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Market Operations in Fiscal 2021

Financial Markets Department
Bank of Japan

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I. Summary

The Bank of Japan pursued powerful monetary easing throughout fiscal 2021 under the framework of Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control, with a view to achieving the price stability target of 2 percent. It conducted (1) the Special Program to Support Financing in Response to the Novel Coronavirus (COVID-19); (2) an ample and flexible provision of funds both in yen and foreign currencies without setting upper limits, mainly through outright purchases of Japanese government bonds (JGBs) and the U.S. dollar funds-supplying operations; and (3) outright purchases of exchange-traded funds (ETFs) and Japan real estate investment trusts (J-REITs) with upper limits of about 12 trillion yen and about 180 billion yen, respectively, on annual paces of increase in their amounts outstanding, in line with its stance on monetary easing and taking into consideration the impact of COVID-19 on the economy.

Turning to the environment surrounding the Bank's market operations, weakness in firms' financial positions has remained in some segments due to the impact of COVID-19, although financial conditions in Japan were on an improving trend on the whole throughout fiscal 2021. Global financial markets saw large fluctuations due to the fact that both positive and negative factors were being taken into account, including favorable corporate results and moves to reduce monetary easing in the United States and Europe from the start of 2022, in addition to the situation with COVID-19. The Bank conducted various market operations, based on guidelines for market operations and for asset purchases decided at each Monetary Policy Meeting (MPM), and continued to (1) support financing mainly of firms, (2) maintain stability in financial markets, and (3) maintain accommodative financial conditions through supporting such financing and maintaining stability while taking account of various changes in the environment surrounding financial markets -- mainly those mentioned above.

The following were the key points in the conduct of the Bank's operations throughout fiscal 2021.

With respect to (1) the Special Program to Support Financing in Response to the Novel Coronavirus (COVID-19), the Bank continued to make outright purchases of CP and corporate bonds as it did in fiscal 2020 in line with guidelines for asset purchases with an upper limit on the amount outstanding of about 20 trillion yen in total. As a result of these operations, issuance rates for CP and the yield spreads between corporate bonds and JGBs continued to be stable at low levels.

With regard to the Special Funds-Supplying Operations to Facilitate Financing in Response to the

Novel Coronavirus (COVID-19) (hereinafter referred to as the "Special Operations in Response to COVID-19"), loans were utilized by a wide range of sectors including regional banks I and II (hereinafter referred to as "regional banks"), mainly against the backdrop of an increase in the amount outstanding of submission of private debts as collateral. The amount outstanding of the loans increased significantly throughout the fiscal year and it stood at 86.8 trillion yen at the end of March 2022.

As for (2) an ample and flexible provision of yen and foreign currency funds without setting upper limits, the Bank conducted outright purchases of JGBs flexibly so that long-term interest rates (10-year JGB yields) would remain at around 0 percent under QQE with Yield Curve Control, and the yield curve would be formed in a manner consistent with its guidelines for market operations. Starting from the purchases in April 2021, the Bank decided to announce specific amounts of JGB purchases through the competitive auction method, instead of showing them in a conventional range format, for each of the purchases in the following month, to promote a further enhancement of market functioning. The decision was made in light of the results of the Assessment for Further Effective and Sustainable Monetary Easing conducted at the Monetary Policy Meeting in March 2021 (hereinafter referred to as "Assessment"). Moreover, starting from the purchases in July 2021, the Bank decided to announce a quarterly schedule for the JGB purchases. The Bank then adjusted the quarterly purchase size and the purchase frequency per month in a flexible manner, mainly based on the supply and demand conditions of JGBs in each zone and the bidding for the operations. Amid a rise in overseas interest rates from February 2022, mainly due to the stance on the reduction of monetary easing in the United States, upward pressure on interest rates increased in Japan and gave rise to the risk of long-term interest rates surpassing about 0.25 percent, the upper limit of the range of fluctuations. In response, the Bank conducted fixed-rate purchase operations in February. Moreover, it conducted fixed-rate purchase operations for consecutive days for the first time while making additions to the schedule and increasing the amounts of offers for the purchases of JGBs in March, thereby constraining an excessive rise in long-term interest rates. As a result of these operations, long-term interest rates remained at around 0 percent throughout the fiscal year, while fluctuating in response to economic and price conditions, as well as trends in overseas interest rates.

With regard to outright purchases of treasury discount bills (T-Bills), the Bank deleted the description regarding the offer amounts, about 500 billion to 3.0 trillion yen per auction, from the "Outline of Outright Purchases of Japanese Government Securities" released in June 2021, with a view to adjusting its offer amounts flexibly in light of favorable supply-demand conditions stemming from the reduction in the issuance amount by the government. The Bank flexibly adjusted the purchase amounts, taking into consideration developments in supply and demand conditions in the market, and offered purchases between 100 billion and 2.0 trillion yen each time. As a result of these operations, the yields on T-Bills generally remained stable at around the level of the short-term policy interest rate (minus 0.1 percent).

With respect to the provision of foreign currency funds, the Bank offered 1-week operations of U.S. Dollar Funds-Supplying Operations on a weekly basis in principle, based on the U.S. Dollar-Yen Swap Agreement with the Federal Reserve Bank of New York. The Bank discontinued offering 3-month operations from July 1, 2021, in view of improvements in the U.S. dollar funding conditions and low demand. U.S. dollar funding premiums have risen only slightly as U.S. Dollar Funds-Supplying Operations by the central bank of each jurisdiction served as a backstop, although the premiums temporarily increased when the situation surrounding Ukraine worsened.

The Bank conducted (3) outright purchases of ETFs and J-REITs as necessary in line with its guidelines for asset purchases so that their amounts outstanding would increase at annual paces with upper limits of about 12 trillion yen and about 180 billion yen, respectively.

Meanwhile, current account deposits at the Bank continued to increase mainly against the background of the government's fiscal expenditures amid the COVID-19 crisis, in addition to the Bank's further ample supply of funds. The increase was largely attributable to greater use of the Special Operations in Response to COVID-19 and the associated measures to add to macro add-on balances, as was the case in fiscal 2020. Under these circumstances, the Benchmark Ratio was adjusted downward in many reserve maintenance periods. Amounts outstanding in the repo market and the uncollateralized call market were at high levels throughout the fiscal year as (1) potential transaction needs grew in the short-term money market on both the borrowing side and the lending side while the effects of the measures to add to macro add-on balances and the reduction of the Benchmark Ratio on the upper limit on macro add-on balances differed from one sector to another; and (2) arbitrage trading using the three-tier system of current accounts at the Bank and arbitrage between the repo market rate and the call market rate were both increasingly active. In this situation, the Bank provided ample funds to financial markets by offering purchases of Japanese Government Securities (JGSs) with repurchase agreements in a flexible and timely manner, mainly in light of developments in the money market, with a view to maintaining short-term interest rates in negative territory in a stable manner under its current guidelines for market operations. Moreover, the GC repo rate generally remained stable at a level slightly above the short-term policy interest rate under the three-tier system of current accounts at the Bank and the conduct of market operations described above.

This report describes these market operations during fiscal 2021.

The rest of this paper is organized as follows. First, Chapter II describes developments in the Bank's balance sheet and in exogenous sources of changes in current account balances at the Bank. Next, Chapter III describes the developments in financial markets such as Japanese money markets and bond markets, and the conduct of each measure in market operations. Chapter IV discusses changes in the frameworks related to market operations. Finally, Chapter V presents the Bank's actions to enhance dialogue with market participants.

II. The Bank's Balance Sheet and Exogenous Sources of Changes in Current Account Balances at the Bank

A. The Bank's Balance Sheet

Under the conduct of the aforementioned market operations, the Bank's balance sheet and the monetary base continued to expand (Chart 2-1).

The Bank's balance sheet stood at 736.3 trillion yen at the end of March 2022, an increase of 21.7 trillion yen from a year earlier. Meanwhile, the monetary base amounted to 688.0 trillion yen at the end of March 2022, an increase of 44.4 trillion yen from a year earlier.

On the asset side of the balance sheet, a wide range of assets such as the Special Operations in Response to COVID-19, JGBs, corporate bonds, and ETFs increased since, under QQE with Yield Curve Control, the Bank pursued powerful monetary easing by taking active measures, considering the economic impact of COVID-19. On the other hand, outright purchases of T-Bills decreased significantly by 21.5 trillion yen from the year-earlier level to 12.7 trillion yen, as the Bank adjusted offer amounts flexibly each time it conducted operations in accordance with the yields on T-Bills and their supply and demand conditions.

On the liability side of the balance sheet, banknotes increased by 3.9 trillion yen from a year earlier to 119.9 trillion yen and current account balances at the Bank increased by 40.6 trillion yen from a year earlier to 563.2 trillion yen. Meanwhile, deposits of the government decreased significantly by 23.9 trillion yen from a year earlier to 13.0 trillion yen.

Chart 2-1: The Bank's Balance Sheet

trillion yen

	End-Mar.2017	End-Mar.2018	End-Mar.2019	End-Mar.2020	End-Mar.2021	End-Mar.2022	Year-on-year
JGBs	377.1	426.6	459.6	473.5	495.8	511.2	+15.5
CP	2.0	2.1	2.0	2.6	2.9	2.5	-0.4
Corporate bonds	3.2	3.2	3.2	3.2	7.5	8.6	+1.1
ETFs	12.9	18.9	24.8	29.7	35.9	36.6	+0.7
J-REITs	0.38	0.48	0.52	0.58	0.67	0.67	-0.0
Loan Support Program	43.4	45.6	46.1	49.2	60.0	61.6	+1.6
Outright purchases of T-Bills	32.6	18.8	7.9	10.2	34.2	12.7	-21.5
Funds-Supplying Operation to Support Financial Institutions in Disaster Areas	0.5	0.5	0.7	0.5	0.5	0.5	+0.0
Special Operations in Response to COVID-19	-	-	-	3.4	64.8	86.8	+22.0
Funds-Supplying Operations to Support Financing for Climate Change Responses	-	-	-	-	-	2.0	-
Funds-Supplying Operations against Pooled Collateral	0.7	0.4	0.7	1.2	0.5	0.5	+0.0
Foreign currency assets	6.6	6.4	6.7	26.0	7.7	8.3	+0.6
Total assets (including others)	490.1	528.3	557.0	604.5	714.6	736.3	+21.7
Banknotes	99.8	104.0	107.6	109.6	116.0	119.9	+3.9
Current account balances	342.8	378.2	393.9	395.3	522.6	563.2	+40.6
Other deposits	13.6	21.4	27.5	51.8	26.8	26.6	-0.2
Deposits of the government	21.8	15.1	17.5	12.6	36.9	13.0	-23.9
Payables under repurchase agreements	3.4	0.3	0.2	24.1	0.6	0.9	+0.3
Total liabilities and net assets (including others)	490.1	528.3	557.0	604.5	714.6	736.3	+21.7

Monetary base	447.3	487.0	506.3	509.8	643.6	688.0	+44.4

Notes: 1. Loan Support Program does not include the Special Rules for the U.S. Dollar Lending Arrangement to Enhance the Growth-Supporting Funding Facility.
2. "Outright purchases of T-Bills" does not reflect changes in the amount of T-Bills induced by, for example, the Bank's transactions with the government.
3. "Funds-Supplying Operation to Support Financial Institutions in Disaster Areas" includes the funds-supplying operations to support financial institutions in disaster areas of the Great East Japan Earthquake and of the 2016 Kumamoto Earthquake before they were abolished.
4. "Special Operations in Response to COVID-19" in March 2020 is the balance of the Special Funds-Supplying Operations to Facilitate Corporate Financing regarding the Novel Coronavirus (COVID-19).
5. "Foreign currency assets" is the sum of foreign currency-denominated assets held by the Bank, foreign currency loans by U.S. Dollar Funds-Supplying Operations against pooled collateral, and other assets.
6. "Other deposits" represents deposits such as those held by foreign central banks.
7. "Payables under repurchase agreements" includes the Securities Lending Facility, sales of JGSs with repurchase agreements, and Securities Lending to Provide JGSs as Collateral for the U.S. Dollar Funds-Supplying Operations.

Box 1: Comparison of Monetary Policies and the Balance Sheets of Major Central Banks

This box outlines developments in monetary policies of major central banks overseas during fiscal 2021.

First, the U.S. Federal Reserve System (Fed) ended various emergency facilities introduced in response to the spread of COVID-19, and then reduced asset purchases and raised the policy rate in the second half of Japanese fiscal 2021 in light of developments in prices and the labor market. Specifically, among the emergency facilities, purchases of corporate bonds and corporate bond ETFs under the Secondary Market Corporate Credit Facility (SMCCF) were ceased in December 2020. Moreover, the holdings of these assets were sold gradually from June 2021, completing the sale in August. The provision of new loans under the Paycheck Protection Program Liquidity Facility (PPPLF), the only emergency facility that had been extended beyond April 2021, was terminated in July. With regard to purchases of Treasury securities and agency mortgage-backed securities (MBSs) -- of which the purchase amounts had been increased from March 2020, the monthly amount of increase in the Fed's holdings was reduced by a total of 15 billion U.S. dollars in both November and December 2021 from a total of 120 billion U.S. dollars per month. The reduction was then increased to a total of 30 billion U.S. dollars per month from January 2022, and the Fed's new purchases of these assets were ended in March, except for reinvestment purchases. The target range for the federal funds (FF) rate was raised by 25 basis points from 0.00-0.25 percent to 0.25-0.50 percent in March 2022.

Under these circumstances, the Fed's balance sheet saw moderate deceleration in the pace of increase from November 2021 and the increase came to an end in March 2022. On the liability side, the Treasury general account balance decreased significantly from January 2021 due to progress in fiscal spending. Conversely, the amount outstanding of reverse repo operations increased significantly by absorbing funds in current balances that had increased due to progress in the Fed's asset purchases and fiscal spending, amid an increase in the per-counterparty limit in March 2021 (Box Chart 1-1).

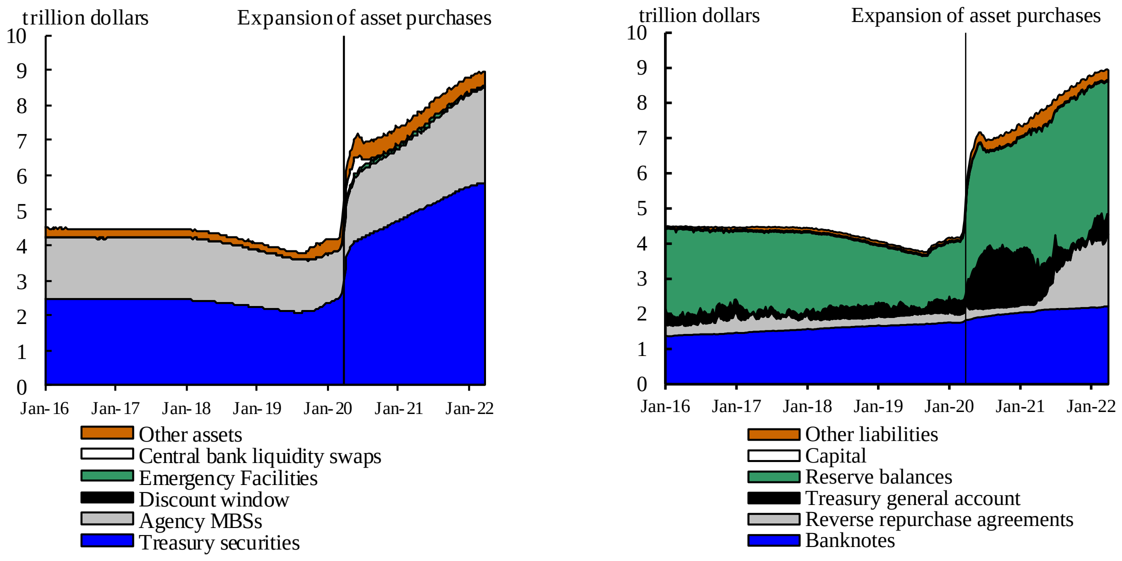
The European Central Bank (ECB) maintained its negative interest rate policy, in which the interest rate on excess reserves and the deposit facility was set at minus 0.5 percent. Meanwhile, the ECB continued its asset purchase programme (APP) which sets the monthly net purchase amount at 20 billion euros of bonds issued by euro area central governments and corporate bonds. Moreover, net purchases under its pandemic emergency purchase programme (PEPP), of which the size of the overall envelope is 1.85 trillion euros, were reduced in a gradual manner and discontinued in March

2022. In December 2021, the ECB terminated providing new loans under both the Pandemic Emergency Longer-term Refinancing Operations (PELTROs), introduced in May 2020 to respond to the spread of COVID-19, and the targeted longer-term refinancing operations (TLTRO-III), for which a relaxation of terms and conditions such as lowering the interest rate had been applied in June 2020.

Under these circumstances, the size of the ECB's balance sheet had been expanding since March 2020, when the PEPP was introduced. From January 2022, however, the pace of increase in the balance sheet has moderated, as the ECB slowed down the pace of purchases under the PEPP and the provision of new loans under various funds-supplying operations was terminated. On the liability side, current account balances at the ECB increased due to various asset purchases and funds-supplying operations (Box Chart 1-2).

Box Chart 1-1: The Fed's Balance Sheet

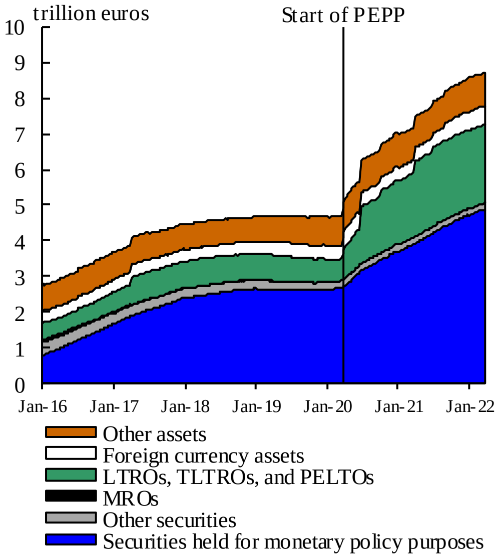
(Assets) **(Total Liabilities and Net Assets)**



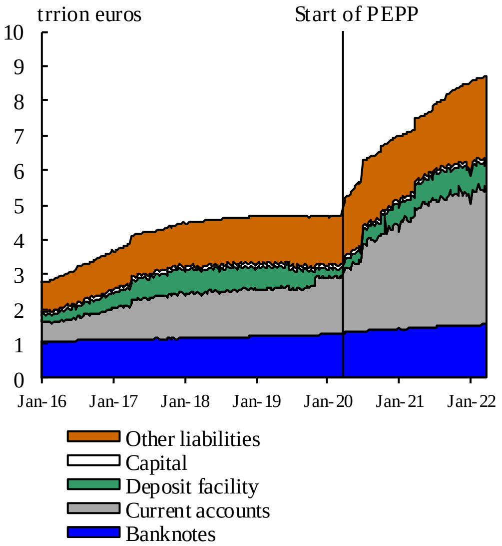
Notes: 1. Based on weekly data (as of Wednesday).
2. "Emergency Facilities" is the sum of the Commercial Paper Funding Facility (CPFF), the Main Street Lending Program (MSLP), the Money Market Mutual Fund Liquidity Facility (MMLF), the Municipal Liquidity Facility (MLF), the Paycheck Protection Program Liquidity Facility (PPPLF), the Primary Dealer Credit Facility (PDCF), the Secondary Market Corporate Credit Facility (SMCCF), and the Term Asset-Backed Securities Loan Facility (TALF).

Box Chart 1-2: The ECB's Balance Sheet

(Assets)



(Total Liabilities and Net Assets)



Notes: 1. Consolidated assets and liabilities of the ECB and the national central banks in the euro area. Based on weekly data (as at weekends).

2. LTROs, TLTROs, PELTROs, and MROs denote longer-term refinancing operations, targeted longer-term refinancing operations, pandemic emergency longer-term refinancing operations, and main refinancing operations, respectively.

B. Developments in Exogenous Sources of Changes in Current Account Balances at the Bank

Financial institutions' current account balances at the Bank change along with market operations as well as receipts and payments of banknotes and treasury funds between financial institutions and the Bank or the government. Changes in current account balances at the Bank resulting from factors other than market operations are called "exogenous sources of changes in current account balances at the Bank." Exogenous sources of changes in the current account balances at the Bank are categorized into (1) "changes in banknotes" resulting from exchanges of banknotes for deposits in the current accounts and (2) "changes in treasury funds and others" mainly resulting from exchanges of funds between the current accounts and government deposits.

During fiscal 2021, exogenous sources of changes in current account balances at the Bank, particularly changes in treasury funds and others, caused current account balances to decrease by 87.8 trillion yen. The decrease was smaller than the 155.1 trillion yen decrease in fiscal 2020, mainly because excess net receipts (more issuance than redemption, a source of decrease in current account balances) from T-Bill issuance decreased significantly.

1. Changes in Banknotes

The outstanding balance of banknotes continued on an uptrend during fiscal 2021, and stood at 122.0 trillion yen (an increase of 3.1 percent year-on-year) at the end of December 2021 and 119.9 trillion yen (an increase of 3.3 percent year-on-year) at the end of March 2022 (Chart 2-2). Reflecting this increase in banknote issuance, changes in banknotes continued to be a source of decrease in current account balances at the Bank in fiscal 2021, although the amount of net issuance decreased from 6.4 trillion yen in fiscal 2020 to 3.9 trillion yen in fiscal 2021.

The cumulative changes in banknotes from the start of fiscal 2021 was mostly net issuance, indicating that households, in particular, possessed an excess amount of banknotes, albeit to a lesser extent than in the previous year, amid persistent uncertainty caused by a resurgence of COVID-19 (Chart 2-3).

