

Is the Bank of Japan's Financial Structure an Obstacle to Policy?

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Central bank capital and accounting measures of capital adequacy potentially constrain central bank policy outcomes. Historical and institutional factors explain why central banks are organized as public corporations; however, capital structure design provides little predictive insight into policy outcomes. In fact, focusing on accounting measures of capital adequacy and similar performance indicators potentially interferes with monetary policy, especially in extraordinary economic circumstances such as deflation. The Bank of Japan, like the Federal Reserve in the 1930s, has overemphasized accounting measures of central bank performance at the cost of nonoptimal policy outcomes. [JEL E58, E31, E63]

During the past decade, the financial strength and capital policy of all G-3 central banks—the European Central Bank, Federal Reserve, and Bank of Japan—have been reviewed and discussed. In only the last case, however, has it been suggested that the financial risks facing the central bank might justify or necessitate a material modification to the stance of monetary policy. What has made the Bank of Japan special? Clearly, in its fight against deflation, the Bank of Japan has been forced to take what might be termed a highly leveraged position in the domestic financial market and hence has taken on considerable risk. In addition, the financial environment that would attend a successful exit from deflation—higher nominal interest rates—would have a clear negative impact on a significant holder of Japanese nonindexed debt such as the Bank of Japan; that is, the financial risks are nonsym-

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metric, and the realization of the financially damaging state is consistent with central bank policy “success.” Lastly, the Bank of Japan capital policy gives the impression—mistaken in our view—that the Bank’s financial strength could be completely exhausted by a normal change in the macroeconomic environment.

This paper examines these issues in light of the problems associated with confusing the conventional term “central bank capital” with the more meaningful and broader concept of financial strength, which, as argued elsewhere in this issue of *IMF Staff Papers*, relates to the central bank’s overall financial capacity to achieve its policy target and is not merely a balance sheet concept. Furthermore, a review of Bank of Japan policy outcomes shows that neither conventional measures of institutional independence nor financial independence may be good predictors of policy outcomes. Indeed, focusing on narrow accounting measures of capital adequacy and formal rules of legal independence may divert the central bank and the government from dealing with serious macroeconomic problems.

These issues have been on the mind of the Bank of Japan in recent years. Governor Masaru Hayami, who retired March 19, 2003, current Governor Toshihiko Fukui, and Kazuo Ueda, former member of the Policy Board, have all publicly expressed concern over Bank of Japan capital and its relationship to central bank credibility.¹ This concern is likely to intensify following the release of the Bank of Japan’s financial statements for FY 2003 (April 1, 2003, to March 31, 2004), which revealed the first operating loss since 1972, 22.3 billion yen. Although the operating loss is not as dramatic as it first appears, because the Bank was able to transfer 47.2 billion yen to the government after paying dividends and adding to reserves, the loss, combined with a decline in the Bank of Japan’s measure of capital adequacy compared with FY 2002, will stimulate further discussion of the relationship between the Bank’s financial strength and its ability to maintain price stability. The operating loss may have been a one-time event, however. The Bank of Japan most recently reported a positive operating income of 507.4 billion yen for FY 2004. Irrespective of the most recent financial performance of the Bank of Japan, the recovery of the Japanese economy starting in 2003, the deceleration of the CPI deflation rate, and the decline in the output gap will further intensify concern as Japan’s recovery continues and increasing interest rates reduce the market value of Japan Government Bonds (JGBs) held by the Bank of Japan.² The recovery, however, slowed in mid-2004, and it is not clear whether the Bank of Japan will have to deal with a stagnant or an expanding economy in the future.

This paper focuses on Bank of Japan capital, financial strength, and policy outcomes from several perspectives. Section I reviews postwar Bank of Japan policy bifurcating the postwar period into “high” and “low” periods in terms of policy outcomes and the enhanced legal independence provided to the Bank of Japan effective April 1, 1998. The objective is to place the current discussion in historical context and highlight the lack of correspondence between conventional measures of independence and policy outcomes. Section II differentiates between capital and central

¹ See Fukui (2003), Pilling (2003), and Ueda (2004).

² Academic interest in this issue and its applicability to the Bank of Japan has also risen lately. See Jeanne and Svensson (2004).

bank financial strength, suggests reasons why central banks possess a capital structure, and discusses the relationship between capital structure and central bank independence. The institutional evolution of the Bank of Japan's capital account is reviewed in Section III, emphasizing the point that the Bank's recent institutional redesign has elevated the Bank of Japan's concern over capital adequacy. Section IV reviews measures of Bank of Japan capital adequacy, the performance of capital adequacy measures in the 1990s, and the specific concerns raised by the Bank of Japan over its capital structure. This section argues that the Bank of Japan's capital adequacy measure and policy bear little relationship to the risk exposure to the Bank of Japan's financial strength; that is, the Bank's focus on capital has diverted central bank policy from the ultimate goal of price stability. Both the Bank of Japan and the Ministry of Finance would appear to bear responsibility for this problem. Section V draws parallels between the Federal Reserve in the 1930s and the Bank of Japan, and suggests that both central banks focused too much on institutional independence and accounting measures of balance sheet performance. The costs of deflation are so serious that they require central banks to take exceptional balance sheet risks as well as depart from formal independence from the Ministry of Finance. There exist straightforward methods to ensure the central bank is well capitalized, and adherence to the concept of central bank independence should not interfere with these policies.

I. Policy Outcomes and Institutional Design of the Bank of Japan in the Postwar Period

This section provides historical perspective on Bank of Japan policy in the postwar period bifurcated into high- and low-point periods. These periods correspond to different institutional designs of the Bank of Japan, with the high point associated with a legally dependent structure and the low point associated with legal independence. The high point of central bank policy covers the period from 1950, when reindustrialization accelerated in response to the start of the Korean War, through May 1989, when the Bank of Japan raised the discount rate, and equity and land asset prices subsequently collapsed. During that period the Bank of Japan achieved a moderate to low inflation rate, accommodated sustained real GDP growth, avoided the inflation-disinflation-recession sequence of the early 1980s in response to the second set of oil price shocks, and maintained financial stability. This is an impressive policy record, considering the structural changes and internationalization of the Japanese economy that became increasingly important after 1975. The only meaningful exception to this record was a short, but turbulent, period in the early 1970s, as Japan adjusted to a maturing of the reindustrialization process and breakup of the BrettonWoods fixed exchange rate system.

