FINANCIAL MARKETS REPORT – SUPPLEMENT

Changes Observed in Money Markets after the Conclusion of the Quantitative Easing Policy

Financial Markets Department
Bank of Japan
September 2006

The Bank of Japan released its Financial Markets Report – Supplement, "Issues regarding Money Markets after the Conclusion of the Quantitative Easing Policy," after the conclusion of the quantitative easing policy in March. In the report, the Bank pointed out the issues to be addressed in order to recover the functions of money markets, the size of which was reduced significantly under the quantitative easing policy. This report examines the changes that have taken place in money markets and to what extent the market functions have recovered during the 3 months since the conclusion of the quantitative easing policy. The main points are as follows.

- The uncollateralized call market has grown in size, mainly due to an increase in overnight transactions. Securities companies and foreign banks have been increasing the amounts of fundraising as major borrowers whereas the roster of lenders has become more diversified. The restoration of credit line networks has progressed to a certain extent. There has been a growing tendency for market participants to invest surplus funds in the uncollateralized call market. However, there is still room to improve the functions of the market: credit lines could be further expanded, reflecting changes in the roster of borrowers and lenders; some lenders are not motivated to invest surplus funds in the market yet, because there is little to gain from investing at a nearly zero interest rate as compared with costs; and market participants generally have not regained confidence that they can raise necessary funds in the market whenever they need.
- The collateralized call market has shrunk to a certain extent since the conclusion of the quantitative easing policy. Although arbitrage transactions have become active across the uncollateralized call market, the securities lending with cash collateral and repo markets ("repo markets") and the currency swap and Euro-yen markets, the collateralized call market has been somewhat isolated from the other money markets.
- The repo markets have grown, mainly due to an increase in overnight transactions. This is partly because a decrease in the outstanding of market operations by the Bank has primarily led to an increased demand for fundraising in this market. On the other hand, market participants perceive that the repo rates tend to rise and become volatile from time to time since quite a few lenders have not made necessary operational arrangements for repo transactions and thus the roster of lenders is not well diversified.
- After the conclusion of the quantitative easing policy, especially after May 2006, with the current account balance at the Bank having decreased substantially by then, the repo rate frequently rose prior to the other overnight interest rates and the rise in the repo rate was transmitted to the currency swap rate and the uncollateralized call rate through arbitrage transactions. However, the repo rate tended to become higher than the other overnight interest rates such as the overnight call rate. It suggested that the flow of funds between the repo markets and the other money markets such as the uncollateralized call market was not necessarily smooth and thus the arbitrage mechanism did not function sufficiently.
- As a whole, the functions of money markets have been steadily recovering with transactions including arbitrage trading increasing and the flow of funds across money markets becoming smoother along with the rise in interest rates and an increase in their volatility. It is expected that the rise in the policy interest rate in July 2006 will strengthen the recovery of market functions.
- Meanwhile, with a view to facilitating the flow of funds across money markets and thereby enhancing more stable formation of interest rates, it will be important (1) to facilitate uncollateralized transactions by appropriately expanding credit lines and (2) to increase the number of market participants having necessary operational arrangements for collateralized transactions, and thus to improve the efficiency and liquidity of collateralized markets such as the repo and collateralized call markets, including those of same-day settlement.

* This report is based on information available before the Monetary Policy Meeting held on July 13th and 14th, when the Bank decided to raise the policy interest rate.

1. Changes in Each Money Market

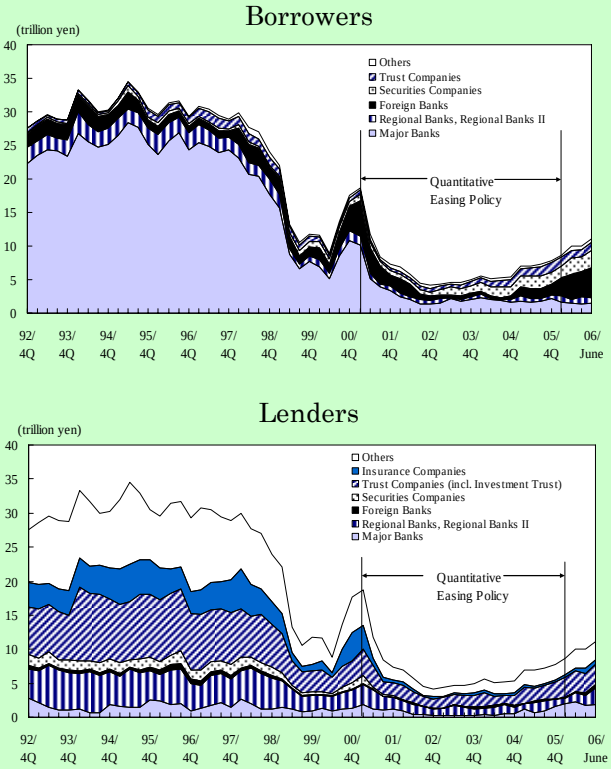
First, we will review the changes observed in each money market after the conclusion of the quantitative easing policy.

For this article, we conducted a survey from June 16 to 29, 2006 of nearly 150 market participants who were in principle counterparties for the market operations by the Bank ("Counterparties"). We will refer to some of the results of the survey in the following.

(1) Uncollateralized Call Market

The outstanding amount of the uncollateralized call market has shown a moderate upward trend since last year, and has continued to increase after the conclusion of the quantitative easing policy. The outstanding amount at the end of June 2006 increased by more than 2 trillion yen compared with the end of February 2006 (Chart 1).

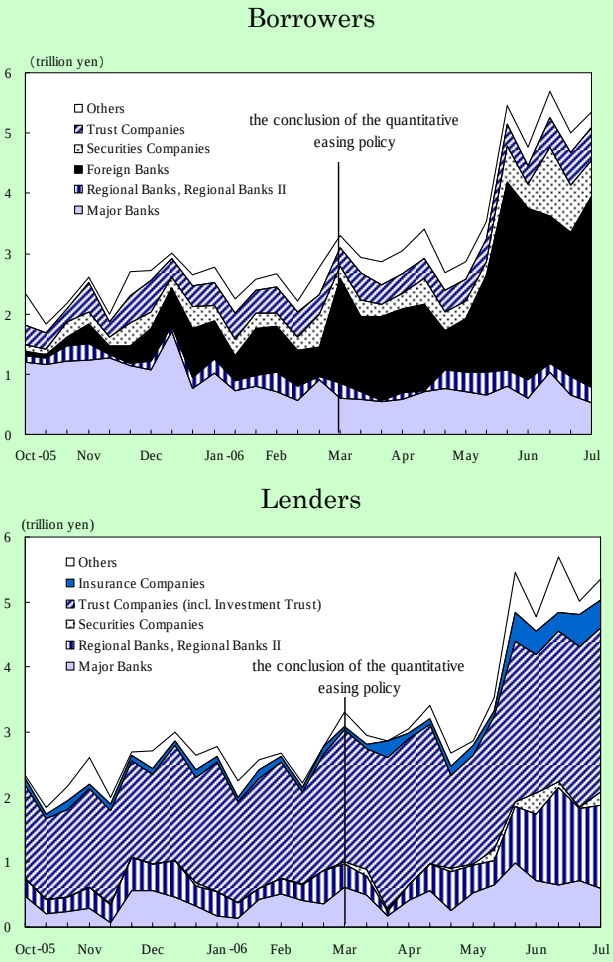
Chart 1: Amounts Outstanding in the Uncollateralized Call Market



