



WP/05/73

# IMF Working Paper

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## A Post-Reflation Monetary Framework for Japan

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**IMF Working Paper**

Asia and Pacific Department and Monetary and Financial Systems Department

**A Post-Reflation Monetary Framework for Japan<sup>1</sup>**

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April 2005

**Abstract**

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Modifications to Japan's monetary policy framework will be needed as positive inflation resumes because the current monetary regime and operations are tailored to ending deflation. The paper suggests that the monetary regime should move from an "anti-deflation" objective to an inflation objective, complemented by a shift of monetary operations from a quantitative operating target to an interest rate target. There are also questions about the timing of these shifts and the particulars of such arrangements, but decisive answers are elusive.

JEL Classification Numbers: E42; E52

Keywords: Monetary policy; monetary operations; Japan; deflation.

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<sup>1</sup> We thank Hervé Ferhani, Geoffrey Heenan, Saul Lizondo, Scott Roger, Garry Schinasi, Peter Stella, Masahiko Takeda, Jouni Timonen, Alexander Wolfson, and seminar participants at the Bank of Japan and the International Monetary Fund for helpful comments. The paper has also benefited from discussions with a range of our colleagues at the IMF. All errors, as well as the opinions expressed herein, remain the authors' responsibility.

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## INTRODUCTION

This paper is about how to adjust Japan's monetary policy framework to meet the resumption of inflation. Today, Japan's monetary policy framework is tailored to ending deflation and maintaining financial stability. The Bank of Japan (BoJ) has committed to maintaining a highly accommodative stance under its "quantitative easing" policy at least until actual and expected deflation end. Operationally, it relies on a quantitative operating target, namely bank and nonbank reserves, supplying ample liquidity and thereby keeping the policy interest rate at virtually zero. This has the additional benefit of bolstering financial stability.

While these arrangements are well suited to the current deflationary environment, adjustments will be needed once deflation ends. The current "nominal anchor"—ending deflation—will no longer be relevant, and the tradeoffs that the BoJ faces in working to meet both its price stability and financial stability objectives will change qualitatively. In addition, an operating target that sends clearer policy signals—a short-term interest rate—will become viable as inflation resumes and excess reserves decline.

This paper proposes two adjustments to accommodate the resumption of inflation.<sup>2</sup> The first adjustment is clearer communication of the BoJ's inflation objective and its views on inflation dynamics to anchor market expectations. A medium-term inflation objective could replace the "anti-deflation" objective to signal the commitment to price stability while retaining flexibility to respond to short-term shocks. This shift could be supported by publication of an inflation report to enhance the transparency of the commitment to the inflation objective and guide market expectations. The second adjustment is readoption of the overnight call rate (OCR) as the operating target. Because money demand is unstable, changes in the liquidity target can send ambiguous signals about the central bank's views and its future policy intentions, whereas changes in nominal interest rates send clearer signals.

We also discuss the difficult choices raised by implementation of these adjustments to the monetary framework. One choice is when and how to announce adjustments to the framework. Another is how actively to drain excess reserves to engineer a tightening of monetary conditions and establish a positive short-term interest rate target that can serve as an operating target. These choices will hinge on the evolving—and highly uncertain—strength of monetary policy transmission mechanism channels as deflation ends, as well as on inflation and policy expectations, which can be difficult to ascertain. Thus, clear cut answers to the implementation choices are elusive, and we conclude that in many respects, the BoJ will need to feel its way forward.

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<sup>2</sup> Much research has focused on the different issue of whether monetary policy—a massive expansion of liquidity, targeting the price level or inflation, exchange rate depreciation, or some combination—could eradicate deflation and deflation expectations. For example, see Krugman (1998), Eggertsson (2003), and Eggertson and Ostry (2005).

The paper is organized as follows. Section II reviews the BoJ's present monetary policy framework—quantitative easing and the anti-deflation objective. Sections III and IV discuss post-reflation options for the monetary regime and operations respectively. Section V discusses implementation of the two proposed adjustments in the monetary framework, and Section VI concludes.

## **I. THE CURRENT MONETARY POLICY FRAMEWORK**

To illustrate the challenges that monetary policy will face post-reflation, we begin by discussing the current policy framework and how it has evolved in the context of persistent deflation. The present monetary framework—indeed, any such framework—can be defined as comprising a monetary regime and a set of monetary operation arrangements, where the regime is defined by the choice and clarity of the nominal anchor, and operations arrangements cover policy implementation. We use this conceptual framework to describe the choices facing Japanese monetary policy.

### **A. The Monetary Regime**

Japan currently practices a unique “anti-deflation” monetary regime tailored to restoring inflation and maintaining financial stability given its circumstances of deflation. Under typical circumstances, central banks are mainly preoccupied with keeping inflation and inflation expectations from rising above levels consistent with price stability. In Japan, by contrast, the challenge has been to *lift* inflation and inflation expectations. In March 2001, the Bank of Japan adopted a “quantitative easing” policy, with the stated objective of “preventing prices from declining continuously as well as preparing a basis for sustainable economic growth.” The BoJ is committed to maintain the current regime at least until two necessary conditions are fulfilled: (i) deflation ends and (ii) most Policy Board members forecast positive inflation. Financial stability is supported under this regime because BoJ operations have provided banks with substantial excess reserves, ensuring that they have ample liquidity in the event of financial disruption.

In October 2003, the BoJ took steps to clarify its commitment to ending deflation. In particular, it clarified the necessary conditions for ending quantitative easing: the tendency for core CPI inflation to be positive should be confirmed over a few months, and many BoJ board members would need to forecast positive inflation. It also stressed that there may be circumstances under which the BoJ would maintain quantitative easing even if these conditions were met.

### **B. Monetary Operations Arrangements**

Prior to March 2001, the BoJ's operational target was the unsecured OCR, which is an interbank money-market rate. Following monetary policy meetings, the BoJ would announce a target for the call rate and then use its instruments to guide the rate toward that target. The target rate was normally positive, but between January 1999 and August 2000, a “zero interest rate policy” was adopted with the aim was to “encourage the uncollateralized overnight call rate to move as low as possible.” During this period, the rate was effectively zero. In August 2000, the OCR was raised to 0.25 percent.

In March 2001, the BoJ moved to quantitative easing by targeting the level of current account balances (CABs) at the BoJ, which are bank and nonbank reserves.<sup>3</sup> The BoJ has stressed that it will provide liquidity in excess of the target if liquidity demand spikes, and has done so on occasion. In this environment, the OCR has declined to about zero.

The monetary operations arrangements include an array of instruments for managing the level of CABs: repos and reverse repos as well as outright purchases and sales of treasury bills, financing bills, commercial paper, and long-term government bonds. Counterparties in such operations include banks, securities companies, money market brokers (*tanshi* companies), and other financial institutions. The BoJ also has a Lombard-type lending facility for loans against eligible collateral at the official discount rate (now 0.10 percent), which acts as a ceiling on market rates. Banks are subject to reserve requirements that range from 0.005 percent to 1.3 percent, and which are satisfied by holdings of CABs.

### **C. Monetary Developments Under Quantitative Easing**

Quantitative easing has induced a massive rise in reserves. Between March 2001 and March 2004, the CAB target was raised nine times, boosting CABs sharply from about ¥5 trillion to about ¥35 trillion (Figure 1). The main counterpart on the BoJ's balance sheet has been purchases of government securities, especially government bonds. As one consequence of the policy, the overnight rate has remained at zero and longer-term money market rates have been very low.