Chart 2-2: Outstanding Balance of Banknotes Issued

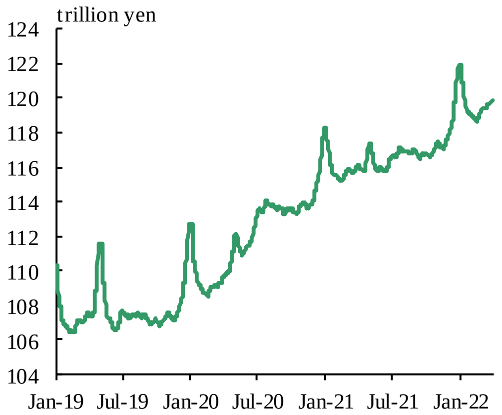
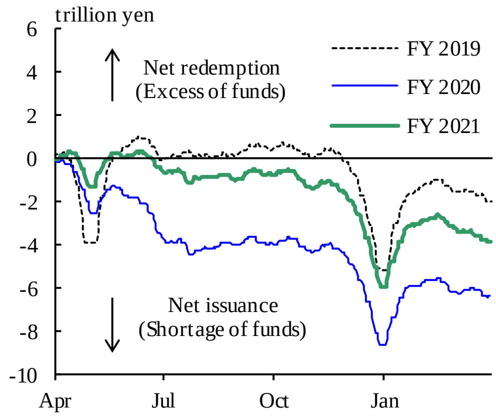


Chart 2-3: Cumulative Changes in Banknotes from the Start of the Fiscal Year



2. Changes in Treasury Funds and Others

In fiscal 2021, changes in treasury funds and others registered net receipts of 84.0 trillion yen (decrease in current account balances at the Bank),[1] a decrease from the net receipts of 148.7 trillion yen in fiscal 2020 (Chart 2-4). After adjusting for the increment by which the repayment amount to financial institutions decreased as a result of the Bank having purchased JGBs and T-Bills as part of its market operations (hereinafter referred to as the "repayment adjustment"),[2] net payments amounted to 21.9 trillion yen. Compared with fiscal 2020, when the amount was 20.3 trillion yen of net receipts after the repayment adjustment, these net payments increased the current account balances at the Bank by 42.2 trillion yen (Charts 2-5 and 2-6). As for the factors behind this increase, while net payments under "net fiscal payments" declined compared to fiscal 2020, net receipts of

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[1] The net amount of JGBs and T-Bills issued (or redeemed) is registered as changes in treasury funds and others, provided that the Bank does not engage in market operations. If the Bank purchases JGBs and T-Bills from financial institutions and holds them to maturity, these positions are not netted out. Specifically, the Bank records net receipts for changes in treasury funds and others (decrease in current account balances at the Bank) when JGBs and T-Bills are issued by the government. The Bank's purchases of JGBs and T-Bills are sources of increase in current account balances at the Bank, while the current account balances do not see a change upon redemption of the securities. As a result, changes in treasury funds and others register substantial net receipts (decrease in current account balances at the Bank) due to the Bank's market operations, although receipts and payments for changes in treasury funds and others are assumed to be largely commensurate with one other.

[2] With "repayment adjustments," regarding JGBs and T-Bills redeemed from the government to the Bank, adjustments are made to treat these as if the Bank sold them to financial institutions just before redemption and financial institutions received the redemptions from the government. For this reason, after repayment adjustments are carried out, there are changes in the amount of fluctuation for JGBs (with a residual maturity of more than 1 year) and T-Bills from among changes in treasury funds and others, as well as in purchases of JGBs and T-Bills as part of market operations (Chart 2-6).

T-Bills decreased and turned to net payments, significantly exceeding the decrease in net payments under "net fiscal payments."

Specifically, with regard to "net fiscal payments," the budget which was of a size larger than usual, was implemented for economic measures and preventive measures related to COVID-19. The amount, however, was smaller than the amount of, for example, financing support and cash payments for firms and special cash payments to individuals made in fiscal 2020 (Chart 2-7). Moreover, tax revenue for the government grew as Japan's economy picked up. The issuance amount of T-Bills per issue decreased in a gradual manner until the end of 2021 mainly due to the improved balance of payments in "net fiscal payments" and moves to spend government deposits that had been accumulated during fiscal 2020. The government deposit balance as of the end of March 2022 decreased by 23.9 trillion yen year-on-year to 13.0 trillion yen, mainly on the back of the decrease in the issuance of T-Bills exceeding the decrease in fiscal expenditures and the increase in government tax revenue (Chart 2-8).

Developments of yen-denominated deposits received by the Bank from foreign central banks and international institutions also affect the current account balances at the Bank, which are included in the "others" of "Treasury funds and others." The balance of deposits received from overseas monetary authorities for the purpose of yen-denominated foreign reserves was more or less flat in fiscal 2021 compared to fiscal 2020. This balance tends to fluctuate significantly due mainly to the asset investment policies of the individual depositors, contributing to the daily fluctuations seen in the current account balances at the Bank.

Chart 2-4: Cumulative Changes in Treasury Funds and Others from the Start of the Fiscal Year

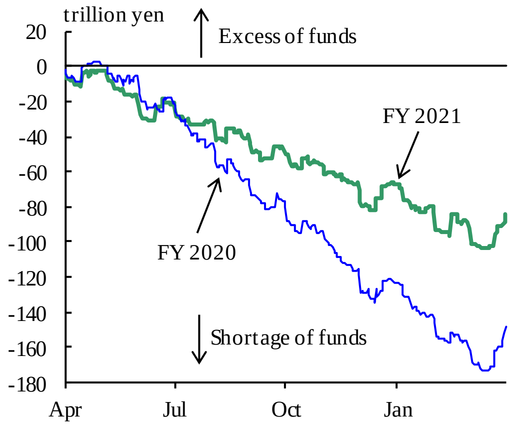


Chart 2-5: Cumulative Changes in Treasury Funds and Others from the Start of the Fiscal Year (After Repayment Adjustments)

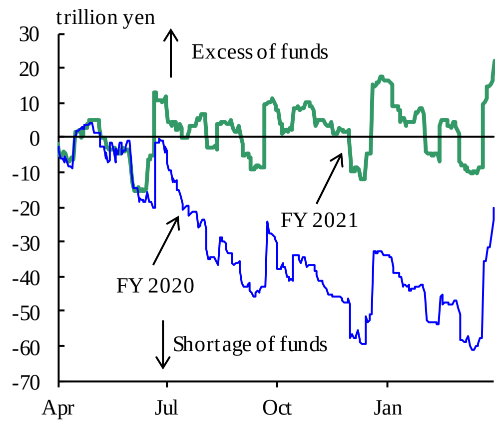


Chart 2-6: Sources of Changes in Current Account Balances at the Bank

trillion yen

	Before adjustment			After adjustment		
	FY 2020	FY 2021	Year-on-year	FY 2020	FY 2021	Year-on-year
Banknotes	-6.4	-3.9	2.5	-6.4	-3.9	2.5
Treasury funds and others	-148.7	-84.0	64.8	-20.3	21.9	42.2
Net fiscal payments	83.4	51.7	-31.7	83.4	51.7	-31.7
JGBs (more than 1 year)	-94.5	-104.2	-9.7	-33.6	-48.5	-14.9
T-Bills	-142.9	-32.3	110.6	-75.4	17.9	93.3
Foreign exchange	-1.1	0.3	1.4	-1.1	0.3	1.4
Others	6.4	0.5	-5.8	6.4	0.5	-5.8
Surplus/shortage of funds	-155.1	-87.8	67.3	-26.7	18.0	44.8
BOJ loans and market operations	282.4	128.4	-154.0	154.0	22.6	-131.5
Outright purchases of JGBs	85.0	72.9	-12.1	24.1	17.2	-6.9
Outright purchases of T-Bills	91.6	28.8	-62.8	24.1	-21.4	-45.5
Special funds-supplying operations to facilitate financing in response to the novel coronavirus	61.4	22.0	-39.4	61.4	22.0	-39.4
Fund-supplying operations to support financing for climate change responses	—	2.0	2.0	—	2.0	2.0
Securities lending to provide JGSs as collateral for the U.S. dollar funds-supplying operations	19.2	0.0	-19.2	19.2	0.0	-19.2
Loan Support Program	10.8	1.6	-9.2	10.8	1.6	-9.2
Other loans and market operations	14.4	1.1	-13.3	14.4	1.1	-13.3
Net change in current account balances	127.3	40.6	-86.7	127.3	40.6	-86.7

Notes: 1. For banknotes, negative figures represent a net increase in banknotes. For treasury funds and others, negative figures represent net receipts of the treasury. For BOJ loans and market operations, positive figures represent the supply of funds.
2. The shaded areas indicate increase or decrease of figures after repayment adjustments.

Chart 2-7: Treasury Funds Payments with the Private Sector

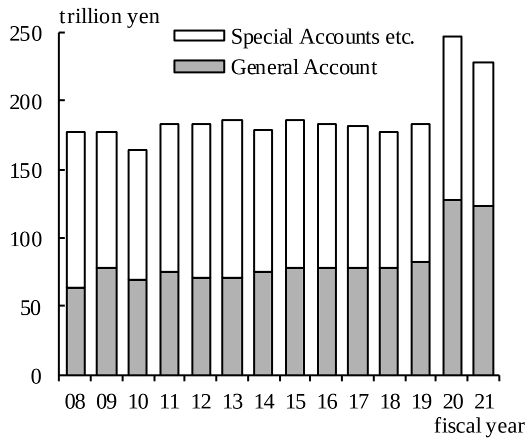
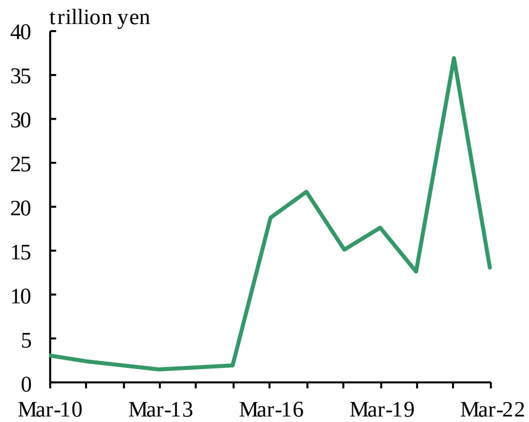


Chart 2-8: Government Deposit Balance



III. Developments in Markets and the Conduct of Individual Measures in Market Operations

A. Three-Tier System of Current Accounts at the Bank and Money Markets

1. Three-Tier System of the Current Accounts

The Bank, under QQE with Yield Curve Control, adopted a three-tier system in which the outstanding balance of each financial institution's current account at the Bank was divided into three tiers. Under this system, a positive interest rate (0.1 percent) was applied to basic balances, a zero interest rate was applied to macro add-on balances, and a negative interest rate (minus 0.1 percent) was applied to policy-rate balances (Chart 3-1).

Chart 3-1: Three-Tier System of the Current Accounts

Tier	Subject to Calculation	Applied interest rate
(1) Basic Balance	Benchmark Balance (average outstanding balance for 2015) – Required reserves	+0.1%
(2) Macro Add-on Balance	Benchmark Balance × Benchmark Ratio[3]	0.0%
	Balances associated with the Bank's various fund-provisioning measures[4] (Loan Balance 1)[5]	
	Increase in balances associated with the Bank's various fund-provisioning measures compared with at End-March 2016 (Loan Balance 2)	
	Amount based on the special rules for money reserve funds[6] and those for new institutions[7]	

[3] Ratio equally applied to all financial institutions.

[4] The Bank's measures include the Stimulating Bank Lending Facility, Growth-Supporting Funding Facility, Funds-Supplying Operation to Support Financial Institutions in Disaster Areas (including the funds-supplying operations to support financial institutions in disaster areas of the Great East Japan Earthquake and of the 2016 Kumamoto Earthquake, before they were abolished), the Special Operations in Response to COVID-19, and the Funds-Supplying Operations to Support Financing for Climate Change Responses.

[5] With a view to providing incentives to use various fund-provisioning measures, balances of those measures (Loan Balances 1) as well as the increase in balances compared with those at the end of March 2016 (Loan Balances 2) are included in the calculation of the Macro Add-on Balance limit.

[6] The smaller of the average amount outstanding of MRFs entrusted to an institution during the reserve maintenance periods from January to December 2015 (on a net asset basis; including the amount that was not deposited in the current accounts at the Bank as a result of investment) and that entrusted to an institution during the designated reserve maintenance period (on a net asset basis; excluding the amount that was not deposited in the current accounts as a result of investment).

[7] The balance obtained by multiplying the benchmark ratio by the Deemed Benchmark Balance based on

	Amount added/reduced in the calculation of the limit of the Macro Add-on Balance[8] Required reserves	
(3) Policy-Rate Balance	Amount obtained by subtracting (1) and (2) from current account balances	-0.1%

Some financial institutions may have "unused allowances" in their basic balances and/or macro add-on balances because the amount of their current account balances at the Bank falls below the upper bound on their basic balances and macro add-on balances. Other financial institutions may have policy-rate balances generated because the amount of their current account balances at the Bank exceeds the upper bound on their basic balances and macro add-on balances. Unused allowances or policy-rate balances constitute one of the factors that induces arbitrage trading by financial institutions, which is carried out by borrowing (lending) cash at interest rates that are lower (higher) than those applied according to their current account balances at the Bank and depositing funds in (supplying funds from) their current accounts at the Bank. Assuming that financial institutions with unused allowances in their basic balances and/or macro add-on balances utilize all of their unused allowances to borrow cash from financial institutions with policy-rate balances through such arbitrage trading, the policy-rate balance left is referred to as the "hypothetical policy-rate balance after arbitrage transactions have taken place in full" (the "hypothetical policy-rate balance").

During fiscal 2021, the Bank reviewed the Benchmark Ratio every reserve maintenance period so that the "hypothetical policy-rate balance" stayed at about 5 trillion yen. This was done in line with the policy to "reduce [this balance] from the current level of about 10 trillion yen on average" "…under the condition that yield curve control can be conducted appropriately," that was decided at the MPM held on July 30 and 31, 2018. Given that the call rate remained at a somewhat high level throughout fiscal 2021, the Bank set the Benchmark Ratio at a slightly lower level, taking account of the risk of a decline in the hypothetical policy-rate balance, with a view to maintaining short-term interest rates stable in negative territory.

the "Special Rules regarding Calculation of Interest of Complementary Deposit Facility for New Institutions."

8 Amounts added to or reduced in the calculation of the limit of the Macro Add-on Balances introduced in light of the Bank's Assessment in March 2021. For details, see "Appendix 4: Operation of the Complementary Deposit Facility" ("Revision regarding 1." and "Revision regarding 2.") of "Assessment for Further Effective and Sustainable Monetary Easing (The Background)" released on March 19, 2021, and Box 3 of this report.

Turning to developments in the "hypothetical policy-rate balance" during fiscal year 2021, in many reserve maintenance periods the balance was above the level of about 5 trillion yen, estimated at the time the Benchmark Ratio was set, owing to changes in treasury funds and others and the Bank's operations that had not been expected at the time the Benchmark Ratio was set, in addition to the Benchmark Ratio that was set at a slightly low level as mentioned above. In particular, the "hypothetical policy-rate balance" stood at about 15 trillion yen at the end of the March 2022 reserve maintenance period, the highest level since April 2018, mainly due to the Bank's increased purchases of T-Bills as well as unscheduled purchases of JGBs, including fixed-rate purchase operations (Chart 3-2).

"Unused allowances," chiefly consisting of that of macro add-on balances, and actual policy-rate balances followed a downtrend through the middle of fiscal 2021, due to, for example, arbitrage trading being carried out more actively.[9] Meanwhile, in the August 2021 reserve maintenance period, both the unused allowances and the actual policy-rate balances declined as the measures to add to or reduce the limit of macro add-on balances started to be applied. The unused allowances also decreased in the September 2021 reserve maintenance period as current account balances were increased by other institutions subject to the Complementary Deposit Facility including *shinkin* banks as the Special Deposit Facility to Enhance the Resilience of the Regional Financial System started to be applied. Subsequently, both the unused allowances and the policy-rate balances followed an uptrend through the second half of fiscal 2021. The increase was brought about by (1) increased deviation in fund positions among different sectors, a development attributable to differences in the stance on the use of the Special Operations in Response to COVID-19; and (2) changes in the amount reduced in the calculation of the limit of the macro add-on balances, while the hypothetical policy-rate balance deviated above 5 trillion yen for several reserve maintenance periods (Chart 3-3).

Developments in the three-tier system described above are presented in Chart 3-4 by sector.

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[9] Arbitrage trading became more intense in Fiscal 2021 in light of moves by the cash lending side to increase cash lending in the call market by, for example, extending their credit line. Such moves were observed while potential transaction needs grew in the short-term money market on both the cash borrowing side and the cash lending side. These were brought about by a situation in which amounts outstanding of various operations including that of the Special Operations in Response to COVID-19 climbed and the Benchmark Ratio was reduced.

Chart 3-2: Upper Bounds on the Basic Balance and the Macro Add-on Balance and the Hypothetical Policy-Rate Balance

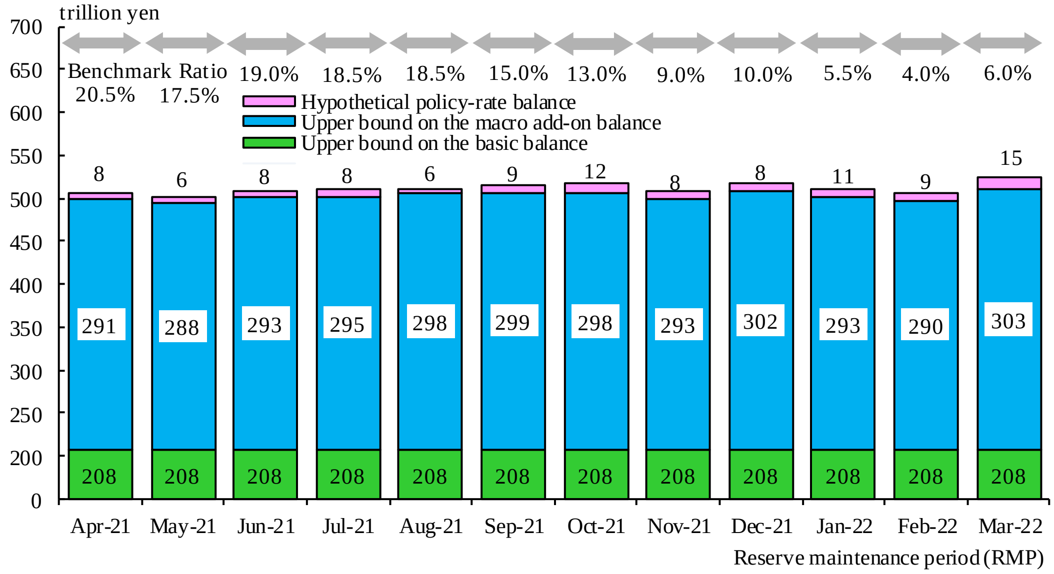


Chart 3-3: Unused Allowances in Tiers and the Policy-Rate Balance

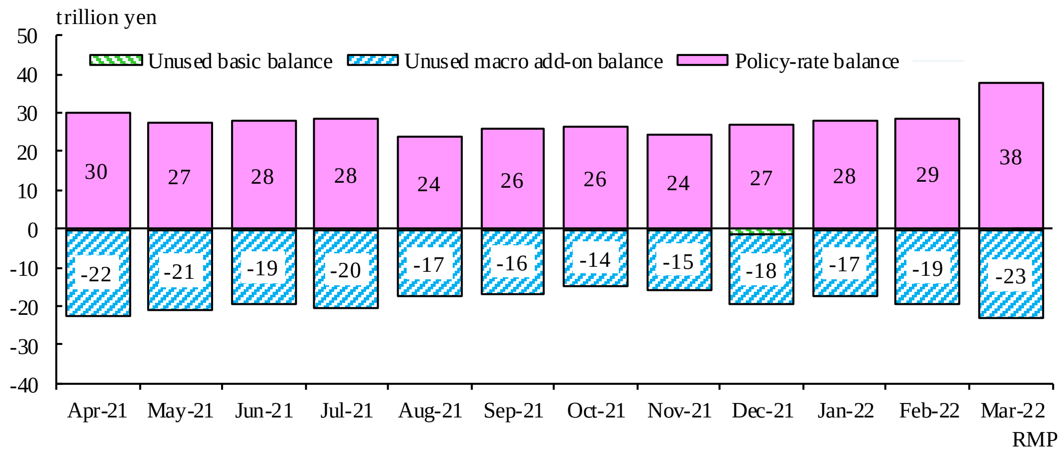
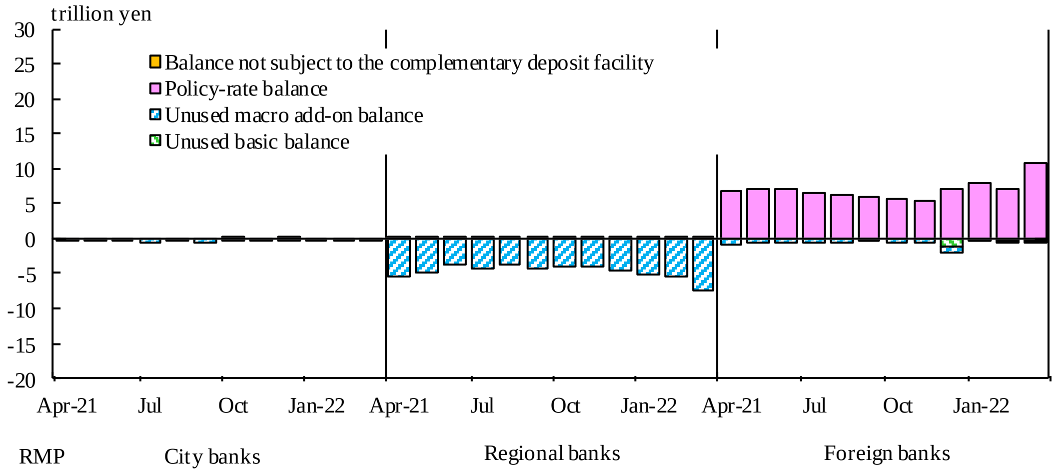
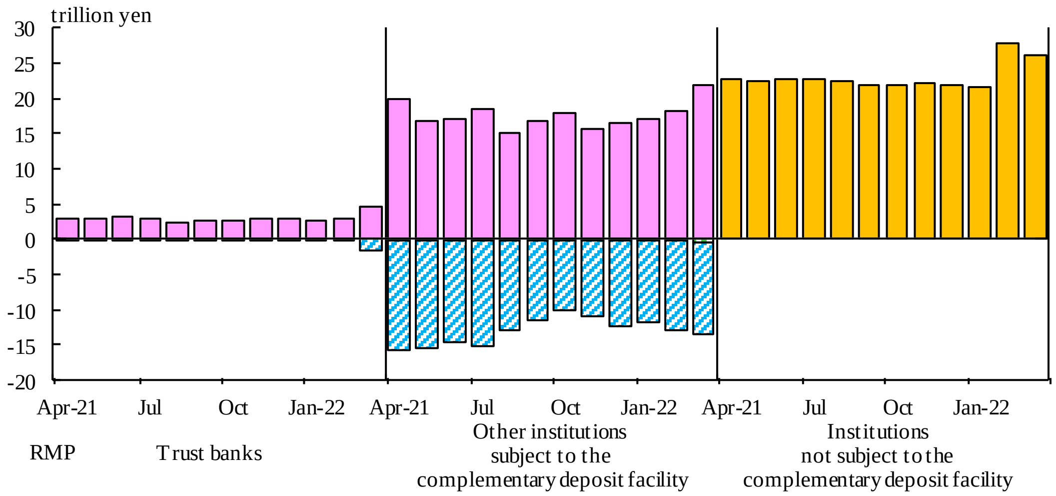


Chart 3-4: Three-Tier System of the Current Accounts by Sector





Notes: 1. "Other institutions subject to the complementary deposit facility" are other institutions subject to the reserve requirement and institutions not subject to the reserve requirement.

