

IMF Working Paper

Managing the Exit:
Lessons from Japan's Reversal of
Unconventional Monetary Policy

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Asia and Pacific Department

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Abstract

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In responding to the global crisis, central banks in several advanced economies ventured beyond traditional monetary policy. A variety of unorthodox measures, including purchases of public and private assets, have significantly enlarged their balance sheets. As recoveries take hold, focus will increasingly shift from countering the Great Recession to orchestrating an exit and returning to a more normal monetary framework. Five years ago, as its economy recovered from a severe financial crisis, Japan attempted just such an exit. This note revisits the Bank of Japan's experience and draws potential lessons for managing an orderly exit today, with a focus on technical aspects, practicalities, and communication strategies. While the nature of the assets acquired during the present crisis could pose additional complications, parts of Japan's arsenal—communication, flexibility, a sufficient set of policy tools and a strategy for using them, safeguards against potential losses, the revival of risk appetite through decisive restructuring of balance sheets, and refinements to the monetary framework upon exit—also could be important this time around.

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CONTENTS

I.	Introduction.....	3
II.	Rewriting the Rules: The BoJ's Unconventional Measures	4
III.	The BoJ's Exit Strategy	6
	A. Exit from Liquidity Operations and JGB Purchases	7
	B. Exit from the Policy Duration Commitment: Raising Interest Rates	8
	C. Exit from Unconventional Asset Purchases	9
	D. Communication Strategy after the Exit: A New Monetary Framework	10
IV.	How Successful Was Japan's Exit?	11
V.	Potential Implications for the Current Exit.....	12
	References.....	14

I. INTRODUCTION

1. Over the last year, central banks in a number of advanced economies resorted to unconventional monetary policies to combat the global crisis. Reflecting differences in the structure of their financial systems, the focus and type of these responses differed—the U.S. Federal Reserve (the Fed) dramatically changed the size and composition of its balance sheet through “credit-easing” measures aimed at stabilizing credit markets; the European Central Bank (ECB) extended its refinancing operations and acquired covered bonds to provide “enhanced credit support”; while the Bank of England’s (BoE’s) “quantitative easing” (QE) operations featured outright purchases of gilts and some corporate debt.² These actions were all motivated by a need to provide additional monetary stimulus and stabilize financial markets when policy rates had fallen close to their zero bound.

2. As economies emerge from the Great Recession, attention increasingly is shifting to managing the exit and returning to a more normal monetary framework. Many central banks already have made a start, mainly by unwinding emergency liquidity facilities and testing new tools for draining excess liquidity: in December 2009, the ECB stopped lending banks unlimited 1-year funds; in February 2010, the BoE paused its gilt purchases; and in March 2010, the Fed terminated its purchases of mortgage-backed securities and agency debt (Sack, 2010; and Trichet, 2009). This reflects to some extent the improved global economic outlook. However, less benign factors also may be playing a role, notably concerns about a disorderly unwinding or one that would undermine the credibility and independence of central banks. To address this risk, it is important to stabilize market expectations through well-crafted communication strategies regarding the exit.

3. Completing the exit will be challenging for all these central banks, but it is not without precedent (Shirakawa, 2009a and 2009b). Nearly 10 years ago, in the wake of a similar financial crisis, the Bank of Japan (BoJ) pioneered unorthodox monetary policies, and its experiences have contributed to the bold responses witnessed during the last year. As the Japanese economy recovered, the BoJ faced similar challenges in normalizing its balance sheet and executed a relatively smooth exit on most fronts.

4. In search of insights for managing the exit, this note revisits Japan’s experiences. It discusses the BoJ’s unorthodox measures, its strategy for unwinding them, and the factors that contributed to its smooth exit. Although the appropriate timing of exit also is an important policy question, this note focuses purely on its technical aspects, practicalities, and associated communication strategies. The note concludes by drawing implications for some conceptual and operational questions emerging in policy circles today, notably:

- What is the appropriate sequence of exit and what should be the main considerations in determining the modalities, including whether interest rates can be raised before fully

² See Klyuev, De Imus, and Srinivasan (2009) for a taxonomy and summary of measures during the current crisis.

unwinding unconventional measures? What is the most effective way of communicating the central bank’s strategy and policy stance during the exit?