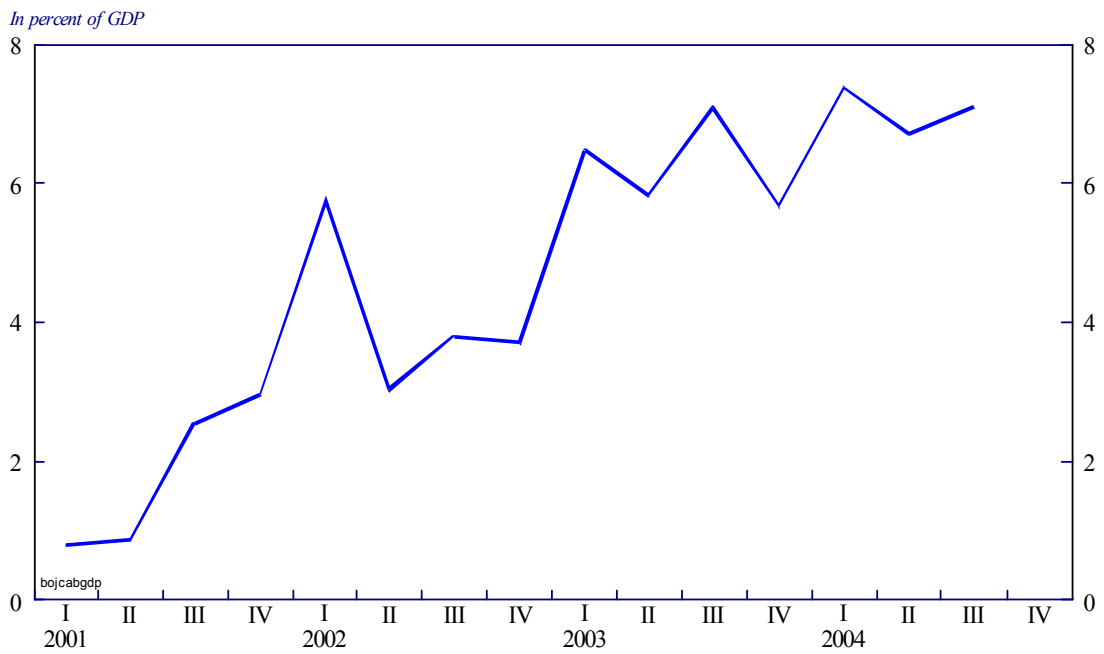
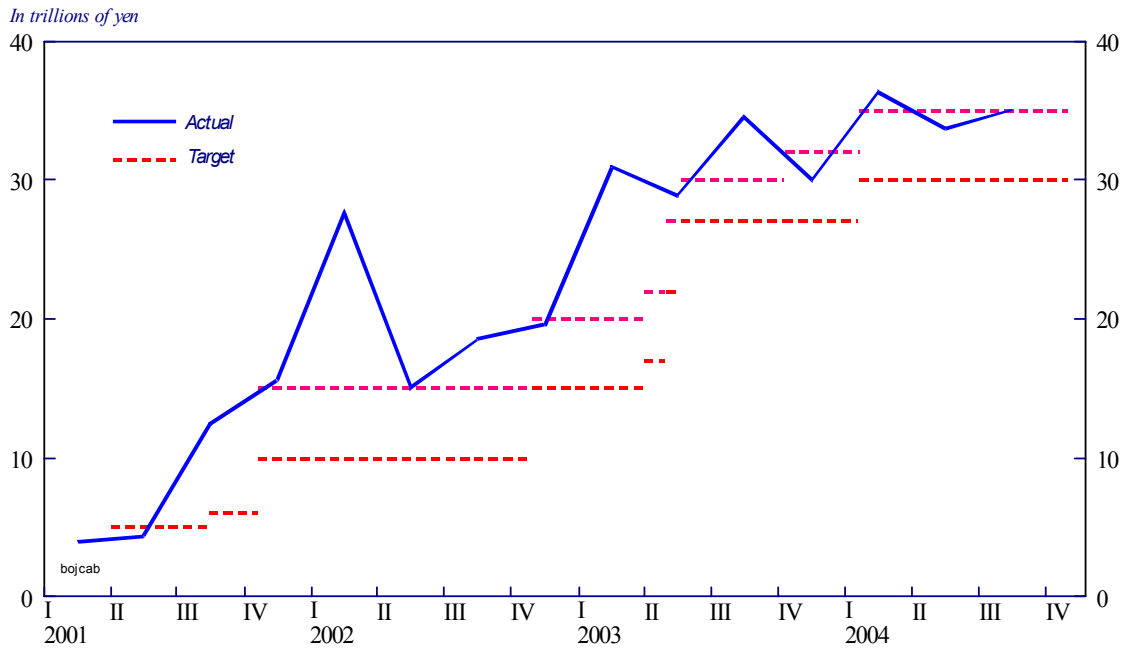
Another influence on monetary conditions has been massive foreign exchange market intervention, which totaled a record ¥35 trillion between January 2003 and March 2004. These operations, which coincided with a period of upward pressure on the yen, and thus an incipient tightening of monetary conditions, comprising selling of yen (mainly for dollars). Such interventions are routinely sterilized through issuance of FBs for the full amount of (e.g.) yen sales. While interventions potentially influence monetary conditions, they are not decided upon by the Bank of Japan: instead, foreign exchange policy and the timing and size of any interventions are decided upon by the Ministry of Finance (MoF). The BoJ's role is to execute intervention operations as agent of the MoF.

The large increase in CABs and zero short-term rates have coincided with a decline in call market activity that has compressed dealing capacity in the money market (Figure 2). In

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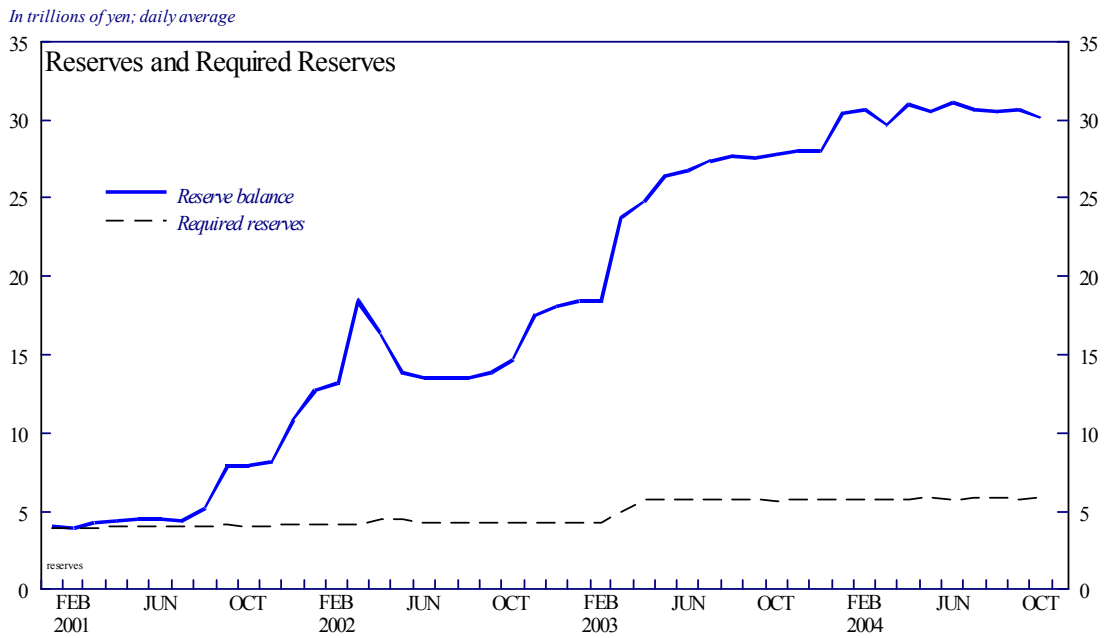
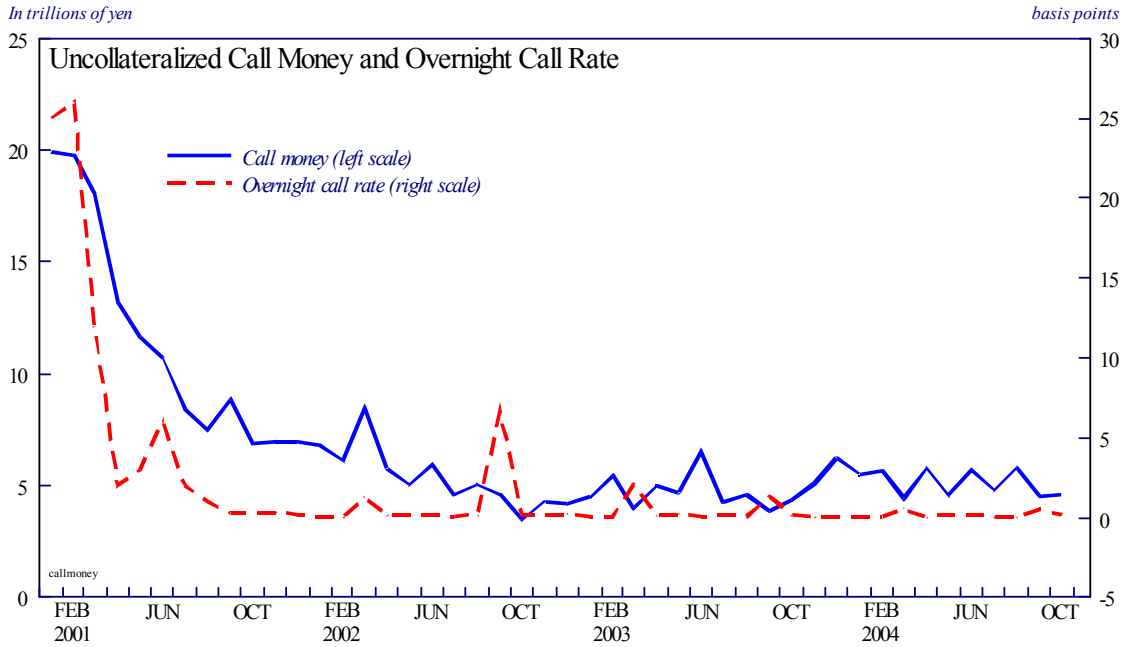
<sup>3</sup> Current account balances do not pay interest and held by domestic (major and regional) and foreign banks, domestic and foreign securities companies, securities finance companies, and money market brokers (*tanshi* companies), stock exchanges and bankers associations. As of end-March 2000, about 676 institutions held current accounts.