Many researchers by the late 1980s concluded the Bank of Japan was one of the most credible central banks in terms of commitment to price stability and policy outcomes (for example, Hutchison and Judd, 1989). This performance was achieved against the backdrop of Bank of Japan's legal status, which remained largely unchanged since its establishment in 1882. On legal grounds, the Bank of Japan was rated as one of the most dependent central banks in the world (for example,

Cukierman, Webb, and Neyapti, 1992). Its price stability record therefore is evidence counter to the widely accepted view (for example, Alesina and Summers, 1993) that the more legally independent the central bank, the lower the inflation rate is likely to be.³

The low point of central bank policy commenced with the Bank of Japan's decision in May 1989 to raise the discount rate and burst the asset price bubble, and continued through 2004. The Bank of Japan increased the discount rate in several steps from a historical low of 2.5 percent to 6.0 percent in the first part of 1991. In hindsight, the sharp restrictive policy was an overreaction to the monetary accommodation of asset inflation in the second half of the 1980s. A sharp recession and declining asset prices prompted the Bank of Japan to shift toward ease in 1991, and by early 1995, the call rate and discount rate declined to 0.05 and 0.5 percent, respectively. The Bank of Japan continued to lower the discount and call rate until the first "zero interest rate" policy was adopted in February 1999 and ended in July 2000. The Bank raised the call rate to 0.25 in August 2000, although the discount rate was left unchanged at 0.5 percent. The Bank of Japan returned to a zero interest rate policy in late 2000 and shifted to a quantitative easing policy in March 2001 in response to a decline in the economy and the need to adopt a different operating framework in the context of essentially zero short-term interest rates.

The quantitative policy targets the Bank of Japan's current account balance or reserves of depository institutions. The current account balance target has been successively increased from around 5 trillion yen in March 2001 to 30–35 trillion yen as of May 2004. Required reserves have averaged around 5 trillion yen, indicating a significant increase in excess reserves held by the banking system since March 2001. The quantitative targets have been achieved primarily by purchases of JGBs.

Despite the shift toward ease in 1991, the Bank of Japan has failed to achieve price stability. Japan experienced disinflation from an already low inflation rate in the 1980s and, after 1994, deflation. While inflation rates decline worldwide, Japan represents one of the few economies and the only industrial economy where deflation has persisted for almost a decade, rekindling memories of the 1930s. China until recently is a notable example of deflation; however, China's short period of deflation differs significantly from deflation in Japan (Cargill and Parker, 2004).

Critics of Bank of Japan policy argue that it has for all practical purposes been insufficiently expansionary since the early 1990s, especially after 1994 (for example, Hetzel, 2003; and McCallum, 2003), and recommend more aggressive purchases of JGBs (Bernanke, 2003). Some suggested this can be accomplished within the current institutional design, while others have recommended that the Bank of Japan adopt a formal inflation or price-level target framework.

In contrast, the Bank argued against more expansionary policy, because the monetary base channel has been constrained by structural problems in the banking system, high credit risk in the real sector, and until very recently, a large non-performing loan problem. Aggressive purchases of JGBs were seen to risk weakening fiscal discipline in the context of an already large central government deficit

³The view that formal independence generates better policy outcomes has been challenged in Cargill (1995), Fujiki (1996), and Posen (1996).

and a high ratio of JGBs to GDP of around 150 percent. Furthermore, aggressive purchases of JGBs combined with higher interest rates projected as the economy recovers were seen as exposing the Bank's balance sheet to interest rate risk, reducing the Bank's capital, and jeopardizing credibility.

Fujiki, Okina, and Shiratsuka succinctly summarized the Bank's view in early 2001:

... further monetary easing beyond the zero interest rate policy, most typified by the outright purchase of long-term government bonds, should be viewed as a bet which we would only be forced to explore in the event the Japanese economy stands on the brink of serious deflation . . . during the course of prolonged economic stagnation, it is becoming clearer in Japan that monetary policy is neither a cure-all for an economic slump nor a substitute for policy measures directed at latent structural problems on the supply side (Fujiki, Okina, and Shiratsuka, 2001, pp. 124–5).

Despite this position, the Bank of Japan significantly increased the targeted current account balance from around 5 trillion yen to 10–15 trillion yen by late 2002 consistent with increasing pressure from Prime Minister Koizumi and the Diet over the continuing price declines. The PM made public statements about the need to have a “deflation fighter” replace the retiring Governor Hayami in March 2003, and some members of the Diet suggested the independence given the Bank of Japan in 1998 be restrained by an inflation target framework. The Bank of Japan subsequently moved toward further ease in late 2002 and continued under Governor Fukui after his appointment March 2003. The policy appeared to have contributed to a more optimistic outlook for the Japanese economy. The economy expanded in 2003 through the first quarter of 2004, but declined slightly in the second and third quarters and raised concerns about the sustainability of the recovery. However, the Bank of Japan (Bank of Japan, 2005) continues to project an improving economy in FY 2005 and FY 2006 with a return to positive price increases in FY 2006.

The shift in policy has been accomplished by an increase in Bank of Japan's balance sheet, with the increase in the asset portfolio of JGBs representing the most significant development.⁴ At the end of 2000, JGBs represented 26 percent of assets, but by the end of 2003, JGBs represented 49 percent of assets, and open market purchases of JGBs dominated increases in the monetary base.

Taking a broad view of the postwar record of Bank of Japan policy, one could argue that it contradicts much of the conventional wisdom about central bank institutional design. The high point of policy outcomes was achieved in the context of a legally dependent central bank, while the low period persisted despite a significant increase in the legal independence of the Bank of Japan effective April 1, 1998. The irony is that greater independence has been associated with disinflation, deflation, and growing criticism of Bank of Japan policy both inside and outside of Japan. This suggests two considerations regarding the debate over capital structure, financial strength, and central bank credibility. First, measures of “legal” central bank independence provide misleading predictors of Bank of Japan policy outcomes in the

⁴The Bank of Japan has also engaged in aggressive foreign exchange intervention to limit yen appreciation both as a fiscal agent for the Ministry of Finance and for its own account.

postwar period, and likewise, accounting measures of capital adequacy may be misleading predictors of central bank financial independence and ability to achieve policy goals. Second, the manner in which the Bank of Japan achieved enhanced legal independence and the public-choice aspects of legal independence may provide insight into the current debate about the Bank of Japan's financial strength and suggest solutions to the Bank's concerns.

The institutional redesign in 1998 is often rationalized as necessary to free the Bank of Japan from the vestiges of the wartime concerns reflected in the 1942 Bank of Japan Law (Suzuki, 1989), to give the Bank of Japan the ability to achieve new objectives, and/or to provide the Bank of Japan with the ability to better achieve existing objectives. Each of these considerations, however, appears to have been overstated.

Under the 1942 law, the Bank was required to conduct policy so “. . . that the general economic activities of the nation might adequately be enhanced” (Article 1). Articles 2, 25, 42, and 43 of the law highlight the role of monetary policy in achieving the national objectives and the institutional dependence of the Bank of Japan on the Ministry of Finance and other parts of the government.

Article 1: “The Bank of Japan has for its object the regulation of the currency, the control and facilitation of credit and finance, and the maintenance and fostering of the credit system, pursuant to the national policy, in order that the general economic activities of the nation might adequately be enhanced.”

Article 2: “The Bank of Japan shall be managed solely for achievement of national aims.”

Article 25: “The Bank of Japan may, with the permission of the competent Minister, undertake such businesses as are necessary for the maintenance and fostering of the credit system.”

Article 42: “The Bank of Japan shall be under the supervision of the competent Minister.”

Article 43: “The component Minister may, whenever deemed necessary for the attainment of the object of the Bank of Japan, order the Bank to undertake any necessary business, or order alternations in the By-laws as well as other necessary action.”