- How can potential losses to central bank balance sheets be managed, notwithstanding that this need not be the primary consideration of monetary policy?
- Should monetary policy frameworks simply revert to their precrisis forms, or are some changes warranted?

II. REWRITING THE RULES: THE BOJ’S UNCONVENTIONAL MEASURES

5. Nearly two decades ago, the Japanese economy was mired in a crisis bearing a close resemblance to the current Great Recession (Syed, Kang, and Tokuoka, 2009). As the crisis unfolded, the BoJ faced an unprecedented array of challenges. Monetary policy was loosened over the 1990s but the impact was dampened by weaknesses in bank and debtor balance sheets. Unable to lower policy rates past their zero bound, the BoJ adopted several unorthodox measures between the late 1990s and mid 2000s.

6. When policy rates fall to their lower bound, central banks can provide additional stimulus through at least four channels: (1) providing funds to financial institutions to alleviate their liquidity concerns; (2) purchasing assets with longer-term maturities, such as long-term government bonds; (3) intervening directly in credit markets by purchasing private assets or providing loans collateralized by private-sector assets; and (4) guiding longer-term interest rates by committing to keeping policy rates low for an extended period.

7. The BoJ’s responses evolved over time, eventually covering this entire spectrum (Table 1):

Massive liquidity provision and QE.

Starting from the late 1990s, conventional open-market operations—mainly in the form of bill purchases from banks collateralized by a pool of assets and repo agreements—were extended to a broader range of market participants, over longer maturities, and against a wider range of collateral.³ Under its “zero interest rate policy” (ZIRP, February 1999–August 2000), the BoJ maintained overnight interest rates at virtually zero. This continued during the QE period

Table 1. Japan: Entry and exit from unconventional monetary measures

Mar. 19, 2001	• Introduction of QE
Nov. 29, 2002	• Introduction of Stock Purchasing Program
Jul. 28, 2003	• Introduction of Scheme for Purchasing ABS and ABCP
Oct. 10, 2003	• Announcement of “More Detailed Description of the Commitment to Maintaining the Quantitative Easing Policy”
Sep. 30 2004	• Expiration of Stock Purchasing Program
Mar. 9, 2006	• Exit from QE • Return to just Zero-Interest Rate Policy (ZIRP)
Mar. 31, 2006	• Expiration of Scheme for Purchasing ABS and ABCP
Mar. 2006 - Jul. 2006	• Downsizing of the BoJ’s balance sheet
Jul. 14, 2006	• Raising o/n interest rate (policy rate) to 0.25 percent
Jul. 31, 2007	• Publishing the guideline for the disposal of stocks purchased by the BoJ

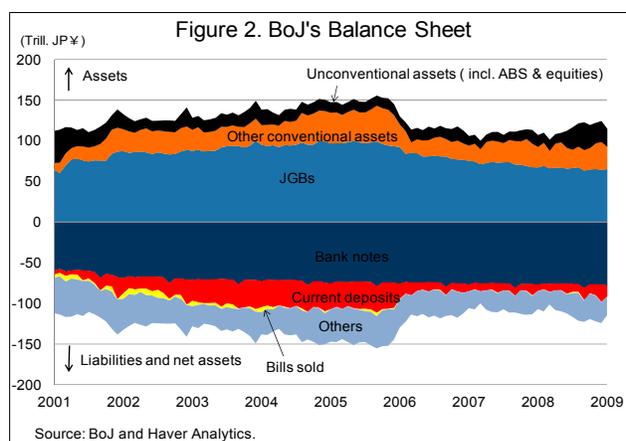
³ For details of the BoJ’s liquidity provision schemes introduced in 1998 and 1999, see:

<http://www.boj.or.jp/en/type/release/zuiji/kako01/k981113a.htm> and
<http://www.boj.or.jp/en/type/release/zuiji/kako02/k991013a.htm>.

(March 2001–March 2006), when the BoJ changed its operating target to the outstanding balance of banks' current accounts at the central bank, with reserves maintained far above required levels (Figure 1).⁴ At its peak, the BoJ's balance sheet exceeded ¥150 trillion, or around 30 percent of GDP.

