for an extended period, does not lead to instability in the public's inflation expectations or to a decline in central bank credibility.

Thus having an inflation target does not appear too costly. In addition, there are two arguments why it would be beneficial to have an inflation target above zero. First Akerlof, Dickens and Perry (1996) have argued that setting inflation at too low a level produces inefficiency and will result in increase the natural rate of unemployment. They argue that downward rigidity of nominal wages, which they argue is consistent with the evidence, indicates that reductions of real wages can occur only through inflation. The implication is that a very low rate of inflation might

prevent real wages from adjusting downward in response to declining labor demand in certain industries or regions, thereby leading to increased unemployment and hindering the re-allocation of labor from declining sectors to expanding sectors. We do not find their argument totally convincing because as pointed out by Groshen and Schweitzer (1996, 1999), inflation not only can put "grease" in the labor markets and allow downward shifts in real wages in response to a decline in demand along the lines of Akerlof, Dickens and Perry (1996), but can also put in "sand" by increasing the noise in relative real wages. This noise reduces the information content of nominal wages about what is happening to relative real wages and hence the efficiency of the process by which workers are allocated across occupations and industries.

The second, and we believe, more persuasive argument against an inflation goal of zero, as opposed to, say, one, is that it makes it more likely that the economy will experience episodes of deflation. We have argued above that deflation can be highly dangerous because it promotes financial instability. The implication is that undershooting a zero inflation target (i.e., a deflation) is potentially more costly than overshooting a zero target by the same amount. The logic of this argument suggests that setting an inflation target a little above zero is worthwhile because it provides some insurance against episodes of deflation. Indeed, in Bernanke et al (1999), one of us has have argued for a long-run inflation goal of 1% above true inflation. With measurement error in Japan estimated to be on the order of 1% (Shiratsuka, 1999), this suggests a reasonable inflation target of 2%. The analysis here thus leads to a second recommendation for Japanese monetary policy.

(Recommendation) Once the price level target described in the previous recommendation is achieved, the Japanese monetary authorities should announce that they will move to an inflation targeting regime with a long-run goal for inflation of 2%.

Once inflation rate targeting is adopted, then the next question is whether it should be a point target (say 2% plus/minus a 1% tolerance range), or a target range (1-3%). The Bank of England adopted point targeting, while the Bank of Canada, the Reserve Bank of Australia have adopted a target range. Presumably, the central bank with a point target has a utility function with a peak at the target point and declining utility around it, while it is possible that a central bank with a target range feels indifferent so long as the inflation rate is within the range. However, a central bank with a target range could take the view that it has a utility function with a peak at the target point. Those who favor the point target cite its strong effect on inflation anchoring. The Bank of England points out the fact that the inflation expectation for 10 years in future (measured by the difference between yields of the straight bonds and the inflation-indexed bonds) have converged to its inflation target. Those who favor a target range worry that the point target may suffer from a danger of fine tuning. Because we do not have a strong view on whether a point target would be better than a target range, and the difference between them may not be that great depending on the central bank's communication strategy, we do not make a recommendation on which should be adopted.

2.2 Nonconventional Monetary Policy

Critics of inflation targeting (Friedman, 2003) have argued that the concept of “managing expectations” is problematic. Why would announcing an inflation rate or a price level target pin down expectations? Aren't actions more important than words? We would agree that words by themselves are not enough. But neither are actions. Indeed, it is words plus actions that is critical to successful monetary policy. Also, when there are doubts among the market participants about the precise interpretation of price stability, announcement of the intention is

quite important. This raises the issue of what actions will actually influence the economy and help make a price level or inflation target credible, particularly when the policy interest rate has hit a floor of zero, as is currently the case in Japan? Once the short-term, policy interest-rate is at the floor of zero, it clearly cannot be driven lower. Thus the conventional monetary policy tool of manipulating the short-term, policy interest rate is no longer an option. Is the central bank powerless? What nonconventional policy measures can it take to affect the economy and thereby achieve its price level or inflation target? We look at four types of measures below: 1) quantitative easing, 2) open-market operations in long-term bonds, 3) foreign exchange rate intervention, and 4) open market purchases of private assets.

2.2.1 Quantitative Easing

The nonconventional monetary policy tried by the BOJ has been the so-called “quantitative easing.” This involves an expansion of the monetary base, even when the policy interest rate cannot be driven any lower, either through open market purchase of government debt, or through unsterilized purchases of foreign currency. The BOJ has been conducting such a policy since March 2001, and more aggressively since December 2001.