While the language of the 1942 law is consistent with the wartime view, it is essential to note that key aspects of the 1882 and 1912 laws make clear that the position of the Bank of Japan in the financial system remained unchanged despite the 1942 revision. Indeed, a close comparison of the 1882 law and the wartime 1942 version reveals little difference in the expressed relationship between the Bank of Japan and the government.⁵

The 1998 redesign of the Bank of Japan was not intended to provide it with new objectives. Prior to 1971, maintaining the fixed exchange rate was the Bank's primary objective. With the unraveling of the fixed exchange rate standard after 1971, price stability replaced the exchange rate as the primary policy goal.⁶ The 1998 redesign merely codified and made more explicit what had been Bank standard policy

⁵See Cargill, Hutchison, and Ito (2001, p. 84).

⁶Cargill, Hutchison, and Ito (1997).

goals. The 1997 law eliminated the generality and restricted monetary policy to two objectives: “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).

Likewise, the 1998 redesign was not intended to give the Bank enhanced ability to achieve its existing policy goals, that is, instrument independence. Indeed, despite some criticism of Bank of Japan policy in the latter part of the 1980s, there is little to suggest the 1998 redesign was motivated by past failures of central bank policy or a general consensus that independence would improve Bank of Japan policy.⁷

While there was an underlying desire to remove the vestiges of the wartime legislation from the Bank of Japan and redesign it to be more in line with other central banks, independence was more an outcome of political developments that had little to do with monetary policy outcomes. Cargill, Hutchison, and Ito (2001) argue that independence came largely as the unintended result of a political process involving the new Hashimoto government and the Ministry of Finance that was designed to deflect attention from the failures of the Ministry in its handling of the financial system problem and to demonstrate that the Hashimoto government was implementing the objectives of the “Big Bang” financial liberalization announced in November 1996.

Notwithstanding the manner in which it came about, the unexpected grant of legal independence may have influenced the Bank of Japan's behavior. It wanted to ensure its independence was permanent, and, as a result, policy became overly conservative and the Bank became resistant to any outside recommendations, fearing this would appear to compromise its autonomy. Cargill, Hutchison, and Ito (2001) referred to this public-choice aspect of independence as an “independence trap.” This, in turn, may have contributed to the Bank's concern with the risks to its balance sheet and capital that were assumed since the start of quantitative targeting in March 2001 and are discussed below.

II. Central Bank Institutional Design, Capital Structure, and Financial Strength

Central bank capital structure and its relationship to central bank financial strength have not received the level of attention devoted to other monetary policy topics; however, there is a small but growing literature on the subject emphasizing the relationship among central bank financial strength, measurement of financial strength, capital structure, credibility, and policy instrument flexibility to pursue final policy targets.⁸ As discussed in Stella (in this volume), central bank capital cannot be equated with financial strength, with the latter being not only more general but also policy depen-

⁷Ueda (2000), however, has argued that had the Bank of Japan been more independent in the second half of the 1980s, it would have resisted foreign exchange operations to limit yen appreciation and thus not accommodated the run-up in asset prices. This is debatable and ignores that fact that the Bank and Ministry of Finance both supported foreign exchange intervention to limit yen appreciation.

⁸Recent discussions include Stella (1997, 2002, and 2003), Sims (2001), Courts and Mander (2003), Pringle (2003), and Jeanne and Svensson (2004).

dent. Indeed, accounting measures of capital often have little or no relevance for measuring the true financial capacity of a central bank to attain its policy target.

Capital structure defines the institutional organization of the central bank that incorporates a country's history, culture, and economic institutions and defines how the accounting profits of the central bank are distributed. Central banks, in general, generate revenues in excess of expenses because the marginal cost of funds used to purchase interest-earning assets, such as government bonds and foreign exchange, and to advance loans to depository institutions, is essentially zero. Hence, the only essential requirement of the balance sheet is to allow the central bank sufficient revenue to cover operating expenses, to provide a reserve for fluctuations in revenue, and to provide the central bank with asset-acquisition power that allows control over high-powered money.

Despite the conceptual difference, most discussions of financial strength end up focusing on capital structure. That has clearly become the case with the Bank of Japan; however, focusing on specific measures of capital adequacy as a foundation for credibility misses the more important relationship between the Bank of Japan's financial strength and its ability to achieve price stability.

In the abstract there is no inherent reason why a central bank is required to be organized around a capital structure that serves only to define ownership status and profit transfers to government. Even ownership status is not substantially defined by capital structure; for example, despite the fact that private banks hold Federal Reserve stock and individuals hold about 40 percent of Bank of Japan stock, neither private banks in the United States nor individuals in Japan own the central bank in any meaningful property-right sense.

However, central banks do require financial strength to achieve final policy targets. A central bank can conduct policy without capital; that is, capital as arbitrarily defined by central bank accounting policy, since its control over financial regulatory parameters, such as reserve requirements in a fractional reserve system allows the central bank to influence reserves (central bank liabilities) by managing its assets. At a practical or political level, however, central bank capital may become such a focal point, and failure to distinguish between capital and financial strength could adversely influence public confidence. The important point is that it is not capital or capital structure alone that generates credibility but the ability to pursue final policy targets with flexibility and financial strength.

The importance of monetary policy and price stability in the context of financial liberalization reintroduced an old issue about the institutional design of central banks. Many observers argued that formal independence from the government would best ensure price stability. This argument received econometric support in the form of two-variable regressions widely published in the 1990s that showed a significant inverse relationship between inflation and measures of central bank independence. Accepting independence as the appropriate institutional design to ensure price stability led to concern about central bank credibility and transparency, and, in this context, central bank financial strength and capital structure emerged as important considerations of modern central banking.

Debate over central bank policy in Japan in the late 1990s further highlighted the issue of central bank capital because of the Bank of Japan's reference to declines

in capital adequacy as a constraint on more aggressive monetary ease. Large holdings of JGBs would reduce the Bank's capital once interest rates began to increase and, hence, limit its effectiveness in restraining inflation. As noted above, Bank of Japan officials and research papers developed by the Bank's Institute for Monetary and Economic Studies frequently raised concerns about the Bank's capital exposure to credit risk should the Bank purchase nongovernment assets or to interest rate risk should the Bank purchase large amounts of JGBs.

As noted, central banks do not need capital as frequently defined, but they do need the financial strength to meet their policy commitments. In a fiat money system with a flexible exchange rate, a strong enough balance sheet is needed so that it is not necessary to create money inconsistent with the given inflation target, which is usually easy to achieve. Central banks evolved as monetary standards shifted from commodity- to fiat-money-based systems in which depository institutions held a fraction of their promises to pay in the form of reserves (high-powered money) controlled by the central bank. Institutionally, governments established central banks as the monopoly supplier of reserves and imposed reserve requirements on private depository institutions to create a demand for reserves. This system allowed the central bank to function as a lender of last resort and to control the total amount of credit and money. Nothing is inherent in these functions that requires a central bank to operate with capital or, if organized around a capital structure, to operate with some specific level of an accounting measure of capital adequacy. The monetization of assets, whether loans to depository institutions or purchases of government or private debt, does not require a positive level of capital.