Figure 1. Japan: Current Account Balances at the BOJ, 2001-2004



source: Bank of Japan.

Figure 2. Japan: Money Market and Reserves, 2001–04



Source: Bank of Japan.



particular, uncollateralized overnight call money outstanding has declined sharply as institutions turned increasingly to the BoJ for money market funding, especially at longer terms. This has occurred because interest rates fell to such low levels that returns on lending interbank money could not cover dealers' costs.<sup>4</sup> With money dealing a loss-making business, the number of *tanshi* broker/dealers fell by more than half (to three) compared with the pre-quantitative easing period.

Much research has focused on the effects of quantitative easing. There is broad agreement that the policy has supported financial stability, by providing banks with ample liquidity. There is less agreement about whether it has had a major effect through the usual monetary policy channels of liquidity and interest rates: with the banking system weak for much of the period, and short-term interest rates virtually zero, those channels have not been as strong as in the past. The policy has arguably had some effect through an expectations channel, however. In particular, increases in CABs may have signaled a reinforced commitment to maintaining accommodative monetary conditions to conquer deflation for a long period of time, and thereby reduced long-term interest rates (the "duration effect"). Available evidence on this score is mixed. Bernanke et al. (2004) find little evidence that recent policy moves have affected expectations of future interest rates, although they do find that the term structure of interest rates has been flatter than predicted by a model. Against this, Okina and Shiratsuka (2003) find some evidence that supports a duration effect. Similarly, Baba et al. (2005) find evidence that policy commitments under the zero rate and quantitative easing policies reduced expected future short-term interest rates.

## II. THE POST-REFLATION MONETARY REGIME

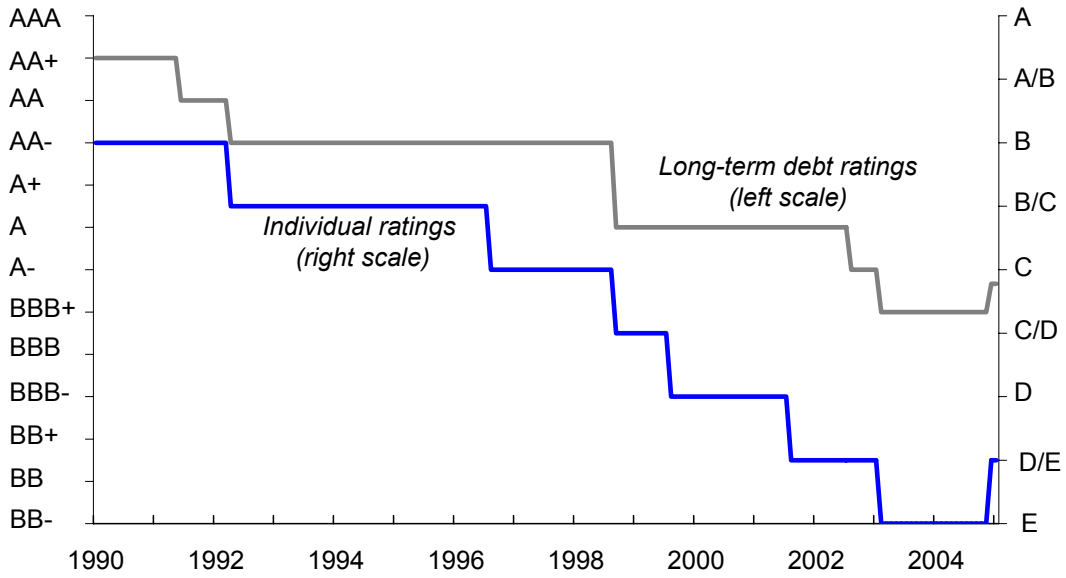
An obvious reason why the monetary regime will need to be adjusted in the post-reflation environment is that the present regime is explicitly geared to ending deflation. A subtler but equally important reason is that the BoJ will then face a standard, symmetric set of tradeoffs that are different from the ones it now faces. In particular, the BoJ is committed to two goals: price stability (ending deflation), and maintaining financial stability. In an environment of deflation, these goals are complementary: easing combats deflation and also limits the risk of financial instability (a similar tradeoff exists between combating deflation and offsetting short-term shocks to economic activity, such as oil price spikes).

Once inflation resumes, tensions between price stability and other policy objectives may arise—as is almost always the case. The significant improvement in the health of bank balance sheets—which is part and parcel of the shift from a deflationary to a low inflation environment—means that financial stability will be less of a policy concern. Indeed, major banks have reduced nonperforming loans and recently received ratings upgrades (Figures 3 and 4). However, at the same time, the resumption of inflation brings into play the standard worry of

