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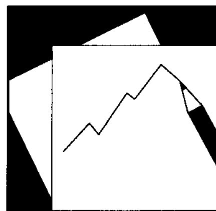

IMF Working Paper

"Lost Decade" in Translation: What Japan's Crisis could Portend about Recovery from the Great Recession

Murtaza Syed, Kenneth Kang, and Kiichi Tokuoka

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Prepared by Murtaza Syed, Kenneth Kang, and Kiichi Tokuoka

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Abstract

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Is the recovery from the global financial crisis now secured? A strikingly similar crisis that stalled Japan's growth miracle two decades ago could provide some clues. This paper explores the parallels and draws potential implications for the current global outlook and policies. Japan's experiences suggest four broad lessons. First, green shoots do not guarantee a recovery, implying a need to be cautious about the outlook. Second, financial fragilities can leave an economy vulnerable to adverse shocks and should be resolved for a durable recovery. Third, well-calibrated macroeconomic stimulus can facilitate this adjustment, but carries increasing costs. And fourth, while judging the best time to exit from policy support is difficult, clear medium-term plans may help.

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I. INTRODUCTION

1. **Following two quarters of free fall, the latest economic news from across the world provides grounds for cautious optimism.** Buoyed by a sharp rebound in Asia together with stabilization or modest recoveries in other regions, the world economy seems to slowly be returning to life. The panic that gripped global financial markets last fall has also receded significantly, although stresses remain. In differing patterns and intensity, green shoots are sprouting across the world, fueling hopes that the end of the "Great Recession" is in sight.

2. **But has the global economy reached a true turning point, and should policy support be reversed anytime soon?** Aggressive macroeconomic stimulus, unprecedented financial sector interventions, and restocking associated with global inventory cycles are providing an important boost to activity. Beyond these transient forces, however, the durability and shape of the recovery are likely to vary across economies, based, among other things, on the health of their financial systems, the soundness of private sector balance sheets, and their relative dependence on external demand and financing. Looking ahead, policymakers in individual economies will need to judge the extent to which recovery is on a firm footing, based primarily on whether private demand is sufficiently well placed to replace generous government support.

3. **What can be learned from history?** To help assess current economic prospects, this paper recalls Japan's banking crisis of the 1990s, sometimes dubbed the "lost decade". Many commentators have noted the striking similarities between Japan's lost decade and the ongoing crisis, notably with respect to their genesis and the policy challenges they posed.[1] Both crises originated in the bursting of asset bubbles fueled by lax financial regulation and irrational exuberance, against the backdrop of an escalation in private debt. The asset collapse spread to other markets, raising liquidity and solvency concerns for systemically important institutions and weakening growth. Addressing these concerns required unprecedented policy support to stabilize financial markets, while cushioning adverse feedbacks through aggressive fiscal and monetary loosening. Finally, as a durable recovery took hold, attention turned to unwinding these exceptional macroeconomic and financial interventions.

4. **Motivated by the parallels between the Lost Decade and the current Great Recession, this paper draws potential implications for the global outlook and the appropriate setting of policies.** Based on Japan's experiences, it asks:

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[1] Two recent IMF seminars—"Japan's Policy Response to its Financial Crisis: Parallels with the U.S. Today" in Washington D.C. (March 19, 2009) and "How Japan Recovered from its Banking Crisis: Possible Lessons for Today" in Istanbul (October 6, 2009)—have discussed Japan's experiences and the potential implications for resolving the current global crisis.

For supporting materials, see http://www.imf.org/external/np/seminars/eng//2009/jpn/index.htm and http://www.imf.org/external/am/2009/schedule.htm.

- Are current green shoots harbingers of a true turning point or "false dawns" propped up by stimulus and other temporary factors? What could be the key signs of a sustainable economic recovery?
- For a lasting recovery, how vital are efforts to restore the soundness of creditor and debtor balance sheets, and how can this be achieved? While this is done, how can fiscal and monetary policies be deployed to support growth and combat deflation?
- How should policymakers design and articulate exit strategies, even if they are implemented only after a durable recovery takes hold?
- What could be the longer-term legacies of the crisis for growth, inflation and public debt?

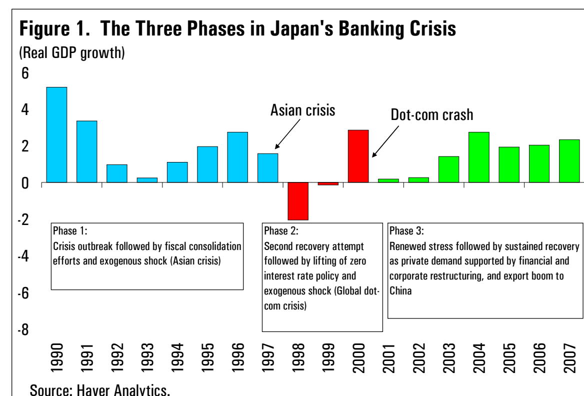
5. **The rest of the paper is organized as follows.** Section II sets the stage by reviewing Japan's experience with nascent recoveries during its banking crisis and outlining the key ingredients to its eventual lasting resurgence. The latter part of the section discusses Japan's policy responses and exit strategies in more detail. Section III places these experiences in the current context, using them to assess the likely durability of current green shoots and lay out the policy stance that may be needed to ensure a sustained global recovery. Section IV concludes.

II. JAPAN'S LOST DECADE: FROM GREEN SHOOTS TO ENDURING RECOVERY

A. Background: The Three Phases of Japan's Crisis

Contrary to popular perception, Japan's lost decade was not an uninterrupted period of economic decline, but involved three distinct phases. Twice, green shoots of recovery emerged, allowing stimulus to be withdrawn. However, on both occasions, the external environment subsequently deteriorated dramatically—first during the Asian financial crisis in 1997 and then the IT bubble collapse in 2000—and the shock to the economy was amplified by a still-fragile financial system. A more severe downturn ensued, necessitating even more aggressive stimulus to support real activity and magnifying the longer-term challenges associated with unwinding policy support. An enduring recovery was ultimately possible only when financial and corporate sector problems at the heart of the crisis were addressed, allowing a resumption of policy stimulus and a favorable external environment to reinvigorate private demand.

6. **Japan's banking crisis featured three dips in activity and spanned almost a dozen years** (Figure 1). As the crisis unfolded, the Japanese authorities faced a set of challenges unprecedented in the postwar era and responded with innovative measures that ultimately proved successful. Japan's crisis also highlights the tremendous uncertainty involved in judging the strength of recovery



from a post bubble recession and the difficulty in timing the exit from policy support. In particular, while fragilities in the financial system and debtor balance sheets remain, a recovery can be derailed by unforeseen adverse shocks. This section summarizes Japan's experiences with fledgling recoveries that did not endure and the keys to its eventual sustained turnaround.

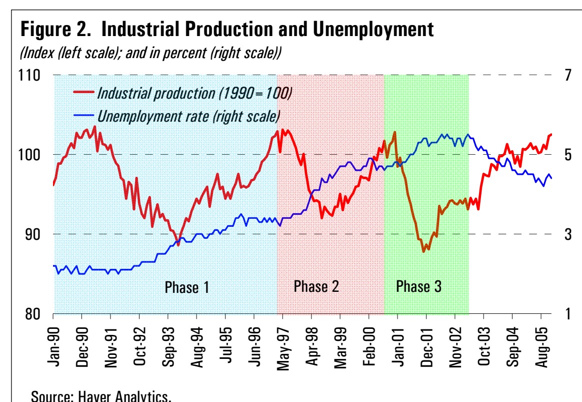
Phase 1: 1990–97—Crisis Outbreak and Fragile Recovery

7. **Much like the current Great Recession, Japan's crisis was sparked by the collapse of bubbles in its stock and real estate markets in the early 1990s.** After tripling during the latter half of the 1980s, these markets collapsed in 1989–1990. Whereas real estate prices declined continuously over the next decade, the stock market staged intermittent bull runs (1995–96) and (1999–2000), only to subsequently slide to new lows. As in the present situation, private debt also escalated in the lead-up to Japan's crisis, although the increase in leverage was less acute and reflected borrowing by firms, not households.

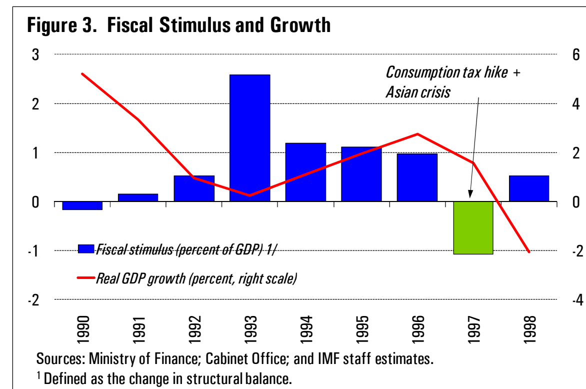
8. **The fallout was relatively muted during the first phase of the crisis, as the bursting of the twin bubbles stalled Japan's long postwar expansion for a few years.** For two decades, Japan had enjoyed the strongest growth among advanced economies, expanding by almost 4 percent annually after the oil shock of 1973, compared to an OECD average of around 2¾ percent. Over the same period, unemployment was less than half the OECD average and inflation almost 3 percentage points lower. After the bubbles burst, the economy stagnated, with growth falling to an average of 1½ percent between 1991 and 1994. Unemployment ticked up, and inflation fell gradually from highs of around 3½ percent, although credit growth remained relatively resilient and official nonperforming loans (NPLs) were low.

9. **By the middle of the decade, green shoots were sprouting in the face of policy stimulus.** With the Bank of Japan (BoJ) cutting policy rates to near zero by 1995, together with successive fiscal stimulus packages, the economy was expected to emerge relatively quickly from what was seen as a cyclical downturn. Indeed, a recovery appeared to be taking hold from 1994, with growth and inflation picking up, unemployment leveling off, and the stock market rallying. Industrial production also recovered, supported by a technical correction related to the inventory cycle (Figure 2). Signs of recovery allowed policy stimulus to be withdrawn—with a fiscal

Figure 2. Industrial Production and Unemployment
(Index (left scale); and in percent (right scale))



Source: Haver Analytics.

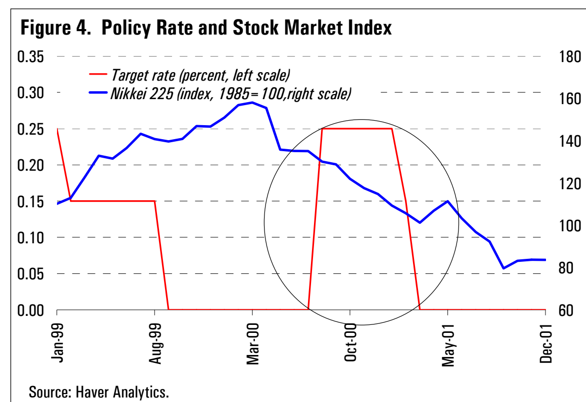


consolidation effort launched in April 1997 in response to concerns about escalating public debt (Figure 3).[2]

Phase 2: 1997–2000—Systemic Stress and Second Recovery Attempt

10. **The Asian crisis then struck in 1997, pushing the economy into a second and more virulent phase of crisis and bringing Japan close to a financial meltdown.** The bursting of the asset bubbles had left Japan's financial system saddled with large nonperforming loans, but these were masked by regulatory forbearance and their full scale not properly diagnosed. The increasing mistrust of financial institutions came to a head when the external environment deteriorated unexpectedly as a result of the Asian crisis—mounting losses on failed real estate loans and falling share prices led to a seizing up of the interbank markets and a wave of large-scale failures in the financial sector. The real impact was severe, as a credit crunch ensued and the economy contracted for two years in a row (in both 1998 and 1999), the first time growth had fallen into negative territory since the oil shocks of the 1970s.

11. **The economy then seemed to mend between 1999 and 2000.** In the aftermath of the 1997 crisis, capital was injected into the banking system—albeit with few conditions and without tackling the NPL problem—and policy stimulus was reintroduced, in the form of larger fiscal packages and a shift to a zero-interest rate policy. These actions helped to calm markets and supported a pickup in activity. In this environment, the policy rate was raised modestly by 25 basis points in August 2000 (Figure 4).