Note 1: "Major Banks" refers to the city banks, Shinsei Bank and Aozora Bank in the charts of this report.
2: Figures are on a quarterly basis until the first quarter of 2006 and on a monthly basis from April to June of 2006.
3: Figures are based on the transactions through *tanshi* companies (transactions with direct dealing are excluded).
Source: Bank of Japan

The increase was attributed exclusively to an increase in overnight call transactions (Chart 2). In terms of borrowers, the funds raised by foreign banks and securities companies increased significantly. On the other hand, in terms of lenders, regional banks, life insurance companies and investment trusts resumed investments in this market along with the rise in the overnight call rate. Accordingly, daily surplus funds tended to be invested in the uncollateralized call transactions of same-day settlement.

Chart 2: Amounts Outstanding of the Uncollateralized Overnight Call Transactions



Note 1: Figures are based on the transactions through *tanshi* companies (transactions with direct dealing are excluded).
2: Figures are counted on the date of contract. So, they include transactions contracted but not started yet.
Source: Bank of Japan

Restoration of credit line networks has progressed.

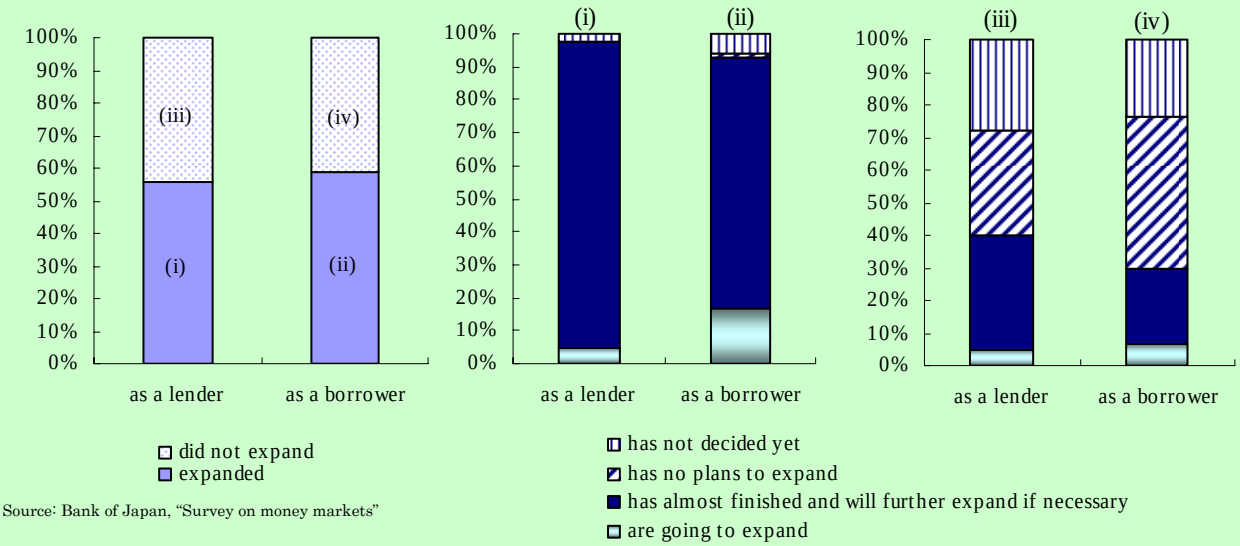
One of the issues regarding the functions of the uncollateralized call market is the restoration of credit line networks, and there has been steady progress in this regard. Chart 3 (a) shows the changes in credit lines among the Counterparties during the last six

Chart 3: Survey Results of Market Participants' Expansion of Credit Lines

(a) Question on expanding credit lines during the last six months

(b) Question on future plans for expanding credit lines to those who have expanded credit lines

(c) Question on future plans for expanding credit lines to those who have not expanded credit lines



Source: Bank of Japan, "Survey on money markets"

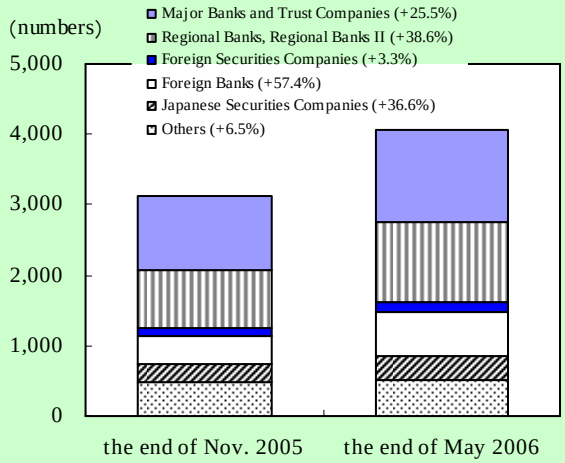
months. Nearly 60 percent of them expanded credit lines during the last six months, whether as lenders or as borrowers. About 80 to 90 percent of those who expanded credit lines answered that they had almost finished expanding credit lines although they would not exclude the possibility of further expansion if necessary (Chart 3 (b)).

On the other hand, about 40 percent of the Counterparties did not expand credit lines during the last six months, and they are not so positive about expanding credit lines, either (Chart 3(c)). Although we did not ask them the reason, taking the answers to Question 1 in Chart 5 discussed later into consideration, it is likely that these Counterparties require substantial rises in interest rates in order to expand the credit lines.

Chart 4 shows the answers to the question asking how many financial institutions the Counterparties perceived had set credit lines for them. It increased by approximately 30 percent from 3,000 at the end of November 2005 to 4,000 at the end of May 2006. Especially credit lines for regional banks, foreign banks and Japanese securities companies have been expanded substantially.

The figures in Charts 3 and 4 were based on the numbers of financial institutions, but if they had been based on the amount of credit lines, the figures might have shown that credit line networks had recovered further, because the Counterparties who usually made transactions for large amounts actively expanded credit lines. From our observations, we consider that the expansion of credit lines has progressed as much as could be expected under a zero interest rate. It is worth monitoring closely whether credit lines continue to expand in line with the rise in the policy interest rate in July 2006.

Chart 4: The Number of Financial Institutions whom the Market Participants Considered as Having Set Up Credit Lines with Them



Note 1: "Others" include *tanshi* companies.
2: The figure at the end of Nov. 2005 includes the answers of the market participants who could not obtain the number at the end of Nov. 2005. Their answers are either the number at the end of Aug. 2005, Oct., Feb. 2006, Mar., or Apr.

