Monetary Policy during Japan's Great Recession:
From Self-Induced Paralysis to Rooseveltian Resolve

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I. Introduction

Japan's macroeconomic performance during the 1980s was nothing short of stellar. As shown in Figure 1, the country enjoyed a rapid expansion in economic activity, with real GDP growth averaging 4.4% per year over the decade. Inflation was subdued, averaging 2.6% per year from 1980 to 1989. Moreover, except for 1986, when oil prices fell sharply, inflation remained in positive territory over the period. Then came the collapse of property price and stock market bubbles in 1990. The economy stagnated as GDP grew at a mere 0.8% annual rate from 1992 to 2001. Chronic deflation set in, with consumer prices falling on average by 0.3% per year from 1999 to 2012.

There has been a great deal of debate over the years about the extent to which Japan's economic malaise was caused by insufficient spending, as opposed to long-term structural factors. To be sure, slowing population growth and decelerating productivity account for some of the slowdown. However, the fact that deflation accompanied economic weakness suggests that inadequate aggregate demand deserves a large share of the blame for the prolonged downturn. Monetary policy, normally the first line of defense against recessions, failed to arrest the economy's slide into stagnation.

Section I of the paper summarizes the history of BoJ policies from the period leading up to Japan's Great Recession through the recently implemented policy changes under Bank of Japan (BoJ) Governor Kuroda. Up until Kuroda regime change, BoJ policies were consistently characterized by conservatism and inaction. The Bank was too slow to tighten policy during the four years leading up to the downturn. Symmetrically, it was slow to cut rates as the economy contracted in the early 1990s. While it took the steps necessary to contain the banking crisis in the mid-1990s, for years the Bank resisted calls to implement quantitative easing policies that would have expanded its balance sheet. Even then, it made only token purchases of unconventional assets and limited its purchases of government securities to those on the short end of the yield curve.

Section II offers several explanations for the BoJ's inertia in responding to deteriorating economic conditions. The four candidates, not mutually exclusive, include an irrational fear of inflation, conflicts with the finance ministry, the failure to recognize the severity of the zero lower bound and concerns about the possible loss of independence. Section III discusses the lessons learned from the Japanese experience for the future direction of monetary policy.

II. Six Phases of Japanese Monetary Policy

1. Before the bubble

The seeds of Japan's economic malaise were likely sowed years before the collapse of the bubble. Looking back, it is clear that policy was excessively expansionary during the late 1980s. This verdict is confirmed by Jinushi et al. (2000), who showed that the Bank's call rate target remained well below the prescription of a conventional Taylor-style policy rule from 1987 through 1990.

What is puzzling is that the BoJ, as early as 1986, realized that policy was too loose during this period and recognized that it was contributing to unstable financial conditions. Carefully reviewing BoJ's *Monthly Bulletin*, Jinushi et al. (2000) documented the BoJ's concern with financial excesses as manifested in asset prices and the money supply (M2 plus CDs). And yet, in spite of these concerns, the BoJ failed to tighten monetary policy; indeed, it continued to cut rates in early 1987.

Jinushi et al. (2000) cited political considerations as the primary reason of the BoJ's inaction. International pressure was repeatedly brought to bear on Japan in late 1986 and early 1987 to bring down the value of the Yen and promote consumption-led growth. These pressures resulted in a public pledge meeting by then-Finance Minister Miazawa at the September 1986 IMF-World Bank meeting to increase domestic demand. This was followed in February 1987 by the Louvre Accord, which specified a 50 basis point reduction in the discount rate as a means to weaken the Yen.

The BoJ began hiking interest rates belatedly in May 1989. The discount rate was raised five times within eight months, reaching 6% by August 1990. Inflation, which had increased from under 1% in 1988 to 2.5% in May 1989, continued to rise and remained in the 3% range in late 1989 and early 1990.

2. Interest rate cuts, 1991-1995

The BoJ reacted to the economy's deterioration with a series of cuts in the call rate beginning in July 1991. From a level of 8% in early 1991, the rate had fallen to half a percentage point by mid-1995. On the face of it, the policy rate reductions would appear to have been a forceful response to deteriorating economic conditions, comparable only to the decline in the interest rate in the mid-1970s. But the slow pace of the rate cuts, which were spread out over a four-year time span, along with a pronounced decline in the inflation rate, meant that monetary policy was not as expansionary as it would appear at first glance. As discussed in Harrigan & Kuttner (2005) and Posen (2010b), the BoJ's actions were less decisive than the measures taken by the Fed in during the recessions that began in 2000 and 2007.

Figure 4 illustrates this point. The thick line in panel (a) shows the path of the BoJ's nominal call rate during the eight quarters prior to and the 16 quarters following the commencement of the rate cuts. Allowing for the lower initial level of the nominal interest rate in the U.S., the BoJ's response in 1991–95 appears qualitatively similar, if somewhat more gradual, to the Federal Reserve's during its two most recent easing cycles.

The *real* interest rate is a better gauge of monetary policy than the nominal rate, however, and once inflation is taken into account the BoJ's response looks significantly less decisive. As shown in panel (b), inflation in Japan fell by two percentage points during the same 1991–95 period depicted in panel (a), implying a smaller reduction in the real rate. In contrast, U.S. inflation remained steady in the early 2000s and fell by only one percentage point following the financial crisis.

The paths of the inflation-adjusted policy rates are shown in panel (c).[1] The thick line shows that the monetary easing effectively ended in mid-1992, only four quarters after the peak. The real interest rate remained in the 1.5% to 2% range until 1995, a level only modestly below conventional estimates of the equilibrium real rate of interest. Jinushi et al. (2000), Kuttner & Posen (2004) and Harrigan & Kuttner (2005) argued that it is hard to reconcile this level of interest rates with the implications of standard monetary policy rules, which would have called for more aggressive rate cuts in response to falling inflation and the deceleration in real GDP growth.

The BoJ's response looks especially timid in comparison with the Fed's reaction to the previous two recessions in the U.S. The Fed's aggressive rate cuts in 2001 led to a near-zero real rate by the end of the year, and the rate remained there for the following three years. The sharp rate cuts are especially striking given the fact while the U.S. economy experienced a period slow of growth from 2002 through 2003, the 2000-01 recession was itself quite mild, not unlike Japan's 1991 downturn.