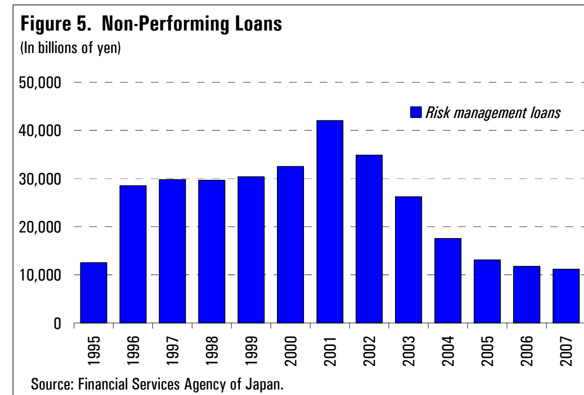


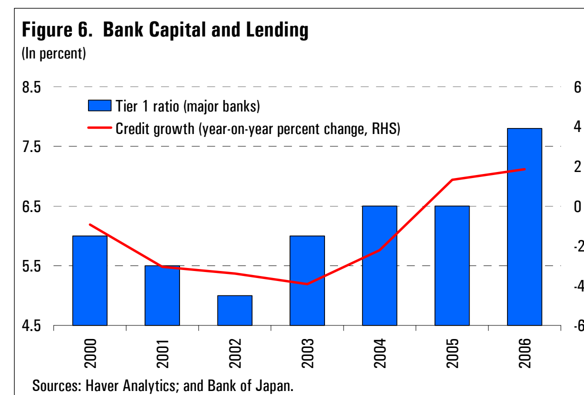
Phase 3: 2001–03—Renewed Systemic Stress Followed by Sustained Recovery

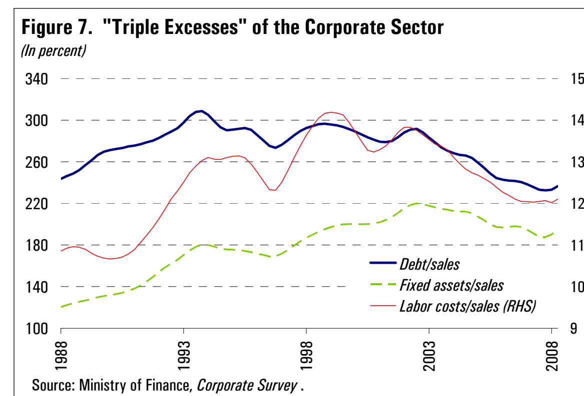
12. **The collapse of the global information technology bubble from March 2000 onwards triggered a third phase of financial and economic stress** as deteriorating corporate profits strained the still-fragile banking system, and policy stimulus was reintroduced. With the economy barely growing in 2001 and 2002, a large output gap opened up. As credit contracted in the face of long-delayed but much-needed deleveraging, unemployment rose to a post-war high of 5½ percent in 2002, and NPL ratios peaked at

[2] As announced two years earlier, the consumption tax rate was raised to 5 percent from 3 percent in 1997, and a temporary income tax cut was lifted. At the same time, social security premiums were raised.

almost 9 percent. Against this weak economic backdrop, public debt rose to nearly 75 percent of GDP in net terms, easily the highest among advanced economies.







13. **A comprehensive strategy for addressing underlying problems in the financial and corporate sectors was finally put in place in 2002–03.** A more aggressive approach to dealing with problem loans and capital shortages in the banking system was adopted, helping to restore confidence in the banking system (Figures 5 and 6). In addition, corporates—helped by a push to restructure distressed assets—made significant progress in shedding the "triple excesses" of debt, capacity, and labor from the bubble period (Figure 7). As a result, corporate debt, which had continued to rise even after the bubbles burst—from 80 percent of GDP in the early 1980s to 120 percent in 1995—returned to prebubble levels by 2004.

14. **What was different about this third episode?** A more aggressive approach to restoring financial health combined with positive growth stimulus from China enabled a more durable expansion to finally take hold. In contrast to the earlier recovery attempts, private domestic demand was on a stronger footing (Figure 8), supported by a revitalized banking system and a healthier corporate sector. As a result, sustained growth finally resumed—averaging a healthy 2 percent between 2003 and 2007—on the back of a virtuous circle, with bank and corporate profits rebounding, credit flowing again, employment rising, the stock market surging, and investment picking up (Figure 9). Favorable global conditions, together with a real effective depreciation associated with deflation and a weak yen, also benefited the recovery, with net exports accounting for around a third of Japan's growth during this period. The next section discusses Japan's policy responses in more detail— assessing its financial sector policies and macroeconomic stimulus measures, as well as its eventual exit strategies.[3]

[3] The Appendix presents a more detailed chronology of key policy measures during Japan's banking crisis.

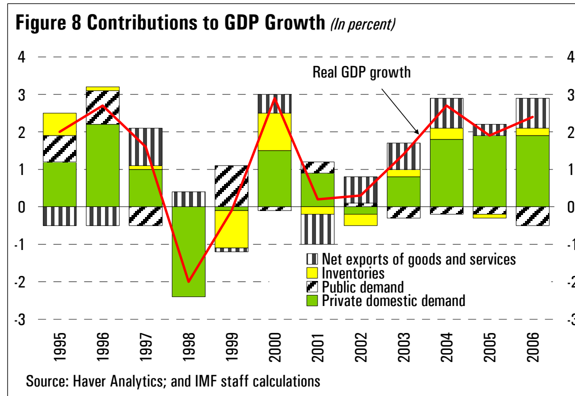


Figure 8 Contributions to GDP Growth *(In percent)*

Source: Haver Analytics; and IMF staff calculations

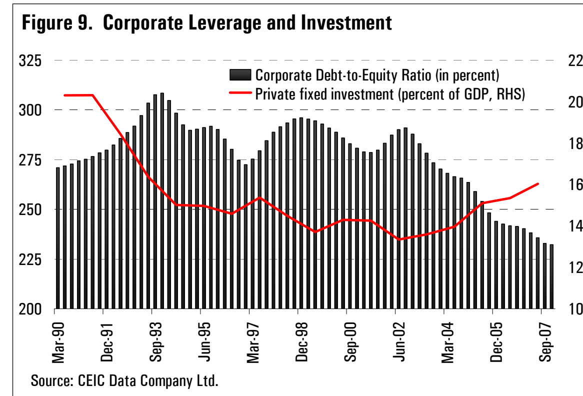


Figure 9. Corporate Leverage and Investment

Source: CEIC Data Company Ltd.

B. Revisiting Japan's Policy Responses

The Primacy of Financial and Corporate Interventions

As the crisis intensified and its roots became clearer, the Japanese authorities turned more forcefully to financial sector policies. Their strategy centered on restructuring banks, pushing them to recognize problem loans and raise new capital, and in some cases seek out public funds or exit the sector. At over ¥100 trillion, bank losses were much larger than first envisioned, and around ¥47 trillion in public funds was needed to dispose of NPLs and recapitalize banks. In the final analysis, tighter supervision, judicious use of public funds, and a sound framework for restructuring distressed assets helped restore health to the financial system and support a sustained economic recovery. To date, nearly three-fourths of the public funds used in the financial sector interventions have been recovered.

15. **Delays in recognizing problem loans exacerbated Japan's financial crisis and postponed a sustained recovery.** Weak accounting practices and regulatory forbearance masked the NPL problem for many years and limited incentives for remedial action by both the government and the banks themselves. This partly reflected a lack of understanding of the size of the NPL problem and an initial belief that an economic recovery would soon emerge (Figure 10). The delay in recognizing the losses proved costly, both in terms of taxpayer funds but also in holding back a recovery, as insolvent "zombie" firms were allowed to linger and constrain investment by sound firms.[4] The result was ultimately a lost decade of growth, wasteful pump-priming spending, and a large buildup of public debt. At a minimum, earlier action to recognize problem loans and raise adequate provisioning would have helped identify the capital shortage and jump-start the process of restructuring.

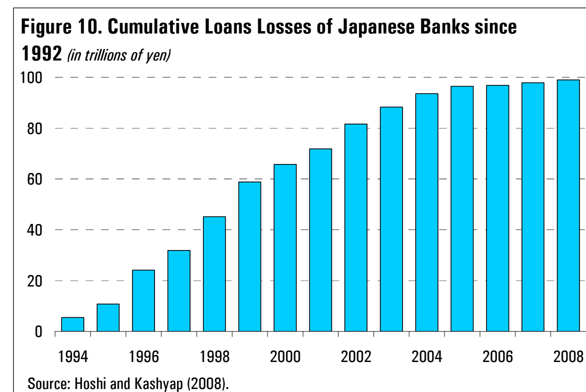


Figure 10. Cumulative Loans Losses of Japanese Banks since 1992 *(in trillions of yen)*

Source: Hoshi and Kashyap (2008).

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[4] See Caballero, Hoshi, and Kashyap (2008) for an empirical analysis of the impact of such "zombie" firms on investment and employment growth of sound firms.

16. **Liquidity provision helped forestall an immediate systemic crisis, but could not adequately address the fundamental problem of an undercapitalized banking system.** In Japan, exceptional liquidity was required to stabilize the system, but without accompanying steps to recognize losses and address the capital shortage, its effectiveness diminished over time. As discussed later, if left for too long, exceptional liquidity can also generate negative side effects by distorting the functioning of the markets and delaying needed restructuring. Because of the capital shortage, banks were unable to extend new credit or take on risk, raising concerns over a credit crunch. Combined with regulatory forbearance, management and shareholders had limited incentives or means to take action, either by raising new equity or writing-down bad loans. To resolve this impasse, the BoJ and others pushed strongly for the government to inject public funds as a means of freeing banks' capital constraints and reviving the credit channel.

17. **Public funds that were conditional on equity writedowns and steps to dispose of bad assets ultimately proved effective.** In Japan, the injection of capital into viable institutions, together with the orderly resolution of nonviable ones, helped support credit and bolster capital ratios, but only after they were linked to strong steps to clean up balance sheets and undertake restructuring. Earlier rounds of capital injection had come with relatively few conditions and while these helped the recapitalization effort, they could not rehabilitate the banking system because they did not deal with the NPL problem. The success of the ultimate strategy reflected the emphasis on ensuring realistic valuation of assets, accelerating NPL disposals, stricter conditions on capital injections, and close monitoring by the FSA under an agreed reorganization plan (see Appendix for details). Public funds also helped to promote needed financial consolidation, with several large banks and many smaller institutions either closed or merged.

18. **A centralized asset management approach helped accelerate the clean-up of bank balance sheets.** In 2003, the Industrial Revitalization Corporation of Japan (ICRJ) was established to purchase distressed loans from banks and work with creditors in restructuring. The Resolution and Collection Corporation (RCC) was also charged with disposing of bad assets of banks, and became more aggressive in selling and restructuring its non-performing asset portfolio over time. Government purchases and sales of NPLs through the RCC and the IRCJ facilitated a market for restructuring by enhancing price discovery, resolving credit disputes, and providing legal clarity and accountability.[5] They also allowed bank management to concentrate on extending new loans and restructuring their business operations. With asset prices recovering, these interventions ended up costing taxpayers far less than their original price tag—the IRCJ even managed to generate a small profit before it shut down in 2007.

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[5] See Kang (2003) and Ohashi and Singh (2004) for an analysis of the development of a market for distressed debt in Japan.

19. **On the borrower side, a sound private-sector-led framework assisted the restructuring process.** The large write-offs and debt restructuring by banks were instrumental in promoting the needed deleveraging of the corporate sector. Although a public asset management company could quickly remove distressed assets from banks, recovery values depended on the private sector taking the lead in restructuring. Reforms of the insolvency system and out-of-court corporate workouts helped create a market for restructuring distressed assets, drawing in private capital and expertise, including from overseas. Getting the incentives right hinged on proper valuation of distressed assets and a sound prudential framework. Bankruptcy reforms and improvements to the accounting and governance framework also provided the private sector with useful tools to restructure distressed firms.

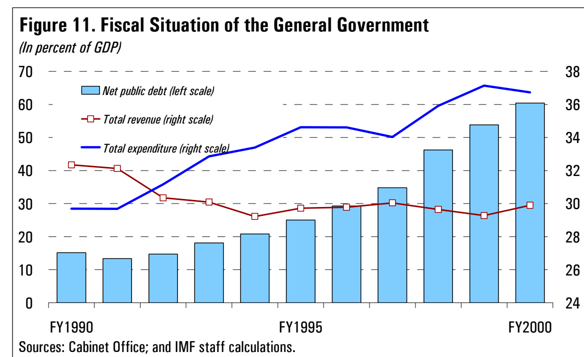
20. **In the end, the government injected public funds of nearly ¥47 trillion (10 percent of 2002 GDP) to recapitalize the banking system and dispose of problem loans.** In 2003, banks' share prices started to recover, as banks' NPLs began to trend down and capital ratios stabilized. At the same time, the banking system underwent significant consolidation, with several large banks and many smaller institutions either closed or merged. As discussed below, nearly three-quarters of the ¥12½ trillion of public capital has been repaid to date, and about 80 percent of total funds are expected to be recovered.

