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Trends in and Challenges for the Money Market in Japan
—— Results of the Tokyo Money Market Survey (August 2012) ——

Financial Markets Department
Bank of Japan

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Results of the Tokyo Money Market Survey (August 2012)

Contents

Note: This paper is based essentially on the information available at the end of November 2012.

▽ Number of Respondents in the Tokyo Money Market Survey (August 2012)

		2010 survey	2012 survey
Total respondents		190	234
	Eligible counterparties in the Bank of Japan's money market operations	172	211

Note: In addition to the eligible counterparties in the Bank of Japan's money market operations, some of the major life insurance companies, general insurance companies and major asset management companies participated in the survey.

I. Introduction: Overview of the Tokyo Money Market Survey

In August 2012, the Financial Markets Department of the Bank of Japan conducted the third Tokyo Money Market Survey to identify developments in the Japanese money market and confirm how a number of market-related issues were being addressed. This paper's review is based on the results of the survey.

The first survey, conducted in August 2008, reviewed the impact on the Japanese money market of the subprime housing loan problem and the Lehman shock, which occurred immediately after the questionnaires were collected, and pointed in particular to issues arising in the repo market. The second survey, conducted in August 2010, reviewed developments in the money market about two years after the Lehman shock, and confirmed that market participants had made progress in addressing the issues identified in the first survey.

This third survey investigated developments as of the end of July 2011 and 2012, focusing on the amounts outstanding of call and repo transactions. The number of respondents in the survey increased dramatically from the previous survey, to 234 from 190. Likewise, the number of eligible counterparties in the Bank's money market operations rose significantly (to 211 from 172), and major general insurance companies, which are not eligible counterparties in the Bank's money market operations, participated in the survey for the first time.

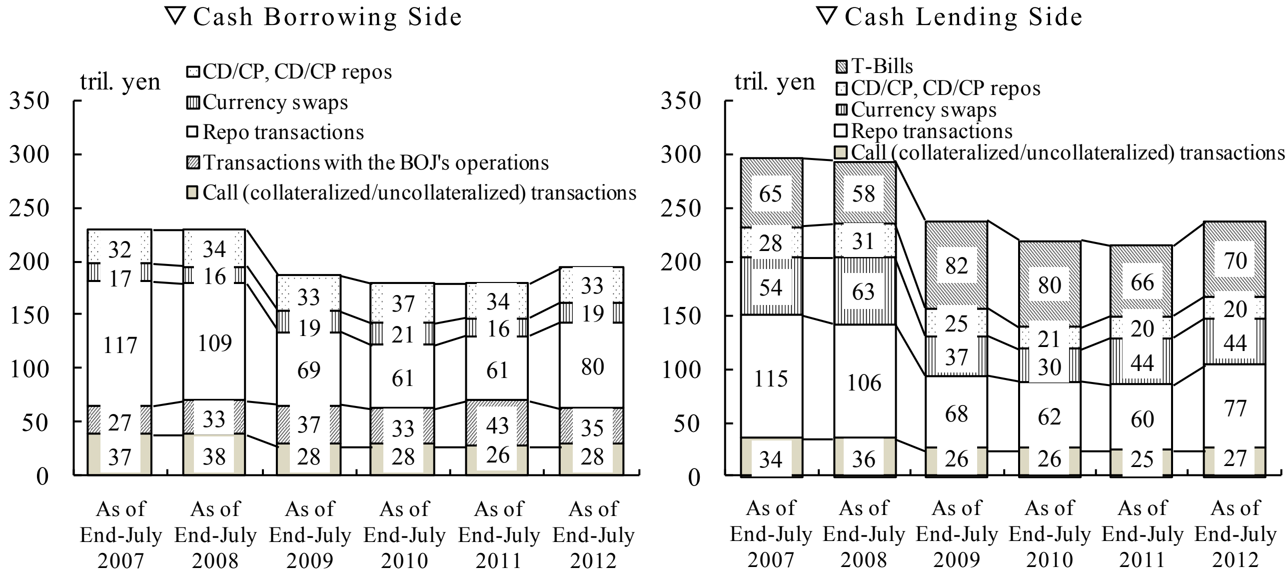
This paper comprises the following: Section 2 reviews developments in the money market, focusing on developments since the previous survey, by exploring market trends in each market and market participants' attitudes toward money market transactions. Section 3 reviews how issues in the money market are being addressed. In addition to the issues such as the widespread adoption of the fails practice for Japanese government bonds (JGBs), the shortening of the payment and settlement period for JGBs, and the improving robustness and participation of central clearing of JGBs, all of which have been recognized as market-wide issues in light of the experience of the Lehman shock, this survey explored efforts to enhance the effectiveness of the business continuity plan (BCP) for money market transactions, whose importance has been recognized increasingly since the Great East Japan Earthquake. Lastly, Section 4 sums up the findings obtained from this survey.

II. Developments in the Money Market

A. Overview

The amounts outstanding in the money market remained flat, while short-term interest rates, including term rates, remained stable at a low level reflecting ample liquidity provision by the Bank, after showing a significant decrease following the Lehman shock. The volume has recently grown, mainly because of the increase in repo transactions, while it is still at a level below that prevailing prior to the Lehman shock (Chart 1).

