

The Bank of Japan: An Odyssey of Zero Interest Rate Policy and Quantitative Easing Policy

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1: Introduction

Two constraints on Bank of Japan (BoJ) policy were relaxed in 1973. BoJ policy was freed from the constraint of maintaining a fixed relationship between the yen and the dollar with the collapse of the Bretton Woods framework and the BoJ achieved a degree of political independence from the Ministry of Finance (MoF) in the aftermath of the “wild inflation” period of the early 1970s. In 1975 the BoJ announced that price stability would be its primary objective and began publishing money supply forecasts which some incorrectly interpreted as a “monetarist” operating framework; however, the policy objective of price stability was clearly monetarist.

BoJ policy outcomes since 1975, however, have ranged from impressive when the BoJ achieved a record of price stability from 1975 to 1989 that attracted world attention because of its formal dependence on the MoF to disappointing when the BoJ contributed to the asset bubble of the late 1980s, permitted disinflation in the first half of the 1990s, and most importantly, permitted deflation from 1995 to 2005.

Japan’s disinflation in the first half of the 1990s followed by deflation over the next decade is a remarkable central bank policy outcome. Japan’s deflation in the past decade represents the only example of prolonged deflation in a major economy since the Great Depression period of the 1930s. While Japan’s deflation is not on the same order of magnitude as occurred in the 1930s, the effects on the economy have been significant. The deflation process imposed significant costs on the Japanese economy, limited the effectiveness of structural reforms, and postponed meaningful recovery. To combat deflation, the BoJ adopted a Zero Interest Rate Policy (ZIRP) in February 1999 and because of its lack of effectiveness and political pressure resulting from a premature exit of ZIRP in August 2000, the BoJ adopted the more expansionary Quantitative Easing Policy (QEP) in March 2001. QEP is designed to increase excess reserves of the banking system or current account balances held by banks at the BoJ through open market purchases of government bonds. In March 2006 the BoJ announced the pre-conditions for ending QEP had been achieved because CPI price changes are now positive. The March 2006 decision to exit QEP, return to ZIRP for a short period of time, and move to higher interest rates in the future has raised concern the BoJ might be adopting an exit strategy too soon. In July 2006 the BoJ raised the target call rate to 0.25 percent and as of the time of this writing the target remains at 0.25 percent.

There is a general consensus ZIRP was fundamentally misconceived and public statements by BoJ officials, especially former Governor Masaru Hayami, defending the policy were not always consistent. First, the policy of targeting nominal interest rates at zero in the context of declining prices and expectations of further price declines generates higher real interest rates. This lesson from the experience of the 1930s seems to have been ignored by the BoJ. A zero short-term interest rate is not necessarily consistent with easy monetary policy. Second, ZIRP lacked a numerical dimension (Ueda, 2002) and interest rate targeting in general provides a weak link between central bank policy and the price level under the best of circumstances (Cargill and Gurerro, 2006a). Third, once the ZIRP was adopted the BoJ had no further means to influence the public’s expectations of price change since the ZIRP essentially stated “this is all the central

bank can do” to reverse the deflationary process. The central bank essentially abdicates its role as a price stabilizing institution if ZIRP is insufficient to reverse deflationary expectations.

QEP was an improvement over ZIRP, though the BoJ continued to be criticized for not expanding liquidity more aggressively (Bernanke, 2003). Nonetheless, the significant increase in liquidity starting in late 2002 and continued through 2005 appears to have had a positive effect on spending (Ugai, 2006) and deserves credit for slowing down, if not ending, the deflation process. Despite the positive impact of QEP and the fact that recent price behavior seems consistent with the pre-conditions for exiting QEP, reasonable observers question whether the BoJ is adopting an exit policy too soon especially in light of the August 2000 decision to raise the targeted call rate. In August 2000 the BoJ attempted to exit ZIRP by slightly raising the target call rate and the negative effect on the economy forced the BoJ to return to ZIRP and subjected the BoJ to intense political criticism. What makes the August 2000 policy change remarkable is that it followed a BoJ sponsored conference in July during which the majority of non-BoJ participants criticized the BoJ for not pursuing a more aggressive policy of increasing liquidity (Bank of Japan, 2001). Had it been known during the conference the BoJ was considering a move toward tightness the criticism would have been even more intense.