Figure 2.2 shows that growth rates of monetary base (MB) and the money supply (M2+CD, hereafter simply M2). MB had indeed expanded quickly from the end of 2001, but with little impact on M2. How to explain the deviation between MB and M2 is a challenge, and another is whether an expansion of MB without an expansion of M2 has positive impacts on the economy. The monetary base includes the amount of current account at the Bank of Japan, the amount of excess liquidity in the system. In normal times, excess reserves would be unlikely to help stimulate the economy. However, an expansion of the monetary base might be beneficial even if it does not produce a significant increase in M2 when the interest rate is zero. First, ample

liquidity in the system may help avoid a potential financial crisis that was a concern in 2002-2003. Second, liquidity may encourage financial institutions to take more risk in portfolio management, in particular taking positions in long-term bonds, equities, and foreign bonds, any of which would contribute to stimulating the economy indirectly. The economic recovery in 2003 may be due to ample liquidity in the system.

The data do not look favorable to this approach. The monetary base has increased by 20-40% from 2002 to 2003 and yet deflation did not stop. One problem with coming to this conclusion based on the evidence from Japan is that, as we have seen in the earlier section of this paper, the BOJ under Hayami created market expectations that even when it pursued expansionary monetary policy for a time, it would soon reverse it. Then it is no surprise that quantitative easing did not work. Given the very different rhetoric under Fukui, there is the possibility that quantitative easing may be more successful in the future.

However, in addition there are good theoretical reasons why quantitative easing might be ineffective. The conventional liquidity trap analysis suggests that when the short-term interest rate hits a floor of zero, short-term bonds become a perfect substitute for money and so expanding the monetary base will have no effect on the economy. Eggertsson and Woodford (2003) show that this result can even hold if short-term bonds and money do not become perfect substitutes, although this conclusion still is based on the specific features of their model. However, as they emphasize, quantitative easing might help stimulate the economy if it provided a signal that the monetary base would be higher than it otherwise would be once the deflation is over. This is the position taken by Auerbach and Obstfeld (2003).

However, given theoretical arguments against its being effective and the fact that quantitative easing did not work, at least under Hayami, to stimulate the economy and stop deflation in Japan, there is clearly a strong case that the BOJ needs to also look at other approaches to

conducting monetary policy.

2.2.2 Open Market Operations in Long-Term Bonds.

Alternative non-conventional monetary policies involve the monetary authorities in conducting open market operations in other assets besides short-term bonds. The most conventional of these is a shift toward central bank purchases of long-term rather than short-term bonds: i.e., the BOJ could engage in even larger purchases of JGBs rather than Treasury bills. Since, long-term interest rates are more likely to figure in household and business decisions about spending, it seems that open market purchase of these bonds might succeed in lowering long-term interest rates, thereby stimulating the economy. However, in order for purchase of long-term bonds to work, there would have to be significant portfolio-balance effects, so that a shift in the supply of long-term versus short-term government debt in the hands of the public as a result of the open market purchases would affect risk (term) premiums and so result in a fall in long-term rates. The evidence that risk (term) premiums can be affected by changing the supply of long-term bonds relative to short-term bonds in the hands of the public is, unfortunately, far from clear. One episode where this was tried was the so-called “Operation Twist” in the United States in the early 1960s in which the Federal Reserve bought long-term bonds in order to lower long rates relative to short rates. It has generally been viewed as a failure with only a very small effect if any on the relative interest rates of long versus short-term bonds (see Meulendyke, 1998, for a summary of the literature and Fujiki, Okina, and Shiratsuka, (2001, pp. 106-107) for their negative appraisal of the Operation Twist or any increase in long-term bonds at the time of their writing).

Bernanke (2002) has suggested that the apparent failure of Operation Twist does not mean that the central bank could not drive long-term bond rates down as long as the central bank announced that it would peg interest rates on long-term bonds at a very low interest rate (possibly zero) and stood ready to purchase any amounts of these bonds at this low rate. This peg could

certainly work because the commitment is easily verifiable since the price and interest rates on long-term bonds are immediately known. However, this could require the central bank to purchase the entire stock of long-term bonds which it might not be fully comfortable about doing.

