BOJ
Reports & Research Papers

June 2012

Money Market Operations in Fiscal 2011

Financial Markets Department

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Financial Markets Department, Bank of Japan

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I. Summary

This paper explains the money market operations conducted by the Bank of Japan in fiscal 2011.

During fiscal 2011, the Bank pursued powerful monetary easing under "the comprehensive monetary easing policy." The Bank maintained the virtually zero interest rate policy and repeatedly increased the maximum amount outstanding of the Asset Purchase Program, introduced in October 2010, on a significant scale from about 40 trillion yen to about 65 trillion yen. In order to ensure financial market stability, the Bank provided ample funds to domestic markets. With regard to the provision of foreign currency funds, the Bank took coordinated actions with major central banks, such as a reduction of interest rates on the U.S. dollar funds-supplying operation. The Bank also made active contributions as the central bank, continuing and enhancing support to strengthen the foundations for economic growth and implementing support for financial institutions in disaster areas affected by the Great East Japan Earthquake.

Regarding the money market operations conducted under these policies, first, to pursue powerful monetary easing, the Bank made steady progress in terms of the Program with the fixed-rate funds-supplying operations against pooled collateral and purchases of various financial assets such as Japanese government bonds (JGBs), treasury discount bills (T-Bills), CP, corporate bonds, exchange-traded funds (ETFs), and Japan real estate investment trusts (J-REITs). The amount outstanding of the Program increased by 17.1 trillion yen during fiscal 2011 and reached 48.9 trillion yen at the end of fiscal 2011.

Second, in response to changes in the current account balances at the Bank caused by treasury accounts and others, the Bank conducted the variable-rate funds-supplying operations as necessary. Against the backdrop of the Bank's provision of ample funds including those through the Program, market confidence in funding conditions was maintained throughout the year. The uncollateralized overnight call rate remained in line with the guideline for money market operations, and longer-term interest rates declined to extremely low levels.

Third, to address heightened tensions in global financial markets, the Bank continued to offer the U.S. dollar funds-supplying operations. In November, in response to significant rises in U.S. dollar funding costs in global money markets, the Bank, in cooperation with five other central banks -- namely, the Bank of Canada, the Bank of England, the European Central Bank, the Federal Reserve, and the Swiss National Bank -- took measures to enhance the capacity to provide liquidity support to the global financial system, by reducing interest rates on the U.S. dollar funds-supplying operations and establishing bilateral liquidity swap arrangements among the central banks that would enable provision of liquidity in any of their currencies. As a result, U.S. dollar liquidity funding costs, mainly in foreign exchange swap markets, declined significantly after the beginning of 2012.

This paper first explains developments in financial markets and the conduct of money market operations. It then discusses changes in the Bank's balance sheet as a result of the money market operations. Last, the paper describes the conducts of individual measures for the money market operations.

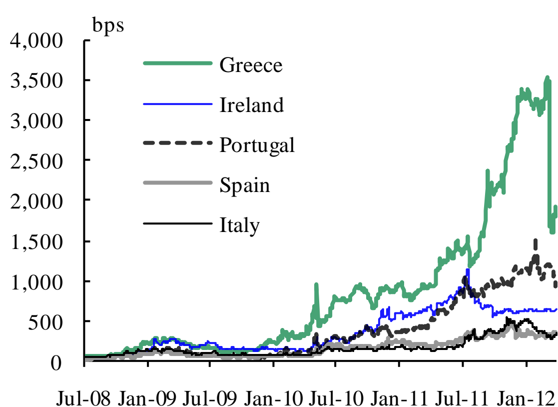
II. Developments in Financial Markets and Conduct of Money Market Operations

This section contains an overview of financial market developments and money market operations in fiscal 2011.

A. Developments in Global Financial Markets

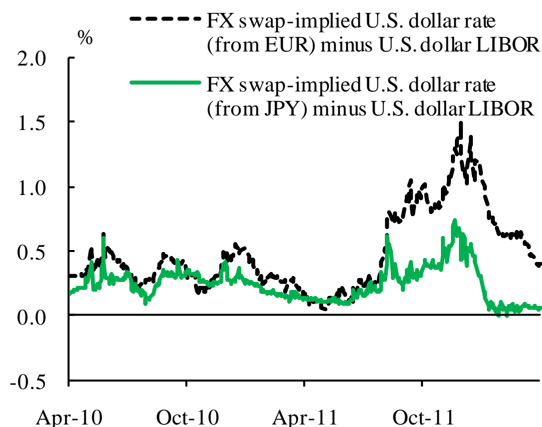
Strains in global financial markets increased during fiscal 2011, primarily because of increasing concerns about the European debt crisis since fiscal 2010. These concerns spilled over to euro zone countries including relatively large ones; against the background of growing uncertainties over Greek debt restructuring, yields on government bonds of some European countries, including Italian and Spanish government bonds, rose sharply in July 2011 (Chart 1). Falling prices of government bonds, broadly seen in European countries, led to downgrades of ratings of European financial institutions that held large quantities of these bonds. This made lenders more cautious about providing funds, mainly in the U.S. dollar money market and the foreign exchange swap market, with concerns about counterparty risks against European financial institutions. Although steps were taken to stabilize financial systems by euro zone countries, they failed to eliminate concerns over the prospects among market participants, and thus U.S. dollar funding costs rose significantly toward the end of 2011 (Chart 2).

Chart 1: Spreads for European Government Bonds (10-Year)



Notes: 1. The yield for government bonds issued by European countries minus those issued by Germany.
2. The spreads for Greek bonds narrowed significantly after the restructuring of government debt in March 2012.

Chart 2: U.S. Dollar Funding Pressure in the FX Swap Markets (3-Month)

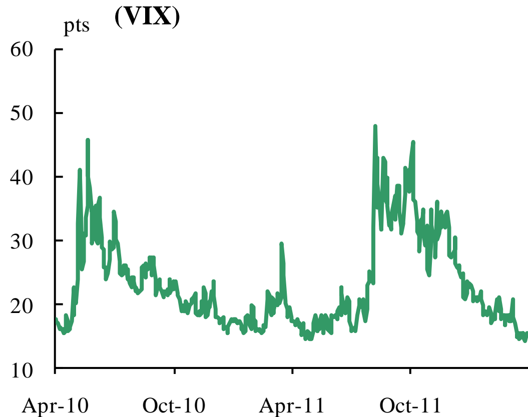


Note: The FX swap-implied U.S. dollar rate from EUR (JPY) is the total funding cost of raising EUR (JPY) at EUR (JPY) LIBOR and converting the proceeds into U.S. dollars through an FX swap transaction.

Global investors, under these circumstances, in general adopted a more cautious attitude to investing in risk assets toward the end of 2011. Stock prices in the United States and Europe exhibited increasing nervousness in the form of higher implied volatility of U.S. stock prices (VIX; Chart 3), which is sometimes called the "investor fear gauge," and experienced large swings in reaction to developments in the European debt crisis and speculation about its outcomes (Chart 4). In the United States and Europe, spreads widened between corporate bond yields and government bond yields, mainly those for the financial sector (Chart 5). Meanwhile, long-term government bond yields in these areas declined significantly against the backdrop of monetary easing by the Federal Reserve, increasing preferences for safe assets among investors, and renewed concerns about a possible slowdown of the U.S. economy, about which investors seemed to have been optimistic before. Long-term government bond yields were at historically low levels, even below those seen immediately after the failure of Lehman Brothers in 2008 (Chart 6).

In early 2012, strains in the markets were alleviated somewhat as the Bank and other major central banks took coordinated measures (described below) and the European Central Bank supplied ample funds through the 3-year long-term refinancing operations (LTROs) with full allotment (see Box 1). Pessimistic prospects regarding the U.S. economy receded somewhat after a series of economic indicators that outperformed market expectations. In response to these, investors' appetite for risk assets was restored somewhat, as seen in significantly reduced U.S. dollar funding costs in the markets and in the VIX being at low levels seen in early fiscal 2011. Stock prices were on a rising trend, with the Dow Jones industrial stock average in the United States crossing above 13,000 for the first time since the Lehman Brothers failure. Yield spreads between corporate bonds and government bonds narrowed in the United States and Europe. Meanwhile, long-term government bond rates remained low in both areas.

Chart 3: Implied Volatility of U.S. Stock Prices (VIX)



Note: Implied volatility of the S&P500 index over the next 30-day period.

Chart 4: Stock Prices

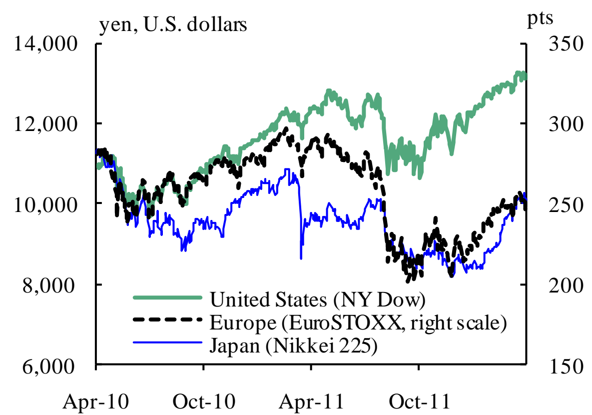
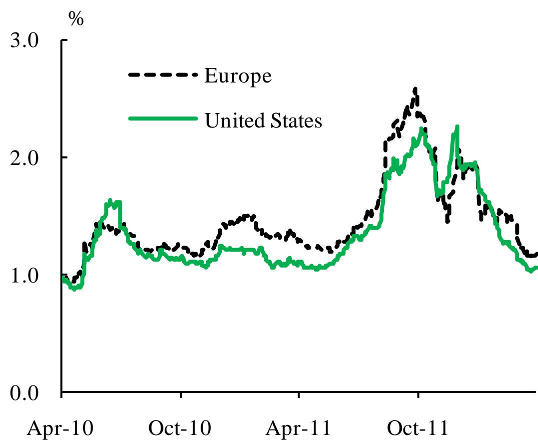
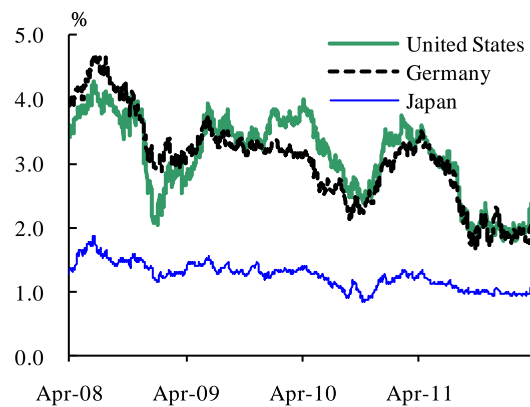


Chart 5: Yield Spreads between Corporate Bonds and Government Bonds



Note: Average yield spreads of bonds that are AA-rated by Fitch, Moody's, or S&P, and with a residual maturity from three to five years.

Chart 6: 10-Year Government Bond Yields



B. Conduct of Money Market Operations by the Bank

The Bank made policy decisions described below during fiscal 2011.

The Bank has pursued powerful monetary easing under the comprehensive monetary easing policy since October 2010. Three specific decisions were made at the Monetary Policy Meetings (MPMs) in October 2010: first, clarification of the Bank's virtually zero interest rate policy by changing the policy target rate for the uncollateralized overnight call rate to "around 0 to 0.1 percent"; second, explicit commitment to maintain the virtually zero interest rate policy until the Bank judges that price stability is in sight; and third,

establishment of the Asset Purchase Program, through which the Bank purchases a wide range of financial assets. The Bank also took actions necessary to ensure stability of financial markets and strengthen the foundations for economic growth.

In addition to maintaining these measures, the Bank made decisions to further enhance monetary easing at the MPMs held on August 4, 2011, October 27, 2011, and February 13 and 14, 2012. On August 4, the Bank increased the total size of the Program by about 10 trillion yen to about 50 trillion yen in order to ensure a successful transition from the recovery phase following the earthquake disaster to a sustainable growth path with price stability. On October 27, the Bank increased it by about 5 trillion yen to about 55 trillion yen. On February 13 and 14, the Bank clarified its monetary policy stance in order to overcome deflation and achieve sustainable growth with price stability, by publishing "the price stability goal in the medium to long term." The Bank also increased the total size of the Program by about 10 trillion yen to about 65 trillion yen (Chart 7), so as to further support positive developments from the financial side and better ensure the economy's return to a moderate recovery path, amid continued high uncertainty surrounding economic developments both at home and abroad. The Bank announced its intention to complete the increased purchases by around the end of 2012.

On November 30, 2011, the Bank, in cooperation with five other central banks -- namely, the Bank of Canada, the Bank of England, the European Central Bank, the Federal Reserve, and the Swiss National Bank -- reduced the interest rates by 0.5 percentage point on the U.S. dollar liquidity swap arrangement with the Federal Reserve and the U.S. dollar funds-supplying operations, in order to enhance their capacity to provide liquidity support to the global financial system to address heightened pressures in global money markets. The applicable rate on the operations, which was initially the U.S. dollar overnight index swap (OIS) rate plus 1 percentage point, was changed to the U.S. dollar OIS rate plus 0.5 percentage point.

Regarding the Fund-Provisioning Measure to Support Strengthening the Foundations for Economic Growth (hereafter the Growth-Supporting Funding Facility), the Bank established a new line of credit of 500 billion yen for equity investments and asset-based

lending (ABL) at the MPM held on June 13 and 14, 2011, with a view to further encouraging financial institutions' efforts. The Bank, in addition, enhanced the Growth-Supporting Funding Facility both in terms of the yen and a foreign currency, and increased the total amount of loans by 2 trillion yen, from 3.5 trillion yen to 5.5 trillion yen, at the MPM held on March 12 and 13.

To support restoration and rebuilding of the disaster area affected by the Great East Japan Earthquake from the financial side, the Bank decided at the MPM held on April 28, 2011 to introduce the funds-supplying operation to support financial institutions in disaster areas.

Chart 7: Increases in Maximum Amount Outstanding of the Asset Purchase Program

trillion yen

	Maximum amount outstanding					Amount outstanding (as of end-Mar. 2012)
	Oct. 2010	Mar. 2011	Aug. 2011	Oct. 2011	Feb. 2012	
Total size	About 35	About 40	About 50	About 55	About 65	48.9
Asset purchases	5.0	10.0 ↑	15.0 ↑	20.0 ↑	30.0 ↑	14.3
JGBs	1.5	2.0 ↑	4.0 ↑	9.0 ↑	19.0 ↑	6.3
Treasury discount bills (T-Bills)	2.0	3.0 ↑	4.5 ↑	4.5	4.5	3.5
CP	0.5	2.0 ↑	2.1 ↑	2.1	2.1	1.6
Corporate bonds	0.5	2.0 ↑	2.9 ↑	2.9	2.9	2.0
Exchange-traded funds (ETFs)	0.45	0.9 ↑	1.4 ↑	1.4	1.4	0.8
Japan real estate investment trusts (J-REITs)	0.05	0.1 ↑	0.11 ↑	0.11	0.11	0.07
Fixed-rate funds-supplying operation against pooled collateral	30.0	30.0	35.0 ↑	35.0	35.0	34.6
3-month term	20.0	20.0	20.0	20.0	20.0	20.0
6-month term	10.0	10.0	15.0 ↑	15.0	15.0	14.6
Intended time to complete the increase	End-Dec. 2011	End-June 2012	End-Dec. 2012	End-Dec. 2012	End-Dec. 2012	—

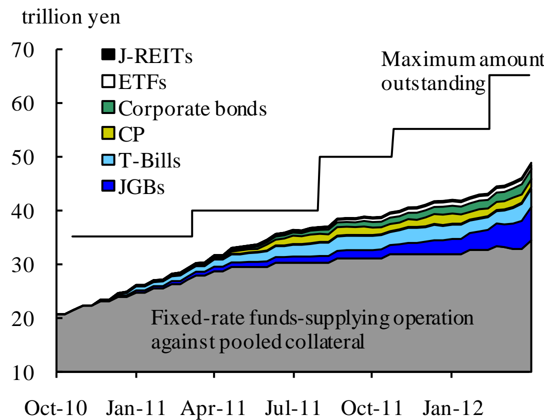
Note: In addition to purchases through the Asset Purchase Program, the Bank regularly purchases JGBs at the pace of 21.6 trillion yen per year.

Based on these decisions, the Bank conducted money market operations as described below.

First, the Bank increased the amount outstanding of the Program as its maximum amount increased repeatedly. With the fixed-rate funds-supplying operations against pooled collateral, the Bank provided longer-term financing of 3-month and 6-month durations at the low interest rate of 0.1 percent. It also carried out purchases of JGBs and other financial assets. As a result, the amount outstanding of the Program increased from 31.8 trillion yen at the end of March 2011 to 48.9 trillion yen against its ceiling of 65 trillion yen at the end of March 2012 (Chart 8).

In more detail, regarding the fixed-rate funds-supplying operations against pooled collateral -- whose ceiling was increased from 30 trillion yen to 35 trillion yen in August 2011 -- the Bank rolled over the maturing loans with the same amount, and offered new loans to increase the amount outstanding. As a result, the balance of the operations stood at 34.6 trillion yen at the end of March 2012, a year-on-year increase of 5.8 trillion yen, and almost reached the increased ceiling. Regarding the purchases of long-term government bonds, the Bank increased the maximum amount outstanding from an initial amount of 2 trillion yen, to 4 trillion yen in August 2011, 9 trillion yen in October, and 19 trillion yen in February 2012. In line with these increases, the Bank accelerated the pace of purchases to a great degree: once a month with 100 billion yen per operation from April to July 2011, once or twice a month with 150 billion yen per operation from August to October 2011, twice a month with 250-300 billion yen per operation from November 2011 to January 2012, and three times a month with 500 billion yen offered per operation from February 2012. The amount outstanding was up 5.4 trillion yen year on year to 6.3 trillion yen at the end of March 2012. The Bank also substantially increased the amounts outstanding purchased of T-Bills, CP, corporate bonds, and other financial assets in year-on-year terms.

Chart 8: Amount Outstanding of the Asset Purchase Program



Note: The amount outstanding before the establishment of the Asset Purchase Program is that of the fixed-rate funds-supplying operation against pooled collateral.

Second, in order to achieve its target rate of around 0 to 0.1 percent for the uncollateralized overnight call rate and ensure stability of financial markets, the Bank provided ample funds to the markets, by utilizing the variable-rate funds-supplying operations against pooled collateral, as the operations mainly addressing short-term surplus or shortage of funds in money markets. With the current account balances at the Bank at substantially higher levels than those in the previous year and perceptions of abundant liquidity stronger among market participants, "undersubscriptions" -- where total bidding amounts fell short of the offered amounts -- occurred in some variable-rate funds-supplying operations against pooled collateral and some operations under the Program mentioned above.

The Bank regularly offered the 1-week and the 3-month U.S. dollar funds-supplying operations, based on the U.S. dollar liquidity swap arrangements with the Federal Reserve, to ensure stability of financial markets in response to increasing stress in the U.S. dollar funding market and foreign exchange swap markets, and associated rises in U.S. dollar funding costs. No bids had been made until October 2011, but as market stress grew further and foreign exchange swap implied U.S. dollar rates rose substantially, small amounts of bids were submitted in November. After the interest rate for the U.S. dollar funds-supplying operations was lowered on November 30, the amounts of bids for the operations increased significantly.

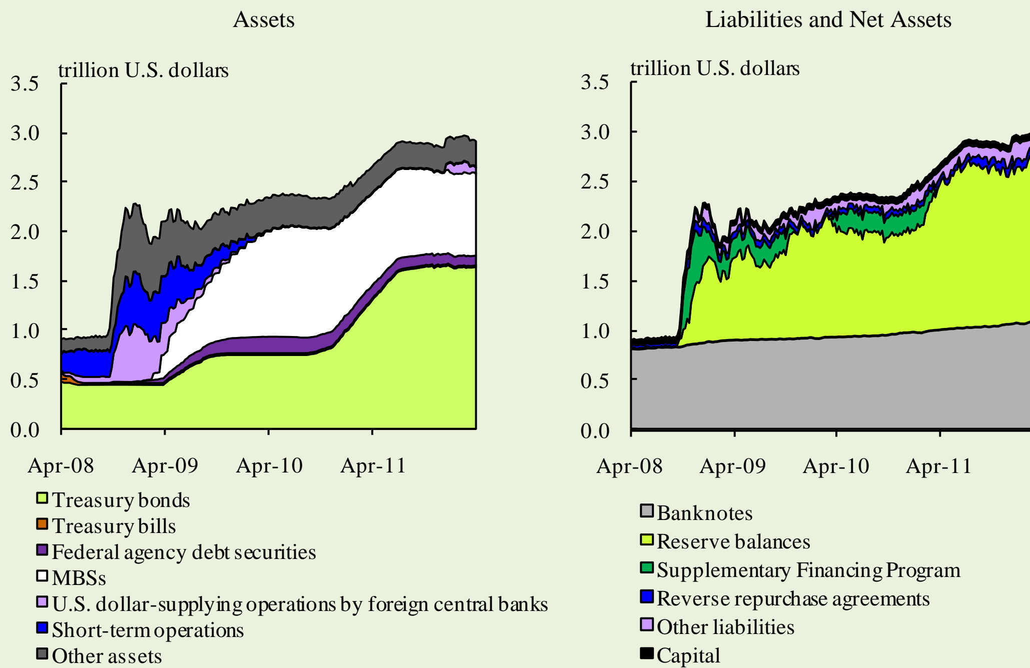
Meanwhile, the Growth-Supporting Funding Facility was conducted once every three months; the funds-supplying operation to support financial institutions in disaster areas, once per month.