Thus, it seems fair to question why the BoJ is moving rapidly to end QEP when the Japanese economy’s recovery has only begun and price inflation remains very close to zero, especially considering the well-known measurement errors in the price index. This paper addresses two issues relating to this question. First, why has the BoJ followed a deflationary policy for almost a decade? A corollary to this question, is why does the BoJ seem so willing to exit QEP when it is not yet clear the economy has recovered to the level that positive price expectations will dominate economic contracting? This paper suggests the BoJ’s concern with the financial strength of its balance sheet is an important part of the explanation for past policies and the desire to exit QEP. Second, is the BoJ’s concern with its balance sheet legitimate, could concern with technical balance sheet relationships generate policy errors and are there lessons to be learned in this regard from other central banks?

These two questions are explored in the following five sections. The various explanations for past BoJ policy are outlined in Section 2. Section 3 discusses why central banks are organized as a public corporation. Section 4 discusses whether the BoJ’s balance sheet is a realistic constraint on policy while Section 5 considers the implications for central bank independence if the balance sheet does become a constraint in dealing with extraordinary conditions such as those of the Japanese economy for the past fifteen years, respectively. Section 6 discusses the policy errors made by the Federal Reserve in the 1930s that might be of relevance to current BoJ policy. Sections 4, 5, and 6 are drawn directly from Cargill (2005 and 2006) with only minor revision. A short concluding section ends the paper.

2: What Account’s for Fifteen Years of Disinflation and Deflation?

The disinflation in the first half of the 1990s and deflation from 1995 through at least 2004 have imposed significant costs on Japan’s economy. Deflation, even if completely anticipated, imposes real costs on the economy and is not the reverse of anticipated inflation, which imposes small resource costs on the economy for moderate inflation rates. Because there is a lower bound of zero on nominal interest rates, deflation is fundamentally different than inflation and has the potential for additional adverse effects on the economy.

Cargill and Parker (2003) outlined the adverse effects of deflation: deflation increases the burden of servicing outstanding debt and hence increases bankruptcy; deflationary expectations reduce consumption; deflation increases the demand for money balances; deflation reduces the deposit expansion multiplier; and, deflation generates a “discontinuity” in monetary policy in that the effort to reverse the deflationary process increases over time because of the decline in the money multiplier, decline in aggregate demand, and increase in the demand for money.

Given these adverse effects the obvious question is what accounts for the policy outcomes of the BoJ during the past fifteen years? The following possible explanations might account for the BoJ’s policy outcomes over the past decade:

1. It’s not my fault trap;
2. Conservative central banker trap;
3. Independence trap;
4. Policy error trap;
5. War of attrition with the MoF trap: Version 1: fiscal responsibility
6. War of attrition with the MoF trap: Version 2: forgiveness and forbearance; and,
7. Balance sheet trap

It’s not my fault trap: The BoJ has stated on a number of occasions that structural problems, aftermath of the collapse of asset prices, or Chinese cheap imports were responsible for the deflation process and these events were outside of the influence of monetary policy. Did the BoJ have the power to reverse disinflation and deflation that characterized the 1990s? The BoJ has found little support for its position that deflation was out of its control or that the BoJ pursued a policy of ease during the 1990s. Long periods of inflation or deflation are a monetary phenomenon to paraphrase Friedman’s famous statement about the relationship between money and prices. A number of studies of BoJ policy have concluded that rather than following a policy of ease, BoJ policy for much of the 1990s was restrictive (e.g., MaCallum, 2003)

Conservative Central Banker: The BoJ’s history suggests that it has an aversion toward inflation and that it regards measured inflation rates close to zero as price stability. In a sense, the BoJ meets the requirements of the conservative central banker solution to the time inconsistency problem in which central banks have an inflation bias (Rogoff, 1985). The March 2006 decision to end QEP seems consistent with this view. The Monetary Policy Board adopted an inflation range (not target) of zero to two percent with the majority focusing on a one-percent inflation rate. Given the well-known measurement biases of the price index this range is essentially defining price stability as a measured inflation rate of zero or close to zero. By any standards this would be regarded as conservative.

Independence Trap: Formal independence in 1997 came to the BoJ quickly and was as much the outcome of a political effort to reduce the role of the MoF in the financial system as it was to modernize the BoJ’s legal charter and to achieve an institutional design similar to other central banks. As such, Cargill, Hutchison, and Ito (2000) argued the BoJ became overly cautious and inward in its decision making. In a sense the BoJ became a “prisoner of its own independence”. Not only did BoJ policy become more risk averse in adopting nontraditional policy as the deflation process became more apparent in 1998 and 1999, but the BoJ become politically more insular and unwilling to interact with the MoF or others for fear this would represent a loss of independence.

Policy Error Trap: It is possible the BoJ simply made a series of policy errors - not unheard of even in recent central banking history! The turbulent environment of 1998 when the Governor and Deputy Governor resigned over a scandal in the banking section combined with the appointment of Hayami as Governor may have generated an environment for error. Some of the policy statements of former Governor Hayami in particular suggest a lack of understanding about monetary policy (Cargill and Gurerro, 2006a).