3. Responses to the banking crisis, 1995-1999

Interestingly, the Japanese financial system did not experience significant financial stress until several years after the beginning of the macroeconomic downturn. Burdened with trillions of yen in worthless real estate loans, the dire conditions of the *jusen* became increasingly apparent in 1995, and plans to bail out those institutions began to be formulated later that year. Two prominent events during this initial phase of the crisis were the closure of Kizu Credit Association, and the rescue of Cosmo Credit and Hyogo Bank in August 1995. It was only at this point, five years into the downturn, that the BoJ was forced to intervene in the financial markets, and exercise its authority as lender of last resort. The BoJ responded to banks' deteriorating conditions with a series of *ad hoc* credit extensions, under Article 25 under the old BoJ law, and the provision of temporary funding to the Deposit Insurance Corporation (DIC). A selected chronology of the events in Japan is given in table 1.

The November 1997 closure of Yamaichi Securities, and the collapse of Hokkaido Takushoku Bank, marked a new, more perilous phase of the crisis. While not a core part of the Japanese financial system, Hokkaido Takushoku's failure in particular was regarded as a major shift in Japanese policymakers' response to financial distress.[2] The decision to allow the bank to fail marked an end to the government's *goso-sendan-hoshiki* ("convoy") policy in which troubled banks were kept alive through mergers with

[1] The real rate is calculated using the previous four quarters' inflation rate. The CPI excluding food and energy is used for Japan, and the PCE deflator excluding food and energy is used for the U.S. Note that the ex ante real rate in Japan would have been even higher to the extent that the disinflation was anticipated.

[2] The second-tier brokerage firm Sanyo Securities also filed for bankruptcy in early November, resulting in the first default in the unsecured call loan market.

relatively stronger institutions. The market response was dramatic, with the so-called "Japan premium" spiking to nearly 70 basis points. At the same time, the share of borrowers in the Tankan survey reporting tighter credit conditions swung 30 percentage points, from −15 to 15 percent.

The next milestone was the passage of bank rescue legislation in October 1998. Half of the bill's $500 billion appropriation provided funds for recapitalizing distressed banks. The remaining $250 billion financed a blanket guarantee of bank deposits, and provided for the possible nationalization of failing institutions. The bill was the largest bailout effort up to that point, although there was some skepticism that it would be enough to solve the long-term problems facing Japan's largest banks. The bill did, however, make possible the government takeover of failing banks: just days after the bill's passage, Long-Term Credit Bank was nationalized, followed by Nippon Credit in December of the same year. In spite of these failures, the Japan premium fell sharply following the introduction of blanket deposit insurance.

The BoJ took a number of incremental steps to regularize its provision of liquidity in the months following the bank rescue bill. In November 1998, the BoJ announced an expansion of its short-term lending against commercial paper collateral, and its intention to establish a lending facility specifically designed to "support firms' financing activities." It also announced plans to study change in operating procedure, in which funds would be lent against pooled collateral, ultimately backed by corporate bonds and loans on deeds. It announced in September 1999 an expansion in the range of collateral to include assets such as bank debentures and corporate bonds. Those guidelines were subsequently modified, and generally relaxed, in a series of steps over the next several years.

4. Unconventional policies, 2001-2005

Responding to weakening economic conditions, the BoJ resumed its rate cuts in late 1998, first with a reduction in the call rate to ¼ percent, and then to virtually zero.[3] This marked the beginning of the Zero Interest Rate Policy (ZIRP), which also involved some tentative efforts to influence expectations of the path of future policy. Specifically, the minutes of the Policy Board meeting of April 9, 1999, released a month later, stated that "it was important to maintain the current decisive easy stance of monetary policy, firmly underpinning economic activity until deflationary concerns were dispelled." (Fourteen years later, the Fed would take a similar approach in its use of "forward guidance.")

The BoJ's highly expansionary setting of short-term interest rates was, however, undercut by the statements of senior officials — especially by those of then-BoJ Governor Hayami. In the most notorious of these, a speech given on March 21, 2000, Hayami contended that Japan's deflation was beneficial, or at least benign, and argued strenuously against policy measures intended to combat it. In reference to an explicit inflation target, Hayami stated that "such a proposal is tantamount to artificially creating inflation … at any cost."

[3] While not literally a zero call rate target, the ZIRP was implemented by way of a new guideline for money market operations that called for the Bank of Japan to "provide more ample funds and encourage the uncollateralized call rate to move as low as possible."

The ZIRP policy came to an abrupt end on August 11, 2000, when the BoJ increased the call rate target to ¼ percent. The Policy Board cited the "improvement of the economy" as a factor in its decision, but said nothing about deflationary pressures. Long-term JGB rates fell steadily during the six months following the rate hike, suggesting a further decline in inflation expectations. Kuttner and Posen (2004) identified this as the most distinct of several "deflation scares" occurring over the 1996-2003 period. Orphanides (2004) likened the BoJ's August 2000 rate increase to the Fed's disastrous policy tightening of 1937, which is widely blamed for extinguishing the incipient recovery that was taking place at the time.

The BoJ reversed itself in early 2001 with the reduction of the call rate, in two steps, to zero. On March 19, the BoJ announced a change in the change in the main operating target to the outstanding balance of current accounts (CABs), initiating its policy of quantitative easing. The central element of this policy was the introduction of a steadily increasing target for CABs, along with an expansion in the range of assets eligible for purchase by the BoJ. The policy change was accompanied by a stronger form of forward guidance, in the form of an announcement that "the new procedure will be kept in place until the CPI registers a stable zero percent or increase year-on-year." The specificity of this statement made it a much more explicit effort to influence expectations than the less-precise "until deflationary concerns were dispelled" statement that accompanied the initial ZIRP.

The additional liquidity was provided through a combination of increased short-term collateralized loans, along with outright purchases of Japanese government bonds (JGBs), which more than tripled to 1.2 trillion yen per month by October 2002. The JGB purchases were largely at the short end of the yield curve, however, and thus not designed to reduce long-term interest rates (unlike the Fed's QE3 and Operation Twist policies). McCauley and Ueda (2009) documented that the average maturity of the Bank's portfolio of government bonds actually *fell* from nearly six years in 2001 to less than four years in 2005.