Re-assessing the Effectiveness of Fiscal Stimulus

The effectiveness of Japan's fiscal policy response has been the subject of much debate. Some argue that expansionary fiscal policy was effective but not tried consistently; to others the combination of rising deficits, mounting debt, and stagnant growth points to strong Ricardian effects, mistargeted stimulus, or constraints from a dysfunctional banking system. The evidence itself also appears mixed.

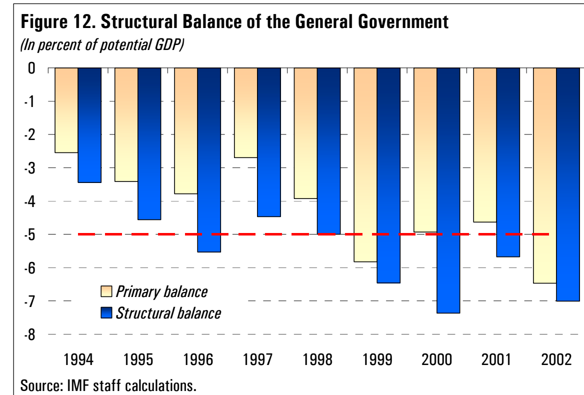
21. **Fiscal stimulus was used to combat the downturn, but the economy remained largely stagnant until the early 2000s.** Stagnant tax revenues and increased spending contributed to average deficits of more than 5 percent of GDP between 1993 and 2000 (Figure 11). As a result, net debt rose to 60 percent of GDP. Stimulus measures mainly took the form of public investment, support for small and medium-sized enterprises (SMEs), and employment assistance on the spending side, as well as tax cuts.

Figure 11. Fiscal Situation of the General Government
(In percent of GDP)



Sources: Cabinet Office; and IMF staff calculations.

22. **While deficits appeared large, the actual fiscal impulse was more modest**, with the cyclically adjusted deficit (the "structural" deficit) increasing only modestly between 1994 and 1998 (Figure 12). It was only after 1998 that fiscal policy became truly



expansionary, with a more significant widening of the structural deficit. As discussed below, the limited fiscal impulse may have reflected several factors.

23. **First, public investment was smaller than the deceptively large headline numbers, as public investment in the central government initial and supplementary budget did not increase much after the mid-1990s**. The economic impact may also have been limited by the large share of land purchases, which were as high as 30 percent of the project size in some cases (Kalra, 2003). Finally, about 15 percent of budgeted public investment remained unused partly because local governments were unable to obtain matching funds.[6] As a result, public investment remained flat after the mid-1990s, as reflected in the national accounts data, where real public investment (including by local governments) started to decline as early as 1995.[7]

24. **Second, early stimulus efforts may have been dampened by their stop-start nature**. In response to rising government debt, the government changed course in favor of a substantial down payment on medium-term consolidation, raising the consumption tax rate in April 1997. The larger-than-expected fall in household spending that followed in the wake of the Asian crisis stymied the short-lived recovery, plunging the economy back into recession. The government responded by resuming fiscal stimulus efforts.

25. **Third, stimulus may have been hampered by low fiscal multipliers** (Table 1).[8] Estimates of fiscal spending multipliers cover a wide range (0.4–2.0), but there is general consensus that these declined over time. For example, the Cabinet Office estimates for the public investment multiplier declined to 1.1 in 2004 from 1.3 in 1991. Possible factors behind the declining multipliers include:

Table 1. Estimated Multipliers

	Spending	Tax cut	Estimation period
Kalra (2003)	0.4	0.4-0.5	1981-2000
Bayoumi (2000)	0.65	0.2	1981-98
Murata and Saito (2004)	1.1[1]	0.5	1985-2003
Kuttner and Posen (2002)	2.0	2.5	FY1976-99

[1] Multiplier for public investment.

[6] However, unused funds are carried over to the next year's budget.

[7] Analyses by the Cabinet Office also confirm that the rise in the fiscal deficit and debt during the 1990s was largely due to nondiscretionary factors: a sharp decline in revenues and an increase in social security spending owing to the prolonged slump rather than rising public investment associated with countercyclical policy. Indeed, the Cabinet Office's estimates indicate that public capital formation contributed *positively* to the fiscal balance over the period 1990–2002. However, this may largely reflect a drastic cut in public investment after 2000.

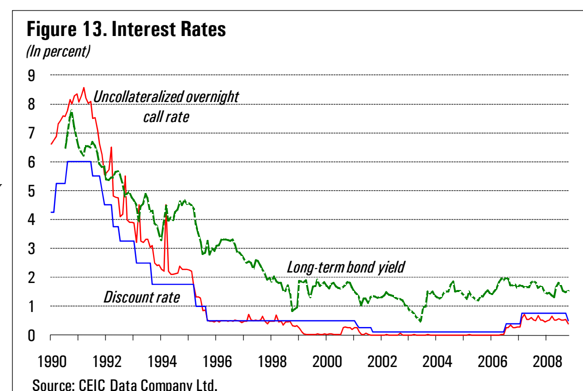
[8] Jinno and Kaneko (2000); Kuttner and Posen (2001); Kalra (2003); Sadahiro (2005).

- *Lack of private sector response.* Private spending may not have responded to the stimulus because the banking sector was not able to play an effective intermediary role given its weak balance sheet and bad loan problems (e.g., Kuttner and Posen, 2001). This view is supported by empirical evidence of a credit crunch during the late 1990s (Motonishi and Yoshikawa, 1999). Heavily indebted corporates were also not in a position to increase spending, as they were deleveraging. Indeed, flow of funds data suggests that the corporate sector's financial surplus was on an upward trend until the end of the 1990s.
- *Shift to lower multiplier spending.* The share of central government spending on social security, which is typically thought to have a smaller multiplier than capital spending, increased to 3.5 percent of GDP in 2000 from 2.6 percent in 1990. The disbursement of cash vouchers in 1999 also had a limited impact, with an estimated multiplier of at most one-third, perhaps due to substitution effects (Cabinet Office, 1999).
- *Ricardian equivalence.* Although the evidence for Ricardian effects is mixed, some have argued that private demand could have been suppressed by concerns over future tax increases and the rapid rise in public debt (e.g., Bayoumi, 2000).

The Supportive Role of Credit Easing

As the crisis unfolded, the Bank of Japan faced an unprecedented set of challenges on the monetary front. Unable to lower rates past their zero bound, the BoJ took some innovative steps from 2001, centered on exceptional measures to provide liquidity, including expanding the range of collateral, direct asset purchases, and quantitative easing under a zero interest rate policy. However, through most of this period, monetary policy appeared to be "pushing on a string" as demand for credit shriveled. Each time measures were taken, the economy seemed to be unresponsive, as growth deteriorated and deflationary pressures became more entrenched. Ultimately, fixing the financial system was needed to end deflation and usher a return to a more normal monetary policy framework, with the BoJ managing a smooth exit.

26. **When policy rates hit the lower bound—the first time this had happened in an advanced economy during the post-war period—the BoJ embarked on a radical change in the monetary policy framework by shifting to a zero interest rate policy (ZIRP) in February 1999** (Figure 13)**.** The policy rate was lowered to 0.15 percent, succeeded by further reductions to rates as low as 0.02 percent.



27. **Following the bursting of the IT bubble, creative "quantitative easing" measures were used to inject liquidity into financial markets.** In August 2000, within 18 months, the BoJ lifted ZIRP and raised rates to 0.25 percent, on some evidence of a pickup in growth. The move was also prompted by fears that excess liquidity could fuel another bubble and unhinge inflation expectations. In the event, with the economy falling back into recession

soon after, the BoJ had to lower the policy rate back to zero within seven months. As the zero bound became a more serious constraint on monetary policy, with much weaker growth and increased deflationary pressures, policymakers adopted new ways of easing monetary policy and supporting credit intermediation in March 2001, dubbed "quantitative easing". The policy instrument was changed, with the BoJ targeting the outstanding balance of banks' current accounts at the central bank (consisting of required and excess reserves). Importantly, private expectations were better-managed under "quantitative easing" through a strengthened commitment to prolonged accommodation (the so-called "policy duration" effect).

28. **Greater coordination with fiscal policy also helped to increase the potency of the authorities' response**, with the BoJ gradually increasing its purchases of long-term government bonds from ¥400 billion to ¥1.2 trillion per month. This decision was balanced against possible drawbacks, including jeopardizing the BoJ's recently won independence and credibility in financial markets; exposing the central bank balance sheet to potentially large capital losses once the economy recovered; facilitating a rapid build up in public debt and fiscal profligacy; and the risk of a spike in yields when these operations were wound down (see, for example, Sellon (2003)). Over time, assets that could be purchased by the BoJ were expanded to include commercial paper, corporate bonds, equities and asset-backed securities, although actual amounts were relatively limited. The quantitative easing policy saw the BoJ's balance sheet increase from ¥91 trillion (18 percent of GDP) in 1998 to a high of about ¥155 trillion (31 percent of GDP) in 2006.

29. **With financial markets severely impaired, unconventional measures helped support corporate lending and buttress the capital position of banks.** To help firms with their end-of-year funding, the BoJ established a temporary lending facility to refinance a part of new loans provided by financial institutions in 1998. In 2003, the BoJ initiated a program to assist SMEs by purchasing ABS and ABCP backed by SME loans. At the same time, the BoJ took unprecedented steps to address the capital shortage in banks by offering to purchase their equity holdings. Although significant in size, the amount was only 1.3 percent of the BoJ's total assets and represented a much smaller risk compared to its large holdings of JGBs (¥65 trillion).

30. **In the final analysis, however, the precise impacts of quantitative easing were uncertain.** The effectiveness of unconventional monetary policies depended on a number of hard to predict factors, including risk appetite, confidence and asset price developments. Weaknesses in the banking system and borrower balance sheets also stunted their impact.[9] In particular, quantitative easing did not immediately arrest deflation or lead to an expansion in bank credit, partly reflecting the unwillingness of banks to make loans and the subdued

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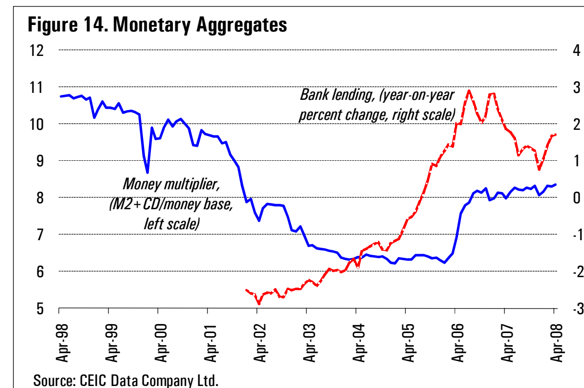
[9] IMF staff analysis using VAR techniques supports the view that banking sector weaknesses in Japan hampered the link between base money and prices, underscoring the importance of strengthening the banking sector to fully leverage the effectiveness of monetary policy (see for example, Morsink and Bayoumi (2000) and Baig (2003)).

demand for credit from corporates amid deleveraging pressures. These weaknesses, manifested in a sharp decrease in the money multiplier, disrupted the normal transmission channels of monetary policy (Figure 14). However, there is some evidence that liquidity provision reduced interbank risk premia (Baba et al, 2006) and that the policy duration effect helped lower interest rates, particularly at shorter maturities and once the economy was on a recovery trend (Oda and Suzuki, 2007 and Ichiue and Ueno, 2007).

Figure 14. Monetary Aggregates



Source: CEIC Data Company Ltd.

31. **Moreover, quantitative easing came at a cost and was not a final solution.** Unconventional monetary policies had significant negative side effects, notably by compounding the breakdown in money markets, reducing market activity, compressing credit spreads and bank profits, as well as reducing incentives for restructuring.[10] This may have been a necessary price to pay for maintaining financial stability and preventing deflation from worsening. However, the costs increased the longer the zero interest rate policy was in place, necessitating rapid progress to restructure all affected balance sheets.