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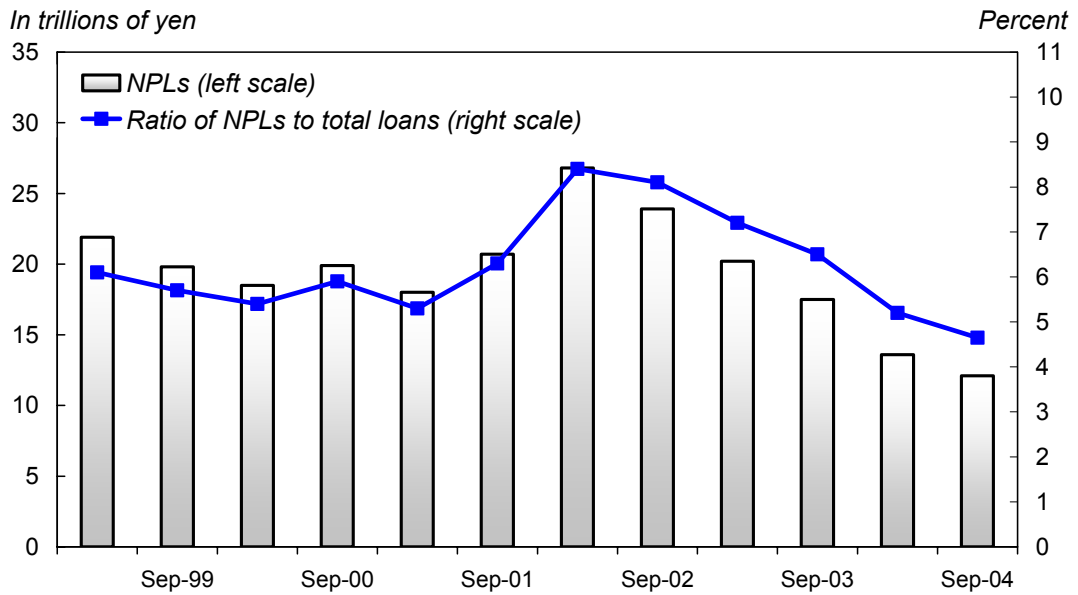
<sup>4</sup> For example, at an overnight rate of one basis point (0.001 percent), lending ¥10 billion yields only ¥273 in interest and brokers' fees of about ¥140. By comparison, deal confirmation system charges run about ¥200 per deal while BOJ-NET funds transfer charges are about ¥40–60 per deal.

Figure 3. Average Credit Ratings, Major Japanese Banks



Source: Fitch Ratings.

Figure 4. NPLs and Ratio of NPLs to Total Loans (Major Banks)



Source: Financial Services Agency.

central bankers that aggressive liquidity injections to stabilize the financial system in the face of financial shocks could risk compromising price stability. Accordingly, Japan's post-reflation regime will need to carefully balance a commitment to price stability—defined as low, stable and positive inflation—with appropriate flexibility to smooth shocks to financial stability and temporary shocks to economic activity as well.

Thus, policymakers will face the challenge of adjusting the monetary regime to strike the right balance between commitment and flexibility. As deflationary pressures ebb, markets will reassess inflation dynamics. Concerns about inflation pressures could arise, in the near term from monetary stimulus in the pipeline, and in the longer term from the very high level of public debt. At the same time, the BoJ will want to signal clear commitment to prevent a recurrence of deflation by maintaining a sufficiently high level of inflation. In this environment, confusion about the inflation outlook and the BoJ's inflation objectives could translate into volatility in inflation expectations, and thus into volatility in long-term interest rates—an issue of concern both for economic growth and for banks that have large long-term bond holdings.

We assess the adjustments to the monetary regime in response to the resumption of inflation in three steps. First, we present the general monetary regimes that are relevant for post-reflation Japan. Second, we draw on the experiences of other countries to assess the type of regime that would seem appropriate for Japan based both on its economic structure and on the desired balance of commitment versus flexibility in meeting monetary policy objectives. Third, on this basis we propose a new regime (“post-reflation regime”) for Japanese monetary policy, which is a hybrid of its pre-deflation regime and the regimes of inflation-targeting central banks.

### A. Monetary Regimes Generally

In order to cast into sharper light the regime choices for Japan, it is useful to establish a taxonomy of real-life monetary regimes actually practiced by countries. A monetary regime can be defined by the choice and clarity of the nominal anchor (Stone and Bhundia, 2004). Clarity is the degree of transparency and accountability of the commitment to the anchor. The essence of choosing a monetary regime is ascertaining the appropriate balance of commitment versus flexibility, conditional on a country's circumstances. Based on this definition, Stone and Bhundia (2004) organize monetary regimes into six categories. Two of these six categories are relevant for post-reflation Japan:<sup>5</sup>

1. **Full-fledged inflation targeting (FFIT)**—FFIT countries make a clear commitment to an inflation target institutionalized in high degrees of transparency and accountability (Bernanke and others, 1999; Truman, 2003). This clear commitment, in principle,

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<sup>5</sup> The regimes that are not relevant for Japan are: *monetary nonautonomy*, consisting of countries that do not issue an independent currency; *exchange rate anchor*, under which the exchange rate is fixed or fluctuates narrowly around a central rate; *monetary targeting*, in which a money target is the nominal anchor; and “*inflation targeting lite*,” which is practiced by emerging market countries that lack the stable macroeconomic setting and well-developed financial systems needed to adopt a fully credible inflation target.

reduces the room for discretion. In practice, FFIT has proven to be flexible in that actual inflation is outside the targeted range about 30 percent of the time for countries not in disinflation (Roger and Stone, 2005), and it does not seem to entail much cost in terms of output volatility (de Simone, 2002; Truman, 2003). Full-fledged inflation targeting is practiced by thirteen industrial and seven emerging market countries.

2. **Implicit price stability anchor (IPSA)**—IPSA countries maintain price stability but with less transparency and accountability than FFIT countries. IPSA countries have established historical records of low and stable inflation, but have none of the formal accountability mechanisms and few of the transparency institutional elements that define FFIT countries. The institutional modalities and nature and institutional clarity of the inflation commitments of IPSA countries are not as uniform as those of FFIT countries. Singapore, Switzerland, the United States and the European Central Bank (as well as pre-deflation Japan) have IPSA regimes.

The IPSA and FFIT regimes can be used to define an appropriate choice set for Japan's monetary policy framework for two reasons. First, IPSA and advanced FFIT (AFFIT) countries share Japan's level of development, and broadly speaking, its economic and financial structure, at least compared with countries that practice other monetary regimes. Second, IPSA and AFFIT countries lie at either end of a commitment/flexibility spectrum. Central banks in IPSA countries self-report high discretion and low focus on inflation relative to those in AFFIT countries (Table 1). Thus, the monetary regime choice for Japan can be boiled down to choosing a point on the commitment-flexibility spectrum defined by the IPSA and AFFIT regimes.<sup>6</sup>

### **B. Lessons from IPSA and AFFIT Countries for Japan's Post-Reflation Monetary Regime**

The post-reflation regime choice for Japan can be analyzed by examining more closely the features of IPSA and AFFIT countries, then gauging whether Japan more closely resembles the former or the latter. Key to this is an examination of inflation performance. In this regard, the record of IPSA regimes is at least as favorable as those of AFFIT regimes notwithstanding the clearer inflation targets in the latter (Table 2). During 1990-2003, median inflation was about the same between the two groups and was identical if Japan is excluded. Moreover, inflation was more stable in IPSA countries, as gauged by the standard deviation and range.

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<sup>6</sup> In related work, commentators (Krugman, 1998; Truman, 2003; and McCallum, 2000) have explored the question of whether Japan should adopt an explicit inflation target regime, such as in AFFIT countries. However, they have approached the inflation target as a device to get out of deflation, rather than as a method for stabilizing inflation expectations during and after the resumption of inflation. Also, they have generally not delved into specific adjustments to the monetary framework that are of practical importance; we pay attention to these issues below.

Table 1. Central Bank Self-Reported Indices of Inflation Focus and Discretion, 1999 1/

	Inflation focus	Discretion
<i>Advanced Full-Fledged Inflation Targeting Countries</i>		
Australia	94	6
Canada	88	16
New Zealand	94	6
Sweden	100	6
<u>United Kingdom</u>	<u>100</u>	<u>0</u>
Median	94	6
<i>Implicit Price Stability Anchor Countries</i>		
Singapore	19	53
United States	19	84

Source: Fry and others, 2000.

1/ These data are for AFFIT and IPSA central banks surveyed by Fry and others (2000); they are not available for the ECB. The survey was undertaken in 1999. The indicators are valued from 0 to 100 with 100 denoting the strongest focus on inflation and the most discretion.