Source: Bank of Japan, "Survey on money markets"

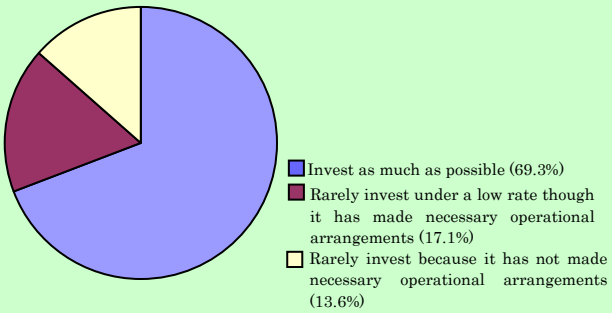
Market participants are still cautious about raising funds in this market.

In our survey, we asked to what extent the Counterparties were practically using the uncollateralized call market (Chart 5). Question 1 in Chart 5 asked, in terms of investment, "Will your company invest the surplus in money market transactions such as call loans of same-day settlement when there is an excess reserve in your company?" Some 70 percent of the Counterparties answered that they would invest excess reserves as much as possible, while the other 30 percent answered that they needed further rises in interest rates or enhanced operational capacities to begin investing in money market transactions of same-day settlement.

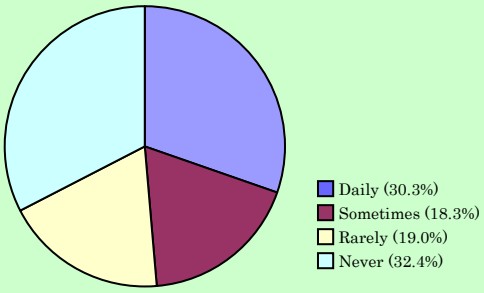
Questions 2 and 3 in Chart 5 asked how the market was used in terms of financing. Question 2 asked, "To what extent does your company use money markets such as the uncollateralized call market to raise funds of same-day settlement?" 30 percent of the Counterparties answered they were using them every day; less than 20 percent answered they sometimes did; and more than 50 percent answered they seldom (or never) did. Question 3 asked, "If there is an arbitrage opportunity across money markets, will your company raise funds of same-day settlement in money markets such as the uncollateralized call market to exploit the opportunity?" 70 percent of the Counterparties answered that they refrained from such transactions. Judging from the answers to Questions 2 and 3, the market participants appear to be still cautious about raising funds in the uncollateralized call market in general. This indicates that the market participants have not become confident that they can stably raise funds in the uncollateralized call market yet, since there is still considerable uncertainty as to which financial institutions would be stable lenders/borrowers and as to availability of funds in this market. This perception underlies the market participants' conservative behavior toward investment and fundraising: they maintain high current account balances (CAB) at the Bank; and they are reluctant to take investment positions of longer maturities or in the other money markets by raising overnight funds in the uncollateralized call market.

Chart 5: Market Participants' Investment/ Fundraising in Money Markets Transactions of Same-Day Settlement

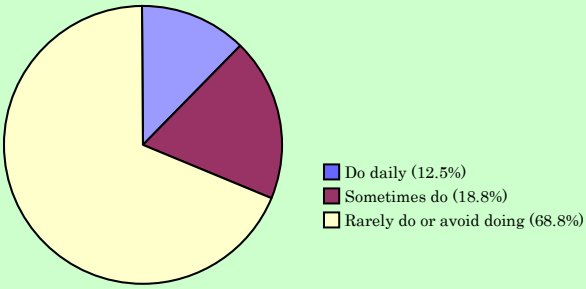
Q. 1: Will your company invest the surplus in money market transactions such as call loans of same-day settlement when there is an excess reserve in your company?



Q. 2: To what extent does your company use money markets such as the uncollateralized call market to raise funds of same-day settlement?



Q.3: If there is an arbitrage opportunity across money markets, will your company raise funds of same-day settlement in money markets such as the uncollateralized call market to exploit the opportunity?

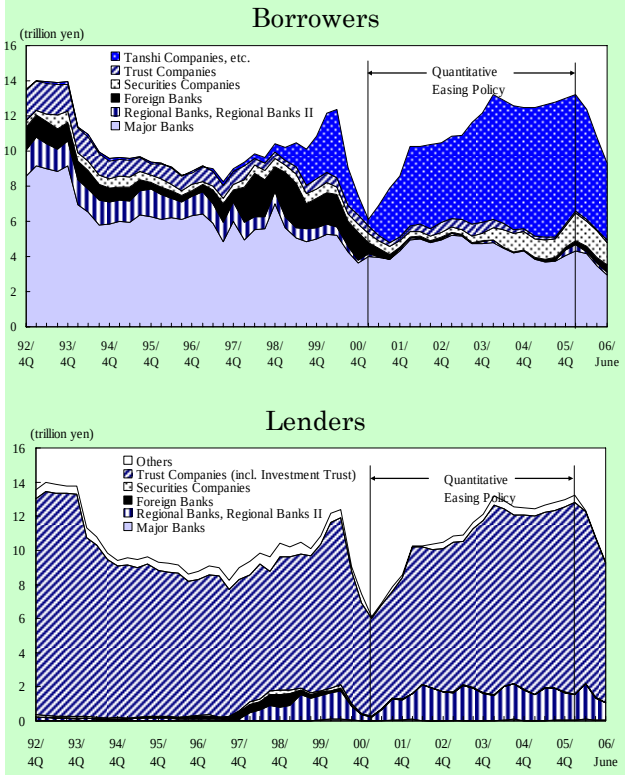


Source: Bank of Japan, "Survey on money markets"

(2) Collateralized Call Market

The outstanding amount of the collateralized call market has declined to a certain extent, mainly because trust banks (including investment trusts) and regional banks have shifted some of their funds from the collateralized call market to other money markets such as the uncollateralized call market. The outstanding amount of the collateralized call market at the end of June 2006 has fallen by almost 4 trillion yen compared with the end of February 2006 (Chart 6).

Chart 6: Amounts Outstanding in the Collateralized Call Market



Note: Figures are on a quarterly basis until the first quarter of 2006 and on a monthly basis from April to June of 2006.
Source: Bank of Japan

No major changes in market functions have been observed.

A small number of large lenders and borrowers have continued to dominate the collateralized call market. There are issues to be addressed regarding this market: collateral including Japanese Government Securities (JGS) are generally not delivered against payment of funds (Non-DVP); under these circumstances, most transactions are conducted by the so-called "*tanshi* dealing method", whereby *tanshi* companies, intermediaries in money markets, act as dealers, mediating transactions between final lenders and final borrowers through their own accounts and act as buffers against mismatched amounts and timing of transfers of funds and collateral.