The Art of Disengagement: Exit Strategies and Long-Term Impacts

The exceptional actions described above eventually needed to be unwound to avoid undermining longer-term growth and macroeconomic stability. Policymakers faced the difficult dilemma of maintaining stimulus long enough to support growth and prevent deflation, while considering the appropriate timing of exit to prevent new imbalances and a rise in public debt. In addition to the timing, the choice of instruments to achieve the unwinding was another key policy challenge.

32. **Japan found unwinding its fiscal policies to be particularly challenging.** Although a law aiming to reduce deficits over the medium term was formulated in 1997, it was quickly scrapped in light of the sharp economic contraction at the beginning of the second phase of Japan's crisis. Only in mid-2001 was a target for achieving a primary balance (excluding the social security fund) announced, by which time net debt had quintupled on weak growth, stagnant tax revenues, and increased spending (Figure 15). The protracted downturn and the delay in framing a medium-term strategy saw the income tax cut introduced in the late 1990s only fully lifted ten years later (in 2007), contributing to persistently large deficits and a continued rise in public debt. While long-term yields have remained low given the large

[10] For example, ample liquidity and low interest rates can delay the recognition of problem loans and undermine market discipline by making it easier for essentially insolvent borrowers to remain current on their interest payments. The flattening of the yield curve also made it more difficult for banks to raise their core profitability and "grow out" of their problems (see Box 3, in IMF, 2003).

available pool of domestic savings, the elevated public debt—now approaching 200 percent of GDP in gross terms—continues to limit policy flexibility.[11]

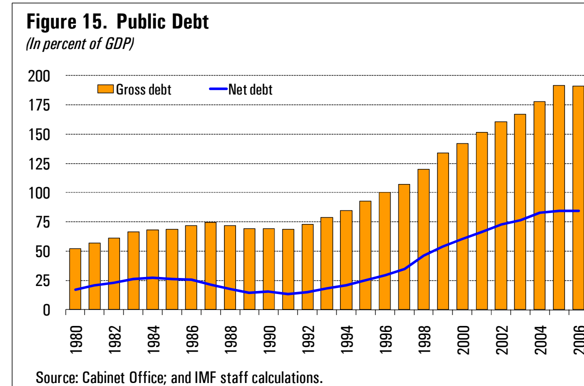


Figure 15. Public Debt
(In percent of GDP)
Source: Cabinet Office; and IMF staff calculations.

33. **Exit was more successful in the monetary arena, as the BoJ was able to end quantitative easing and smoothly unwind its balance sheet.** In October 2003, the BoJ clarified the timing of its exit by announcing two necessary conditions: that core CPI be nonnegative for a few months and be forecasted to remain positive by a majority of Policy Board members. This also helped the BoJ to better manage market expectations about the future path of interest rates. With these conditions met, the BoJ announced in March 2006 that it would gradually drain liquidity while keeping overnight interest rates effectively at zero. By July of that year, the BoJ had smoothly transitioned to a more normal monetary framework, with current account balances normalizing and the policy rate raised.

34. **Since credit easing in Japan had relied mainly on extended liquidity operations and the purchase of government securities, the BoJ was able to exit through normal open market operations.** Given its large holdings of short-dated government paper, the BoJ managed to withdraw liquidity without selling Japanese government bonds (JGBs) or issuing its own bills (Figure 16). With the recovery drawn out and inflationary pressures subdued, the BoJ was also able to avoid losses and yield spikes by holding JGBs to maturity. In the end, the money market, which had withered during the late 1990s, was revived, as institutions gradually reduced their reliance on the BoJ for funding. In addition, outright purchases of asset-backed securities and asset-backed commercial paper carried sunset clauses and were of short maturity, facilitating the eventual unwinding.

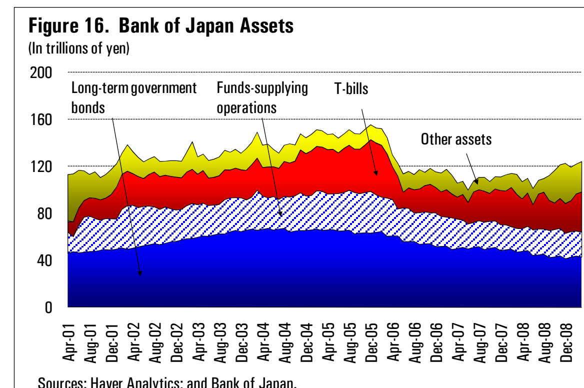


Figure 16. Bank of Japan Assets
(In trillions of yen)
Sources: Haver Analytics; and Bank of Japan.

35. **Fully unwinding financial sector interventions, however, has proved more difficult.** An exit strategy for divesting public shares in the banking system and other interventions took longer to be designed. To restore market discipline and minimize moral hazard, blanket guarantees were replaced with partial deposit insurance, and public funds were gradually repaid. Impressively, nearly three-fourths of the 10 percent of GDP in public funds needed to dispose of NPLs and recapitalize banks have been recouped (Table 2).

[11] See Tokuoka (2009) for a more detailed analysis of the factors affecting Japanese government bond yields.

However, the BoJ has been unable to fully unwind its purchases of equities held by banks, and some banks have been unable to fully repay their public funds. Similarly, the withdrawal of public support of SMEs (primarily in the form of generous credit guarantees) has been relatively gradual and may have held back needed restructuring of the sector.

Table 2.Public Funds Allocated to the Financial Sector (1999-2008)

	Allocation		Recovery as of March 2008	
	Trillions of yen	Percent of GDP	Trillions of yen	Recovery rate (%)
Grants of loss coverage	18.6	3.6	8.2 [1]	...
Asset purchases	9.8	1.9	9.6	98.0
Capital injection	12.4	2.4	10.2	82.3
Others	6.0	1.1	4.9	81.7
Total	46.8	9.0	32.9	**70.3**
Excluding grants	28.2	5.4	24.7	**87.6**

Sources: Bank of Japan; Financial Services Agency of Japan; and Deposit Insurance Corporation of Japan.

[1] 10.4 trillion yen is covered by the taxpayers, with the remaining amount scheduled to be covered by deposit insurance fees paid by financial institutions.

36. **Notwithstanding these partial successes with exit policies, the crisis has left some long-term scars**, manifested in persistently lower investment, weak price pressures, and a significant rise in public debt. Compared to rates reached in the 1980s, gross fixed capital formation has on average been more than 5 percent of GDP lower, and average growth has fallen by half. Asset prices also have never fully rebounded, with the stock market and house prices remaining some 40 and 70 percent below their precrisis highs, respectively. Meanwhile, deflationary pressures have persisted, with headline inflation only edging into positive territory from 2006 and policy rates peaking at a mere 50 basis points.

III. Potential Implications for Today: Recovery from the Great Recession

This section places Japan's experiences with nascent recoveries and sustained turnaround in the current global context. Today, the beginning of the end of the Great Recession appears in sight, and a global repeat of the lost decade is by no means inevitable or even likely. Through forceful interventions, policymakers appear to have precluded the worst possible outcomes, and the world economy is on the cusp of a recovery. But based on Japan's experiences, where could the global economy go from here?

A. The Outlook for the Global Recovery: Views from the Lost Decade

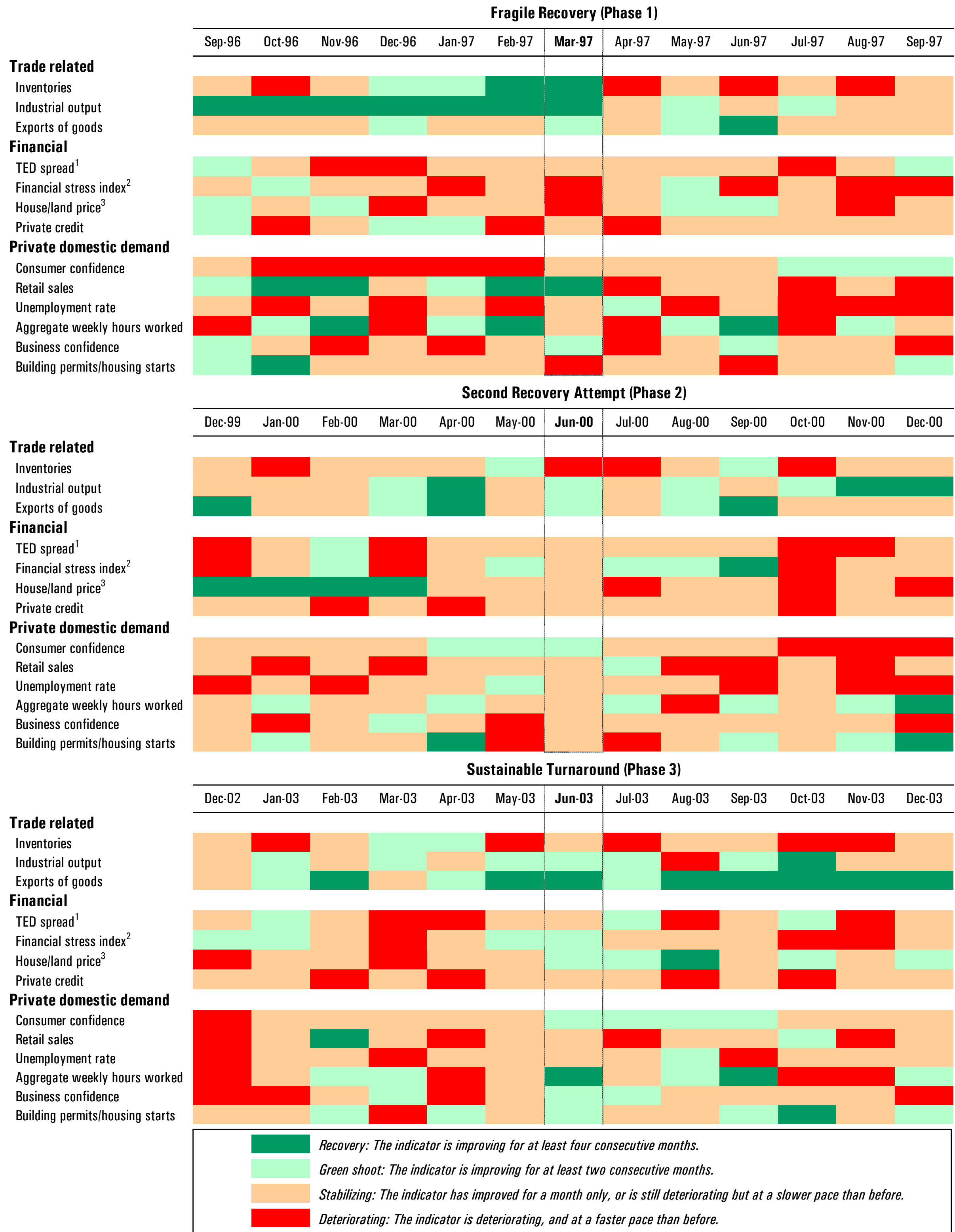
37. **What can Japan's experiences tell us about the outlook for the global recovery?** This section recreates recovery "heat maps" for various time periods during Japan's lost decade and compares them with those for the United States, the United Kingdom, and the euro area since the beginning of the year. The heat maps track a set of high-frequency indicators—for trade, financial conditions, and private domestic demand—classifying them as being in modes of recovery (dark green), green shoots (light green), stabilization (orange), or deterioration (red) based on their underlying momentum. The time intervals considered for Japan are 12-month windows centered around: (1) March 1997, (2) June 2000, and (3) June 2003. Recall from the previous section that the first two episodes represented fledgling recovery attempts stifled by external shocks after the withdrawal of stimulus in the face of

green shoots (the consumption tax increase in April 1997 and policy rate hike in August 2000), whereas the third episode marked the onset of a more durable recovery.

38. **Comparing the Japanese heat maps highlights the difficulty of differentiating green shoots from genuine turning points, but also reveals some interesting patterns** (Figure 17):

- A sustained up turn was possible only when indicators across all the components—trade, financial conditions, and private domestic demand—were displaying signs of tangible recovery by flashing green. This suggests that a broad-based pickup may have been a key ingredient for a lasting recovery.
- In all three episodes, exports and industrial production seemed to be recovering strongly, but there was little spillover to private demand during the first two recovery attempts. Underlying momentum was weak, with significant fragilities remaining in the financial system and corporate balance sheets. As a result, when external shocks hit, the economy foundered again.
- In the final episode, private demand was stronger—in particular, corporate investment—as firms had made progress in cleaning up their balance sheets and deleveraging, and the financial system had been recapitalized and was in a position to lend again.
- Although it is difficult to tease out a precise sequence, it appears that certain financial market indicators, in particular the stock market, were typically the first to show signs of recovery, together with a cyclical correction in inventories that supported production. In the middle stages, there was a tendency for consumer and business sentiment to improve, bolstering domestic demand. In the final stage, only reached at the third attempt in Japan, private credit, house prices, and the labor market turned, sealing the recovery.