- **Outright purchases of long-term government bonds.** To facilitate liquidity provision, the BoJ increased its outright purchases of long-term government bonds (JGBs) from ¥400 billion to ¥1.2 trillion per month during the QE period.
- **Outright purchases of assets with credit risks.** To help alleviate the capital shortage faced by banks and rehabilitate the financial system, the BoJ, as a financial-stability policy, introduced a program to purchase their stockholdings in November 2002.⁵ In July 2003, the BoJ introduced a ¥1 trillion scheme for outright purchases of asset-backed securities (ABS) and asset-backed commercial paper (ABCP).⁶
- **Policy duration commitment.** At the beginning of the QE period, the BoJ announced that the policy would be continued until actual inflation became stably nonnegative.⁷

Under these unorthodox policies, the BoJ's assets mushroomed from ¥91 trillion in 1998 to a peak of about ¥155 trillion in 2006, or from 18 to more than 30 percent of GDP (Figure 2). Of this increase, about three-fifths came from enhanced liquidity supplying operations, and the rest mainly from long-term JGB purchases, with only a negligible fraction from nonconventional asset purchases. On the liabilities side, this was matched almost entirely by a buildup in bank reserves.



⁴ In this note, QE is defined as monetary easing with an operational target on quantitative indicators instead of short-term interest rates.

⁵ During 2002–04, BoJ purchases of equities reached ¥2.1 trillion, representing about 6 percent of banks' total equity holdings. While significant, the amount was small compared to the BoJ's holdings of JGBs (¥65 trillion) and liquidity-supplying operations (which peaked at ¥40 trillion).

⁶ To minimize credit risk, the BoJ capped its overall purchases at ¥1 trillion, focused on instruments rated BB or higher, and limited the maturity of eligible ABCP and ABS to one and three years, respectively. For details, see <http://www.boj.or.jp/en/type/release/zuiji/kako03/k030611b.htm>.

⁷ See <http://www.boj.or.jp/en/type/release/zuiji/kako02/k010319a.htm>. Due to the typical 2- or 3-year time lag in monetary policy transmission, this policy duration commitment was designed to demonstrate that the BoJ's policy reaction function was aimed at achieving positive inflation. Although any policy duration commitment inherently sacrifices policy flexibility, it can become increasingly important under the zero bound and intense downward pressures on the economy.

III. THE BOJ'S EXIT STRATEGY

8. In theory, exit from unconventional easing involves a number of seemingly straightforward central bank operations to maintain activity close to potential and ensure price stability: (1) halting extraordinary interventions; (2) downsizing and normalizing the central bank balance sheet; (3) selling purchased assets, if necessary; and (4) raising short-term interest rates.

9. In practice, however, uncertainties about the outlook for economic activity and inflation and the precise transmission mechanism of unconventional policies complicate an exit strategy's timing, pace, and sequencing. In addition, to return to a positive policy rate, central banks usually need to eliminate the excess bank reserves accumulated through their unconventional operations, or at least neutralize the potential undesirable effects on credit growth and inflation as activity picks up. Some portion will contract automatically, as exceptional liquidity facilities are terminated and short-lived assets mature. However, the rest necessitate selling assets acquired by the central bank or other ways of sterilizing excess reserves to facilitate the necessary rate hike, such as by paying interest or issuing central bank bills.⁸

10. The BoJ grappled with these challenges as Japan emerged from its crisis. Although the economy staged a recovery from 2002, it was not until March 2006 that the BoJ ended QE.⁹ Signaling the start of its exit strategy, the BoJ announced that it would gradually drain liquidity while keeping the overnight rate at virtually zero.¹⁰ By July 2006, it had smoothly transitioned to a more normal monetary framework, having downsized its balance sheet before raising the policy rate. As discussed below, clear communication, transparent conditions governing future actions, flexibility, and market confidence about the adequacy of

⁸ Note that this does not mean that policy-rate hikes should necessarily take place only after the unwinding of excess reserves. Indeed, it is possible for central banks to raise policy rates even if they maintain excess reserves, although this could involve additional complexities. For example, central banks would need to pay careful attention to risks of financial losses on their balance sheets from interest payments on their liabilities and continued holding of unconventional assets. In addition, central banks may face challenges in communicating their stance if policy rates are raised while unconventional interventions remain in place.