The BoJ supplemented its policy of CAB targeting and JGB purchases with two new programs aimed at providing additional stimulus. One was a policy of outright equity purchases, announced in October 2002 and implemented in December of the same year. The stated purpose of the program was to free banks' balance sheets of the burden of equities, which would presumably make them more willing to extend new credit.

Another unconventional policy, announced in June 2003 and implemented in August of the same year, was the purchase of asset-backed securities (ABS), presumably in an effort to increase credit supply. According to the press release, its purpose was to encourage "…the development of the ABS market by directly taking credit risks through purchases of ABSs as a temporary measure. By encouraging the development of the ABS market through this unprecedented scheme for a central bank, the Bank could strengthen the transmission mechanism of monetary easing against the background of banks' weak financial intermediary function."

These two programs accounted for very little of the increase in the volume of credit extended by the BoJ, however. The much-publicized stock purchase plan never amounted to more than 2 trillion yen, or 1.4 percent of the Bank's assets. The ABS purchase program had only a trivial impact on the Bank's assets, with a maximum of 291 billion yen, or 0.2 percent of the balance sheet. The largest contributors by far to the expansion of the BoJ's balance sheet were the liquidity-provision programs put in place in the 1990s and the JGB purchases that commenced in 2001.

In three key respects, the BoJ's actions during the post-bubble years differ starkly from the Fed's reaction to the 2007–09 crisis. First, the BoJ's response was much more gradual. Significant quantitative easing policies began a full ten years after the initial downturn, whereas the Fed took action within six months of the business cycle peak. To be fair, the Fed's alacrity is to some extent the result of the rapid deterioration of financial conditions – Japan's banking crisis began four years after the bursting of the bubble. Still, the economy endured ten years of stagnation before the BoJ began to enact unconventional policies.

Another important difference is that the BoJ's policies focused exclusively on the level of CABs, using short-term liquidity provision and purchases of relatively short-term JGBs to achieve its targets. There were no significant private-sector asset purchases, nor were there any policies designed explicitly to reduce spreads or lower long-term bond yields. In contrast, the Fed's policies emphasized the asset side of the balance sheet rather than the liability side, the quantity of total reserves. This involved very large purchases of privately issued securities, especially commercial paper and mortgage-backed securities. From the outset, the intention of these "credit" policies was to replace the funding that had previously been provided by private investors, thus reducing the spreads. As discussed in Posen (2010c), this reduction in spreads gives investors an incentive to reallocate their portfolios towards higher-yielding and riskier assets. In addition, unlike the BoJ, the Fed completely sold off its inventory of Treasury bills and lengthened the average maturity of its holdings, particularly with the implementation of "operation twist" and QE3 (discussed below).

5. Unwinding and rewinding, 2005-2012

The unwinding of these various credit and monetary measures began in 2005, as deflation receded and the economy began to show signs of a more sustained recovery. In that year, the Deposit Insurance Corporation lifted the blanket guarantee of bank deposits, and the BoJ suspended it ABS purchases. The quantitative easing policy came to an end the spring of 2006, and CABs fell rapidly from its January 2006 peak of 33.6 trillion to 7.5 trillion as of November 2007. While inflation continued to hover around zero, the economy managed to maintain a respectable rate of real GDP growth of roughly 2% from 2004 through 2007.

The onset of the 2007–09 cut the recovery short, however. The BoJ belatedly (but no more so than many other central banks, including the ECB) cut the policy rate target in early 2009 from 0.5% to 0.1%. GDP shrank by 1% in 2008 and 5.5% in 2009.

Once again confronting a recession and constrained by the zero lower bound, in October 2010, two years after Lehman failure, enacted a set of policies it referred to as Comprehensive Monetary Easing. Besides setting a target of 0 to 0.1% for the uncollateralized call rate, the policy entailed the purchase of several classes of assets other than the usual menu of government securities and collateralized lending. These included commercial paper (CP), asset-backed CP (ABCP), corporate bonds, exchangetraded funds (ETFs), and Japan real estate investment trusts (J-REITs). At first glance, this had the appearance of a bold step, similar to the asset purchases implemented by the Fed in 2009. The quantities involved were minuscule, however. As of December 2012, the BoJ had purchased only ¥2 trillion of CP, ¥1.5 trillion of ETFs and ¥3 trillion of corporate bonds. Each represented less than 2% of the Bank's total assets, which then stood at ¥158 trillion. There was no significant increase in the rate of government bond purchases, and consequently acceleration in the growth of CABs.

Unsurprisingly given its position at the epicenter of the financial crisis, quantitative easing (QE, which the Fed prefers to call Large Scale Asset Purchases or LSAPs) was carried out much more aggressively than in Japan. One difference is that QE began more quickly, with large-scale purchases of privately issued mortgage backed securities commencing in February 2009 as part of QE1. QE2, which involved large-scale purchases of Treasuries, followed in 2010. Both measures greatly expanded the Fed's balance sheet, as shown in figure 4. "Operation twist," which lengthened the average maturity of the Fed's portfolio, and QE3, which established a program of purchasing $40 billion a month in MBS and $45 billion per month of long-term Treasures, were both launched in 2012.

6. The Kuroda regime change

The most decisive shift in BoJ policy did not come until January 22, 2013, more than two decades after Japan's economy slid into recession. Under pressure from the newly elected Abe government, the Bank finally announced an explicit inflation target of 2% and committed to open-ended monetary easing.[4]

Three months later, the Bank released further details of what it referred to as a policy of Quantitative and Qualitative Monetary Easing. One element of the policy is to set a time horizon of two years for the achievement of the target announced in January. A second is a much more rapid expansion of the monetary base, at a pace of ¥60–70 trillion per year. Third, rather than limit JGB purchases to the short end of the yield curve, the Bank extended the maturity of the bonds purchased, its first explicit effort to bring down long-term interest rates.[5] The policy also entails purchases of ETFs and J-REITs, but the quantities involved (1 trillion and 30 billion, respectively) are comparable to those of the Comprehensive Monetary Easing policy under Shirakawa, and remain quite small relative to the size of the Bank's balance sheet.

