FINANCIAL MARKETS REPORT – SUPPLEMENT

Changes Observed in Money Markets after the Rise in the Policy Interest Rate in July 2006

Financial Markets Department
Bank of Japan
April 2007*

The Bank of Japan has monitored the development of money markets and has exchanged views with a wide range of market participants with a view to contributing to enhance the functions of money markets after the conclusion of the quantitative easing policy. (For the situation before the rise in the policy interest rate in July 2006, see "Financial Markets Report – Supplement: Issues regarding Money Markets after the Conclusion of the Quantitative Easing Policy" (Bank of Japan, Financial Markets Department [2006]) and "Financial Markets Report – Supplement: Changes Observed in Money Markets after the Conclusion of the Quantitative Easing Policy" (Bank of Japan, Financial Markets Department [2006]).)

This report examines to what extent the functions of money markets have recovered and what problems remain based on the situation of money markets during the second half of 2006, when the policy interest rate reached 0.25%. The main points are as follows.

- Generally, overnight interest rates have been stable at around the level of the policy target rate even with the reduced current account balance at the Bank compared with that of spring to summer 2006. Before the rise in the policy interest rate in July 2006, the flow of funds between the uncollateralized call market and other money markets such as the securities lending with cash collateral and repo markets and the currency swap markets had not been necessarily smooth and repo rates had tended to rise and had become volatile from time to time. However, since the rise in the policy interest rate in July 2006, arbitrage transactions between the markets mainly conducted by city banks and overseas financial institutions have become active and spreads between money market interest rates have become more stable than before. Interest rates of longer maturities in money markets, which remained nearly zero under the quantitative easing policy, now actively fluctuate reflecting market participants' expectations of the policy interest rate in the future among other things. Under the circumstances, derivative transactions of short-term interest rates have also steadily grown.
- In the uncollateralized market, restoration of credit line networks has progressed further since the rise in the policy interest rate in July 2006, and the roster of lenders has become more diversified. In addition, until June 2006 market participants generally did not have confidence that they could raise necessary funds in the market whenever they needed, but the situation has steadily improved since July 2006. Thus, surplus funds tend to be invested more effectively than before in money market transactions of same-day settlement.
- In the collateralized call market, a small number of financial institutions have additionally started raising funds because the interest rate tends to be lower than that of other money markets. Under the circumstances, the collateralized call rate has begun to somewhat fluctuate along with other overnight interest rates. However, the diversification of the roster of participants in the collateralized call market has remained marginal. Reasons include the fact that margin ratios for collateralized call transactions are higher for fundraisers, and the collaterals are not marked to market but evaluated at face value.

- In repo markets, the transactions on a T+0 settlement basis (where the transactions are conducted on a same-day settlement basis) have increased, although the proportion of the transactions remains small, under the circumstances where arbitrage transactions between repo markets and other markets such as the uncollateralized call market have increased. However, no major changes have been observed in terms of the roster of lenders which has not become well diversified. This is because market participants continue to be conscious of the costs for making necessary operational arrangements and transaction costs due to managing and actually handling collateral. Against this background, the volatility of repo rates increased somewhat in December 2006, when market participants were aware of the year-end factor among other things.
- As a whole, transactions have become more active along with the rise in interest rates and the flow of funds across money markets and the formation of interest rates has become more efficient. However, as stated above, there is still room to improve the liquidity and efficiency of the collateralized markets such as repo markets and the collateralized call market. Also, although derivative transactions, which are conducted on the basis of expectations of short-term interest rates, have grown steadily, the size of the market is still smaller than that in the U.S. or Europe and the market has the potential to accept more participants. The Bank will deepen the discussions with market participants with a view to enhancing further the functions of money markets.

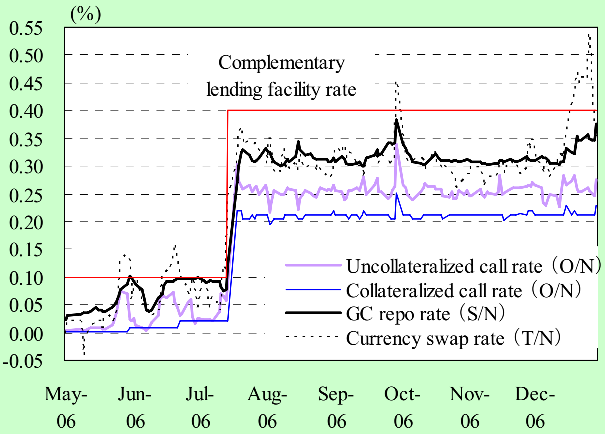
＊ This report was first published in Japanese in January 2007. It is, therefore, based on information available at the end of 2006.

1. Development of short-term interest rates after the rise in the policy interest rate

First, this report reviews the current development of short-term interest rates while paying attention to the functions of money markets.

Generally, overnight interest rates have been stable at around the level of the policy target rate even with the reduced current account balance at the Bank compared with that of spring to summer 2006, although the overnight interest rates now fluctuate actively, reflecting the daily or intra-day supply and demand for funds. Volatility of the uncollateralized call rates and that of the rates of the securities lending with cash collateral and repo markets ("repo markets") have also decreased (Chart 1, 2). There has been a steadily growing tendency that surplus funds are lent smoothly through money markets after the rise in the policy interest rate in July 2006. This is partly because financial institutions have made further progress in the operation of investment and fundraising and their operational arrangements.

Chart 1: Overnight Rates (from May to Dec. 29, 2006)



Note 1: Rates are on a starting-date basis.
2: "GC repo rate" refers to overnight GC "Repo Rate (indication, aggregated)" released by the Bank of Japan in the charts of this report. The rate is an arithmetic mean of indicative rates reported by 50 counterparties to the Bank of Japan's purchases/sales of JGSs (Japanese Government Securities) under repurchase agreement operations. Please note that the rate might not fully reflect the actual movements of the repo market since it does not consider the transaction volume of each financial institution.
Source: Meitan Tradition, Tanshi Association, Bank of Japan

Chart 2: Standard Deviation

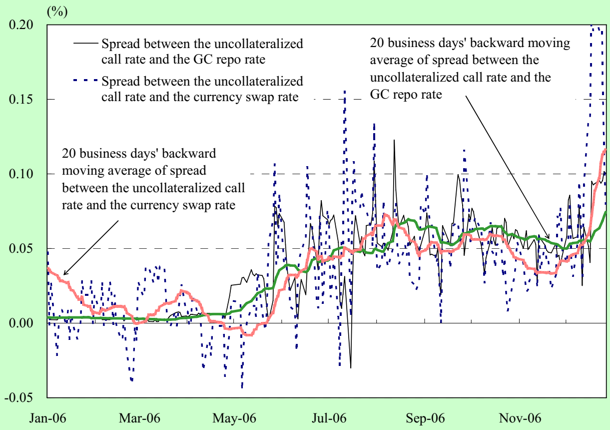
(%)

	Uncollateralized call rate	GC repo rate	Currency swap rate
3/10-4/28	0.001	0.002	0.019
5/1-7/14	0.024	0.026	0.051
7/18-9/29	0.018	0.016	0.029
10/2-12/15	0.011	0.008	0.021
12/18-12/29	0.012	0.015	0.055

Source: Meitan Tradition, Bank of Japan

The flow of funds and arbitrage transactions between overnight money markets such as the uncollateralized call market was not always smooth and so spreads between overnight interest rates were unstable from May to July 2006, when repo rates became volatile and tended to stay high from time to time. Following the rise in the policy interest rate, arbitrage transactions mainly conducted by city banks and overseas financial institutions have become active and spreads between the uncollateralized call rate and other overnight interest rates such as repo rates have become stable except for a period at the end of 2006 (Chart 3, 4). Moreover, the collateralized call market was somewhat isolated from other money markets and thus interest rates scarcely fluctuated until July 2006. However, the collateralized call rate has begun to somewhat fluctuate along with other overnight interest rates since the number of fundraisers in the collateralized call market has increased to a certain extent (Chart 1).

Chart 3: Spreads between the Uncollateralized Call Rate and the GC Repo Rate/Currency Swap Rate (from Jan. to Dec. 29, 2006)



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

Chart 4: The Average and the Standard Deviation of Spreads between the Uncollateralized Call Rate and the GC Repo Rate/Currency Swap Rate

(%)

	Spread between the Uncollateralized Call Rate and the GC Repo Rate		Spread between the Uncollateralized Call Rate and the Currency Swap Rate	
	Average	Standard Deviation	Average	Standard Deviation
3/10-4/28	0.005	0.002	0.006	0.019
5/1-7/14	0.040	0.023	0.033	0.037
7/18-9/29	0.060	0.023	0.058	0.026
10/2-12/15	0.057	0.013	0.047	0.020
12/18-12/29	0.086	0.021	0.173	0.059

Source: Meitan Tradition, Bank of Japan

Accordingly, surplus funds tend to be invested more smoothly than before in overnight money markets and arbitrage transactions between markets have become smoother, and thus interest rates have been formed more efficiently. Under the circumstances, the frequency of market operations for funds-supplying by the Bank and financial institutions' policies on reserve maintenance have changed compared with those until summer 2006. The Bank has controlled the excessive fluctuation of interest rates by conducting market operations for funds-supplying on a T+3 or T+1 settlement basis, as well as on a T+2 settlement basis (in which the Bank provides liquidity two business days after the offer of the operation), mainly during the reserve maintenance period from May to July. However, the frequency of the market operations for funds-supplying on a T+3 settlement basis has become less since the reserve maintenance period in August (Chart 5). Moreover, although the financial institutions subject to the required reserve system prudently tended to keep more reserves than their required daily average during the reserve maintenance period immediately after the rise in the policy interest rate, they have gradually standardized the reserve maintenance, and the excess reserves have decreased (Chart 6).