Central banks are established as public corporations with a capital structure for three reasons. First, historically, central banks frequently evolved from private bank and/or clearinghouse institutions for which a strong capital base was necessary to be credible issuers of promises to pay. The Bank of England, to take one example, evolved from a private bank, and the structure of the Federal Reserve was based partly on private institutions. The evolution of central bank institutions tended to mirror the balance sheet structure of their private counterparts. Since the first central banks were organized around a capital structure, it was natural for subsequent central banks to be designed in a similar way. At the start of industrialization in the 1870s, Japan sent representatives to other countries to study economic and financial institutions, and, as a result, several important Japanese financial institutions, such as the Bank of Japan, were modeled after those found elsewhere. Second, financial resources were provided to central banks to cover startup costs and to institutionalize a functional separation between the central bank and the government—organizing the central bank around a capital structure was an easy way to accomplish this objective. The capital structure defined ownership and how profit would be transferred from the central bank to the government budget. This separation was enhanced when the central bank's stock was held partly (Bank of Japan) or completely (Federal Reserve) by the public; however, central bank stock did not confer the usual benefits of equity ownership that it did in the private sector.⁹ Third, central banks need to

⁹In addition to Japan and the United States, the central banks of Austria, Belgium, Greece, Italy, the Netherlands, Pakistan, South Africa, and Switzerland still have private shareholders (Lybek and Morris, 2004).

earn a net income to finance operations and build up a surplus to cover those periods when future operations might incur losses. A separate budget for the central bank institutionalizes separation from government, and capital provides the repository for a portion of net income to allow the central bank flexibility in periods of low revenue.

There is no inherent relationship between the capital structure of the central bank and the formal or even informal relationship to the government. Various capital structures are consistent with legally dependent or independent central banks. The Bank of Japan's capital structure has remained constant in the postwar period, yet the Bank significantly changed its legal standing vis-à-vis the government in 1998. The capital structure of the Federal Reserve has remained constant in the postwar period, yet the Federal Reserve has experienced subtle changes in legal independence such as the Concurrent Resolution 133 in 1975 and the Humphrey-Hawkins Act of 1978.

III. Development of Bank of Japan Capital Structure

The Bank of Japan was established in 1882 in response to the mandate of the 1868 Meiji Restoration policy to support industrialization in general and, in particular, to correct the failures of the national banking system that had been established in 1872 (based on the U.S. national banking system). Japan's national banking system generated an unstable and inflationary banknote circulation, and in 1882 the Bank of Japan was designed as the only institution permitted to issue banknotes and established the central bank as a public corporation for a 30-year period with capital of 10 million yen, divided into fifty-thousand shares of 200 yen each.¹⁰ The Bank of Japan commenced operations in October 1882. The capital base was increased to 20 and 30 million yen in 1887 and 1895, respectively. Bank of Japan shares could be held by Japanese subjects with permission from the Minister of Finance with the provision that the government could purchase up to 50 percent of the outstanding shares. Shares could be exchanged with permission by the Bank of Japan; hence, the law permitted a market in Bank of Japan shares to exist. Net profits were to be distributed to shareholders in the form of dividends, distributed to a reserve fund to "make good any loss of capital," or distributed as bonuses and allowances to Bank offices. The 1910 Bank of Japan Law permitted the Bank to operate for another 30-year period commencing in 1912 and doubled the Bank's capital to 60 million yen.

The 1942 law raised the Bank's capital to the current level of 100 million yen, of which the government as the majority shareholder subscribed to 55 million yen. Net profit was distributed three ways: dividends to shareholders of no more than 5 percent, to a standing reserve account or new reserve accounts as required by special circumstances, and as a payment to the government.

The end of the war brought about major changes in Japan's economic and political institutions; however, the Allied Occupation did not reorganize the Bank of Japan, as it did the Bundesbank in Germany, and the Bank continued to operate

¹⁰The yen at the time was equivalent to approximately 1.5 grams of gold.

under the 1942 law until April 1, 1998, although some institutional changes did occur. First, in 1949, the Policy Board, consisting of five voting and two nonvoting members, was created to formulate monetary policy. Second, Bank of Japan subscription certificates (stock) were listed on the Tokyo, Osaka, and Nagoya stock exchanges. The Policy Board remained an official part of the Bank of Japan prior to the 1997 law; however, it did not play a meaningful role in the formulation of monetary policy. Bank of Japan stock was delisted from the three stock exchanges in 1960; however, trading then shifted to the over-the-counter markets in Tokyo, Osaka, and Nagoya.

The June 1997 Bank of Japan Law represented a major institutional redesign of the Bank. The most important changes consisted of a narrower set of policy targets (price stability and contributing to financial stability), enhanced formal independence, reestablishment of the primacy of the Policy Board, and transparency in policymaking and execution. The 1997 law did not, however, change the capital provisions of the 1942 law to any meaningful degree.

The current distribution of Bank of Japan stock is illustrated in Table 1. The fact that 38.6 percent of stock is held by individuals renders the Bank of Japan unusual among central banks. The ownership of central banks is generally limited to government or some narrow range of private entities such as the member banks of the Federal Reserve System in the United States. Even more noteworthy is the fact that Bank of Japan stock is traded in a private market.

The behavior of Bank of Japan daily stock prices from March 3, 1988, to May 12, 2005, is illustrated in Figure 1. Not surprisingly, the price of Bank of Japan stock has no meaningful implications for either its financial strength or public confidence in the Bank of Japan. Bank of Japan stock is regarded as an “art” or “curiosity” asset rather than a market-traded financial asset reflecting expected cash flows; for example, it is common practice for retiring Bank of Japan officials to receive a share of Bank of Japan stock as a gift. Its price behavior is thus likely to reflect the performance of the general economy, especially land and equity prices. Bank of Japan

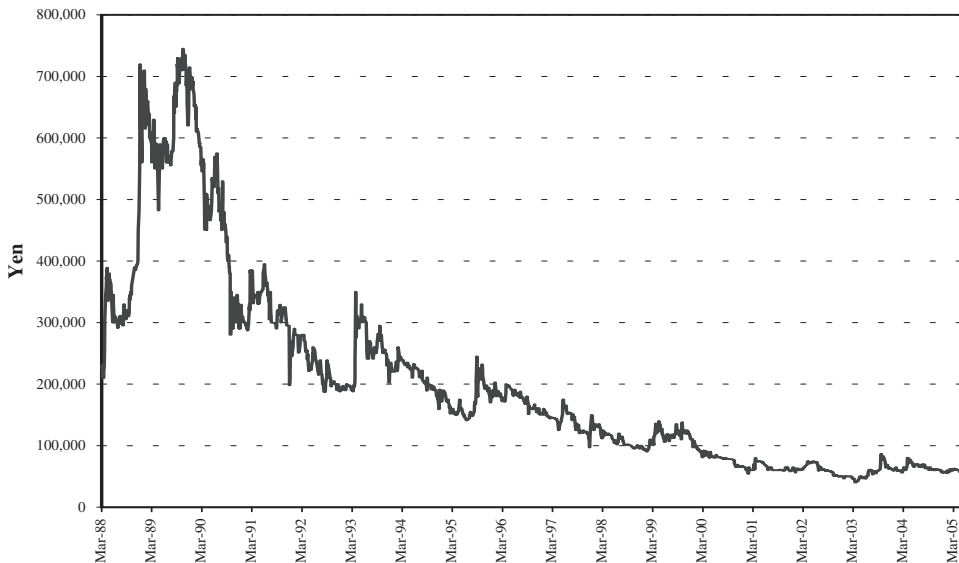
Table 1. Ownership Distribution of Bank of Japan Stock, March 2003

	Millions of Yen	Percent
Government	55,045	55.0
Private sector	44,954	45.0
Individuals	38,601	38.6
Financial institutions	2,937	2.9
Public organizations	291	0.3
Securities companies	142	0.1
Other Japanese firms	2,951	3.0
Foreign firms	30	0.0
Total	100,000	100.0

Source: Bank of Japan (2003, p. 80).