2. Other institutions subject to the reserve requirement include the following: *Shinkin* Banks (with deposits of more than 160 billion yen); PayPay Bank; Seven Bank; Sony Bank; Rakuten Bank; SBI Sumishin Net Bank; au Jibun Bank; AEON Bank; Daiwa Next Bank; ORIX Bank; Custody Bank of Japan; Shinsei Bank; Aozora Bank; Shinhan Bank Japan; The Resolution and Collection Corporation; The Norinchukin Bank; Japan Post Bank; Lawson Bank; GMO Aozora Net Bank; Minna Bank; UI Bank.

3. Institutions not subject to the reserve requirement include the following: securities companies; *tanshi* companies (money market brokers); securities finance companies; Shinkin Central Bank; *Shinkin* Banks (with deposits of 160 billion yen or less); The Shoko Chukin Bank; The Shinkumi Federation Bank; and The Rokinren Bank.

4. "Institutions not subject to the complementary deposit facility" include the following: Japanese Bankers Association; Japanese Banks' Payment Clearing Network; Tokyo Financial Exchange; Japan Securities Clearing Corporation; JASDEC DVP Clearing Corporation; CLS BANK International; Development Bank of Japan; Japan Finance Corporation; Japan Bank for International Cooperation; and Deposit Insurance Corporation of Japan.

Box 2: Background to Adjustment in the Benchmark Ratio in Fiscal 2021

The Bank sets the Benchmark Ratio used to calculate the macro add-on balance for reserve maintenance periods so that the "hypothetical policy-rate balance" would stay at about 5 trillion yen. In doing so, the Bank takes into account exogenous sources of changes in current account balances at the Bank such as changes in banknotes and changes in treasury funds and others as well as changes in financial adjustments stemming from various operations including outright purchases of JGBs and the Special Operations in Response to COVID-19 to the extent possible.

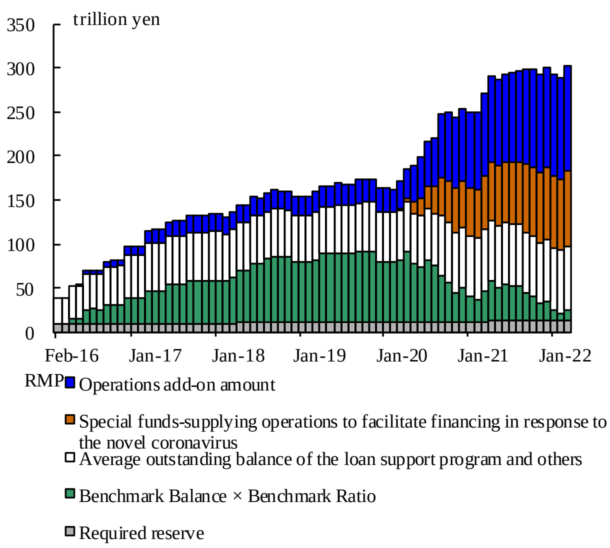
Looking at the underlying developments in the adjustment of the Benchmark Ratio in fiscal 2021 based on this approach, current account balances at the Bank continued to increase mainly against the background of the government's fiscal expenditures amid the COVID-19 crisis, in addition to the Bank's further ample supply of funds. The increase was largely attributable to greater use of the Special Operations in Response to COVID-19 and the associated measures to add to macro add-on balances, as was the case in fiscal 2020. Meanwhile, the need to adjust the Benchmark Ratio downward was expected in many reserve maintenance periods so that the "hypothetical policy-rate balance" would not decrease excessively (Box Chart 2-1).

The Bank set the Benchmark Ratio every reserve maintenance period, while taking into account the abovementioned factors so that the "hypothetical policy-rate balance" would stay at about 5 trillion yen. Looking back at fiscal 2021, the Benchmark Ratio declined by 9.5 percentage points throughout the year. It stood at 6.0 percent in the March 2022 reserve maintenance period, whereas it had started at 15.5 percent in the March 2021 reserve maintenance period (Box Chart 2-2).

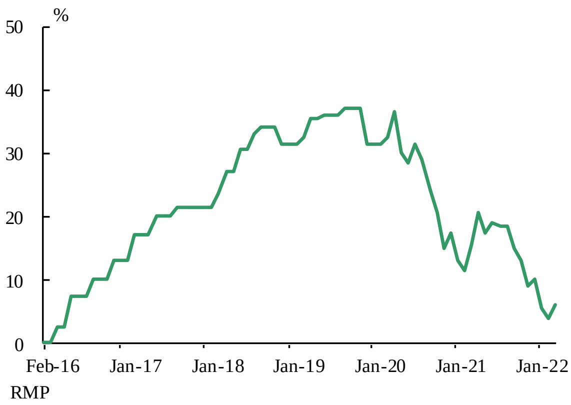
The "Add-on Ratio" was introduced newly in the Bank's Assessment in March 2021.[10] It was decided that, in the case that the macro add-on balance limit could not be adjusted even when the Benchmark Ratio was reduced to zero, Loan Balance 2 would be multiplied by the Add-on Ratio. That being said, the Bank did not adjust the limit using the Add-on Ratio in fiscal 2021 as the Benchmark Ratio continued to be above zero throughout the fiscal year.

[10] The ratio between 0 and 1 applied to the increase in balances, mainly regarding the Bank's operations including the Loan Support Program, compared with that at the end of March 2016 (Loan Balance 2) in order to lower the macro add-on balance limit.

Box Chart 2-1: Changes of Upper Bound on Macro Add-on Balances



Box Chart 2-2: Benchmark Ratio



Note. "Loan support program and others" includes the Stimulating Bank Lending Facility, the Growth-Supporting Funding Facility, the Funds-Supplying Operation to Support Financial Institutions in Disaster Areas (includes the funds-supplying operations to Support Financial Institutions in Disaster Areas of the Great East Japan Earthquake and of the 2016 Kumamoto Earthquake), the Fund-Supplying Operations to Support Financing for Climate Change Responses, the amount based on the special rules for MRFs, and the amount added or reduced in the calculation of the limit of the Macro Add-on Balance.

Box 3: Measures to Add to and Reduce the Limit of the Macro Add-on Balances

In light of the Assessment in March 2021 and from the perspective of contributing to the smoother operation of the Complementary Deposit Facility, the Bank introduced measures to add to[11] and reduce[12] the upper limit on macro add-on balances in fiscal 2021.[13]

Looking at the measure to add to the upper limit on macro add-on balances, the Bank increased that for mainly "other institutions subject to the Complementary Deposit Facility" and "trust banks" by approximately 2.6 trillion yen in total (Box Chart 3-1).

On the other hand, turning to the amount deducted by the measure to reduce the limit of the macro add-on balances, it stayed at around 2.7 trillion yen in the beginning, almost the same as the amount added by the measure, mainly among "other institutions subject to the Complementary Deposit Facility." From the November 2021 reserve maintenance period, however, the amount declined to a level below 2.0 trillion yen (Box Chart 3-2). The decline was attributable to a reduction in the number of institutions subject to the measure to reduce the limit, as a result of moves by some of the institutions among "other institutions subject to the Complementary Deposit Facility." These institutions moved to increase funds in their current accounts at the Bank, after the special remuneration under the Special Deposit Facility to Enhance the Resilience of the Regional Financial System started to be applied (Box Chart 3-3). Thereafter, some institutions experienced difficulty in obtaining funds amid upward pressure on the uncollateralized call rate and they started to use less of the macro add-on balance limit, leading to an increase in the amount of reduction of the macro add-on balances, which once again exceeded 2.0 trillion yen.

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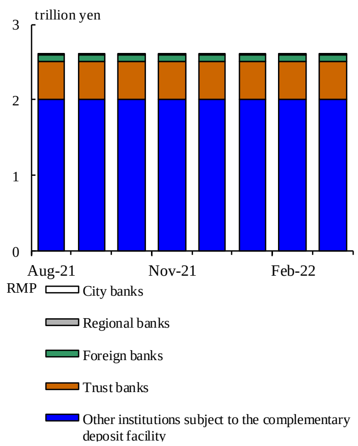
11 Of the average current account balances for reserve maintenance periods between February 2016 and December 2019 that exceed the basic balance by a factor of three, one-third of the amount will be added to the limit of the macro add-on balance (excluding the increase in balances associated with the Bank's fund-provisioning measures).

12 Institutions who have used less than 50 percent of the limit of their macro add-on balances (excluding required reserves) during all periods from a reserve maintenance period that started on a date four months prior to a date on which an interest-bearing reserve maintenance period began to a date two months prior to such a date will have the limit reduced by 25 percent in the reserve maintenance period.

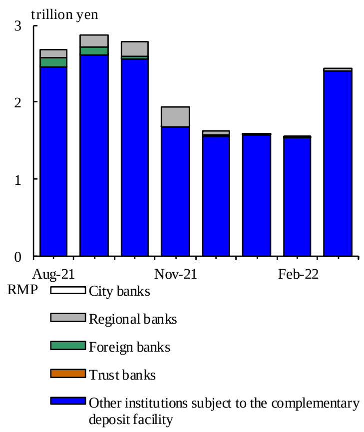
13 The Bank started to implement the measures to add to and reduce the limit of macro add-on balances from the August 2021 reserve maintenance period. The reference period for the August 2021 reserve maintenance period regarding the application of the measures was April, May, and June 2021 reserve maintenance periods.

As discussed above, these measures contributed to lowering both the policy-rate balances and the "unused allowances" of the macro add-on balances as they were started to be applied. Subsequently, fluctuations in the amount of reduction of the macro add-on balances, coupled with developments in financial institutions' arbitrage trading using the three-tier system and deviation in fund positions among different sectors, brought about fluctuations in the policy-rate balances and "unused allowances" of macro add-on balances (for details, see III.A.1).

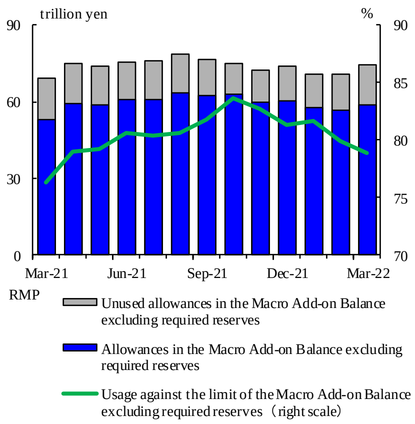
Box Chart 3-1: Amounts Added in the Calculation of the Limit of the Macro Add-on Balance



Box Chart 3-2: Amounts Reduced in the Calculation of the Limit of the Macro Add-on Balance



Box Chart 3-3: Usage against the Limit of the Macro Add-on Balance excluding Required Reserves of Other Institutions Subject to the Complementary Deposit Facility



2. GC Repo Market

Developments in the GC Repo Market

During fiscal 2021, the GC repo rate generally continued to be stable at a level slightly above the short-term policy interest rate of minus 0.1 percent (Chart 3-5).

The amount of cash borrowing by banks was on a downtrend through the middle of fiscal 2021, as their financing capacity had been reduced mainly due to the lowering of the Benchmark Ratio (Chart 3-6). Under these circumstances, the GC repo rate fell below minus 0.1 percent temporarily, as demand from securities companies for cash borrowing -- for the purpose of inventory financing -- remained at a low level in the beginning of the August 2021 reserve maintenance period against the backdrop of favorable supply and demand conditions of T-Bills. Toward the end of the November 2021 reserve maintenance period, the GC repo rate temporarily rose slightly above minus 0.05 percent due to increased cash borrowing by, for example, (1) financial institutions aiming to conduct arbitrage trading between the GC repo rate and the call rate; and (2) securities companies for the purpose of inventory financing owing to the concentration of auction dates. In the second half of fiscal 2021, when the GC repo rate rose, the amount of cash lending grew in the overall market as a result of certain financial institutions having begun to lend cash more actively (Chart 3-7).

The amount outstanding in the repo market remained at a high level as a wide range of financial institutions actively engaged in arbitrage trading that took advantage of the three-tier system applied to their current accounts held at the Bank and there were also moves to borrow cash for the purpose of arbitrage trading between the GC rate and the call rate (Chart 3-8).

Chart 3-5: GC Repo Rate (O/N)

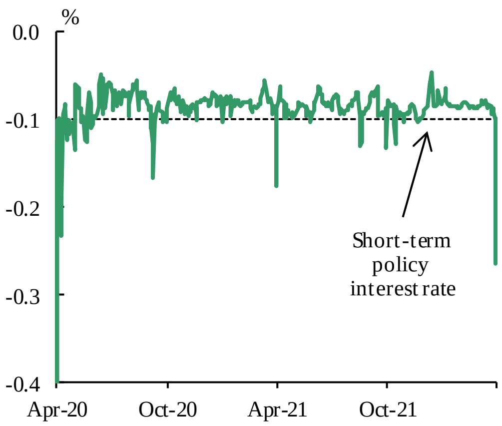
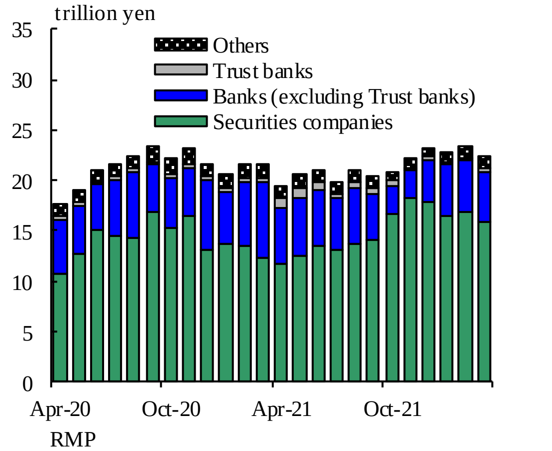
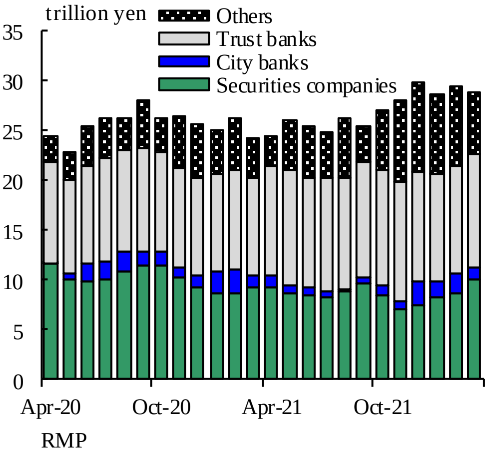


Chart 3-6: Cash Borrowing (Securities Lending) Side



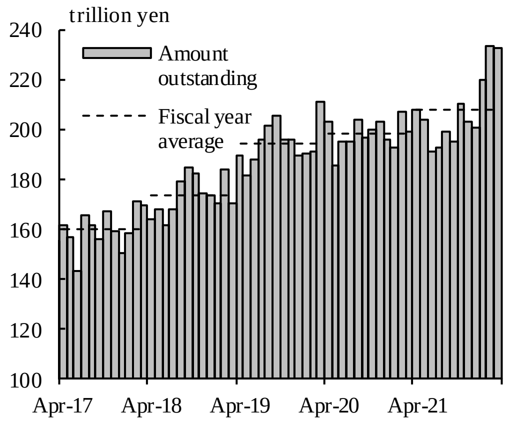
Note: The amount of the O/N cash borrowing (only the repo transactions) is aggregated, out of the daily flow data of the Statistics on Securities Financing Transactions in Japan.

Chart 3-7: Cash Lending (Securities Borrowing) Side



Note: The amount of the O/N cash lending (only the repo transactions) is aggregated, out of the daily flow data of the Statistics on Securities Financing Transactions in Japan.

Chart 3-8: Amounts Outstanding in the Repo Market



Note: Figures are the sum of securities lending with cash collateral and securities sales with repurchase agreements.

Purchases of JGSs with Repurchase Agreements

The Bank provided ample funds to financial markets by offering purchases of JGSs with repurchase agreements in a flexible and timely manner mainly in light of developments in the money market, with a view to maintaining short-term interest rates in negative territory in a stable manner under its current guidelines for market operations (Chart 3-9).

Toward the end of the November 2021 reserve maintenance period, the Bank offered operations with overnight (O/N) and 1-day term loans (T/N) over a three-day period from December 13 with a view to curbing upward pressure on the GC repo rate. This resulted in a considerable decline in the GC repo rate, mainly in T/N operations. During the December 2021 reserve maintenance period, the Bank offered term transactions in an effort to efficiently meet market participants' cash borrowing demand.

Toward the end of the February 2022 reserve maintenance period, the Bank offered T/N and term operations in order to encourage market participants to lend cash in the call market as the uncollateralized call rate remained high, although the GC repo rate was at a low level (Chart 3-10).

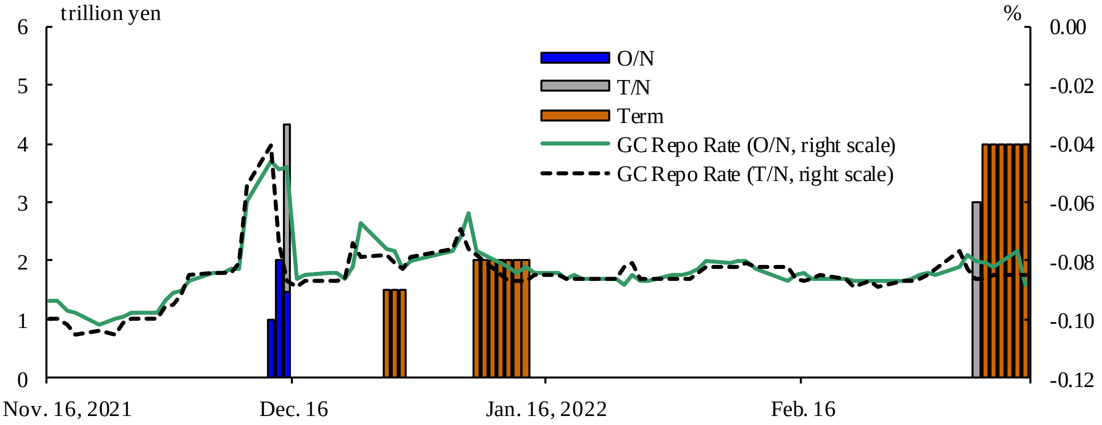
Given that the short-term policy interest rate had been set at minus 0.1 percent, the minimum yield was also set at minus 0.1 percent with a view to encouraging the formation of appropriate rates in money markets.

Chart 3-9: Implementation of Purchases of JGSs with Repurchase Agreements

100 million yen, percent per annum

Offer date	Settlement date	Term	Amounts offered	Bid-to-cover ratio	Average successful bid rate	Pro-rata rate
Dec. 13, 2021	T+0	1D	20,000	0.50	-0.060	-0.060
Dec. 14	T+0	1D	20,000	1.11	-0.100	-0.100
Dec. 14	T+1	1D	70,000	0.41	-0.100	-0.100
Dec. 15	T+0	1D	20,000	0.73	-0.097	-0.100
Dec. 24	T+1	3D	15,000	1.34	-0.086	-0.100
Jan. 6, 2022	T+1	1W	20,000	2.29	-0.095	-0.100
Mar. 8	T+1	1D	30,000	2.38	-0.093	-0.100
Mar. 9	T+1	1W	40,000	1.92	-0.097	-0.100

Chart 3-10: Amounts Outstanding of Purchases of JGSs with Repurchase Agreements and the GC Repo Rate



3. Uncollateralized Call Market

During fiscal 2021, the call rate remained in the range of about minus 0.05 to minus 0.01 percent (Chart 3-11). Looking at the details, some sectors began to borrow cash more actively from the August 2021 reserve maintenance period. Subsequently, the call rate rose mainly toward the end of reserve maintenance periods and it temporarily exceeded minus 0.01 percent.

On the cash borrowing side, an increasing number of institutions, mainly regional banks, were engaged in more active borrowing. Regional banks' financing capacity grew as the upper limit on their macro add-on balances was raised due to their active use of the Special Operations in Response to COVID-19 -- which continued from the previous fiscal year.[14] Meanwhile, as part of their moves

[14] The definition of financing capacity specifies that it is "calculated by deducting the balances of current

to seek profit opportunities, regional banks engaged in expanded arbitrage trading to obtain call funds at a negative interest rate and keep them within their macro add-on balances. The volume of transactions carried out by regional banks in the uncollateralized call market continued to increase significantly throughout the fiscal year. In addition, some city banks and trust banks borrowed cash more actively in the call market, especially toward the ends of reserve maintenance periods, contributing to pushing up the call rate (Charts 3-12 through 3-14).