Table 2. AFFIT and IPSA Countries, Monthly Inflation, 1990-2003

	Regime date	Median	Standard Deviation	Range
<i>Advanced Full-Fledged Inflation Targeting Countries</i>				
Australia	1993-2003	2.4	1.6	6.4
Canada	1991-2003	1.8	1.4	7.0
Finland	1992-1998	1.5	0.8	2.8
Iceland	2001-2003	3.1	2.7	8.0
New Zealand	1990-2003	2.0	1.6	8.1
Norway	2001-2003	1.8	1.5	6.9
Spain	1995-1998	3.0	1.2	3.9
Sweden	1992-2003	1.6	1.4	6.4
<u>United Kingdom</u>	<u>1992-2003</u>	<u>2.6</u>	<u>0.9</u>	<u>3.6</u>
Median		2.0	1.4	6.4
<i>Implicit Inflation Targeting Countries</i>				
Euro Area	1999-2003	2.0	0.5	2.1
Japan	1995-2000	0.0	0.9	3.7
Norway	1992-2000	2.3	0.6	2.9
Singapore	1990-2003	1.7	1.4	5.5
Switzerland	2000-2003	0.9	0.5	1.9
<u>United States</u>	<u>1993-2003</u>	<u>2.6</u>	<u>0.7</u>	<u>2.7</u>
Median		1.8	0.6	2.8

Sources: CPI data are from IFS and regime dates are from Stone and Bhundia (2004).

What is it that allows IPSA countries to have both lower inflation and evidently more policy discretion than the AFFIT countries? Empirical analysis of this issue is limited by the few available observations and short time span of these regimes. However, clues may lie in the economic circumstances of the two groups of countries, which differ in two important ways:

- *The deeper financial systems of IPSA countries may allow monetary policy accountability to be enforced informally rather than formally* (Table 3). Deeper financial systems mean that there are more resources allocated to and greater rewards for monitoring central bank adherence to low inflation (e.g. Fed watchers in the U.S.). This market-based, informal mechanism effectively holds the central bank accountable. By comparison, AFFIT countries tend to have less deep financial systems and thus benefit from more formal accountability modalities.

Table 3. Structural Indicators: Implicit Price Stability Anchor and Full-Fledged Inflation Targeting Countries

Countries	GDP (billion \$)	GDP per capita (\$)	Broad money ratio to GDP	Stock market cap-ratio to GDP	Volume of stocks traded ratio to GDP	Volume of stocks traded (million \$)
			1990-02	1998-02	1998-02	1998-02
<b>Japan</b>	4,248	33,686	113.1	70.7	41.0	2,915,561
<b>Implicit price stability anchor countries</b>						
Singapore	74	20,259	95.5	150.1	84.3	132,988
Switzerland	257	37,166	129.1	171.6	214.6	649,918
Euro Area	6,337	21,874	77.9	45.6	68.2	4,653,338
United States	7,920	29,443	60.8	109.1	242.6	2,393,200
Median	3,297	25,659	86.7	129.6	149.5	1,521,559
Average	3,647	27,186	90.8	119.1	152.4	1,957,361
<b>Full-fledged inflation targeting countries</b>						
Australia	364	19,363	59.1	24.3	57.4	101,588,234
Canada	618	21,303	58.8	76.4	64.3	692,352
Iceland	7	26,553	39.2	36.9	19.0	4,444
New Zealand	53	14,454	80.6	43.3	17.8	22,305
Norway	146	14,454	54.2	31.0	31.0	62,406
Sweden	242	27,380	44.8	82.7	113.6	277,990
United Kingdom	1,236	21,263	87.8	134.2	121.7	14,010,667
Median	242	21,263	58.8	43.3	57.4	277,990
Average	381	20,682	60.6	61.3	60.7	16,665,485

Sources: International Financial Statistics, World Economic Outlook, and World Bank Development Indicators.

- *Many of the AFFIT countries adopted their regime to disinflate or lock in low inflation*—This is suggested by contrasting the inflation performance of the AFFIT countries before and after the year that they adopted FFIT (Stone, 2003). Three of the seven used FFIT to complete disinflation, while the remaining four used this regime to lock in progress in disinflation. In contrast, none of the IPSA countries have had to disinflate in many years.

On the basis of these considerations, Japan would seem to more closely resemble the IPSA countries. Japan has a relatively deep and sophisticated financial system, and it has not experienced double-digit inflation since the early 1970s, in contrast to AFFIT countries.

But Japan also has features that could make a stronger FFIT-style commitment to low and positive inflation advantageous. The first has to do with the recent experience with deflation, which makes it imperative for the BoJ to aim at a level of inflation that is sufficiently above zero to limit the risk that deflation returns. A more explicit inflation objective could help to convince markets of its commitment to maintain positive (but low) inflation. Just as a stronger commitment to low inflation has helped AFFIT countries complete the process of disinflation or lock in disinflation gains, Japan could employ this type of stronger commitment mechanism to complete reflation or lock in reflation gains.

Other unique aspects of Japan pertain to the opposite risk of high inflation. The sizeable monetary stimulus in the pipeline could raise concerns about a potential overshooting of inflation.<sup>7</sup> Also, Japan faces fiscal strains that are potentially much more serious than in IPSA countries, with the highest debt/GDP ratio of any advanced country by a significant margin and the debt set to continue rising. This situation could raise market concerns—whether valid or not—that pressure may be put on the BoJ to raise inflation to reduce the debt burden. Markets will be looking to assess potential inflationary pressures and their focus could well turn to these two aspects of Japan's situation.

In sum, Japan's economic structure argues for a flexible IPSA-type regime, while risks to price stability argue for a stronger FFIT-style commitment to price stability. This suggests aiming for a balance between the two regimes. From the starting point of the anti-deflation regime, this means strengthening the BoJ's commitment to price stability to help anchor inflation expectations, while retaining some flexibility to deal with short-term shocks to financial stability and output.

### **C. A Proposed Post-Reflation Regime: An Inflation Objective and Greater Transparency**

Two changes to the current regime could help strengthen the commitment to price stability in a post-reflation setting. These changes are as follows:

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<sup>7</sup> Lebow (2004) calculates potential implications of monetary expansion for the price level.

- *Announce a quantitative inflation objective, but without a preannounced policy horizon.* A quantitative objective would strengthen the commitment to maintain price stability. To maintain flexibility, the BoJ would not specify a policy horizon over which it would commit to keeping inflation near the objective. Thus, in the event that inflation moves away from the objective the BoJ would not be committing itself to bringing inflation back within a specified timeframe.
- *Publish an inflation report.* A report would further strengthen the commitment to the inflation objective and guide market expectations. Inflation reports issued by FFIT countries provide detailed accounts of the impact of monetary policy on inflation (Box 1). Compared with the BoJ reports produced now, this would entail a more frequent and detailed analysis of inflation developments and monetary policy.

### **Box 1. Inflation Reports**

**Inflation reports have emerged as perhaps the key communication vehicle for FFIT countries** (Schmidt-Hebbel and Tapia, 2002; Wyplosz and others, 2003; Leeper, 2003). They provide detailed backward-looking accounts of recent economic and financial developments and their effects on the behavior of inflation relative to the target. Inflation reports also provide forward-looking discussion of expected inflation behavior over the policy horizon. Inflation reports enhance accountability by providing an ex post explanation of forecast errors and the starting point for the current forecast. In addition, when inflation falls outside the target range, inflation reports usually explain the policy measures (if any) to steer inflation back.

**The amount of information conveyed by inflation reports has increased over time** (Roger and Stone, 2005). The early inflation targeters introduced inflation reports only after they committed to this regime. However, by the late 1990s central banks began to introduce an inflation report in preparation for adoption of full-fledged inflation targeting. Other indications of enhanced transparency are the increase in the number of reports per year from an average of 2.7 in 1998 to 3.5 in 2004, and the rise in the share of reports with a quantitative forecast of inflation from 75 percent in 1998 to 100 percent in 2004. Finally, the share of reports that included “fan” charts of their inflation outlooks to illustrate in a stylized, probabilistic fashion the amount of uncertainty surrounding their outlooks over the policy horizon increased from 29 percent in 1998 to 84 percent in 2004.