Note: Percentage values may not add up due to rounding.

Figure 1. Daily Market Price of Bank of Japan Stock, March 3, 1988, to May 12, 2005



stock rose significantly during the run-up of asset prices in the late 1980s and fell during the 1990s as income and financial wealth fell. As of late 2003, land and equity prices had declined about 60 and 75 percent, respectively, from their highs in late 1989. Bank of Japan stock declined about 90 percent as of 2002 but has leveled off since that point.

IV. Capital Structure and Bank of Japan Policy

The Bank of Japan has in recent years expressed concern about its capital position and argues that its capital structure is exposed to interest rate and credit risk. Interest rate risk is the result of large holdings of JGBs purchased in a low-interest-rate environment and credit risk is the result of advances to troubled financial institutions and the Deposit Insurance Corporation. The Bank of Japan is also subject to exchange rate risk because of foreign exchange intervention; however, this type of risk is seldom emphasized.

There are three components to understanding the Bank of Japan's concern with capital: (i) measurement of capital adequacy, (ii) trends in measures of capital adequacy, and (iii) exposure to risk resulting from large JGB holdings.

Central bank capital as the difference between assets and noncapital liabilities is more difficult to measure from an economic perspective than capital for private enterprises and as such may understate or overstate the financial strength of the central bank. Central banks have large potential off-balance sheet assets and liabilities not typical of private enterprises that render any measure of capital adequacy at a

point in time difficult to interpret. Central banks can benefit from future seigniorage and inflation tax revenue, and central bank responsibility for limiting systemic risk means that large liabilities in the future may need to be assumed to bail out troubled financial institutions and limit contagion. This point should caution one from placing any confidence in an accounting measure of capital as a measure of financial strength. More fundamentally, the value of central bank assets and liabilities is a function of the policy regime and objective.

The discussion above points to the difficulty one would have in offering international comparisons of central bank capital adequacy. Unlike the Basel Accord, which lays out common principles for determining commercial bank capital adequacy, central banks exhibit a wide variety of approaches to measuring their capital as well as the risks to which they are exposed, and, indeed, in a number of cases one might suggest that there is no established capital policy at all.

Until recently, the Bank of Japan, along with most other G-7 central banks, paid little attention to the capital account, nor did they set capital based on the risks to which they have been exposed. Prior to 1998, the Bank of Japan did not highlight the capital account nor publish a capital adequacy ratio, at least in the reports available in English. After April 1, 1998, the Bank of Japan introduced more detailed financial statement information consistent with its enhanced independence and transparency, which greatly improved analysts' ability to assess its financial strength. As part of this effort, the Bank commenced publishing a capital adequacy ratio defined as follows:

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

Expressing capital adequacy in terms of banknotes reflects the long-standing Bank of Japan focus on regulating and maintaining public confidence in banknote circulation, which represents a large part of the money supply, given the low utilization of transactions accounts by the public. The successive increases in capital in 1910 and 1942 can be attributed to the desire to maintain public confidence in Bank of Japan notes, especially given the negative experience the Japanese public had with private banknotes in their first encounter with modern financial institutions. As noted above, the 1882 Bank of Japan was specifically established as the monopoly issuer of banknotes to replace the national bank system, which had been modeled on the flawed U.S. national banking system.¹¹

Three considerations explain the Bank of Japan's new emphasis on capital and capital adequacy. First, the 1882, 1910, and 1942 Bank of Japan Laws established a close relationship between the Bank and the Ministry of Finance. In this context, the Ministry of Finance was responsible for overseeing the Bank of Japan's operations

¹¹Remarkably, Japan took only seven years to realize that the national banking system was a failure, while the United States took almost half a century to replace the national banking system with a central bank-issued currency. For an interesting account of the Japanese experience with banknotes during that period see Boling (1996).

and, by implication, was responsible for ensuring the Bank's financial strength. The post-1998 Bank of Japan could no longer rely on a close relationship with the Ministry and in the context of more formal operational and goal independence needed to devote more attention to its financial strength and financial independence. Second, the 1997 Bank of Japan Law required the Bank to be more transparent to the government (reporting to the Diet) and the public (Policy Board reports) in line with the more general emphasis on transparency in the financial system. Developing a measure of capital adequacy, reporting the measure, and commenting on the measure was consistent with the new emphasis on transparency in the Japanese financial system. Third, the percentage of Bank of Japan assets allocated to JGBs increased significantly in the 1990s at a time of low nominal interest rates exposing the Bank of Japan to interest rate risk. Combined with expanded loans to the Deposit Insurance Corporation and increasing concern that more bailouts of troubled financial institutions would be required, the Bank focused more closely on its capital position than in the past.

Figure 2 presents the Bank of Japan's measure of capital adequacy on a bi-annual basis (September and March) from September 1970 to March 2004. There is a notable decline in the ratio in the early 1970s as the Bank of Japan significantly expanded the money supply to sustain high rates of economic growth and limit yen appreciation. The capital base declined because of large exchange rate losses on dollars as the yen appreciated after 1971. The most relevant starting point is 1975 when the Bank of Japan adopted price stability as the final policy target and had achieved considerable success in bring the inflation rate down from the highs of the early 1970s. The ratio averaged 9.40 for the period from September 1975 to March 2004,

Figure 2. September and March Values of Bank of Japan Measure of Capital Adequacy, September 1970 to March 2004