War of Attribution with the MoF – Version I and II: The BoJ has expressed concern over the MoF's policies of expanding the debt both to finance spending and to support a policy of forgiveness and forbearance in dealing with troubled financial institutions. The BoJ regards the level of private and public debt as socially excessive and has adopted deflation as a second-best policy instrument to limit the amount of debt issued by the MoF. Cargill and Gurerro (2006b) developed a theoretical model that suggests deflation was a second-best policy for the BoJ given its concern with the amount of debt and the MoF's policies of spending and dealing with troubled financial institutions.

Balance Sheet Trap: The BoJ has expressed concern QEP exposes the Bank's balance sheet to solvency and interest-rate risk problems in that the large amount of government bonds purchased to achieve QEP targets reduces its ability to exit QEP (Hiroshi, Okina, and Shiratsuka, 2001). The BoJ fears postponing the exit too long will force it to increase interest rates rapidly and reduce its capital base; and ultimately, might reduce the BoJ's credibility with the public.

This is not an exhaustive list of explanations; however, they are the most frequently cited explanations. These six explanations to some degree offer insights into the policy outcomes of the BoJ since 1990; however, the balance sheet trap seems to be especially important judged by statements by BoJ officials in recent years, concern raised by the BoJ's first reported operating loss reported in FY2003, and judged by the same preoccupation the Federal Reserve had with its balance sheet condition in the 1930s.

3: Central Bank Balance Sheets

Central banks are organized as public corporations with a capital structure because they evolved from private bank and/or clearinghouse institutions for which a strong capital base was necessary to be credible issuers of promises to pay; capital structure was an easy way to cover startup costs and to institutionalize a functional separation between the central bank and the government; and, capital structure was an easy way to build up a surplus to cover those periods when future operations might incur losses. Central bank capital structure, however, is not the same as the capital structure of a private bank.

Capital structure does not define meaningful ownership status; for example, despite the fact that memberbanks banks hold 100 percent of outstanding Federal Reserve stock and individuals hold about 40 percent of BoJ stock, private entities in both the United States and Japan do not own or influence the respective central banks in any meaningful property-right sense. Nor does capital structure have much meaning for legal independence. The BoJ achieved a significant increase in legal independence in 1997 without any meaningful change in the distribution of stock ownership between the government and the public. Most important, capital structure is a weak measure of central bank financial strength because of contingent liabilities.

Technically a central bank does not require capital to conduct policy, but it does need to generate enough revenue by asset acquisition (open market operations and loans) and fees to cover the costs of providing monetary services. As a practical matter, however, central banks will always be organized around a capital structure and failure to distinguish between capital and financial strength can adversely influence public perception and policy outcomes. A financially weak central bank is one that continually generates losses that eventually require monetary expansion to cover expenses, requires abandonment or modification of a policy objective to eliminate losses, reduces the ability of the central bank to function as a fiscal agent for the government, and may in the extreme, generate a shift from the formal to the informal payments system. A financially weak central bank also loses credibility with the public as they come to believe the central bank will modify or abandon a specific policy to ensure profitable operation.

Stella (2003 and 2005) defines financial strength as the ability of the central bank to commit to a policy under a variety of macroeconomic events; that is, the only requirement for central bank policy is that the central bank generate sufficient revenue to cover the costs of providing monetary services. If the central bank can conduct operations in the present and future without incurring operating losses, the central bank can be regarded as financially strong. Ironically central bank financial strength or independence may involve cooperation with the government at certain times that appears to conflict with its legal independence. Financial strength is forward looking and focuses on the risks the central bank incurs in committing to a specific policy target in spite of losses it may incur in pursuing that target.

Unfortunately, financial strength is difficult to measure since it depends on the asset structure of the central bank, the cost of providing monetary services, and the macroeconomic events that influence operating profits. Stella (2003) offers some possible indicators of financial strength, but emphasizes that it is unlikely a "one size fits all" measure is practical. Financial strength cannot be measured by conventional balance sheet ratios; in fact, focusing on balance sheet ratios may generate adverse policy outcomes.

4: BoJ's Concern over Capital Adequacy

The BoJ has made large purchases of government bonds to implement QEP and maintain a high level of current account balances of financial institutions held at the BoJ. In addition the BoJ has made loans to troubled financial institutions and even purchased equities from banks on a small scale. As a result of these operations the BoJ has assumed a leveraged position in the domestic financial market. The past asset accumulation of government bonds has exposed the BoJ to problems when policy shifts from preventing deflation to restraining inflation in a higher interest rate environment.