There have not been major changes regarding these issues after the conclusion of the quantitative easing policy. While arbitrage transactions and the flow of funds have become active across the uncollateralized call market, the repo markets and the currency swap and Euro-yen markets, the collateralized call market has been somewhat isolated from the other money markets. The collateral in the collateralized call market is not marked to market but evaluated at its face value. Thus margin ratios for collateralized call transactions are higher than those for repo transactions, which are also collateralized transactions (Chart 7). Since these are unfavorable for fundraisers, they help explain why securities companies and foreign banks are reluctant to raise funds in the collateralized call market, although they have substantial funding needs for the time being.

Chart 7: Differences in Collateralized Call Transactions and Repo Transactions regarding JGS

	Collateralized Call Transaction	Repo Transaction
Evaluation of collaterals	face value	market value
Haircut ratio	TB・FB 100/103(≒97%) JGB 100/110(≒91%) under transaction practices	100 % of the market price unless otherwise agreed
Margin call	not applied	applied
Settlement convention	mainly on a T+0 basis	mainly on a T+2/T+3 basis
Settlement method	mostly Non-DVP	DVP

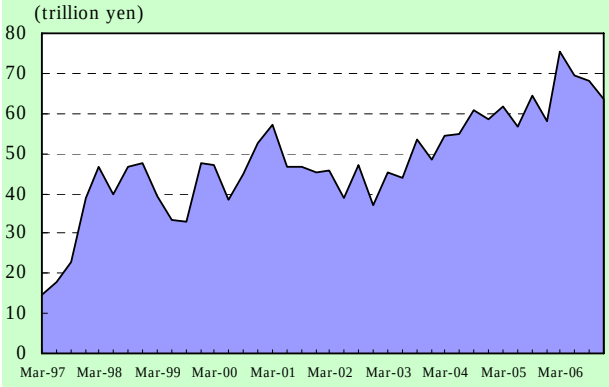
Note: DVP is the abbreviation for delivery versus payment where both securities and funds deliveries take place at the same time.

(3) Repo Markets

The outstanding amount of repo markets (total outstanding amount of securities lending with cash collateral and securities sales under repurchase agreements) has been showing an upward trend with some fluctuation, although it has slightly declined very recently (Chart 8). Especially, the GC repo market, which is a market for borrowing and lending funds as discussed later, is thought to have grown in size. This might be partly because a decrease in the outstanding of market operations by the Bank has primarily led to an increased demand for financial institutions such as securities companies to raise funds in this market.

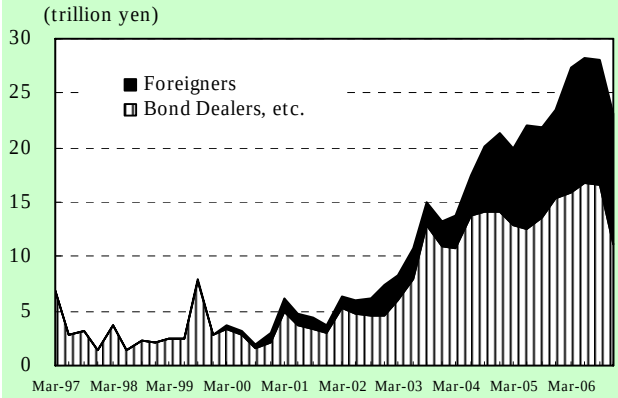
Chart 8: Amounts Outstanding in the Repo Markets

Securities Lending with Cash Collateral



Note: Figures are on a quarterly basis until the first quarter of 2006 and on a monthly basis from April to June of 2006.
Source: Japan Securities Dealers Association, "Bond Margin Loans"

Securities Sales under Repurchase Agreements



Note: The outstanding of transactions involving the Bank of Japan, Japanese Government and other public institutions are excluded.
Source: Japan Securities Dealers Association, "Balance of Bond Transactions with Repurchase Agreements (by investor type)"

The roster of lenders is not well diversified.

As discussed later, after the conclusion of the quantitative easing policy, it was frequently observed that the repo rate rose prior to the other overnight interest rates such as the uncollateralized call rate. Many market participants pointed out that liquidity in the market was not so high because the roster of lenders was not well diversified and it was perceived that lenders had superiority in setting rates.

The repo markets are large, with approximately 100 trillion yen in the outstanding amount. They are also highly secured markets collateralized by JGS. Therefore, the statistics on the repo markets available for the time being were unlikely to show that a lack of diversification in the roster of lenders could continuously bring about a rise in the repo rates, even though repo rates had risen considerably for very short periods, such as at the end of a fiscal year, when the supply and demand for funds tended to be tight. In this regard, we asked in our survey the details of repo transactions vis-à-vis lenders and borrowers.

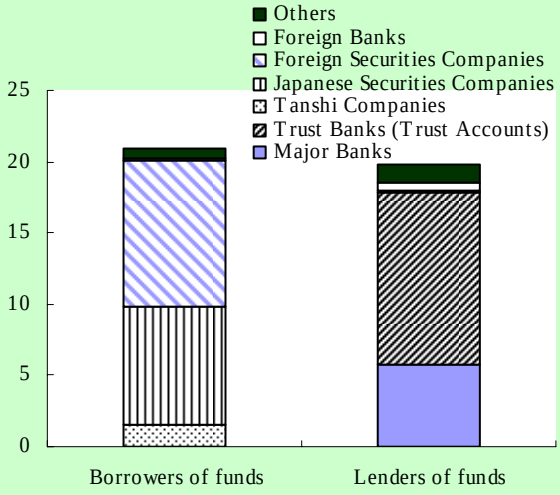
Repo transactions can be classified into two types: (1) SC (Special Collateral) which is mainly used to borrow or lend specific bonds and (2) GC (General Collateral) which is mainly used to raise funds against earmarked securities. It is GC that is essentially considered to be a transaction to borrow or lend short-term funds. Since GC and SC transactions are not distinguished in the current statistics on the repo transactions, we asked in our survey the details of repo transactions classified by GC and SC. The main findings were as follows.

- The outstanding amount in the face value of repo transactions conducted by the Counterparties was 94 trillion yen at the end of May 2006. This covered more than 90 percent of the total outstanding of repo markets shown in Chart 8.
- Of the 94 trillion yen, GC accounted for 37 trillion yen and SC for 57 trillion yen both on a gross-outstanding basis.
- In order to recognize who were essentially lenders or borrowers in the GC repo markets, we netted out the outstanding of borrowing and lending, Counterparty by Counterparty, and then summed up their netted positions. We found that approximately 30 percent of lending was attributed to city banks (included in major banks) and approximately 60 percent to trust banks (trust

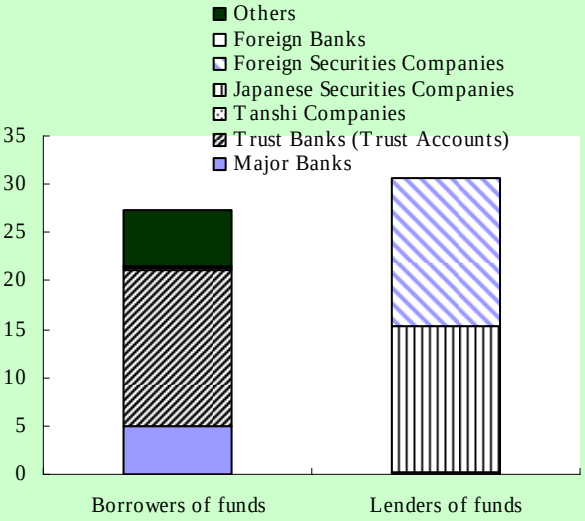
accounts). Compared with the uncollateralized call market, where regional banks and life insurance companies play important roles as lenders, the roster of lenders is not so diversified in this market. On the other hand, borrowers are mostly securities companies (Chart 9 (a)).