However, the needs for fundraising in overnight money markets increased mainly in mid-December mainly because the fluctuation of fund surpluses and shortages became larger due to seasonality at the end of 2006. Thus, currency swap rates, repo and other rates rose and spreads between money markets became wider.

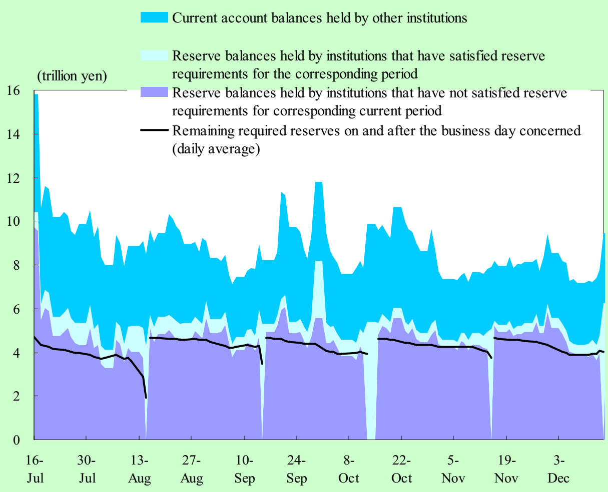
Chart 5: The Number of Principal Operations for Funds-Supplying Exercised by the Bank of Japan

(times)

	Purchases of JGSs under Repurchase Agreements T+2	Outright Purchases of Bills at Head Office/ Funds-Supplying Operations against Pooled Collateral at Head Office T+2	Others	T+3	T+1	T+0
April Period	4	0	3	0	3	0
May Period	9	4	18	4	9	5
June Period	13 (+2)	11	11	4	1	6
July Period	14	12	23	6	7	10
August Period	15	9	14	2	8	4
September Period	11	10	10	0	7	3
October Period	12	17	5	0	4	1
November Period	11 (+1)	20	9	0	4	5

Note 1: "Period" refers to the reserve maintenance period which is one month, from the 16th of the month to the 15th of the following month.
2: Figures are on an exercising-date basis.
3: The Bank of Japan exercised purchases of JGSs under repurchase agreements on a T+0 and T+1 settlement basis for each one time in the June period, and on a T+1 settlement basis for one time in the November period.
Source: Bank of Japan

Chart 6: Amounts Outstanding of Current Account Balances (from the Reserve Maintenance Period in July to Nov.)



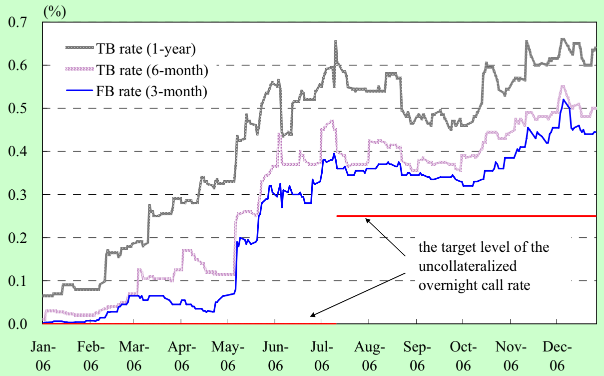
Source: Bank of Japan

Interest rates of longer maturities in money markets, which remained nearly zero under the quantitative easing policy, now actively fluctuate reflecting market participants' expectations of the policy interest rates in the future among other things (Chart 7). Under the circumstances, derivative transactions of short term interest rates have steadily grown (discussed later). Overnight Index Swap ("OIS") transactions, which are conducted on the basis of expectations of the overnight interest rates, have rapidly grown (Chart 27, shown later). The arbitrage transactions between these derivatives and short-term governmental securities, funds with longer maturities in money markets have also become more active (Chart 8).

These developments of the interest rates indicate that the functions of money markets have been steadily recovering as a whole after the rise in the policy interest rate. This report reviews the degree of recovery of the function in each market.

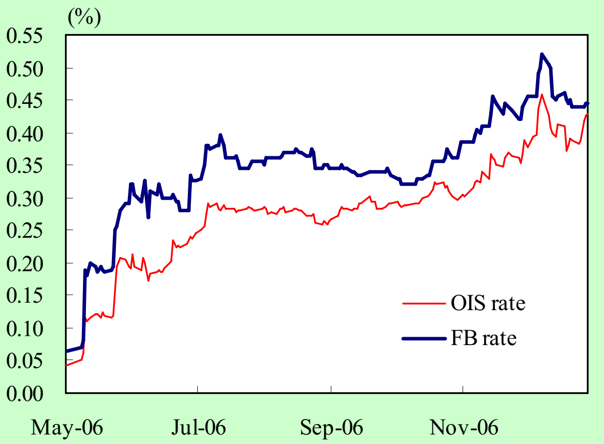
For this article, the Bank conducted a second survey from November 2 to 20, 2006 (the first survey was conducted in June 2006) of about 160 market participants who were in principle counterparties for the market operations by the Bank ("Counterparties", the number of participants in each financial sector is shown in Chart 24). This report refers to some of the results of the survey.

Chart 7: Short-Term Rates (from Jan. to Dec. 29, 2006)



Source: Japan Bond Trading Co., Ltd.; Bank of Japan

Chart 8: FB Rate and OIS Rate (3-month)



Source: Japan Bond Trading Co., Ltd.; Meitan Tradition

2. Changes in Each Money Market

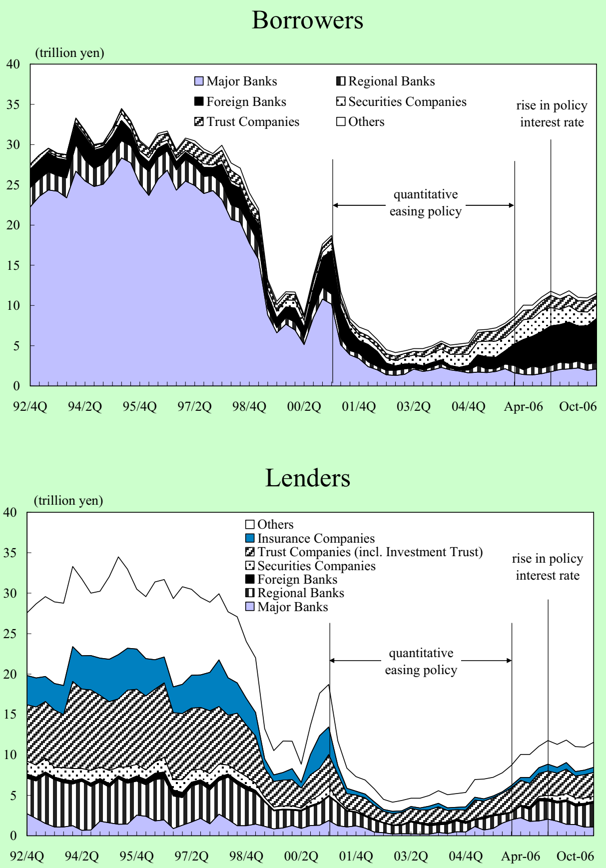
(1) Uncollateralized Call Market

The outstanding amount of the uncollateralized call market has been virtually flat since the rise in the policy interest rate in July 2006 although it showed a moderate upward trend before that (Chart 9). However, transactions in which financial institutions deal directly with each other without going through *tanshi* companies, intermediaries in money markets (direct dealing, "DD") have increased, and thus the overall uncollateralized call transactions including DD seem to have kept increasing. The Bank's survey shows that the outstanding amount of the uncollateralized call direct dealing reached 7.6 trillion yen in October 2006, compared with 6.7 trillion yen as of July 2006 (these figures accounted for the total amount of transactions in which the Counterparties were fundraisers excluding transactions within the same financial group).

There have been no significant changes in the composition of borrowers and lenders before and after the rise in the policy interest rate. However, major financial institutions such as city banks ("major banks") have increased the amount of fundraising and diminished the amount of investment, to a certain extent. It seems that major banks have a more general tendency to raise funds through the uncollateralized call market in which the rate is lower than others and to invest in repo or currency swap markets.