⁹ Before the exit, prominent BoJ officials often stated in their speeches and press conferences that the termination of the QE would not be accompanied by an immediate rate hike, and that short-term interest rates would be adjusted only in a gradual manner. For example, Governor Fukui made the following remarks in a speech on December 22, 2005: "[T]he possibility of a departure from the unprecedented framework of the quantitative easing policy, which was introduced to stave off a deflationary spiral, is likely to increase over the course of fiscal 2006... Although the level of interest rates after such a change of policy framework will of course depend on developments in economic activity and prices, an accommodative financial environment is likely to be maintained, as long as upward pressure on prices continues to be contained and the economy follows a sustainable and balanced growth path." (See <http://www.boj.or.jp/en/type/press/koen/ko0601a.htm#06>.)

¹⁰ See http://www.boj.or.jp/en/type/release/zuiji_new/k060309.htm.

tools and underlying strategy for absorbing excess liquidity¹¹ helped the BoJ manage an orderly exit. A revival of risk appetite through a restructuring of financial sector and debtor balance sheets, together with prudence and safeguards introduced during the entry stage of its unconventional operations, also was important.

A. Exit from Liquidity Operations and JGB Purchases

11. In accordance with the rapid decline in bank excess reserves, the BoJ's balance sheet shrank from ¥145 trillion to ¥116 trillion between March and July 2006. This decline largely reflected a ¥20 trillion decrease in funds-supplying operations as money markets were revived and institutions gradually reduced their reliance on the BoJ for funding; and a natural unwinding of relatively short-dated securities held by the BoJ. Although it had the authority to do so, the BoJ eventually did not need to increase the issuance of its own bills to sterilize excess reserves, because reserves contracted smoothly.

12. Indeed, the BoJ's exit announcement made it clear that the reduction of excess reserves would be achieved through adjustments in short-term money market operations and without an immediate reduction of its JGB holdings. Two main factors contributed to the smooth normalization of the BoJ's balance sheet:

- **The increase in the BoJ's balance sheet largely had been due to ordinary operations.** As discussed, the increase in the BoJ's liabilities largely had been backed up by increases in bill purchases and government securities on the asset side. Much like in the current crisis, short-term liquidity operations unwound naturally as market conditions normalized, because they provided funds at a premium over the policy rate. Funds supply was withdrawn through open-market operations, mainly by allowing short-term assets, such as treasury bills purchased from banks, to mature.¹² The flexibility of these operations facilitated the exit process.
- **Discipline in the BoJ's outright purchase of JGBs.**¹³ The BoJ had instituted a "banknote rule"—a requirement to keep outstanding long-term government bond holdings below the amount of banknotes in circulation—to impose self-discipline in its JGB purchases under QE. This rule worked as an exit safeguard by capping the BoJ's JGB purchases. When it came time to exit, the demand for banknotes remained stable despite the marginal rise in short-term interest rates and the enhanced soundness of the banking sector. With banknotes remaining above long-term JGB holdings, the BoJ was able to mop up excess reserves without having to sell JGBs. Nonetheless, the BoJ has not yet reduced its outright JGB purchases—in fact, purchases have been increased to

¹¹ This includes the ability to sell assets as necessary and to drain excess reserves, such as by issuing central bank bills or paying interest on bank reserves.

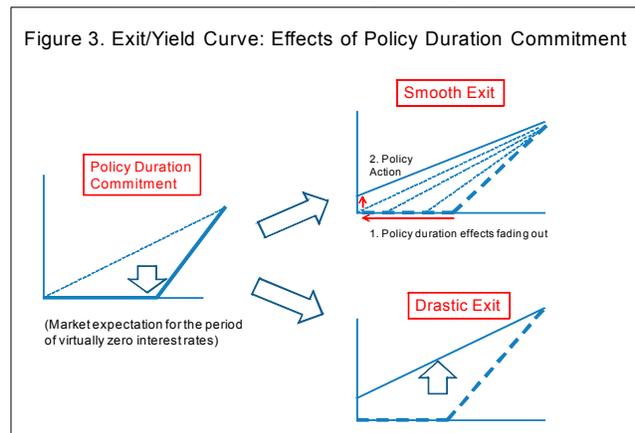
¹² This was facilitated by the average maturity of these bills falling to four months in the first quarter of 2006.

¹³ Underwriting of JGBs by the BoJ is legally prohibited by Article 5 of the Fiscal Law.