On the cash lending side, cash lending was carried out actively by investment trusts, who are major suppliers of funds in the call market, as well as city banks and financial institutions of central organizations of financial cooperatives, both of which increased their lending positions from the middle of fiscal 2021 as the Benchmark Ratio was lowered. Some city banks actively engaged in arbitrage trading that took advantage of the difference of the rates and lent funds in the call market after having obtained them at a lower rate in the GC repo market.

The amount outstanding in the uncollateralized call market remained on an uptrend throughout fiscal 2021, amounting to about 13-18 trillion yen, up from about 9-12 trillion yen for the previous fiscal year. This was owing to many financial institutions that were even more actively engaged in arbitrage trading using the three-tier system of their current accounts at the Bank (Chart 3-14).

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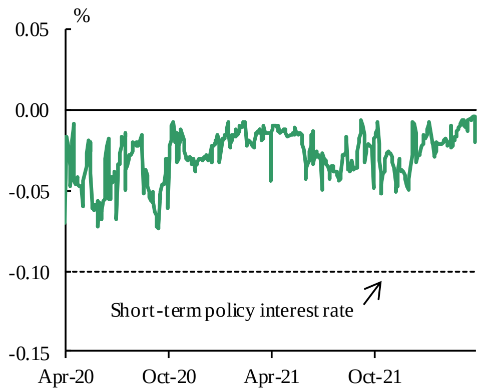
accounts before trading in the uncollateralized call market from the upper bound on their basic balances and macro add-on balances." For details on the relationship between the financing capacity of regional banks and the uncollateralized call rate, see Box 3 in Market Operations in Fiscal 2017.

Chart 3-11: Uncollateralized Overnight Call Rate



Note: Weighted average.

Chart 3-12: Illustration of Financing Capacity

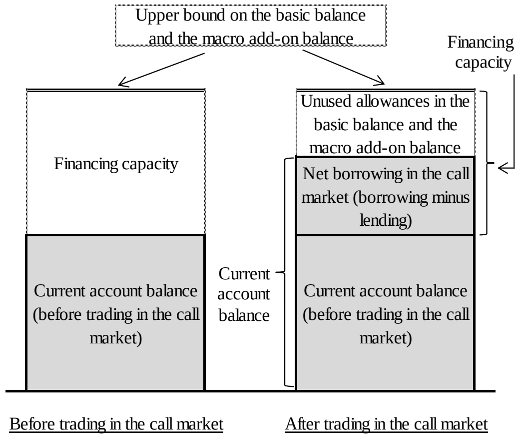


Chart 3-13: Financing Capacity of Regional Banks

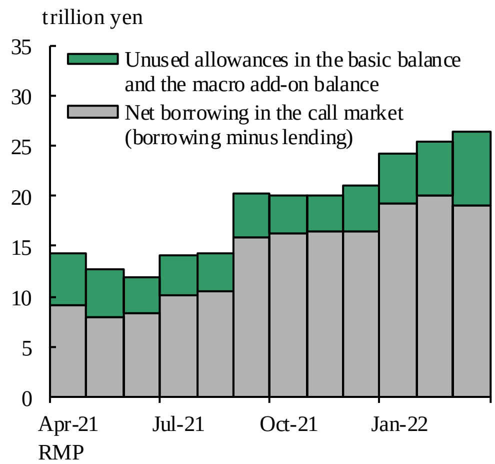
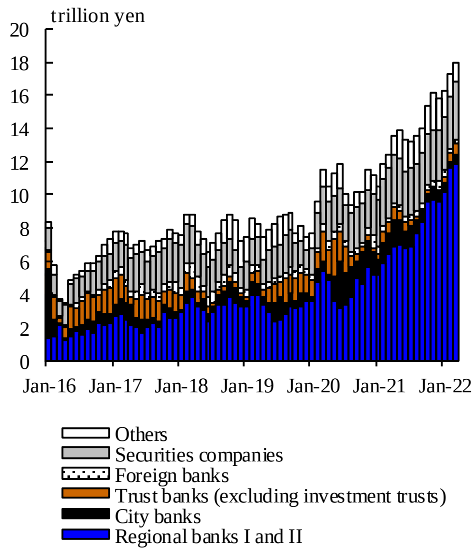
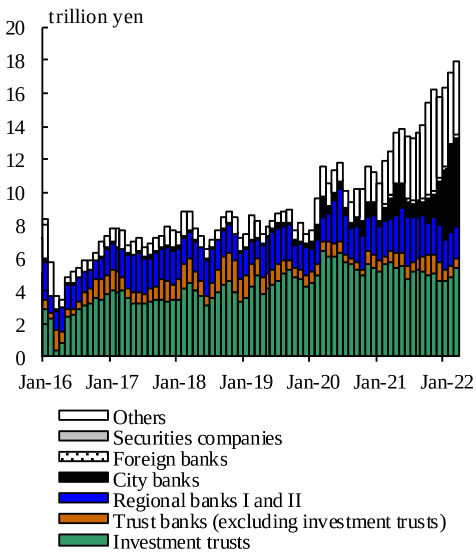


Chart 3-14: Amounts Outstanding in the Uncollateralized Call Market by Sector

(Cash Borrowing Side)



(Cash Lending Side)



Note: Monthly average.

Box 4: Active Trading in the Call Market

The amount outstanding in the uncollateralized call market continued to follow an uptrend throughout fiscal 2021.

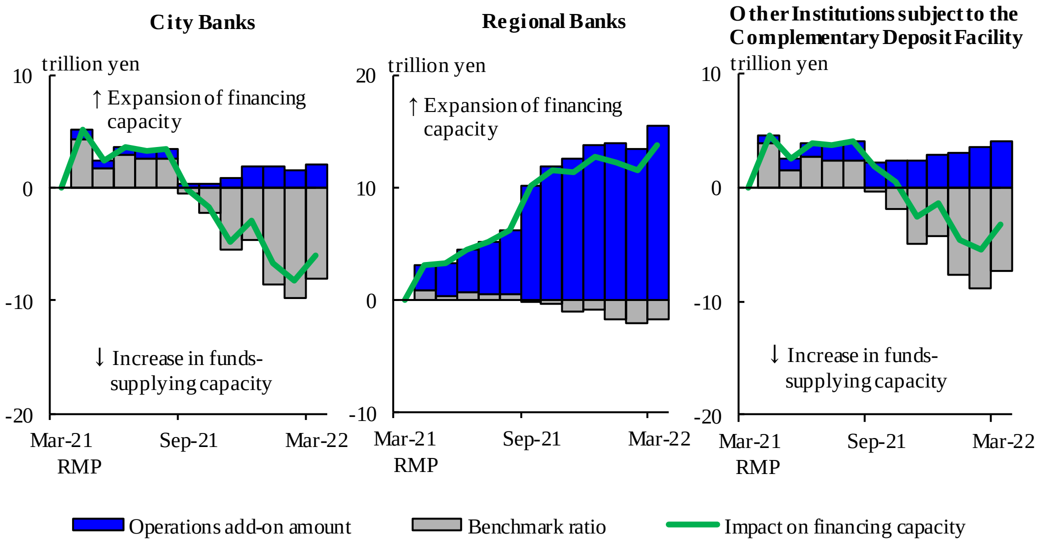
This is attributable to the fact that potential transaction needs grew in the short-term money market on both the borrowing side and the lending side. This in turn resulted from the situation where amounts outstanding of various operations including that of the Special Operations in Response to COVID-19 climbed and the Benchmark Ratio was reduced, while their effects on the upper limit on macro add-on balances differed from one sector to another.

Looking at changes in financial institutions' fund positions during fiscal 2021 by sector, city banks' cash lending needs grew due to effects of the reduction of the Benchmark Ratio, amid a halt in the increase in the amounts outstanding of the Special Operations in Response to COVID-19 and of the Fund-provisioning Measure to Stimulate Bank Lending. Regional banks' borrowing needs grew further as the upper limit on their macro add-on balances was raised due to their continued active use of the Special Operations in Response to COVID-19. Other institutions subject to the Bank's Complementary Deposit Facility (such as financial institutions of central organizations of financial cooperatives) saw their cash lending needs grow as they would have policy-rate balances and a negative interest rate applied unless they lent cash, due to the reduction of the Benchmark Ratio given that they held considerably large Benchmark Balances while their use of the Special Operations in Response to COVID-19 had been limited (Box Chart 4-1). Under these circumstances, in the call market, moves to borrow cash became widespread mainly among regional banks that had increased cash borrowing needs. In contrast, some city banks and other institutions subject to the Bank's Complementary Deposit Facility (such as financial institutions of central organizations of financial cooperatives) that had expanded cash lending needs lent cash in the call market more actively by extending their credit line to avoid having policy-rate balances.

The increase in the amount outstanding in the call market was facilitated by a rise in transactions in which financial institutions including city banks obtained funds at a lower rate in the GC repo market and invested the funds in the uncollateralized call market, while city banks kept extending their credit line. In this respect, looking at the stance on the management of current accounts at the Bank on the cash lending side as seen in the results of the Tokyo Money Market Survey, the spread between the rate on arbitrage trading and the interest rate applied according to their current account balances that balances out administrative costs narrowed,[15] suggesting that arbitrage trading by financial institutions may be becoming more intense (Box Chart 4-2).[16]

Nevertheless, financial institutions that have incurred policy-rate balances include those that did not necessarily lend cash in the call market in sufficient amounts relative to their cash lending capacity due to continued credit line constraints. The Bank will continue to monitor developments in the money market while further engaging in dialogue with financial institutions as necessary, since a lack of progress in cash lending on the cash lending side could become a factor in pushing up short-term interest rates.

Box Chart 4-1: Changes of Upper Bound on Macro Add-on Balances by Sector



Notes: 1. "Operations add-on amount" is the amount added to each financial institution's macro add-on balance based on the increase in balances associated with the Banks various fund-provisioning measures from end-March 2016.
2. "Other Institutions subject to the Complementary Deposit Facility" points to the same institutions as those in Chart 3-4.

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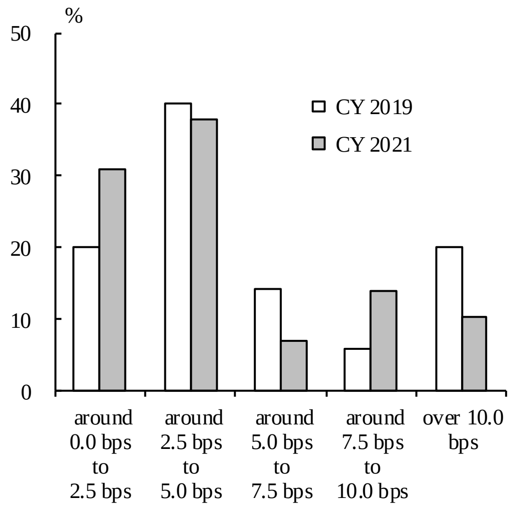
15 The rate gap between the rate used in arbitrage trading and the interest rate that is applied in accordance with the current account balances at the Bank.

16 See "Trends in the Money Market in Japan: Results of the Tokyo Money Market Survey (August 2021)."

Box Chart 4-2: Rate Gap that Matches Administrative Costs of the Cash Lending Side (Percentage Ratio)



Note: The rate gap between the rate used in arbitrage trading and the interest rate that is applied according to their current account balances at the Bank. Respondents are only those who answered that they "engage in arbitrage trading to the extent that administrative costs are balanced out."

Box 5: Formation Mechanism for the GC Repo Rate

The GC repo trade rate is expected to essentially remain slightly above the short-term policy interest rate (minus 0.1 percent), as GC repo transactions are not subject to credit line constraints, unlike call transactions, in a situation where "hypothetical policy-rate balance after arbitrage transactions have taken place in full" is set above zero and financial institutions actively engage in arbitrage trading that takes advantage of the three-tier system of their current accounts at the Bank. In practice, however, the GC repo rate fluctuates occasionally due to inventory financing by securities companies and funding by financial institutions for the purpose of arbitrage trading that takes advantage of the difference in rates between the GC repo market and the call market.

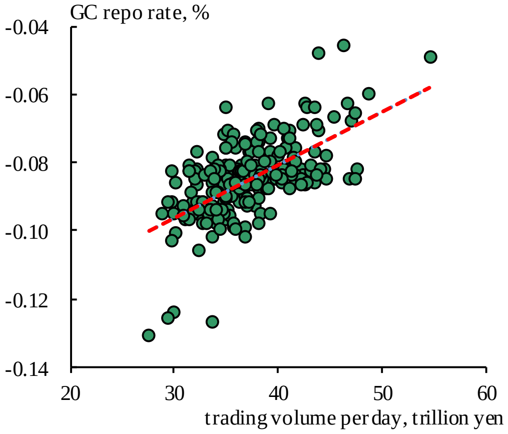
There is a mild positive correlation between the daily turnover volume of the GC repo transactions and the GC repo rate (Box Chart 5-1). This suggests that, if assuming a downward-sloping cash borrowing curve and an upward-sloping cash lending curve, the GC repo rate is determined mainly by changes in funding demand on the borrowing side (the funding curve shifts to the left or right), while the cash lending side's cash lending stance is generally constant (the cash lending curve is generally unchanged, Box Chart 5-2).

Turning to developments on the cash borrowing side for GC repo transactions, city banks' financing capacity was reduced as the upper limit on their macro add-on balances was lowered, and the amounts of cash borrowing declined subsequently. This was attributable to the fact that the Benchmark Ratio had been reduced toward the middle of the fiscal year as well as to a slowdown mainly in the use of the Special Operations in Response to COVID-19 (Box Chart 5-3). In addition, the amount of cash borrowing by securities companies was relatively low in the first half of fiscal 2021 due to a reduction in the amount of T-Bills issued by the government and steady investor demand (Box Chart 5-4). Affected by such a decline in cash borrowing demand, the GC repo rate temporarily fell below the short-term policy interest rate (minus 0.1 percent) in the beginning of the August 2021 reserve maintenance period.

Moreover, changes in the GC repo rate throughout each reserve maintenance period show that the more the turnover volume accumulated toward the latter half of the reserve maintenance period, the higher the GC repo rate tended to be (Box Chart 5-5). This relationship is likely to be affected by lending demand being lopsided among lenders who are not necessarily active arbitrage traders. This is because many cash lenders often lend cash at a higher pace than the average when they intend to reduce their policy-rate balances, and the aforementioned situation tends to be created as this demand of theirs is fulfilled.[17] Uncertainty over future fund positions abates in the latter half of a reserve maintenance period as the number of days remaining in the period declines, and upward pressure tends to be exerted on the GC repo rate because some financial institutions, especially banks, borrow cash more proactively for the purpose of arbitrage trading that takes advantage of the difference in rates between the GC repo market and the call market (Box Chart 5-6).

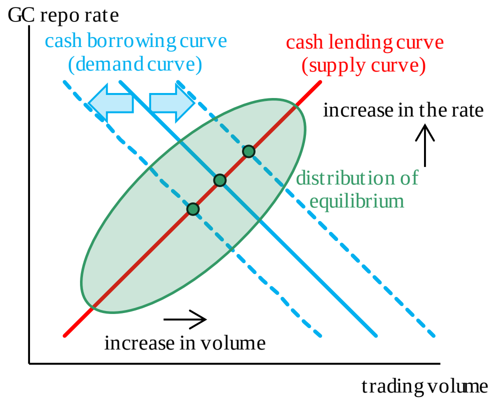
In light of these circumstances, the Bank effectively met cash borrowing demand by carrying out purchases of JGSs with repurchase agreements, including term operations, when upward pressure was exerted on the GC repo rate, and sought to prevent excess lending capacity from being lopsided among cash lenders that were less active in arbitrage trading.

Box Chart 5-1: Relationship between the Trading Volume and the GC Repo Rate



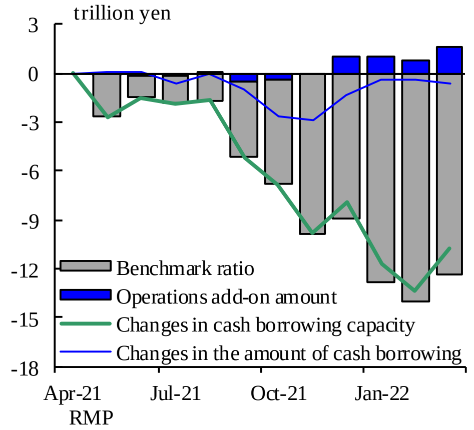
Notes: 1. Trading volume is the amount of overnight transactions per day between April 2021 and March 2022 (excluding the last business day of each quarter, when market participants tend to decrease securities lending).
2. The dashed line indicates the regression line using the least squares method.

Box Chart 5-2: Supply and Demand in the GC Repo Market



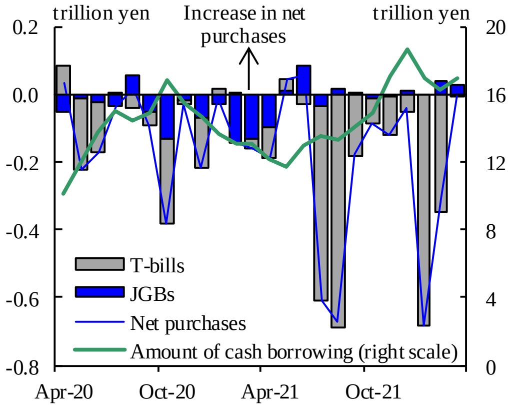
[17] See Box 6 of "Market Operations in Fiscal 2018" for a discussion of different stances on arbitrage trading and its impact on short-term interest rates.

Box Chart 5-3: Changes in the Financing Capacity and the Amount of Cash Borrowing of City Banks



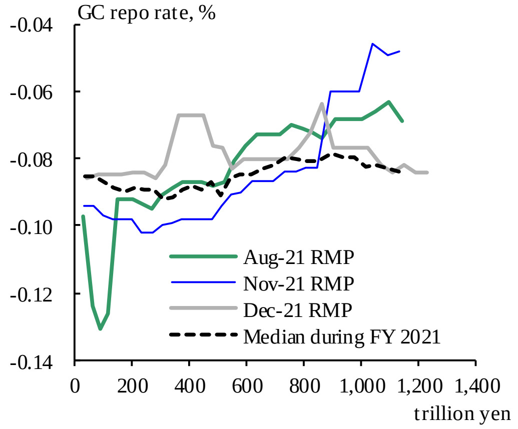
Notes: 1. Changes are from the April 2021 reserve maintenance period.
2. "Operations add-on amount" is the amount added to each financial institution's macro add-on balance based on the increase in balances associated with the Banks various fund-provisioning measures from end-March 2016.
3. The amounts of cash borrowing are the averages of overnight transactions by banks.

Box Chart 5-4: OTC Bond Transactions and Amounts of Cash Borrowing by Securities Companies



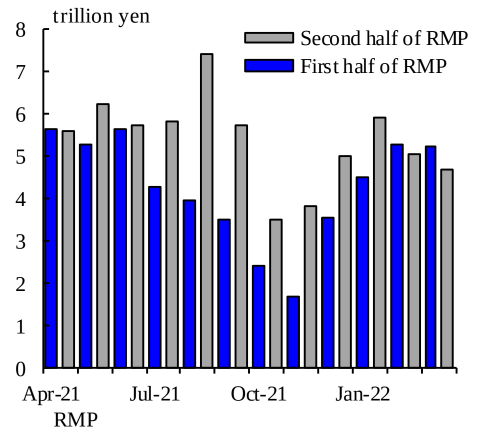
Note: The amount of cash borrowing is the monthly average of overnight transactions.

Box Chart 5-5: Relationship between the Accumulated Trading Volume and the GC Repo Rate



Note: Trading volumes are calculated by accumulating the amounts of overnight transactions during each RMP.

Box Chart 5-6: Amounts of Cash Borrowing by Banks



Note: The amounts of cash borrowing are the averages of overnight transactions during the first and second halves of each RMP.

B. Developments in the T-Bill Market and Outright Purchases of T-Bills

1. T-Bill Market

During fiscal 2021, yields on T-Bills (3-month) remained at around minus 0.1 percent (Chart 3-15). While amounts of issuance by the government were decreased gradually, lowering the amount outstanding of T-Bills (Chart 3-16), their yields temporarily declined to minus 0.165 percent due to the fact that (1) collateral demand from domestic investors was high; and (2) from October 2021 onward, when the premium over the end of the calendar year had started to be priced in, there was an increase in demand from foreign investors against the backdrop of a decline in the FX swap-implied yen rate from the U.S. dollar as in previous years. In the beginning of 2022, however, the yields rose to around minus 0.1 percent as the supply and demand eased on the back of (1) a decline in demand from foreign investors reflecting the dissipation of the premium over the end of the calendar issues; and (2) an increase in the amounts of issuance of 3-month T-Bills by the government.

While yields on 6-month and 1-year T-Bills exhibited similar developments to those of 3-month T-Bills, the yield on 1-year T-Bills rose somewhat more significantly when the yields on JGBs with coupons in the short- to medium-term zone increased in the beginning of 2022.

In the meantime, the amount outstanding of T-Bills held by the Bank decreased amid generally favorable supply and demand conditions as seen in the amounts outstanding of T-bills held by domestic and foreign investors which remained at high levels (Chart 3-17).