Box 1: Money Market Operations Conducted by the Federal Reserve and the European Central Bank

As the Bank of Japan pursued powerful monetary easing as described above, the Federal Reserve and the European Central Bank similarly took measures to reduce official interest rates to extremely low levels, enhance liquidity provisions, and purchase financial assets after the collapse of Lehman Brothers in the fall of 2008. Likewise, various monetary easing measures were adopted in fiscal 2011, which varied across the countries and areas depending on the impairment of function of financial markets and economic and financial environment.

In November 2010, the Federal Reserve introduced the Large-Scale Asset Purchase Program (LSAP2), under which it purchased government bonds until June 2011, resulting in increases in long-term government bonds among its assets, with corresponding increases in reserve balances among its liabilities (Chart 9). After the completion of the new purchases, the Federal Reserve continued to reinvest redemption proceeds from securities held in medium- and long-term government bonds. On September 21, it decided to purchase government bonds with long maturities while selling the same value of government bonds with short-term maturities to extend the maturity of its government bond portfolio (the so-called Operation Twist). It also decided to reinvest redemption proceeds from agency bonds and agency mortgage-backed securities (MBSs) held in agency MBSs. The size of the Federal Reserve's assets was more or less unchanged through these measures, since new assets were purchased by selling and redeeming a commensurate amount of Federal Reserve assets. Meanwhile, after reducing the interest rate on the U.S. dollar funds-supplying operations on November 30, the Federal Reserve recorded increases in the balances of U.S. dollars supplied to other central banks as demand for the operations increased.

Chart 9: Federal Reserve Assets and Liabilities

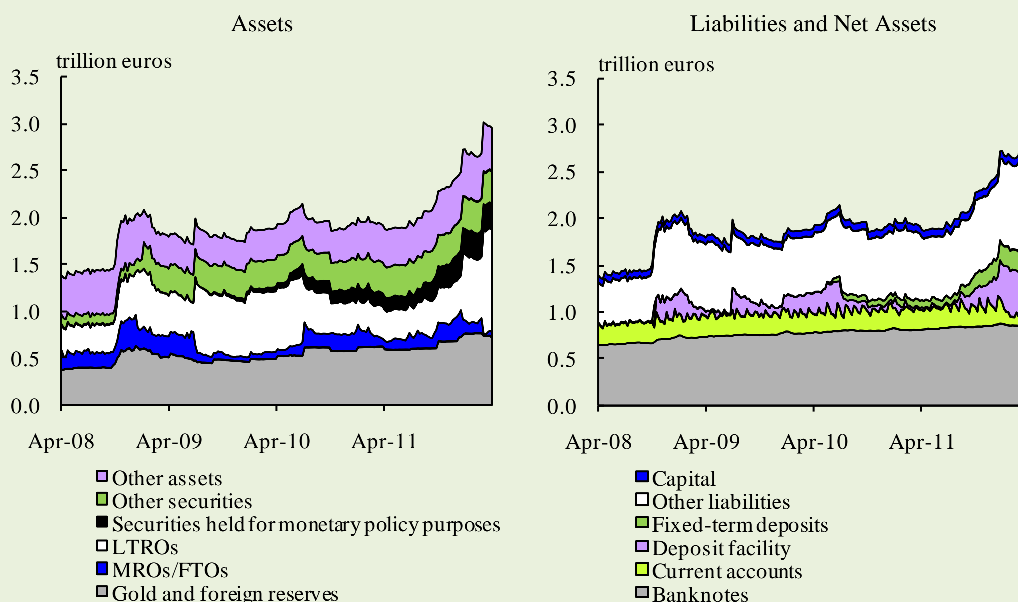


The European Central Bank, in response to impairment of government bond market functions resulting from the European debt crisis, resumed purchases of government bonds and other assets under the Securities Market Programme (SMP) introduced in May 2010. On October 6, 2011, it restarted the covered bond purchasing program, which had terminated in June 2010. According to the increase in the purchases of government bonds and other assets under the SMP, the balance of the deposit facility increased as well in order to absorb the funds supplied by the purchase (Chart 10).

To further enhance the supply of liquidity, the European Central Bank expanded operations to lend unlimited amounts of longer-term funds at the policy rate, LTROs. Six-month LTROs that had not been offered since May 2010 were resumed on August 4, 2011; 12-month LTROs that had not been offered since December 2009 were resumed on October 6, 2011; and new 3-year LTROs were introduced on December 8, 2011. The 3-year LTROs in particular attracted a large amount of bidding, 489.2 billion euros on December 21 and 529.5 billion euros on February 29, 2012. These operations resulted in large increases in the amount outstanding of the LTROs on the asset side, and similarly large increases in deposit facility balances, which can be regarded as excess reserves in essence, on the liability side. On

January 18, 2012, as the European Central Bank reduced the reserve requirement ratio from 2 percent to 1 percent, the current account balance decreased accordingly.

Chart 10: European Central Bank Assets and Liabilities



Notes: 1. The consolidated assets and liabilities of the European Central Bank and the national central banks in the euro area.
2. MROs, FTOs, and LTROs denote the main refinancing operations, fine-tuning operations, and longer-term refinancing operations, respectively.

C. Developments in the Domestic Money Markets and Bond Markets

Against the background of the aforementioned market operations conducted by the Bank, the money markets and the bond markets in Japan, the U.S. dollar funding markets, and other markets developed as follows.

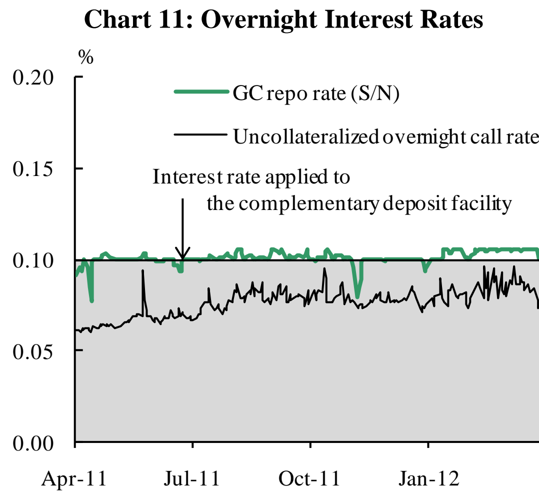
1. Overnight Money Market

During fiscal 2011, the uncollateralized overnight call rate remained in line with the guideline for money market operations ("The Bank of Japan will encourage the uncollateralized overnight call rate to remain at around 0 to 0.1 percent."). There was no day on which the uncollateralized overnight call rate exceeded 0.1 percent (Chart 11). Immediately after the Great East Japan Earthquake, a large amount of funds was raised for a precautionary purpose through the Bank's operations, but as uncertainties over the future

receded and the money market regained stability, perceptions of abundant liquidity grew among market participants. Under these circumstances, funding demand in the call market decreased and the uncollateralized overnight call rate declined temporarily to as low as 0.06 percent. As the funds raised through the Bank's operations immediately after the earthquake gradually came due, the interest rate rose modestly, but maintained stably at levels of around 0.08 percent through the end of March 2012 under the ample provision of funds by the Bank.

The general collateral (GC) repo rate (S/N) declined briefly below 0.1 percent in April 2011 when a large volume of precautionary funds was supplied immediately after the Great East Japan Earthquake, and in November when a large volume of funds flowed into the market after foreign exchange interventions. The GC repo rate, however, basically remained stable at 0.1 percent, the interest rate applied to the complementary deposit facility, or slightly above it throughout the year.

Chart 11: Overnight Interest Rates



Notes: 1. Based on the contract date.
2. Shaded area indicates the Bank's target policy rate for the uncollateralized overnight call rate (around 0 to 0.1 percent).

Box 2: Overnight Interest Rates under the Complementary Deposit Facility and Large Fund Supplies

Overnight interest rates were very stable during fiscal 2011, with various short-term interest rates converging at around 0.1 percent. The convergence was due to the fact that the complementary deposit facility kept these rates from falling significantly below 0.1 percent, while ample supplies of funds by the Bank ensured that rates did not rise significantly above 0.1 percent.

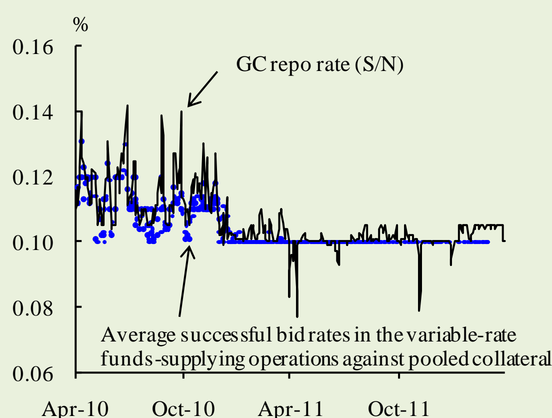
The complementary deposit facility is a monetary operation instrument in which current account balances at the Bank that exceed the required reserves (the so-called excess reserves) are remunerated. During fiscal 2011, the rate applied to the facility was 0.1 percent. With the complementary deposit facility in place, when prevailing market interest rates are below 0.1 percent, market participants raise funds in the market and simply deposit them in their current accounts at the Bank to earn income from the 0.1 percent yield. These transactions lead a rise in market interest rates up to 0.1 percent. The facility is designed to maintain the functioning of the money market, by setting a floor under market interest rates and leaving incentives for market transactions even when the Bank supplies ample funds.

Financial institutions raised funds as a precaution immediately after the Great East Japan Earthquake, but this demand gradually subsided as uncertainties over future market conditions receded. As a result, some of these funds became unnecessary, putting strong downward pressures on market interest rates. In this situation, city banks and others engaged in arbitrage trading in the uncollateralized call market, raising funds invested by financial institutions not eligible for the complementary deposit facility -- including money market mutual funds at low rates around 0.06 percent -- and depositing them in their current accounts at the Bank to earn yields of 0.1 percent. Similar transactions were seen in the repo market as well. With such arbitrage trading, the complementary deposit facility functioned as an instrument to maintain a floor of 0.1 percent for the uncollateralized call rate and GC repo rates even under strong downward pressures on interest rates.

Downward pressures on interest rates subsided gradually as funds raised immediately after

the earthquake gradually came due, but market interest rates remained stable without increasing significantly; the uncollateralized call rate at roughly 0.08 percent, and the GC repo rate at around 0.10 percent. While the uncollateralized call rate was somewhat lower than GC repo rates, total funding costs, including intermediary fees, were considered to be more or less equivalent. Market participants choose the lowest-cost means available when raising funds, resulting in arbitrage among various funding tools. The Bank continued to supply sufficient funds to accommodate market demand, and thereby average successful bid rates in all short-term funds-supplying operations were reduced to 0.10 percent. Under these circumstances, the uncollateralized call rate and GC repo rates converged to the funding cost through the Bank's operations of 0.10 percent (Chart 12).

Chart 12: GC Repo Rate and Successful Bid Rates of the Funds-Supplying Operations

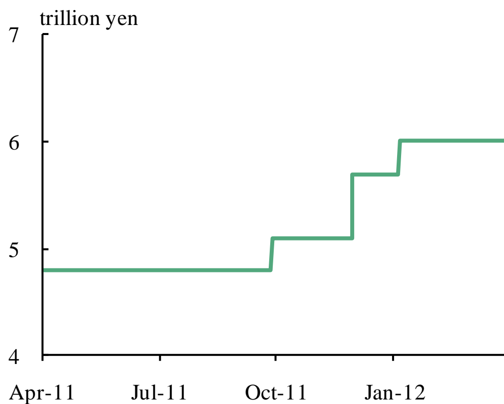


2. Market for Term Instruments

Against the backdrop that overnight interest rates were stable at low levels with ample funds provided by the Bank, confidence in future funding conditions increased and expectations that short-term interest rates would be rising were reduced significantly among market participants. Under the Asset Purchase Program, the Bank offered the fixed-rate funds-supplying operations against pooled collateral, with which longer-term funds of 3-month and 6-month periods were supplied at 0.1 percent, and some of the funds raised through these operations were invested in longer-term assets. Outright purchases of T-Bills through the Program also contributed to a reduction in interest rates on term instruments,

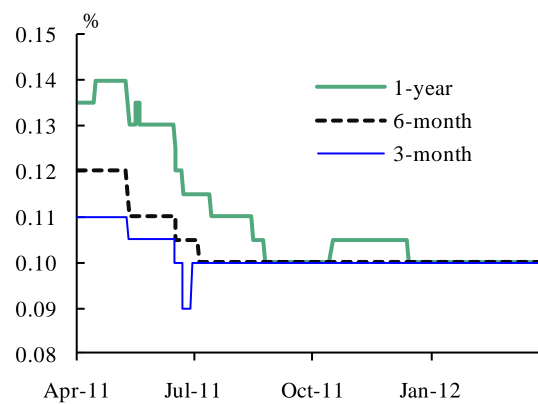
mainly those for the longer term where room for further reduction remained. During fiscal 2011, while the amount of each issue of T-Bills (3-month) increased repeatedly from around 4.8 trillion yen in April 2011 to around 6.0 trillion yen in March 2012 (Chart 13), demand was strong among investors and the yields continued to decline as a trend (Chart 14). From August 2011 onward, rates for all terms up to one year virtually converged to 0.1 percent, which is equivalent to the applied interest rate of the complementary deposit facility.

Chart 13: Amount of Each Issue of T-Bills (3-Month)



Note: Offering amount at each auction date.

Chart 14: T-Bill Rates in the Secondary Market



Box 3: Short-Term Government Bond Yields in Japan and the United States

In Japan, yields on short-term government bonds (T-Bills) generally stayed at around 0.1 percent, which is equivalent to the interest rate applied to the complementary deposit facility. Interest rates on T-Bills temporarily fell below 0.1 percent at auctions for issuance held in August and September 2011 (Chart 15). Around that period, the European debt crisis and concerns about the U.S. federal government debt ceiling problem intensified, which triggered "flight to quality" among investors globally. Under these circumstances, foreign investors, which were not eligible for the complementary deposit facility, increased their investment in Japan's T-Bills (Chart 16). This seems to have been one reason why the floor for market interest rates that the facility is supposed to set did not fully function at that time. However, the downward deviation from the floor of 0.1 percent was mostly temporary and small. Yields on the GC repo transactions, which are used as a funding tool for dealers'

holdings of T-Bills and as a short-term investment vehicle essentially equivalent to T-Bills, remained at around 0.10 percent, the interest rate applied to the complementary deposit facility (see Box 2).

Chart 15: T-Bill Rates at Issuance Auction (3-Month)

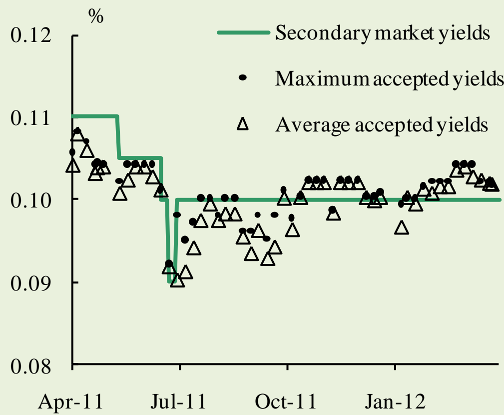
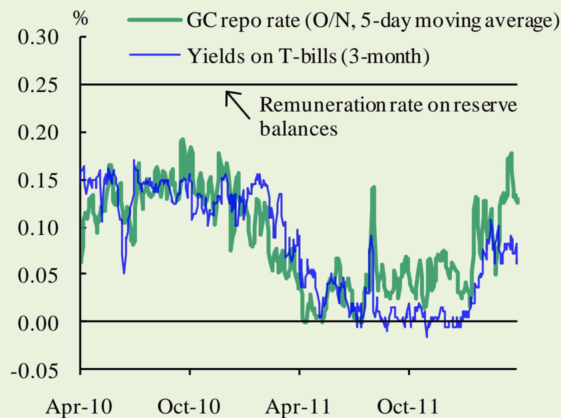


Chart 16: Net Purchases of Short-Term Securities by Nonresidents

Notes: 1. Securities with a residual maturity of up to one year (T-Bills, etc.).
2. Figures represent cumulative net purchases (April 3, 2011 = 0).

In the United States, reserve balances (required reserves and excess reserves) of financial institutions with the central bank are remunerated at 0.25 percent. As in Japan, when the European debt crisis intensified, investors "fled to quality," which exerted strong downward pressure on yields for T-bills. However, unlike Japan, yields moved down significantly below 0.25 percent, the remuneration rate on reserve balances, and remained around 0 percent for some time (Chart 17). The GC repo rate was also significantly below 0.25 percent.

Chart 17: GC Repo Rate and Yields on T-Bills in the United States



There are many factors behind these differences between Japan and the United States. Some of them are as follows.

First, in Japan, the city banks and other financial institutions that are eligible for the complementary deposit facility have a strong presence as lenders or investors in the GC repo and short-term government bond markets. When these lender/investors became more risk-averse, they considered their current accounts at the Bank "safe assets," and parked funds there to earn yields of 0.1 percent. As a result of these trades, the GC repo and short-term government bond yields were maintained at 0.1 percent or above in most cases. In addition, some city banks and securities companies (also eligible for the complementary deposit facility) made arbitrage transactions between the GC repo market and the complementary deposit facility, which also prevented the rates from falling below 0.1 percent.

By contrast, in the United States, money market mutual funds (MMMFs) and other market participants not eligible for remuneration on reserve balances have a strong presence in the GC repo and short-term government bond markets (Chart 18). This resulted in large amounts of funds being invested even at rates below the remuneration rate of 0.25 percent. As market sentiment deteriorated and concerns about counterparty risks associated with European financial institutions intensified, MMMFs transferred funds that had been invested in U.S. dollar-denominated CP and certificates of deposit (CDs) issued by European financial institutions into "safe assets" of GC repos and short-term government bonds. This further increased the amount of funds available at rates below 0.25 percent in the GC repo market and T-bill market.

Chart 18: U.S. Money Market (End-December 2011)

billion U.S. dollars

By Lender	By Borrower
State and local governments 166.5	REITs 210.0
GSEs (net) 110.4	Brokers and dealers (net) 213.1
MMMFs 484.0	U.S.-chartered commercial banks (net) 273.4
Mutual funds 115.1	Foreign banking offices in U.S.(net) 315.6
Others 153.8	Others 190.3
Discrepancy 172.6	

Note: Figures are for federal funds and security repurchase agreements.

Even under these circumstances, market interest rates would have converged at around 0.25 percent if the U.S. commercial banks and other institutions eligible for remuneration on reserves had engaged in arbitrage by raising funds in the GC repo market at rates below 0.25 percent and depositing them in their reserve at the Federal Reserve to earn yields of 0.25 percent. In fact, during 2010, the GC repo rate, which stayed at around 0.15 percent, did not significantly deviate from the remuneration rate on reserve balances (0.25 percent). Following changes in the deposit insurance system in April 2011, however, U.S. commercial banks needed to pay a premium charged on the short-term borrowing in the money markets. In other words, U.S. commercial banks incurred additional costs for engaging in the arbitrage described above, making such transactions less common, and GC repo rates more often deviated from 0.25 percent. In the United States, non-reserve holders such as brokers and dealers, which are not eligible for the remuneration on reserves, do not take account of the level of the remuneration rate in their trading. This differs from Japan, where *tanshi* companies and securities companies are eligible for the complementary deposit facility (Chart 19).