¥1.8 trillion per month in response to the current crisis—so that its exit remains incomplete on this front.¹⁴

B. Exit from the Policy Duration Commitment: Raising Interest Rates

13. Ending the policy duration commitment was one of the most difficult aspects of the BoJ’s exit strategy. Under the commitment, market participants expected near-zero rates for an extended period. Thus, before raising the policy rate, the BoJ needed to smoothly “shorten” the market’s expectations about this duration to avoid any drastic shifts in the yield curve that could have jeopardized the recovery. As illustrated in Figure 3, the policy duration commitment translates into a kink in the yield curve, with the market expecting zero interest rates for a prolonged duration. Under a smooth exit scenario, the market’s expectations of this duration is first gradually shortened (shifting the kink closer to the origin) before the rate hike shifts the yield curve upward. By contrast, under a drastic exit scenario, the market is unable to adjust its expectations smoothly and the yield curve moves upward abruptly, with potentially disruptive effects on activity.



14. Faced with substantial uncertainty about the exact timing and size of potential inflationary pressures in the aftermath of Japan’s postbubble recession, the BoJ made its commitment to maintaining an accommodative stance conditional on an easily observable and verifiable statistic: actual consumer price index (CPI) inflation.¹⁵ Hence, improvements in the inflation outlook were expected to contribute to a gradual reduction in the policy duration effect.

15. Moreover, as the preannounced conditions for exit became imminent, a more precise enunciation of the exit strategy was needed. The BoJ announced a “More Detailed Description of the Commitment to Maintaining the Quantitative Easing Policy” on October 10, 2003.¹⁶ This further clarified the BoJ’s policy reaction function and provided a clearer guidepost for the timing of exit, by announcing two “necessary conditions”: (1) “it required not only that the most recently published core CPI should register a zero percent or above,

¹⁴ At the end of March 2010 the BoJ’s holdings of government securities stood at ¥73 trillion, or around 15 percent of GDP.

¹⁵ Such conditionality also helped make the commitment credible in the first place. For example, a commitment “to continue virtually-zero interest rates for 20 years regardless of the economic environment” would not be credible. Since the primary goal of monetary policy is to achieve price stability, it would be reasonable to expect the central bank to respond to any emerging intolerable risks of inflation occurring during this period.

¹⁶ For details, see <http://www.boj.or.jp/en/type/release/zuiji/kako03/k031010b.htm>.

17. Minimizing the impact of exit on financial markets can be one of the most important but difficult tasks for central banks. In Japan's case, exit from stock purchasing was especially difficult because, unlike debt, stocks have no maturity date. To alleviate banks' capital shortages while containing potential losses to its balance sheet, at the entry stage, the BoJ limited the total amount available for stock purchases (¥3 trillion), constrained eligibility to stocks held by banks whose stockholdings exceeded their Tier I capital, and included a "sunset clause" (September 2003, later extended to September 2004). At the exit stage, the BoJ announced explicit "selling guidelines" in July 2007.²⁰ Under the guidelines, the BoJ delegated the task to trustees (trust banks), with due attention to diversifying the timing of sales to minimize the stock market impact. Importantly, the BoJ never expressed profit maximization as an objective in its stock sales. The trustees also were allowed to temporarily postpone sales in the event of a substantial decline in stock prices. The selling process began after October 2007, with a 10-year targeted completion date. With global stock markets collapsing at the onset of the current crisis, however, the process was halted in October 2008.

D. Communication Strategy after the Exit: A New Monetary Framework

18. After ending QE, the BoJ did not simply return to the rules that governed its past actions. The BoJ saw the need for adjustments to its monetary policy framework taking into account the lessons from the earlier bubble period, as well as to facilitate the exit from QE by providing a new anchor to guide expectations.²¹

19. Under the new framework published on March 9, 2006, the BoJ announced its policy board members' "understanding of price stability" as annual CPI inflation of between 0 and 2 percent.²² The framework also placed more emphasis on the forward-looking orientation of policy, with monetary settings reflecting an assessment of economic conditions from two perspectives: the first perspective is the outlook for growth and prices one to two years ahead; and the second perspective is examining, over a longer term, various risks—such as asset price bubbles or excessive credit expansion—that could undermine price and output prospects. Finally, communication with market participants was enhanced, with monetary policy decisions explained in terms of the two perspectives, and the underlying analysis discussed at greater length in the BoJ's semiannual *Outlook Reports* and its Interim Assessments.