Chart 3-15: Yields on T-Bills

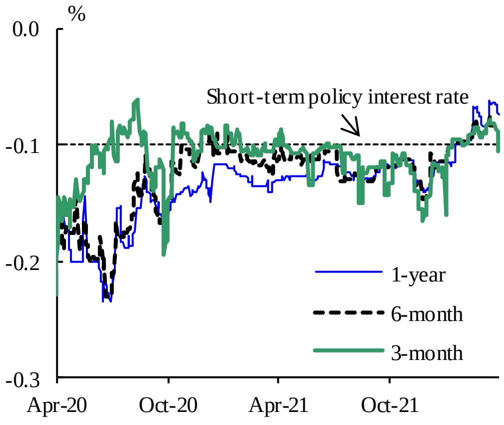


Chart 3-16: Amounts Outstanding of T-Bills by Maturity Period

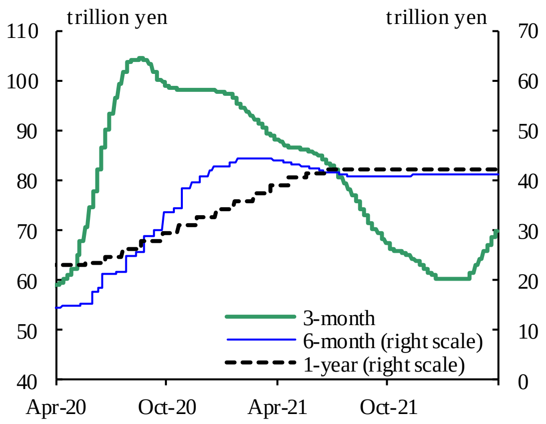
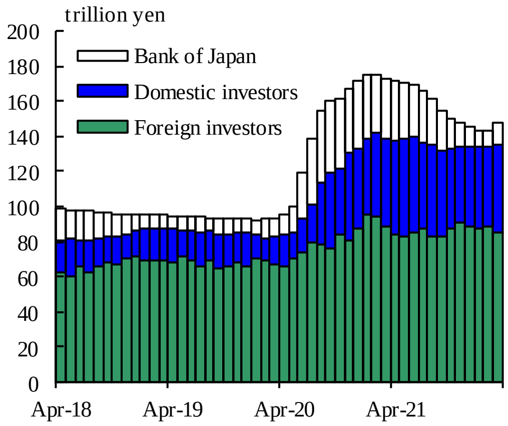


Chart 3-17: Amounts Outstanding of T-Bill Holdings by Entity



Note: Excludes T-Bills held by the government and the Fiscal Loan Fund, as well as those underwritten by the Bank. Figures for the amount outstanding of foreign investors' T-Bill holdings are estimated by adding monthly net investment flows to the quarterly gross external debts (general government/short-term debt securities). Figures for domestic investors are calculated by deducting the amounts outstanding of T-Bills held by the Bank and foreign investors from the total.

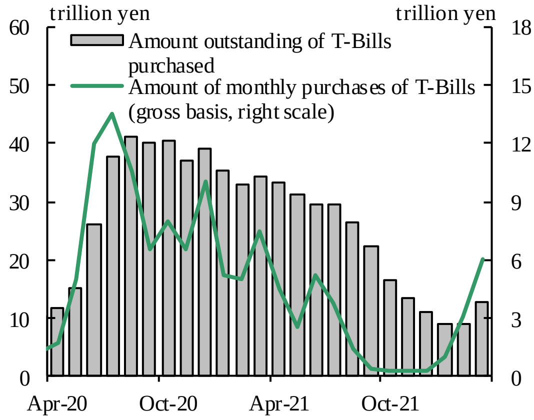
2. Outright Purchases of T-Bills

During fiscal 2021, the Bank flexibly conducted outright purchases of T-Bills, taking into consideration developments in supply and demand conditions in the market. In the "Outline of Outright Purchases of Japanese Government Securities" released on June 29, 2021, the Bank deleted the description on the offer amounts, which set them at about 500 billion to 3.0 trillion yen of T-Bills per auction. This was done with a view to continuing to adjust its offer amounts flexibly in light of favorable supply and demand conditions stemming mainly from a reduction in the amount of issuance for 3-month T-Bills. Then, the Bank continued to purchase about 100 billion yen of T-Bills each time from the middle of August to the end of 2021. Since January 2022, the Bank has made offers of 500 billion yen to 2.0 trillion yen each time given that the supply and demand conditions have eased as a result of an increase in the amount of issuance of 3-month T-Bills.

With regard to the schedule of purchases, the Bank conducted purchases on the second business day following the auction date, in principle. It maintained the policy to continue conducting operations flexibly as necessary. In December 2021, the number of auctions between the Bank's purchases amounted to five times due to the concentration of auction dates. However, no signs of a sharp deterioration in the supply and demand conditions were observed. With respect to T-Bills eligible for purchase, the Bank continued its flexible operations by carefully taking into consideration trends in individual T-Bills and the background thereof and by excluding some T-Bills in the case of, for example, a significant decline in the yield of such T-Bills relative to neighboring zones.

Under such operation, the amount outstanding of T-Bills purchased stood at 12.7 trillion yen at the end of March 2022, a decrease of 21.5 trillion yen from a year earlier (Chart 3-18).

Chart 3-18: Amounts Outstanding of T-Bills Purchased and Amounts of Monthly Purchases of T-Bills



C. Developments in the JGB Market and Outright Purchases of JGBs

1. Developments in the JGB Market

Japanese long-term interest rates remained at around 0 percent throughout fiscal 2021 with the target level of long-term interest rates having been maintained at around 0 percent under QQE with Yield Curve Control. The long-term interest rates fluctuated in response to economic and price conditions, as well as trends in overseas interest rates.

Japanese long-term interest rates followed a downtrend in the first half of fiscal 2021, accompanied by a decline in overseas interest rates, and they were at 0.000 percent in early August, the lowest level of the fiscal year. Subsequently, the rates temporarily rose to 0.100 percent in late October, as overseas interest rates began to increase due to supply-side constraints and vigilance against inflation stemming from a rise in energy prices. The rates then fell again to 0.035 percent in December, as interest rates decreased on a global scale reflecting the spread of the Omicron variant. In 2022, the rates rose temporarily to 0.230 percent intraday on February 10 as overseas interest rates rose rapidly, reflecting concern over acceleration in the pace of reduction in monetary easing in the United States. The rise was then halted in light of the Bank's announcement that day about fixed-rate purchase operations for the next business day after the three-day weekend. Thereafter, the worsening situation surrounding Ukraine led to the increase of the rates to decelerate temporarily. However, as upward pressure on U.S. interest rates continued to be exerted, the rates turned upward again, reaching 0.25 percent on March 28. Under such circumstances, the Bank offered fixed-rate purchase operations for consecutive days and made addition and increases to its offers for outright purchases of JGBs toward the end of the fiscal year and the rise in long-term interest rates was therefore moderated at the end of March 2022 (for details, see Box 7).

Yields on short- and medium-term JGBs, including 2-year and 5-year JGBs, remained at around minus 0.14 to minus 0.06 percent during 2021, partly due to collateral demand from domestic investors. However, they rose in tandem with long-term interest rates from the end of the year and the yield on 5-year JGBs rose into positive territory in the beginning of February 2022 (Chart 3-19).

Yields on super-long-term JGBs remained within a narrow range during 2021 due to persistent demand from domestic investors albeit with fluctuations in long-term interest rates. After the end of 2021, the yields on super-long-term JGBs rose significantly relative to long-term interest rates, for which the increase had been contained by the Bank's fixed-rate purchase operations amid an increase in overseas interest rates. The yield spreads for each zone widened (against 10-year JGB yields) throughout fiscal 2021, although they declined somewhat due to the Bank's additional purchases of JGBs at the end of the fiscal year (Charts 3-19 and 3-20).

Meanwhile, the break-even inflation rate (BEI) for inflation-indexed JGBs, which is calculated as the difference between their yields and those for nominal bonds over the same maturity period, rose along with overseas BEIs, especially from August 2021 as inflation expectations grew globally (Chart 3-21).

Chart 3-19: Yields on JGBs

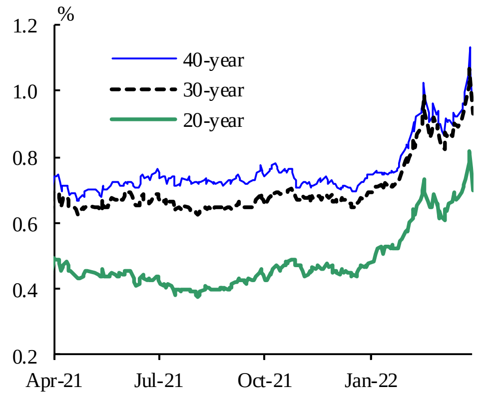


Chart 3-20: Yield Spreads between 10-Year JGBs and JGBs in Other Maturity Zones

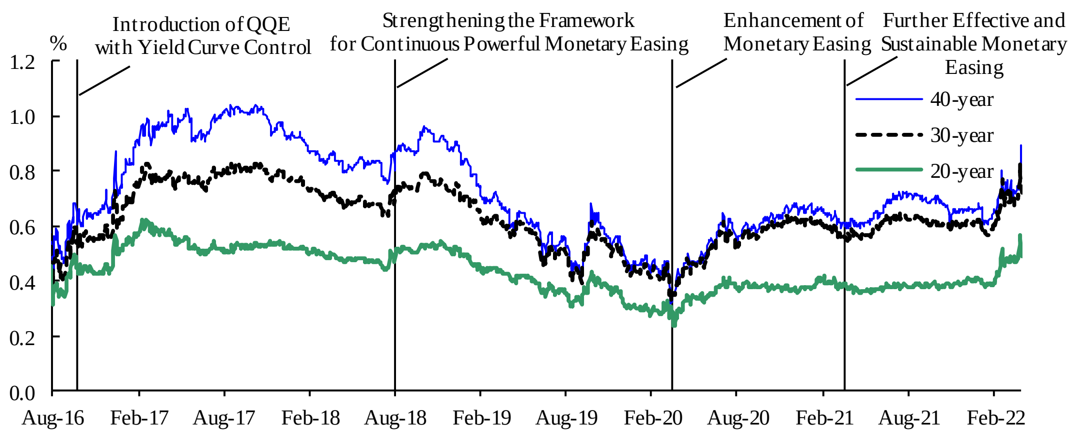
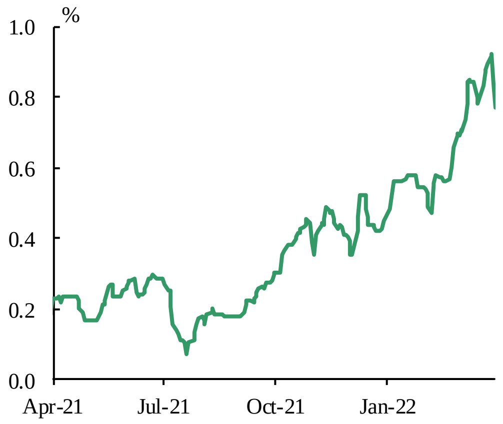


Chart 3-21: Break-Even Inflation Rate



2. Outright Purchase of JGBs

During fiscal 2021, the Bank conducted outright purchases of JGBs flexibly so that long-term interest rates would remain at around 0 percent under QQE with Yield Curve Control, and the Bank was successful in realizing a yield curve consistent with the guidelines for market operations (Chart 3-22).

In order to ensure the transparency of its conduct of market operations, the Bank has been releasing the "Outline of Outright Purchases of Japanese Government Securities" in advance. With regard to outright purchases of JGBs with the competitive auction method, the Bank provided the purchase size per auction for the following month and announced the dates of auctions for that month for five maturity zones (more than 1 year and up to 3 years, more than 3 years and up to 5 years, more than 5 years and up to 10 years, more than 10 years and up to 25 years, and more than 25 years) until June 2021.[18] From July, the Bank changed the method of announcing its JGB purchase schedule and announced a JGB purchase schedule for the coming 3 months on a quarterly basis for further enhancement of market functioning.

The Bank then adjusted the quarterly outright purchase size and the monthly purchase frequency in a

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[18] The Bank made revisions to the "Outline of Outright Purchases of Japanese Government Securities" released on March 19, 2021, based on the results of the Assessment conducted at the March MPM. The revised outline stated that the amount of outright purchases of JGBs through the competitive auction method would be described as a specific amount in the announcement of the monthly schedule of outright purchases for the month, instead of showing it in the conventional form of a range, starting from April.

flexible manner, mainly based on the supply and demand conditions of JGBs in each zone and the bidding for the operations. Starting from the purchases in April 2021, while the number of purchases per month was reduced by one in each zone from the previous month, the purchase size per auction was increased from the previous month. This was done while taking into account the bidding for the operations, the supply and demand conditions of JGBs, and investors' demand for investment in JGBs after the beginning of the new fiscal year in April 2021. Moreover, in July 2021, given the supply and demand conditions, the Bank reduced the amounts of purchases for maturity zones comprising "more than 1 year and up to 3 years," "more than 5 years and up to 10 years," and "more than 10 years and up to 25 years" (Chart 3-23).

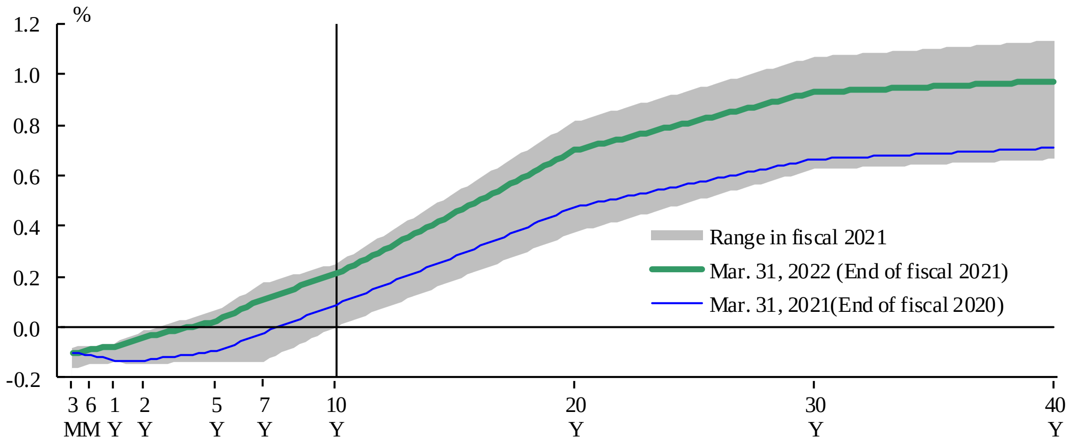
With respect to issues eligible for purchase, the Bank excluded on-the-run issues of 20-year, 30-year, and 40-year JGBs. Moreover, it continued to exclude issues of JGBs in a wide range of zones from its outright purchases, mainly taking into consideration the developments in financial markets including the supply and demand conditions of individual JGB issues.

From February 2022, increasingly strong upward pressure was exerted on Japan's interest rates amid an increase in overseas interest rates mainly reflecting the reduction of monetary easing in the United States, and long-term interest rates approached about 0.25 percent, the upper limit set on the range of fluctuations. In response, on February 14, the Bank conducted fixed-rate purchase operations after notifying the market in advance on the previous business day. As long-term interest rates rose again at the end of March, the Bank conducted fixed-rate purchase operations, fixed-rate purchase operations for consecutive days, and made addition and increased offers for its outright purchases of JGBs (see Box 7 for details).

As for the inflation-indexed JGBs, like with JGBs with fixed-rate coupons, the Bank decreased the frequency of purchases and raised the purchase size per auction from April 2021.

The Bank revised the frequency of outright purchases of the floating-rate JGBs from "once every two months" to "once every quarter" and reduced the offer amount per purchase from 50 billion yen to 30 billion yen from April, mainly taking into consideration an absence of new issuances and a decrease in the amounts outstanding in the market.

Chart 3-22: Changes in the JGB Yield Curve



Note: Figures for residual maturity of 7 years are yields on CTDs (JGB futures).

Chart 3-23: Changes of Monthly Schedule of Outright Purchases of JGBs

Residual maturity	April-June 2021	July 2021-March 2022
-1Y	1500	1500
	1	1
1-3Y	4750	4500
	4	4
3-5Y	4500	4500
	4	4
5-10Y	4500	4250
	4	4
10-25Y	2000	1500
	1	1
25Y-	500	500
	1	1
Inflation-indexed bonds	600	600
	1	1
Floating-rate bonds	300	300
	Once a quarter	Once a quarter

Notes: 1. From top to bottom, figures are the offered amount per auction (100 million yen) and the frequency of auctions.
2. The shaded areas indicate increases or decreases of amounts of purchases.
3. Purchase sizes of these auctions listed above are approximate.

Box 6: Change in the Method of Announcement of the Schedule for Outright Purchases of JGBs

After the release of "Monthly Schedule for Outright Purchases of Japanese Government Bonds" on March 31, 2021, the Bank began to indicate a specific offer amount (fixed, in principle) in advance instead of indicating a range as previously done (Box Chart 6-1). The Bank lowered the frequency of announcing scheduled JGB purchases from once every month to once every quarter, starting from the release of the "Quarterly Schedule for Outright Purchases of Japanese Government Bonds" on June 29, 2021. The Bank took these steps with a view to encouraging autonomous interest rate formation in the market so that interest rates would fluctuate more within a clarified range in line with economic activity, prices, and overseas interest rates (Box Chart 6-2).

In this regard, the difference in the sensitivity of JGB yields to the U.S. Treasury bond yields on offer dates and non-offer dates was analyzed in two sample periods, with a view to checking whether uncertainty over the Bank's offer amounts was a disturbance factor in yield fluctuations in response to developments in economic activity and prices. For JGBs, difference between the yields of 10-year on-the-run issues marked before 10:10 am on a given business day and the yields at the close of the market on the previous business day was analyzed. For U.S. Treasury bonds, daily changes of 10-year U.S. Treasury bond yields (1-day lag) were analyzed. The sample periods were from March 2017 through March 2021 (Period 1) and from April through December 2021, after offer amounts were determined in principle (Period 2). As a result, in Period 1, the sensitivity on offer dates was statistically significantly lower than that on non-offer dates, whereas in Period 2, there was no statistically significant difference between the two (Box Chart 6-3).

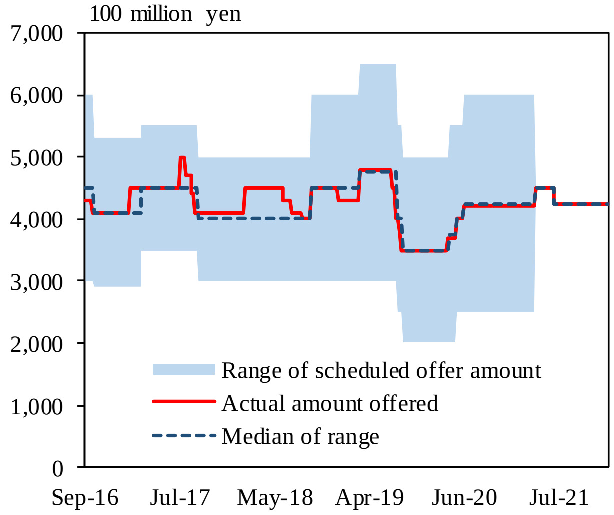
The results of the analysis suggest that having purchase amounts fixed in principle is effective in the improvement of market functioning in terms of encouraging yield fluctuations in response to overseas interest rates, although it should be noted that the results of the analysis presented in this box should be interpreted with some latitude due to the small sample size. Moreover, from the same perspective, the shift to announcing the purchase schedule on a quarterly basis is considered to also have helped improve market functioning.

In this box, the Bank's analysis was centered on the sensitivity of the 10-year JGB yields to the 10-year U.S. Treasury bond yields. The Bank strives to identify the degree of market functioning by referring to a diverse set of indicators including trading volume and the supply-demand gap for individual issues of JGBs as well as qualitative information, such as interviews with market participants and opinions heard at the Bond Market Group meetings.[19]

Nevertheless, these changes in the publication of the schedule of JGB purchases are merely efforts made to take into account market functioning under the Bank's yield curve control. As stated in the "Outline of Outright Purchases of Japanese Government Securities," the Bank may adjust the purchase amount in the case, for example, that there is the risk of long-term interest rate surpassing either the upper or the lower limit of the range of fluctuations. On March 30, 2022, the Bank increased its offer amounts and made additions to the auction schedule, as it was judged that long-term interest rates were likely to surpass the upper limit set on the range.

Going forward, the Bank will continue to take appropriate measures in conducting its market operations under the guidelines, while taking into account market functioning.

Box Chart 6-1: Changes in Offer Amount (Residual Maturity of More than 5 Years and up to 10 Years)



Note: The median of range of scheduled offer amounts from April 2021 is the scheduled offer amount, which is fixed in principle. Actual amounts offered do not include unscheduled purchases on August 2, 2018, March 13, 17, 19, and 23, 2020, and March 30, 2022, nor increased purchases on March 30, 2022.

Box Chart 6-2: Changes in the Method of Announcement of Schedule for Outright Purchases

Period	Scheduled dates	Amount	Frequency of announcement
Sep. 2016 - Feb. 2017	Only number of auctions per month	In a range	Monthly
Mar. 2017 - Mar. 2021	Specific dates		
Apr. 2021 - Jun. 2021		Fixed amount	
Jul. 2021-			Quarterly

[19] The following opinion was expressed at the Bond Market Group meeting held in December 2021: "With regard to the release of the schedule of the Bank's outright purchases of long-term JGBs, the Bank started to indicate in advance the amount of each offer instead of a conventional range from the schedule for April and changed the frequency of announcements from monthly to quarterly from that for July. We assess them appropriate as measures for improving the degree of functioning in the bond market."

Box Chart 6-3: Method of Announcement of Amount for Outright Purchases and Sensitivity to U.S. Treasury Bond Yields until Offer Time

Method of announcement of amount	Period		Regression coefficient on non-offer dates	Change in regression coefficient on offer dates
In a range	(1)	Mar. 2017 - Mar. 2021	0.1486***	−0.0858***
Fixed amount	(2)	Apr. 2021 - Dec. 2021	0.0912***	0.0309

Notes: 1. *** indicates the statistical significance at the 1% level.