In summary, in the United States, a strong market presence of players not eligible for

remuneration on reserves and increasing difficulties in arbitrage by eligible institutions make it more likely that the GC repo rate and T-bill yields will fall significantly below the remuneration rate of 0.25 percent.

Chart 19: Eligible Institutions for Complementary Deposit Facility in Japan and Those for Remuneration on Reserve Balances in the United States

	Japan	United States
Institutions subject to the reserve requirement (banks, etc.)	✓	✓
Institutions NOT subject to the reserve requirement		
Tanshi companies and securities companies (brokers and dealers), etc.	✓	×
MMMFs	×	×
Life insurance companies, etc.	×	×
Nonresidents	×	×

3. JGB Market

As the yield curve flattened at 0.1 percent for up to one year, downward pressure on interest rates spilled over into yields on 2-year JGBs. Under the Bank's comprehensive monetary easing policy framework, so-called policy duration effects seemed to have contributed to the reduction of interest rates and outright purchases of JGBs with maturities of one to two years through the Asset Purchase Program provided market participants with opportunities to sell their JGB holdings on a large scale on a regular basis, increasing investors' confidence in 2-year investments. Yields on 2-year JGBs were around 0.20 percent at the beginning of fiscal 2011, but decreased further during the year (Chart 20). The yields were in the 0.12–0.13 percent range in most cases after October 2011, when the maximum amount outstanding of JGB purchases through the Program was raised to 9 trillion yen. The yields declined further and were very stable at around 0.11 percent after February 2012, when the maximum amount outstanding was increased to 19 trillion yen.

Yields on 5-year and 10-year JGBs also declined to levels generally lower than those seen under the quantitative easing policy between 2002 and 2006, with the exception of immediately prior to the "VaR shock" in 2003. They have remained more or less flat at low

levels in 2012, even after share prices turned to begin to increase (Chart 21). Meanwhile, amid growing concerns about the European debt crisis, the large cumulative government debt of Japan and the consequences of debate on a possible increase in the consumption tax rate gained increasing attention.

Chart 20: Yields on JGBs (2-Year)

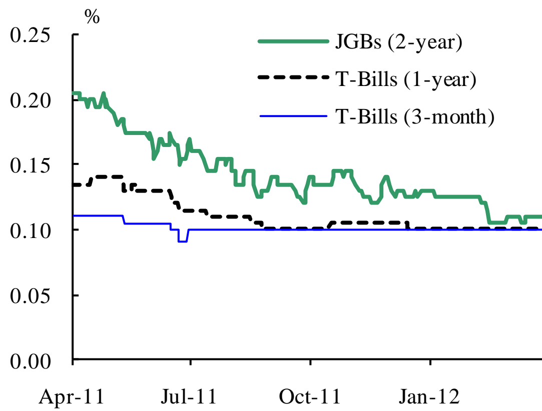
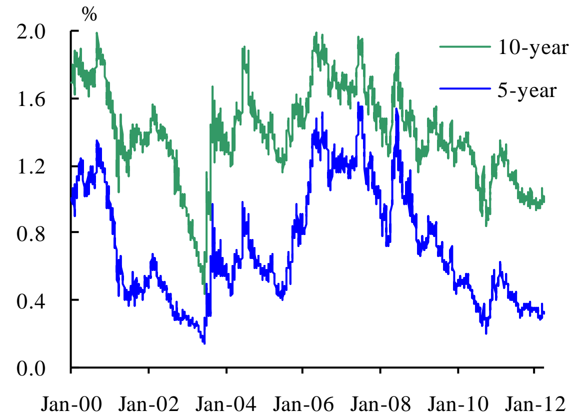


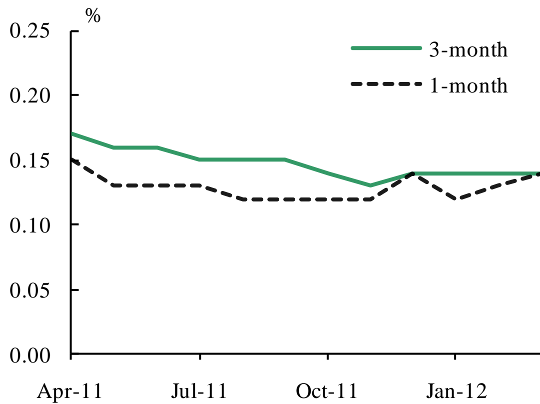
Chart 21: Yields on JGBs (5-Year and 10-Year)



4. CP and Corporate Bond Markets

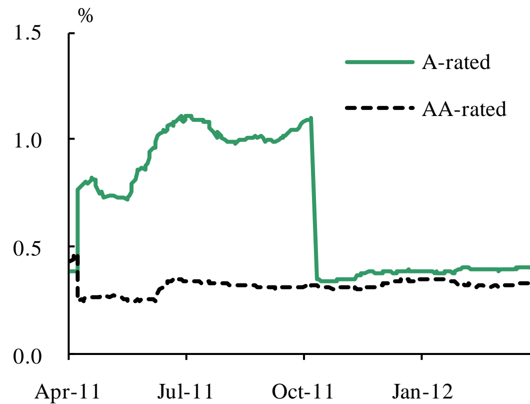
Yields on credit instruments such as CP issuing rates and corporate bond yields remained low and stable, with the exception of impacts of rating downgrades on some corporate issuers (Charts 22 and 23). Although global risk aversion among investors resulted in widening of credit spreads for corporate bonds in the United States and Europe, the impact was generally limited in Japan. Meanwhile, the Bank's outright purchases of CP and corporate bonds through the Asset Purchase Program gave market participants confidence that it was serving as a regular purchaser, and thereby contributed to low and stable risk premiums.

Chart 22: CP Issuance Rates



Note: For CP issued by business companies.

Chart 23: Yield Spreads between Corporate Bonds and JGBs

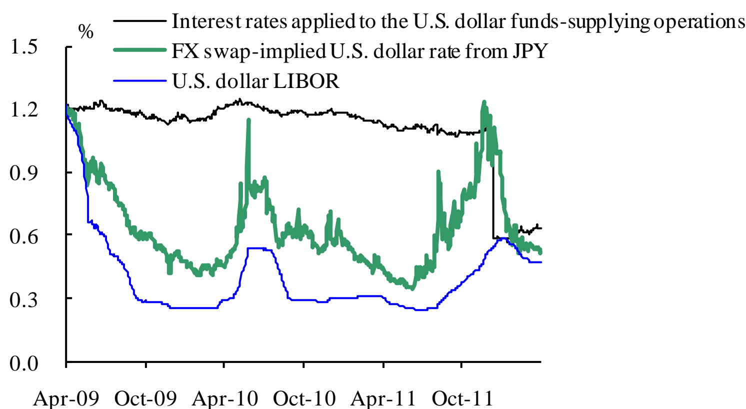


Notes: 1. Five-year residual maturity. Yields on corporate bonds are based on the expanded pool of issues with maturity of three to seven years.
2. Fluctuations on April 2011 and October 2011 are due mainly to rating downgrades on some issues.

5. U.S. Dollar Funding Market and Foreign Exchange Swap Market

Toward the end of 2011, as concerns about the European debt crisis heightened, U.S. dollar funding costs rose significantly. The U.S. dollar interbank interest rate (LIBOR) hit a level unseen since July 2009, and the foreign exchange swap-implied U.S. dollar rate from yen rose to the 1.2 percent level toward the end of November 2011 (Chart 24). On November 30, six major central banks including the Bank took coordinated measures. Due partly to these actions, there was no turbulence in money markets around the year-end, although market participants had been worried about potential deterioration of market conditions. After the turn of the year, the concerns subsided among market participants. Both the U.S. dollar LIBOR and foreign exchange swap-implied U.S. dollar rate from yen began to decline at a rapid pace, below the interest rate for the U.S. dollar funds-supplying operations toward the end of March 2012.

Chart 24: U.S. Dollar LIBOR and FX Swap-Implied U.S. Dollar Rates from JPY (3-Month)



Note: For the FX swap-implied U.S. dollar rate from JPY, see the note to Chart 2.

Box 4: Foreign Exchange Swap Market and the U.S. Dollar Funds-Supplying Operations

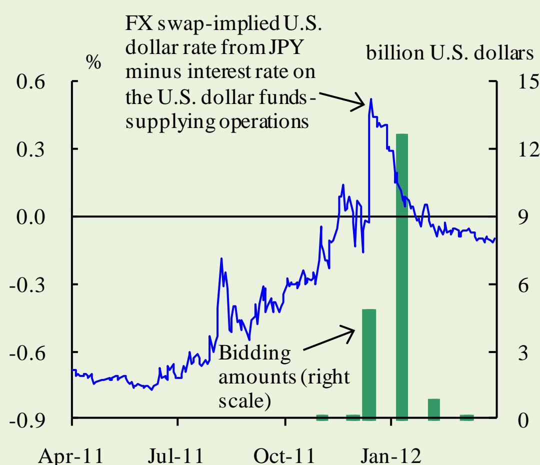
As the worsening of the European debt crisis raised concerns about the business conditions of European financial institutions that held large volumes of government bonds issued by European countries, caution regarding counterparty risks of European financial institutions increased in global financial markets. Especially in the U.S. dollar funding market and foreign exchange swap market, lenders became more risk-averse from the summer toward the end of 2011. U.S. dollar funding costs rose significantly, not only through unsecured transactions but also through foreign exchange swaps.

While U.S. dollar funding conditions of Japanese financial institutions were better than those of European financial institutions, Japanese financial institutions raised larger amounts of U.S. dollars than required as a precaution through a variety of measures including foreign exchange swaps in order to meet their funding requirements for the end of 2011. Toward the end of 2011, as financial institutions became increasingly reluctant to lend U.S. dollars, foreign exchange swap-implied U.S. dollar rates rose substantially, as the precautionary liquidity demand combined with ordinary funding needs for U.S. dollars. Partly because the interest rate on U.S. dollar funds-supplying operations was the U.S. dollar OIS rate plus 1 percentage point -- which was not sufficiently attractive compared to other funding measures -- until November 2011 the demand for the operations was rather

small (Chart 25). Many market participants mentioned nonetheless that the operations had enhanced market confidence as a backstop in the event of emergency.

On November 30, the six central banks announced coordinated actions to reduce the interest rate applied to the U.S. dollar funds-supplying operations to the U.S. dollar OIS rate plus 0.5 percentage point. Thereafter, the demand for the Bank's U.S. dollar funds-supplying operations surged, putting downward pressure on foreign exchange swap-implied rates, which had been stubbornly elevated until then. In early 2012, the operations were extensively used to raise funds over the fiscal year-end. However, the demand for the operations decreased rapidly, as U.S. investors resumed investing their U.S. dollar funds actively in the money markets after 2012 began, and as a result foreign exchange swap implied rates declined sharply.

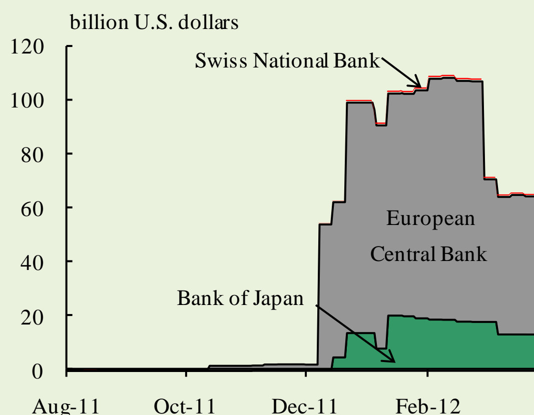
Chart 25: Bidding Amounts of the U.S. Dollar Funds-Supplying Operations



Notes: 1. For the FX swap-implied U.S. dollar rate from JPY, see the note to Chart 2.
2. "Bidding amounts" denotes those of the U.S. dollar funds-supplying operations (3-month).

With the four major central banks conducting the U.S. dollar operations, the European Central Bank accounted for the majority of the total amount outstanding (Chart 26). As of the end of March 2012, the European Central Bank held 33 billion U.S. dollars, representing more than 70 percent of the total; the Bank of Japan held 13.5 billion dollars, accounting for less than 30 percent.

Chart 26: Amount Outstanding of the U.S. Dollar Funds-Supplying Operations



Note: No bid was submitted to the Bank of England during the period or to the other three central banks from April to July 2011.

D. Developments in the Foreign Exchange Market and the Domestic Stock Market

During this period, the foreign exchange market and the domestic stock market were significantly influenced by developments in global financial markets, given the relatively strong presence of foreign investors in the two markets.

The yen appreciated against the U.S. dollar in the course of the summer of 2011, when pessimistic views on the U.S. economy prevailed and the Federal Reserve clarified the duration of the low interest rate policy on condition that economic conditions and inflation developed as forecasted. Toward the end of 2011, the yen appreciated further, trading between 75 and 80 yen against the dollar (Chart 27). Responding to this situation, the Japanese government conducted foreign exchange interventions to purchase dollars and sell yen in August and around the end of October 2011. The amounts of these interventions were substantial, setting a new historical record for the intervention per day: 4.5 trillion yen on August 4 and 8.1 trillion yen on October 31.

Stock prices continued on a downtrend toward the end of 2011 against the backdrop of increasing risk aversion among investors and concerns about global economic slowdown (Chart 28). Japanese stock prices underperformed U.S. stock prices through the end of 2011,

reflecting the impacts of the Great East Japan Earthquake and the flooding in Thailand, together with the yen's trading at historically high levels against the U.S. dollar. The Nikkei 225 Stock Average hit a post-quake bottom (March 15, 2011).

Since the beginning of 2012, as nervousness about the European debt crisis subsided, investors' risk appetites were gradually restored and views on the U.S. economic outlook grew less pessimistic. Two-year U.S. Treasury yields rose while 2-year JGB yields remained low as mentioned, resulting in a moderate widening of the interest rate differentials between them. In addition, given Japan's trade deficit -- which was monitored closely by foreign investors -- the yen started depreciating against the U.S. dollar and was around 82 to 83 yen at the end of March. The Nikkei 225 Stock Average rose and hit a post-quake high in March, against the background of rising U.S. stock prices and the weaker yen.

Chart 27: Interest Rate Differential between Japan and the United States, and the U.S. Dollar/Yen Exchange Rate

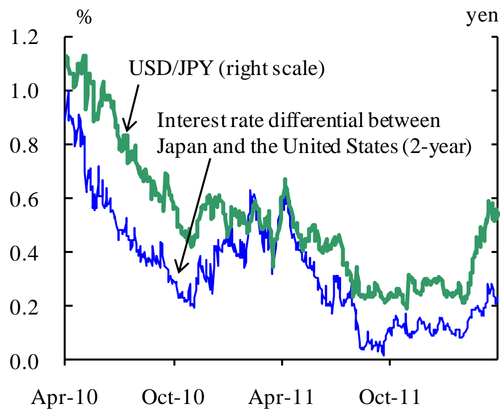
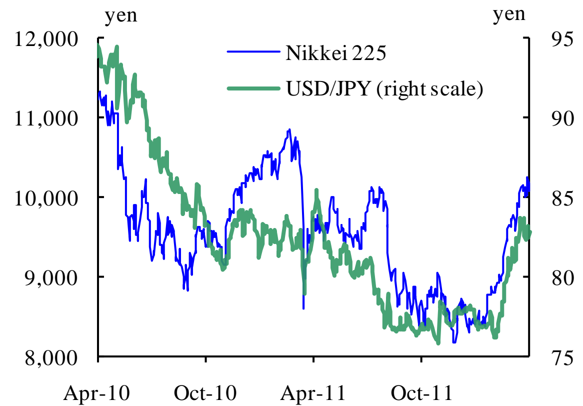


Chart 28: U.S. Dollar/Yen Exchange Rate and Stock Prices



III. Money Market Operations and the Bank's Balance Sheet

A. Changes in the Bank's Balance Sheet

Partly reflecting the results of the money market operations, the size of the Bank's balance sheet amounted to 139.6 trillion yen as of the end of March 2012 (Chart 29).

Chart 29: The Bank's Balance Sheet (End-March 2012)

trillion yen, figures in parentheses are changes from end-Mar. 2011

Assets		Liabilities and net assets	
Long-term JGBs	64.4 (+6.2)	Banknotes	80.8 (-0.1)
Short-term funds-supplying operations	1.2 (-29.9)	Current account balances	34.4 (-6.3)
Outright purchases of T-Bills	0.4 (-5.0)	Others	24.4 (+3.7)
Other short-term funds-supplying operations	0.8 (-25.0)		
Asset Purchase Program	48.9 (+17.1)		
Funds-supplying operations against pooled collateral	34.6 (+5.8)		
Outright purchases of JGBs	6.3 (+5.4)		
Outright purchases of T-Bills	3.5 (+2.1)		
Outright purchases of CP	1.6 (+1.3)		
Outright purchases of corporate bonds	2.0 (+1.8)		
Outright purchases of ETFs	0.8 (+0.7)		
Outright purchases of J-REITs	0.1 (+0.1)		
Complementary lending facility	0.0 (-0.0)		
Growth-Supporting Funding Facility	3.1 (+0.9)		
Funds-supplying operations to support financial institutions in disaster areas	0.5 (+0.5)		
Others	21.6 (+2.5)		
Total assets	139.6 (-2.7)	Total liabilities and net assets	139.6 (-2.7)

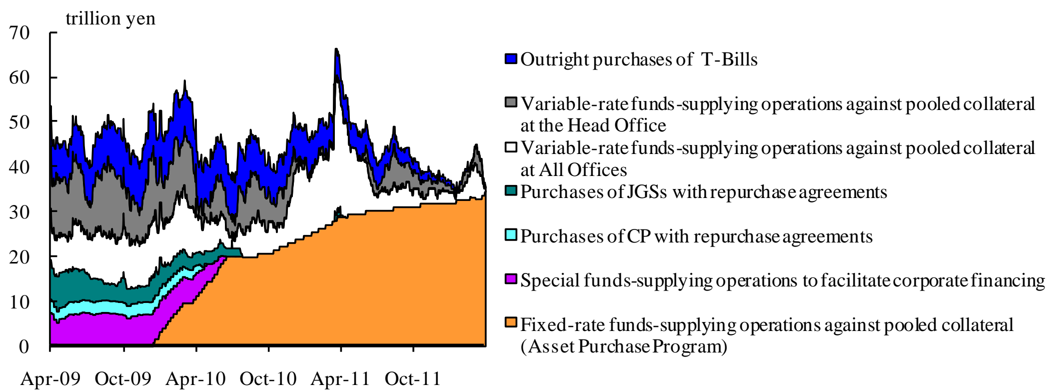
Notes: 1. Figures are preliminary.
2. "Long-term JGBs" and "outright purchases of T-Bills" do not include those purchased through the Asset Purchase Program.
3. "Other short-term funds-supplying operations" includes variable-rate funds-supplying operations against pooled Collateral, purchases of Japanese government securities (JGSs) with repurchase agreements, and purchases of CP with repurchase agreements.

In terms of changes from the end of March 2011, the amount outstanding of long-term JGBs increased by 6.2 trillion yen. The amount outstanding of the Asset Purchase Program increased by 17.1 trillion yen, reflecting the pursuit of powerful monetary easing under the comprehensive monetary easing framework. The amount outstanding of the

Growth-Supporting Funding Facility and that of the funds-supplying operations to support financial institutions in disaster areas increased by 0.9 trillion yen and 0.5 trillion yen, respectively.

Meanwhile, the amount outstanding of T-Bills outright purchased as short-term funds-supplying operations and that of the other short-term funds-supplying operations decreased by 5.0 trillion yen and 25.0 trillion yen, respectively. While the amount outstanding of T-Bills purchased through the Program increased, that of T-Bills outright purchased as short-term funds-supplying operations decreased. The decrease in the amount outstanding of the other short-term funds-supplying operations mainly reflected a decrease in that of the variable-rate funds-supplying operations against pooled collateral. This was because demand for funds was increasingly fulfilled by fund provisions and asset purchases through the Program, and because an increase was offset in the amount outstanding of the variable-rate funds-supplying operations at the end of March 2011 -- which was utilized based on growing precautionary demand for funds immediately after the Great East Japan Earthquake -- as uncertainties among market participants about future funding conditions decreased subsequently (Chart 30).