**Two of the IPSA central banks publish reports that resemble the inflation reports of FFIT countries.** The Swiss National Bank discusses inflation and an inflation forecast in its Quarterly Bulletin but coverage is less complete relative to the inflation reports of FFIT countries (Wyplosz and others, 2003). The ECB extensively discusses inflation developments in its Monthly Bulletin.

We term the new monetary regime that would be formed by these two changes “a post-reflation regime” (PRR). These two changes amount to establishing a commitment to a nominal anchor (an inflation objective) clearly enough to anchor expectations while allowing enough flexibility to accommodate other objectives. These changes can be viewed as an improved communications strategy for monetary policy.

Introducing an inflation objective entails choices that shape the transparency and accountability of the commitment. Countries with an inflation objective make these choices to balance commitment versus flexibility conditional on their own circumstances. Since the PRR does not entail a full-fledged commitment to an inflation objective, there are no formal accountability aspects. However, there are important choices that pertain to communication and transparency. For Japan, these choices would need to take into account the risk of deflation and the attendant costs if deflation resumed (related to, among other things, the downward rigidity of wages and



the proximity of the zero bound on interest rates). Several of the key choices relevant for Japan—including whether to specify the objective as a point versus a range, and which index to use—are aspects of the FFIT framework. In this connection, the experience of the FFIT countries may offer some perspective (Box 2 discusses these choices for FFIT countries).

Another issue is that some may view the announcement of a specific inflation objective as a radical proposal. But every central bank must have a specific inflation objective in mind; otherwise, it is hard to see how it could set monetary policy. Indeed, the current “anti-deflation” objective implies that the BoJ is aiming for a low, positive inflation rate—although as we note elsewhere, whether it will still be perceived this way when inflation resumes is less clear. The only question, then, is whether it should make its inflation objective public. This question hinges on the tradeoff between transparency and flexibility: announcing the inflation objective, rather than keeping it private, increases transparency but reduces flexibility to miss or change the objective, at least without providing some credible explanation.

Accordingly, introducing a medium-term inflation objective and more transparency would make the PRR rather more transparent than IPSA but keep it qualitatively less rigid than most FFIT regimes (Table 4). The announced inflation objective and inflation reports would make PRR more transparent than IPSA. With no commitment to keeping inflation at or near the objective over a fixed horizon and with no formal accountability modalities, it would be less constraining than FFIT. At the same time, PRR would be more constraining compared to the IPSA regimes for countries that have one-sided (or no) ranges. In other words, the PRR would reduce short-run flexibility at the margin vis-à-vis IPSA countries, at least until the objective is fully credible.

An evident drawback of the PRR is that the BoJ could lose credibility if it either undershot or overshot the objective, although this risk may not be as serious as it first appears. Undershooting could be a significant risk if it were introduced while the banking system, and thus the monetary policy transmission mechanism, was still weak. Conversely, a potential *overshooting* of inflation may be a risk as well under an inflation target given the potential inflationary pressures noted above. However, the flexibility of the proposed PRR, as well the experience of FFIT countries, suggests that missing the objective need not damage credibility. FFIT countries have missed their targets regularly and still no country has dropped this regime.<sup>8</sup> The key is likely for a central bank to provide a credible explanation of why deviations from the inflation objective occur and how it envisions the path back to the inflation objective. In any event, the BoJ could lose credibility even if it did not reveal its inflation objective, if inflation or deflation reached levels that the public saw as incompatible with price stability.

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<sup>8</sup> Indeed, Brazil and South Africa overshot their inflation targets by 7 and 6 percent respectively without doing apparent damage to the credibility of their commitment.

## Box 2. Inflation Target Parameters<sup>1</sup>

Inflation target parameters vary across countries, and to some degree across time, in the numerical specification of the inflation target, the time horizon over which the target is meant to be achieved, and the definition of the inflation measure being targeted. This overview of inflation target parameters covers all full-fledged inflation targeting countries.

### *Inflation target range*

**Most inflation targeting countries have adopted point targets within symmetric ranges for inflation outcomes.** Three countries have a point target, Australia has a “thick band” target one percentage point wide, and others set a target range without specifying a point target. Some countries define a target range but do not specify a mid-point of the range as the official target. In a few cases, particularly during disinflation phases, countries have specified upper but not lower bounds to target inflation. The levels and range widths for inflation targets are quite similar across countries. With few exceptions, medium-term target levels for 12-month inflation rates are between 1 and 3 percent, and ranges are usually close to 2 percentage points wide (i.e., the target rate plus or minus 1 percentage point).

### *Inflation target horizon*

**The inflation target horizon is the period over which the central bank holds itself accountable for meeting its target.** For the target to be meaningful, a basic requirement is that the horizon take into account the lags between policy actions and their effects on inflation outcomes. A longer horizon can give the central bank more flexibility for taking other policy objectives into account without subordinating the inflation objective and allows the central bank to vary the pace of planned adjustment of inflation toward the central part of the target range.

**Countries at their desired long run level of inflation have multiyear or indefinite horizons.** In practice this means that for these countries the target ranges apply on a continuous basis. Interestingly, target horizons appear to have been getting longer. Most inflation targeters appear to practice “flexible” inflation targeting, which requires a policy horizon long enough to capture the impact of monetary policy on inflation through movements activity and output gaps.

### *Inflation target index*

**The target measure of inflation is based on the Consumers Price Index (CPI) in all inflation targeting countries.**<sup>2</sup> In a few countries, the target measure has been defined to exclude interest costs. In some other countries, the inflation target has been defined as a measure of “core” or “underlying” inflation excluding the impact of various kinds of distortions. The trend has been away from setting targets in terms of core inflation measures and now only a few countries do so. However, core inflation measures continue to play key roles in both policy formulation and policy accountability, even if the target is defined in terms of headline inflation.

<sup>1</sup>This box is based on Roger and Stone (2005); detailed discussions of inflation target parameters can also be found in Haldane (1995), Schaechter *et al* (2000) and Castelnuovo and others (2003).

<sup>2</sup>Statistical issues such as which measure of inflation to use and how to deal with technical change are involved in formulating an inflation target. For discussion of statistical issues see Carson *et al.*, eds (2002).

Table 4. Commitment-Flexibility Aspects of Monetary Regime Options for Post-Reflation Japan

	Commitment to: Price stability	Flexibility for:	
		Financial stability	Short-term output stability
Full-fledged inflation targeting (FFIT)	Commitment with full transparency and accountability	Less flexible than IPSA or PRR	Less flexible than IPSA or PRR
Implicit inflation targeting (IPSA)	Commitment with moderate transparency	More flexible than FFIT or PRR	More flexible than FFIT or PRR
Proposed post-reflation regime (PRR)	Commitment with considerable transparency	Less flexible than IPSA and more flexible than FFIT	Less flexible than IPSA and more flexible than FFIT

### III. POST-REFLATION MONETARY OPERATIONS ARRANGEMENTS

The switch from an anti-deflation to a post-reflation regime would call for adjustments to monetary operation arrangements. This is not surprising because the monetary regime and operational arrangements go hand in hand. One key adjustment, switching back to the OCR operating target, is uncontroversial because quantitative easing was adopted specifically to counter deflationary pressures, and most observers expect that interest-rate targeting would be readopted when deflation has ended.

Employing the OCR as the operating target after reflation would signal policy intentions more clearly than a quantitative target. For example, under a quantitative target, an injection of liquidity sends an ambiguous signal about the central bank's views and its future policy aims. That is, it could be a response to a temporary increase in money demand, rather than a shift to a more accommodative stance. In addition, aggregate demand, and hence price behavior, bear a clearer relationship to interest rates than to the quantity of excess reserves. While the central bank could explain its motives behind the injection of liquidity, an adjustment in an interest-rate target sends a clearer signal.