2. The estimation model is as shown below. For each period, we regress changes of on-the-run 10-year JGB yields from the close of the market on the previous business day, which are calculated by weighting rates for individual transactions by trading volume, with changes in UST (10-year U.S. Treasury bond yields), and a dummy variable which takes 1 when the Bank's outright purchases of the maturity zone of more than 5 years and up to 10 years are offered and takes 0 otherwise. "Regression coefficient on non-offer dates" is the estimation result for β1, and "Change in regression coefficient on offer dates" is that of β3. β3 is estimated to be statistically significant for period (1) at the 1% level, and not for period (2) even at the 10% level. The sample excludes days of the JGB auctions by the government.

$$\Delta JGB = \alpha + \beta_1 \Delta UST + \beta_2 Dummy + \beta_3 \Delta UST * Dummy$$

Box 7: The Bank's Responses to Rises in Interest Rates from February through March 2022 and Their Effects

As described in the main text, from the middle of February through March 2022, the Bank implemented a number of operational measures to appropriately adhere to the Guidelines for Market Operations in which the target level of long-term interest rates is around 0 percent, while JGBs were under increased upward pressure on the back of rises in overseas interest rates. This box reviews the background and aim of the measures implemented as well as market developments in February and March.

[Announcement and Implementation of Fixed-rate Purchase Operations <February 10-14>]

JGB yields rose from the beginning of 2022, driven by the yields on 10-year JGB futures (hereinafter referred to as "JGB futures") and swaps in tandem with overseas interest rates that rose in the face of surging global inflation. 10-year JGB yields approached 0.235 percent temporarily in the evening of February 10.

Faced with this situation, at 6 pm on February 10, the Bank announced that it would conduct fixed-rate purchase operations on February 14. This was a step taken to clearly state an intention to set an upper limit on the range of fluctuations of long-term interest rates considering that (1) uncertainty over the conduct of the Bank's market operations in the absence of fixed-rate purchase operations after the Bank's March 2021 Assessment had been pointed out; and (2) overseas interest rates were likely to fluctuate widely during the Japanese three-day holiday from February 11 through 13 in Japan. The announcement was made despite the fact that long-term interest rates at the time were somewhat far from the 0.25 percent level, an upper limit on the range of fluctuations specified in the Bank's March 2021 Assessment.

There were no bids for the fixed-rate purchase operations on February 14, as the prevailing market yields on that day were somewhat lower than the Bank's purchase yields. However, long-term interest rates declined through the first half of March while the market became aware again of the upper limit on the range of fluctuations in long-term interest rates, and market participants shifted to a "risk-off" mode globally in response to the worsening situation surrounding Ukraine (Box Chart 7-1).

[Conducting fixed-rate purchase operations and fixed-rate purchase operations for consecutive days, and additional and increased offer schedules for purchases of JGBs < March 28-31 >]

From the middle of March, while overseas interest rates followed an uptrend again, Japanese long-term interest rates approached the upper limit on the range of fluctuations yet again. For this reason, the Bank offered fixed-rate purchase operations on March 28. While a number of bids were received in the operations, totaling 64.5 billion yen, the Bank announced at 4 pm on the same day that it would conduct fixed-rate purchase operations for consecutive days from March 29 through 31. March 29 was the first day on which these fixed-rate operations for consecutive days were conducted after being introduced in the Bank's March 2021 Assessment, and bids worth 528.6 billion yen in total were submitted, exceeding the bids submitted on March 28.

Meanwhile, the shape of the yield curve changed significantly. In other words, while 10-year JGB yields remained relatively firm at around 0.25 percent, a level that made investors keenly aware of the upper limit on the range of fluctuations, the JGB futures zone (7-year) and super-long-term zone were extensively sold in bulk, mainly by foreign investors due to the rise in overseas interest rates. As a result, yield spreads for bonds with these maturity zones widened rapidly relative to the 10-year zone, driving the 10-year JGBs to be overvalued (Box Chart 7-2).

Against the backdrop of strong upward pressure on interest rates in the entire yield curve, on March 30, the Bank increased the amount of JGB purchases (via the competitive auction method) of "more than 3 years and up to 5 years" and of "more than 5 years and up to 10 years," which had been announced in advance in the "Quarterly Schedule of Outright Purchases of Japanese Government Bonds (Competitive Auction Method) (January-March 2022)," and added purchases of JGBs of "more than 10 years and up to 25 years" and "more than 25 years," which had not been scheduled in advance.

The Bank had indicated in the "Outline of Outright Purchases of Japanese Government Securities" that it would increase the amount of purchases as necessary, and additionally stated the same thing in the statement it released on March 28 with regard to fixed-rate purchase operations for consecutive days. The Bank then announced an increase in the amount of purchases at 8:30 am on March 30, before the market opened for the day, with a view to fully informing market participants in consideration of the size of the increase. Following the announcement, interest rates fell across a wide range of maturity zones in the morning session. However, successful bid rates and core bid-to-cover ratios[20] for the purchases of JGBs of "more than 5 years and up to 10 years," of "more

[20] The core bid-to-cover ratio is calculated by extracting the bidding amount for JGB purchases with yields which are equivalent to or higher than the offer rate put forward by sellers of JGBs (prices which

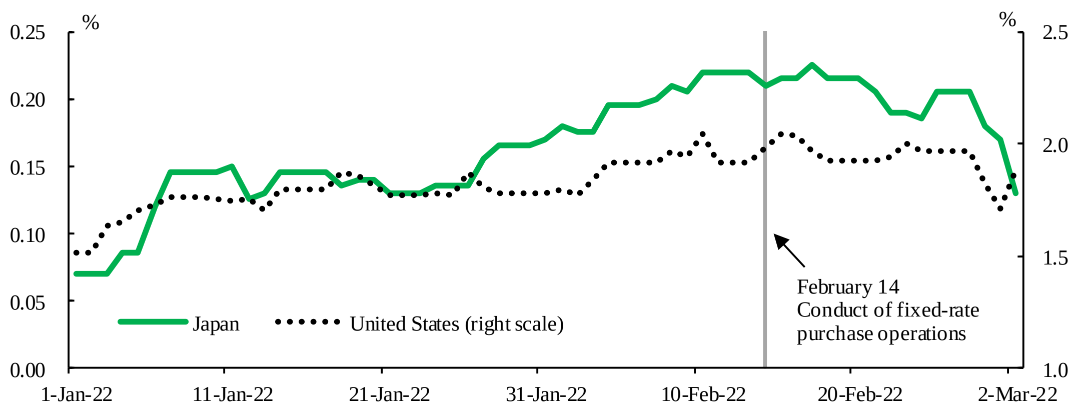
than 10 years and up to 25 years," and of "more than 25 years" suggested that there was still a considerable need in the market to sell JGBs at yields close to the prevailing market yields, despite increased and added JGB purchases by the Bank. In fact, after the results of the operations were announced, long-term interest rates once again followed a slightly increasing trend. Consequently, the Bank conducted additional unscheduled purchases of JGBs in the aforementioned three maturity zones at 1 pm on March 30.

As a result of these measures, the sharp upward pressure on interest rates moderated, with the long-term interest rates at the close of the market at 0.215 percent (Box Chart 7-3). Then, there were no bids in the fixed-rate purchase operations on March 30 and 31.

[Increase in Offer Amounts for Purchases of JGBs in the Quarterly Schedule <March 31>]

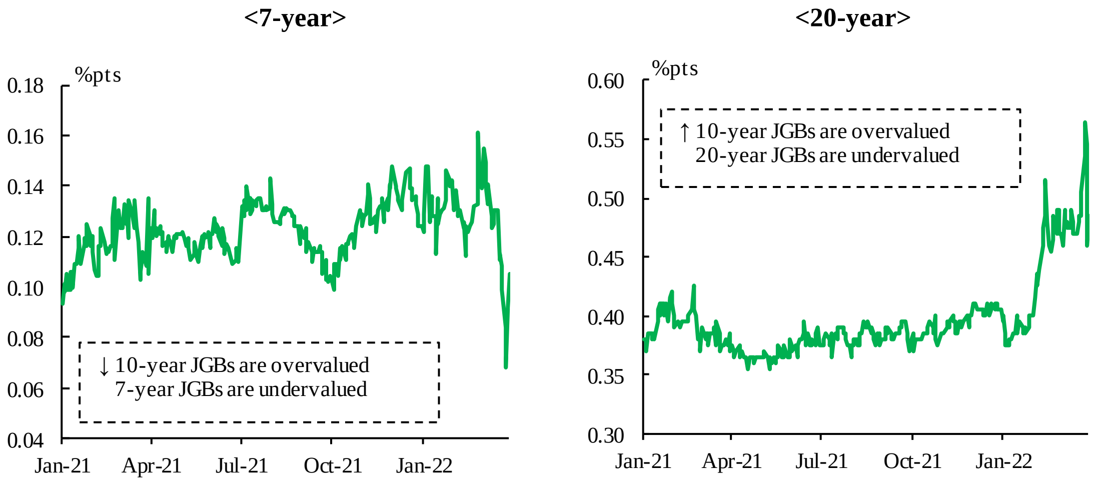
In light of these developments in the JGB market during the period from February through March, the Bank increased its monthly offer amounts by a total of 650 billion yen for five maturity zones ranging from "more than 1 year and up to 3 years" to "more than 25 years" in the "Quarterly Schedule of Outright Purchases of Japanese Government Bonds (April-June 2022)" announced on March 31. This reiterated the Bank's intention to adhere to the Guidelines for Market Operations, which set the target level of long-term interest rates at around 0 percent by increasing its purchase amounts for a wide range of maturity zones from short term to super long term, in the face of continued upward pressure on the entire yield curve.

Box Chart 7-1: Long-term Yields in Japan and United States

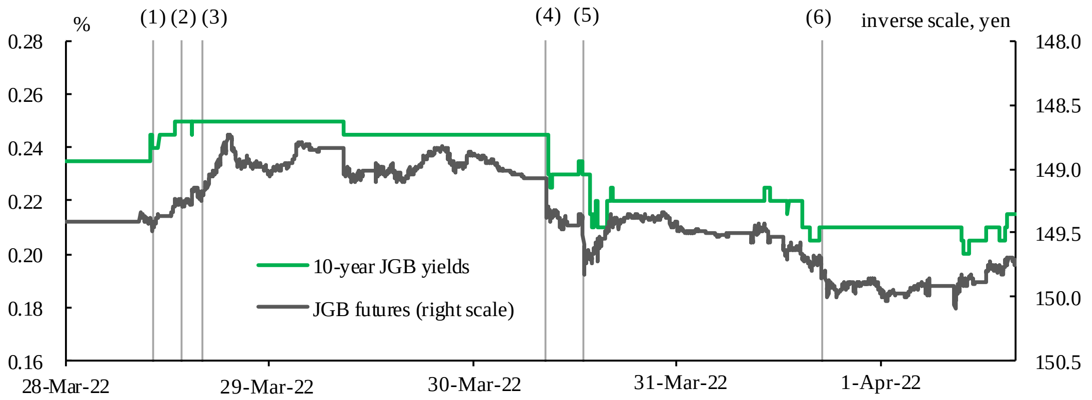


are equivalent to or lower than the offer prices by sellers of JGBs) in the secondary market immediately before the deadline for submitting bids, and dividing the total of that amount by the offered amount. For details on the thinking on the core bid-to-cover ratio, see Box 8 in Market Operations in Fiscal 2016.

Box Chart 7-2: Yield Spreads between 10-year JGBs and in Other Maturity Zones



Box Chart 7-3: 10-year JGB Yields and JGB Futures



(1) Fixed-rate purchase operations (AM)
(2) Fixed-rate purchase operations (PM)
(3) Annoucement of fixed-rate purchase operations for consecutive days
(4) Increase in amounts of outright purchases of JGBs, etc.
(5) Conduct of unscheduled additional purchases of JGBs
(6) Announcement of the quarterly schedule of outright purchases of JGBs (April-June 2022)

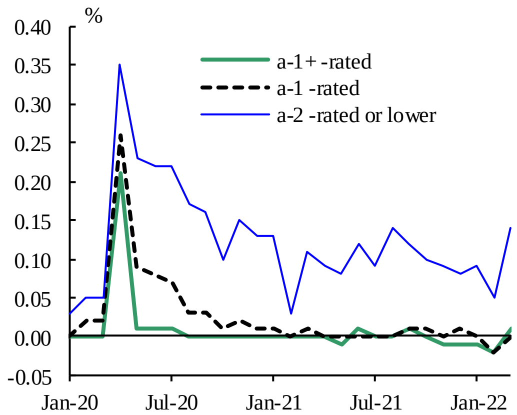
D. Developments in the CP Market and Outright Purchases of CP

1. Developments in the CP Market

During fiscal 2021, CP issuance rates remained at around 0 percent, mainly among issues with high ratings. Some of the issues continued to be issued at a negative rate on the back of demand for collateral for the Special Operations in Response to COVID-19 (Chart 3-24).

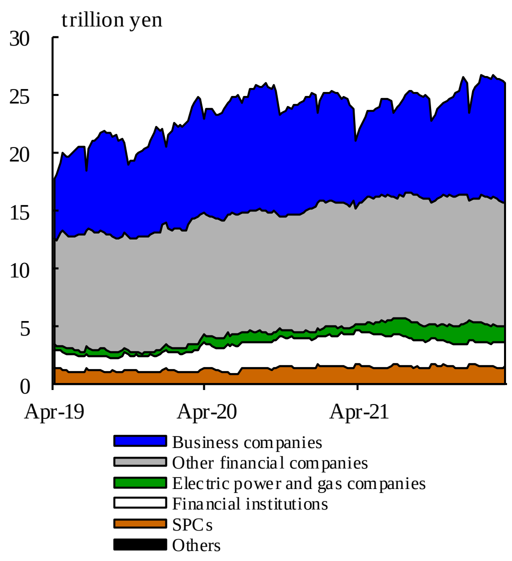
The amount outstanding of CP remained at a high level throughout the fiscal year. Other financial companies (including leasing companies and nonbanks) continued to issue CP in significant amounts. In the second half of fiscal 2021, CP issuance was conducted mainly by electric power and gas companies and energy-related business companies against the backdrop of a rise in firms' funding needs for working capital due mainly to a surge in commodity prices including crude oil. As a result, the amount outstanding of CP reached 26 trillion yen in December 2021 (Chart 3-25).

Chart 3-24: CP Issuance Rates



Notes: 1. 1-month rates.
2. CP issuance rates of business companies (including electric power and gas companies) and other financial companies (including leasing companies and nonbanks) on a monthly basis.

Chart 3-25: Amount Outstanding of CP



Note: Business companies exclude electric power and gas companies, and other financial companies.

2. Outright Purchases of CP

The Bank actively purchased CP throughout fiscal 2021. This was in line with the decision made at the MPM held on June 17 and 18, 2021, to continue purchasing CP and corporate bonds with an upper limit on the amount outstanding of about 20 trillion yen in total until the end of March 2022

(Chart 3-26).[21] Meanwhile, it flexibly revised the auction amount per auction in accordance with conditions surrounding the issuance of and the yields on CP.[22]

The lowest accepted bid yields for outright purchases of CP remained in negative territory (Chart 3-27). They declined from February and March 2022, due to a decrease in bids made by financial institutions that prioritized securing private debt to pledge as collateral for the Special Operations in Response to COVID-19. Under these circumstances, the Bank set the lower limit on bid rates for each offer with a view to inducing appropriate pricing of CP and ensuring stability in financial markets.

Chart 3-26: Offered Amounts of Outright Purchases of CP

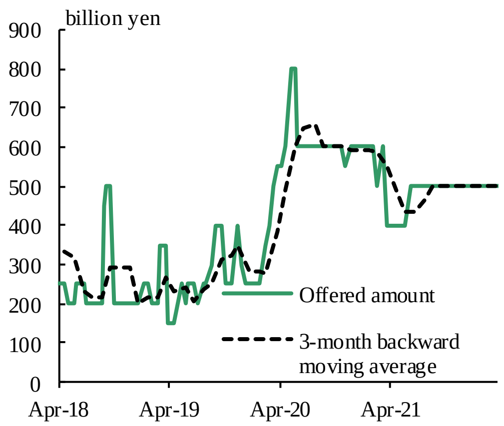
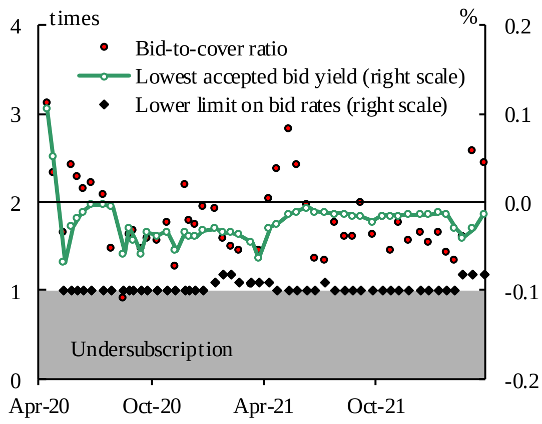


Chart 3-27: Bid-to-Cover Ratios and Lowest Accepted Bid Yields of Outright Purchases of CP



[21] At the MPM held on December 16 and 17, 2021, the Bank decided to (1) complete its additional purchases of CP and corporate bonds at the end of March 2022 as scheduled; and (2) purchase about the same amount of CP and corporate bonds as prior to the COVID-19 pandemic, so that the amounts outstanding of these assets would decrease gradually to the pre-pandemic levels, namely, about 2 trillion yen for CP and about 3 trillion yen for corporate bonds. Subsequently, on February 25, 2022, the Bank released "Maximum Amounts Outstanding of a Single Issuer's CP and Corporate Bonds to Be Purchased." In order to facilitate the purchases of CP and corporate bonds from April to September 2022, the Bank decided to set the maximum amounts outstanding of a single issuer's CP and corporate bonds to be purchased and their ratio to the total amount outstanding at 100 billion yen and 50 percent for CP and at 250 billion yen and 30 percent for corporate bonds, respectively.

[22] When the Bank released "Schedules of Outright Purchases of CP and Corporate Bonds" for June through July 2021, the footnote on the maximum bidding amount for each counterparty (that it would be equal to the auction amount in principle) was removed with a view to clarifying that the maximum bidding amount for each counterparty may be set flexibly as necessary.

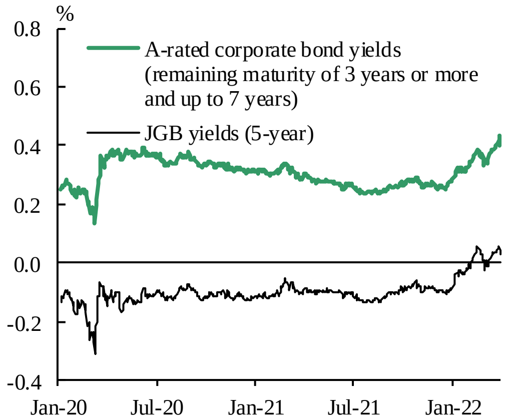
E. Developments in the Corporate Bond Market and Outright Purchases of Corporate Bonds

1. Developments in the Corporate Bond Market

Corporate bond yields generally remained at low levels in the first half of the fiscal year. They rose from December 2021 in tandem with JGB yields, which are base rates (Chart 3-28). In the secondary market, the yield spreads between corporate bonds and JGBs narrowed moderately, partly due to the Bank's purchases of corporate bonds and demand for collateral for the Special Operations in Response to COVID-19 (Chart 3-29).

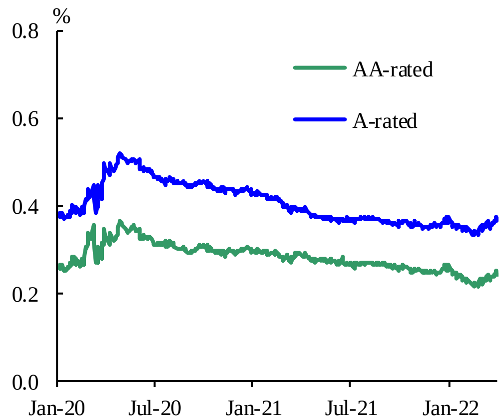
Meanwhile, the amount outstanding of corporate bonds increased at a pace similar to fiscal 2020 under a favorable issuance environment on the whole, although developments such as the postponement of corporate bond issuance had been seen in part since the beginning of February 2022, in response to increased market volatility mainly brought about by the situation surrounding Ukraine (Chart 3-30).

Chart 3-28: Yields on Corporate Bonds and JGBs



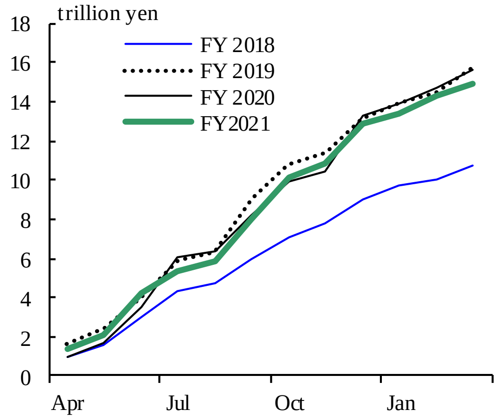
Note: Rated by R&I. The same applies to Chart 3-29.

Chart 3-29: Yield Spreads between Corporate Bonds and JGBs



Note: Corporate bonds with a remaining maturity of 3 years or more and up to 7 years.

Chart 3-30: Cumulative Issuance of Ordinary Corporate Bonds from the Start of the Fiscal Year



Notes: 1. Figures are as of the month-end.
2. On a nominal basis. Privately offered bonds are excluded.

2. Outright Purchases of Corporate Bonds

The Bank actively purchased corporate bonds throughout fiscal 2021. This was in line with the decision made at the MPM held on June 17 and 18, 2021, to continue purchasing CP and corporate bonds with an upper limit on the amount outstanding of about 20 trillion yen in total until the end of March 2022, as described above.[23]

The Bank decreased the amount of purchases of corporate bonds with a remaining maturity of "1 year or more and up to 3 years" to 125.0 billion yen from the purchases in April 2021 due to a distinct tightening of supply and demand conditions as firms' needs to issue bonds newly moderated while the Bank continued with its sizable purchases. The Bank subsequently conducted outright purchases of corporate bonds with a remaining maturity of "1 year or more and up to 3 years" and those with a remaining maturity of "more than 3 years and up to 5 years" for 125.0 billion yen and 75.0 billion yen, respectively, on a monthly basis throughout fiscal 2021. The amount outstanding of corporate bonds purchased followed a moderate uptrend throughout the fiscal year and it stood at 8.6 trillion yen at the end of March 2022 (Chart 3-31).