The BoJ has directed attention to its declining measure of capital adequacy (Figure 1) defined as:

$$\text{Capital Adequacy Ratio} = [\text{capital account (BoJ paid-in stock plus legal reserves)} + \text{several reserve accounts}] / \text{average of BoJ notes outstanding.}$$

In addition, the Bank reported its first operating loss since 1972 for FY 2003 (April 1, 2003, to March 31, 2004) and former Governor Hayami, Governor Toshihiko Fukui, and former Policy Board member Kazuo Ueda, have all publicly expressed concern over BoJ capital and its relationship to central bank credibility.

The BoJ has been increasingly concerned about the potential for a sudden decline in capital adequacy when nominal interest rates increase. This concern may have accounted for the premature shift to a tighter monetary policy in August 2000 and especially the March 2006 announcement to exit QEP. It is QEP that resulted in a major increase in the leveraged position of the BoJ.

Financial strength is an important concern for BoJ policy as higher interest rates will generate a capital loss on the large holdings of government bonds even with modest increases in long-term interest rates if the government bonds are sold, and the Bank's measure of capital adequacy has declined in the last few years (Figure 1). In this context, how valid is the BoJ's concern?

It is difficult to argue the financial strength of the BoJ has been compromised or that the BoJ is likely to lose its ability to credibly commit to price stability as a result of operational losses. In fact, the opposite might be true. The irony here is that the BoJ is trying to defeat deflationary expectations; hence, a weak balance sheet—implying a need for future money creation—could *add* to its credibility. It should also be noted that the BoJ has not sold any government bonds in the past 30 years (Ueda, 2004, p. 6).

Part of the problem is that the BoJ's measure of capital adequacy appears to have recovered from declines in the past, but more importantly, the measure has little bearing on its financial strength. The measure does not incorporate legitimate elements in determining financial strength such as interest rate risk, credit risk, or exchange rate risk and is overly influenced by currency in circulation. Alternative measures of capital adequacy, particularly with a forward-looking dimension, incorporating risks under different macroeconomic scenarios would provide a better measure of potential threats to its financial strength to pursue price stability.

5: Too Much Independence?

A more fundamental problem might be the overemphasis on legal independence and the constraint this imposes on the ability of the BoJ and the MoF to cooperate in the face of unusual events to ensure the central bank has the flexibility to pursue price stability. Deflation is such an unusual event that requires nontraditional approaches to price stability and cooperation between the central bank and the government. The BoJ is not a corporation in the private market sense and cannot go bankrupt any more than government can default on general debt in normal and even extra-normal times. The BoJ could absorb a mark-to-market loss and continue to have assets to constrict liquidity through open market operations. It is difficult to accept the BoJ would not be able to generate sufficient revenue to cover operating expenses given the essentially zero marginal cost of purchasing even low-interest yielding assets.

The balance sheet can impose a real constraint on BoJ's operations if it reflects a dependence of the central bank on government to the degree monetary policy is directly financing government spending, supporting insolvent financial institutions, or if the BoJ needs to resort to money creation to finance its own operations. To prevent this, the MoF has an obligation to ensure the BoJ retains financial strength in the context of legal independence; however, maintaining an adequate level of capital will not be costless to the government budget.

The solution might involve the introduction of new variable interest rate government bonds as suggested by Bernanke (2003) to immunize the Bank's balance sheet from interest rate fluctuations, or, more simply, a public commitment to ensure the BoJ's commitment to price stability will not be compromised by interest-rate risk. Legal independence does not mean the

central bank is a “sink or swim” institution separate from the rest of government. Both institutions need to cooperate to ensure that balance sheet constraints do not interfere with the more important objective of price stability.

This is new ground for the BoJ as well as for other central banks in a low interest rate environment. The BoJ and the MoF need to jointly determine how to ensure that the BoJ maintains an adequate level of capital if there is a meaningful threat to the Bank’s financial strength in a transparent manner that does not interfere with the objective of price stability. This will clearly involve direct dialogue, since there is nothing in the BoJ Law to indicate the adequate level of capital, what would happen if the BoJ’s balance sheet generated negative net worth or what responsibility the MoF has to ensure adequate bank capital.