Primary borrowers in the market are foreign banks and securities companies, and the amount of fundraising by foreign banks has kept increasing. On the other hand, primary lenders are trust banks and regional banks, and the amount of investment by regional banks has kept increasing as well. Also, some insurance companies and shinkin banks, although the amount of transactions is small, have reentered the market, and thus the roster of lenders has been more diversified compared to that before the rise in the policy interest rate.

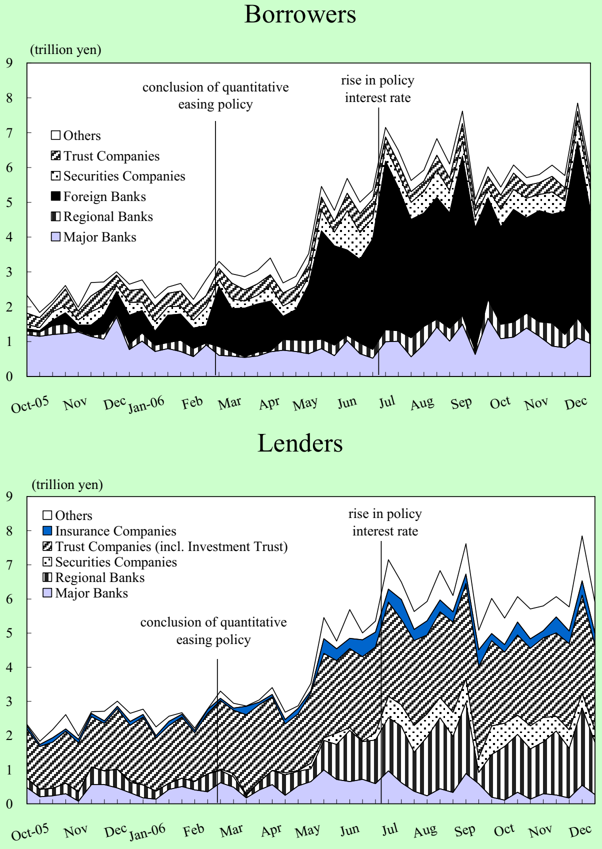
Chart 9: Amounts Outstanding in the Uncollateralized Call Market



Note 1: "Major Banks" refers to the city banks, Shinsei Bank and Aozora Bank, "Regional Banks" refers to the regional banks and regional banks II 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 December of 2006.
3: Figures are based on the transactions through *tanshi* companies (transactions with direct dealing are excluded).
Source: Bank of Japan

The outstanding amount of the uncollateralized overnight call market has been virtually flat since the rise in the policy interest rate even though it increased toward July 2006. It is similar to the amount outstanding of the uncollateralized call market as a whole, and seems to be due to the increase in DD (Chart 10).

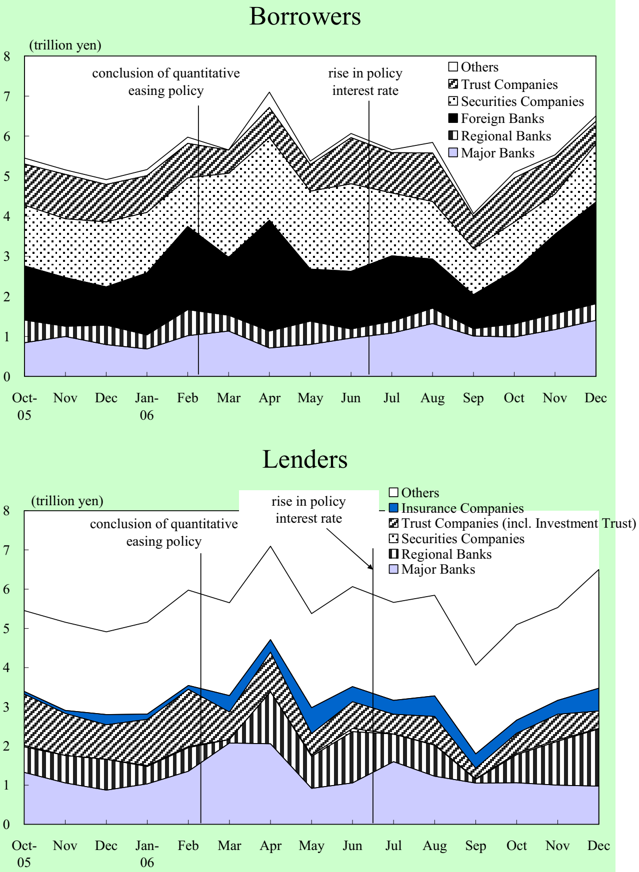
Chart 10: Amounts Outstanding of the Uncollateralized Overnight Call Transactions



Note: Figures are based on the transactions through *tanshi* companies (transactions with direct dealing are excluded).
Source: Bank of Japan

On the other hand, the uncollateralized call transactions with longer maturities are in contrast to the uncollateralized overnight call market. There have been no major changes in the outstanding amount before and after the conclusion of the quantitative easing policy and the rise in the policy interest rate in July 2006 (Chart 11). However, the current outstanding amount stays lower compared to the outstanding amount of about 10 trillion yen when the policy target rate was set to the same 0.25% in the past (from August 2000 to February 2001). Some market participants point out that the uncollateralized call transactions with longer maturities should be increased.

Chart 11: Amounts Outstanding of the Uncollateralized Call Transactions with Longer Maturities

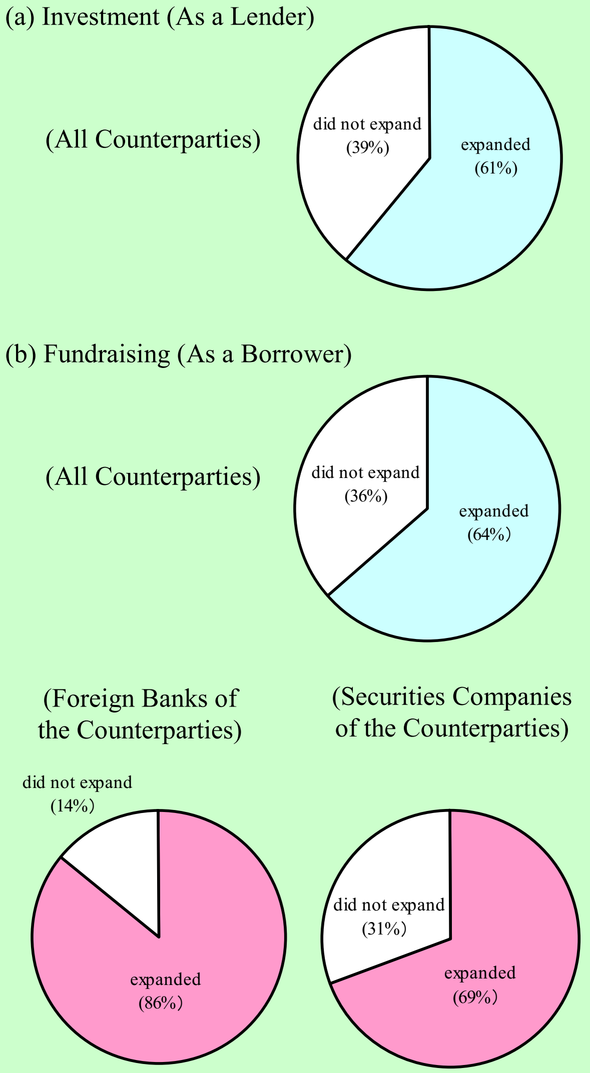


Note: Figures are based on the transactions through *tanshi* companies (transactions with direct dealing are excluded).
Source: Bank of Japan

Restoration of credit line networks has progressed further.

One of the problems regarding the functions of the uncollateralized call market was the limited roster of credit line networks, and there has been further improvement in this regard since the rise in the policy interest rate in July 2006. Chart 12 shows the changes in credit lines among the Counterparties during the last six months. In line with the rise in the policy interest rate, about 60 percent of them expanded credit lines, either as lenders or as borrowers. Especially, nearly 90 percent of foreign banks and nearly 70 percent of securities companies, which had strong needs for fundraising, expanded credit lines.

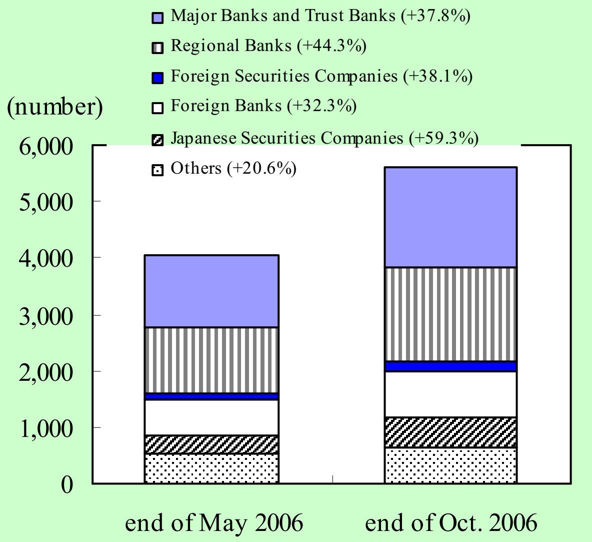
Chart 12: Survey Results of the Market Participants' Expansion of Credit Lines during the Last Six Months



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

Chart 13 shows the answers to the question asking how many financial institutions the Counterparties perceived had set credit lines for them. The number increased by approximately 40 percent from about 4,000 at the end of May 2006 to about 5,600 at the end of October 2006.