Looking at the lowest accepted bid yields for outright purchases of corporate bonds, that for

[23] See footnote 21 in III.D.2 for the MPM held on December 16 and 17, 2021, and "Maximum Amounts Outstanding of a Single Issuer's CP and Corporate Bonds to Be Purchased" released on February 25, 2022.

corporate bonds with a remaining maturity of "1 year or more and up to 3 years" was in negative territory from April through December 2021, but remained in positive territory from January 2022 onward partly due to a rise in JGB yields, which are base rates, and a resultant increase in the attractiveness of yields as seen by financial institutions, which encouraged them to submit bids. From April through July 2021, the lowest accepted bid yield on bonds with a remaining maturity of "more than 3 years and up to 5 years" rose moderately as financial institutions' demand for selling the bonds through the Bank's purchases was strong against the backdrop of active issuance of bonds with the same maturity period, but subsequently remained more or less unchanged partly because the issuance of bonds came to a halt. Nonetheless, while the Bank decided at the MPM held on December 16 and 17, 2021, to complete its additional purchases of CP and corporate bonds at the end of March 2022, as scheduled, the lower accepted bid yields on corporate bonds rose due to a front-loaded increase in demand for operations for those with a remaining maturity of "more than 3 years and up to 5 years", which would no longer be eligible for purchase from April 2022, and they continued to rise thereafter on the back of an increase in JGB yields, which are base rates (Chart 3-32).

Chart 3-31: Amounts Outstanding of Corporate Bonds Purchased and Amounts of Monthly Purchases of Corporate Bonds

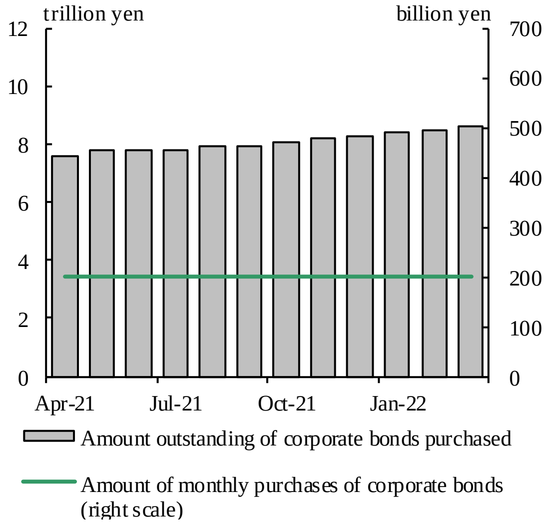
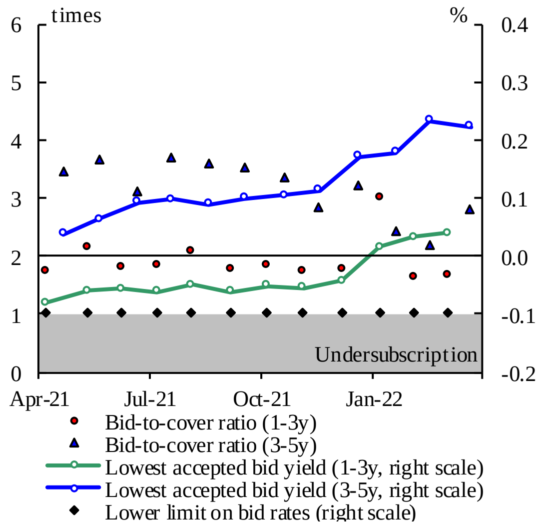


Chart 3-32: Bid-to-Cover Ratios and Lowest Accepted Bid Yield of Outright Purchases of Corporate Bonds



F. Developments in the FX Swap Market and Supply of U.S. Dollar Funds

1. Developments in the FX Swap Market

In the FX swap market, U.S. dollar funding costs (short-term FX swap-implied U.S. dollar rate from the yen) rose through the second half of fiscal 2021, while markets factored in policy rate hikes to be carried out by the Fed.

Looking at the details, U.S. dollar funding costs temporarily increased slightly toward the end of 2021 partly due to concerns over the possibility that some foreign banks would reduce U.S. dollar fund supply as in preceding years in consideration of the impact on their global systemically important bank (G-SIB) scores. After the start of 2022, the FX swap-implied U.S. dollar rate from the yen rose, reflecting an increase in the U.S. dollar overnight index swap (OIS) rate brought about by factoring in continuous policy rate hikes to be carried out by the Fed. In addition, when the situation surrounding Ukraine deteriorated in late February, U.S. dollar funding costs rose temporarily in the form of an increase in the U.S. dollar funding premium (Charts 3-33 and 3-34). In both instances, however, the U.S. dollar funding premium rose only slightly as U.S. dollar funds-supplying operations by the central bank of each jurisdiction served as a backstop.

Chart 3-33: U.S. Dollar Funding Costs through Short-Term FX Swaps

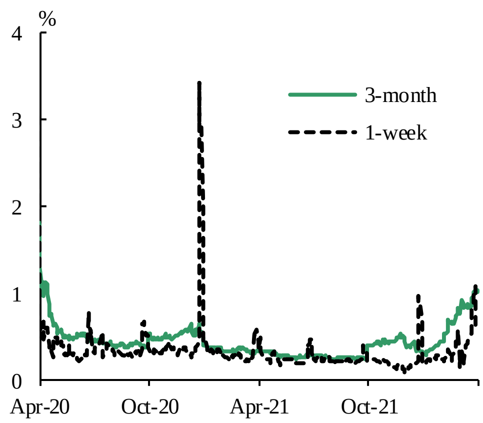
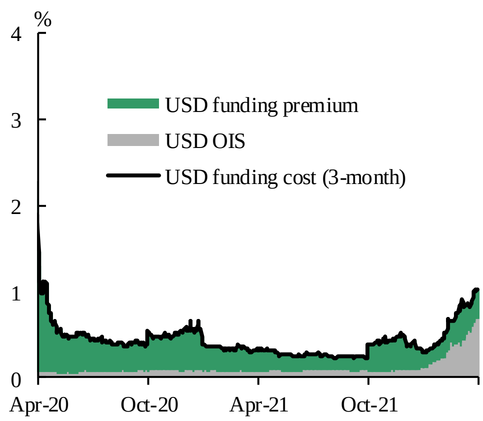


Chart 3-34: Breakdown of U.S. Dollar Funding Costs through Short-Term FX Swaps



Note: The U.S. dollar funding costs through short-term FX swaps are the total funding costs of raising yen at JPY OIS and converting the proceeds into dollars through FX swap transactions.

2. Supply of U.S. Dollar Funds

U.S. Dollar Funds-Supplying Operations are to be used as a backstop for such cases as when market participants find difficulty in obtaining U.S. dollars despite adequate efforts to obtain them in the markets due to heightened tensions in the U.S. dollar money markets, or when there is a substantial rise in the U.S. dollar funding rate.

During fiscal 2021, the Bank offered 1-week operations on a weekly basis in principle. From July 1 onward, the Bank discontinued offering 3-month (84-day) operations in view of improvements in the U.S. dollar funding conditions and low demand.[24]

Turning to the use of U.S. Dollar Funds-Supply Operations, counterparties only used the operations in very small sums for training purposes.

The framework of the Securities Lending to Provide JGSs as Collateral for the U.S. Dollar Funds-Supplying Operations was used only sporadically in small sums for the purpose of verifying administrative preparedness.

[24] When discontinuing the operations, the Bank also made clear in its statement that the relevant central banks "stand ready to re-adjust the provision of U.S. dollar liquidity, including restarting the 84-day operation, as warranted by market conditions."

G. Outright Purchases of Other Assets

1. Outright Purchases of ETFs

The Bank conducted outright purchases of ETFs as necessary with an upper limit of about 12 trillion yen on the annual pace of increase in the amount outstanding, in accordance with the guidelines for asset purchases decided at the MPMs.[25]

In this situation, during fiscal 2021, the Bank conducted a total of eight outright purchases, with each amounting to about 70.0 billion yen. These resulted in the amount outstanding of ETFs purchased by the Bank at the end of March 2022 standing at 36.6 trillion yen. Moreover, the amount of monthly purchases of ETFs (based on trade date) ranged from 0.0 to 140.2 billion yen during fiscal 2021 (Chart 3-35). In addition, the Bank did not purchase ETFs composed of stocks issued by "firms that are proactively investing in physical and human capital" during fiscal 2021.

2. Outright Purchases of J-REITs

The Bank purchased J-REITs as necessary with an upper limit of about 180 billion yen on the annual pace of increase in the amount outstanding, in accordance with the guidelines for asset purchases decided at the MPMs.[26]

As a result, the Bank conducted a total of two purchases during fiscal 2021, with each amounting to about 1.2 billion yen, and the amount outstanding of J-REITs purchased by the Bank at the end of March 2022 stood at 656.7 billion yen (excluding accrued dividends receivable). The amount of monthly purchases of J-REITs (based on trade date) ranged from 0.0 to 2.4 billion yen during fiscal 2021 (Chart 3-36).

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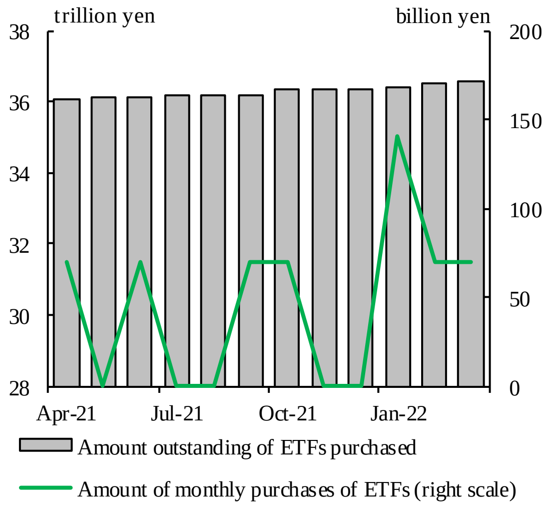
[25] It was decided to, in principle, purchase ETFs as necessary with an upper limit of about 12 trillion yen on the annual pace of increase in the amounts outstanding.

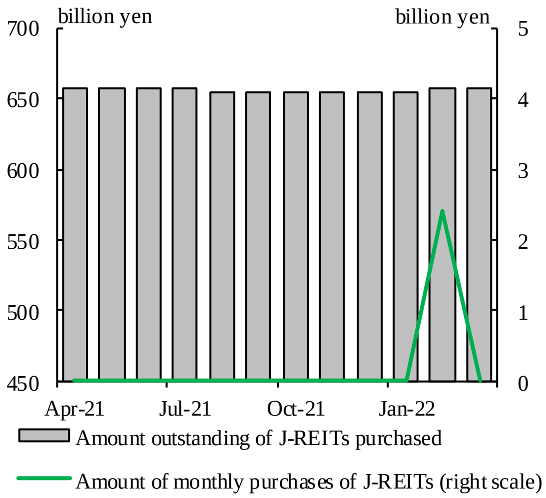
[26] It was decided to, in principle, purchase J-REITs as necessary with an upper limit of about 180 billion yen on the annual pace of increase in the amounts outstanding.

Chart 3-35: Amounts Outstanding of ETFs Purchased and Amounts of Monthly Purchases of ETFs



Note: "Amount of monthly purchases of ETFs" is based on trade date. The same applies to Chart 3-36.

Chart 3-36: Amounts Outstanding of J-REITs Purchased and Amounts of Monthly Purchases of J-REITs

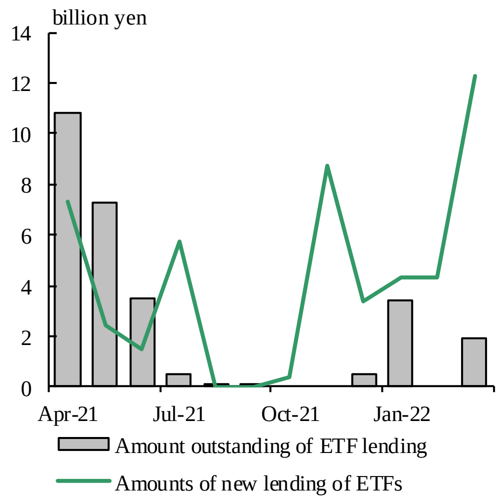


Note: "Amount outstanding of J-REITs purchased" excludes accrued dividends receivable.

3. ETF Lending Facility

The Bank lent its holdings of ETFs 55 times in total during fiscal 2021, and the amount outstanding at the end of March 2022 stood at 1.9 billion yen. Moreover, the amount of new lending made monthly (based on trade date) ranged from 0.0 to 12.3 billion yen during fiscal 2021 (Chart 3-37).

Chart 3-37: Amount Outstanding of ETF Lending and Amounts of Monthly New Lending of ETFs



Note: "Amounts of monthly new lending of ETFs" is based on trade date.

H. Other Operations

1. Special Funds-Supplying Operations to Facilitate Financing in Response to the Novel Coronavirus (COVID-19)

The Bank has been conducting the Special Operations in Response to COVID-19 with a view to doing its utmost to ensure smooth private sector financing and maintain stability in financial markets, given the impact of the spread of COVID-19 on economic activity.

In fiscal 2021, the Bank offered these operations once a month. The duration of loans was set at 6 months.

During fiscal 2021, the number of counterparties for operations increased only slightly after the increase having peaked in fiscal 2020. Meanwhile, the amount outstanding of loans continued to rise, mainly against the backdrop of an increase in the amount outstanding of submission of private debts. The outstanding balance of loans as of the end of March 2022 was 86.8 trillion yen (Chart 3-38).

Meanwhile, regional banks actively engaged in moves to increase their current account balances at the Bank through the operations conducted in September 2021 after the special remuneration under the Special Deposit Facility to Enhance the Resilience of the Regional Financial System started to be applied. In the operations conducted in December, the amounts outstanding of loans increased in a wide range of sectors, reflecting an increase in the maximum amount of loans. The increase was brought about by a review of the value of collateral in line with a raise in the margin tables for eligible collateral regarding beneficial interests of a trust in housing loans at the end of November.

It was decided at the MPM held on December 16 and 17, 2021, to complete the fund-provisioning against private debt pledged as collateral under the Special Operations in Response to COVID-19 at the end of March 2022 (see IV.4 of this report). In this regard, the balance of outstanding loans declined in the January 2022 operations. This was because (1) some city banks, trust banks, and regional banks postponed bidding in the January operations, with the intention of bidding in the operations in bulk in March, so that they would be able to keep their amounts outstanding of loans provided against private debt pledged as collateral as long as possible after the start of fiscal 2022; and (2) some counterparties' balances of eligible loans decreased. The outstanding balance of loans increased significantly in the March 2022 operations as counterparties who had postponed bidding in the operations in January and February used the operations as much as they did previously and a front-loaded increase demand was observed prior to the completion of the fund-provisioning against private debt pledged as collateral.

The amount outstanding of loans grew throughout fiscal 2021 in a wide range of sectors, mainly in regional banks (Chart 3-39).

Chart 3-38: Amounts Outstanding of Special Operations in Response to COVID-19 and the Number of Eligible Counterparties

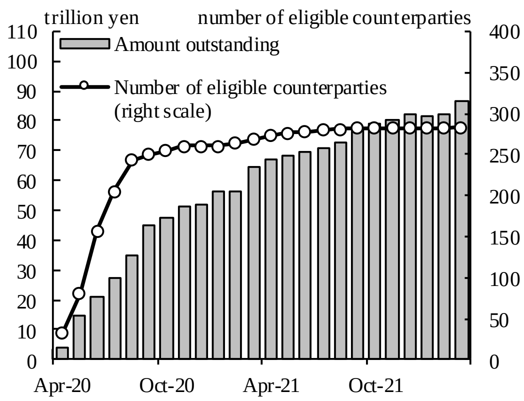
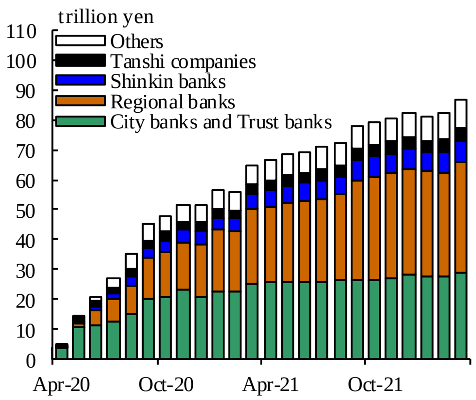


Chart 3-39: Amounts Outstanding of Special Operations in Response to COVID-19 by Sector



2. Funds-Supplying Operations against Pooled Collateral

The Bank continued to offer the Funds-Supplying Operations against Pooled Collateral with a fixed interest rate of 0 percent and 2-week terms at a pace of roughly once every two weeks, in principle. Looking at the use of the operations, demand for the operations had been sluggish while the sense of an abundance of liquidity continued to be extremely strong in money markets.

As a result, the amount outstanding of the operations stood at 0.5 trillion yen at the end of March 2022, an increase of 0.0 trillion yen from a year earlier (Charts 3-40 and 3-41).

Chart 3-40: Amounts Outstanding and Amounts of Monthly Operations of the Funds-Supplying Operations against Pooled Collateral

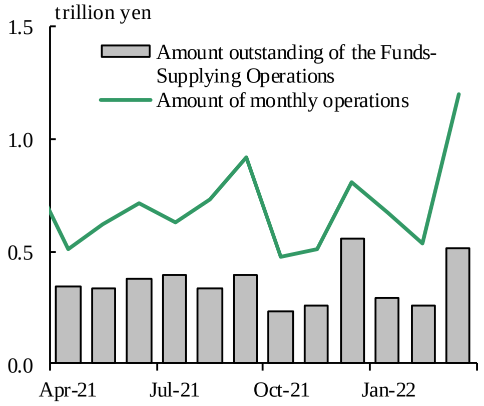
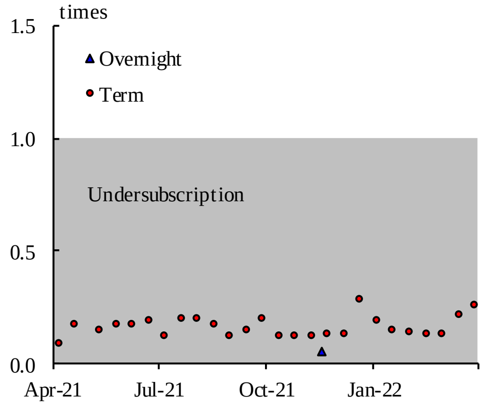


Chart 3-41: Bid-to-Cover Ratios of the Funds-Supplying Operations against Pooled Collateral



3. Growth-Supporting Funding Facility

During fiscal 2021, the Bank disbursed loans once a quarter, four times in total, under the main rules for the Growth-Supporting Funding Facility introduced in June 2010 and revised in October 2019, and under the special rules for the U.S. dollar lending arrangement introduced in April 2012 for investments and loans denominated in foreign currencies (Chart 3-42).

At the end of March 2022, the outstanding balance of loans under the main rules reached 5.7 trillion yen (a decrease of 0.0 trillion yen from a year earlier). The outstanding balance of loans under the special rules for the U.S. dollar lending arrangement amounted to 19.1 billion dollars (a decrease of 2.7 billion U.S. dollars from a year earlier) (Chart 3-43).

Chart 3-42: Loan Disbursement under the Growth-Supporting Funding Facility

(Main rules)

100 million yen

44th (May 27, 2021)	45th (Aug. 27)	46th (Nov. 26)	47th (Feb. 24, 2022)	Outstanding balance of loans (as of end-Mar. 2022)
2,644	5,024	2,464	7,922	57,358.88 (16,666.61)

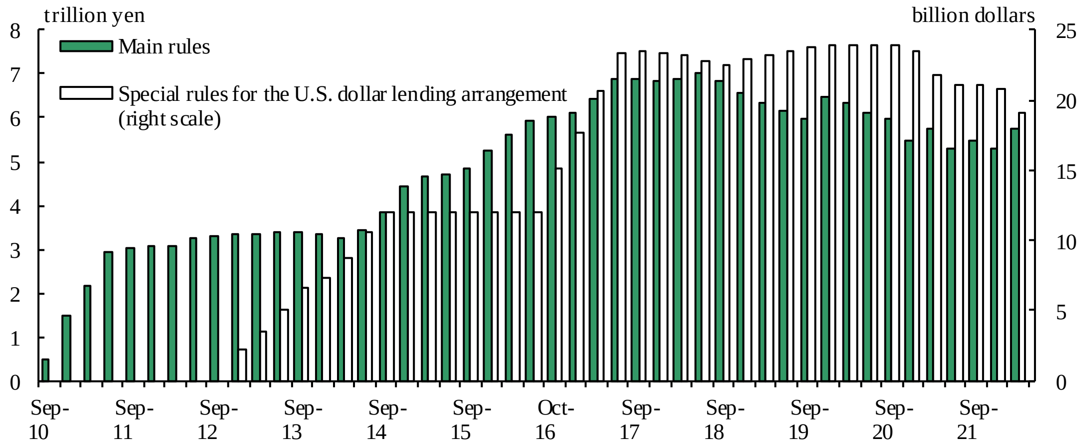
(Special rules for the U.S. dollar lending arrangement)

million U.S. dollars

36th (May 27, 2021)	37th (Aug. 27)	38th (Nov. 26)	39th (Feb. 24, 2022)	Outstanding balance of loans (as of end-Mar. 2022)
3,387	2,034	853	1,022	19,143

Notes: 1. The date in parentheses is the offer day, and the value denotes new loans.
2. The outstanding balance of loans under the main rules includes the outstanding balance of loans under the special rules for equity investments and asset-based lending (5.8 billion yen) and that of small-lot investments (3.988 billion yen), both of which expired.
3. The value in parentheses below the outstanding balance of loans under the main rules is the outstanding balance of loans to financial institutions that are members of central organizations (financial institutions that do not hold current accounts at the Bank).