Chart 30: Amounts Outstanding of Short-Term Funds-Supplying Operations

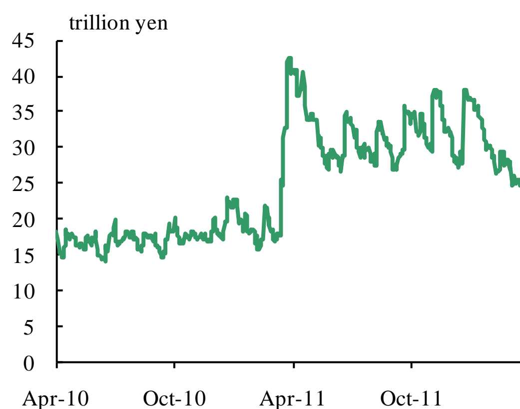


Notes: 1. Based on the exercise date.
2. "Fixed-rate funds-supplying operations against pooled collateral (Asset Purchase Program)" includes those before the establishment of the Program (October 28, 2010).

B. Developments in Current Account Balances at the Bank

During fiscal 2011, while the asset side of the Bank's balance sheet remained elevated, the current account balances at the Bank, on the liability side, generally were in the range of 25 to 35 trillion yen, albeit with some fluctuations (Chart 31). At the end of March 2012, current account balances at the Bank stood at 34.4 trillion yen. They decreased by 6.3 trillion yen, compared to the end of March 2011, when a large amount of funds was raised by many financial institutions as a precaution following the Great East Japan Earthquake. In fiscal 2011 as a whole, however, current account balances at the Bank remained at a significantly higher level than those in fiscal 2010.

Chart 31: Current Account Balances at the Bank



Box 5: Current Account Balances at the Bank by Sector, and Overnight Rates

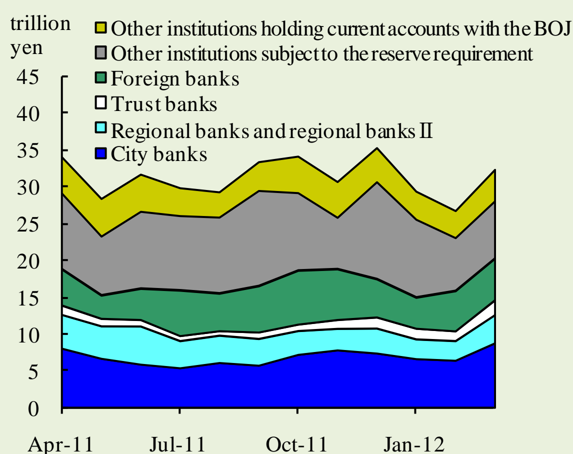
Fluctuations in current account balances at the Bank were larger during fiscal 2011 than during fiscal 2010, and such swings in individual sectors exhibited some characteristics described below.

Current account balances at the Bank increased significantly in the June 2011, September, December, and March 2012 reserve maintenance periods. Large volumes of JGB redemptions around the 20th of June, September, December, and March as well as payments of various fiscal funds during the March reserve maintenance period brought such increases. By sector, "other institutions subject to the reserve requirement," which received large JGB redemption proceeds, experienced substantial increases in their current account balances at the Bank during the June, September, and December reserve maintenance

periods (Charts 32 and 33). Throughout the year, changes in the current account balances at the Bank of such a specific sector contributed significantly to the changes in the total.

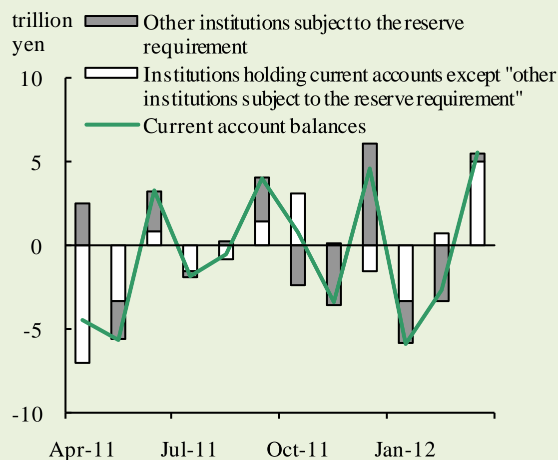
The current account balances at the Bank had been at high levels until the October reserve maintenance period, the breakdown of which indicates that those of other institutions subject to the reserve requirement declined, but those of city banks and foreign banks increased substantially. A series of fund flows associated with foreign exchange interventions contributed greatly to the difference among sectors. When the government conducts foreign exchange interventions of buying dollars and selling yen, yen funds are paid out from the Foreign Exchange Funds Special Account to the market for the settlements. Market participants engaged in a wide variety of market transactions for in the course of their position adjustments. In this process, a substantial amount of yen funds flowed into the current accounts at the Bank of city banks and foreign banks, which generally had a large share in foreign exchange trading.

Chart 32: Current Account Balances at the Bank by Sector



Notes: 1. Average amount outstanding for each reserve maintenance period.
2. "Other institutions holding current accounts with the BOJ" indicates those that are not subject to the reserve requirement but hold current accounts at the Bank.

Chart 33: Changes in Current Account Balances by Sector

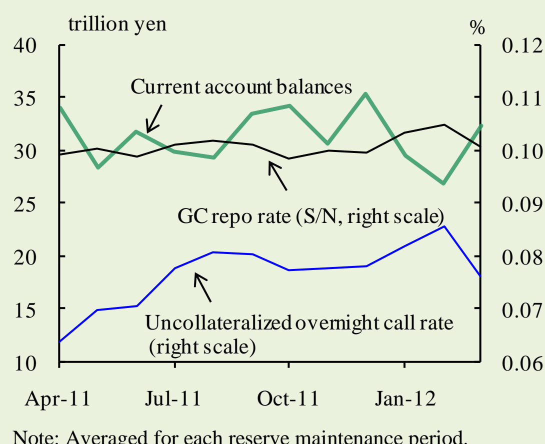


Note: Changes in the average amount outstanding for each reserve maintenance period. See note 2 to Chart 32.

Looking at the relationship between the current account balances at the Bank and overnight interest rates such as the uncollateralized call rate and the GC repo rate, significant increases in the current account balances at the Bank due to large JGB redemptions did not

necessarily exert strong downward pressure on overnight interest rates (Chart 34). This was because the JGB redemption proceeds were not immediately invested in the market but rather retained for some time as excess reserves held by some financial institutions. On the other hand, when foreign exchange interventions caused increases in the current account balances at the Bank, city banks and foreign banks -- which received the surplus funds -- actively invested them in the GC repo market, for example, and thus downward pressures on interest rates emerged quickly. As described above, the impact of changes in the current account balances at the Bank on overnight interest rates may vary depending on what causes the changes and what kind of institutions hold the excess reserves.

Chart 34: Current Account Balances at the Bank and Overnight Interest Rate

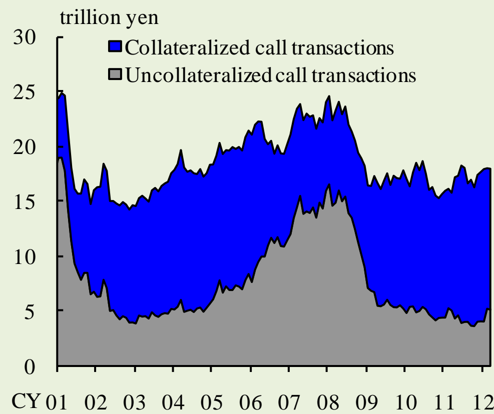


Note: Averaged for each reserve maintenance period.

Box 6: Amounts Outstanding in the Call Markets

The amounts outstanding in the call markets, where financial institutions make final adjustments of their cash positions, remained at a low level (Chart 35). This reflected the fact that market participants held a large amount of excess reserves amid the Bank's provision of ample funds, and therefore it became less necessary for individual financial institutions to fine-tune their daily outstanding balances of current accounts held at the Bank. This situation was also observed under the quantitative easing policy from 2002 to 2006.

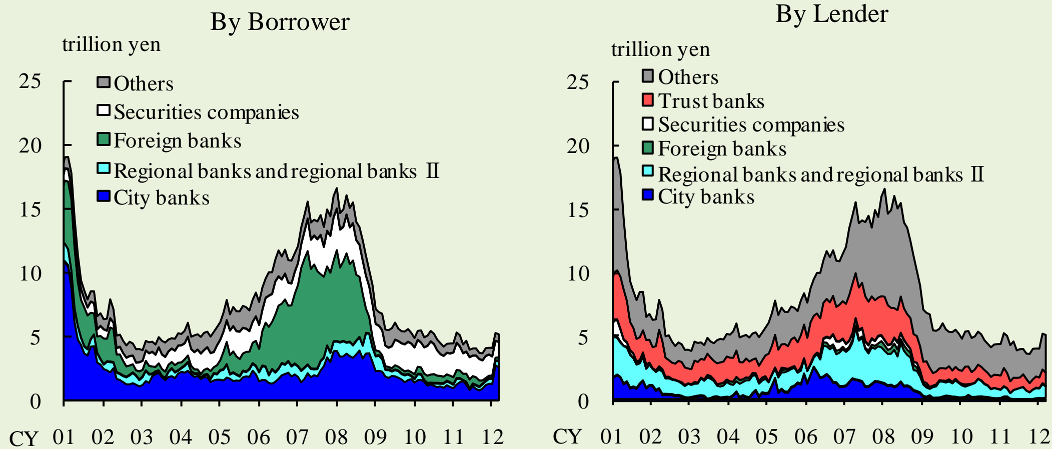
Chart 35: Amounts Outstanding in the Call Market



Note: Transactions intermediated by *tanshi* companies (monthly average balance).

The amounts outstanding of uncollateralized call transactions through *tanshi* companies (money market brokers) generally remained at around 3-5 trillion yen, with a moderate downtrend. By sector, as in fiscal 2010, for the lending side a large share was accounted for by trust banks (primarily mutual fund accounts) and life insurance companies, which lent funds at rates below the interest rate applied to the complementary deposit facility (0.1 percent), as the uncollateralized overnight call rate remained below 0.1 percent. For the borrowing side, city banks and regional banks accounted for a substantial portion (Chart 36). Reflecting the decreased transaction volume in the uncollateralized call market, the weighted average of the uncollateralized overnight call rate (the Bank's target rate) was susceptible to idiosyncratic factors -- such as borrowing by some financial institutions not to meet their actual funding demand but to test their funding conditions -- and occasionally deviated somewhat from interest rate levels of other transactions reflecting real funding needs.

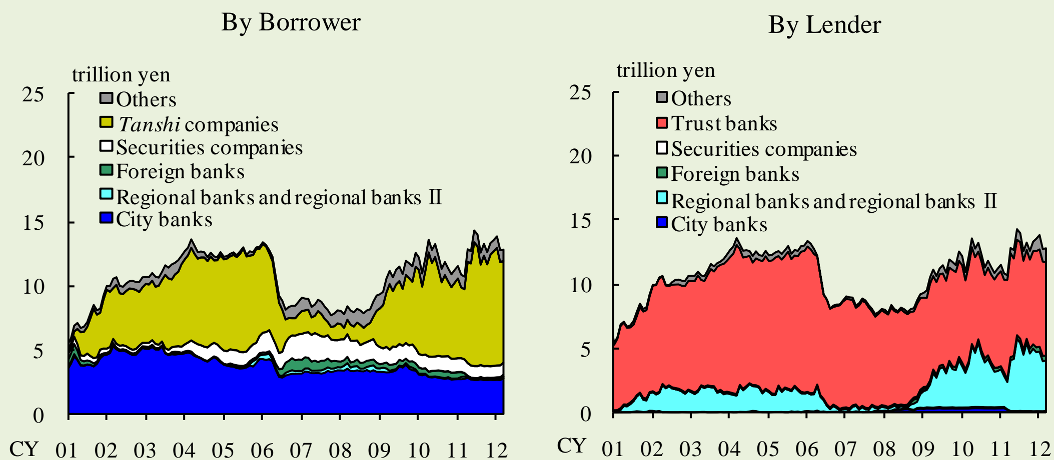
Chart 36: Amounts Outstanding in the Uncollateralized Call Market by Sector



Notes: 1. Transactions intermediated by *tanshi* companies (monthly average balance).
2. "City banks" includes city banks, Shinsei Bank, and Aozora Bank. "Securities companies" includes securities finance companies.

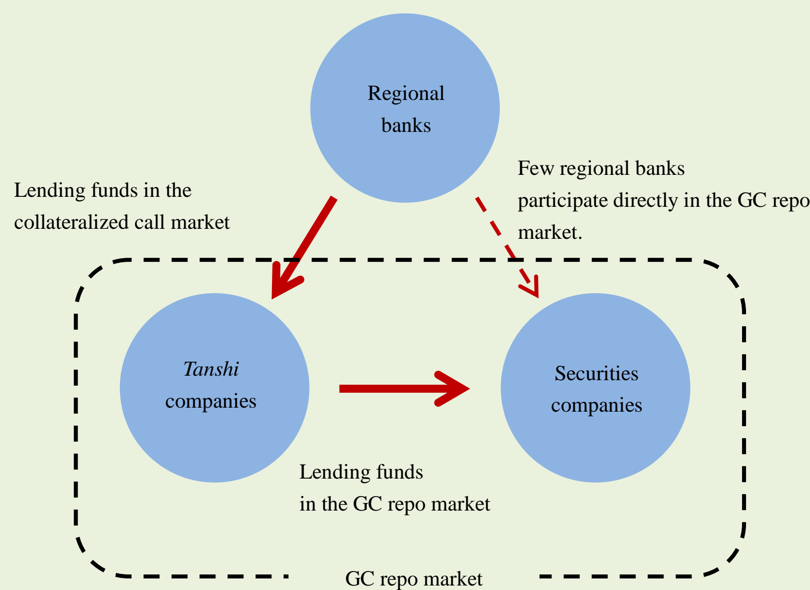
Meanwhile, the amount outstanding in the collateralized call market increased somewhat from fiscal 2010, albeit with some fluctuations. By sector, the share of regional banks on the lending side and that of *tanshi* companies on the borrowing side rose (Chart 37). Although not many regional banks participate directly in the GC repo market, fund flows across the two markets were seen in such a way that *tanshi* companies borrowed funds from the regional banks in the collateralized call market and invested them in the GC repo market (Chart 38).

Chart 37: Amounts Outstanding in the Collateralized Call Market by Sector



Note: See the notes to Chart 36.

Chart 38: Fund Flows between the Collateralized Call Market and the GC Repo Market



C. Developments in Excess and Shortage of Funds

The current account balances at the Bank increase or decrease in response to receipts and payments of banknotes and treasury funds between financial institutions and the Bank or the government, -- called excess and shortage of funds -- as well as to the money market operations of the Bank. Regarding banknotes, (1) withdrawals of banknotes from the Bank by financial institutions (issuance of banknotes) constitute sources of decrease in current account balances, while (2) deposits of banknotes at the Bank by financial institutions (withdrawal of banknotes from circulation) constitute sources of increase. As for treasury funds, (1) issuance of Japanese government securities (JGSs) and payments of taxes (treasury fund receipts) result in transfers of funds from current accounts of financial institutions to the government account and constitute sources of decrease in current account balances, while (2) redemptions of JGSs, pension payments, and other fiscal expenditures (treasury fund payments) from the government account to current accounts of financial institutions at the Bank constitute sources of increase.

The Bank conducts money market operations, taking into account day-to-day changes in current account balances resulting from receipts and payments of banknotes and treasury funds, or excess and shortage of funds. Thus, excess and shortage of funds are important preconditions for the money market operations conducted by the Bank. The following relationships hold between changes in current account balances at the Bank and excess and shortage of funds.

> Changes in current account balances at the Bank
> = money market operations + excess and shortage of funds.
>
> Excess and shortage of funds
> = changes in the factor of banknotes + changes in the factor of treasury funds and others.

In fiscal 2011, as in fiscal 2010, the money market operations conducted by the Bank contributed to increasing current account balances at the Bank, while changes in excess and shortage of funds contributed to decreasing current account balances at the Bank, mainly due to changes in treasury funds and others (Charts 39 and 40). However, the shortage of funds amounted to 25.3 trillion yen, down significantly from 37.9 trillion yen in fiscal 2010 (Chart 41).

Chart 39: Excess and Shortage of Funds, and Market Operations

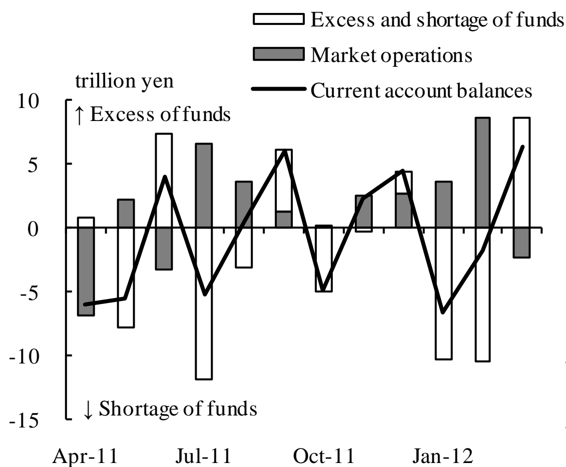


Chart 40: Banknotes, and Treasury Funds and Others

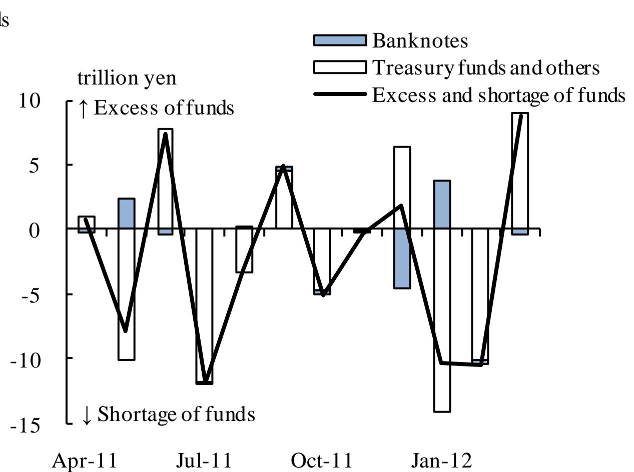


Chart 41: Breakdown of Excess and Shortage of Funds

trillion yen

	Fiscal 2010	Fiscal 2011	
			y/y chg.
Banknotes	-3.6	+0.1	+3.7
Treasury funds and others	-34.3	-25.4	+8.9
Fiscal payments and revenues	+32.3	+34.8	+2.4
JGBs (over one year)	-60.6	-44.3	+16.3
T-Bills	-9.2	-26.4	-17.3
Foreign exchange	+2.5	+9.7	+7.2
Others	+0.7	+0.9	+0.3
Excess and shortage of funds	-37.9	-25.3	+12.6

(Reference)

	Fiscal 2010	Fiscal 2011
Outstanding balance of banknotes	80.9	80.8

Notes: 1. Positive figures indicate an increase in the current account balances at the Bank, or excess of funds; negative figures indicate a decrease in the current account balances at the Bank, or shortage of funds.
2. For banknotes, negative figures indicate net issuance; for treasury funds and others, positive figures indicate net payment, and negative figures indicate net receipts.
3. Figures for outstanding balance of banknotes are as of the end of the fiscal year.

The following section reviews changes in the factor of banknotes and changes in the factor of treasury funds and others, respectively.

1. Changes in Banknotes

In fiscal 2011, changes in banknotes turned to net redemptions, from net issuance of 3.6 trillion yen resulting from heightened demand for banknotes immediately after the Great East Japan Earthquake in fiscal 2010. They constituted 0.1 trillion yen of the sources of increase in current account balances, or excess of funds.

The cumulative changes in banknotes during fiscal 2011 showed the following developments. Although net issuance increased significantly toward the end of fiscal 2010, some banknotes were redeemed in early fiscal 2011 amid declining demand and therefore changes in banknotes shifted somewhat toward excess of funds compared to fiscal 2010. Seasonal changes in banknotes after that remained more or less unchanged from the previous year. The amount of shortage of funds increased sharply toward the end of December 2011, reaching 3.1 trillion yen, and changes in banknotes turned to excess of

funds after 2012 began (Chart 42). The outstanding balance of banknotes stood at 84.0 trillion yen at the end of December 2011 and at 80.8 trillion yen at the end of March 2012 (Chart 43). Year on year, these figures represented an increase of 2.0 percent and a decrease of 0.1 percent, respectively.