Clearly another way for the central bank to lower long-term bond rates (Orphanides and Wieland, 2000) is to convince the markets that it will continue to pursue a zero-interest-rate policy (ZIRP) for a considerable time even after the deflation is over. Then, as is suggested by the expectations hypothesis of the term structure, because long-term bond rates are an average of the expected future short-term rates, long-term interest rates would necessarily fall. Indeed, this strategy is complimentary to Bernanke's because it is a way of committing to more expansionary policy in the future even after the economy has bounced back.

Earlier, the Bank of Japan economists were skeptical, if not negative, of the recommendation of increasing the JGB purchase (see Goodfriend (2000)'s recommendation and negative reactions from Fujiki, Okina, and Shiratsuka, 2001 to the Goodfriend recommendation). However, the Bank of Japan gradually increased the amount of JGB purchase from 400 billion yen per month prior to August 2001 to 1.2 trillion yen per month in October 2002. The policy has been followed. In addition, the Bank of Japan had made it clear that the zero interest rate policy would be maintained in the future. These actions contributed to declining JGB yield to the level below 1 percent in late 2002 to mid-2003.

The Bank of Japan's recent announcements, in particular the one in October 2003, about a condition for lifting the zero-interest-rate policy have some elements of this strategy but does not go nearly far enough. The BOJ has announced that it will not reverse the ZIRP policy until there is clear cut evidence that the deflation is over and that it is unlikely to recur in the future. In particular, the announcement of October 2003 states that the inflation rate should be above zero "for a few months" and would not go back to the negative territory (deflation) again as a condition to change

the current quantitative easing policy. However, this is a far weaker commitment than the strategy above suggests. We would like to see the BOJ commit to stay with ZIRP not only until the deflation is clearly over, but until they have a prospect of achieving the price level target described above in which the CPI would have to rise by 2.5% or more for several years if it takes time to get to the target.³¹ There is still the problem that an announcement of this type might not be believed by the markets because of the past behavior of the BOJ, particularly under Governor Hayami, where the ZIRP was reversed as soon as the economy began to recover. However, this is where the purchase of JGBs might help. The BOJ could buy substantial amounts of these long-term JGBs as a signal of its confidence that their price will remain high because ZIRP will be continued well after the deflation is over.³²

2.2.3 Foreign Exchange Intervention.

Depreciation of the currency provides an additional way of exiting from a deflation trap. A fall in the value of the domestic currency makes imports more expensive and exports cheaper. The result is expenditure switching in which exports rise and imports fall, thereby increasing the demand for domestically produced goods which stimulates aggregate demand. Intervention in the foreign exchange market, the selling of yen and purchase of foreign currency, has thus been

³¹ In order not to overshoot the target, ZIRP would have to be abandoned a little while before the target is reached, but for all practical purposes, this would be a commitment to keep ZIRP for a substantial period after the deflation is over.

³² If the Bank of Japan had concerns about its balance sheet, buying long-term bonds would also provide incentives for the BOJ to stick with the ZIRP policy after the deflation is over because premature abandonment of ZIRP would lead to losses on the JGBs that it has bought. However, as argued later in the paper, we believe that the Bank of Japan's balance sheet should not be an important consideration in the conduct of monetary policy.

suggested as a powerful way of getting the Japanese economy moving again (Bernanke, 2000, McCallum, 2000a, 2002, 2003, Meltzer, 2001, Orphanides and Wieland, 2000, and Svensson, 2001, 2003). Indeed, in recent years the Ministry of Finance and BOJ have been intervening in the foreign exchange market to keep the yen from appreciating, but has not engineered a depreciation of the yen.³³

One problem with this transmission mechanism is that it also requires that portfolio-balance effects be operational. The exchange rate intervention in which the purchase of foreign-denominated assets (like U.S. Treasury bills) are bought with yen, thereby increasing the supply of yen-denominated assets relative to foreign-denominated assets, only affects the exchange rate if domestic and foreign assets are imperfect substitutes. As was the case for short-term versus long-term bonds, the evidence for portfolio-balance effects are not strong (see the survey in Sarno and Taylor, 2001).