Chart 3-43: Amounts Outstanding of the Growth-Supporting Funding Facility



Note: "Main rules" includes the outstanding balance of loans under the special rules for equity investments and asset-based lending and that of small-lot investments, both of which expired.

4. Stimulating Bank Lending Facility

During fiscal 2021, the Bank disbursed loans once a quarter, four times in total, under the Stimulating Bank Lending Facility (Chart 3-44). As a result, the outstanding balance of the operations stood at 55.9 trillion yen at the end of March 2022, an increase of 1.6 trillion yen from a year earlier (Chart 3-45).

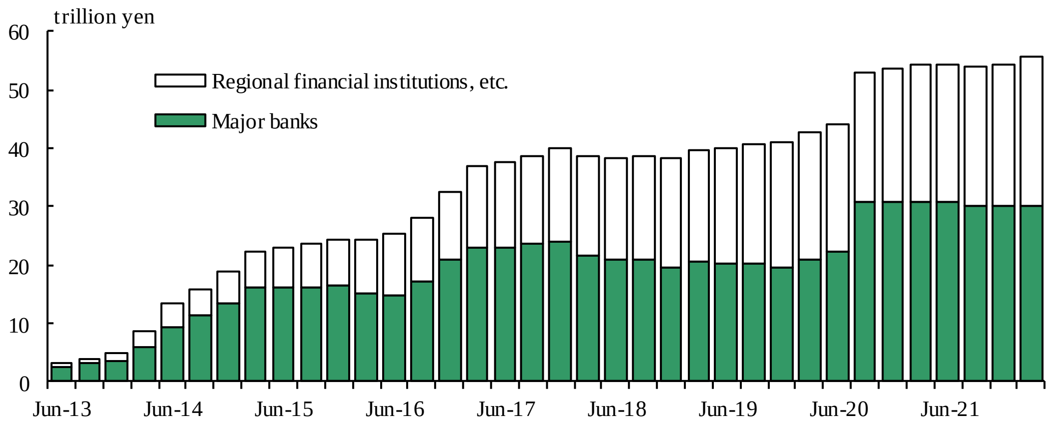
Chart 3-44: Loan Disbursement under the Stimulating Bank Lending Facility

100 million yen

Jun. 2021 (Jun. 16)	Sep. 2021 (Sep. 13)	Dec. 2021 (Dec. 13)	Mar. 2022 (Mar. 14)	Outstanding balance of loans (as of end-Mar. 2022)
26,498	27,659	20,129	38,879	558,690 (21,875)

Notes: 1. The date in parentheses is the offer day, and the value denotes new loans.
2. The value in parentheses below the outstanding balance of loans is the outstanding balance of loans to financial institutions that are members of central organizations (financial institutions that do not hold current accounts at the Bank).

Chart 3-45: Amounts Outstanding of the Stimulating Bank Lending Facility



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

During fiscal 2021, from April to June, the Bank offered the Funds-Supplying Operation to Support Financial Institutions in Disaster Areas once a month, three times in total. The loan period was set at 2 years, 1 year and 11 months, or 1 year and 10 months for each loan as a measure for transitioning to a new framework in line with the amendment to the operation decided at the MPM held on March 16, 2020.

Since July 2021, the Bank has offered operations quarterly, three times in total (Chart 3-46). The loan period was set at two years.

The outstanding balance at the end of March 2022 stood at 532.4 billion yen (the same as the previous year).

Chart 3-46: Loan Disbursement under the Funds-Supplying Operation to Support Financial Institutions in Disaster Areas

∇ Funds-Supplying Operation to Support Financial Institutions in Disaster Areas

100 million yen

10th (Apr. 14, 2021)	11th (May 12)	12th (Jun. 9)	13th (Aug. 18)
1,268	300	596	0

14th (Nov. 17)	15th (Feb. 16, 2022)	Outstanding balance of loans (as of end-Mar. 2022)
0	0	5,324

Note. The date in parentheses is the offer day, and the value denotes new loans.

6. Funds-Supplying Operations to Support Financing for Climate Change Responses

The details of the Funds-Supplying Operations to Support Financing for Climate Change Responses were decided in September 2021. The Bank made the first offer in December 2021. As a result, the outstanding balance of the operations stood at 2.0 trillion yen at the end of March 2022 (Chart 3-47).

Chart 3-47: Loan Disbursement under the Funds-Supplying Operations to Support Financing for Climate Change Responses

100 million yen

1st (Dec. 23, 2021)	Outstanding balance of loans (as of end-Mar. 2022)
20,483	20,483

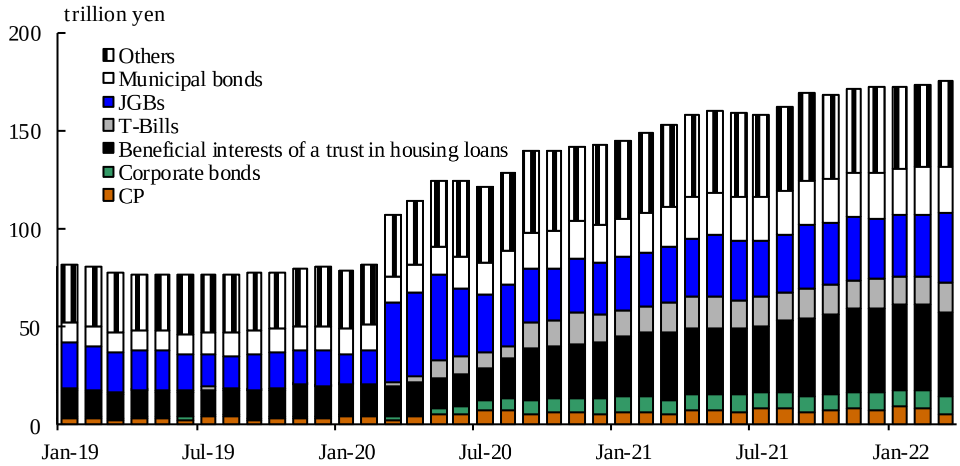
Note. The date in parentheses is the offer day, and the value denotes new loans.

7. Collateral Pledged to the Bank of Japan

As a result of an increase in the use of the Bank's operations including the Special Operations in Response to COVID-19, the amount outstanding of collateral pledged to the Bank from financial institutions continued to grow markedly, mainly in private debt pledged as collateral such as beneficial interest of a trust in housing loans.

Moreover, in view of the permanent cessation of Japanese yen LIBOR (all settings) and U.S. dollar LIBOR (1-week and 2-month settings) scheduled for December 31, 2021, the Bank ceased accepting electronically recorded monetary claims and loans on deeds referencing the abovementioned Japanese yen and U.S. dollar LIBOR settings as eligible collateral from September 24.

Chart 3-48: Amounts Outstanding of Collateral Accepted by the Bank of Japan



I. SC Repo Market and Supply of JGSs

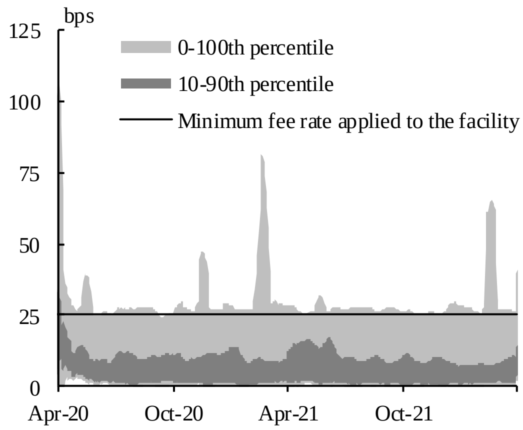
1. Developments in the SC Repo Market

The special collateral (SC) repo market remained generally calm throughout fiscal 2021.

Looking in detail at developments during this time, the on-the-run issues before reopening issuance auctions -- for which demand of securities companies to cover the short position of JGBs tends to increase -- and off-the-run issues -- of which the amounts outstanding in the market are small mainly in the short- to medium-term zones -- saw the SC repo rate temporarily decline or remain at a low level. In February 2022, the SC repo rate for some of the on-the-run issues among super-long-term JGBs which are not held by the Bank declined, as the yields on JGBs rose and the yield curve steepened in response to a rise in overseas interest rates.

Nevertheless, excessive tightening of supply and demand conditions of JGBs was not observed on the whole, partly due to (1) the minimum fee rate for the Securities Lending Facility functioning as the effective minimum SC repo rate and (2) the Bank excluding issues of JGBs from those eligible for purchase as part of its conduct of outright purchases of JGBs when a tightening of supply and demand conditions of such JGBs was noticeable (Chart 3-49).

Chart 3-49: GC-SC Repo Rate Spreads



Notes: 1. For the GC repo rate, the Tokyo repo rate, for which transactions are carried out on the same day as SC repo (T/N), is used.
2. The GC-SC repo rate spreads are calculated using all individual issues traded on JBOND.
3. Each percentile is calculated using 10-business-day backward moving averages.

2. Securities Lending Facility

With respect to the Securities Lending Facility, the Bank continued with measures -- which it originally introduced as temporary, exceptional measures in March 2020 -- to increase the number of JGS issues offered and raise the upper limit on the number of issues allowed for the submission of bids by a counterparty per auction. As a result, the number of auctions remained at a high level, at 488 times in fiscal 2021, as with the 490 times in fiscal 2020 (Chart 3-50). Nevertheless, the amount of successful bids remained at a low level while the SC repo market continued to be calm, and favorable supply and demand conditions of JGSs were maintained on the whole (Chart 3 -51).

Chart 3-50: Number of Securities Lending Facility Auctions

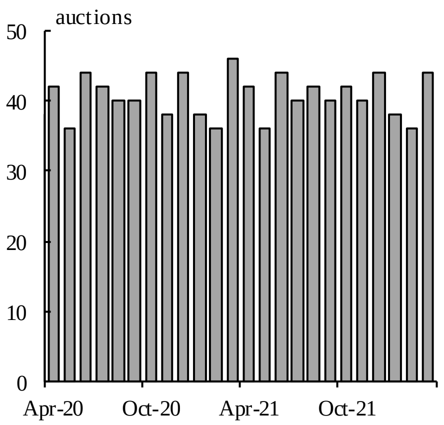
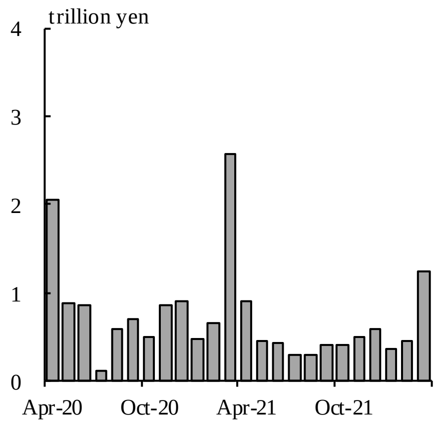


Chart 3-51: Acceptance of Bids through Securities Lending Facility



J. Complementary Lending Facility

During fiscal 2021, the use of the facility remained at an extremely low level. This reflected the supply of ample funds to financial markets by the Bank under powerful monetary easing, which created strong perceptions of abundant liquidity in money markets.

IV. Changes in the Frameworks Related to Market Operations

1. Extension of the Special Program to Support Financing in Response to the Novel Coronavirus (COVID-19)

At the MPM held on June 17 and 18, 2021, the Bank decided to extend the duration of the Special Program to Support Financing in Response to the Novel Coronavirus (COVID-19) until the end of March 2022 with a view to continuing to support financing, mainly of firms.

2. Introduction of the Funds-Supplying Operations to Support Financing for Climate Change Responses

At the MPM held on June 17 and 18, 2021, in order to support private financial institutions' various efforts in the field related to climate change, the Bank judged it appropriate to introduce a new fund-provisioning measure, through which it provides funds to financial institutions for investment or loans that they make to address climate change issues based on their own decisions. The Bank announced that the new measure would be launched within 2021 as a successor to the Fund-Provisioning Measure to Support Strengthening the Foundations for Economic Growth (loan disbursement under the existing measure was to be made through June 2022). In light of this, the Bank decided on the preliminary outline of the measure at the MPM held on July 15 and 16, 2021. At the MPM held on September 21 and 22, the Bank decided on the details of the measure, including the establishment of the Principal Terms and Conditions of the Funds-Supplying Operations to Support Financing for Climate Change Responses.

3. Amendment to the Loan Rates under the Special Rules for the U.S. Dollar Lending Arrangement to Enhance the Fund-Provisioning Measure to Support Strengthening the Foundations for Economic Growth

At the MPM held on October 27 and 28, 2021, the Bank decided to make amendment to the loan rates under the Special Rules for the U.S. Dollar Lending Arrangement to Enhance the Fund-Provisioning Measure to Support Strengthening the Foundations for Economic Growth, from 6-month U.S. dollar LIBOR to 6-month term U.S. dollar Secured Overnight Financing Rate term rates (SOFR Term Rates) plus 0.42826 percent per annum, starting with lending from January 1, 2022. The decision was made in light of the progress in the Bank's response in preparation for the permanent cessation of U.S. dollar LIBOR.

4. Partial Extension of the Special Program to Support Financing in Response to the Novel Coronavirus (COVID-19)

At the MPM held on December 16 and 17, 2021, the Bank decided the following with respect to the

Special Program to Support Financing in Response to the Novel Coronavirus (COVID-19) with a view to continuing to support financing, mainly of small and medium-sized firms.

<1> Special Operations in Response to COVID-19

(i) Regarding the fund-provisioning against loans that financial institutions make on their own ("non-government-supported loans") in response to COVID-19, mainly to small and medium-sized firms, the Bank will extend the implementation period by six months until the end of September 2022 under the current terms and conditions.

(ii) Regarding the fund-provisioning against loans that financial institutions make on the back of government support ("government-supported loans") in response to COVID19, mainly to small and medium-sized firms, the Bank will extend the implementation period by six months until the end of September 2022 under the revised terms and conditions. Specifically, from April 2022 onward, this fund provisioning will fall under Category III in the Interest Scheme to Promote Lending, for which the applied interest rate is 0 percent, and the amount to be added to the Macro Add-on Balances in current accounts held by financial institutions at the Bank will be the amount outstanding of funds they receive. In accordance with the revised terms and conditions, the Bank will continue to provide funds to financial institutions against government-supported loans they make.

(iii) The Bank will complete the fund-provisioning against private debt pledged as collateral, which mainly consists of debt issued by large firms and housing loans, at the end of March 2022.

<2> Purchases of CP and corporate bonds

The Bank will complete its additional purchases of CP and corporate bonds at the end of March 2022. From April 2022 onward, it will purchase about the same amount of CP and corporate bonds as prior to the COVID-19 pandemic, so that the amount outstanding of these assets will decrease gradually to the pre-pandemic levels, namely, about 2 trillion yen for CP and about 3 trillion yen for corporate bonds.

5. Extension of the Fund-Provisioning Measure to Stimulate Bank Lending

At the MPM held on January 17 and 18, 2022, the Bank decided to extend by one year the deadline for loan disbursements under the Fund-Provisioning Measure to Stimulate Bank Lending, with a view to continuing to promote further active lending by financial institutions and stimulate credit demand of firms and households. The Bank did not extend the term of the Fund-Provisioning Measure to Support Strengthening the Foundations for Economic Growth as it had been decided to terminate loan disbursement under the existing measure by the end of June 2022 at the MPM held on June 17 and 18, 2021.

V. Actions to Enhance Dialogue with Market Participants

Under QQE with Yield Curve Control, the Bank carefully examines the developments and functioning of financial markets, as well as the impacts of its market operations. The Bank also conducts daily market monitoring and various market surveys with a view to further deepening dialogue with market participants.

Furthermore, the Bank's Financial Markets Department undertook various initiatives in fiscal 2021 related to dialogue with market participants as follows. Such dialogue was conducted utilizing online conference and conference call systems, due to the impact of COVID-19 remaining.

1. Holding of the Meeting on Market Operations

The Meeting on Market Operations, which is held twice a year with eligible counterparties for market operations, was held on October 15, 2021, and February 18, 2022. At these meetings, the Bank explained and exchanged opinions with participants on (1) recent developments in financial markets and market operations, (2) liquidity in, and functioning of, the JGB markets, and (3) the interest rate benchmark reform (transition from LIBOR).[27]

2. Holding of the Bond Market Group Meeting

The Bond Market Group Meeting, which in principle is held twice a year with bond market participants, was held on June 3 and 4, 2021, and December 7. At these meetings, the Bank explained and exchanged views with participants on (1) the results of the Bond Market Survey; (2) liquidity in the JGB market, and (3) recent developments in the financial markets and market operations.[28]

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[27] See below for summaries of the Meeting on Market Operations held in fiscal 2021.
The October 2021 meeting (the second round in 2021)
https://www.boj.or.jp/en/announcements/release_2021/rel211018a.pdf
The February 2022 meeting
https://www.boj.or.jp/en/announcements/release_2022/rel220221a.pdf

[28] For details, see the Bank's website (https://www.boj.or.jp/en/paym/bond/index.htm/).

3. Dialogue with the Study Group for Activation of Short-Term Money Markets

The Bank participated in the Study Group for Activation of Short-Term Money Markets, comprising representatives of businesses that conduct short-term money market transactions, and actively supported the deliberations and initiatives by market participants for the activation of short-term money markets. Moreover, the Bank hosted a working-level meeting with the group, which in principle is held once a year, with the Study Group for Activation of Short-Term Money Markets on November 25, 2021. The Bank exchanged opinions on (1) recent developments in short-term money markets, (2) initiatives for the interest rate benchmarks reform, and (3) the Bank's approach to central bank digital currency.

4. Initiatives Taken by the Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks

The Cross-Industry Committee on Japanese Yen Interest Rate Benchmarks (hereafter the Committee), with the Bank serving as secretariat, deliberated on the transition away from JPY LIBOR in the Japanese yen interest rate swaps market. The Committee specified the types of contracts to be subject to (1) the transition of quoting conventions to the Tokyo Overnight Average Rate (TONA) in Japanese yen interest rate swaps by liquidity providers ("TONA First") and (2) the cessation of the initiation of new Japanese yen interest rate swaps referencing JPY LIBOR in July and September 2021, respectively, and recommended that market participants proceed with necessary preparations.

With respect to the treatment of "tough legacy" contracts in Japan (existing contracts that cannot feasibly be transitioned away from JPY LIBOR), the Committee summarized in September 2021 (1) the concept of contracts for which the use of synthetic yen LIBOR might be considered and (2) points to note when actually using synthetic yen LIBOR. This was followed by the Committee's public consultation which was conducted through the middle of October 2021. In the public consultation, opinions were received from a total of 38 participants from a wide range of industries, such as financial institutions, institutional investors, and non-financial corporates, and the large majority of them expressed support. The Committee published the final report on the results of the public consultation in November 2021.

In January 2022, the Committee published the key results of two rounds of a questionnaire survey that asked entities participating in the Committee about progress in the transition away from JPY

LIBOR (referenced dates of end-November and end-December 2021). The survey found that (1) the transition to alternative interest rate benchmarks had been completed by the end of December 2021 for most contracts referencing JPY LIBOR, (2) the transition of the few contracts for which the transition had not been completed was expected to be completed by the day of the next revision of interest rates; and (3) operational measures, including IT system arrangements, were also progressing smoothly.

Subsequently, in March 2022, it was deemed that a smooth transition had been achieved in the Japanese markets and the Committee's activities based on the purpose of its establishment had come to an end. Thus, the Committee was reorganized and the Cross-Industry Forum on Japanese Yen Interest Rate Benchmarks was established to provide opportunities to exchange opinions for a wide range of market participants and interest rate benchmark users, aiming to facilitate smooth transactions referencing Japanese yen interest rate benchmarks.

Reference: Numbers of Auctions and Eligible Counterparties for Market Operations

numbers

	Fiscal 2018	Fiscal 2019	Fiscal 2020	Fiscal 2021	Number of eligible counterparties
Outright purchases of JGBs	354	280	302	208	56
Outright purchases of T-Bills	50	46	50	43	56
Outright purchases of CP	36	27	27	24	37
Outright purchases of corporate bonds	12	12	24	24	37
Outright purchases of ETFs	76	69	56	8	—
Outright purchases of J-REITs	36	54	58	2	—
Lending of ETFs	—	—	97	55	12
Funds-Supplying Operations against Pooled Collateral	53	45	27	27	347
Growth-Supporting Funding Facility	64	60	38	20	160
Stimulating Bank Lending Facility	16	16	10	4	212
Funds-Supplying Operation to Support Financial Institutions in Disaster Areas	24	24	15	6	40
Special Operations in Response to COVID-19	—	1	17	12	283
Funds-Supplying Operations to Support Financing for Climate Change Responses	—	—	—	1	43
Purchases of JGSs with repurchase agreements	0	3	0	8	56
Sales of JGSs with repurchase agreements	0	6	0	0	56
U.S. Dollar Funds-Supplying Operations	48	59	161	62	85
Securities Lending Facility	362	306	490	488	56
Securities Lending to Provide JGSs as Collateral for the U.S. Dollar Funds-Supplying Operations	4	13	31	5	46
Total	1,135	1,021	1,403	997	—

Notes: 1. The number of auctions (excluding outright purchases of ETFs and J-REITs and lending of ETFs) is the number of the Bank's notifications of auction guidelines (offers) to eligible counterparties.
2. The number of eligible counterparties is as of end-March 2022. The number of eligible counterparties for the Funds-Supplying Operation against Pooled Collateral is that for Funds-Supplying Operations against Pooled Collateral at all offices (of which 42 counterparties are also eligible for funds-supplying operations against pooled collateral at the Head Office).
3. The number of outright purchases of ETFs excludes purchases of ETFs to support firms proactively investing in physical and human capital.
4. The number of "Funds-Supplying Operation to Support Financial Institutions in Disaster Areas" includes the number of funds-supplying operations to support financial institutions in disaster areas of the Great East Japan Earthquake and of the 2016 Kumamoto Earthquake before they were abolished.
5. The number of "Special Operations in Response to COVID-19" in fiscal 2019 indicates the number of Special Funds-Supplying Operations to Facilitate Corporate Financing regarding the Novel Coronavirus (COVID-19).

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