Figure 17. Recovery Heat-maps in Japan: The Three Phases of the Banking Crisis



Sources: CEIC Data Company Ltd.; Thompson Datastream; Haver Analytics; and IMF staff calculations.

[1] Three-month (or short-term) money market rate minus equivalent T-bill rate.

[2] See Balakrishnan and others (2009). The index comprises seven variables capturing developments in the banking sector, the securities markets, and the foreign exchange markets.

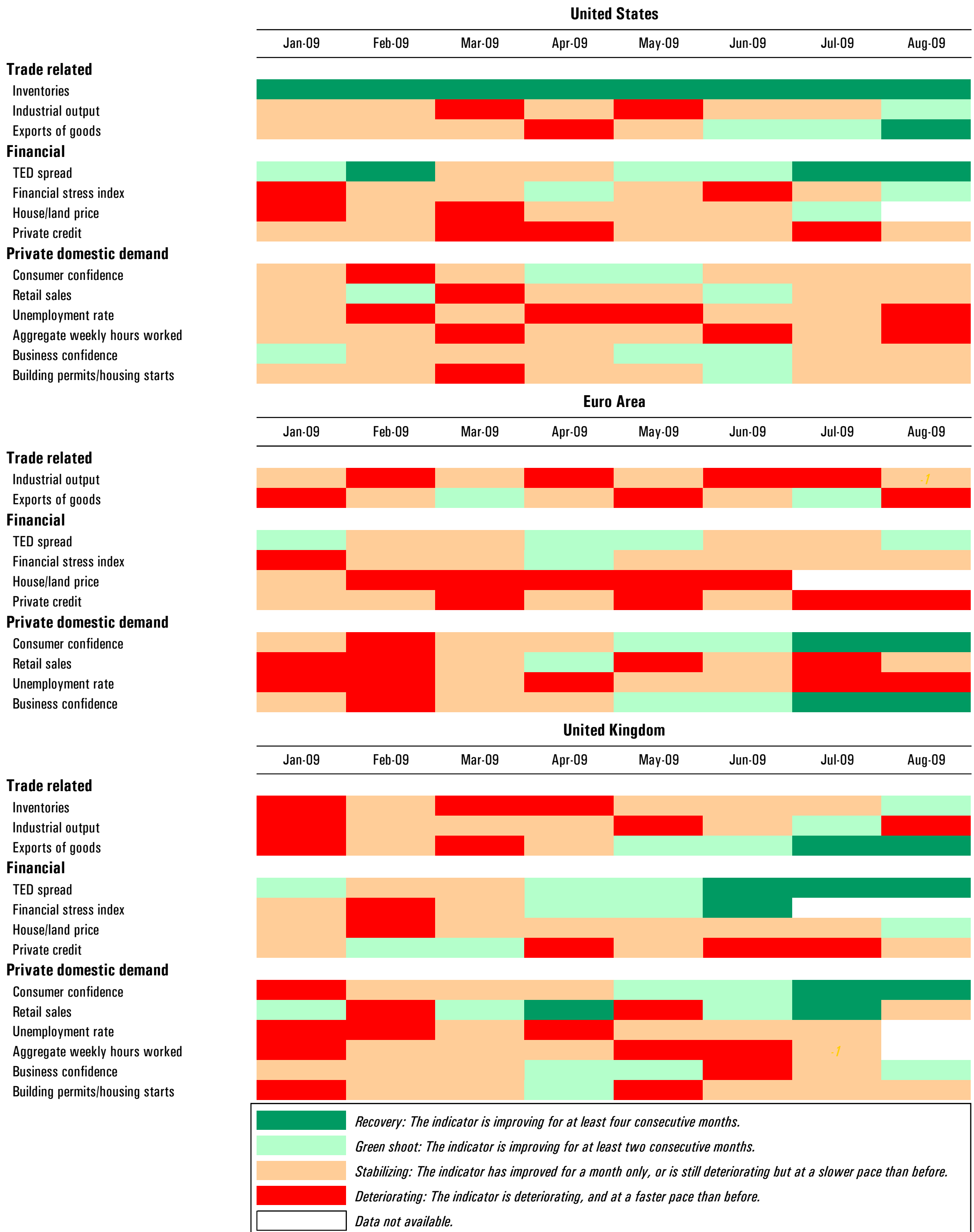
[3] House price index not available for Japan, proxied by stock market instead.

39. **Qualitatively, the patterns in leading indicators over the last year in advanced economies outside Asia resemble somewhat those in the lead-up to Japan's incipient recovery attempts** (Figure 18). Much as in those two episodes, indicators related to trade and financial markets are showing signs of recovery in places, but private domestic demand—which was a key ingredient for Japan's lasting recovery— still appears weak:

- *Trade related*: Global stimulus efforts are bolstering exports, and inventory adjustment is progressing. However, the recovery in production has yet to take hold.
- *Financial markets:* Reflecting aggressive credit easing and financial sector support measures, recovery is most strongly apparent in some financial market segments, led by the United States. Money markets in the United Kingdom have also recovered strongly. Overall, however, financial markets are still under strain, and credit conditions remain exceptionally tight for many households and firms.
- *Private domestic demand:* Improvements seem to be lagging in the real economy. Although fiscal stimulus appears to be providing some support to confidence in the euro area, consumer and business sentiment generally remain depressed. Moreover, spending is uniformly subdued and labor market conditions extremely weak.

40. **By contrast, emerging Asia, in particular China and India, are rebounding much more quickly** (Figure 19)**.** Sizable monetary and fiscal stimulus and the rebound in global risk appetite have underpinned the striking recovery in emerging Asia. At the same time, industrial production and exports are benefiting from an unwinding of earlier global inventory adjustments. Sound macroeconomic management in the lead-up to the crisis has also allowed more aggressive policy responses in many parts of the region. In turn, their effectiveness has been magnified by the generally much better condition of private sector balance sheets, as banks have been more willing to lend and borrowers less constrained by debt in their decisions to borrow and spend out of tax cuts. In marked contrast to most other regions, credit has continued to expand across most of Asia, and in China it has accelerated rapidly, providing further support to consumption and investment. That said, private domestic demand still looks vulnerable in the export-oriented Asian economies, with business confidence and private consumption still not in full recovery mode.

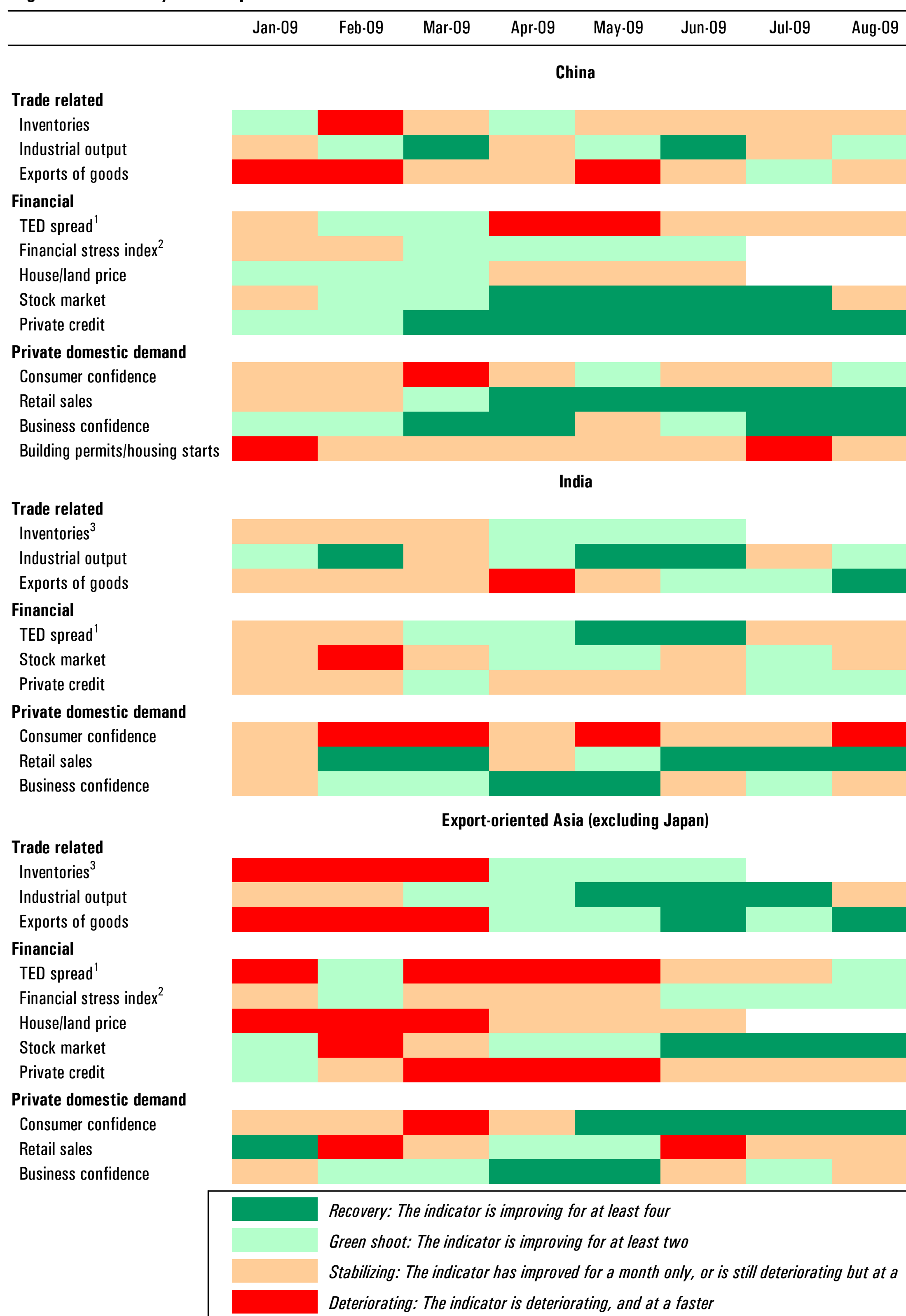
Figure 18. Recovery Heat-maps in Advanced Economies in 2009[1]



Sources: CEIC Data Company Ltd.; Thompson Datastream; Haver Analytics; Financial Times; and IMF staff calculations.

[1] See notes to Figure 17.

Figure 19. Recovery Heat-maps in Asia in 2009[1]

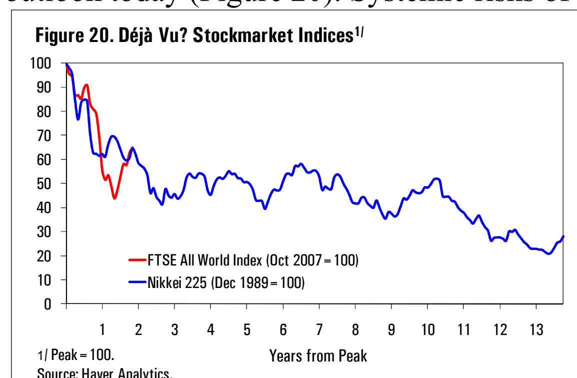


Sources: CEIC Data Company Ltd.; Thompson Datastream; Haver Analytics; and IMF staff calculations.

[1] See notes to Figure 17.