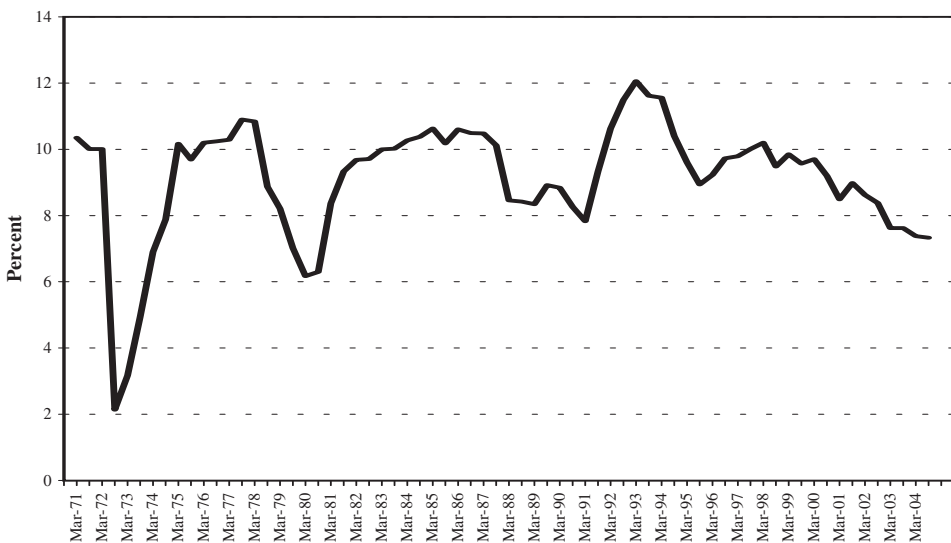
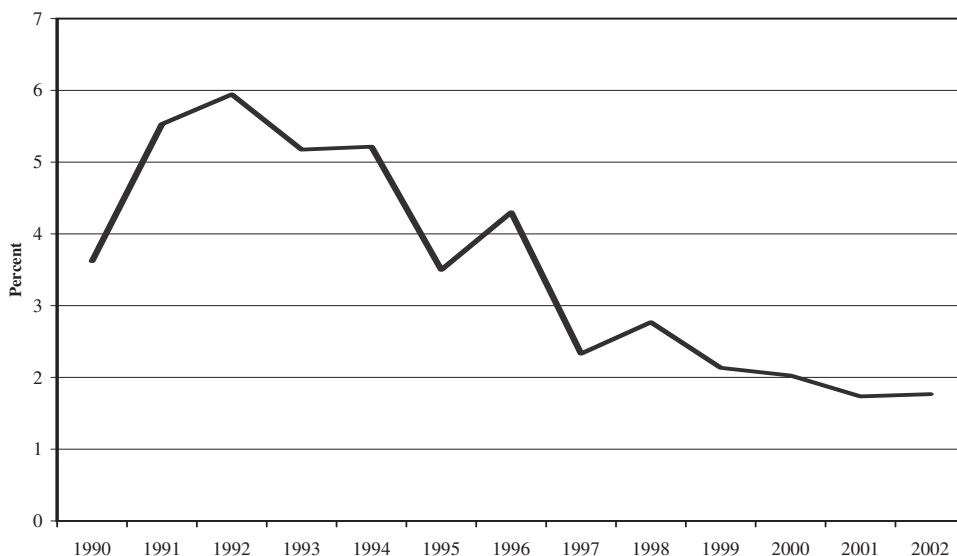


Figure 3. Bank of Japan Capital/Asset Percentage, FY 1990 to FY 2002

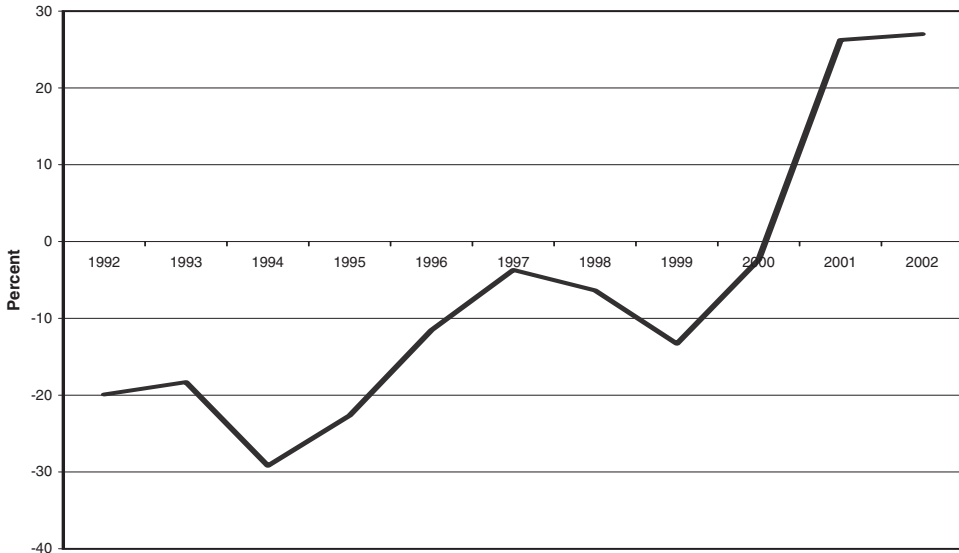


9.41 for the period from September 1975 to March 1989, and 9.45 for the period from September 1990 to March 2004. Thus, over the period from 1975 to 2004, the adequacy ratio has been fairly constant at about 9.4; however, in the most recent period, the ratio has declined. The ratio averaged 8.44 from March 1999 to March 2004, which corresponds more or less to the period of “zero interest rate” policy. While the ratio has declined in the most recent period, it should be noted that the ratio had also declined three times in the past (early 1970s, late 1970s, and late 1980s) and yet quickly returned to the long-term average of 9.4.

As noted above, meaningful cross-country measures for capital adequacy are not available. Stella (2003) presents what data are widely available for the distribution of capital and ratios of other items net (OIN) to assets based on 2002 data reported by 157 monetary authorities in the IMF's *International Financial Statistics (IFS)*.¹² Although a small number of monetary authorities operate with negative capital-asset ratios, most range from a few percentage points to up to 20 percent. A little over 10 percent of the monetary authorities operated with capital-asset ratios greater than 20 percent. Figure 3 illustrates the capital-to-asset ratio for the Bank of Japan (as defined by the Bank) for FY 1990 (ending March 1991) to 2002 (ending March 2003) and illustrates a downward trend in the 1990s. According to this measure, the Bank of Japan ranks at the lower end of central bank capital-asset ratios provided in *IFS*. Figure 4 illustrates the Bank of Japan's OIN-asset ratio (available from *IFS*), where the trend improvement beginning in 2001 is evident.

¹²Other items net, the residual from all identified assets and all identified liabilities, was examined in light of the fact that not all central banks report capital as a separate *IFS* line item and that national accounting conventions could lead to hidden losses or reserves being classified as OIN.

Figure 4. Bank of Japan Other Items Net (ION)/Asset Percentage, CY 1992 to CY 2002



While recent trends have not been overly troublesome, the Bank of Japan has been increasingly concerned about possible future developments, in particular the potential for a sudden decline in capital adequacy in the event nominal interest rates increase. Fujiki, Okina, and Shiratsuka (2001) provide the most comprehensive technical analysis of the Bank's position on the issue of capital loss exposure to purchases of long-term government bonds. They estimate the capital loss the Bank of Japan could experience if it conducted additional outright purchases of government bonds in the range of 60–70 trillion (which is close to the increase in JGBs from 2002 to 2003) and subsequently was required to sell them to restrain inflation and thus realize the capital loss. The magnitude of the capital loss depends on two elements: the increase in the nominal interest rate and the timing—when the Bank of Japan would be required to absorb the monetary base as the economy recovered. The size of the interest rate increase has an asymmetrical effect on the Bank's financial statement. The increase in interest rates both lowers the value of government bonds and increases the Bank of Japan's revenue from loans and discounts.

If the large-scale purchase of government bonds is accompanied by a small increase in interest rates and the Bank sells the bonds within a few years, the mark-to-market capital loss is estimated to be 2.4 trillion yen, although some of this loss would be offset by higher revenue because of higher short-term interest rates. If interest rates increase to the 5 percent range, the capital loss increases to 12 trillion yen. The projected range of capital loss is thus large, although it is less than 10 percent of total assets as of March 31, 2005.