However, here is where a price level target and the management of expectations can again come to the rescue. Svensson (2001, 2003) has advocated that along with an announcement of a price level target along the lines we have described above, the BOJ and the Japanese government commit to an exchange rate peg which is consistent with that price level target. This involves a commitment to an immediate depreciation of the yen which would then be allowed to appreciate at the rate of the foreign interest rate differential (so that the expected return on foreign and domestic assets is equalized.) The peg would then be abandoned once the price level target has been achieved and a price level or inflation targeting regime would be put into place. Committing to the peg is also a commitment to the higher price level target and continued expansionary monetary policy even after the deflation is over. Thus it solves the commitment problem described above.

³³ The amount of intervention has become very large. The monetary authorities have sold 20 trillion yen in 2003 and 15 trillion yen in the first three months of 2004. However, the yen appreciated from 120 in January 2003 to 103 in March 2004. See Ito and Yabu (2004) showing that the effects of intervention has become much smaller in 2003 compared to earlier period.

Clearly, implementing such a peg would require cooperation between the BOJ and the Ministry of Finance because it is the government that has the ultimate authority over the exchange rate and exchange rate interventions in Japan. Also since the policy calls for a substantial depreciation of the yen from current levels, it would require that the Japanese stand ready to buy large amount of foreign-denominated assets to ensure that they are a good investment relative to yen-denominated assets. This would just mean an even larger accumulation of international reserves for Japan, which is always feasible. (This is in contrast to a case where a country wants to prop up the value of its currency and thus must sell foreign assets, thereby losing international reserves which may run out and thus force the abandonment of the peg.) The commitment to a peg also has the advantage that it provides incentives for the central bank and the government to stick with the peg until the price level target is achieved: early abandonment would lead to an appreciation of the yen which would result in substantial losses on Japan's international reserves.

Although, we agree with Svensson that his "foolproof way" to escape the deflation trap would work, we do have our doubts about this strategy. Such a strategy suffers from two difficulties. First, Japan's trading partners would be likely to be up-in-arms if an exchange-rate peg of this type were announced. We have seen strong U.S. complaints against the Chinese peg of the yuan at a depreciated rate, and we expect that this outcry would be even harsher if Japan adopted Svensson's suggestion. The yen appreciated substantially in September 2003 when G7 called for "flexibility in the exchange rate" without naming countries. The outcome of a depreciated peg might be trade sanctions against Japan and a rise in protectionism that could be disastrous for the world trading system. Globalization and free trade have become dirty words for many politicians and this could get much worse if Japan adopted a highly depreciated, exchange-rate peg. Earlier in 2002 and early 2003, when the Japanese economy, stock market and financial system were at a low point, the chance of a depreciation strategy winning tacit

approval of trading partners might have been reasonably high, if Japan had argued that this was a temporary strategy to prevent the economy to fall into another crisis, and that a strong Japanese economy would be beneficial to the rest of the world. However, the logic has lost its appeal when the fourth quarter of 2003 registered a strong recovery and the stock prices had risen by 50% from the trough.

A second problem is that adoption of an exchange rate peg might cause a shift of the nominal anchor away from the price level or inflation to the exchange rate. We do not dwell on this here because we discuss this extensively in another paper (Ito and Mishkin, 2004). Inflation targeting central banks have gotten into trouble when they have included an exchange-rate peg as part of their monetary policy strategy – Chile, Hungary and Israel immediately come to mind. The exchange rate ends up as the dominant influence over monetary policy and this results in monetary policy not focusing sufficiently on domestic considerations with poor economic outcomes the result.

The bottom line is that we believe that the Svensson plan would be a serious mistake, not because we disagree with Svensson's logic, but because the political economy of such a plan could be disastrous. Svensson's "foolproof way" would be a red flag to protectionist and anti-Japanese elements in the rest of the world and would be likely to hinder a communication strategy based on the price stability objective. Nonetheless, we do think that a more subtle approach makes sense. We advocate Japanese intervention in the foreign exchange market to depreciate the yen as one element of non-conventional monetary policy, but no precise exchange rate target should be announced. Instead the BOJ and the Ministry of Finance should emphasize that exchange-rate interventions, along with other measures, are being conducted as a method of pursuing expansionary monetary policy and to achieve a higher price level and a stronger Japanese economy. These interventions should be unsterilized so that they are a signal that their primary purpose is to

produce expansionary monetary policy that raises the price level and is not focused on a target level of the exchange rate.³⁴ It would also be important for the Japanese authorities to emphasize that Japan's escape from its deflation trap would help get Japan's economy back on track and would eventually be highly beneficial for Japan's trading partners.