Chart 9: Amounts Outstanding in the Repo Markets at the end of May 2006

(a) GC Repo



(b) SC Repo



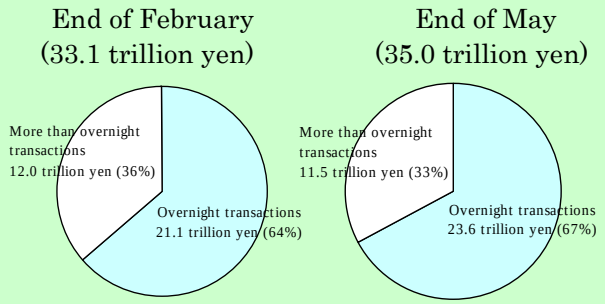
Note: the amounts are on a net basis of borrowing and lending.
Source: Bank of Japan, "Survey on money markets"

As discussed later, quite a few regional banks and institutional investors have not made necessary operational arrangements for repo transactions, and this is one of the reasons why there are not so many lenders in this market. In addition, the trust banks, which account for 60 percent of fund lending in the GC repo market, often lend the JGSs that they have been entrusted with as securities trust to securities companies under SC agreements, and at the same time the trust banks lend funds that they have received as cash collateral for SC to the same securities companies under GC agreements in most cases. Chart 9 (b) shows the outstanding amount of SC transactions at the end of May 2006, revealing that for trust banks, SC is almost the same as GC in the outstanding amount. Trust banks often conclude GC agreements and SC agreements with the same counterparties at the same time, which is economically equivalent to exchanges of securities without paying or receiving any funds. In the formation of repo rates, trust banks focus mainly on the spread between SC and GC repo rates, and the GC repo rate is often agreed based on the prevailing rate in the market. This may be another reason why market participants are likely to perceive that there are few lenders.

The GC repo market has grown in size mainly due to an increase in overnight transactions.

In terms of the outstanding amounts of the GC repo market classified by maturities at the end of February and May 2006 (Chart 10), we can see that only overnight transactions have grown in size. This may be because lenders still prefer lending funds overnight and borrowers tend to raise funds mainly overnight to cover the daily change of JGS inventory.

Chart 10: Composition of GC Repo by Maturities



Source: Bank of Japan, "Survey on money markets"

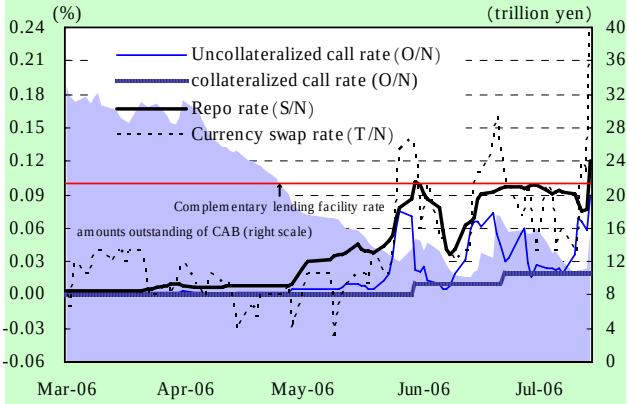
2. Development of Overnight Interest Rates after the Conclusion of the Quantitative Easing Policy

With respect to development of the overnight interest rates after the conclusion of the quantitative easing policy, the overnight interest rates have risen since May 2006, with the outstanding of CAB having decreased substantially by then, as mentioned in the Financial Markets Report which was released together with this report. This was in principle because less frequent market operations by the Bank led to increased needs for fundraising in money markets; and with the rise in interest rates of longer maturities, some market participants expanded their investment positions of longer maturities and thus increased the amount of overnight funding to cover them. In the following, we will examine this mechanism in detail.

The rises in overnight interest rates started from the repo rate.

Overnight interest rates were stable until April 2006. Since May 2006, however, the rates have risen with increasing volatility (Chart 11). The rises in overnight interest rates started from the repo rate (overnight GC repo rate), and was transmitted to the currency swap and Euro-yen rates and the uncollateralized call rate. Meanwhile, there was no major change in the collateralized call rate.

Chart 11: Overnight Rates (from Mar. to July 14, 2006)



Note: Rates are on a starting-date basis.
Source: Meitan Tradition, Tanshi Association, Bank of Japan

The transmission mechanism by which the overnight interest rates rose was as follows (Chart 12).

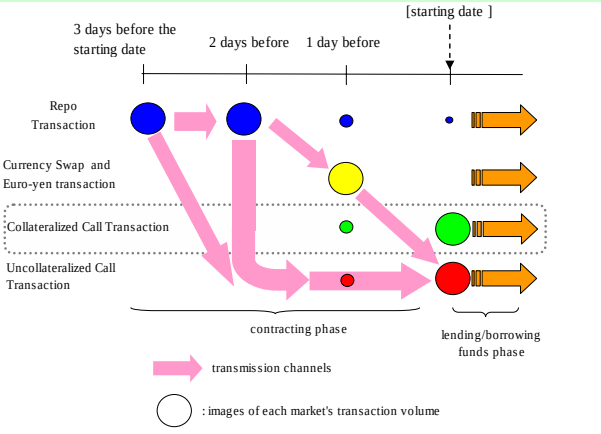
(1) First the repo rate rose, where repo agreements were mainly concluded two or three days before the starting dates when funds were delivered (T+3/T+2 settlement).

(2) With the rise in the repo rate, market participants such as foreign banks increased currency swap and Euro-yen transactions for fundraising which were mainly concluded one day before the starting date (Tomorrow Next, T+1 settlement). This brought about the rises in the currency swap and Euro-yen rates in accordance with the repo rate.

(3) Market participants such as major foreign banks and some securities companies increased the amounts of fundraising in the uncollateralized call market, where the uncollateralized call rate was lower than the repo and currency swap rates. Accordingly, the rise in the repo and currency swap rates was transmitted to the uncollateralized call rate. In spite of all these arbitrage transactions, the repo rate tended to be more volatile and stayed higher than the other overnight rates such as the uncollateralized call rate.

(4) Meanwhile, in the collateralized call market, where transactions were conducted on a same-day settlement basis (T+0 settlement), foreign banks and securities companies were reluctant to raise funds because of the high margin ratios of collateral as discussed above. Thus, arbitrage transactions between the collateralized call markets and the other money markets were not frequently observed in contrast with (1) to (3).