All advanced countries utilize a short-term interest rate as the operating target, reflecting its use as a signaling mechanism, (Borio, 1997). Further, all but one FFIT and all IPSA countries have quite similar monetary operations arrangements that include an interest rate operating target (Schaechter and others, 2000). The inflation target or objective is the nominal anchor and the inflation forecast can be viewed as the intermediate target. Changes in the operating target are aimed at keeping the inflation forecast as close as possible to the inflation target or objective. The operating target is a short-term interest rate, sometimes employed with a Lombard-type facility to set a ceiling for market rates. Market-based instruments such as repos and government and central bank securities are used to keep the target interest rate at the desired

level. For example, when inflation expectations move above the inflation target or objective (explicit or implicit), the operating interest rate can be increased by signaling and/or undertaking liquidity-absorbing changes in the monetary instruments. It would make sense for Japan to move back to these types of arrangements once inflation resumes.

#### **IV. IMPLEMENTATION OF ADJUSTMENTS TO THE MONETARY FRAMEWORK**

The timing and modalities of implementing the proposed adjustments in the monetary framework present complex and unprecedented challenges. Implementation of the adjustments would involve, not necessarily in this order:

- recognition that the necessary conditions for ending quantitative easing have obtained;
- announcement that the operating target will shift from CABs to the OCR;
- a reduction in excess liquidity so that the OCR can be used as an operating target;
- a shift to using the OCR as a target;
- announcement of the inflation objective;
- adoption of the inflation objective; and
- publication of an inflation report.

Adjustments to the framework should be implemented with a view to anchoring inflation expectations in a low, positive and stable inflation range and avoiding disruptions to the money markets. The aim will be to avoid an “overshooting” of expectations that could pose potential risks to price stability, as well as to prevent a reversion to deflation. Further, in switching operating targets it will be important to avoid interest rate instability, which could confuse the market’s interpretation of the BOJ’s policy intentions as well as entail economic and financial costs.

However, the high degree of uncertainty regarding the monetary transmission process—which ultimately determines the connection between the operating target and the nominal anchor—greatly complicates implementation of changes to the regime and monetary operations. As noted earlier, the main transmission channel at present may be market views of the BoJ’s commitment to maintaining accommodative monetary conditions for a long period of time (the “duration effect”). Once inflation resumes, the standard monetary transmission channels via interest rates, liquidity, and inflation expectations should kick in. Indeed, the improvements in bank balance sheets suggest that interest rate and liquidity channels may soon come back to life. However, the speed and form of the change in transmission is highly uncertain. Unfortunately, there is no guidance from recent experience on how to meet the practical challenges in moving out of deflation because no country has made this transition in recent decades.

These difficulties notwithstanding, a logical sequence for thinking about the changes from an anti-deflation to a post-reflation framework could be as follows:

1. Begin to frame the communication of policy more in terms of the inflation forecast and policy implications, and eventually move to an inflation report.

2. Publicly announce attainment of the necessary conditions for ending quantitative easing, although possibly emphasizing at the same time that quantitative easing will be maintained for the near term.
3. Announce adoption of a medium-term inflation objective and the intention to move back to targeting the OCR.
4. Over time, accommodate or engineer a draining of excess bank reserves to set the stage for the OCR operating target.
5. Shift to using the OCR as an operating target.

These five steps are considered next.

### **Begin to discuss policy in terms of inflation and publish an inflation report**

Recasting communication of policy to put more emphasis on a forward-looking discussion of inflation could begin relatively early. Shifting early to discussing policy in terms of an inflation forecast and the policy implications would have the advantage of providing an early guide to market expectations, and there would not seem to be any disadvantages. Further, publishing a full-blown inflation report need not wait for the right conjuncture of price and monetary developments. Indeed, in recent years most inflation-targeting central banks have begun publishing inflation reports *before* introducing formal inflation targets (Roger and Stone, 2005).

The BoJ already publishes most of what comprises inflation reports in FFIT countries, and thus it could simply give a larger role to the discussion of its views on inflation in existing products. One approach could be to add more material on inflation to the BoJ's semiannual "Outlook for Economic Activity and Prices" (the former "Outlook and Risk Assessment of the Economy and Prices"; this would not require the issuance of any new publication). The additional material could include a well-defined central forecast with a forward-looking discussion of policies and the assumptions underlying the forecast. Alternatively, discussion of these issues could be enhanced in its monthly report, although this would be an unusually high frequency: inflation-targeting central banks issue reports at most four times a year.

### **Announce that the necessary conditions for ending quantitative easing are in place**

In line with the BoJ's past announcements, the necessary conditions for ending quantitative easing are several months of positive year-on-year inflation and forecasts of positive inflation by the majority of BoJ Board members. The BoJ could emphasize at that point that it may maintain quantitative easing for some time depending on the prevailing economic and financial environment. Specifically, it could stress that quantitative easing will be maintained until positive inflation is firmly entrenched.

An argument could be made that it would be preferable to make the announcement after the conditions for ending quantitative easing are in place to allow for a possible unexpected change in the situation. However, this would be a move in an undesirable direction—toward less transparency, rather than more. Moreover, waiting could induce undesirable volatility in

expectations, as markets will be closely watching inflation developments and attempting to deduce the BoJ's beliefs and intentions.

### **Announce adoption of an inflation objective and prospective readoption of the OCR**

Should the BoJ announce the new inflation objective at the same time as the necessary conditions for ending quantitative easing are acknowledged? Or should it wait, say until inflation is close to or within the intended objective?

The answer is not clear cut. On the one hand, the new objective may not be wholly credible if markets see the BoJ as still lacking the ability to attain the inflation objective owing to lingering weaknesses in the transmission mechanism. This would militate in favor of waiting, perhaps until actual and expected inflation are close to or within the objective. On the other hand, the absence of an inflation objective could lead markets to interpret the announcement about necessary conditions for ending quantitative easing as an implicit signal by the BoJ that it was concerned about an undue rise in inflation or intended to tighten soon. This would militate in favor of an early announcement, to mitigate any such concerns.

Regardless of the timing, the announcement of changes in the monetary framework would have two elements. The first is introduction of the new inflation objective regime, comprising a range or point and an inflation index (Box 2). As stressed earlier, the case for a flexible commitment to an inflation target suggests that an open-ended horizon would be desirable. In making the announcement, it would be essential to emphasize the open-ended nature of the commitment. It would also be important to stress that the promulgation of an inflation objective is meant to help guide expectations, rather than to put more emphasis on price stability at the expense of other objectives such as output stability and financial stability (which would usefully remain among the BoJ's objectives in the post-reflation world).

The second element is the intention to switch from the quantitative operating target to an interest rate target. It would make sense to announce this change before it is introduced to give markets time to make technical adjustments as well as give the public time to get used to the idea of a new policy signal. The BoJ could announce that it will make the switch when demand in the money market is sufficient to push up short-term interest rates to a level where they can serve as a policy signal.

### **Draining of excess bank reserves**

Excess reserves will need to diminish before the OCR can be used as the operating target. Presumably, overnight rates would remain around zero if excess reserves declined only slightly, because banks would still be in a position of having excess liquidity. Accordingly, excess reserves will need to decline to a level that gives financial institutions incentive to borrow from each other more actively in the interbank markets. This more active borrowing in turn would allow the OCR to rise to levels such that it can serve as a policy signal. More active borrowing will result from some combination of credit expansion that leads banks to use up excess

liquidity, autonomous factors such as movements in fiscal funds and fluctuations in outstanding bank notes, and liquidity absorption interventions by the BoJ.<sup>9</sup>

The challenge for the BoJ will be to decide how actively it should drain excess reserves to engineer a tightening of monetary conditions. As credit demand picks up (whether from cyclical or structural factors) banks will become willing to lend out funds at higher rates. Inevitably, this will lead to a decline in excess reserves. If the BOJ passively maintains its current portfolio of liquidity-providing securities, then the resumption of an OCR sufficiently high to serve as a policy signal may take some time (although autonomous fluctuations in fiscal and other flows could provide opportunities to reduce excess liquidity here and there). Conversely, if the BoJ plays a more active role and absorbs liquidity by allowing its short-term liquidity providing operations to unwind, then current account balances will shrink and the OCR will rise sooner.<sup>10</sup> Indeed, the BoJ has outstanding a substantial amount of temporary funds-providing operations; merely ceasing or scaling back such operations would allow excess reserves to fall over time.