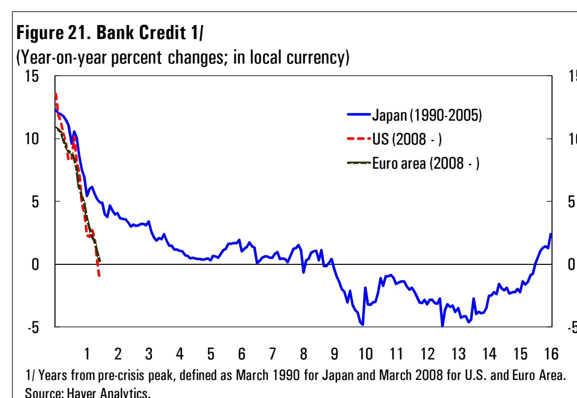
41. **If Japanese history is any guide, then, the global recovery could still be in the initial stages.** An important lesson from Japan is that green shoots do not guarantee a recovery, implying a need to be cautious on the outlook today (Figure 20). Systemic risks of collapse have been sharply reduced, and the macroeconomic response has generally been forceful and faster than was the case with Japan's more drawn-out crisis. These would seem to lower the risk of a double-dip or a very protracted recession. However, financial conditions remain far from normal, credit growth remains subdued (Figure 21), and weak labor markets and sizable excess capacity are weighing on global output. Moreover, as was the case in Japan in the early stages of the lost decade, the problems that lay behind the crisis in advanced economies linger: delinquencies on mortgage loans are still rising, households remain highly indebted, and the financial system remains encumbered by an uncertain amount of distressed assets and doubts about firms' capital positions. Even in emerging Asia, a vigorous and sustained turnaround cannot yet be taken for granted, and the significant fragility of external demand outside the region may slow the momentum of exports, dampening what has historically been a key channel for Asia's recoveries.

Figure 20. Déjà Vu? Stockmarket Indices[1/]



1/ Peak = 100.
Source: Haver Analytics.

Figure 21. Bank Credit 1/
(Year-on-year percent changes; in local currency)



1/ Years from pre-crisis peak, defined as March 1990 for Japan and March 2008 for U.S. and Euro Area.
Source: Haver Analytics.

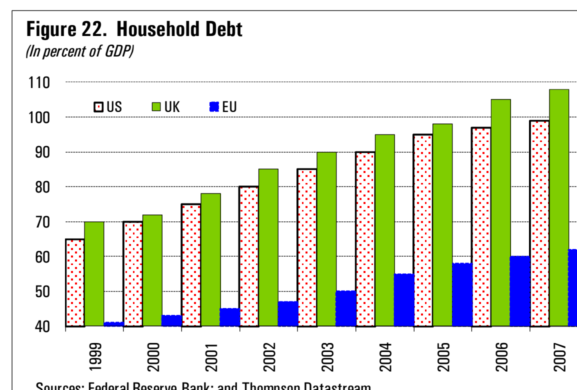
42. **In addition, Japan's experiences highlight that lingering financial fragilities leave the economy vulnerable to adverse shocks, and can magnify their impact.** On two occasions in Japan, adverse external shocks were amplified by a weak banking system, pushing the economy back into stagnation. Today, given downside risks and the still strained nature of financial systems and household balance sheets in advanced economies, the possibility of a double dip cannot be discounted altogether. Moreover, a double-dip recession would necessitate further rounds of aggressive and costly macroeconomic and financial interventions, which could worsen longer-run outcomes.

B. The Role for Global Policies: From Stimulus to Exit

So what could Japan's experiences imply about the appropriate stance of policies today?

43. **First, a lasting recovery is likely to depend on concerted efforts to resolve financial sector and debtor imbalances.** In Japan, it was only when corporate debt had

returned to prebubble levels and banks had disposed of their distressed loans and been adequately recapitalized that the benefits from policy stimulus and a favorable external environment could spill over and reinvigorate private domestic demand. In advanced economies that find themselves at the center of the Great Recession, this would suggest that a robust private-led recovery may not take hold until household debt levels fall back toward more normal levels and banks are sufficiently strengthened (Figure 22). More specifically, with varying degrees of relevance across economies today, Japan's experiences suggest that:



- *Recognizing bank losses early and fully could help identify the capital shortage and jumpstart the process of restructuring.* Global banks face potential writedowns of around $2.8 trillion (IMF, 2009). Around half of these still are still to be written down, roughly where Japan stood in the middle of its crisis. Delays in recognizing problem loans could exacerbate the financial crisis and postpone a sustained recovery.

- *Public funds can help recapitalize banks and dispose of bad assets.* Japan adopted many of the same strategies being considering presently—setting up asset management companies, protecting bank liabilities, and injecting public capital—but the financial system remained dysfunctional until banks were forced to clean up their balance sheets and dispose of bad assets. Encouragingly, the ultimate fiscal cost was significantly lower than the upfront expenses because a significant amount was recovered once the economy stabilized.

- *In this regard, rigorous inspection of bank asset quality may be a prerequisite.* Notwithstanding differences in complexity and pricing, Japan faced similar challenges in valuing NPLs or "toxic assets" on bank balance sheets. The introduction of discount cash flow methodology and mark-to-market accounting and the cross-check across banks helped to clarify the true extent of banks' losses on a worst case basis and strengthened the incentives for restructuring in Japan.[12] If left unaddressed, uncertainty over the value of the nonperforming loans can spill over to affect sound banks, making it difficult to raise private capital. In the present situation, this calls for continued close monitoring and regular stress-testing to evaluate vulnerabilities on an on-going basis, particularly as a prolonged downturn could place further strains on bank capital.

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[12] In some cases, such as for Shinsei Bank, where uncertainty over loan valuations was high, partial insurance through "put options" on NPLs was used to encourage investors to take over failed banks. However, insurance must be designed carefully to avoid the risk of "cherry picking" and selling back the worst assets (Tett, 2004).

- *A centralized asset management approach could help accelerate the clean-up of bank balance sheets and facilitate the restructuring process.* Consideration could be given to establishing institutions with a clear mandate to buy distressed assets from banks and recover value. This would help enhance price discovery and resolve credit disputes, and could end up costing far less than the upfront price tag provided asset values recover.

- *However, overcoming resistance to financial sector bail-outs and making adequate capital available for recapitalization are key.* Eventually, overcoming public resistance to bank bailouts and the stigma attached to public capital proved crucial in forging a final resolution to the problem in Japan. Effectively communicating the importance of financial stability can help. In this context, making clear the link between a sound and well-capitalized financial system and a sustained recovery is important to bolster support for the use of public funds.

- *Rehabilitating distressed borrowers would support bank restructuring.* In Japan, financial and corporate restructuring went hand in hand and proved mutually reinforcing. Some encouraging steps have been taken in a number of advanced economies dealing with housing bubble collapses to support mortgage modifications and provide alternatives to foreclosures. Given the scale of the problem, additional instruments may be needed to encourage banks to work more directly in restructuring distressed mortgages, such as through the bankruptcy system. Although controversial, as with corporate restructuring in Japan, these new procedures and institutions may help create a more flexible and resilient financial system for the future.

- *A sound private-sector-led framework could assist this process.* In Japan, bankruptcy reform, out-of-court workouts, and debt-equity swaps were useful tools for the private sector to rehabilitate distressed, but creditworthy, firms. In advanced economies today, providing the private sector with the tools to restructure distressed borrowers could call for personal bankruptcy reforms and improvements to the accounting and governance framework along similar lines.

44. **Second, while restructuring is underway and until the recovery becomes better established, policy stimulus may need to be maintained.** As in Japan, stimulus could facilitate needed restructuring by giving banks and households in advanced economies time to rebuild their balance sheets. It could also lay down firmer foundations for renewed growth. In particular, on the fiscal front Japan’s experiences suggest that:

- *Successful fiscal stimulus hinges on identifying spending with high multipliers.* In particular, large multipliers are needed to justify spending against debt accumulation and its potential effects on interest rates (Figure 23). On public investment, multipliers higher than unity may be needed, with priority on projects that are more likely to stimulate private demand, while transfers could be targeted at lower-income households that have a higher marginal propensity to consume.

- *Restoring the credit function of the banking sector can help maximize the impact of fiscal stimulus.* The effects of fiscal stimulus are likely to be short-lived unless financial system problems are resolved. In particular, without sound capital buffers in the banking system, fiscal stimulus may prove ineffective in generating a sustained recovery on its own, as was the case in Japan.

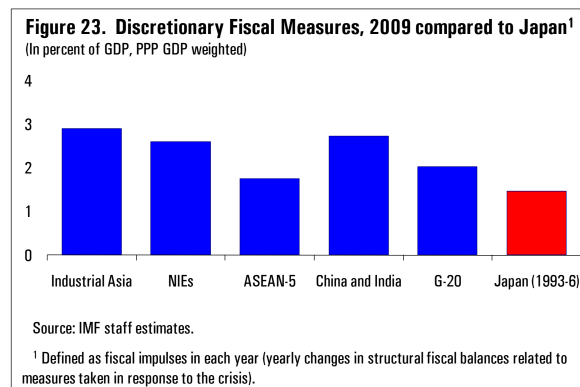


Figure 23. Discretionary Fiscal Measures, 2009 compared to Japan[1]
(In percent of GDP, PPP GDP weighted)

Source: IMF staff estimates.

[1] Defined as fiscal impulses in each year (yearly changes in structural fiscal balances related to measures taken in response to the crisis).

- *A prolonged delay in restoring the fiscal position through tax increases and expenditure reforms could be costly.* As highlighted by Japan's experience, it may be useful to announce the timing for eliminating tax cuts or precommit to increasing revenues in order to minimize political pressures and Ricardian effects associated with a hike in public debt. Resorting to stimulus measures that are more revenue-neutral in the medium-term (e.g., accelerated capital depreciation) could also be considered.

With regard to monetary stimulus, Japan's experiences have the following broad implications:

- *Should downside risks materialize and private markets remain dysfunctional, additional direct measures to ease monetary conditions that aim to jump-start credit could be considered.* If needed, central banks could continue targeted interventions through (further) purchases of agency and private (non guaranteed) debt, equities, or even direct loans to individuals, corporations and partnerships to unclog credit channels (Figure 24).

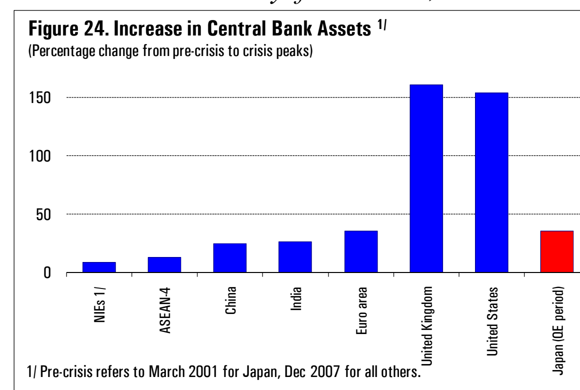


Figure 24. Increase in Central Bank Assets 1/
(Percentage change from pre-crisis to crisis peaks)

1/ Pre-crisis refers to March 2001 for Japan, Dec 2007 for all others.

- *Temporary and limited coordination between fiscal and monetary authorities may be called for.* Such coordination could take the form of (increased) government bond purchases, which could help stimulate the economy by lowering long-term yields and alleviating crowding-out. They could also help ease credit conditions by influencing expectations about future interest rates and flattening the yield curve, while limiting the risk of a spike in yields that could disrupt a recovery.

- *However, risks to the balance sheet and independence of the central bank must be carefully balanced.* In Japan's case, risks were minimized by the relatively limited purchases of non-conventional assets. In some advanced economies today, default risks could be more significant given the larger purchases of private debt, placing a premium

on careful risk management and high transparency. In some cases, it could be more appropriate for the Treasury agency to undertake operations that have a fiscal nature and where credit risk is significant.

- *Clear communication with the public could help manage financial market expectations of future monetary policy actions.* While most central banks have made some appropriate modifications to their communication policies, the specific targets and criteria of success of their unconventional policies remain somewhat unclear. To anchor expectations and further improve transparency, a stronger commitment to a prolonged accommodative stance as well as clarifying near-term objectives and the variables deemed most relevant to achieving then (e.g., measures of credit tightening) may be useful. Risks to the inflation outlook—both upside and downside— could also be discussed in more detail in public pronouncements.

- *At the same time, however, unconventional policies can have costly side-effects and are ultimately not a substitute for balance sheet restructuring.* A properly functioning financial system and healthy borrowers will be needed to transmit the benefits of monetary loosening to the broader economy. In advanced economies at the heart of the present crisis, this places a premium on timely steps to restructure bank and household balance sheets, which would stimulate private credit while creating a plausible exit strategy from credit easing policies.