Taking a longer-term perspective, the ratio of outstanding balance of banknotes to nominal GDP, which had remained more or less constant at a certain level previously, continued to follow a clear uptrend from the mid-1990s (Chart 44). The seasonally adjusted outstanding balance of banknotes trended up at an almost constant pace in recent years (Chart 45). The outstanding balance of banknotes increased and deviated considerably from this trend toward the end of fiscal 2010 due to heightened precautionary demand following the Great East Japan Earthquake. After fiscal 2011 began, the outstanding balance of banknotes decreased temporarily reflecting a decline in such demand, but did not return to the pre-disaster trend. It continued to deviate upward from the trend and again started to follow an uptrend around June 2011. Reflecting such steady developments in the outstanding balance of banknotes, its ratio to nominal GDP rose further.

Chart 42: Cumulative Changes in Banknotes in terms of Excess and Shortage of Funds

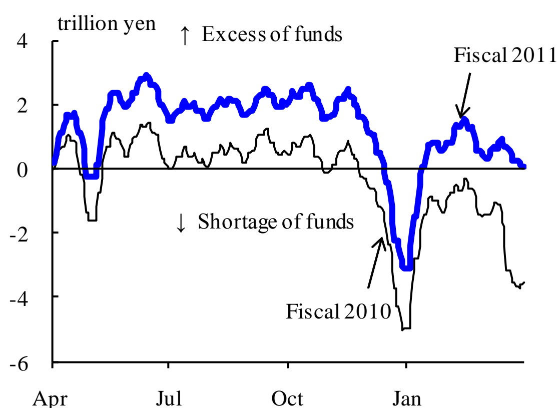


Chart 43: Outstanding Balance of Banknotes

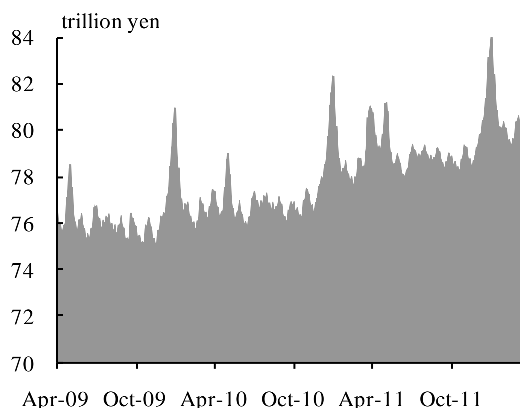
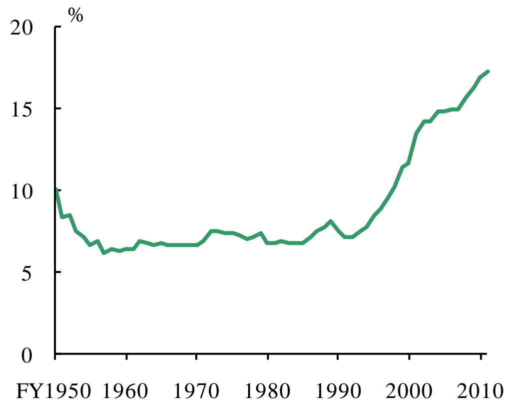
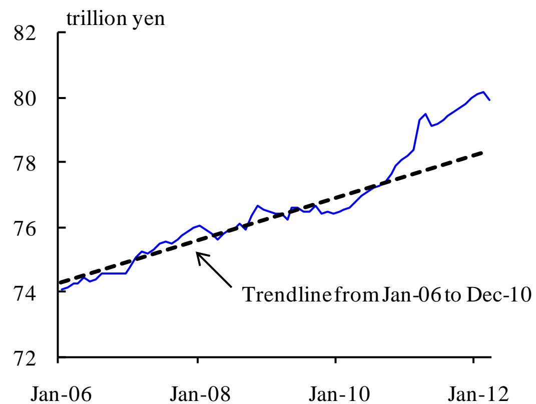


Chart 44: Ratio of Amounts Outstanding of Banknotes in Circulation to Nominal GDP



Notes: 1. Figures for the amount outstanding of banknotes in circulation are as of the end of the fiscal year.
2. It is assumed that the nominal GDP for January-March 2012 remains unchanged from the previous quarter.

Chart 45: Seasonally Adjusted Outstanding Balance of Banknotes



Note: Monthly average.

2. Changes in Treasury Funds and Others

In fiscal 2011, as in fiscal 2010, net receipts from JGBs and T-Bills (sources of decrease in current account balances, or shortage of funds) exceeded net payments of fiscal payments and revenues and foreign exchange transactions (sources of increase in current account balances, or excess of funds). As a result, changes in treasury funds and others registered net receipts of 25.4 trillion yen, down significantly from net receipts of 34.3 trillion yen in fiscal 2010.

A review of cumulative changes in treasury funds and others during fiscal 2011 shows that the amount of shortage of funds was on upward trend as a whole, although there was excess of funds due to a large redemption of JGBs, pension payments, and payments of funds for foreign exchange interventions conducted in August and November 2011. The shortage of funds reached 40.6 trillion yen in early March 2012 (Chart 46). Toward the end of March 2012, the shortage of funds resulting from cumulative changes in treasury funds and others decreased somewhat as a result of a large redemption of JGBs and fiscal payments, registering 25.4 trillion yen.

A breakdown shows that "JGBs (over one year)" contributed to large excess of funds in June, September, and December 2011 and March 2012, mainly due to a large redemption (Chart 47). Regarding the foreign exchange interventions, while "foreign exchange" contributed to large excess of funds in August and November 2011 due to payments of funds for the interventions to the private sector, the increased issuance of "T-Bills" contributed to shortage of funds in the second half of fiscal 2011.

Chart 46: Cumulative Changes in Treasury Funds and Others in terms of Excess and Shortage of Funds

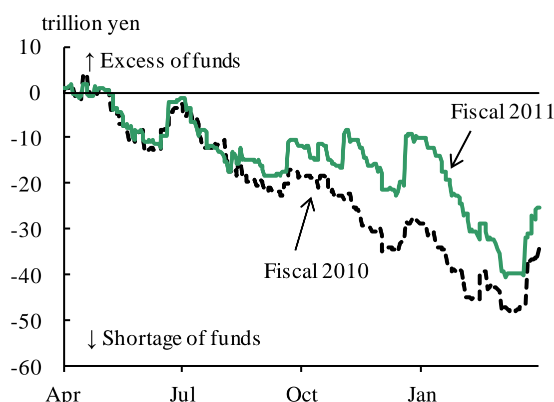
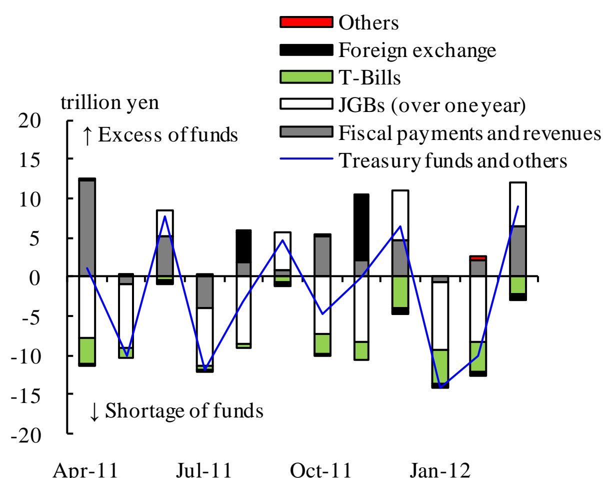


Chart 47: Breakdown of Treasury Funds and Others



a. Fiscal Payments and Revenues

"Fiscal payments and revenues" is a concept that includes all treasury payments and receipts except for those related to JGBs (over one year), T-Bills, and foreign exchange. Fiscal revenues comprise receipts of corporate taxes (at the beginning of every month), withholding income taxes (in the middle of every month), and pension insurance premiums (at the beginning of every month). Fiscal payments include pension payments (in the middle of even-numbered months), allotments of local allocation taxes (in early April, June, September, and November), and payments on public works (March).

In fiscal 2011, "fiscal payments and revenues" resulted in net payments of 34.8 trillion yen, up from 32.3 trillion yen in fiscal 2010. The increase in net payments was mainly due to increased payments related to the Great East Japan Earthquake.

b. JGBs (Over One Year)

"JGBs (over one year)" includes issuance and redemption of JGBs.

During fiscal 2011, "JGBs (over one year)" amounted to net government receipts of 44.3 trillion yen, marking a very large decrease from 60.6 trillion yen in fiscal 2010, as the annual increase in redemption amount exceeded that in issuance amount. Issuance during the year amounted to 126.0 trillion yen, up from 121.6 trillion yen during fiscal 2010, while redemption amounted to 81.7 trillion yen, up considerably from 60.9 trillion yen during fiscal 2010. The increase in redemption amount was mainly due to the redemption of ten-year Fiscal Investment and Loan Program (FILP) bonds that started to be issued given the reform of the FILP in fiscal 2001.

c. T-Bills

"T-Bills" includes issuance and redemption of T-Bills.

During fiscal 2011, "T-Bills" amounted to net government receipts of 26.4 trillion yen, marking a very large increase from 9.2 trillion yen during fiscal 2010, as the annual increase in issuance amount exceeded that in redemption amount. Issuance during this period amounted to 373.6 trillion yen, up considerably from 347.9 trillion yen during fiscal 2010. The increase mainly reflected the increased issuance of 3-month T-Bills. Redemption amounted to 347.1 trillion yen, up from 338.7 trillion yen in fiscal 2010.

d. Foreign Exchange

"Foreign exchange" includes receipts of yen funds in foreign exchange interventions and in the yen/U.S. dollar exchanges via the Foreign Exchange Funds Special Account for U.S. dollar funding by the Japan Bank for International Cooperation.

During fiscal 2011, "foreign exchange" registered net payments of 9.7 trillion yen, up considerably from 2.5 trillion yen in fiscal 2010. This was mainly due to the payments of

yen funds related to yen selling/U.S. dollar purchasing foreign exchange interventions conducted in August and November 2011.

e. Others

"Others" includes receipts and payments of funds between yen deposit accounts held by foreign central banks and international organizations at the Bank (deposits of overseas account holders) and those held by financial institutions, and the Bank's provision of funds to maintain stability of the financial system, such as the provision of loans as stipulated under Article 38 of the Bank of Japan Act, referred to as "*Tokuyu* (a special loan)," and loans to the Deposit Insurance Corporation of Japan. Together with receipts and payments of treasury funds, these are included in "changes in treasury funds and others" (represented by "others"). For example, an increase in deposits of overseas account holders results in a decrease in current account balances at the Bank; a decrease in deposits of overseas account holders results in an increase in current account balances at the Bank.

During fiscal 2011, "others" registered net payments of 0.9 trillion yen, more or less unchanged from 0.7 trillion yen in fiscal 2010.

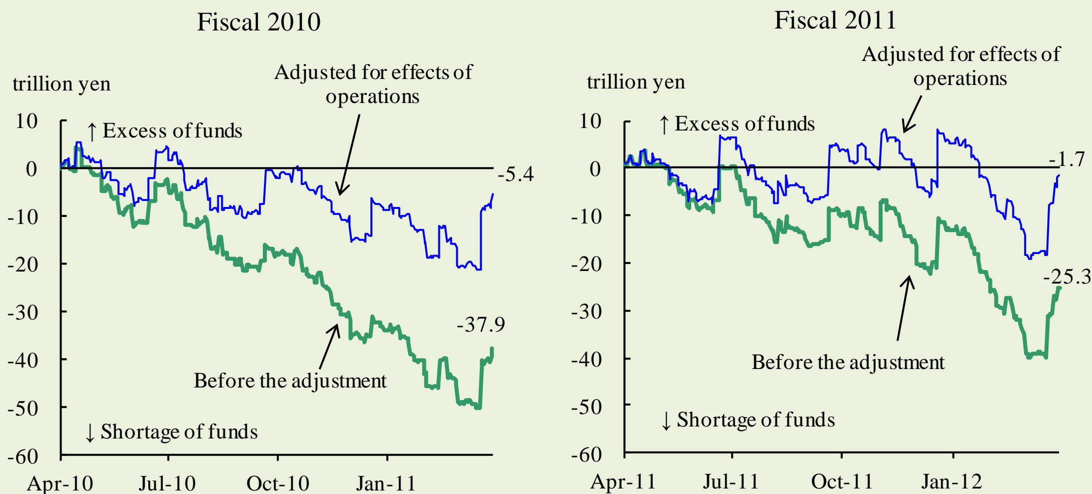
Box 7: Effects of Money Market Operations on Excess and Shortage of Funds

In principle, "treasury funds and others" in excess and shortage of funds is determined by treasury payments and receipts. Among "treasury funds and others," however, "JGBs (over one year)" and "T-Bills" are influenced also by the money market operations conducted by the Bank. This is because, when the Bank purchases JGBs and T-Bills from financial institutions and holds them to maturity, redemption proceeds that would have been deposited in current accounts of financial institutions involved are paid to the Bank. Such transactions result in declines in treasury payments to current accounts at the Bank. Although receipts and payments of "treasury funds and others" are supposed to be more or less equal, such treatment of redemption proceeds leads to large net receipts (shortage of funds). In fact, on the assumption that redemption proceeds of JGBs and T-Bills the Bank purchased outright through operations were paid not to the Bank but to the financial institutions involved, the shortage of funds (adjusted for the effects of operations)

throughout fiscal 2011 would be 1.7 trillion yen, decreasing significantly compared with 25.3 trillion yen before the adjustment (Chart 48).

In addition, before the adjustment, the shortage of funds in fiscal 2011 (25.3 trillion yen) decreased significantly from that in fiscal 2010 (37.9 trillion yen). Although the shortage of funds (adjusted for operations) in fiscal 2011 was 1.7 trillion yen, down from 5.4 trillion yen in fiscal 2010, the difference was smaller than that before the adjustment. This suggests that the significant decrease in the shortage of funds before the adjustment in fiscal 2011 from fiscal 2010 was partly due to a decline in redemption proceeds of JGBs and T-Bills held by the Bank and an increase in redemption proceeds paid to the private sector. Such a decline in redemption proceeds paid to the Bank was caused by a decrease in redemption of T-Bills held by the Bank that resulted from a decrease in outright purchases of T-Bills conducted as short-term funds-supplying operations.

Chart 48: Cumulative Excess and Shortage of Funds



IV. Conduct of Individual Measures in Money Market Operations

This chapter explains the individual measures taken in the course of the money market operations conducted during fiscal 2011.

A. Asset Purchase Program

The Asset Purchase Program was instituted in October 2010 to encourage a decline in longer-term interest rates and various risk premiums in a situation where there was little room for a further decline in short-term interest rates. The Bank manages the Program separately on its balance sheet. During fiscal 2011, its maximum amount outstanding was increased to about 65 trillion yen at the MPMs held on August 4 and October 27, 2011 and February 13 and 14, 2012. Under this framework, the Bank conducted the fixed-rate funds-supplying operation against pooled collateral and the purchase of various financial assets, increasing the amount outstanding of the Program. The amount outstanding of the Program rose to 48.9 trillion yen at the end of March 2012 from 31.8 trillion yen at the end of the previous year (Chart 49).

With the progress of these fund supplies and asset purchases, the effects of the Bank's monetary easing spread into financial markets with longer-term market interest rates declining significantly, and in this situation, undersubscriptions occurred occasionally.

Chart 49: Amounts Outstanding of the Operations through the Asset Purchase Program

trillion yen

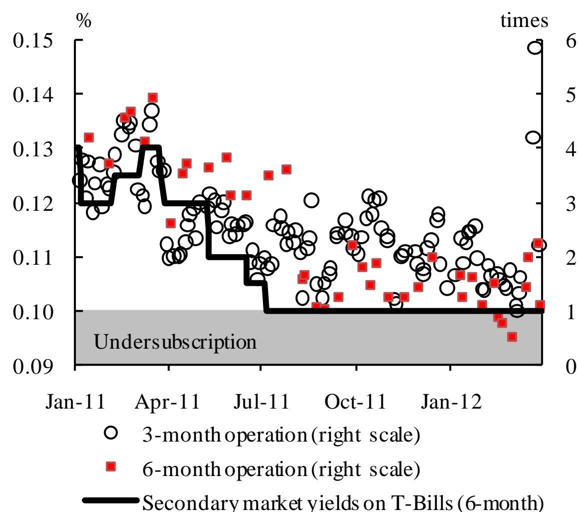
	Total	Fixed-rate funds-supplying operation against pooled collateral	Purchases of various financial assets						
			Total	JGBs	T-Bills	CP	Corporate bonds	ETFs	J-REITs
End-Mar. 2012	48.9	34.6	14.3	6.3	3.5	1.6	2.0	0.8	0.07
End-Mar. 2011	31.8	28.8	2.9	0.9	1.3	0.3	0.2	0.2	0.02
Maximum amount outstanding (as of end-Mar. 2012)	65	35.0	30.0	19.0	4.5	2.1	2.9	1.4	0.11

1. Fixed-Rate Funds-Supplying Operation against Pooled Collateral (Maximum Amount Outstanding of Loans: About 35.0 Trillion Yen)

The Bank conducted the 3-month operations at a pace of twice a week in general with 800 billion yen offered per operation. The Bank maintained the amount outstanding of the operations at around 20 trillion yen by offering the same amount as maturing loans. The Bank also conducted the 6-month operations with 800 billion yen offered per operation. Until July 2011, the Bank offered the same amount as maturing loans and two new loans, and at the end of July 2011 the amount outstanding of the 6-month operations stood at 10.4 trillion yen and that of 6-month and 3-month operations in total amounted to 30.4 trillion yen, reaching the maximum amount outstanding at that time of about 30 trillion yen. After the maximum amount outstanding was increased by 5 trillion yen for the 6-month operation to about 35 trillion yen in total at the MPM held on August 4, 2011, the Bank not only continued to offer the same amount as maturing loans but also offered six new 6-month loans with 800 billion yen per operation. As a result, at the end of March 2012, the amount outstanding of the 6-month operation increased to 14.6 trillion yen, and that of 6-month and 3-month operations in total rose to 34.6 trillion yen, nearly reaching the increased maximum amount outstanding.

Until July 2011, the bid-cover ratios of 3-month and 6-month operations remained high, generally between two and four times and between three and five times, respectively. From August 2011, however, the fixed rate of 0.1 percent applied to these longer-term operations became significantly less advantageous, as the short-term market rates, such as yields on T-Bills, converged to 0.10 percent. As perceptions about the abundance of liquidity remained strong and concerns about future funding conditions dissipated, market participants needed less longer-term funding. Thus, the bid-cover ratios generally trended lower. In particular, those of the 6-month operations declined considerably, and undersubscriptions occurred in February and March 2012 (Chart 50).

Chart 50: Bid-Cover Ratios of Fixed-Rate Funds-Supplying Operations against Pooled Collateral



Box 8: Bid-Cover Ratios of Fixed-Rate Funds-Supplying Operations against Pooled Collateral

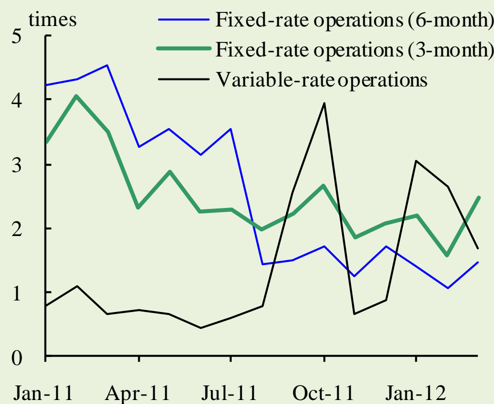
The bid-cover ratios of fixed-rate funds-supplying operations against pooled collateral declined as a trend during fiscal 2011 as short-term market interest rates declined.

Until around July 2011 -- when yields on 3-month and 6-month T-Bills were slightly above 0.1 percent with the short-term yield curve sloping upward -- the bid-cover ratios generally remained at two to four times. The bid-cover ratios of the operations with 6-month duration tended to be higher than those with 3-month duration, because the former were more attractive than the latter, since the same interest (0.1 percent) was applied to both. From August 2011, when yields on T-Bills with durations of up to one year declined to 0.1 percent and the yield curve flattened entirely, the bid-cover ratios declined clearly. In terms of the funding cost, the advantage of the 6-month operations over the 3-month operations was lost. While there was a certain level of demand for 6-month operations as a stable funding source, market participants paid more attention to their disadvantage: longer-term operations were unsuited to temporary fluctuations in funding positions. Against this background, the bid-cover ratios of the operations with 6-month duration declined quickly to levels below those with 3-month duration, and eventually to the range between one and two times and to the level of undersubscription. In other words, the decline in the bid-cover ratio reflected the fact that interest rates in money markets for up to six months declined to

0.1 percent with concerns about funding for the next six months essentially eliminated.