The BoJ's balance sheet has grown spectacularly since the adoption of the policy. As shown in figure 5, the Bank's total assets have grown from ¥163 trillion in February 2013 to ¥225 trillion as of early 2014. (The "other" category consists largely of short-term liquidity measures, such as loans made against pooled collateral.) Most of this growth has come through increases in the purchases of long-dated JGBs, and the average

[4] Prior to the announcement, the BoJ framed its intention in terms of its "understanding of medium- to long-term price stability," as defined by the individual policy board members. The midpoint of the board members' "understanding" was a 1% annual rate of inflation.
[5] The maturity extension required the suspension of the so-called "banknote principle," which limited the purchase of long-term securities to the amount of currency in circulation.

maturity of the Bank's portfolio of government securities has risen from less than three years to more than seven.

Just as important, the Bank's communication changed dramatically with the appointment of Haruhiko Kuroda as governor. In his public statements BoJ governor Kuroda has reiterated the seriousness of the Bank's commitment by downplaying the risk of inflation getting out of control and by pledging to use any tools necessary to achieve the inflation target. In fact, the April 2013 announcement stated explicitly that one of the goals was to "drastically change the expectations of markets and economic entities."

Kuroda's rhetoric starkly with his three predecessors', which often emphasized the risks associated with expansionary policy and lamented the lack of effective tools for combating deflation, as noted by Posen (2010b). Taken together, these policies are a sharp break from previous BoJ policy. Prime Minister Shinzo Abe was not exaggerating when he hailed the move as a "regime change" in monetary policy.

II. Explanations for BoJ conservatism

The fundamental lesson from Japan's experience of the past 20 years and the 2007–09 global financial crisis is that periods of severe economic and financial stress call for extraordinary monetary policy measures. Why, then, did the BoJ act so deliberately even as the economy slid into deflation?

Underestimating the importance of the ZLB

One hypothesis is that members of the policy board simply were not attuned to the risks posed by the extraordinary shocks the economy experienced in the 1990s. One such shock was the sharp decline in asset prices, and the financial stress caused by the resultant balance sheet effects. Subsequent research has shown (or reminded us) that recessions precipitated by financial crises call for policies that are considerably more interventionist than in normal times.

In extreme cases, it may be appropriate for the central bank to temporarily resuscitate significant parts of the financial system through the direct provision of credit. This is essentially what the Fed did with its support of the commercial paper and MBS markets, where the buy side of the market simply evaporated. Referring to this form of support as "credit easing," Bernanke (2009) drew a distinction between this set of tools and conventional monetary policy and traditional liquidity provision as part of the central bank's lender of last resort function.

Another aspect of the first hypothesis is that the BoJ was slow to recognize the possibility of deflation and the constraints on policy imposed by the zero lower bound (ZLB) on nominal interest rates. These issues were relevant to the 1930s, of course, but by the early 1990s these were viewed as curiosities and relegated to the footnotes in macroeconomics textbooks. It took Krugman's (1998) paper to bring the ZLB issue back into policymakers' consciousness. In the absence a sharp contraction (year-over-year real GDP growth never fell below –1% during the 1990-93 recession), it is perhaps understandable that BoJ policymakers should not have taken the ZLB possibility into account. The BoJ was not alone in that regard. Research conducted in the 1990s by Federal Reserve economists, such as Fuhrer and Madigan (1997), suggested that the deleterious effects of the ZLB were relatively modest.

The 2007-09 global financial crisis forcefully demonstrated ZLB was a far more serious problem than either the BoJ or the Fed realized in the 1990s, and was not an idiosyncratic Japan-specific phenomenon. Subsequent research, such Hess et al. (2012), suggests that the relatively sanguine view of the ZLB may have been unduly influenced by the absence of large adverse shocks during the "great moderation" period in the U.S. If nothing else, the post-2007 experience shows that policy needs to be more aggressive when there is a risk of hitting the ZLB. Blanchard et al. suggest that the ZLB threat may call for an inflation target in excess of the 2% adopted by most advanced-economy central banks.

Unfounded fears of inflation

A second hypothesis is that the BoJ leadership clung to erroneous beliefs about ideas about the causes and risks of inflation. As discussed in Bernanke (2000), Blanchard (2000), and Posen (2000), there seems to have been a self-induced paralysis at the BoJ, and at times a mistaken belief in the real benefits of tighter credit conditions.

A 2000 speech by then-Governor Hayami encapsulated this mindset. Perhaps reflecting a Cagan-style model of unstable inflation dynamics, he hypothesized that any increase in the target inflation rate would destabilize inflation expectations,

> The point that "inflation is most likely uncontrollable once triggered. . . . Some argue that [the Bank of Japan] can raise the inflation rate to 2 or 3 percent and then contain it around that level. . . . However, if we tried to contain inflation after it had gained momentum, we would need very strong monetary tightening."

This view clearly flies in the face of the experience of other industrialized countries, most of which had successfully targeted and maintained inflation rates of roughly 2 percent.

In addition to exaggerating the risk of inflation instability, BoJ officials apparently failed to recognize the potential benefits of a positive inflation target. In the same 2000 speech, Hayami asserted that because increasing inflation would have not stimulative effects, it was not a solution to Japan's economic problems. In fact, there seems to have been sympathy for the view that in the case of Japan, falling prices were a manifestation of "good deflation."

These concerns receded over time, with BoJ officials recognizing that the rapid increase in current account balances posed no risk of inflation. Then-Governor Masaaki Shirakawa conceded in a 2011 interview that the proposition that "inflation is always and everywhere a monetary phenomenon" had been proven wrong by Japan's experience.[6]

Fear of loss of independence

A third hypothesis is that the BoJ's aversion to aggressive action had its roots in political considerations. One aspect of this centered on the fiscal implications of purchases of

[6] Apparently oblivious to the Japanese experience, some prominent economists, including Allan Meltzer and Martin Feldstein, have warned about the threat of inflation in the U.S. created by the expansion of the Fed's balance sheet.

private sector securities, such as asset-backed securities, which were purchased in only very small amounts. As then-Deputy Governor Yamaguchi put it in 2001,

> The basic rule in a democratic society is that fiscal policy using taxpayers' money needs to be approved as part of a budget by a parliament composed of members elected by the people. [A policy of purchasing private-sector assets] should be discussed publicly in the context of governance in a democratic society.