Overall, the main tradeoffs facing monetary operations would seem to revolve around how quickly the BoJ wants to move to interest rate targeting. A gradual approach would avoid sending the signal that the BoJ wants to tighten monetary policy quickly, and thereby avoid the possible sharp rise in long-term interest rates that could occur through the expectations channel. In addition, moving slowly would reduce the potential for interest rate volatility, as the BoJ would not need to engage in large liquidity-absorbing operations that could put temporary upward pressure on interest rates. The cost of undue interest rate volatility would be less effective monetary policy implementation as markets try to sort out whether interest rate fluctuations are being driven by policy or by technical factors. Further, a lack of clarity about the future path of short-term interest rates could engender volatility in long-term rates and might reduce the credibility of the new framework.

However, a slow and cautious approach would also mean a protracted period of near-zero short-term interest rates, which might be incompatible with the desirable stance of monetary policy once inflation picks up. In addition, this would mean an extended period during which the BoJ would lack the clearer signaling method of interest rates. This signaling method would be particularly desirable during the transition to the post-reflation regime in light of the high degree of uncertainty about the inflation outlook.

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<sup>9</sup> Another potentially complicating factor would be any decision by the MoF to intervene in the foreign exchange market during the transition. The issue of coordinating monetary and exchange-rate policy is not explicitly addressed here because the Bank of Japan does not play a role in deciding the latter. Of course, it would be desirable for exchange-rate policy to be conducted in a manner consistent with the aims of monetary policy (as arguably has been done in the recent period).

<sup>10</sup> An increase in unremunerated reserve requirements is not considered here, because it is a crude instrument that effectively levies a tax on banks.

How the BoJ would choose to balance these tradeoffs would depend largely on the nature and understanding of the ongoing changes in the strength of the monetary transmission mechanism, as well as on inflation and inflation expectations. As the more standard monetary transmission channels gain traction, and as inflation rises, it would be desirable to move more rapidly to reduce excess liquidity and introduce the rate target than would otherwise be the case. However, changes in the transmission mechanism are especially difficult to get a handle on, and inflation expectations are hard to measure and may be relatively volatile.

Accordingly, there would seem to be no option other than for the BoJ to move cautiously, feeling its way with due attention to changes in the monetary transmission mechanism, the functioning of money markets, and inflation and policy expectations. Indeed, clear communication with the markets will be at a high premium because expectations about inflation and future monetary policy moves will be particularly sensitive to policy announcements during this period.

On balance, this analysis suggests that it might make sense to start with a gradual decrease in liquidity, then drain liquidity more actively once expected and actual inflation are quite close to the objective. That said, there is a risk that this favorable constellation of actual and expected inflation will not occur—moreover, the relationship between inflation and the level of reserves may not be very tight, owing to a still-weak transmission mechanism—which again militates for a flexible approach.

It should also be noted that the BoJ has at its disposal a wide range of tools—temporary and permanent operations in a variety of securities—that it can use to manage the reduction in liquidity. Indeed, one possibility would be to use existing tools to help manage volatility in short-term interest rate during the transition.

### **Adoption of the OCR as the operating policy target**

The final stage is adoption of the OCR as the operating policy target. Depending on how events unfold there could be temporary changes to monetary operations to smooth expectations and money market volatility.

Establishing a corridor for short-term interest rates could be one way to facilitate the move to an OCR operating target while minimizing disruptions, with the lower bound operating as an interim policy target and the Lombard window rate as an upper bound (Kato, 2003–04). The main issue is that some institutions seem to avoid using the Lombard facility, mainly because the official discount rate is well above market rates, and only institutions that have collateral can use it. To date it has been only moderately used, with a maximum of ¥200 billion in borrowing, but this does not mean that it could not be more actively used in the future.

An interest rate on current account balances could be used to set a lower bound and function as an interim operating target. This would set a floor on market rates, help to limit volatility, and quickly establish a positive and controllable interest rate operating target. However, fixing the rate might mean that liquidity shocks would transmit into volatile levels of CABs, which would have hard to predict consequences given that capacity has been reduced in the market. Further,



the interest rate operating target would still need to be ultimately switched from this current account balance rate to a market OCR in the future.

Under a corridor system, the target level for current account balances could be dispensed with, as it would have been superseded by an interest-rate target. At the same time, it would be important to move carefully to ensure that the shift is not perceived as an undue early tightening of monetary policy. One way to do this would be to wait until upward pressure on short-term interest rates is already evident and markets have begun to expect a future tightening. At that point, introducing the corridor system—with judiciously chosen upper and lower interest-rate bounds—would amount to ratifying expectations.

Further, refinements could be made to the reserve requirement system to allow more room for fluctuations in CABs and money market balances during the transition. Such refinements could include a longer reserve maintenance period and lower penalty interest rates for failing to meet reserve requirements (both of which would require revisions to the Law Concerning the Reserve Deposit Requirement System).

Finally, temporary adoption of a BoJ fixed tender rate on one key instrument, e.g., repo operations, as the policy interest rate could be another transitional change prior to moving to an OCR. The advantage would be that it could serve as a clear policy signal, and the OCR would be allowed to vary to help absorb shocks. A disadvantage is that there would be a weaker relationship between the policy instrument and interbank money market conditions. The OCR could be adopted as the policy interest rate once money market volatility diminished sufficiently.

## V. CONCLUSION

Japan's monetary framework will need to change as deflation gives way to inflation. We propose two changes to the monetary framework—enhanced communication about the BoJ's inflation objective, and a shift back to interest-rate targeting—that we believe would be warranted as inflation returns. The enhanced communication strategy of the proposed framework can be thought of as a synthesis of existing frameworks currently applied by central banks. In particular, it is more explicit about inflation objectives than the framework utilized by (say) the U.S. Federal Reserve or the pre-deflation BoJ, but it is less binding than the framework applied by inflation-targeting central banks such as the Bank of England. Our proposed framework could help stabilize inflation expectations during a period when they could be volatile, while giving the BoJ due flexibility to respond to shocks that might arise.

The proposed adjustments to the monetary framework continue in the direction in which the BoJ has been moving in recent years, and thus would not mark a qualitative departure. Indeed, the BoJ targeted interest rates rather than reserves before 2001, and since then has been targeting reserves only because overnight interest rates have been at zero. Moreover, the BoJ has been moving in the direction of greater transparency over time, publishing minutes of monetary policy meetings and its monthly analyses of economic developments with short lags.

In line with this, the BoJ itself sees the implementation of transparency as an evolutionary and ongoing process.<sup>11</sup>

The timing for introducing the proposed adjustments is a trickier matter. While tradeoffs and some elements of sequencing can be identified, timing will be largely determined by the transformation and strength of the monetary policy transmission mechanism and whether markets are more focused on the risk of excessive inflation or on a return to deflation. Accordingly, it is difficult, if not impossible, to identify a precise timing for introducing the various elements of the new framework. Thus, we conclude that the BoJ will need to feel its way forward.

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<sup>11</sup> See Appendix I in “Japan: Financial System Stability Assessment,” (IMF Country Report No. 03/287, September 2003) which provides an assessment of the transparency of monetary policy vis-à-vis the *Code of Good Practices on Transparency in Monetary and Financial Policies*. The assessment found that its observance of these practices met a high standard. In addition, minutes from recent Policy Board meetings have included discussion of possible further enhancements to communication (see in particular minutes from the October 29 and November 17–18, 2004 meetings).

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