Chart 13: The Number of Financial Institutions whom the Market Participants Considered as Having Set Up Credit Lines with Them

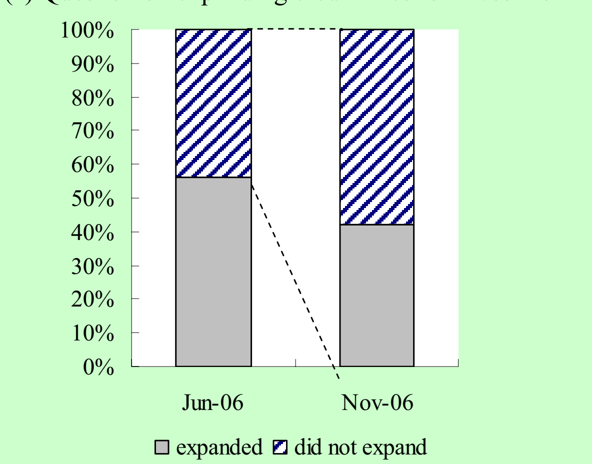


Note: The accounting of "Trust Banks" includes only banking accounts.
Source: Bank of Japan, "Survey on money markets"

Looking over the answers in detail, about half of the lenders which had not expanded credit lines at the June survey (approximately 40 percent of the lenders then) expanded credit lines for investment during the last six months (Chart 14(a)). Especially, about 70 percent of the Counterparties in regional banks, which had not expanded credit lines at the June survey, expanded credit lines during the last six months. As a consequence, the portion of those who answered that they had almost finished expanding credit lines for investment although they would not exclude the possibility of further expansion if necessary, increased compared to that at the June survey (Chart 14 (b)).

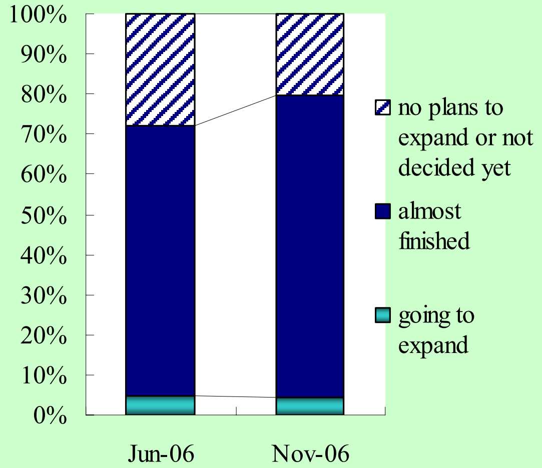
Chart 14: Survey Results of the Market Participants' Expansion of Credit Lines for Investment during the Last Six Months

(a) Question on expanding credit lines for investment



Note: The answers of November are only of the Counterparties which answered "did not expand" to the same question of our survey in June.

(b) Question on future plans for expanding credit lines for investment



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

In view of the foregoing, the restoration of credit line networks has progressed further.

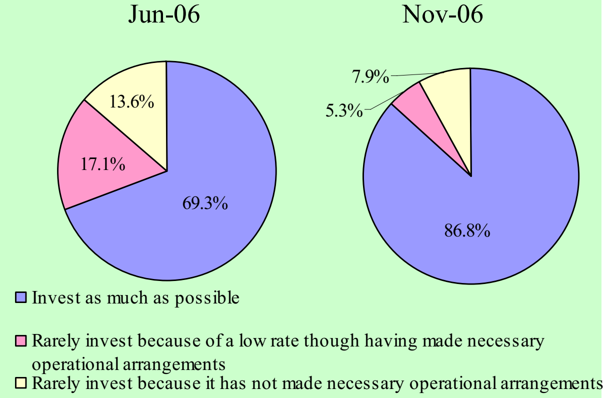
Market participants' confidence in fundraising has steadily improved.

In the survey, the Bank asked to what extent the Counterparties were actually using the uncollateralized call market (Chart 15). Question 1 in Chart 15 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?" The percentage of the Counterparties who answered they would invest excess reserves as much as possible increased from 70 percent in the July survey to about 90 percent.

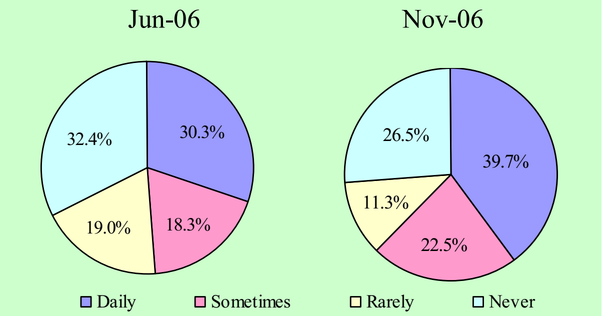
Questions 2 and 3 in Chart 15 asked how the market was used in terms of financing. Question 2 asked, "To what extent does your company use money markets such as the uncollateralized call market to raise funds of same-day settlement?" The proportion of the Counterparties who answered that they were using them daily and who answered that they sometimes did, increased compared to the last survey. On the other hand, 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?" Nearly 70 percent of the Counterparties answered that they still refrained from such transactions. This situation has not changed significantly, particularly in regional banks. However, the number of the Counterparties who answered they did so on a daily basis increased, mainly due to the increase in major market participants such as major banks, foreign banks, and securities companies. In view of the fact that the larger the transaction volume of the market participant, the more active their arbitrage transactions, it could be considered that the market was actually used for fundraising more than the figures above indicate. Also, judging from the answers to Questions 2 and 3, market participants' confidence in fundraising in the uncollateralized call market seems to have steadily improved, although some of them remain cautious.

Chart 15: Market Participants' Investment/Fundraising in Money Markets Transactions of Same-Day Settlement

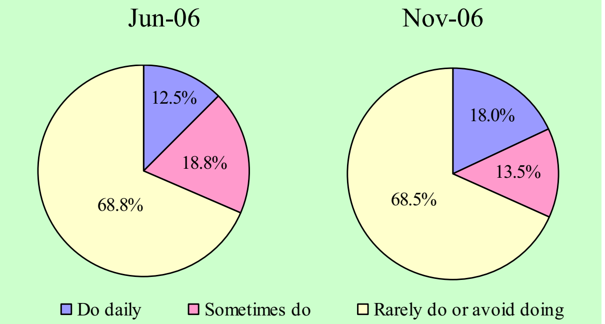
Q. 1: Will your company invest the surplus in money market transactions such as call loans of same-day settlement when there is an excess reserve in your company?



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?

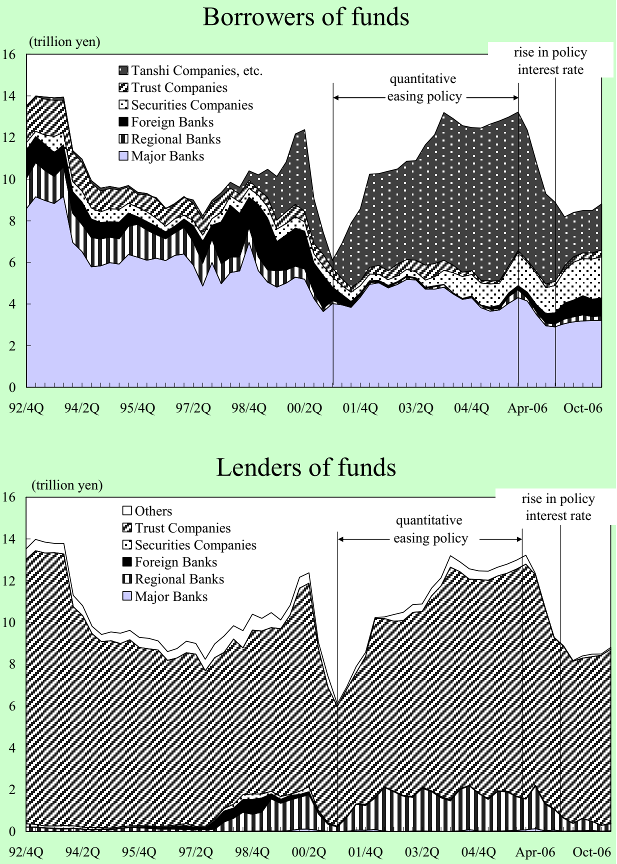


Source: Bank of Japan, "Survey on money markets"

(2) Collateralized Call Market

The outstanding amount of the collateralized call market has been virtually flat or somewhat started to increase since August 2006, although it had declined mainly because trust banks (including investment trusts) and regional banks had shifted some of their investment funds from the collateralized call market to other money markets such as the uncollateralized call market after the conclusion of the quantitative easing policy (Chart 16). This is because some securities companies and foreign banks have increased fundraising due to lower overnight interest rate in this market compared to those of other markets. Under the circumstances, the collateralized call rate has recently begun to somewhat fluctuate along with other overnight interest rates as mentioned in part 1.