Ueda (2003) raised similar concerns, arguing that capital losses—and *in extremis* insolvency—would undermine the Bank's independence. More generally, Cargill et al. (2001) argued that the BoJ found itself in an "independence gap" that led it to resist external advice, particularly that coming from the finance ministry. This, in turn, inhibited the adoption of more innovative and aggressive policies. The BoJ is likely to have been especially sensitive to the independence issue, having just been granted an enhanced degree of independence with the passage of the New Bank of Japan Law in 1997.

Non-cooperative policy games

A fourth hypothesis is that suboptimal monetary policy was the outcome of a non-cooperative game between the BoJ and the finance ministry. Hoshi (2014) argued that the BoJ's reluctance to continue ZIRP resulted from concerns that doing so would reduce the pressure for financial restructuring. Underlying this view is the assumption that aggressive monetary policy, in the form of very low interest rates or direct credit extensions, would allow insolvent ("zombie") firms to survive. Since the survival of firms would reduce the efficacy of monetary policy, the central bank would like the financial supervisor to close or restructure the zombies—but this is costly for the regulator. Hoshi showed how the central bank and the regulatory agency can fall into a trap with insufficient restructuring *and* an overly contractionary monetary policy. Posen (1998) identified this belief on the part of Japanese macroeconomic policy makers early in the Great Recession, and summarized the evidence *against* monetary tightness causing the right firms to close.

A variation on this theme is that aggressively expansionary monetary policy would enable reckless fiscal policy. Bank of Japan policymakers, such as Hayami (2000), raised this objection from time to time.

III. Lessons for the conduct of monetary policy

Japan's monetary policy during the lost decades and the international experience after the 2007-09 financial crisis call into question several tenets of the prevailing central banking framework. The three key elements of the conventional framework are: (1) policy is implemented exclusively via the short-term policy interest rate, (2) the central bank should be fully independent from the elected government and finance ministry, and (3) there should be no attempt to coordinate monetary with other (fiscal, regulatory) policies.

It has become abundantly clear that there is more to monetary policy than the short-term overnight interest rate. Debt management—changes in the maturity distribution of central banks' portfolio of government securities—is a potentially useful tool, one that was largely neglected by the BoJ during the lost decades.[7] Purchases of securities other than government debt have proven to be effective in reducing private-sector interest rates. And there has been renewed interest in non-interest rate policy instruments, such as reserve requirements, maximum loan-to-value ratios, etc., as tools to dampen the sorts of asset price bubbles that ultimately led to Japan's economic malaise.

Equally dubious is the assumption that government involvement in the policymaking process is inherently bad. This long-held view of monetary policy, which was formalized in the highly influential work of Barro and Gordon (1983), assumes that governments pressure the central bank to generate surprise inflation in an ultimately futile effort to artificially boost output. Independence insulates the central bank from government pressure, the thinking went, thereby mitigating inflation pressure.

In this context, the removal of Masaaki Shirakawa and his replacement in April 2013 with Haruhiko Kuroda, a former finance vice-minister with close ties to Prime Minister Abe, could be viewed as a blatant attempt to impose the government's will on the BoJ, which would presumably have inflationary consequences.

Japans' experience shows that coordinated fiscal-monetary stimulus in extreme times may be necessary. As argued in Posen (2010a), strong government oversight of central bank goals over a multiyear period, and voluntary policy cooperation by the central bank in pursuit of those goals, does not harm and can enhance monetary credibility. In this context, succession of Masaaki Shirakawa in April 2013 by Haruhiko Kuroda has rightly been seen as a regime shift, but has not caused a collapse in confidence or surge in inflation.

This interpretation is consistent with the key distinction between goal and instrument independence. Following Debelle & Fischer (1994). Bernanke, et al, (1999, p. 38), argued for goal dependence in inflation targeting, on the grounds that it would "maximize central bank accountability while still leaving the ultimate goals of policy to be determined at least in part by democratic processes…This strategy calls for the inflation targets themselves to be set by a political process in which the central bankers consult with the appropriate legislators or ministers."

The experience of inflation-targeting central banks suggests that there is nothing to fear from government involvement in the setting of monetary policy goals. Among advanced economies, seven of the eight countries with formal inflation targets have those targets either set unilaterally by the government, or in cooperation with the government. (Sweden is the sole exception.) There is no evidence to suggest that these countries either set higher inflation targets or allow inflation to systematically overshoot the targets. To the contrary, Flood and Isard (1989) and Lohmann (1992) argued that governmental involvement is desirable to the extent that it allows an inherently conservative central bank to be overridden in dire economic circumstances.

[7] To be fair, the prevailing wisdom was that debt management was ineffective, a conclusion that was based largely on the small "operation twist" experiment from the U.S. 1960s. More recent research by Bernanke et al. (2004) and Kuttner (2006) indicated that debt management could in fact affect the term structure of interest rates.

IV. Concluding remarks

Fourteen years ago, Ben Bernanke (2000) described the BoJ's hesitance to cut interest rates and failure to commit to aggressively expansionary policy as a case of "self-induced paralysis." The BoJ adopted incrementally more activist measures over the years. To its credit, the Bank pioneered some of the policies that would later be adopted by the Fed. These included quantitative tools, such as the large-scale purchase of government securities, and efforts to guide expectations through the announcement of policy targets.

These policies were generally "too little, too late," however. The rate cuts in the early 1990s were gradual. It took ten years for the Bank commit, even halfheartedly, to a zero interest rate policy. Quantitative easing focused on liquidity provision, eschewing the purchase of long-dated government securities and private-sector assets. Expansionary policies were prematurely reversed. Communication emphasized the risks of forceful policy, not the benefits. It was not until Kuroda's appointment in 2014 that the BoJ's Hooverian conservatism was replaced with Rooseveltian resolve.

Since we will never observe the counterfactual, it is impossible to know how the Japanese economy would have performed had the BoJ reacted more decisively to the post-bubble downturn. But there is little doubt more assertive policies would have helped. Long dismissed as a footnote in intermediate macro textbooks, recent research has shown that the problems created by zero lower bound justify aggressive actions. Moreover, the experiences of both Japan and the U.S. show that the risks of unconventional policy are minimal. Or as Roosevelt put it, "there is nothing to fear but fear itself."