45. **Third, while policy support is maintained for as long as needed, clear plans for exit are likely to be beneficial.** As illustrated in Japan, calibrating the timing of actual exit will be challenging under extreme uncertainty about the underlying strength of the economy and financial vulnerabilities. In particular, policymakers will need to navigate skillfully between avoiding a withdrawal of stimulus before underlying imbalances are redressed, and maintaining support for too long at the expense of longer-run outcomes. In Japan, stimulus was necessary but not a panacea, and over time its effectiveness waned on concerns over rising public debt and banking sector problems. This time around, the global scale of the crisis also makes it important that exit strategies are well-coordinated across economies. Japan's experiences suggest that clear and credible exit strategies can help anchor expectations and reinforce confidence:

- *Outlining a concrete medium-term fiscal consolidation strategy could help manage the difficult balancing act between supporting the economy and maintaining confidence in longer-term debt sustainability.* Aggressive fiscal stimulus being implemented across the world is projected to result in a rapid rise in levels of public debt and markets may require convincing that this trend will eventually reverse.[13] In the current setting, laying

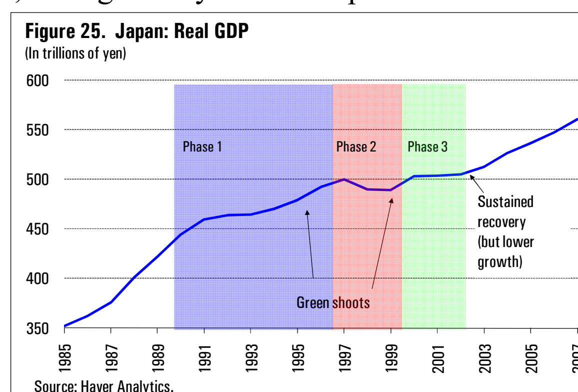
[13] Here Japan's experience may not be typical since government bond yields have shown little sensitivity to changes in the debt stock or fiscal deficits over time. This can be explained by Japan's large pool of household savings, stable institutional investors, and a strong home bias (see Tokuoka, 2009).

out policy options for achieving the desired fiscal adjustment could also help address longer-run spending needs associated with aging populations and expanding social safety nets.

- *An exit strategy from exceptional monetary policies needs to be convincingly articulated to help guide market expectations.* The most desirable exit scenario would be for investors' risk appetite to recover and credit markets to normalize smoothly, as happened in Japan. Communicating to the markets how and under what conditions monetary stimulus would be withdrawn could help ensure a smooth transition to more normal conditions. At the same time, making available a diverse set of tools for managing liquidity—including for instance, granting central banks authority to issue their own debt—would enhance policy flexibility and credibility.
- *A strategy for eventually unwinding financial and corporate sector policies is needed to minimize distortions and fiscal risks.* As was the case for Japan, this will likely imply tightening terms on facilities extending support to financial institutions and corporations, as well as gradually reducing guarantees and subsidies.

46. **Once the dust settles, global economic conditions could look markedly different from the benign precrisis environment so that structural reforms and rebalancing are likely to be imperative.** Unlike cyclical downturns, post bubble recessions can undermine long-term output as risk repricing, deleveraging, and financial restructuring dampen investment and curtail credit. Such forces were at play in Japan, where growth rates have never returned anywhere close to precrisis levels, falling to only half the 4 percent rate achieved during the 1980s (Figure 25). Broader international experience also suggests that financial crises result in permanent losses of output (see, for example, Cerra and Saxena, 2008, and Reinhart and Rogoff, 2009), although there is less evidence of an impact on potential growth rates. Moreover, the global dimension of the current crisis introduces additional complications. Whereas the emergence of a durable expansion in Japan was supported by strong external conditions, the weak global environment today may limit prospects for an export-led recovery. In the face of these potentially long-lived effects on advanced economies, it will be critical to enhance productivity and rebalance the global economy to ensure robust growth over the longer term.

Figure 25. Japan: Real GDP
(In trillions of yen)



Source: Haver Analytics.

IV. Conclusion

47. **Global policy circles are abuzz with talk of green shoots.** Following a plunge in global activity and financial panic last Fall, the rate of decline appears to be moderating. These improvements owe much to resolute policy actions, including sizable fiscal stimulus,

unprecedented monetary easing, and a wide array of initiatives to support the financial system.

48. **However, Japan's experiences caution that it may be too early to declare victory and that further policy support could be needed for some time.** On two occasions during Japan's crisis, "green shoots" withered in the face of severe external shocks aggravated by a still-fragile financial system, forcing policymakers to intervene with more aggressive support. A sustainable recovery took hold only when spillovers from a favorable external environment reinvigorated private domestic demand and the financial and corporate sector problems at the heart of the crisis were adequately addressed.

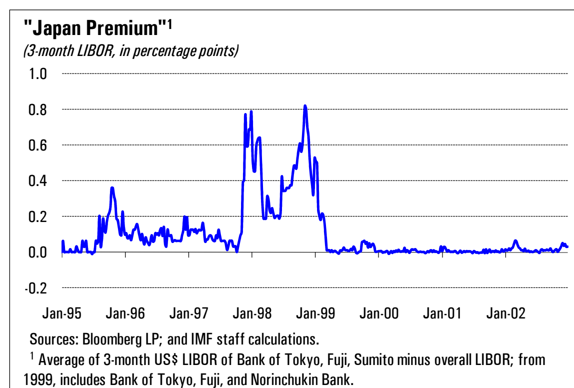
49. **Overall, Japan's banking crisis suggests four broad lessons for policymakers today.** First, green shoots do not guarantee a recovery, implying a need to be cautious about the outlook. Second, financial fragilities can leave an economy vulnerable to adverse shocks and should be resolved for a durable recovery. Third, well-calibrated macroeconomic stimulus can facilitate this adjustment and buy time, but carries increasing costs. And fourth, while judging the best time to exit from policy support is difficult, clear medium-term plans may help contain the longer-term legacies of the crisis.

APPENDIX. A CHRONOLOGY OF JAPAN'S KEY POLICY ACTIONS

Financial and Corporate Sector Policies

1. **Starting in 1991, the Japanese government embarked on a series of attempts to resolve the problems in the banking system** (Box 1). To address the problems with the *jusen* mortgage financing companies and credit cooperatives, the government organized joint rescues by private banks (based on the "convoy" approach) centered around loan concessions and liquidity support. However, these attempts failed to halt the rise in non-performing loans and bolster market confidence. As property prices continued to fall, losses in the loan portfolio increased. By 1995, around three-quarter of *jusen* loans were non-performing, forcing the government to liquidate the failed *jusen* and create a public asset management company to handle their bad assets (Hoshi and Kashyap, 1999 and 2001).

2. **The initial tendency toward regulatory forbearance reflected to some extent a lack of understanding on the size of the NPL problem and the belief that an economic recovery would soon take hold.** Public resistance to bank bail-outs coupled with deficiencies in the deposit insurance scheme and legal framework for resolving large-scale banking crisis may have also limited the authorities' ability to act (Kanaya and Woo, 2000).[1] As problem loans were allowed to fester, funding costs for Japanese banks continued to rise during the mid-1990s (the so-called "Japan premium"), making it more difficult for banks to simply "grow out of their problems."



Sources: Bloomberg LP; and IMF staff calculations.
[1] Average of 3-month US$ LIBOR of Bank of Tokyo, Fuji, Sumito minus overall LIBOR; from 1999, includes Bank of Tokyo, Fuji, and Norinchukin Bank.

3. **As strains in financial markets heightened in 1997, the BoJ was forced to intervene to stabilize the system.** Successive failures of several banks and securities houses beginning in the mid-1990s paralyzed the financial markets, requiring the BoJ to step in with emergency assistance, including providing lender of last resort liquidity support to the interbank market.[2] Despite these efforts, financial market strains persisted, leading the BoJ and the MoF in November 1997 to announce a blanket guarantee on all deposits and interbank transactions to safeguard the system.

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[1] As a result, the BoJ was forced to use its own balance sheet to rescue two banks in 1994, later suffering losses.

[2] The BoJ extended $35 billion in lender of last resort assistance at its peak in December 1997. See Nakaso (2001) for a discussion of the early policy responses to the crisis.

Box 1. Japan: Key Financial System Reforms, 1996–2003

1996: The "Big Bang." Removal of the remaining legal barriers separating ownership of banks, trust banks, securities firms, and insurance companies; removal of the long-standing ban on holding companies, also allowing the creation of financial groups. Safety net enhanced including temporary comprehensive deposit insurance.

1998: Banking law reform. Prompt corrective action (PCA) procedures established. Financial Supervisory Agency established under Financial Reconstruction Commission (FRC) to oversee rehabilitation of the financial sector and improve supervision. Inspection manual prepared and published, designed to promote more effective loan valuation and provisioning practices (introducing so-called self-assessment process). Securities and Exchange Surveillance Commission (SESC) moved from the Ministry of Finance (MoF) to the Financial Supervisory Agency.

Bank of Japan (BoJ) law passed, establishing an independent central bank. BoJ's right to examine counterparty financial institutions explicitly confirmed.

1999: Insolvency law reformed under Civil Rehabilitation Law. Disclosure regime enhanced. Banks required to disclose more information on asset quality and unrealized gains/losses on securities' holdings. The Resolution and Collection Corporation (RCC) created to collect bad loans from failed housing loan companies, banks, and credit cooperatives.

2000: Safety net enhanced. New deposit insurance law codifying the safety net including a crisis management framework. PCA procedures strengthened. Accounting reforms introduced, including consolidated accounting and mandatory use of market values for securities. Financial Supervisory Agency renamed Financial Services Agency (FSA).

2001: FSA takes over functions of the FRC. Position of Minister for Financial Services within the Cabinet set up. Accounting Standards Board of Japan established to complete task of bringing accounting standards into line with international best practice. Special inspections by the FSA leading to more realistic loan loss provisioning.

2002: Comprehensive deposit insurance withdrawn; large time deposits no longer insured. Government and BoJ establish schemes for purchasing bank equity holdings. Program for Financial Revival published; key elements include: (i) special inspection of major banks' loan classification and provisioning; (ii) introducing discounted cash flow (DCF) methodology for provisioning loans to large "special attention" borrowers; (iii) harmonizing loan classification for large borrowers across banks; (iv) disclosing the gap between major banks' self-assessment of problem loans and FSA assessment; and (v) external auditing of capital adequacy ratios, starting in FY 2003.

2003: Industrial Revitalization Corporation of Japan (IRCJ) set up to promote more effective corporate restructuring. Another round of special inspections leading banks to raise external capital and set up asset resolution companies, often in conjunction with international investors.

Source: IMF (2003).

4. **With an expanded range of instruments, the BoJ's operations helped to stabilize the credit markets, but did not solve the problem of banks' capital shortage.** LIBOR spreads for Japanese banks came down starting in 1998, and the volatility and level of short-term interest rates were reduced. However, banks' risk premium remained high as overseas banks continued to price in the additional risk of lending to their Japanese counterparts given their weak capital base and large NPL holdings.

5. **Early attempts at public recapitalization came with few conditions.** The authorities introduced a framework for injecting public funds, consisting of a new Financial Crisis Management Committee to identify banks with capital shortages and the amounts to be injected. By defining conditions under which regulators were obliged to take remedial actions, the scope for regulatory forbearance was narrowed. Under this framework, public funds were injected in three stages.

- In February 1998, the government made ¥30 trillion in public funds available, of which ¥13 trillion (around 2½ percent of GDP) was for capital injection and the rest for deposit insurance. To minimize the stigma attached with public assistance, banks were encouraged to apply together for public funds; by end-March, ¥1.8 trillion had been disbursed almost equally to 21 large banks but without a comprehensive examination or clean-up of bank balance sheets.

- As financial market conditions deteriorated, the Diet in October 1998 doubled the pool of public funds earmarked for strengthening the banking sector to ¥60 trillion (12 percent of GDP), of which ¥25 trillion was set aside for capital injection into solvent banks; ¥18 trillion for resolving failing banks; and the rest allocated to deposit insurance. Despite these efforts, Long-term Credit Bank of Japan and Nippon Credit Bank failed and were temporarily nationalized.

- In March 1999, an additional ¥7½ trillion was injected into 15 major banks. To qualify for the capital injection, each bank was required to submit a restructuring plan including plans for raising new capital from the private sector, which would be reviewed quarterly. If the FSA was not satisfied with progress, it could convert its preferred stock holdings to common stocks after a certain grace period, and demand management changes as the largest shareholder.