Chart 16: Amounts Outstanding in the Collateralized Call Market



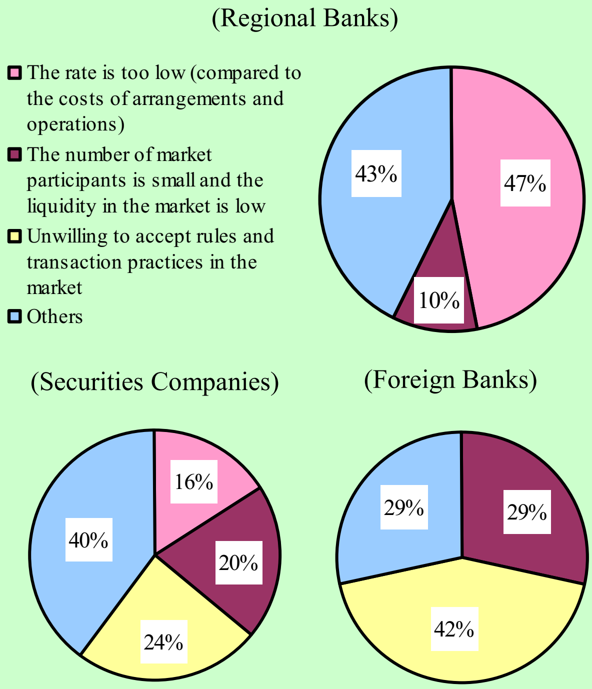
Note: Figures are on a quarterly basis until the first quarter of 2006 and on a monthly basis from April to December of 2006.
Source: Bank of Japan

Reasons for the difficulty in diversifying the roster of the participants

However, the diversification of the roster of participants in the collateralized call market has remained marginal. In the survey, the Bank asked why the Counterparties did not use (so much) the collateralized call market (Chart 17). The number of answers that the interest rate for investment was too low (compared to the costs of arrangements and operations) was the largest of all answers from regional banks, which are considered potential lenders. The number that answered “others” was not small but the contents of the answer “others” indicated likewise.

On the other hand, securities companies and foreign banks, which are considered potential borrowers, tended to reply that they were unwilling to accept rules and transaction practices in the market. In the case of transactions collateralized by Japanese Government Securities (JGS), which are the most popular collateral in the collateralized call market, market participants are conscious that the collateral in the collateralized call market is not marked to market but evaluated at face value, that the margin ratios for collateralized call transactions are higher than those for repo transactions, and that collaterals are generally not delivered against payment of funds (Non-DVP).

Chart 17: The Reason of Rarely Using or Not Using the Collateralized Call Market



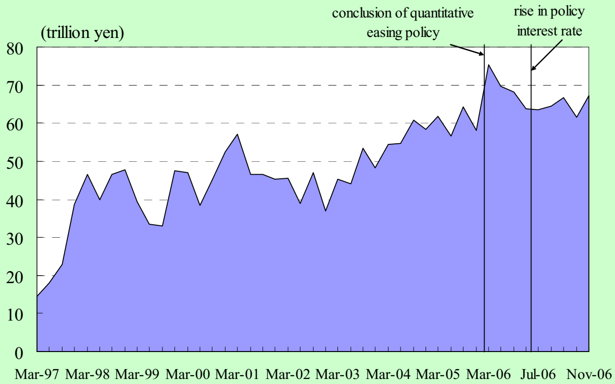
Source: Bank of Japan, “Survey on money markets”

(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 rising, albeit with some fluctuations, against the background of increase in the outstanding and trading volume of JGSs (Chart 18).

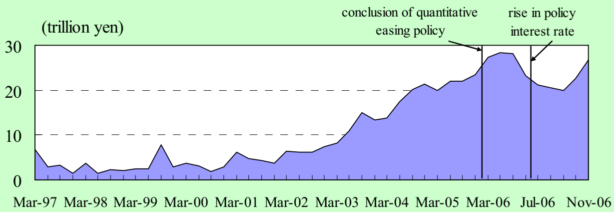
Chart 18: Amounts Outstanding in the Repo Markets

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 November of 2006.
Source: Japan Securities Dealers Association, "Bond Margin Loans"

Securities Sales under Repurchase Agreements



Note 1: Amounts outstanding of transactions involving the Bank of Japan, Japanese Government and other public institutions are excluded.
2: Figures are on a quarterly basis until the first quarter of 2006 and on a monthly basis from April to November of 2006.
Source: Japan Securities Dealers Association, "Balance of Bond Transactions with Repurchase Agreements (by investor type)"

The problems of the repo markets which were pointed out in the July survey were as follows. The roster of market participants, especially lenders, was not well diversified, and thus the repo rates tended to rise and become volatile although the volume of trade was large. The arbitrage mechanism between repo markets and the other money markets did not function sufficiently.

In the recent survey, in order to shed light on the background of such problems and the changes in the market after the rise in the policy interest rate, the Bank asked for further details of the structure of the repo market (such as transactions classified by GC (General Collateral), mainly used to raise funds against earmarked securities, and SC (Special Collateral), mainly used to borrow or lend specific bonds, transactions classified by overnight and the ones with longer maturities, and transactions vis-à-vis lenders and borrowers). The main findings were as follows. Please note that the day-to-day figures might considerably deviate from those stated below since the outstanding amount of repo markets depends largely on the degree of activity of transactions in JGS markets.

The roster of lenders is still not well diversified.

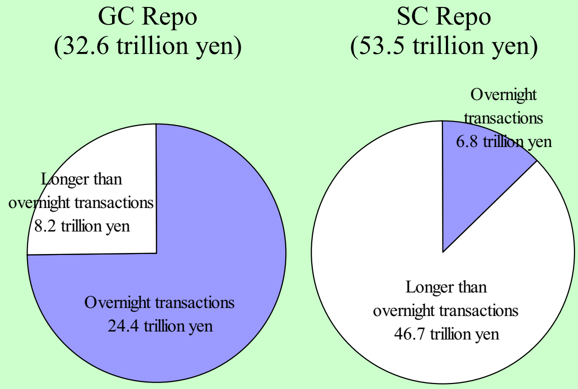
The outstanding amount of repo transactions conducted by the Counterparties was 86 trillion yen at the end of October 2006. This covered about 90 percent of the total outstanding of repo markets.

Of the 86 trillion yen, GC accounted for 33 trillion yen and SC for 54 trillion yen (Chart 19).

Most of the GC repo transactions are overnight transactions, while most of the SC transactions are longer than overnight transactions (Chart 19). As for the SC transactions, the underlying reason seems to be that both securities companies, who have short positions of securities, and institutional investors, who have securities portfolios, have a desire to secure steady counterparties for investment or financing of securities.

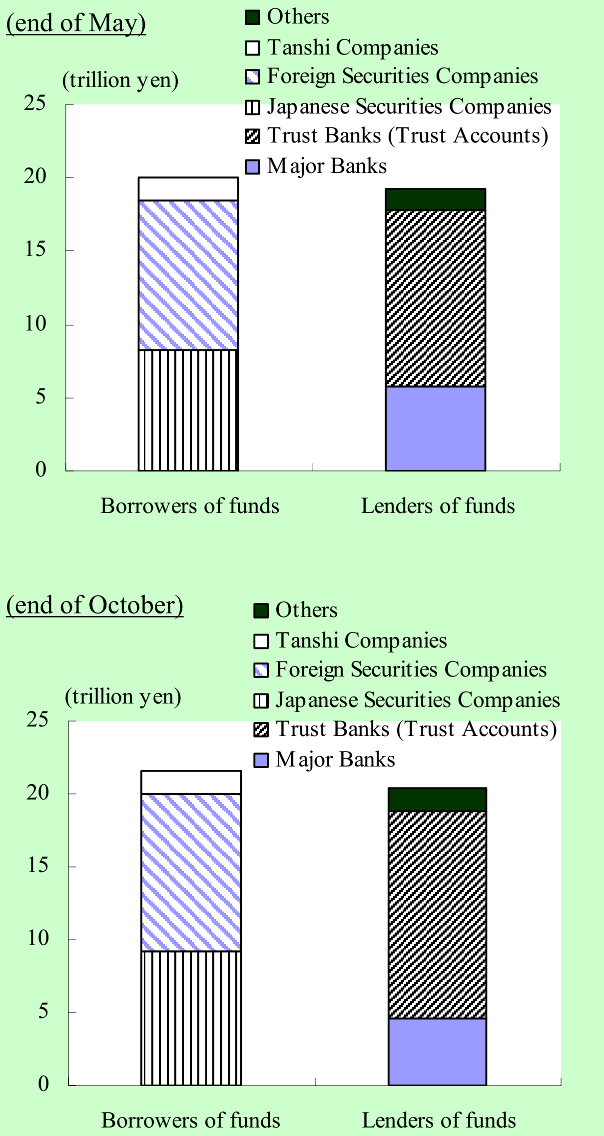
According to the positions in which the outstanding of borrowing and lending was netted out for each Counterparty and then summed up, in the GC repo market which is mainly used to borrow or lend funds, major banks accounted for a little more than 20 percent and trust accounts of trust banks accounted for a little less than 70 percent of the lenders. Compared with the uncollateralized call market where regional banks and insurance companies are also primary lenders, no major changes since the previous survey have been observed in repo markets where the roster of lenders is still not well diversified. On the other hand, the primary borrowers continue to be securities companies (Chart 20). Although the arbitrage transactions between repo markets and other money markets such as the uncollateralized call market have increased compared with before summer 2006, as mentioned in part 1, the number of participants in the repo markets has not significantly increased. This is mainly because those who are conducting arbitrage transactions are financial institutions such as major banks and overseas financial institutions which are not new entrants into repo markets (Chart 24, shown later).