References

Barro, Robert J., and David B. Gordon. 1983. A Positive Theory of Monetary Policy in a Natural-Rate Model. *Journal of Political Economy,* 91, 589–610.

Bernanke, Ben S., Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen. 1999. *Inflation Targeting: Lessons from the International Experience*, Princeton University Press.

Bernanke, Ben S. "Japanese Monetary Policy: A Case of Self-Induced Paralysis?" In Mikitani and Posen (eds.), *Japan's Financial Crisis and Its Parallels to U.S. Experience*, Peterson Institute for International Economics.

Bernanke, Ben S., Vincent Reinhart R. and Brian P. (2004). Monetary Policy Alternatives at the Zero Bound: An Empirical Assessment. *Brookings Papers on Economic Activity* 2004(2), pp. 1-78.

Bernanke, Ben S. 2009. The Crisis and the Policy Response. The Stamp Lecture, London School of Economics, London, England, January 13.

Blanchard, Olivier. 2000. "Bubbles, Liquidity Traps, and Monetary Policy." ?" In Mikitani and Posen (eds.), *Japan's Financial Crisis and Its Parallels to U.S. Experience*, Peterson Institute for International Economics, pp.185-93.

Blanchard, Olivier and Giovanni Dell'Ariccia and Paolo Mauro. 2010. "Rethinking Macroeconomic Policy." *Journal of Money, Credit and Banking* 42, 199–215.

Cargill, Thomas F., Michael M. Hutchison, and Takatoshi Ito. 2001. Financial Policy and Central Banking in Japan, Cambridge, Massachusetts: MIT Press.

Debelle, Guy, and Stanley Fischer. 1994. How Independent Should a Central Bank Be? Pages 195–221 of: Fuhrer, Jeffrey C. (ed), *Goals, guidelines, and constraints facing monetary policymakers*. Conference Series No. 38, Federal Reserve Bank of Boston.

Flood, Robert P. and Peter Isard. 1989. Monetary Policy Strategies. *IMF Staff Papers,* 36, 612–632.

Fuhrer, Jeffrey C. and Madigan, Brian F. 1997. Monetary Policy when Interest Rates Are Bounded at Zero. *Review of Economics and Statistics* 79(4), pp. 573-585.

Harrigan, James, & Kuttner, Kenneth N. 2005. Lost Decade in Translation: Did the United States Learn from Japan's Post-bubble Mistakes? *Pages 79–106 of:* Ito, Takatoshi, Patrick, Hugh, & Weinstein, David E. (eds), *Reviving Japan's Economy: Problems and Prescriptions*. Cambridge, MA: MIT Press.

Hayami, Masuru. 2000. Price Stability and Monetary Policy. Speech presented to the Research Institute of Japan, Tokyo, March 21.

Hess, Chung, Jean-Philippe Laforte, David Reifschneider and John Williams. 2012. Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events? *Journal of Money, Credit and Banking* 44, 47–82.

Hoshi, Takeo. 2014. Role of Central Banks in Financial Stability: Lessons from the Experience of the Bank of Japan. Chap. 5, pages 83–104 of: Evanoff, Douglas D.

(ed), The Role of Central Banks in Financial Stability: How Has It Changed? World Scientific.

Jinushi, Toshiki, Yoshihiro Kuroki and Ryuzo Miyao. 2000. Monetary Policy in Japan Since the Late 1980s: Delayed Policy Actions and Some Explanations. In Mikitani and Posen (eds.), *Japan's Financial Crisis and Its Parallels to U.S. Experience*, Peterson Institute for International Economics.

Krugman, Paul R. It's Baaack: Japan's Slump and the Return of the Liquidity Trap. (1998). *Brookings Papers on Economic Activity* 1998(2), pp. 137-205.

Kuttner, Kenneth N., & Posen, Adam S. 2004. The difficulty of discerning what's too tight: Taylor rules and Japanese monetary policy. *North American Journal of Economics and Finance*, **15**, 53–74.

Kuttner, Kenneth N. 2006. Can Central Banks Target Bond Prices? Working Paper 12454. National Bureau of Economic Research.

Kuttner, Kenneth N. 2010. The Fed's Response to the Financial Crisis: Pages from the BoJ Playbook, or a Whole New Ball Game? *Public Policy Review* 6, 407–430.

Lohmann, Susanne. 1992. Optimal Commitment in Monetary Policy: Credibility versus Flexibility. *The American Economic Review*, 82(1), 273–286.

McCauley, Robert and Kazuo Ueda. 2009. "Government Debt Management at Low Interest Rates." BIS Quarterly Review, 35–51, June.

Orphanides, Athansasios. 2004. Monetary Policy in Deflation: The Liquidity Trap in History and Practice. North American Journal of Economics and Finance 15(1), pp. 101-24.

Posen, Adam S. 1998. *Restoring Japan's Economic Growth*. Peterson Institute for International Economics.

Posen, Adam S. 2000. "The Political Economy of Deflationary Monetary PolicyIn Mikitani and Posen (eds.), *Japan's Financial Crisis and Its Parallels to U.S. Experience*, Peterson Institute for International Economics. 194-208.

Posen, Adam S. 2010a. When Central Banks Buy Bonds - Independence and the Power to Say No. Speech delivered at Barclays Capital 14th Annual Global Inflation-Linked Conference, New York, June 14.

Posen, Adam S. 2010b. "The Realities and Relevance of Japan's Great Recession: Neither Ran nor Rashomon." Peterson Institute for International Economics, Working Paper 10-7.

Posen, Adam S. 2010c. "The Central Banker's Case for Doing More." PIIE Policy Brief 10-24, October.

Ueda, Kazuo. 2003. *The Role of Capital for Central Banks*. Speech delivered at the Fall meeting of the Japan Society of Monetary Economics, October 25.