6. **Ultimately, a more comprehensive strategy based on public funds was required to address the NPL problem.** Although these attempts helped to recapitalize the system, they did not tackle the non-performing loan problem. As a result, they failed to restore health to the banking system or generate a sustained macroeconomic impact. The bad loan problem, the weak economy and low investor confidence led to a vicious cycle that further weakened banks and blunted the effectiveness of macroeconomic stimulus. To help resolve the NPL problem, the government adopted a more forceful approach to using public funds. This

strategy, which complemented previous capital injections, concentrated on four key elements:

- *Ensuring realistic valuation of bad assets*. The strategy began with so-called "special inspections" by the FSA focusing on large borrowers at the major banks. The results confirmed that self assessments of asset quality were overly optimistic and that nonperforming loans had been significantly understated. Starting in 2002, prudential norms were strengthened by introducing mark-to-market accounting, stricter loan classification and loan-loss provisioning. In particular, the introduction of discounted cash flow methodology to value loans and the cross-check of loan classification across major creditors helped to improve provisioning and raise banks' incentives for restructuring.

- *Accelerating the disposal of nonperforming loans*. Under the so-called "Program for Financial Revival," major banks were required to accelerate the disposal of NPLs from their balance sheet within 2–3 years by selling them directly to the market, pursuing bankruptcy procedures, or by rehabilitating borrowers through out-of-court workouts. Remaining loans would be sold to the Resolution and Collection Corporation (RCC) charged with disposing of bad assets of failed banks. In contrast to the ineffective warehousing of bad *jusen* loans in the early 1990s, the RCC and banks looked more to sell and restructure their non-performing asset portfolio.

- *Improving bank capital*. Around ¥12½ trillion of public funds (including past injections) was used to recapitalize both major and regional banks, mainly through preferred stock or subordinated debt. In the later stages, in exchange for public funds, banks were required to write down the capital of existing shareholders, replace senior management, and submit a reorganization plan to be reviewed regularly by the FSA.[3] Banks were also required to undertake governance reforms consistent with Basel Committee guidelines, such as appointing outside directors and establishing a board audit committee.

- *Strengthening supervision*. In 1998, the Financial Supervisory Agency (FSA) was created, consolidating supervision from the MoF and other government agencies into a single entity. A new law was also passed, authorizing the FSA to prescribe prudential rules and apply prompt corrective action when rules were breached or where authorized institutions were viewed as unsafe or unsound.

7. **At the same time, the government took steps to facilitate the restructuring of distressed borrowers.** To facilitate this process, the government in 2003 established the

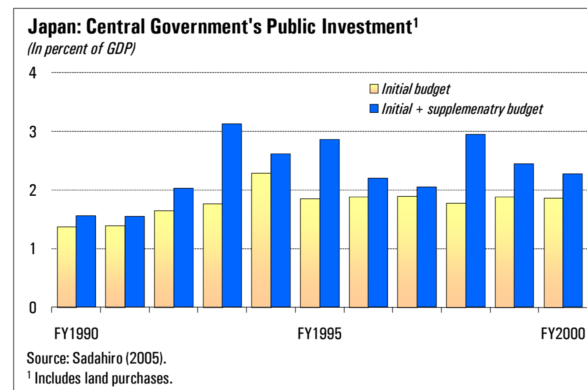
[3] At the same time, limits were placed on the amount of deferred tax assets (tax-credits based on expected future profits) banks could count towards their Tier 1 capital ratio. Deferred tax assets in 2003 accounted for nearly one-half of Tier-1 capital in major banks and generated market concerns over the quality and ability of bank capital to absorb further losses.

Industrial Revitalization Corporation of Japan (IRCJ) to purchase distressed loans from banks (up to around ¥1 trillion) and work with creditors in restructuring. To support private sector-led restructuring, the government also reformed the insolvency system (introducing a faster and more efficient "Civil Rehabilitation Law"), introduced guidelines for out-of-court corporate workouts, and upgraded the accounting and auditing framework.

Fiscal Policy

8. **During the 1990s, Japan introduced a number of fiscal stimulus packages.** These packages were in the form of supplementary budgets, which are typically used to address unforeseen events during the year.[4] While these packages had large headline numbers—totaling ¥140 trillion, including credit guarantees and public investment—actual spending was considerably smaller—about ¥40 trillion (8 percent of 2000 GDP). These packages had the following main elements:

- ***Public works.*** On average, public works accounted for about 40 percent of Japan's stimulus measures, and were particularly important in the packages of the early 1990s. They included spending on roads and bridges. Although the returns from such public investment projects may have been low,[5] they appeared to have served a safety-net purpose, mainly by creating jobs during the downturn. In the late 1990s, public investment shifted toward arguably more productive spending, including IT-related infrastructure.



- ***SME finance.*** Another important element of the stimulus packages was an expansion of credit guarantees on SME lending. When the credit crunch became more pronounced in the late 1990s, Japan introduced a special credit guarantee program that provided 100 percent coverage to banks against losses.[6] These guarantees reached nearly ¥30 trillion (6 percent of GDP) by 2001.

- ***Employment support.*** At the same time, the stimulus packages of the late 1990s attached greater weight to employment support, given the sharp rise in unemployment, and social

[4] Typical examples of unforeseen events are natural disasters, but stimulus measures can also be included.

[5] For example, little-used roads that were constructed in rural areas likely carried small multiplier effects.

[6] Although this measure was aimed at mitigating the credit crunch, it may also have delayed necessary restructuring. For instance, there is some evidence that the SMEs that used this program were more heavily indebted and faced a higher risk of default (Matsuura and Hori, 2003).

security spending, including support for the elderly. In addition, cash vouchers (¥0.7 trillion) were distributed in 1999 to households that were potentially liquidity-constrained.[7]

- ***Tax measures.*** The government also implemented sizable tax cuts, with a cut of about ¥5.5 trillion (1.1 percent of GDP) enacted in 1994.

Japan: Major Tax Cuts During the 1990s
(In trillions of yen)

	Income taxation		Corporate taxation
	Permanent	Temporary	
FY1994		5.5	
FY1995	3.5	2.0	
FY1996	↓	2.0	
FY1997	↓		
FY1998	↓	4.0	Permanent
FY1999	↓	4.0[1]	2.5
FY2000	↓	↓	↓

Sources: Ministry of Finance; and Cabinet Office.
[1] Introduced as semi-permanent tax cut and fully lifted in FY2007.

9. **In 1997, in response to rising government debt and growing concerns about the fiscal implications of population aging, the government changed course and passed a budget aimed at medium-term consolidation.** The budget raised the consumption tax rate by 2 percentage points and abolished the temporary part of the earlier tax cut, raising the overall tax burden by some ¥7.0 trillion (1.4 percent of GDP). In the wake of the sharp economic contraction that followed, the government again changed course and reintroduced a temporary income tax cut of about ¥4.0 trillion in 1998, followed by another tax cut of ¥6.6 trillion in 1999.

Monetary Policy

10. **Except for a hiatus in 1994, the BoJ gradually reduced its target interest rate in the face of the economic slowdown.** Between mid-1991 and mid-1995, the discount rate was lowered eight times from 6 to fractional levels. The BoJ then changed its target to the overnight interest rate but with rates already very low, the initial target was set at just 0.5 percent. In any case, some pick-up in economic activity and inflation—together with increased bank lending—seemed to obviate the need for easing over the next few years and the loosening cycle was halted.

11. **In 1997, the collapse of key financial institutions clarified the full scale of the crisis and called for more forceful and unconventional actions to ease credit conditions.** The macroeconomic environment deteriorated significantly and credit conditions tightened markedly, with bank lending contracting and credit spreads spiking. However, the scope for further conventional easing was extremely limited—a rate cut of only a quarter percentage point to 0.25 percent was possible in the fall of 1998—necessitating a radical change in the

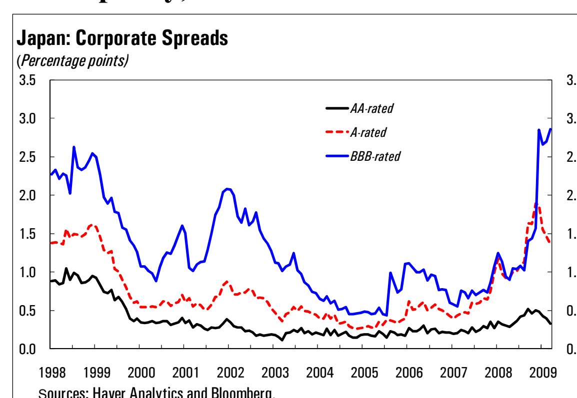
[7] The inability to verify incomes forced the government to seek out proxies, such as the presence of children or the elderly.

monetary policy framework. A major change in the institutional environment was also enacted, as the BoJ gained formal independence from the Ministry of Finance (MoF).[8]

12. **To better provide liquidity support and substitute for the impaired interbank market, the BoJ expanded the range and flexibility of its monetary instruments.** These measures evolved over time in response to changing market conditions and focused primarily on (1) broadening the range of eligible collateral to include corporate bonds, loans on deeds, asset-backed commercial paper (ABCP) and other forms of asset-backed securities (ABS); (2) providing liquidity at longer terms by extending the maturity of bill purchases and Japanese Government Bond (JGB) repos from six months to a year; and (3) increasing the number of counterparties for JGB purchases and commercial paper repo operations.

13. **In February 1999, the BoJ formally shifted to a zero interest rate policy (ZIRP).** Following the announcement of the BoJ's intention to encourage the policy rate to move "as low as possible", the policy rate was lowered to 0.15 percent, succeeded by further reductions to rates as low as 0.02 percent.

14. **Some signs of a pick up in activity and fears that excess liquidity could ignite fresh bubbles prompted an early termination of the policy, but this had to be reversed.** In August 2000, within 18 months, the BoJ lifted ZIRP and raised rates to 0.25 percent, on some tentative evidence of a pick up in growth and a decline in risk premia. However, the recovery appeared fragile, with unemployment still on an upward trend and corporate bankruptcies increasing. In the event, with the economy falling back into recession soon after, the BoJ had to lower the policy rate back to zero within seven months.



15. **In March 2001, the BoJ introduced its "quantitative easing" policy.**[9] The zero bound became a more serious constraint on monetary policy, with much weaker growth and increased deflationary pressures, forcing policymakers to adopt new ways of easing monetary policy and supporting credit intermediation. The policy instrument was changed, with the BoJ targeting the outstanding balance of banks' current accounts at the central bank (consisting of required and excess reserves). The initial target was set at around ¥5 trillion,

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[8] The 1942 Bank of Japan Act, which made the BoJ formally dependent on the government, was repealed and replaced with the New Japan Act of 1998. At the same time, a new Governor was appointed and the Monetary Policy Board gained additional members.

[9] For more details, see, among others, Fujiki et al. (2001) and Shirakawa (2003).

aimed at pushing the overnight call rate to zero, and was increased in a series of steps to around ¥35 trillion by 2004 as credit growth remained lackluster.

16. **The BoJ resorted to unconventional measures to support corporate lending.** In 1998, to help firms with their end-of-year funding, the BoJ established a temporary lending facility to refinance 50 percent of the increase in loans provided by financial institutions during the fourth quarter of the year. In 2003, the BoJ initiated a program to assist SMEs by purchasing ABS and ABCP backed by SME loans rated BB or higher.

17. **At the same time, the BoJ took unprecedented steps to address the capital shortage in banks.** Banks' large equity holdings (¥27 trillion or nearly 150 percent of their Tier 1 capital) constrained their ability to extend credit and take on new risk. To help reduce banks' market exposure, the BoJ introduced a program in 2002 to purchase equity rated BBB- or higher directly from banks at market prices. In addition to stabilizing the banking system, such operations may have bolstered the asset price channel of monetary policy by reinforcing economic activity through wealth effects. During 2002–04, BoJ purchases of equities reached ¥2.1 trillion ($18 billion), representing around 6 percent of banks' total equity holdings.

18. **Meanwhile, the Ministry of Finance undertook large-scale foreign exchange interventions in 2003 and early 2004, helping to stabilize the yen during a period of dollar weakness.** These operations could have helped to activate the exchange rate channel and prevent an undue tightening of monetary conditions. Amounts were large, with the monetary authorities selling ¥20 trillion in 2003 and ¥15 trillion in the first quarter of 2004.

19. **Having relied mainly on ordinary operational tools and the purchase of government securities, the BoJ was eventually able to exit from quantitative easing by shrinking its balance sheet through open market operations and without selling government bonds.** Between March and July 2006, the BoJ's balance sheet shrunk from ¥145 trillion to ¥116, largely reflecting a ¥20 trillion decrease in funds supplying operations as well as a natural unwinding of relatively short-maturity government bonds that had been sold to the BoJ by financial institutions during 2005–6. As money demand picked up, the BoJ was able to meet its self imposed "banknote rule" (the requirement to keep outstanding government bond holdings below the amount of banknotes) without resorting to outright sales of JGBs.

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