Chart 19: Composition of Amounts Outstanding of Repo by Maturities at the End of October 2006



Note: Figures include round numbers reported by financial institutions which do not administer strictly their repo transaction volume classified by GC and SC transactions after the deal.
Source: Bank of Japan, "Survey on money markets"

Chart 20: Amounts Outstanding in the GC Repo Market



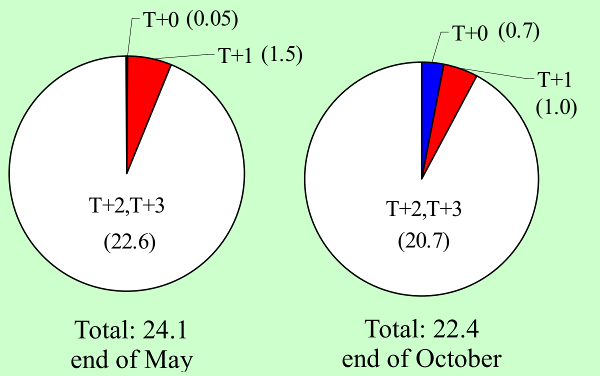
Note: The amounts are on a net basis of borrowing and lending in each company.
Source: Bank of Japan, "Survey on money markets"

Repo transactions on a T+0 settlement basis have increased.

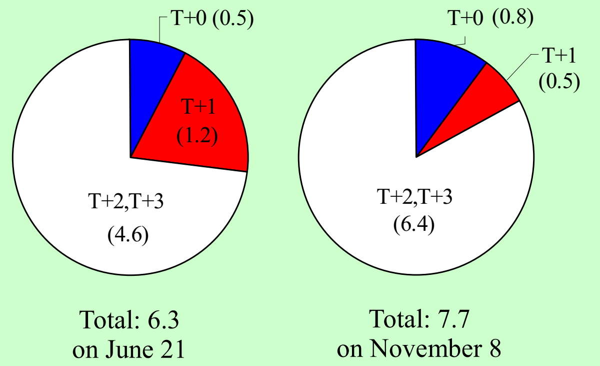
In terms of the outstanding amount of the GC repo overnight transactions classified by settlement date, those on a T+0 settlement basis continue to grow in size, although the portion is small (Chart 21). Some of the market participants mention that the liquidity of repo transactions on a T+0 settlement basis has gradually increased. Primary fundraisers in repo transactions on a T+0 settlement basis are securities companies since they prefer fundraising in the T+0 market where the interest rate is likely to be lower than that of T+2 or T+3. On the other hand, city banks and trust banks are primary lenders and they are aware that the interest rate of repo transactions on a T+0 settlement basis tends to be higher than those of the uncollateralized call market and the collateralized call market. The increase in repo transactions on a T+0 settlement basis could be considered a reflection of the increase in flow of funds and arbitrage transactions between the repo markets and other money markets.

Chart 21: Composition of Overnight GC Repo Transactions

(a) Amounts outstanding of the lending of funds by the Counterparties (figures in trillion yen)



(b) Amounts of overnight GC repo transactions through *tanshi* companies (figures in trillion yen)



Note: Figures on (b) are the sum of the borrowing and the lending.
Source: Bank of Japan, "Survey on money markets"

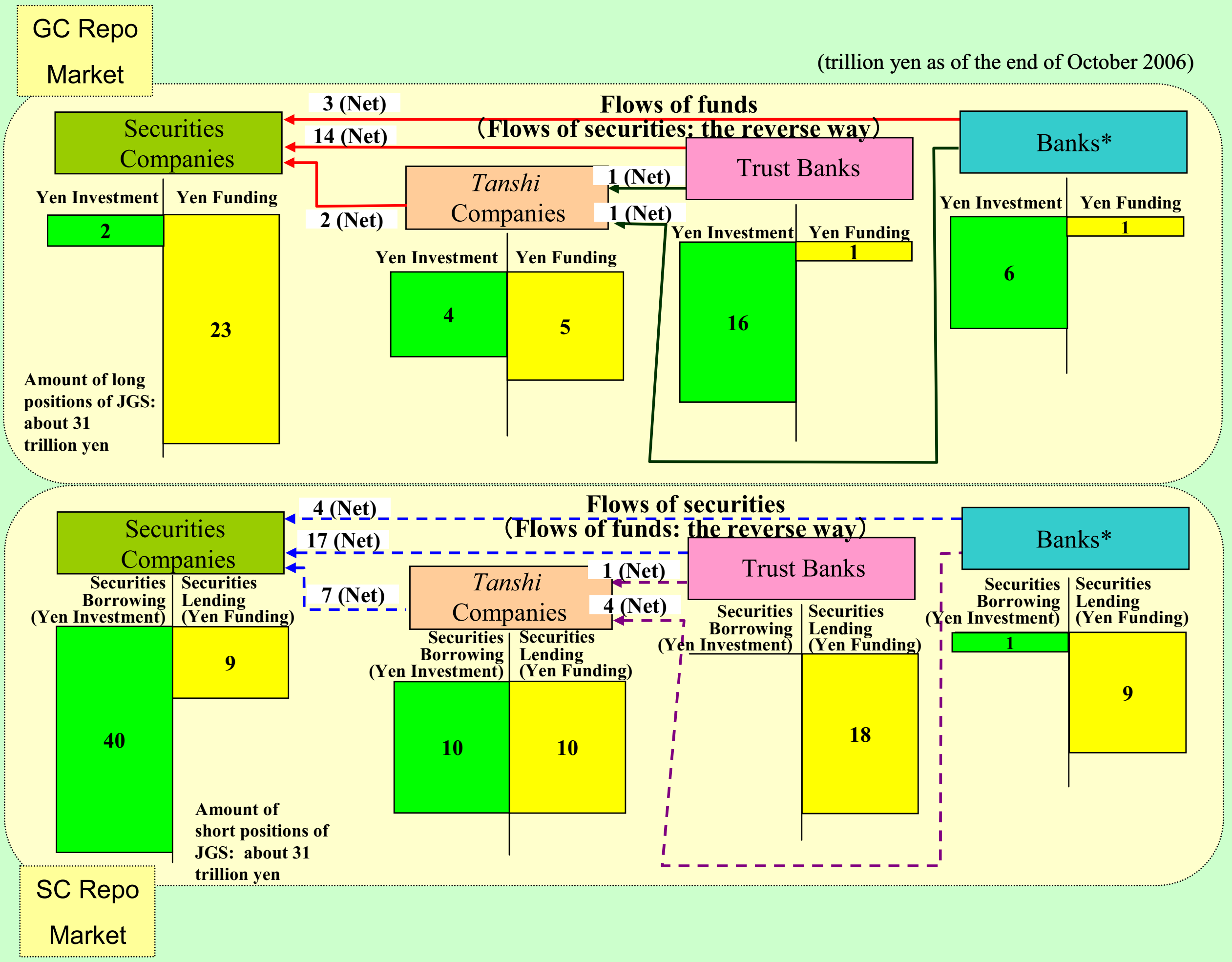
Structure of repo markets classified by lenders and borrowers

The features of the structure of repo markets (classified in terms of between which market participants and how the transactions are conducted in each sector) are as follows (figures are as of the end of October 2006, Chart 22).

- Securities companies hold about 31 trillion yen of both long positions and short positions of JGSs. They finance most of their long positions and obtain securities for covering their short positions through the repo markets.