Chart 12: Transmission Channels of Rises in Overnight Interest Rates



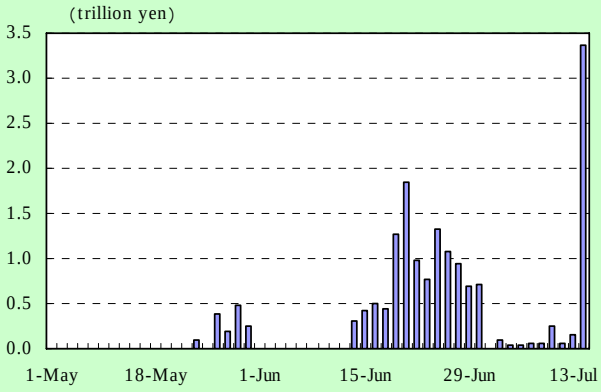
Use of the Complementary Lending Facility sharply increased and repo transactions on a T+1/T+0 settlement basis grew in size.

The rise in the GC repo rate resulted in the increased usage of the Complementary Lending Facility (CLF) (Chart 13). This was because an

increased number of market participants came to prefer fundraising through CLF to fundraising in the repo markets if the repo rate was over 0.1 percent (which was the borrowing rate for CLF), being aware that the funds raised through CLF were equivalent to the funds raised in the repo markets in the sense that they were overnight funds against collateral of JGS. Since the repo transactions were substitutable for the market operations by the Bank, the usage of the CLF also depended on the frequency and outstanding of the market operations. After June 2006, CLF was frequently utilized when the repo rate rose.

Under these circumstances, repo transactions on a T+1/T+0 settlement basis increased marginally. This was because some of the securities companies who could use the CLF at 0. 1 percent on a T+0 settlement basis sought to raise funds at the most favorable interest rate: either by repo transactions on a T+1/T+0 settlement basis or by CLF rather than by ordinary repo transactions on a T+2/T+3 settlement basis where the repo rates for those transactions tended to be relatively high. Chart 14 shows the composition of overnight GC repo transactions. Chart 14 (a) shows the outstanding of overnight GC repo transactions conducted by the Counterparties, including *tanshi* companies, at the end of February and May 2006. Chart 14(b) shows the amount of overnight GC repo transactions through *tanshi* companies on June 21, 2006. Although the bases for these figures are different, they both show that repo transactions on a T+0/T+1 settlement basis increased.

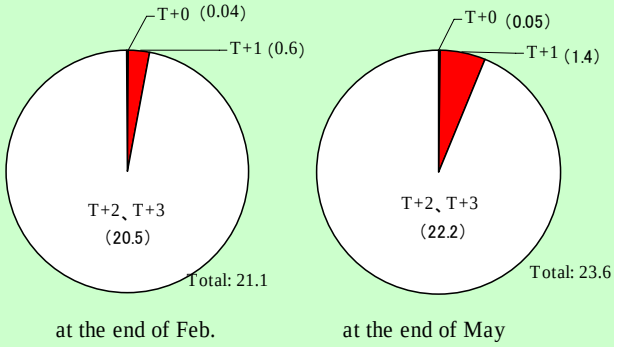
Chart 13: Amounts Outstanding of the Complementary Lending Facility



Note: Figures are until July 14, 2006.

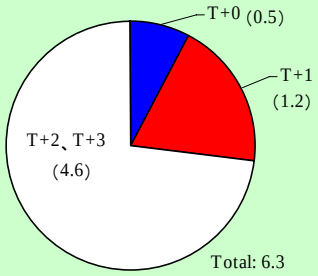
Chart 14: Composition of Overnight GC Repo Transactions

(a) Outstanding of overnight GC Repo transactions conducted by market participants (figures in trillion yen)



at the end of Feb. at the end of May

(b) Amount of overnight GC Repo transactions through *tanshi* companies (figures in trillion yen)



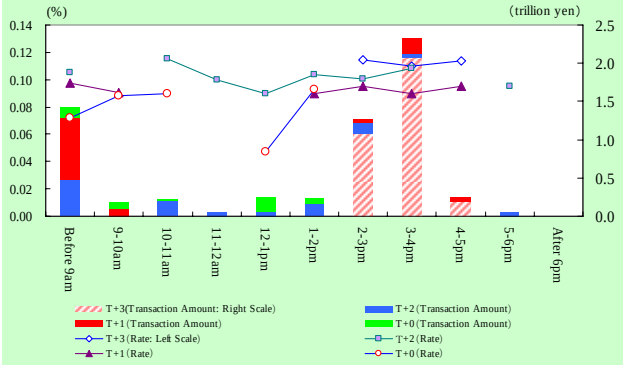
On June 21

Source: Bank of Japan, "Survey on money markets"

In our survey, we collected hourly data, with the assistance of 3 *tanshi* companies, on the amounts and rates of GC repo transactions through the *tanshi* companies during the daytime on June 21, 2006 (Chart 15). According to the data, the amounts of repo transactions on a T+3 settlement basis were the largest and the transactions were conducted between 14:00 and 17:00. This reflected the fact that since JGS traded were usually settled on a T+3 settlement basis and the trading position of JGS during the day almost came to be fixed by these hours, market participants started to cover their funding positions with repo transactions on a T+3 settlement basis during those hours. On the other hand, repo transactions on a T+2/T+1 settlement basis were conducted mainly early in the morning, because the positions to be covered by repo transactions on a T+2/T+1 settlement basis had been fixed by then. The repo transactions on a T+0 settlement basis were conducted throughout the morning without any specific hours during which they were intensively traded. We could observe the forward rate premium depending on how many days prior to the value dates the transactions were conducted. Reflecting the forward rate premium, the repo rates

tended to decline in order from the repo rate on a T+3 settlement basis to that on a T+0 settlement basis.

Chart 15: GC Repo Transactions through *Tanshi* Companies on June 21

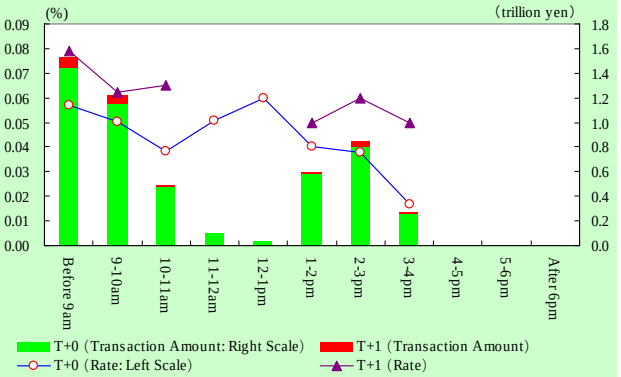


Note: The rates are value-weighted average rates. The transactions in which the rates and transaction amounts are essentially agreed n-business days prior to starting dates are recognized as transactions on a T+n settlement basis even if the transactions including the details of trading JGS are formally agreed on the following days.
Source: Bank of Japan, "Survey on money markets"

Repo transactions are generally conducted on a T+2 settlement basis. In recent years, however, the amounts and rates are mostly agreed essentially 3 days prior to the starting dates, and the details including specific JGSs to be delivered are formally agreed 2 days prior to the starting dates. In Charts 14(b) and 15, these types of transactions were classified as repo transactions on a T+3 settlement basis. In Chart 14(b), 3.4 out of 4.6 trillion yen of repo transactions on a T+2/T+3 settlement basis was on a T+3 settlement basis.