V. Validity of the Concern over Capital Loss

The Bank of Japan will realize a capital loss on its large holdings of JGBs even with modest increases in long-term interest rates only if required to sell JGBs in the future. How empirically valid is this concern? In discussing this issue, Ueda (2004, p. 6) states, "It should be noted that the Bank [of Japan] has not sold any JGBs outright to the market in the past 30 years." Furthermore, in the last half-century, Bank of Japan reserve money liabilities have fallen only twice: in 1992, after which they grew beyond the 1991 level by 1993; and in 2000, following a 39 percent increase associated with Y2K concerns. Hence, it is difficult to argue that the financial strength of the Bank of Japan has been compromised or that the Bank of Japan is likely to lose its ability to credibly commit to price stability as a result of operational losses. The irony here, of course, is that in the current policy environment the Bank of Japan is trying to defeat *deflationary* expectations; hence, a weak balance sheet—implying a need for future money creation—could *add* to its credibility. Nonetheless, in spite of the current environment, some of the institutional issues raised by the Bank of Japan are valid, and there are indeed risks to the Bank's balance sheet that may require cooperation between the Bank of Japan and the Ministry of Finance in the future.

The first and perhaps most important point to recognize, however, is that the Bank of Japan's current measure of capital adequacy has little bearing on its financial strength, and concern with its capital narrowly defined has heretofore deflected attention from the real issues and impeded developing solutions to reverse deflation. Bank of Japan capital adequacy, as defined above, is expressed as a ratio to Bank of Japan notes in circulation, which under a fiat money system has little effect on the Bank of Japan's ability to conduct policy. It is difficult to see how fluctuations in this specific measure of capital adequacy could have any meaningful effect on central bank financial strength, interest rate risk, credit risk, or exchange rate risk. Institutions operate with inertia, and the Bank's concern with this type of measure of capital adequacy can be explained only from the historical role of Bank of Japan notes in replacing national banknotes in the latter part of the nineteenth century and the need to provide some degree of public confidence in the new currency. Alternative measures of capital adequacy—particularly with a forward-looking dimension—would provide a more suitable background for a discussion of the fundamental issues such as that found in Ueda (2004).

Second, and on a more general level, the Bank of Japan 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 institutional arrangement of the central bank is merely a means to achieve price stability and limit systemic risk. It is more than clear that the Bank of Japan could absorb a mark-to-market loss and continue to have assets to constrict liquidity through open market operations.¹³ The essential requirement to maintain a degree of functional separation from government is that the central bank be able to generate sufficient

¹³ And, as noted above, this could accomplish this through regulatory changes determined by the Bank of Japan and the Ministry of Finance.

revenue to cover operating expenses. Given the essentially zero marginal cost of purchasing even low-interest yielding assets, the Bank of Japan should easily be able to meet this requirement. The credibility of the central bank is dependent on expectations that it will conduct the proper policy from an economic perspective rather than be limited by balance sheet considerations. The only possible constraint the balance sheet can impose on the Bank of Japan is if it reflects a dependence of the central bank on government to the degree monetary policy is directly financing government spending or directly supporting insolvent financial institutions, or if the Bank of Japan needs to resort to money creation to finance its own operations. These are legitimate concerns that could weaken the Bank's financial strength; however, these were not the concerns generally expressed by Bank of Japan officials prior to Governor Fukui's speech in June 2003. As long as the Bank of Japan generates sufficient revenue to cover operating costs, it possesses the financial strength to conduct monetary policy, irrespective of the decline in some accounting measures of capital adequacy.

Third, the Bank of Japan, despite its independence, is part of the overall government effort to ensure a stable financial and monetary environment. Central bank independence should not be an institutional constraint on achieving the objective of a stable financial and monetary environment if some degree of cooperation with the government is required. Unfortunately, concern with legal independence has interfered with monetary policy and provided the Bank of Japan with a disincentive to conduct larger-scale purchases of JGBs. The Bank of Japan and the Ministry need to jointly determine how to ensure the Bank of Japan maintains an adequate level of capital if this becomes a constraint. This will clearly involve direct dialogue, since there is nothing in the Bank of Japan Law to indicate the adequate level of capital, what would happen if the Bank of Japan's balance sheet generated negative net worth, and what responsibility the Ministry of Finance has to ensure adequate bank capital. It appears that granting central bank independence in the context of declining prices left many issues unresolved that have come to interfere with price stability.

Fourth, the Ministry needs to play a role in determining how to maintain the Bank of Japan's capital without interfering in its operational and policy independence. Ensuring that the Bank of Japan continues to operate with an adequate level of capital will not be costless to the government budget. The solution could be 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 Bank of Japan'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.

Fifth, the reluctance of the Bank of Japan and the Ministry of Finance to address this problem in a transparent manner with the objective of ensuring that monetary policy is not institutionally constrained is a more serious problem than a decline in an accounting measure of capital adequacy. The cost of deflation is far larger than any budgetary impact of supporting the Bank of Japan's capital structure in the event of a capital loss on government bonds or the temporary loss of independence needed

to cooperate with the Ministry of Finance. There is little evidence the Bank of Japan's capital is insufficient to maintain public confidence in its ability to conduct policy; however, the longer the Bank of Japan permits the price level to fall, the more likely it is the Bank of Japan will experience a loss in credibility, irrespective of its capital position.

Thus, it is difficult to rationalize the Bank of Japan's recent concerns over the decline in the official measure of capital adequacy. In general, central bank capital plays no meaningful role in determining how the central bank functions. Capital is not a reliable measure of the central bank's financial strength, and there is little evidence the Bank of Japan lacks financial strength to stabilize the price level. Maintaining some arbitrary level of capital can easily be accomplished by fiscal cooperation between the central bank and the government. Likewise, legal independence should not be taken literally in this regard so that any cooperation with the government is viewed as a departure from independence, especially in times of extreme economic and financial distress. There is no reasonable basis to assume the Bank of Japan will not be able to earn sufficient revenue to cover operating expenses, and, even if this becomes a problem, there is a fiscal solution that does not mean a loss of credibility to commit to price stability.

VI. Lessons from the Federal Reserve in the 1930s

The Bank of Japan's stance on capital circa 2001 appears remarkably similar to a view espoused by the Federal Reserve in the 1930s (Cargill, 2001a), the previous historical period when a central bank conducted policy in a low interest rate and deflationary environment. The quantitative differences between the two periods are obvious;¹⁴ however, three similarities justify a comparison of the two periods: preoccupation with accounting measures of balance sheet strength, preoccupation with legal independence, and failures to prevent price declines that set into motion a downward process that became increasingly difficult to reverse and ultimately reduced central bank credibility.

The Federal Reserve raised a number of issues about the condition of its balance sheet as a reason for not pursuing more aggressive policy: concerns about potential capital loss from purchasing government securities, concerns about "real bills" and the "free gold problem," and concerns about cooperating with the U.S. Treasury. The real-bills doctrine specified a narrow range of collateral required for Federal Reserve loans to private banks; however, in a declining economy there was little legitimate collateral. The Federal Reserve's focus on credit risk was misplaced and played a major role in the failure to act as a lender of last resort in the first half of the 1930s. The Federal Reserve viewed its balance sheet as if it were a private bank subject to depositor discipline rather than a central bank responsible for price stability.