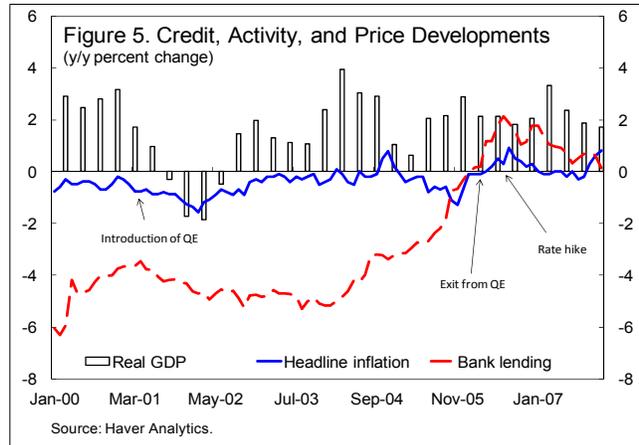
²⁰ See <http://www.boj.or.jp/type/release/zuiji07/fss0707a.htm> (the public statement is only in Japanese).

²¹ Under QE, the BoJ attempted to clarify its policy reaction function by basing its policy duration commitment on actual CPI.

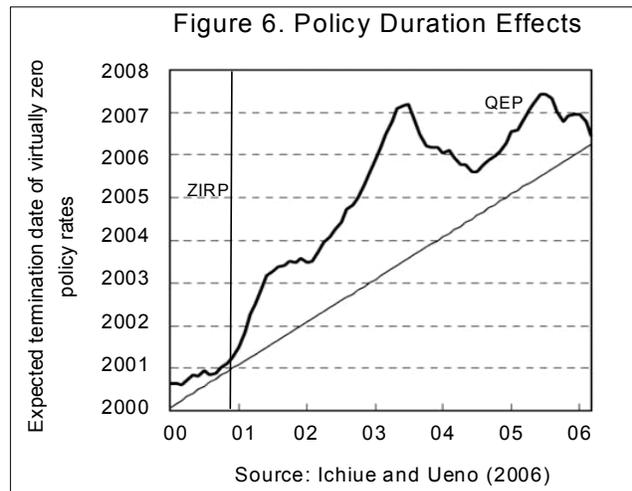
²² For details, see http://www.boj.or.jp/en/type/release/zuiji_new/k060309b.htm.

IV. HOW SUCCESSFUL WAS JAPAN'S EXIT?

20. Japan's experiences suggest that it is possible to exit from a period of QE in a smooth manner, without overshooting of inflation, derailing economic recovery, or destabilizing financial markets (Figure 5). After the termination of QE was officially announced, the BoJ successfully reduced its balance sheet and excess bank reserves within a few months, although not all the way back to their late-1990 levels. Moreover, the exit did not result in any obvious disruption to financial markets. There was no evidence of abrupt portfolio shifts or heightened volatility in safe and risky assets. The gradual and orderly unwinding strategy that the BoJ chose for its JGB holdings saw yields rise by only about 35 basis points, well within normal market fluctuations. Tellingly, the BoJ's vigorous QE did not unleash any dangerous inflationary pressures.



21. How well did the BoJ's enhanced communication policies work? Several empirical studies detect policy duration effects until the beginning of 2005 (e.g., Oda and Ueda, 2005). As prices started to firm thereafter, the policy duration effect decreased, falling to almost zero before the BoJ's exit in March 2006 (Ichiue and Ueno, 2006) (Figure 6). Thus, the policy duration commitment was not an obstacle to the BoJ's raising of overnight interest rates in July 2006, since market participants had built the rate hike into their expectations and the interest rate on term instruments had started to increase.



22. However, two elements of the exit were less successful. First, a persistently weak price environment has continued even after the exit. Indeed, the BoJ was only able to raise policy rates to 0.5 percent, and after the "Lehman Shock" in 2008 the BoJ entered another monetary easing phase. Second, as discussed, the exit also remains incomplete to some extent, given the BoJ's continued holding of stocks and JGBs.

V. POTENTIAL IMPLICATIONS FOR THE CURRENT EXIT

23. Over the last year, central banks in a number of advanced economies have to varying degrees adopted many of the same policies as the BoJ a decade ago, including dramatically increasing the size and scope of their liquidity operations, providing direct support to credit markets, purchasing government bonds, and committing to keeping policy rates low for an extended period. In the process, their balance sheets have swelled considerably and bank reserves have mushroomed.