Meanwhile, demand for the operations with 3-month duration was generally steady compared to those with 6-month duration. This was partly because the former was sometimes used to adjust funding positions against temporary surpluses and shortages of funds, as an alternative to variable-rate funds-supplying operations against pooled collateral. The variable-rate operations were offered less frequently, as financial institutions' demand for funds are satisfied to a greater degree by fund provisions through the Asset Purchase Program. In October 2011 and January 2012, when demand for funds increased in the market, bid-cover ratios of operations with 3-month duration as well as those of variable-rate funds-supplying operations rose moderately (Chart 51).

Chart 51: Bid-Cover Ratios of Funds-Supplying Operations against Pooled Collateral



Notes: Figures are monthly average.

2. Outright Purchases of JGBs (Maximum Amount Outstanding to Be Purchased: About 19.0 Trillion Yen)

At first, among 2-year, 5-year, and 10-year JGBs with a residual maturity of one year or more and up to two years, the Bank continued to assign two issues with the first and the second longest residual maturities of each issuing maturity, six issues in total, for each purchase. After the maximum amount outstanding of purchases was increased to about 19.0 trillion yen at the MPM held on February 13 and 14, 2012, the Bank expanded the pool of issues to be purchased and offered purchases of all 2-year, 5-year, 10-year, and 20-year JGBs with a residual maturity of one year or more and up to two years.

Until July 2011, when the maximum amount outstanding of purchases was set at about 2.0 trillion yen, the Bank conducted outright purchases of JGBs once a month with 100 billion yen offered per operation. After the maximum amount outstanding of purchases was increased to about 4.0 trillion yen, 9.0 trillion yen, and further to 19.0 trillion yen at the MPMs held on August 4 and October 27, 2011 and February 13 and 14, 2012, the Bank offered outright purchases of JGBs once or twice a month with 150 billion yen offered per operation, twice a month with 250 or 300 billion yen offered per operation, and three times a month with 500 billion yen offered per operation, respectively. As a result, at the end of March 2012, the amount outstanding stood at 6.3 trillion yen out of the maximum amount outstanding of about 19.0 trillion yen. The Bank manages the amount outstanding of JGBs purchased through the Asset Purchase Program separately from that of its regular purchases for the purpose of supplying currency consistent with the underlying steady development of the economy, which is limited to the amount outstanding of banknotes in circulation.

During fiscal 2011, stable bids were seen, and the bid-cover ratios remained relatively high between two and six times.

Box 9: Outright Purchases of JGBs through the Asset Purchase Program and Those for the Purpose of Supplying Currency Consistent with the Underlying Steady Development of the Economy

The Bank purchases JGBs under two different frameworks, that is, outright purchases through the Asset Purchase Program and those for the purpose of supplying currency consistent with the underlying steady development of the economy (see Box 11).

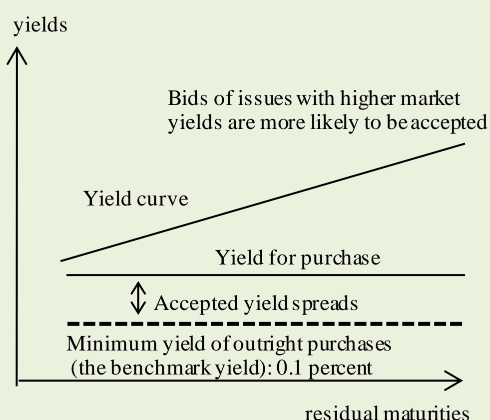
Regarding the difference in purchasing methods, outright purchases of JGBs through the Program are operations in which counterparties bid yield spreads, which are calculated by subtracting the minimum yield of 0.1 percent from the yield at which counterparties seek to sell JGBs to the Bank (Chart 52, left-hand graph). The purpose of the Program is to encourage a decline in longer-term interest rates, and under this purchasing method, as long as the yield curve for market interest rates is positive (i.e., upward sloping), JGBs with longer residual maturities are likely to be accepted. This implies downward pressure is likely to be exerted on interest rates of issues with longer residual maturities. The same

method is also applicable to outright purchases of T-Bills, CP, and corporate bonds through the Program.

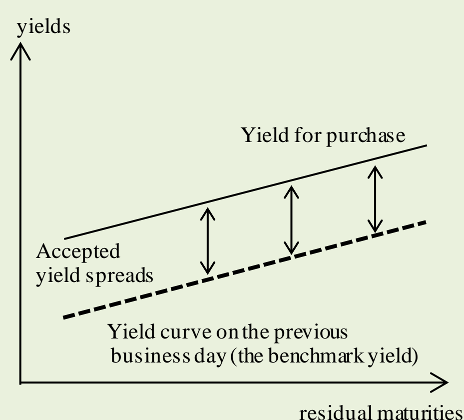
Purchases of JGBs for the purpose of supplying currency consistent with the underlying steady development of the economy (see Chapter IV.B.1) are operations in which counterparties bid yield spreads, which are calculated by subtracting the benchmark yields from the yield at which counterparties seek to sell bonds to the Bank. The "benchmark yields," which vary among issues, are the yields on the previous business day, reported in "Reference Statistical Prices (Yields) for OTC Bond Transactions" released by the Japan Securities Dealers Association (Chart 52, right-hand graph). Regarding this, the Bank has put great emphasis on market neutrality about price formation among issues. In order to prevent the residual maturities of purchased JGBs from shortening or lengthening excessively, the Bank purchases JGBs from five tranches, namely, "up to one year," "more than one year and up to ten years," "more than ten years and up to 30 years," "floating-rate bonds," and "inflation-indexed bonds." Thus, the residual maturities of JGBs actually purchased by the Bank in each tranche reflect the needs of market participants and fluctuate accordingly, depending on intraday developments in the interest rates of each issue and the particular bonds counterparties seek to sell to the Bank on the day of the operation. The same applies to outright purchases of T-Bills as short-term funds-supplying operations (see Chapter IV.B.2).

Chart 52: Purchasing Methods for Outright Purchases of JGBs

(1) Purchases of JGBs through the Asset Purchase Program



(2) Purchases of JGBs to Supply Currency Consistent with the Underlying Steady Development of the Economy



3. Outright Purchases of T-Bills (Maximum Amount Outstanding to Be Purchased: About 4.5 Trillion Yen)

The Bank continued to assign the two latest issues of 6-month T-Bills and the 1-year T-Bills with a residual maturity of six months or more for each purchase. Until July 2011, when the maximum amount outstanding of purchases was set at about 3.0 trillion yen, the Bank offered outright purchases of T-Bills of 150 billion yen twice a month. After the maximum amount outstanding of purchases was increased to about 4.5 trillion yen at the MPM held on August 4, 2011, the Bank in general offered outright purchases of T-Bills of 200 billion yen twice a month. When the Bank judged it difficult to purchase T-Bills through the Asset Purchase Program, under which the minimum purchasing yield is set at 0.1 percent, however, it did not offer outright purchases. Even when purchase was offered on January 20, 2012, undersubscription occurred in which bids of 32.3 billion yen fell short of offers of 200 billion yen.

Under these circumstances, from February 2012, the Bank increased the amount offered per operation to 300 billion yen and offered the purchasing operations three times in some months, while taking into account the actual pace of purchases reflecting undersubscriptions in the past and the maturity dates of purchased T-Bills. The Bank made efforts to increase the amount outstanding of purchases by flexibly accelerating the pace of purchases when it was expected that such purchases were needed among market participants. As a result, at the end of March 2012, the amount outstanding stood at 3.5 trillion yen out of the maximum amount outstanding of about 4.5 trillion yen.

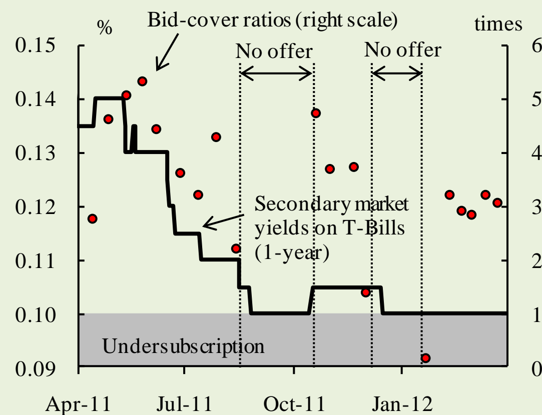
Box 10: Outright Purchases of T-Bills through the Asset Purchase Program

Outright purchases of T-Bills through the Asset Purchase Program employed the same method as outright purchases of JGBs. Specifically, the minimum purchasing yield was set at 0.1 percent and auctions were based on yield spreads, which are calculated by subtracting the minimum yield of 0.1 percent from the yield at which counterparties seek to sell T-Bills to the Bank (see Box 9). As long as the market yield curve is upward sloping, bills with longer residual maturity, or the most recently issued 1-year T-Bills, are more likely to be

accepted in an auction.

In fiscal 2011, the Bank did not announce T-Bill purchase operations through the Program during two periods -- from mid-August to mid-October and from mid-December to mid-January -- when judging it difficult to purchase the bills. These periods corresponded to phases when yields on 1-year T-Bills converged to 0.1 percent, which was the minimum yield for the purchase (Chart 53). The demand for the operation depends not only on the level of market interest rates but also on counterparties' holdings of eligible assets to be purchased. Incentives to sell T-Bills to the Bank were reduced, with yields on T-Bills up to 1 year converging to 0.1 percent.

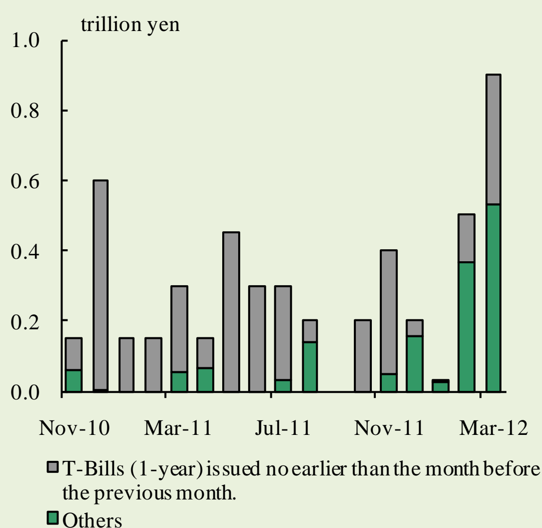
Chart 53: Bid-Cover Ratios of Outright Purchases of T-Bills Conducted through the Asset Purchase Program



With 1-year yields converging to 0.1 percent and the yield curve completely flattened, there was no difference between 6-month T-Bills and 1-year T-Bills in terms of the interest rate. Under these circumstances, 1-year T-Bills with longer remaining maturities are not necessarily accepted in an auction. In fact, in operations conducted in August 2011 and from December 2011 onward, the shares of bills with shorter residual maturity such as 6-month T-Bills increased (Chart 54).

In light of delays in the progress of purchases due to temporary suspensions or shortening of maturities of the bills purchased, the Bank increased the amounts per operation or the frequency of the operations in a flexible manner to ensure that the Bank would not fall behind schedule as originally planned in terms of increasing the amounts outstanding of the Program.

Chart 54: T-Bills Purchased through the Asset Purchase Program

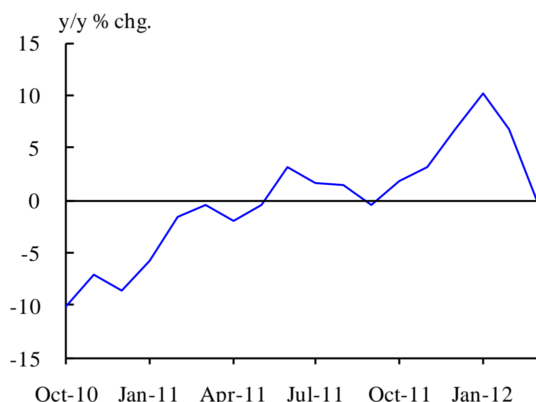


4. Outright Purchases of CP (Maximum Amount Outstanding to Be Purchased: About 2.1 Trillion Yen)

In principle, the Bank offered outright purchase of CP of 300 billion yen, two or three times per month, taking account of market conditions and the Bank's CP holdings. The amount outstanding fluctuated moderately, depending on the redemption schedules of the issues that had been purchased. The amount outstanding increased to 1.9 trillion yen at the end of December 2011 and was 1.6 trillion yen at the end of March 2012, out of the maximum amount outstanding of 2.1 trillion yen.

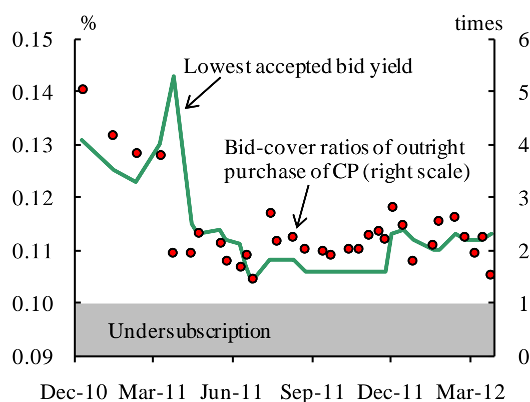
The bid-cover ratios temporarily declined to the range of one to 1.5 times in June 2011, they were stable in the range of 1.5 to three times from July as the amount outstanding of CP issued was mostly larger than the previous year (Charts 55 and 56). In addition, unlike corporate bonds, CP is usually held by underwriters (city banks and *tanshi* companies) for some period of time after issuance until it is purchased by mutual funds or other investors. In this process, the outright purchases by the Bank were often used, making the bid-cover ratios relatively stable.

Chart 55: Amount Outstanding of CP



Notes: 1. Figures are as of the end of the month.
2. CP issued by business companies and asset-backed CP (ABCP).

Chart 56: Bid-Cover Ratios and Lowest Accepted Bid Yield of Outright Purchase of CP



Note: Lowest accepted bid yield is the sum of the lowest accepted bid yield spread and the benchmark yield (0.1 percent).

5. Outright Purchases of Corporate Bonds (Maximum Amount Outstanding to Be Purchased: About 2.9 Trillion Yen)

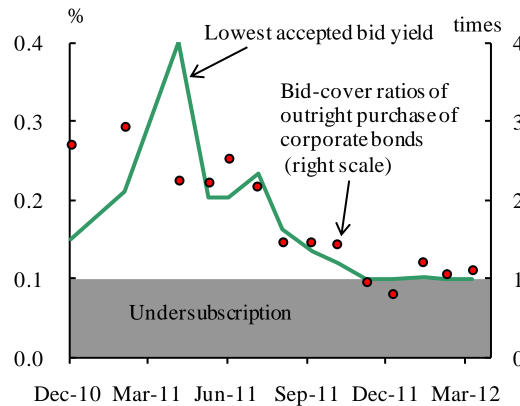
The Bank offered the outright purchase of corporate bonds once a month with the amount of 150 billion yen per operation until July 2011, when the maximum amount outstanding was about 2.0 trillion yen. After the maximum amount outstanding was raised to about 2.9 trillion yen at the MPM held on August 4, the Bank continued to offer the operation once a month, while increasing the amount of a purchase to 200 billion yen when deemed appropriate. Specifically, the Bank purchased 200 billion yen of bonds in December 2011 and March 2012, often taking account of such factors as the redemption schedule of the bonds that had been purchased.

The bid-cover ratios decreased as a trend due to strong demand for corporate bonds by investors, and the operations were undersubscribed in November and December 2011. Although there was no undersubscription from January 2012, the bid-cover ratios remained low and the lowest rates of the accepted bids stayed close to the minimum purchasing rate of 0.1 percent (Chart 57). Many investors in Japan purchase corporate bonds as a long-term investment, and trading volumes in the secondary market are limited. In fiscal 2011, the

electric power companies encountered difficulties in issuing corporate bonds after the nuclear accident that followed the Great East Japan Earthquake, resulting in a supply shortage of corporate bonds as a whole. Investors became more reluctant to sell their corporate bond holdings, as reinvestment opportunities were rather limited.

Even under these circumstances, the Bank continued to offer the outright purchases so as to make investors more confident about investment in corporate bonds. At the end of March 2012, the amount outstanding stood at 2.0 trillion yen out of the maximum of about 2.9 trillion yen.

Chart 57: Bid-Cover Ratios and Lowest Accepted Bid Yield of Outright Purchase of Corporate Bonds



Note: Lowest Accepted bid yield is the sum of the lowest accepted bid yield spread and the benchmark yield (0.1 percent).

6. Outright Purchases of ETFs (Maximum Amount Outstanding to Be Purchased: About 1.4 Trillion Yen)

At the end of March 2012, the amount outstanding stood at 0.8 trillion yen out of the maximum amount outstanding of about 1.4 trillion yen, increasing from 0.2 trillion yen out of the maximum amount outstanding of about 0.9 trillion yen at the same time last year.

7. Outright Purchases of J-REITs (Maximum Amount Outstanding to Be Purchased: About 0.11 Trillion Yen)

At the end of March 2012, the amount outstanding stood at 0.07 trillion yen out of the maximum amount outstanding of about 0.11 trillion yen, increasing from 0.02 trillion yen out of the maximum amount outstanding of about 0.1 trillion yen at the same time last year.

B. Regular Operation Tools

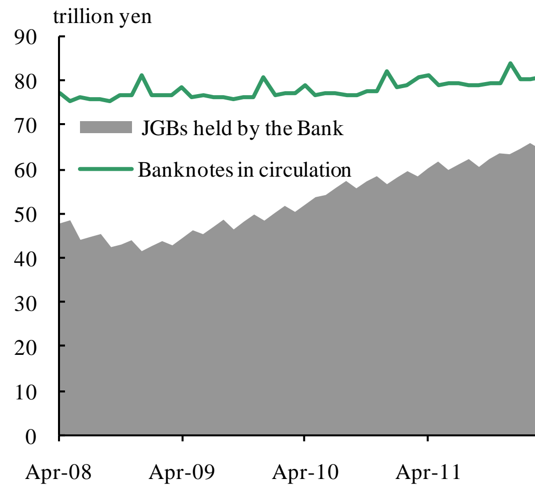
1. Funds-Supplying, Long-Term, and Outright Operations

a. Outright Purchases of JGBs

During fiscal 2011, as in fiscal 2010, the Bank continued to purchase JGBs at a pace of 21.6 trillion yen per year (1.8 trillion yen per month). The Bank conducted the purchasing operations four times a month. In each operation, it offered to purchase JGBs for two out of five tranches classified by bond type and residual maturity, which are "up to one year," "more than one year and up to ten years," "more than ten years and up to 30 years," "floating-rate bonds," and "inflation-indexed bonds."

As the Bank purchased JGBs at a pace of 21.6 trillion yen per year during fiscal 2011, the amount outstanding of JGBs held by the Bank, excluding those purchased through the Asset Purchase Program, stood at 64.4 trillion yen at the end of March 2012, up 6.2 trillion yen from 58.2 trillion yen at the same time last year. The Bank limits the amount outstanding of its holdings of JGBs, excluding those purchased under the Program, within that of banknotes in circulation. The amount outstanding of banknotes in circulation at the end of March 2012 amounted to 80.8 trillion yen, down 0.1 trillion yen from 80.9 trillion yen at the same time last year. The difference between the amount outstanding of the Bank's JGB holdings and that of banknotes in circulation continued to narrow as a trend (Chart 58).

Chart 58: Amounts Outstanding of the Bank's JGB Holdings



Notes: 1. Figures are as of the end of the month.
2. Those purchased through the Asset Purchase Program are not included.

The average residual maturity of JGBs purchased by the Bank (flow), excluding those purchased through the Program, was a little shorter than four years on average, from February 2009 onward, during which the Bank purchased JGBs with the tranches classified by bond type and residual maturity. In fiscal 2011, it was 3.3 years (see Box 9 and Chart 59). The average residual maturity of JGBs held by the Bank (stock), excluding those purchased through the Program, was 4.6 years at the end of March 2012.

Chart 59: Average Residual Maturity of the Bank's JGB Holdings

years

	Flows during the fiscal year	Stock at the end of the fiscal year
Fiscal 2008	2.2	5.2
Fiscal 2009	3.9	5.2
Fiscal 2010	3.8	4.9
Fiscal 2011	3.3	4.6

Note: JGBs purchased through the Asset Purchase Program are excluded.

Box 11: Amounts Outstanding of the Bank's JGB Holdings

The Bank conducts outright purchases of JGBs under the two different frameworks mentioned above (see Box 9).