We also collected hourly data, with the assistance of 3 *tanshi* companies, on the amounts and rates of uncollateralized call transactions during the daytime on June 21, 2006 (Chart 16). According to the data, the uncollateralized call transactions were most heavily traded from 8 a.m. to 11 a.m., which included the hours of ordinary market operations. The trading was also heavy from 1 p.m. to 4 p.m., when regional banks and investment trusts invested surplus funds in the market after fixing their fund positions for the day. The interest rate tended to decline in the afternoon, although there was a little fluctuation of interest rate during the hours when transactions were thin. The forward rate premium was also observed where the rate of transactions on a T+1 settlement basis was higher than that on a T+0 settlement basis.

Chart 16: Uncollateralized Call Transactions through *Tanshi* Companies on June 21



Note: The rates are value-weighted average rates.
Source: Bank of Japan, "Survey on money markets"

Why did the repo rate rise prior to the other overnight interest rates?

As stated above, from May to June 2006, the repo rate was the first to rise among the overnight interest rates and the rise in the repo rate was transmitted to the other overnight interest rates through market participants' arbitrage transactions. Although there were arbitrage transactions across the repo markets and the other money markets, the repo rate tended to become higher and more volatile than the other overnight interest rates such as the uncollateralized call rate. The repo markets are larger in size than the other money markets such as the currency swap and Euro-yen markets or the uncollateralized call market. In addition, they are highly secured markets collateralized by JGS. The reason why the rate in such markets was so unstable was as follows.

<u>An increased demand for fundraising in the repo markets</u>

In the process of reducing CAB, a decrease in the outstanding of market operations by the Bank primarily led to an increased demand for financial institutions such as securities companies to raise funds in the repo markets. In money markets, major banks who used to be main borrowers have now become lenders, because they now carry more deposits than loans with loans having reduced significantly and deposits having increased. On the other hand, securities companies and foreign banks have become major borrowers. Since securities companies and foreign banks had raised a lot of funds through market operations by the Bank, a decrease in the outstanding of market operations immediately led to an increased

demand for securities companies to raise funds in the repo markets. In addition, in the process of the rise in interest rates of longer maturities, securities companies temporarily carried somewhat large inventories of short-term governmental securities. This supply-and-demand condition seemed to be another factor which increased the volatility of the repo rate.

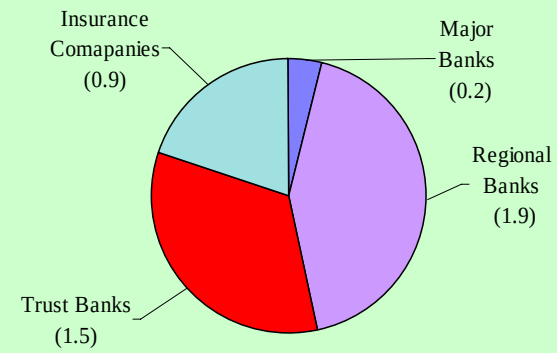
The limited shift of fundraising from the repo markets to the other overnight money markets

As discussed above, with the rise in the repo rate, there was a shift of fundraising from the repo markets to the other money markets. This was not broadly observed, however, because borrowers faced limits on credit lines; market participants have not become confident about raising funds stably in the uncollateralized call market; and some borrowers preferred to cover their funding positions by repo transactions prior to the starting dates.

The limited shift of investment from the other overnight money markets to the repo markets

As mentioned already, since the roster of lenders is not well diversified in the repo markets, market participants are likely to perceive that lenders have superiority in setting repo rates. In this regard, the repo markets show a contrast against the uncollateralized call market, where the roster of lenders is so diversified as to include investment funds, life insurance companies and regional banks (Chart 17). Since the surplus funds of institutional investors fluctuate every day and cannot be fixed in advance, they seldom invest the surplus funds in repo transactions, which are usually concluded prior to the starting dates. In addition, many lenders in the call markets are not so active in investing their funds in the repo markets for the time being, because it is expensive to make necessary operational arrangements for managing and actually handling collateral. Therefore, lenders in the uncollateralized call market did not generally invest their funds in the repo markets.

Chart 17: Lenders in the Uncollateralized Call Market



Note: Figures are net investment positions as of the end of June 2006 (trillion yen). Trust banks include investment trusts.
Source: Bank of Japan

To assist the smooth formation of interest rates in the repo markets, it is important to facilitate arbitrage transactions between repo markets and the other overnight money markets such as the uncollateralized call market. Therefore, it is important for an increased number of market participants, especially lenders, to make necessary operational arrangements for collateralized transactions such as repo transactions, thereby increasing the size and liquidity of collateralized markets. In addition, in view of the existence of lenders who prefer to invest their funds on a same-day settlement basis and the constraint on credit lines faced by borrowers, it would be useful to develop the market for collateralized transactions on a same-day settlement basis that could bridge between the repo markets for collateralized transactions on a T+3/T+2 settlement basis and the uncollateralized call market for uncollateralized transactions on a same-day settlement basis: for example, to develop the repo market on a T+0 settlement basis or to activate the collateralized call market may be effective. As stated above, it was observed from May to June 2006 that the repo transactions on a T+0 settlement basis increased to some extent. Depending on the development of interest rates in the future, the need for such transactions might increase.

3. Other Issues

To what extent is there room for further reducing the outstanding of CAB?

After the conclusion of the quantitative easing policy, the outstanding of CAB of every financial sector such as banks and securities companies was reduced. During the reserve maintenance period in June (from June 16 to July 15), the daily outstanding of CAB (excluding Japan Post's CAB) in excess of the required reserves (daily average of reserves during the reserve maintenance period) fluctuated day by day, but was reduced to about two trillion yen in June and about one trillion yen in July, at the lowest of each month.

In our survey, we asked the Counterparties what approximate target amounts of CAB they were intending to hold for the time being. The total amount was one trillion yen more than the total amount of their required reserves (Chart 18). This was because, in terms of prudent fund management and smooth payment, they tended to maintain CAB at a higher level than required reserves (zero for financial institutions that were not subject to the required reserve system).