6: The Shadow of the Federal Reserve

Concern with balance sheet indicators combined with an emphasis on formal independence contributed to the failure of the Federal Reserve to prevent major declines in the price level from 1930 to 1933, unwillingness to engage in expansionary policy from 1934 to 1935, and the decision to raise reserve requirements in 1936 that generated a short but sharp recession (Cargill and Mayer, 2006). While the quantitative differences between the 1930s in the U.S. and Japan in the 1990s are major, the BoJ’s current stance on its capital structure appears remarkably similar to a view espoused by the Federal Reserve in the 1930s (Cargill, 2005). In both periods the central bank conducted policy in a low interest rate and deflationary environment. Preoccupation with accounting measures of balance sheet strength, accounting measures of liquidity in the banking system, and legal independence contributed to insufficiently stimulative monetary policy that permitted price declines which in turn, set into motion a downward process that became increasingly difficult to reverse and ultimately reduced central bank credibility.

The Federal Reserve erred and, as a result, contributed significantly to the depressed conditions of the 1930s. The irony of the Federal Reserve’s policies is that for all practical purposes, the Federal Reserve lost its operational and policy independence for almost two decades until the Federal Reserve-Treasury Accord of 1951.

History has judged harshly the Federal Reserve’s reluctance to engage in aggressive monetary policy. Concerns about the Federal Reserve’s balance sheet or potential loss of independence in hindsight appear shortsighted. The BoJ’s focus on its capital, particularly on a capital adequacy measure is difficult to rationalize in the context of risks that could weaken a central bank’s financial strength, and diverts the Bank from its more fundamental responsibility of price stability.

7: Concluding Comment

It is too early to determine whether the BoJ has erred in exiting QEP in March 2006. It would be unfortunate, however, if the decision was based on concerns over balance sheet definitions and a reluctance to interact with the MoF. The BoJ does have legitimate concerns over its financial strength; however, these could easily be resolved with dialogue between the BoJ and the MoF and in this regard, failure to resolve the issue rests on both the BoJ and the MoF. Hopefully, the BoJ will exercise caution in moving to higher interest rates, but nonetheless, the entire episode is not a high point of public policy making in Japan.

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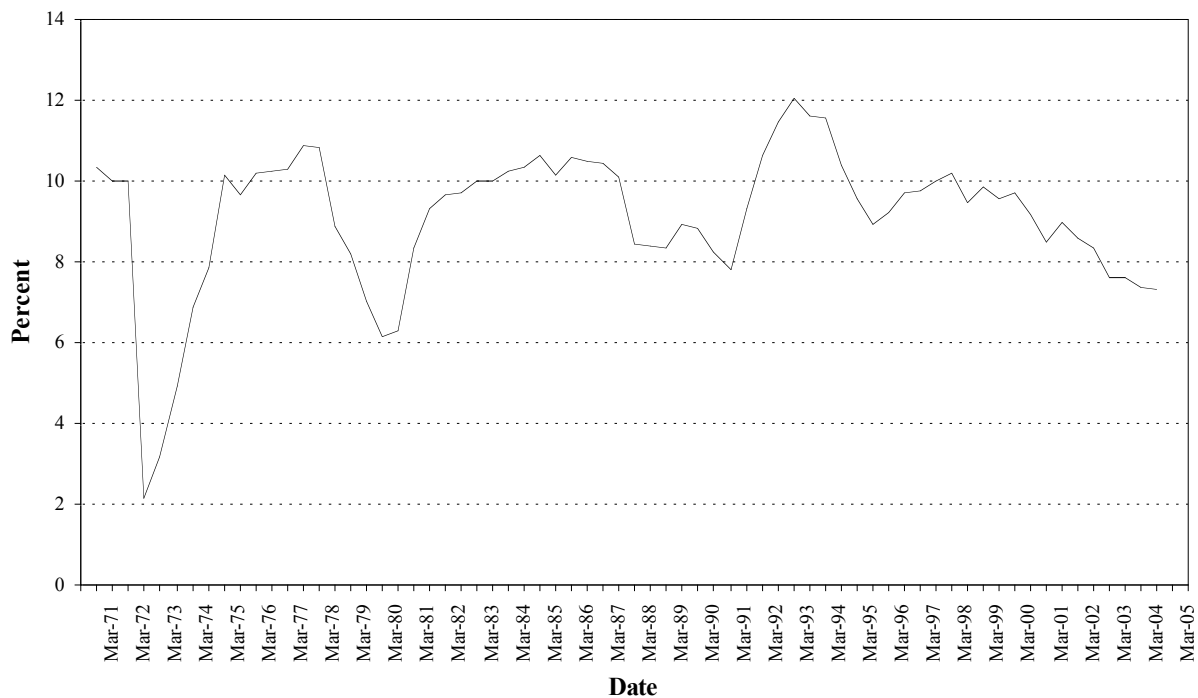
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Figure 1 September and March Values of Bank of Japan Measure of Capital Adequacy, September 1970 to March 2005



Source: Bank of Japan