2.2.4 Open market purchase of private assets.

An even more radical step for the Japanese monetary authorities would be to purchase private assets such as stocks, corporate bonds or real estate. Purchase of these assets would raise their prices directly and would lead to expansion in aggregate demand through a number of channels of monetary transmission (Mishkin, 1996, 2004 and Ito 1999). Purchase of private assets would also directly help restore balance sheets in the economy and help get the financial system working again, which we have seen is crucial to Japanese recovery.

However, BOJ purchase of these assets is not without problems. Government purchase of private assets can be highly politicized. Which assets should the BOJ buy? Different elements in the private sector would lobby for purchase of the assets that would make them profits. Some of this problem could be mitigated by the BOJ buying broad based bundles of assets or market indices so that specific private firms do not benefit over others. (Ito, 2001, proposed that the Bank of Japan buy ETF—the Japanese version of listed, market-based, stock mutual funds.) However, there still is the question of how much real estate should be bought versus stocks, or the relative amounts of corporate bonds versus equities. Decisions on what to buy would have important distributional consequences, which would put the BOJ under intense political pressure. Not only might this result in distortionary decisions, but it could politicize the BOJ and interfere

³⁴ Under the zero interest rate policy, unsterilized intervention becomes equivalent to sterilized intervention because the interest rate is not affected. Therefore, the difference is mainly through its effect through increasing monetary base. The Bank of Japan economists are skeptical on this argument, see Fujiki, Okina, and Shiratsuka (2001).

with the independence that this institution has worked so hard to get.

Another problem with BOJ purchase of private assets is that it involves the government in ownership of the private sector. The trend in recent years has been toward privatization because it is believed that the private sector has better incentives to produce efficiently than does the government sector. Having substantial purchases of private assets by the BOJ, which after all is a government entity, goes against this trend. Maybe the problems of BOJ ownership of private assets can be minimized by announcing that the BOJ will have no involvement in running of the companies or real estate that it has taken a position in, but political pressures may make this hard to do.

We therefore do have a concern that if BOJ purchases of private assets are sizeable, there could be adverse consequences both for the BOJ and the economy. However, if nothing else worked, then this more radical step might be necessary as a way of stimulating the economy and achieving a higher price level. We are thus reluctant to advocate a policy of purchase of private assets, at this point, but it should not be entirely ruled out: it would be a monetary policy of last resort.³⁵

In response to suggestions of purchasing large amounts of long bonds, equities, and foreign assets, the Bank of Japan has expressed concern about its balance sheet. Governor Hayami and Bank economists argued that those unconventional policies would put the balance sheet of the Bank of Japan at risk because of possible losses on these assets. Theoretically speaking, this argument is specious. The Bank of Japan, despite being legally independent, is still part of the public sector. Any profits (seigniorage) are paid to the government and any losses beyond the seigniorage should be offset by a government fiscal injection. However, politically, the Bank of Japan may not be in a comfortable position to ask for fiscal money, if losses become

³⁵ We believe that if these policies had been employed sometime in 2001 and 2002, then the Japanese economy would have started a recovery much earlier than 2003.

too large.³⁶ We recommend that the Ministry of Finance provide assurances that it will cover possible balance sheet losses in return for introducing the price level target.

(Recommendation) If the Bank of Japan achieves the price level target with losses in balance sheet, the Ministry will inject fiscal money to restore the capital position of the Bank of Japan without asking the responsibility of Governor and other Policy Board members for such losses. This policy should be announced unilaterally by the Ministry.

3. Conclusions

Our discussion here has indicated that none of the non-conventional monetary policy strategies are without their problems. Thus we advocate what might be crudely described as a “kitchen sink” or “throw it against the wall and see if it sticks approach.” One concern might be that the uncertainty about the impact of the different approaches might make it harder to be sure of what the outcome of using them might be. One response would be paralysis and then not to try any of them. Indeed, in the past the Bank of Japan has defended doing nothing because it was unsure of what the effects of non-conventional policies might be (Okina (1999)). The BOJ, particularly under Governor Hayami, was concerned that non-conventional policies might lead to uncontrollable inflation.