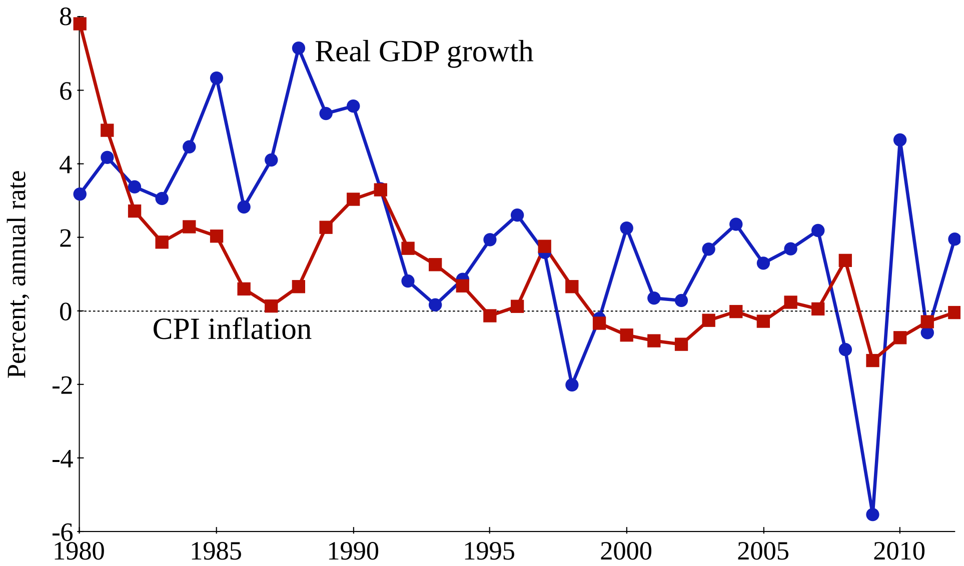
Yamaguchi, Yutaka. 2001. *Remarks*. Speech delivered at the JCIF International Finance Seminar, October 17.

Table 1: Chronology of Key BoJ Policy Actions, 1996–20013

	Announcement (Implementation)
Cosmo Credit, Hyogo Bank and Kizu Credit	August 1995
Emergency loan to Tokyo Kyodo Bank	April 1996
Lending to Deposit Insurance Corporation	September 1996
Emergency loan to Hanwa Bank	November 1996
Introduction of repo operations	October 1997
Emergency loan to Kyoto Kyoei Bank	October 1997
Failures of Yamaichi & Hokkaido Takushoku, emergency loans	November 1997
Emergency loan to Tokuyo City Bank	November 1997
Emergency loan to Fuji/Yamaichi	November 1997
Lending to Deposit Insurance Corporation	February 1998
CP operations for repos	November 1998
Temporary Lending Facility to Support Firms' Financing Activities	November 1998
Zero interest rate target	August 1999
Expansion of eligible collateral	September 1999
Lombard facility	March 2001
Quantitative easing	March 2001
Stock purchases	October 2002 (December 2002)
ABS purchases	June 2003 (August 2003)
Reaffirmation of LOLR function	March 2005
End of quantitative easing policy	March 2006
Introduction of pooled collateral	April 2006
Suspension of stock purchase program	October 2008
Resumption of stock purchase program	February 2009
Comprehensive monetary easing	October 2010
Quantitative and qualitative monetary easing	April 2013

Note: based on Kuttner (2010).

Figure 1: Japanese real GDP growth and CPI inflation, 1980–2012



Source: IMF World Economic Outlook, October 2013.