The Federal Reserve free gold problem is another clear example of narrow central bank focus on a largely irrelevant accounting constraint. Federal Reserve notes at the time required a gold reserve of at least 40 percent with up to 60 percent

¹⁴Sellon (2003) discusses the comparative financial conditions facing the two central banks in the 1930s and 1990s.

backing permitted to be of eligible commercial paper held as a result of lending to banks. The amount of gold held by the Federal Reserve beyond the 40 percent not required for notes was referred to as “free gold.” However, the decline in loans to banks and the increase in currency as the public increased the currency-deposit ratio forced the Federal Reserve to increasingly use gold to satisfy the legal requirement. This reduced the amount of free gold held by the Federal Reserve. The Federal Reserve used an alleged free gold shortage as an argument against aggressive open market purchases of government securities. The feared scenario was that securities purchases would have increased reserves, enabling banks to further reduce borrowing from the Federal Reserve and leading to a decline in eligible commercial paper backing the notes. Thus, Federal Reserve free gold would have had to fall further to meet the note requirement.

Friedman and Schwartz (1971) dismiss the free gold argument of the Federal Reserve as an *ex post* justification for *ex ante* inaction, while the more recent study by Meltzer (2003) finds reason to believe it had some limiting influence. Irrespective of whether it influenced the day-to-day decisions of the Federal Reserve, the basic fact is that focusing on an accounting measure of the balance sheet condition diverted the Federal Reserve from preventing the dramatic fall in prices. The evidence shows that the Federal Reserve could have significantly slowed price deflation and reversed price declines, but it chose instead to rationalize inaction based on rules to protect the balance sheet.¹⁵

The free gold problem, to the extent it constrained Federal Reserve action, could have been resolved by a change in legislation, and, in fact, the eligibility requirements were changed in 1932. To have acted sooner would have required cooperation between the Federal Reserve and the government; however, the Federal Reserve was so focused on its independence that it became caught in an “independence trap,” so that cooperating with the government and/or following the recommendations of outsiders was perceived as literally “giving in to the mob,” and, as such, the central bank becomes a “prisoner of its own independence” (Cargill, 2001b, p. 227). Economic history indicates that the Federal Reserve erred and, as a result, contributed significantly to the depressed conditions of the 1930s. This does not deny the existence of serious structural problems in the U.S. banking system, but more aggressive monetary policy would have significantly contributed to a less severe decline. 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.

Thus, the discussion of free gold appears to bear remarkable similarities to the discussion of Bank of Japan capital from a number of perspectives; however, two important differences render the Bank’s position more understandable but not entirely defensible.

¹⁵The decision of the Federal Reserve to raise reserve requirements in 1936–37 also illustrates a serious policy error traceable to an accounting measure approach to calculating excess reserves of the banking system. The Federal Reserve viewed the accumulation of excess reserves as weakening its financial strength—ability to control the money supply—and doubled reserve requirements. This action is generally regarded as a major contributing factor to the sharp recession in 1938. See Cargill and Mayer (2005).

First, the Bank of Japan is concerned that purchases of JGBs will reduce incentives to deal with the growing deficit. The Bank of Japan has on occasion referred to the 1930s, when the Bank monetized much of the government deficit and generated high rates of inflation (Ide, 2003). This is a real concern; however, it is one that must be part of the dialogue between the Bank of Japan and the Ministry on a policy of ensuring the institutional structure of the central bank remains sound.

Second, the Bank of Japan is concerned that purchases of JGBs in the absence of meaningful structural reform of the banking system will be unproductive. Clearly, structural reform needs to be part of the solution. Structural reform is in progress, however, and while the pace has been much slower than needed, the achievements to date have been significant. In addition, the Bank of Japan's shift toward more aggressive policy in 2002, while not showing up as an increase in the money supply, appears to have had a positive impact on overall economic activity.

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 Bank of Japan'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.

The Bank of Japan's focus on capital has also diverted its attention from the fact that deflation is a far more serious problem than inflation.¹⁶ The institutional issues of capital adequacy and balance sheet problems that might occur are trivial concerns compared with the damage that deflation has imposed on the Japanese economy since 1994. The basic problem with deflation is that nominal interest rates are bounded from below by zero and currency yields a zero interest rate. Even if deflation is anticipated, real interest rates increase and reduce aggregate demand. Deflation in the context of nonperforming loans increases the cost of servicing debt, increasing bankruptcy and decreasing the money multiplier. The Bank of Japan might argue that deflation is due to nonmonetary factors; however, this argument again is reminiscent of the Federal Reserve's defense of its policy in the first half of the 1930s.

Revising price expectations may not be a *sufficient* condition to generate sustained recovery, but it is a *necessary* condition. The more the Bank of Japan expresses concern about capital and stresses the limits on dealing with inflation, the more the Bank of Japan convinces the public that anticipated deflation is consistent with the current central bank regime in Japan. The more recent commitments to continue with expansionary policy until deflation is overcome reflect a sea change in attitude.

VII. Concluding Comment

The Bank of Japan's primary policy responsibility is price stability, and while no specific indicator of price stability is included in the 1997 Bank of Japan Law, there is little debate that price stability has not been achieved since the Bank of

¹⁶Cargill and Parker (2003) compare deflation and inflation.

Japan became more formally independent in 1998. One cannot seriously accept arguments that deflation in Japan can be traced to structural problems, non-performing loans, or more recently, Chinese imports.

The Bank of Japan shifted toward more aggressive policy in 2001 and has continued that policy under the new Fukui administration; however, the Bank continues to express concern about potential capital losses from its large holdings of JGBs should interest rates increase and the Bank is required to sell the bonds to restrain inflation. There is no doubt the Bank's concerns are reasonable from an institutional perspective; however, from a broader policy and empirical perspective, were the Bank of Japan to discontinue its current expansionary policy prematurely—out of concern over the implication for its capital—it would be making the same policy error the Federal Reserve made in the 1930s.

A prerequisite for a solution to the dilemma is a clear restatement of the Bank of Japan's financial strength and the adoption of a capital policy that appropriately reflects the risks facing the Bank in the current policy environment. But the Bank of Japan's concern over capital may mask deeper political economy issues. Reluctance to engage in a dialogue with the Ministry of Finance owing to concerns with diluting newly established independence or concerns that more aggressive policy will be unproductive in the face of structural problems might be more important than institutional concern over capital adequacy. At the same time, the Ministry of Finance must share part of the responsibility for not addressing the legitimate institutional concerns of the Bank of Japan. Concerns over Bank of Japan financial strength can be easily addressed by explicit cooperation with the Ministry of Finance. This was initiated when the Bank was permitted to retain a higher percentage of net income to shore up its capital position. Bernanke (2003), among others, suggested other means to ensure the Bank of Japan maintains an adequate capital base—such as by issuing inflation indexed bonds or by the Ministry of Finance explicitly guaranteeing to cover any significant capital loss so that the Bank of Japan could be confident that even if it experienced large capital losses over the next few years, these would be covered by government.

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