Although the amount outstanding of banknotes in circulation fluctuates due to seasonal factors, it increases moderately in line with economic growth in the long run. From the viewpoint of the Bank's balance sheet, it is appropriate that the Bank holds JGBs (long-term assets of the Bank) in accordance with the amount outstanding of banknotes in circulation (liabilities of the Bank). Thus, the regular outright purchases of JGBs are sometimes called operations to supply currency consistent with the underlying steady development of the economy.

From a somewhat longer-term perspective, the Bank needs to maintain flexibility on the asset side of its balance sheet so as to control the current account balances and conduct money market operations smoothly in response to economic and financial developments at different times. From this point of view, the Bank might need, for example, to purchase and sell JGBs frequently in order to control the current account balances flexibly, depending on the relationship between the amount outstanding of its JGB holdings and that of banknotes in circulation. Such conduct of money market operations, however, might disturb the financial markets as it would increase volatility of market interest rates significantly. The Bank, therefore, limits the amount outstanding of JGBs outright purchased through the regular operations within that of banknotes in circulation. This rule also demonstrates the intent that the outright purchases of JGBs by the Bank are not for supporting JGB prices or financing the government debt.

The amount outstanding of JGBs held is determined by the amount and the residual maturities of issues purchased. The Bank takes such aspects of the JGB purchasing operation into account in designing its practical framework, and in January 2009 introduced the scheme to purchase JGBs with the tranches classified by bond type and residual maturity.

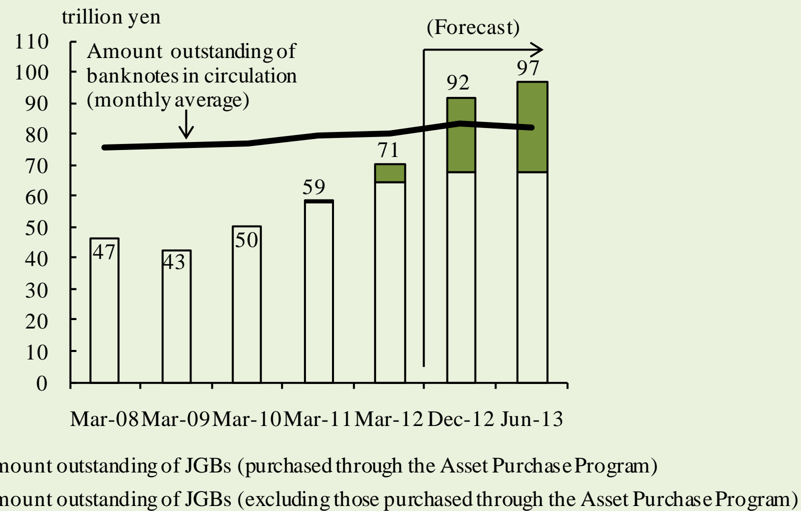
Meanwhile, the outright purchases of JGBs under the Asset Purchase Program are conducted as a temporary measure to encourage a decline in longer-term interest rates, differently from the regular JGB outright purchasing operations described above. In view of this, the Bank's holdings of JGBs purchased through the Program are treated separately from the regular purchasing operations and are not subject to the ceiling on the amount outstanding of banknotes in circulation.

The Bank conducts the regular JGB purchasing operations in accordance with a trend in the demand for banknotes at a pace of 1.8 trillion yen per month. Regarding the JGB purchases through the Program, the Bank decided, at the MPM held on April 27, 2012, to add another about 10 trillion yen to their maximum amount outstanding, which was about 19 trillion yen as of the end of March 2012. In response to this decision, the Bank will conduct the JGB purchases through the Program at the pace of about 2.1 trillion yen per month until the end of 2012 -- when the Bank intends to complete the increase of its JGB holdings to about 24.0 trillion yen -- and at the pace of about 1.0 trillion yen per month from January 2013 to the end of June 2013 -- when the Bank intends to complete the increase to about 29.0 trillion yen. The purposes and frameworks of these two purchases are different, but in total, the Bank will purchase JGBs at the pace of about 3.9 trillion yen per month until the end of 2012, and of about 2.8 trillion yen per month from January to the end of June 2013.

At the end of March 2012, as a total of the two frameworks, the amount outstanding of JGBs held by the Bank was 70.7 trillion yen, of which 6.3 trillion yen was through the Program (Chart 60). On condition that the residual maturity of JGBs purchased through the regular operations (not through the Program) until the end of 2012 is the same as that in fiscal 2011 and that the amount outstanding is constant after the beginning of 2013 at the level as of the end of 2012, the total amount outstanding of JGBs held by the Bank at the end of 2012 is expected to be about 92 trillion yen (of which, 24 trillion yen will be through the Program) and at the end of June 2013 is expected to be about 97 trillion yen (of which, 29 trillion yen will be through the Program). Regarding the amount outstanding of the banknotes in circulation, on condition that it grows at the average rate in the latest three months (an annual rate of 2.3 percent), it is expected to be about 83 trillion yen in December 2012 and about 82 trillion yen in June 2013.

As mentioned earlier, the size of the JGB purchases under the Program is determined solely from the perspective of the monetary policy, and thus is not subject to the ceiling on the amount of banknotes in circulation. The Bank, however, needs to pay closer attention to ensure that such large holdings of JGBs by the Bank are not regarded as financing the government debt.

Chart 60: Amounts Outstanding of the Bank's JGB Holdings



Notes: 1. Figures for the amount outstanding of JGBs are as of the end of each month.
2. The average annual growth rate for the latest three months used to forecast banknotes in circulation in December 2012 and June 2013 is that for December 2011 to February 2012, excluding the figure for March 2012 significantly affected by the Great East Japan Earthquake.

2. Funds-Supplying, Short-Term, and Outright Operations

a. Outright Purchases of T-Bills

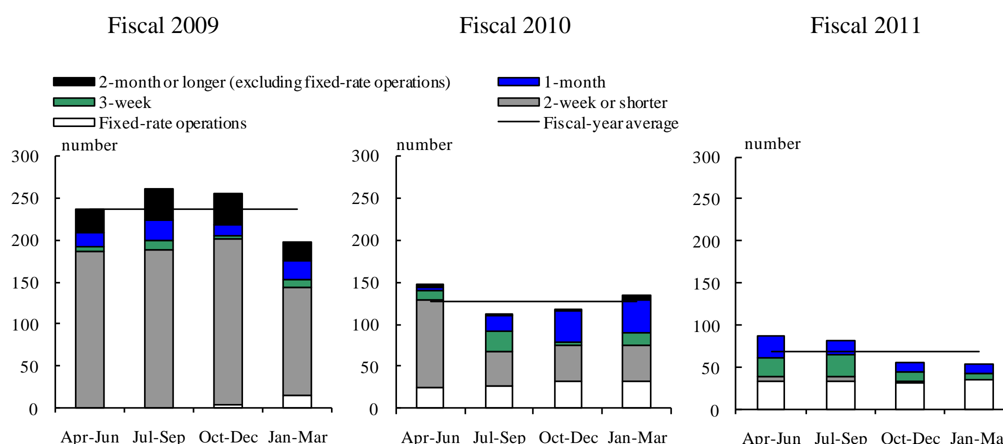
In fiscal 2011, outright purchases of T-Bills were offered until June 2011, about twice a month with the amount purchased per operation of 300 billion yen. Given declining demand among market participants for the operations, however, the Bank did not offer them after June 16, 2011. The amount outstanding, which stood at 5.4 trillion yen at the end of March 2011, declined as T-Bills purchased by June 2011 matured gradually, to 0.4 trillion yen at the end of March 2012.

3. Funds-Supplying and Short-Term Operations with Fixed Maturity

a. Variable-Rate Funds-Supplying Operation against Pooled Collateral

During fiscal 2011, the Bank offered variable-rate operations at the Head Office with maturities of about three weeks and those at All Offices with maturities of about one month, given that durations of the fixed-rate funds-supplying operations against pooled collateral under the Asset Purchase Program were about three months or six months. The share of operations offered with maturities of about two weeks or less was much smaller than that in fiscal 2010 (Chart 61).

Chart 61: Number of Short-Term Funds-Supplying Operations by Term of Loans

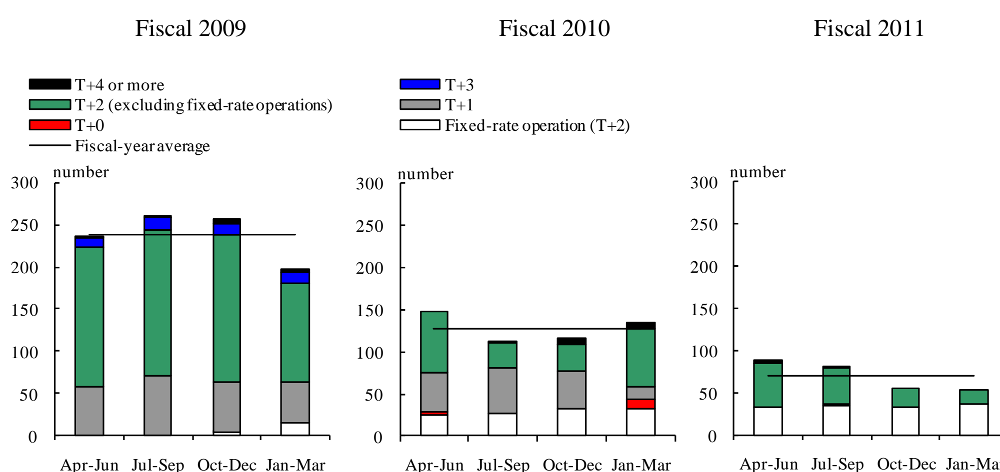


Notes: 1. Based on the offer date.
2. Figures include those of variable-rate funds-supplying operations against pooled collateral, fixed-rate funds-supplying operations against pooled collateral (fixed-rate operations), purchases of JGSs with repurchase agreements, purchases of CP with repurchase agreements, and special funds-supplying operations to facilitate corporate financing.

The Bank offered almost no funds-supplying operations on a T+4 basis (settled four business days after the offer date) or on a T+1 basis (settled the next business day after the offer date), which were offered as necessary during fiscal 2010, but operations in most cases were on a T+2 basis (settled two business days after the offer date) (Chart 62). This was partly because compared to fiscal 2010 there was considerably less need to preemptively supply liquidity for coping with expected large shortages of funds, or to additionally supply funds for addressing elevated tensions in financial markets, since the

money markets remained stable amid the Bank's provision of ample funds. Likewise, the Bank did not offer a same-day funds-supplying operation, an operation on a T+0 basis (settled on the offer date), or an operation starting on the quarter-end day and ending on the next-quarter-start day (so-called quarter-end/quarter-start operation) to meet the increased demand for funds at the quarter-end.

Chart 62: Number of Short-Term Funds-Supplying Operations by Settlement Basis



Note: See the notes to Chart 61.

As the amount outstanding of the Program increased further in fiscal 2011, funding demand was met to a greater degree by fixed-rate funds-supplying operations and asset purchases under the Program. Precautionary finding demand that rose immediately after the Great East Japan Earthquake declined as uncertainties about future market conditions were resolved. Under these circumstances, the amount outstanding of the variable-rate funds-supplying operations against pooled collateral stood at 0.8 trillion yen at the end of March 2012, down 25.0 trillion yen from 25.8 trillion yen at the same time last year.

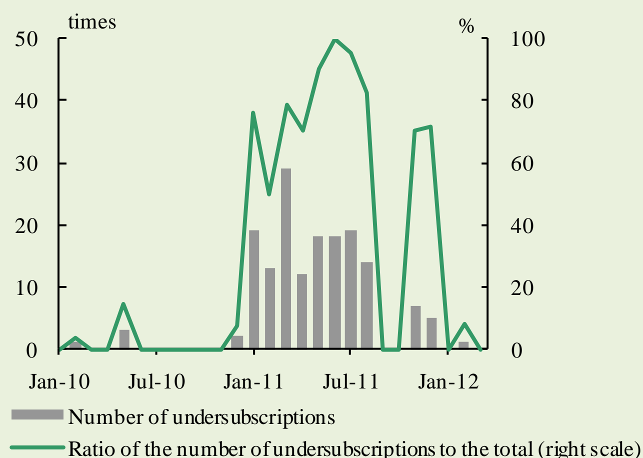
b. Purchases of JGSs and CP with Repurchase Agreements

During fiscal 2011, the Bank did not offer JGS and CP purchasing operations with repurchase agreements, since the repo and CP markets remained stable.

Box 12: Bid-Cover Ratios of Variable-Rate Funds-Supplying Operations against Pooled Collateral

Regarding variable-rate funds-supplying operations against pooled collateral (so-called variable-rate operations), as perceptions of abundant liquidity in the market increased, undersubscriptions occurred frequently in fiscal 2011, as was the case with the January-March 2011 period (Chart 63). For example, during the April-June 2011 period, the Bank offered 55 variable-rate operations, of which 48 (87 percent) were undersubscribed.

Chart 63: Undersubscriptions in the Variable-Rate Funds-Supplying Operations



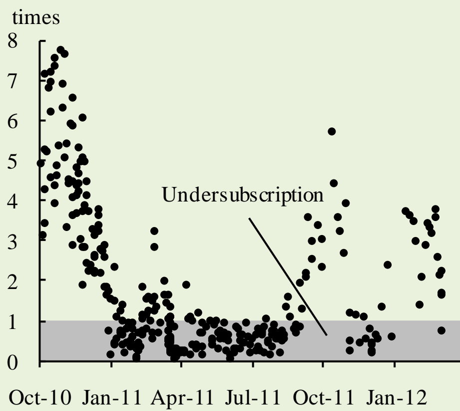
Note: Based on the offer date.

After September 2011, a sharp rise in bid-cover ratios was sometimes seen in operations that were fully subscribed. For example, the operation at the Head Office offered on October 12 attracted bids of 4.6 trillion yen against the offered amount of 800 billion yen, for a bid-cover ratio of 5.72. Even in these cases, however, both the minimum lending rate and the average lending rate remained at 0.10 percent, with no counterparty bidding up yields for funds (Charts 64 and 65).

The sharp rise in bid-cover ratios with financial institutions bidding for funds at an interest rate not higher than 0.1 percent reflected behavior of market participants that can be described as follows. Counterparties participating in an operation make their own forecast of the bid-cover ratio when they expect the operation will not be undersubscribed. They

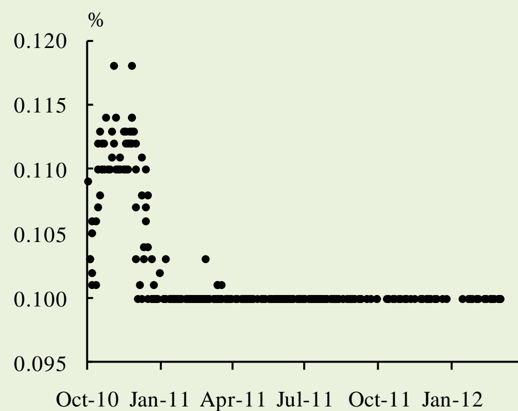
attempt to secure the amount of funds they require by bidding a larger amount than actually needed, based on their forecast of the bid-cover ratio. If many market participants follow this bidding strategy, the total amount of bids will increase in a self-fulfilling process. It should be noted, therefore, that the bid-cover ratios of operations are not necessarily proportional to the level of funding demand.

Chart 64: Bid-Cover Ratios of the Variable-Rate Funds-Supplying Operations



Note: Based on the offer date.

Chart 65: Average Successful Bid Rates of the Variable-Rate Funds-Supplying Operations



Note: Based on the offer date.

4. Funds-Absorbing Operations

During fiscal 2011, as in fiscal 2010, the Bank did not offer funds-absorbing operations since it maintained its target rate for the uncollateralized overnight call rate at "around 0 to 0.1 percent" as part of the comprehensive monetary easing policy.

5. Other Operations

a. Securities Lending Facility

During fiscal 2011, the Bank offered securities lending 14 times in total, less than the 17 times in fiscal 2010. The Bank lent inflation-indexed bonds the most frequently. Regarding inflation-indexed bonds, new issuance paused from August 2008 onward, and buybacks by the National Debt Consolidation Fund and purchasing operations by the Bank continued.

The market size, market liquidity, and functioning of the special collateral (SC) repo market of the inflation-indexed bonds remained low.

C. Complementary Lending Facility

During fiscal 2011, as in fiscal 2010, the use of the complementary lending facility was extremely limited, against the background of the supply of ample funds by the Bank.

D. Growth-Supporting Funding Facility

During fiscal 2011, the Bank disbursed loans under the main rules for the Growth-Supporting Funding Facility introduced in June 2010 once a quarter, four times in total. From the fifth loan disbursement onward, in relation to the total limit of loans to be disbursed (3 trillion yen at the time of these disbursements), since the applied amount of loans exceeded the maximum amount of new loan disbursement, the Bank disbursed loans on a *pro rata* basis (Chart 66).

From August 2011, the Bank disbursed three loans under a new line of credit for equity investments and ABL established in June 2011 (special rules for equity investments and ABL, see Chapter V.A) on the same days when it disbursed loans under the main rules.

At the end of March 2012, the outstanding balance of loans under the main rules reached the ceiling of 3 trillion yen, equal to the total limit of loans to be disbursed at that time, and that of loans under the special rules for equity investments and ABL stood at 0.09 trillion yen out of the ceiling of 0.5 trillion yen.

Chart 66: Loan Disbursement under the Growth-Supporting Funding Facility

(Main Rules)

100 million yen

	4th (May 31, 2011)	5th (Aug. 31, 2011)	6th (Nov. 30, 2011)	7th (Feb. 29, 2012)	Outstanding balance of loans (as of end-Mar. 2012)
Major banks	2,125	228	305	221	13,002.6
Regional banks	4,551	945	1,050	1,030	13,768.4
Other institutions	1,620	222	274	218	3,226.5
Total	8,296	1,395	1,629	1,469	29,997.5

(Special Rules for Equity Investments and Asset-Based Lending)

100 million yen

	1st (Aug. 31, 2011)	2nd (Nov. 30, 2011)	3rd (Feb. 29, 2012)	Outstanding balance of loans (as of end-Mar. 2012)
Major banks	185	131	213	505.5
Regional banks, etc.	196	44	167	385.6
Total	381	175	380	891.1

Note: The date in parentheses is that of notification of loan disbursement.

E. Funds-Supplying Operation to Support Financial Institutions in Disaster Areas

Under the funds-supplying operation to support financial institutions in disaster areas established in April 2011 (see Chapter V.B), the Bank disbursed loans once a month from May 2011, eleven times in total (Chart 67).

At the end of March 2012, the outstanding balance of loans stood at 0.5 trillion yen out of the ceiling of 1.0 trillion yen.

Chart 67: Loan Disbursement under the Funds-Supplying Operation to Support Financial Institutions in Disaster Areas

100 million yen

	1st (May 17, 2011)	2nd (June 21)	3rd (July 20)	4th (Aug. 23)	5th (Sep. 21)	6th (Oct. 18)	7th (Nov. 21)	8th (Dec. 16)	9th (Jan. 17, 2012)	10th (Feb. 21)	11th (Mar. 22)	Outstanding balance of loans (as of end-Mar. 2012)
Major banks	86	135	14	10	225	47	12	52	15	3	1	600
Regional banks, etc.	655	1,158	1,272	126	808	343	0	0	50	50	0	4,462
Total	741	1,293	1,286	136	1,033	390	12	52	65	53	1	5,062

Note: The date in parentheses is that of notification of loan disbursement.

F. U.S. Dollar Funds-Supplying Operations

During fiscal 2011, in line with the pre-announced auction schedule, the Bank conducted the 1-week U.S. dollar funds-supplying operations once a week and the 3-month operations about once every four weeks. In these operations, an unlimited amount of funds was provided against eligible collateral submitted to the Bank by individual financial institutions. Interest rates on the loans were a fixed rate set by the Federal Reserve Bank of New York taking into account the prevailing U.S. dollar OIS market rate that corresponded to the duration of the loan. Specifically, they were set at the U.S. dollar OIS rate plus 1 percentage point at first, and were lowered to the U.S. dollar OIS rate plus 0.5 percentage point given the coordinated action taken by the six central banks on November 30, 2011.