- Trust banks (17 trillion yen), banks (mainly city banks, 4 trillion yen), and *tanshi* companies (intermediaries in money markets, 7 trillion yen), are primary lenders of securities to

Chart 22: Structure of Repo Markets



Note 1: "Banks" includes city banks, regional banks and foreign banks.
2: "Trust Banks" includes banking accounts and trust accounts of trust banks.

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

securities companies through the SC repo market. *Tanshi* companies borrow securities from banks and trust banks and lend the securities to securities companies.

- Trust banks (14 trillion yen), banks (mainly city banks, 3 trillion yen), and *tanshi* companies (2 trillion yen) are also primary lenders of funds to securities companies through the GC repo market. *Tanshi* companies borrow funds from banks and trust banks and lend the funds to securities companies.
- Trust banks (mainly securities trust) lend the securities which they already hold as investment assets and receive funds as cash collateral through the SC market, and invest the funds through the GC market. The trust banks often contract GC agreements and SC agreements with the same counterparties at the same time.
- Banks lend securities through the SC repo market and invest funds through the GC market as well. However, the banks are likely to invest funds comparing the interest rate of the GC repo market with that of other money markets such as the call market, and thus the banks, unlike trust banks stated above, contract GC agreements and SC agreements separately.
- *Tanshi* companies have substantial outstanding amounts of lending and borrowing in both the GC and SC markets since they virtually play an intermediary role among securities companies, trust banks and banks.
- However, in terms of individual financial institutions, the only participants who actively conduct the repo transactions, except securities companies, are three or four banks and three or four trust banks and three *tanshi* companies. Insurance companies and regional banks conduct a small amount of securities lending through the SC market, and few of them conduct GC repo transactions (Chart 24, shown below). Also, most of the participants except *tanshi* companies focus on either lending or borrowing in either of the GC and SC markets, and thus only a few participants have substantial outstanding amounts of both lending and borrowing.

Development of the necessary operational arrangements for repo transactions

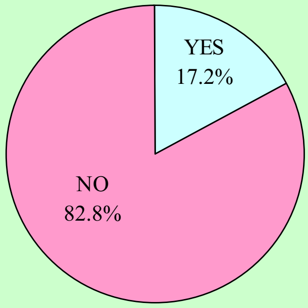
According to the results of the survey on the development of necessary operational arrangements for repo transactions of the Counterparties, less than 20 percent of the Counterparties answered that they had conducted or reinforced their operational arrangements during the last six months (Chart 23). Also, less than 20 percent of the Counterparties answered that the number of trade opponents had increased significantly or to some extent.

In addition, less than 40 percent of all the Counterparties had outstanding amounts of GC repo transactions either at the end of July 2006 or October 2006 (Chart 24). There are few participants from regional banks and insurance companies.

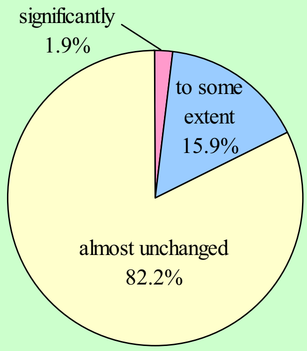
The Bank asked why the Counterparties did not use the GC repo market so much. The number of answers that the interest rate for investment was too low compared to the costs of arrangements and operations was the largest of all answers (Chart 25). Not a few Counterparties answered "others", and many of them answered that they prefer using other markets such as the uncollateralized call market rather than repo markets which require operational costs, and that necessary operational arrangements (including reorganization, staffing, and investment in information technology) had not been made.

Chart 23: Development of the Necessary Operational Arrangements for Repo Transactions

Q. 1: During the last six months, did your institution conduct/reinforce operational arrangements for repo transactions such as increasing employees in charge, making IT investment, or reorganizing front/back office?



Q.2: During the last six months, to what extent did your institution increase the number of counterparties for GC repo transactions?



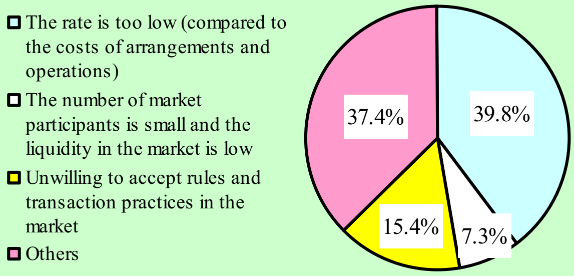
Source: Bank of Japan, "Survey on money markets"

Chart 24: Composition of the Counterparties Which Had Amounts Outstanding of GC Repo Fundraising or Investment at the End of July or October 2006

	Number of Counterparties	Number of Counterparties which had amounts outstanding of GC repo	Percentage (%)
Major Banks	8	6	75
Trust Banks	10	4	40
Regional Banks	76	6	8
Shinkin Banks	9	0	0
Foreign Banks	14	7	50
Securities Companies	26	25	96
Tanshi Companies	3	3	100
Life Insurance Companies	8	2	25
Total (including others)	162	57	35

Note: "Trust Banks" include banking accounts of all trust banks and trust accounts of a portion of trust banks.
Source: Bank of Japan, "Survey on money markets"

Chart 25: Reason of Rarely Using or Not Using the GC Repo Market



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

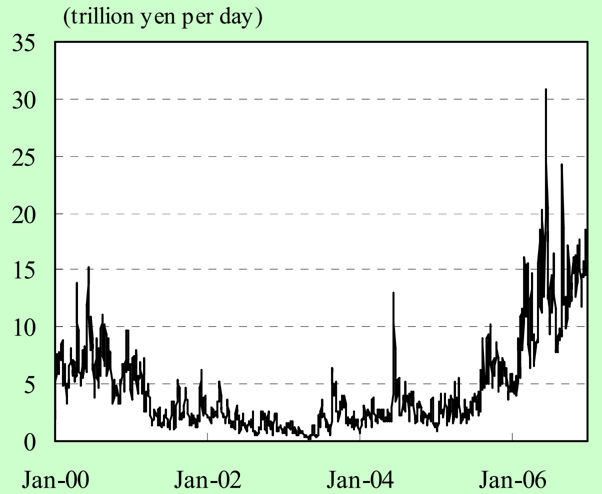
To sum up, it seems that the functions of the market as a whole have improved further: arbitrage transactions by major banks such as city banks between repo markets and other markets have become active, and the repo market on a T+0 settlement basis has grown. However, the roster of lenders of the repo markets is still not well diversified compared with that of the uncollateralized call market. Some market participants such as regional banks and insurance companies continue to be conscious of the costs for making arrangements and operation in the repo markets. Based on these things, market participants continue to perceive that repo rates tend to rise and become volatile from time to time, such as in December 2006 when repo rates rose compared to the uncollateralized call rate mainly due to the year-end factor as mentioned in part 1.

(4) Derivative markets for short-term interest rates

Derivative transactions of short-term interest rates have been continuously growing. The trading volume of euroyen futures has been showing an upward trend with some fluctuation (Chart 26). Also, OIS transactions, which are conducted on the basis of expectations of overnight interest rates, have rapidly been increasing recently (Chart 27).

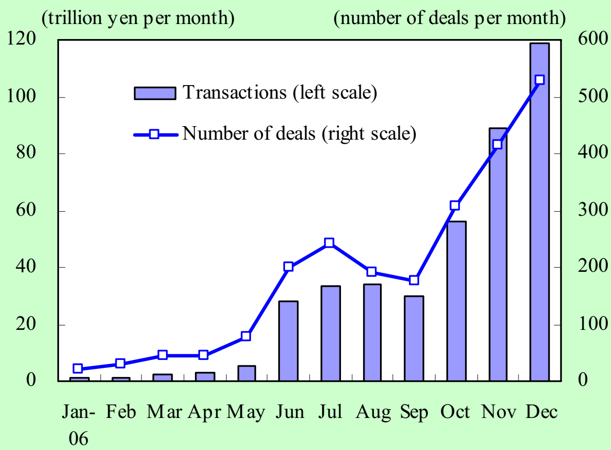
However, the participants in money market derivative transactions are limited to major banks, securities companies, and overseas financial institutions and the scale of the market is smaller than that of the U.S. and Europe. The market participants are almost entirely limited to a small group of overseas financial institutions and thus the roster of participants is not diversified in the OIS market. In the survey, the Bank asked to what extent the Counterparties were practically using the OIS market. Only just over 10 percent of the Counterparties, mainly foreign banks and securities companies, answered that they were using the market daily or had experience of using it (Chart 28). Also, about 10 percent of the Counterparties, mainly major banks and securities companies, answered that they were preparing to begin transactions.