There are two responses to these concerns. The first is that having a clear cut price level/inflation target to pin down expectations can make it highly likely that less conventional

³⁶ The hesitation is understandable from its concern for independence. The old law was explicit in that the Ministry would fill the losses, but this clause was eliminated in the new law of 1998, presumably to make the Bank take responsibility in independent decision making. The independence can be said to have come at a wrong time if this change made the Bank more timid in adopting policy that may potentially cause the losses in balance sheet.

tools of monetary policy can achieve the goal of price stability and that inflation would not spin out of control. In recent years we have seen major successes in the ability of monetary policy to control inflation in many industrialized countries. We would argue that this is not because central banks have become so much more knowledgeable about the transmission mechanisms of monetary policy. There still is tremendous ignorance on this score. What has changed in recent years is that central banks in industrialized countries have been able to put in place much stronger nominal anchors (targets or goals that tie down the price level). The result is greatly improved performance on both the inflation and output fronts. One method has been to adopt inflation targets, as in the New Zealand, Canada, the United Kingdom, Sweden and Australia, and to some extent in the European Monetary Union.³⁷ Alternatively, a strong nominal anchor can be put into place without a formal inflation target through direct communication with the public about the commitment to price stability and actions that are consistent with it. This is the strategy pursued by the Federal Reserve, which has as strong a nominal anchor as inflation-targeting, central banks although it is embodied in an individual, Alan Greenspan (Mishkin, 2000).³⁸ Adopting a price level target and then moving to an inflation target in Japan would go a long way to ensuring an escape from the deflation trap, while making it highly unlikely that inflation would spin out of control thereafter.

The second reason why the BOJ, in concert with the Ministry of Finance, needs to pursue more radical actions to stimulate the economy is that the weakness of the Japanese financial sector

³⁷The European Central Bank does not like to call their monetary policy strategy inflation targeting but it is pretty close: there is a strong commitment to price stability and an explicit inflation goal of less than but close to 2% has been announced.

³⁸This does not mean that there are no reasons for the Federal Reserve to move to an inflation target. See Mishkin (2004).

and the need for massive restructuring of the Japanese economy requires extraordinary measures. Clearly, monetary policy by itself cannot solve Japan's economic problems. Indeed, we believe that financial and nonfinancial restructuring is probably far more crucial to restoring Japan's economic health than are changes in Japanese monetary policy, and this is the subject of other chapters in this book.

However, monetary policy is crucial to making the restructuring process more successful and palatable to the Japanese public. Using monetary policy to reflate the economy will promote restoration of balance sheets that will help the financial system recover. Expansionary monetary policy that increases aggregate demand will make it easier to deal with the disruption that will necessarily be caused by restructuring: it will make it easier for workers in a displaced sector of the economy move to a sector where they will be more productive.

As of this writing (June 2004), the Japanese economy is showing its strong recovery (more than 6 percent (annualized, quarter-to-quarter basis) growth in 2003:IV and 2004:I). Yet, the inflation rates (both in CPI and GDP deflator) still show deflation. The long-term interest rate has risen to about 2 percent. It is important that the Bank of Japan maintain the zero interest rate policy until the inflation rate become clearly above 1 percent, and its intention of keeping ZIRP until several conditions are cleared, should be made clear as pre-commitment. That would prevent the long-term interest rate from rising prematurely.

It is a tragedy to see the once great Japanese economy fall far behind a country like the United States. Japan has tremendous strengths -- a highly educated work force, an incredibly hard working population, and superb engineers. This is manifested in Japan's incredibly vibrant export sector which is the envy of the world. It is not good enough for Japan to be satisfied with growth rates of 2 to 3%, when it has fallen so far behind where it would have been if deflation and financial instability had not set in. There is room for the Japanese economy to grow even faster

until it reaches its full-employment level of resources.³⁹ In addition, if monetary policy can help in the restructuring of the financial as well as the nonfinancial sectors of the economy, higher productivity growth could be the result.

Monetary policy can be effective in unleashing the enormous Japanese potential. As Franklin Delano Roosevelt, one of the greatest American presidents, said, “The only thing we have to fear is fear itself.”⁴⁰ These are wise words that might be taken to heart by the Japanese monetary authorities. We hope that the analysis in this paper provides some guidance for how Japanese monetary policy can be improved to help Japan reach its full potential.

³⁹ Higuchi and Hashimoto (this volume).

⁴⁰ Bernanke (2000) cites the same quote in the context of what the monetary authorities in Japan need to do.

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