As the rates in the Bank's operations continued to exceed those in the market, the bidding amounts remained at low levels of less than 0.1 billion dollars in all auctions conducted by November 2011. After the coordinated action to lower interest rates on the loans taken by the six central banks on November 30, 2011, however, the bidding amounts ballooned. Specifically, the bidding amount in the 1-week auction offered on December 20 maturing over the calendar year-end was 9.035 billion dollars. That in the first 3-month auction offered on December 13 after the lowering of interest rates on loans was 4.756 billion dollars, with 12.556 billion dollars in the following operation offered on January 10. Reflecting the gradual improvement in conditions in the U.S. dollar funding market, the bidding amounts in both 1-week and 3-month auctions decreased substantially. No bids were submitted in the one-week operation offered on February 14 for the first time in three months. During fiscal 2011, the amount outstanding peaked at 20.5 billion dollars from January 12 to 19, 2012, and then decreased to 13.5 billion dollars at the end of March 2012.

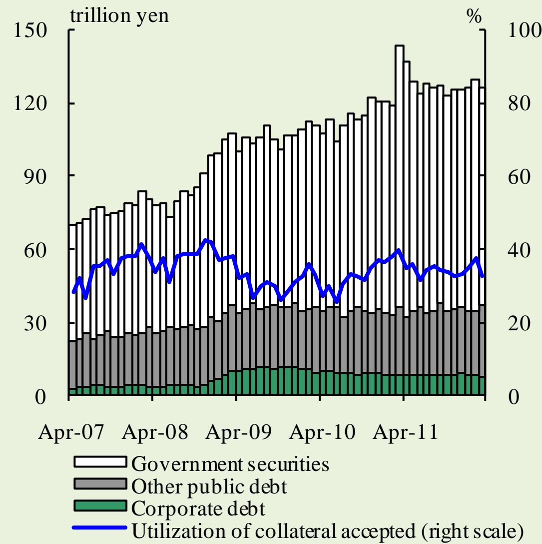
Box 13: Pooled Collateral Accepted by the Bank

The Bank selects a wide range of corporate debt such as corporate bonds and CP, as well as government securities and other public debt, as financial assets eligible as collateral for the Bank's provision of credit (eligible collateral). Financial institutions can obtain credit from the Bank within the value of the eligible financial assets submitted ("pooled collateral"), through the funds-supplying operations against pooled collateral, the complementary lending facility, the intraday overdraft, and other means. Under the pooled collateral scheme, financial institutions can (1) have prompt and certain access to liquidity when necessary, by pledging a sufficient amount of eligible collateral to the Bank in advance and (2) select types of collateral from their assets and make substitutions among them. As such, the framework of pooled collateral is highly convenient for financial institutions and works to support the smooth conduct of money market operations.

Looking at developments in pooled collateral accepted by the Bank from fiscal 2007, the amount outstanding had increased as a whole, particularly since the failure of Lehman Brothers in September 2008. At the end of March 2011, it reached 143.8 trillion yen, up from 69.7 trillion yen at the end of April 2007, as financial institutions cautiously increased the amount of collateral in response to the heightening of precautionary demand for funds immediately after the Great East Japan Earthquake (Chart 68). During fiscal 2011, the amount outstanding remained high at around 125 trillion yen.

Meanwhile, the utilization of pooled collateral (as of the month-end) remained stable at around 30-40 percent. This seemed to indicate that financial institutions adjusted the amount of collateral they submitted to the Bank by considering their own utilization and excess amount of collateral, as well as managing their intraday liquidity. During fiscal 2011, the utilization of collateral stayed at around 35 percent.

Chart 68: Amount Outstanding of Pooled Collateral Accepted by the Bank (1)



Note: Figures are as of the end of the month.

With regard to the categories of collateral, government securities accounted for the largest share of about 70 percent in total (Chart 69). The increase in the amount outstanding of pooled collateral since fiscal 2007 was also driven mainly by government securities. Financial institutions seemed to adjust their overall collateral levels by controlling the amount of government securities that they submitted to the Bank, given the large volume of issuance and the high operational efficiency for submission and withdrawal as collateral to the Bank. Other public debt accounted for more than 20 percent and consisted mostly of loans on deeds to the government and those with government guarantees. Corporate debt accounted for less than 10 percent. Their amount outstanding, however, temporarily increased significantly to more than 11 trillion yen from 3-5 trillion yen, reflecting the introduction of the special funds-supplying operations to facilitate corporate financing in December 2008 (collateral of those operations was limited to corporate debt). Even after the operations expired at the end of March 2010, the amount outstanding of corporate debt decreased only slightly and stayed at around 8-9 trillion yen.

Chart 69: Amount Outstanding of Pooled Collateral Accepted by the Bank (2)

trillion yen

Categories of collateral	As of end-Mar. 2011		As of end-Mar. 2012	
	Collateral value	Share in total	Collateral value	Share in total
Total	143.8	100.0%	126.2	100.0%
Government securities	107.9	75.0%	88.8	70.4%
JGBs with coupons, etc.[1]	81.8	56.9%	76.2	60.4%
T-Bills	26.1	18.2%	12.6	10.0%
Other public debt	27.8	19.3%	29.6	23.5%
Government-guaranteed bonds	2.6	1.8%	2.3	1.8%
Municipal bonds	2.6	1.8%	2.7	2.1%
Fiscal Investment and Loan Program (FILP) agency bonds	0.9	0.6%	1.1	0.9%
Loans on deeds to the government and those with government guarantees	21.6	15.0%	23.4	18.5%
Loans on deeds to municipal governments	0.1	0.1%	0.1	0.1%
Corporate debt[2]	8.0	5.6%	7.8	6.2%
Corporate bonds, etc.[3]	1.4	1.0%	1.3	1.0%
CP, etc.[4]	1.9	1.3%	1.5	1.2%
Bills (excluding CP)	0.3	0.2%	0.3	0.2%
Loans on deeds to companies, etc.[5]	4.4	3.1%	4.7	3.7%

Notes: 1. Including floating-rate bonds, inflation-indexed bonds, and STRIPS.
2. Including foreign government bonds, international financial institution bonds, and foreign bonds denominated in foreign currencies.
3. Consisting of corporate bonds, asset-backed securities, and bonds issued by real estate investment corporations.
4. Consisting of dematerialized CP (including dematerialized CP issued by foreign corporations with guarantees, dematerialized asset-backed CP and dematerialized CP issued by real estate investment corporations) and CP (including ABCP and CP issued by real estate investment corporations).
5. Consisting of loans on deeds to companies (including entities owned by municipal governments) and those to real estate investment corporations.

V. Other Matters Related to Money Market Operations

A. Enhancement of the Growth-Supporting Finding Facility

At the MPM held on June 13 and 14, 2011, the Bank decided to establish a new line of credit for equity investments and ABL, or the special rules for equity investments and ABL. With a view to further encouraging financial institutions' efforts, the Bank deemed it appropriate to focus on supporting their provision of equity-like funds and loans without conventional collateral or guarantees.

Under the special rules for equity investments and ABL, the Bank provides loans against pooled collateral at a fixed rate of 0.1 percent within the amount outstanding of eligible equity investments and ABL. In order to support financial institutions' long-term initiatives, the duration of each loan was set at two years, twice as long as for loans under the main rules. Loans can be rolled over once (the maximum duration of four years). The total amount of loans was set at 500 billion yen, and the maximum amount of loans to each financial institution was set at 50 billion yen.

Furthermore, at the MPM held on March 12 and 13, 2012, the Bank decided to enhance the Growth-Supporting Funding Facility both in terms of the yen and a foreign currency and to increase the total amount of loans available by 2 trillion yen, from 3.5 trillion yen to 5.5 trillion yen. The related four concrete measures are as follows.

First, the Bank established special rules for a new lending arrangement of 500 billion yen for small-lot investments and loans (each of which amounts to 1 million yen or more but less than 10 million yen) that had not been deemed eligible in the main rules for the Growth-Supporting Funding Facility.

Second, the Bank decided to establish special rules for a U.S. dollar lending arrangement for foreign currency-denominated investments and loans that should contribute to Japan's economic growth, using the U.S. dollar reserves already held by the Bank, equivalent to 1 trillion yen. It also compiled a preliminary outline and made it public.

Third, with regard to the main rules for the Growth-Supporting Funding Facility, the Bank extended the deadline for applications for new loans by two years to March 31, 2014 and increased the ceiling for the outstanding balance of loans by 500 billion yen, from 3 trillion yen to 3.5 trillion yen.

And fourth, regarding the special rules for equity investments and ABL, the Bank extended the deadline for applications for new loans by two years, to March 31, 2014, while keeping the ceiling for the outstanding balance of loans at the current 500 billion yen.

B. Support from the Financial Side to Restore and Rebuild the Disaster Areas Affected by the Great East Japan Earthquake

At the MPM held on April 28, 2011, the Bank decided to conduct the funds-supplying operation to support financial institutions in disaster areas and the relaxation of the collateral eligibility standards for debt of companies in disaster areas.

a. Funds-Supplying Operation to Support Financial Institutions in Disaster Areas

With a view to supporting the efforts to meet the demand for funds for restoration and rebuilding, the Bank provides loans at a fixed rate of 0.1 percent against the eligible collateral to financial institutions with business offices in disaster areas that conduct lending and central organizations of financial cooperatives whose member financial institutions have business offices that conduct lending in disaster areas. The duration of each loan was set at one year to meet the need for longer-term funds. The Bank's total amount of loans was set at 1 trillion yen and the maximum amount of loans to each counterparty was set at 150 billion yen, taking into account each counterparty's total amount of lending outstanding at business offices in disaster areas (for central organizations of financial cooperatives, the aggregated amount of lending outstanding in disaster areas made by both the central organization and its member financial institutions).

b. Relaxation of the Collateral Eligibility Standards for Debt of Companies in Disaster Areas

The Bank relaxed the collateral eligibility standards for debt of companies in disaster areas with a view to securing sufficient financing capacity at the financial institutions in disaster areas with business offices in disaster areas that conduct lending.

Specifically, evaluation of creditworthiness and the eligibility standards of external credit ratings and other conditions were relaxed for (1) corporate bonds, bills, and loans on deeds issued by companies with business offices in disaster areas; (2) loans on deeds to municipal governments in disaster areas; and (3) loans on deeds to entities in disaster areas owned by municipal governments in disaster areas (Chart 70). In relaxing the collateral eligibility standards, the Bank took measures to maintain its financial soundness including more conservative margin tables for collateral.

Chart 70: Outline for the Relaxation of the Collateral Eligibility Standards for Debt of Companies in Disaster Areas

	Companies with business offices in disaster areas	Municipal governments in disaster areas	Entities in disaster areas owned by municipal governments in disaster areas
Corporate bonds	The eligibility standards of external credit ratings will be relaxed from "rated A or higher" to "rated BBB or higher."	—	—
Bills	Bills of debtor companies classified as "normal" borrowers in the latest self-assessment by financial institutions in disaster areas will be deemed as having no problems with their creditworthiness.	—	—
Loans on deeds	The eligibility standards of external credit ratings will be relaxed from "rated A or higher" to "rated BBB or higher." - - - - - - - - - - Loans on deeds of debtor companies classified as "normal" borrowers in the latest self-assessment by financial institutions in disaster areas will be deemed as having no problems with their creditworthiness.	The Bank will accept as eligible collateral loans on deeds to municipal governments that do not issue publicly offered municipal bonds, and loans on deeds for which interest rates are not determined through a competitive auction process.	The Bank will accept as eligible collateral loans on deeds to entities that are classified as "normal" borrowers in the latest self-assessment by financial institutions in disaster areas.

Note: In the case of "normal-class" standards, the Bank applies a deeper collateral haircut compared with the case of relaxation of the eligibility standards of external credit ratings, and also sets the limit for the amount of bills and loans on deeds submitted as collateral pursuant to the relevant rules of the Bank.

At the MPM held on October 6 and 7, 2011, the Bank decided to extend these two measures by six months with a view to continuing to support financial institutions in disaster areas in their efforts to meet demand for funds for restoration and rebuilding by making effective use of undisbursed funds for loans originally committed for the operation, and to securing sufficient financing capacity at the financial institutions in disaster areas. Specifically, the Bank extended the deadline for new applications for loans to April 30, 2012 and the effective period of the relaxation of the collateral eligibility standards for debt of companies in disaster areas up to April 30, 2013.

Furthermore, at the MPM held on March 12 and 13, 2012, the Bank decided to extend the measures by one year, taking also into account requests from financial institutions. Specifically, the Bank extended the deadline for new applications for loans under the operation to April 30, 2013, while keeping the existing 1 trillion yen ceiling for the outstanding balance of loans, and extended the effective period of the relaxation of the collateral eligibility standards for the debt of companies in disaster areas through April 30, 2014.

C. Periodic Review of Collateral Value of Eligible Collateral and Other Related Matters

Since fiscal 2005, the Bank has generally conducted an annual review of collateral values of eligible collateral and other related matters, comprising (1) collateral value of eligible collateral, (2) the margin ratios of JGSs used in JGS purchasing operations with repurchase agreements and the collateral value of margin collateral, and (3) margin ratios of JGSs used in the securities lending facility. The review is based on developments in financial markets, and the Bank makes necessary revisions accordingly.

The collateral value and other related matters were revised at the MPM held on October 6 and 7, 2011.

D. Establishment of Bilateral Liquidity Swap Arrangements among the Central Banks to Enable the Provision of Liquidity in Any of Their Currencies

At the unscheduled MPM held on November 30, 2011, in view of developments in the global money markets and their potential repercussions on the liquidity of the yen money market, the Bank decided to extend the expiration of the existing U.S. dollar liquidity swap arrangement with the Federal Reserve and the concomitant U.S. dollar funds-supplying operations through to February 1, 2013.

In addition, as a contingency measure, the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, the Federal Reserve, and the Swiss National Bank agreed to establish temporary bilateral liquidity swap arrangements so that liquidity can be provided in each jurisdiction in any of their currencies should market conditions so warrant. Specifically, they expanded currency swap arrangements to include, in addition to U.S. dollars, Canadian dollars, pounds sterling, yen, euros, and Swiss francs, and thereby established bilateral liquidity swap arrangements among the six central banks available until February 1, 2013.

In response to the coordinated action, at the MPM held on December 20 and 21, 2011, the Bank decided to formulate (1) summaries of swap agreements with four of the central banks (the Bank of Canada, the Bank of England, the European Central Bank, and the Swiss National Bank) under which the Bank could obtain foreign currencies from other banks, principal terms and conditions for funds-supplying operations for the four currencies (the Canadian dollar, the pound sterling, the euro, and the Swiss franc), and procedures for selection of eligible counterparties in the operations; and (2) summaries of swap agreements with the five central banks (the Bank of Canada, the Bank of England, the European Central Bank, the Federal Reserve, and the Swiss National Bank) under which the Bank could provide yen to other banks. The first set of measures enabled the Bank to provide liquidity for the four currencies in addition to the U.S. dollar should it be necessary, while the second enabled the five other central banks to provide liquidity for the yen should it be necessary.

During fiscal 2011, there was no occasion where the liquidity provision of currencies other than the U.S. dollar was necessary, and the Bank did not conduct foreign currency funds-supplying operations other than for the U.S. dollar.

E. Changes to the Operation Timetable for the Shortening of the Payment and Settlement Period for JGBs

Changes were made to the payment and settlement period for JGBs on April 23, 2012, according to which the settlement day was changed from the contract/bid date plus three business days (T+3) to the contract/bid date plus two business days (T+2) for outright JGB trades on both the secondary market and the primary market. Likewise, regarding market practices for GC repo transactions, which are in many cases made after changes in JGB holdings and cash positions are determined as a result of JGB trading, the payment and settlement day was essentially changed from T+2 to T+1.

In response to these changes, the Bank aligned the timetable for the operations of outright purchases and purchases with repurchase agreements with market practices for payment and settlement and shortened the payment and settlement period by one business day. For funds-supplying operations against pooled collateral, (1) regarding variable-rate operations, the T+1 start operations as well as the current T+2 start operations are offered to deal with funding needs after cash positions change as a result of outright JGB transactions. The T+1 start operations are mainly offered as the Head Office lending operations at 10:10 a.m. (Chart 71). (2) Regarding fixed-rate operations through the Asset Purchase Program, the T+2 start operations continue to be offered, since the Bank currently offers the same amount as maturing loans.

Chart 71: Timetable for the Variable-Rate Funds-Supplying Operations against Pooled Collateral (T+1 Settlement Basis)

	Offer	Bid submission cut-off time	Notification of respective result to counterparties	Settlement date
Variable-rate funds-supplying operations against pooled collateral at the Head Office	10:10 a.m.	10:40 a.m.	About 10:55 a.m.	T+1

List of Data Sources and Referenced Materials

Chart 1: Bloomberg.

Chart 2: Bloomberg.

Chart 3: Bloomberg.

Chart 4: Bloomberg.

Chart 5: Bloomberg; Bank of America Merrill Lynch.

Chart 6: Bloomberg; Japan Bond Trading.

Chart 7: Bank of Japan, "Bank of Japan Accounts (Every Ten Days)."

Chart 8: Bank of Japan, "Bank of Japan Accounts (Every Ten Days)."

Chart 9: Federal Reserve, "Factors Affecting Reserve Balances."

Chart 10: European Central Bank, "Minimum Reserves and Liquidity."

Chart 11: Bank of Japan, "Tokyo Repo Rate," "Uncollateralized Overnight Call Rate."

Chart 12: Bank of Japan, "Tokyo Repo Rate," "Bank of Japan Operations."

Chart 13: Ministry of Finance Japan.

Chart 14: Japan Bond Trading.

Chart 15: Japan Bond Trading; Ministry of Finance Japan.

Chart 16: Ministry of Finance Japan, "International Transaction in Securities."

Chart 17: Bloomberg.

Chart 18: Federal Reserve, "Flow of Funds Accounts of the United States."

Chart 20: Japan Bond Trading.

Chart 21: Japan Bond Trading.

Chart 22: Japan Securities Depository Center.

Chart 23: Japan Securities Dealers Association.

Chart 24: Bloomberg.

Chart 25: Bloomberg; Bank of Japan, "Bank of Japan Operations."

Chart 26: Bank of England; European Central Bank; Swiss National Bank; Bank of Japan, "Bank of Japan Operations."

Chart 27: Bloomberg; Japan Bond Trading.

Chart 28: Bloomberg.

Chart 29: Bank of Japan, "Bank of Japan Accounts (Every Ten Days)," "Financial Statements of the Bank of Japan," "Monetary Base and the Bank of Japan's Transactions."

Chart 30: Bank of Japan, "Bank of Japan Operations."

Chart 31: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Updated Every Business Day)."

Chart 32: Bank of Japan, "BOJ Current Account Balances by Sector."

Chart 33: Bank of Japan, "BOJ Current Account Balances by Sector."

Chart 34: Bank of Japan, "BOJ Current Account Balances by Sector," "Tokyo Repo Rate," "Uncollateralized Overnight Call Rate."

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Chart 36: Bank of Japan, "Amounts Outstanding in the Call Money Market."

Chart 37: Bank of Japan, "Amounts Outstanding in the Call Money Market."

Chart 39: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Final Figures)."

Chart 40: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Final Figures)."

Chart 41: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Final Figures)."

Chart 42: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Updated Every Business Day)."

Chart 43: Bank of Japan, "Bank of Japan Accounts (Every Ten Days)."

Chart 44: Cabinet Office; Bank of Japan, "Bank of Japan Accounts (Every Ten Days)."

Chart 45: Bank of Japan, "Currency in Circulation."

Chart 46: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Updated Every Business Day)."

Chart 47: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Final Figures)."

Chart 48: Bank of Japan, "Japanese Government Bonds Held by the Bank of Japan," "Sources of Changes in Current Account Balances at the Bank of Japan and Market Operations (Updated Every Business Day)," "T-Bills Purchased by the Bank of Japan."

Chart 49: Bank of Japan, "Bank of Japan Accounts (Every Ten Days)."

Chart 50: Japan Bond Trading; Bank of Japan, "Bank of Japan Operations."

Chart 51: Bank of Japan, "Bank of Japan Operations."

Chart 53: Japan Bond Trading; Bank of Japan, "Bank of Japan Operations."

Chart 54: Bank of Japan, "T-Bills Purchased by the Bank of Japan."

Chart 55: Japan Securities Depository Center.

Chart 56: Bank of Japan, "Bank of Japan Operations."

Chart 57: Bank of Japan, "Bank of Japan Operations."

Chart 58: Bank of Japan, "Monetary Base and the Bank of Japan's Transactions."

Chart 59: Bank of Japan.

Chart 60: Bank of Japan, "Bank of Japan Accounts (Every Ten Days)," "Monetary Base."

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Chart 68: Bank of Japan, "Collateral Accepted by the Bank of Japan."

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