Figure 2: BoJ and Fed responses to the 1991, 2001 and 2008 downturns

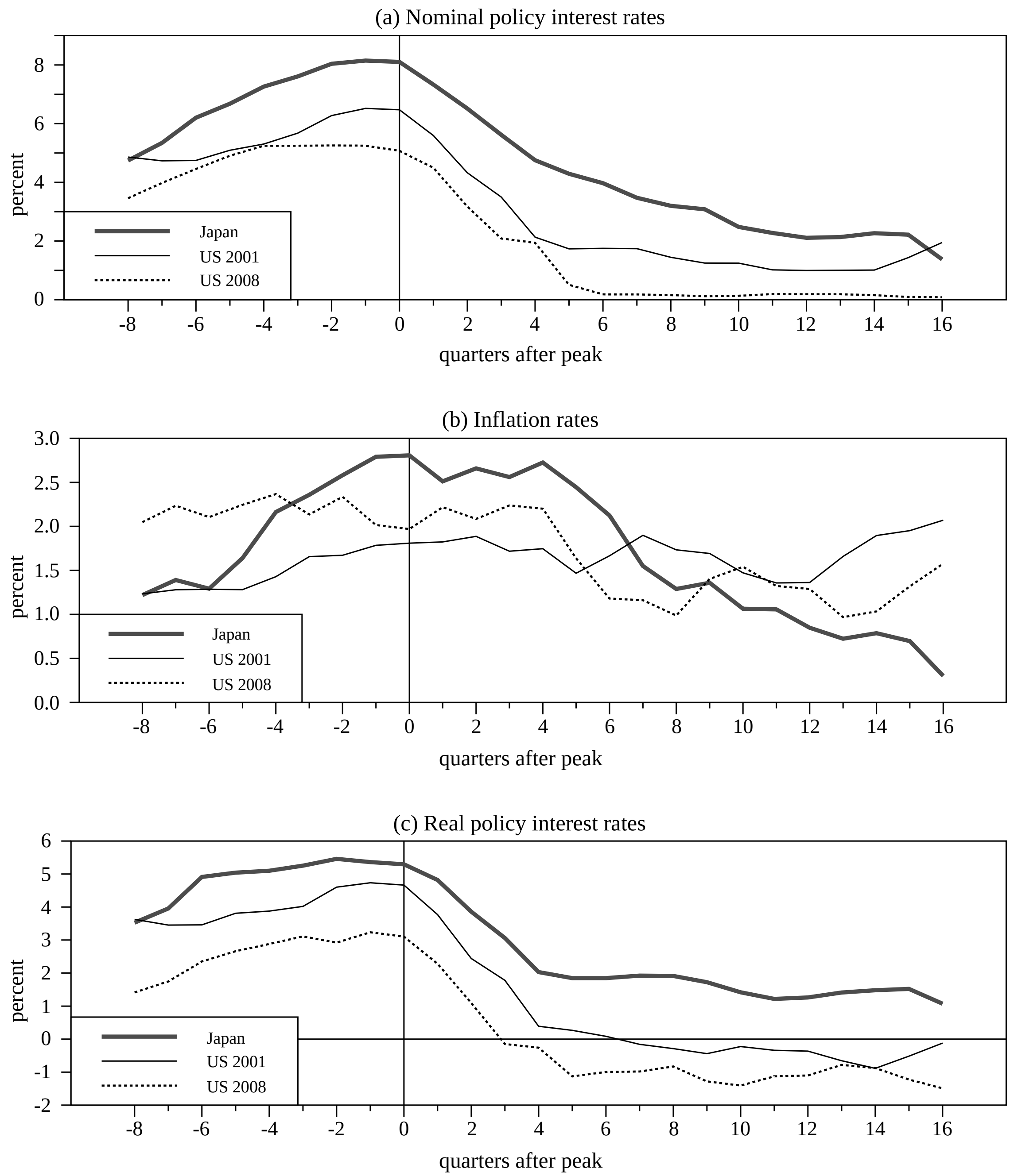


Figure 3: The Bank of Japan's balance sheet, 1992–2009

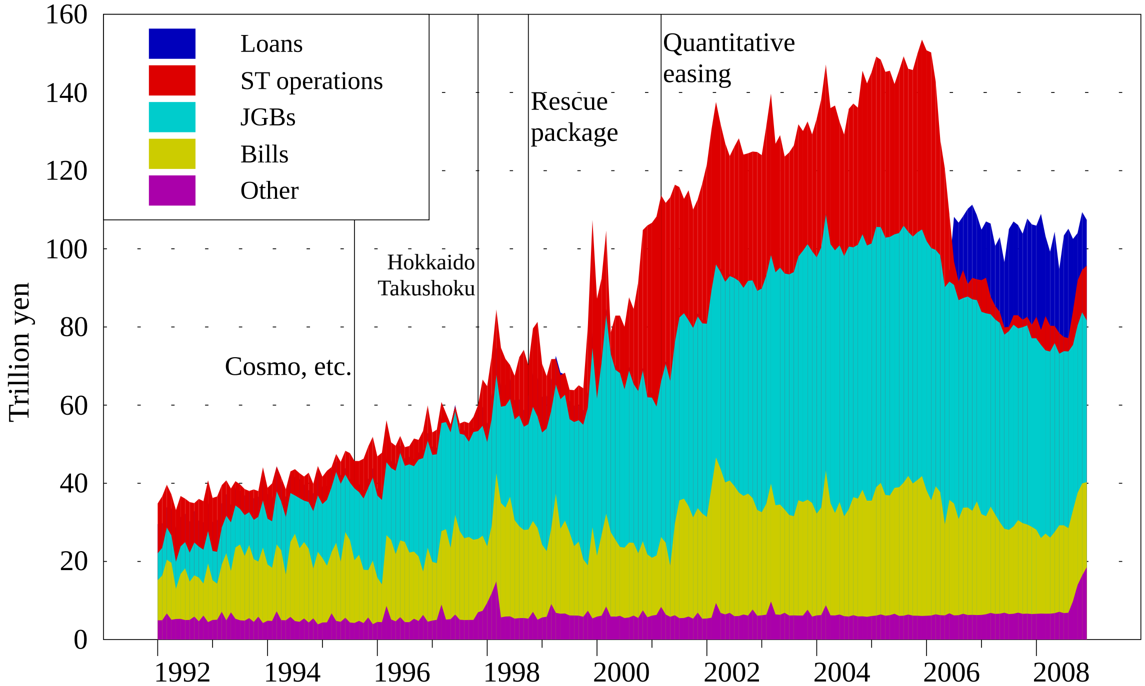


Figure 4: The Federal Reserve's balance sheet, 2007–13

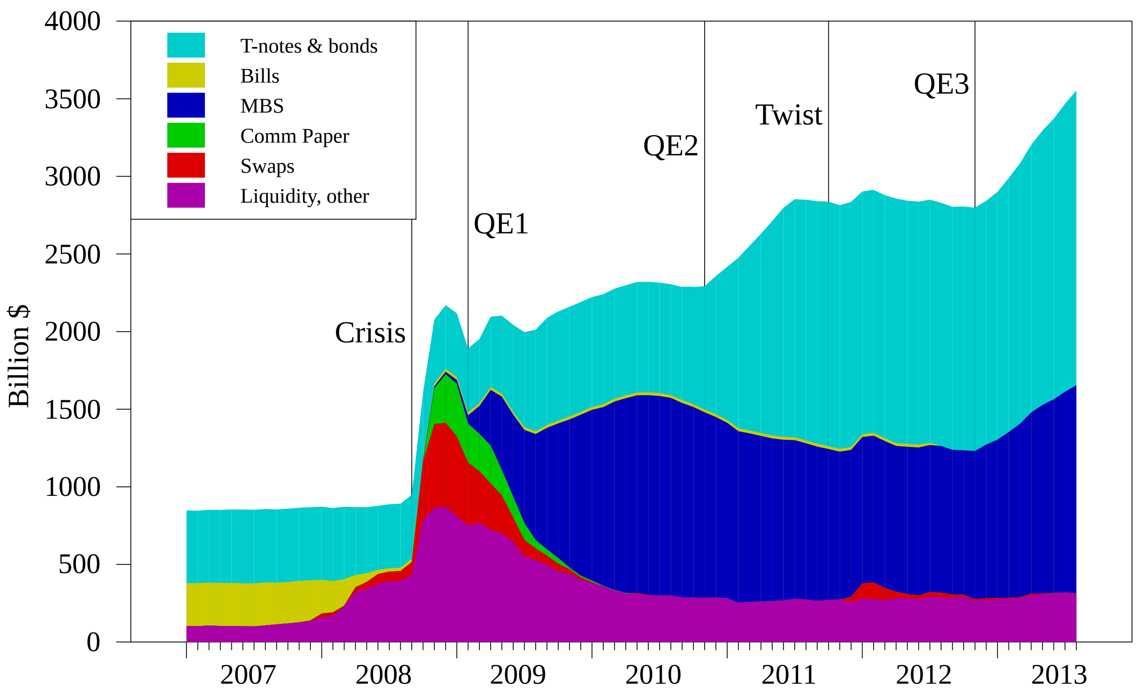


Figure 5: The Bank of Japan's balance sheet, 2001–2014