24. Looking ahead, exit from these policies will likely prove challenging. On the face of it, the technical operations do not seem overly problematic and many advanced central banks have already made progress in unwinding extraordinary liquidity provision operations. However, given the scale of the required unwinding and the relatively untried nature of many of the tools that may be deployed, the risk of complications cannot be ruled out. As they make further progress toward preparing for a smooth exit, what potential lessons can central banks draw from the BoJ's exit five years ago?

25. Overall, the BoJ's experiences offer some comfort and suggest that an orderly exit is possible. Clearly, inflationary pressures are not an inevitable consequence of unconventional policies where central banks have sufficient instruments to exit and can convince market participants of their intentions. While liquidity operations are easier to unwind, public- and private-asset purchases call for careful management to minimize market disruption and decisive steps to rekindle risk appetite by restructuring financial-sector and borrower balance sheets.

26. With the recovery drawn out and inflationary pressures subdued due to the sizeable output gap, the BoJ was also able to avoid losses, market disruptions, and yield spikes by holding most of its asset purchases (including JGBs and ABCP) to maturity. Needless to say, exit strategies will differ according to the economic environment that prevails in each country, as well as the size and scope of the unconventional policies adopted. Nonetheless, we conclude with some broad principles suggested by Japan's experiences, some of which already have been recognized as important by central banks:

- **Ensuring that the central bank has sufficient tools to facilitate the unwinding of unconventional monetary policy is crucial.** The BoJ either put in place or already had a wide range of policy instruments available to unwind its interventions. This may also have boosted confidence in the markets (as well as the BoJ) that the exit could be effectively managed.
- **Since unconventional policies involve a package of measures, the specific characteristics of each will determine when, how, and at what pace they can be unwound.** For example, the BoJ purchased assets with short maturities, such as ABCP, and those with longer maturities, such as JGBs and stocks. With risk appetite recovering, the former could simply be held to maturity, while assets with longer maturities needed a

formal “selling strategy” to minimize potential negative impacts on their markets. In this context, introducing effective safeguards when these purchases were undertaken facilitated their eventual unwinding. In the current context, the composition of the assets that central banks have acquired will in large part determine their approach to exit.

- **Unwinding central banks’ purchases of assets with longer maturities or shallower markets will be more challenging, not only in terms of potential market impact but also central bank losses.** Since private asset purchases by central banks in the aftermath of a crisis are typically at fire-sale prices, risks of suffering losses by holding them to maturity or selling them once the market normalizes ought to be low. However, two observations are in order. First, as was the case with the BoJ, central banks should refrain from announcing profit maximization as their objective, since investors might regard selling operations as a signal that prices have peaked. Second, unwinding purchases of assets with long maturities present more risks, especially where underlying markets may have become impaired and volatile or where continued holdings of long-dated bonds carry interest rate risk as the economy recovers.
- **Central bank communication policies will be crucial.** Unconventional easing can involve a wide range of measures with varied policy purposes (e.g., to lower longer-term interest rates or normalize credit markets), and whose transmission mechanisms are often uncertain and dependent on market sentiment. Thus, exit from unconventional easing will take more time than ordinary tightening operations. Typically, central banks will have to begin unwinding their policy duration commitment before raising rates, and any central bank action might make the market anticipate further measures. To manage these uncertainties and guide expectations, central banks need to effectively communicate their assessment of the outlook and risks. In addition, where policy rates are raised with interventions in distressed credit markets still in place, central banks need to pay even more attention to communicating their intentions. In Japan’s case, the BoJ began issuing more frequent assessments of economic conditions, and its communications during the execution of unconventional policies, such as conditional commitments of policy duration,²³ also helped smooth the exit.
- **Some challenges could extend beyond the exit.** Central banks may need to revisit their monetary policy frameworks, as illustrated by the BoJ’s announcement of its new two-perspective approach at the exit. In particular, central banks could consider the extent to which additional risks highlighted by the crisis, such as those from financial markets and asset prices, should be incorporated into their assessment of monetary conditions.

²³ Like Japan, many advanced economy central banks have adopted policy duration commitments during the current crisis, although with varying degrees of specificity. See, for example, <http://www.federalreserve.gov/newsevents/press/monetary/20091104a.htm> (U.S. Federal Reserve) and http://www.bank-banque-canada.ca/en/ixed-dates/2009/rate_081209.html (Bank of Canada).

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