Chart 18: Current Account Balance Target and Average Required Reserve Amounts

(100 millions of yen)

	Current Account Balance Target (i)	Required Reserve Amounts in May (ii)	i－ii
Institutions required to maintain the reserve	47,217	45,098	2,119
City Banks	31,850	30,335	536
Regional Banks	10,049	9,038	1,011
Regional Banks II	1,012	634	378
Foreign Banks	298	140	158
Other Institutions	8,831	0	8,831
Securities Companies	7,306	0	7,306
Aggregated amount for the Counterparties	56,048	45,098	10,950
Aggregated amount for institutions other than Counterparties	N/A	2,283	N/A

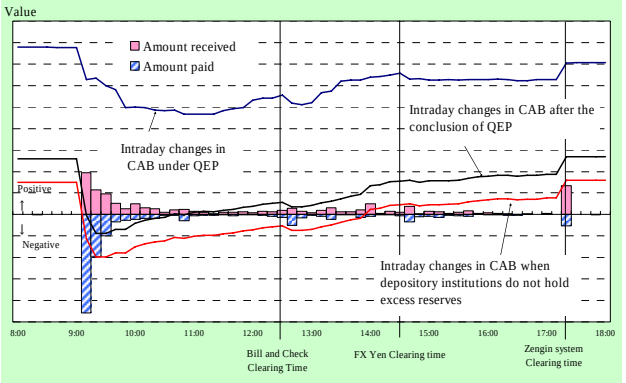
Note: The amounts for Counterparties which do not set a CAB target are included in "Aggregated amount for institutions other than Counterparties."
Source: Bank of Japan, "Survey on money markets"

As mentioned above, the surplus reserves in excess of the required reserves have come to be mediated from lenders to borrowers in a gradually smooth way through the uncollateralized call market. However, due to the limits on credit lines faced by market participants and their cautiousness toward raising funds in the uncollateralized call market, it might not be easy for each market participant to reduce its CAB to the approximate target amount. In this sense, we can consider that the outstanding of CAB has been reduced almost to its minimum under the zero interest rate policy. How this situation changes after the rise in the policy interest rate deserves careful monitoring.

To what extent have the issues on intraday liquidity been addressed?

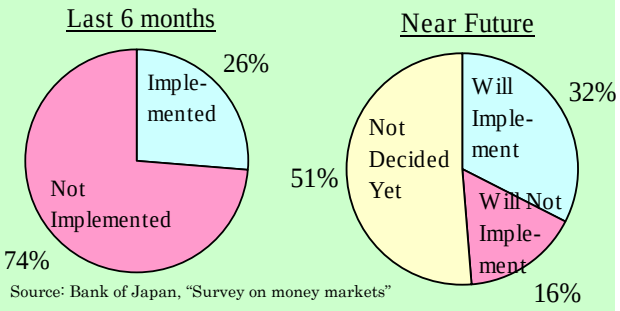
The reduction in CAB after the conclusion of the quantitative easing policy might result in the increased need for intraday liquidity. In fact, each financial institution's CAB has been reduced compared with the CAB under the quantitative easing policy. Chart 19 shows this by a hypothetical example. As a whole, most of the financial institutions have sufficient collateral for an overdraft extended by the Bank and thus the supply-and-demand for intraday liquidity is not yet tight. However, the number of financial institutions who use the overdraft facility has been steadily increasing, and in the future, financial institutions that do not have sufficient collateral might become more conscious of the issues on intraday liquidity.

Chart 19: Image of Intraday CAB (a case in which an amount paid exceeds an amount received in the morning)



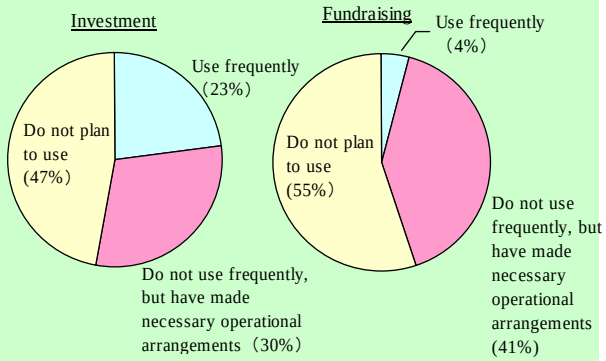
In our survey, we asked the Counterparties to what extent they had addressed the issues on intraday liquidity. According to their answers, only 30 percent of the Counterparties had taken measures to reduce settlement amounts, such as increasing netting contracts and open-end transactions during the last six months (Chart 20). In addition, although about half the Counterparties had made necessary operational arrangements for intraday call transactions, few of them had actually increased fundraising by intraday call transactions (Chart 21).

Chart 20: Measures to Reduce Settlement Amounts



Source: Bank of Japan, "Survey on money markets"

Chart 21: Intraday Call Transactions



Source: Bank of Japan, "Survey on money markets"

4. Conclusion

The money markets have grown in size and their functions have been steadily recovering. The restoration of credit line networks in the uncollateralized call market has progressed to a certain extent. Along with the rise in interest rates and an increase in their volatility, transactions including arbitrage trading have been activated, and the flow of funds across money markets has become smoother.

Nevertheless, there is still room to improve the functions of the markets: some lenders are not motivated to invest surplus funds in the uncollateralized call market yet, because there is little to gain from investing at a nearly zero interest rate as compared with costs; market participants generally do not have confidence that they can raise necessary funds in the money markets whenever they need; the collateralized call market is still somewhat isolated from the other money markets; quite a few lenders have not made the necessary operational arrangements for repo transactions and thus the roster of lenders in the repo markets is not well diversified; and market participants have not taken measures to address the issues of intraday liquidity, such as the reduction in settlement amounts or the use of intraday call transactions.

In the process of reducing CAB, the following points have emerged. First, the flow of funds across the repo markets and the other money markets such as the uncollateralized call market has not become smooth yet and arbitrage transactions across the markets have not been conducted smoothly, either. With a large amount of JGS continuing to be issued, the demand for market participants who hold a lot of JGSs to finance them in the repo markets is expected to remain strong. On the other hand, market participants in the repo markets are aware that the roster of lenders is not well diversified and thus the repo rates tend to rise and become volatile.

Second, since major banks have more deposits than loans, money markets as a whole have changed their structures so that banks with good credit standing and a lot of collateral lend funds to the other financial institutions. In the uncollateralized call market, major borrowers have changed to be foreign banks and securities companies and they have increased the amount of fundraising. Therefore, it continues to be important to expand credit lines in accordance with changes in the roster of lenders and borrowers in order to improve the market functions.

With a view to smoothing the flow of funds across money markets and thereby enhancing the stable formation of interest rates, it will be important (1) to facilitate uncollateralized transactions by appropriately expanding credit lines and (2) for an increased number of market participants to make necessary operational arrangements for collateralized transactions and thus to improve the liquidity and efficiency of collateralized markets such as the collateralized call and repo markets, including the markets for transactions of same-day settlement.

With the rise in the policy interest rate in July, an autonomous mechanism to improve market functions is expected to come into greater play. The recovery of market functions, however, also depends largely on market participants' initiatives.

The Bank will continue to keep a close watch on transactions in money markets and how the markets recover their functions by exchanging views with market participants, and will support their efforts to enhance the functioning of the market.

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