Chart 26: Trading Volume of Euroyen Futures



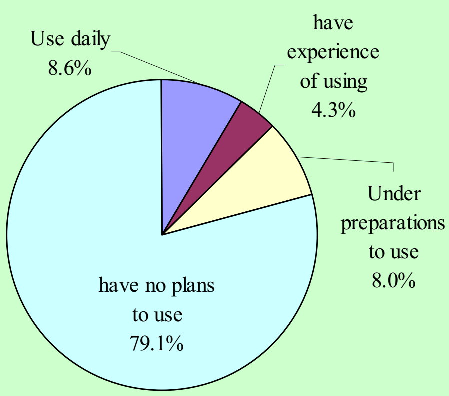
Note: 5 business days' backward moving average of the sum of traded amounts for all contracts.
Source: Tokyo Financial Exchange

Chart 27: OIS Transactions through Brokers



Source: Money Brokers Association, Tokyo

Chart 28: Usage of OIS Transactions



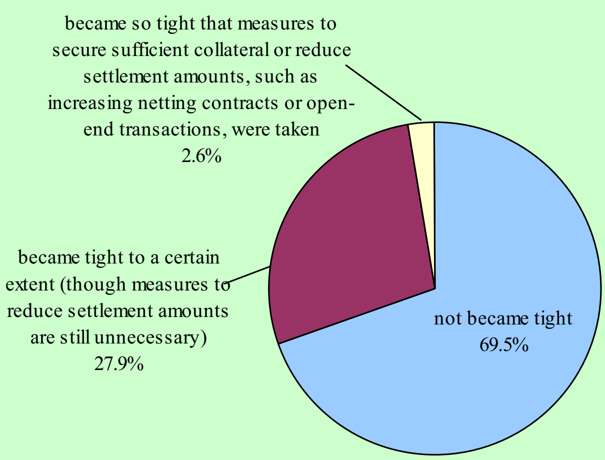
Source: Bank of Japan, "Survey on money markets"

(5) Intraday Liquidity and Intraday Call Market

The need for intraday liquidity of the Counterparties seems to have increased to a certain extent since the use of the overdraft facility of the Bank has been increasing, along with the conclusion of the quantitative easing policy and the reduction in the outstanding of current account balances at the Bank.

However, according to the answers from the Counterparties to the question as to what extent they had addressed the issues on intraday liquidity, very few of them replied that the supply-and-demand conditions for intraday liquidity had become so tight that they had taken measures to reduce settlement amounts, such as increasing netting contracts and open-end transactions during the last six months (Chart 29). This is because major banks and regional banks, both of which are major components of the Counterparties, already have a large amount of JGSs and thus could cope with the situation by using these JGSs. Thus, intraday call transactions have not been active so far. However, about 30 percent of the Counterparties, mainly securities companies and foreign banks, which did not have a large surplus of collateral, answered that supply-and-demand conditions for intraday liquidity had become somewhat tight (though they did not take measures to reduce settlement amounts). Also, around the end of 2006 when fundraising in the uncollateralized call market by foreign banks increased, some market participants increased the transactions whose repayment due was deferred from 10 AM to noon in order to reduce settlement amounts due to the so-called “practice of repayment before receiving funds”.

Chart 29: Changes in Supply-and-Demand Conditions for Intraday Liquidity after the Rise in the Policy Interest Rate in July 2006



Source: Bank of Japan, “Survey on money markets”

3. Conclusion

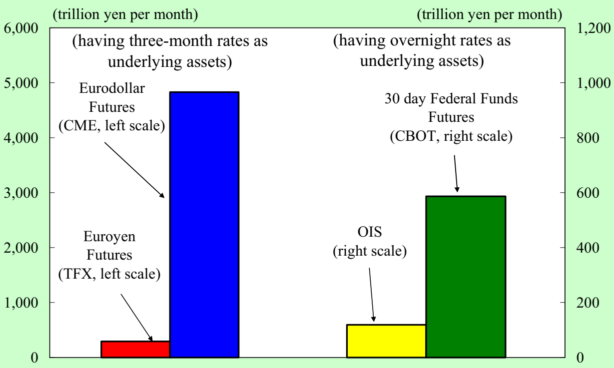
The functions of money markets have been steadily recovering after the rise in the policy interest rate in July 2006. The restoration of credit line networks in the uncollateralized call market has progressed further. The number of participants in the collateralized market has increased marginally. Although the proportion of transactions remains small, the GC repo market for transactions on a T+0 settlement basis has gradually grown. Also, arbitrage transactions between money markets, mainly by major financial institutions, have become active.

Under these circumstances, the following two points will be important for the time being, with a view to further increasing the number of market participants and liquidity of money markets, facilitating the arbitrage mechanism between money markets, and enhancing more efficient formation of interest rates.

First, more efficient collateralized markets have to be developed. The roster of lenders in repo markets is still not well diversified. This is because market participants continue to be conscious of costs for making the necessary operational arrangements and transaction costs due to managing and actually handling collateral. Although arbitrage transactions between the market and other money markets have gradually increased after the rise in the policy interest rate in July 2006, the repo rates tend to fluctuate compared with other interest rates, as was observed toward the end of 2006. The increase in participants in the collateralized call market has remained marginal since market participants are conscious that margin ratios for collateral are higher for fundraisers and the collateral in the collateralized call market is not marked to market but evaluated at face value. Since the outstanding amount of JGS issuance has increased and financial institutions have a large amount of JGSs, the need for secure fund transactions collateralized by JGSs is expected to increase. In order to further encourage efficient flow of funds throughout the market, it continues to be important to increase the liquidity of the collateralized market, although actual use of the market is a decision left to each individual participant.

Second, derivative transactions for short-term interest rates should be extended. As seen above, although transactions of interest rate futures and OIS have developed recently, the market participants are limited to major banks, securities companies, and overseas financial institutions, and the scale of the market is smaller than that of the U.S. and Europe (Chart 30). Especially, in the OIS market, the market participants are almost entirely limited to a small group of overseas financial institutions and thus the roster of participants has not been diversified partly because it was not until quite recently that it started to grow. It is expected that the liquidity of the market including arbitrage transactions between the market and other money markets will increase, and expectations for future interest rates of a broader range of market participants are reflected in the short-term interest rate derivative markets.

Chart 30: Trading Volume of Derivative Transactions for Short-Term Interest Rates in Dec. 2006



Source: Tokyo Financial Exchange, Chicago Mercantile Exchange, Money Brokers Association, Tokyo; Chicago Board of Trade

The functions of money markets are expected to keep improving autonomously in principle. However, due to the years of shrinkage in transactions, it shall take some time for each market participant to make necessary operational arrangements. It may also be necessary to reexamine the possibility of further enhancing the market infrastructure.

The Bank of Japan has a natural and legitimate interest in improving the functions of the money markets in order to encourage more stable interest rate formation and smoother market operations. The Bank will continue to support the autonomous development of money markets by exchanging views with market participants.

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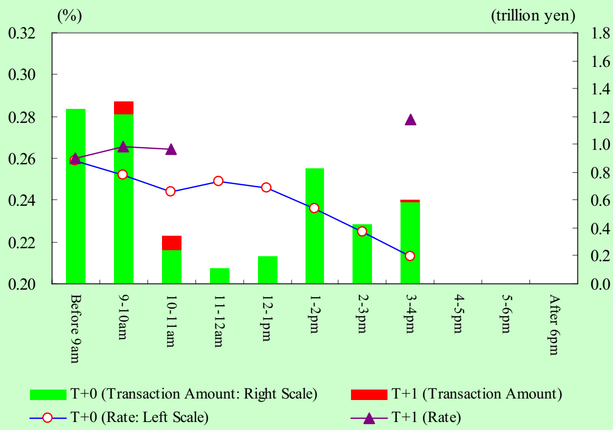
Imakubo K. and H. Chida [2006], “BOJ-NET Funds Transfers after the End of the Quantitative Monetary Easing Policy”, *Bank of Japan Review Series*, 06-E-5, Bank of Japan

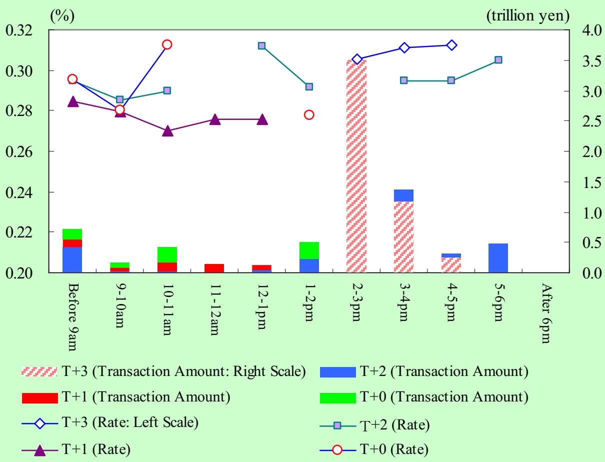
Reference Charts

Reference Chart 1: Uncollateralized Overnight Call Transactions through *Tanshi* Companies on November 8



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

Reference Chart 2: Overnight GC Repo Transactions through *Tanshi* Companies on November 8



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 JGSs are formally agreed on the following days.
Source: Bank of Japan, “Survey on money markets”