Chart 1: Amounts Outstanding in the Money Market



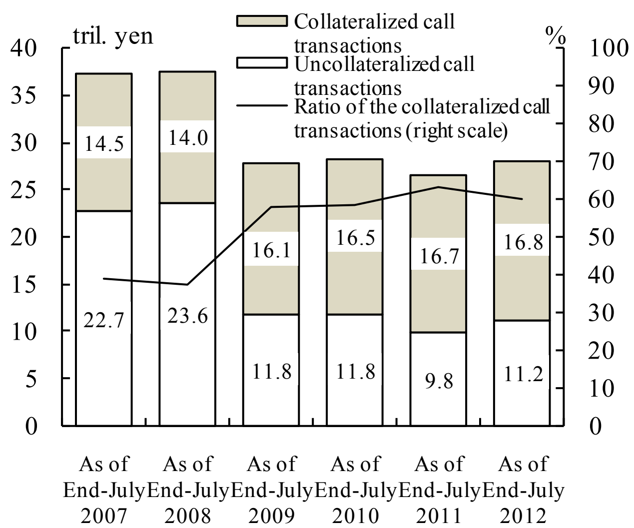
Note: Among call transactions, the figures for uncollateralized call transactions are calculated as total transactions through *tanshi* companies and non-group direct dealing (DD) transactions. The source of data on transactions through *tanshi* companies is "Amounts Outstanding in the Call Money Market" by the Bank of Japan (the same applies hereafter).

B. Call Market

1. Overview

After showing a significant decrease following the Lehman shock, the amounts outstanding in the call market (the collateralized and uncollateralized call markets) generally remained at a low level (Chart 2). There were two main findings. First, the amounts outstanding in the uncollateralized call market declined significantly immediately after the Lehman shock, mainly because foreign banks faced difficulties in raising funds due to increased caution regarding counterparty risks. Thereafter, amounts generally remained flat at a low level as perceptions of the abundance of liquidity remained strong due to the Bank's provision of ample funds. Second, the amounts outstanding in the collateralized call market increased right after the Lehman shock, mainly because regional banks and regional banks II shifted a significant portion of their investing funds to the collateralized call market, reflecting their preference for relatively safe investment. Thereafter, they remained virtually flat. The ratio of the volume of the collateralized call market to the total volume of call markets increased sharply right after the Lehman shock and subsequently remained at around 60%.

Chart 2: Amounts Outstanding in the Call Market and the Ratio of the Collateralized Transactions



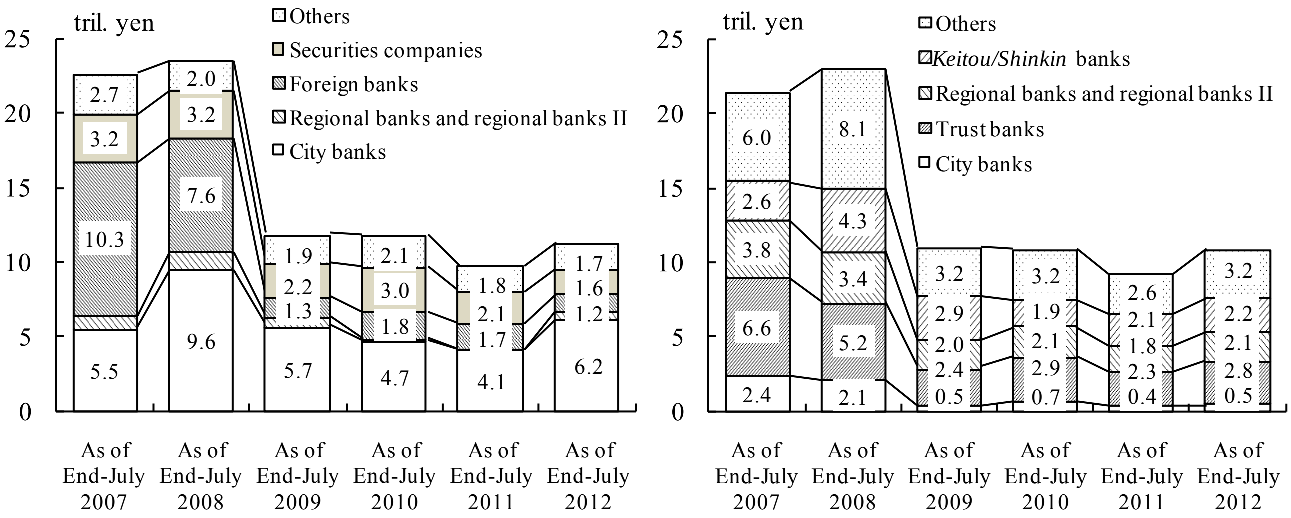
Note: Cash borrowing side.

2. Uncollateralized Call Market

The amounts outstanding in the uncollateralized call market have generally remained flat at a low level since the previous survey, as perceptions of the abundance of liquidity remained strong due to the Bank's provision of ample funds (Chart 3). By sector, it can be noted that over the past year or so the share of city banks, the largest cash borrowing sector in the market, increased further. It appears that efforts in the sector to increase the funding amount, mainly through term transactions, to diversify counterparties and activate the uncollateralized call market contributed to the increase. The size distribution of market participants by sector on the cash lending side has not changed significantly since the previous survey.

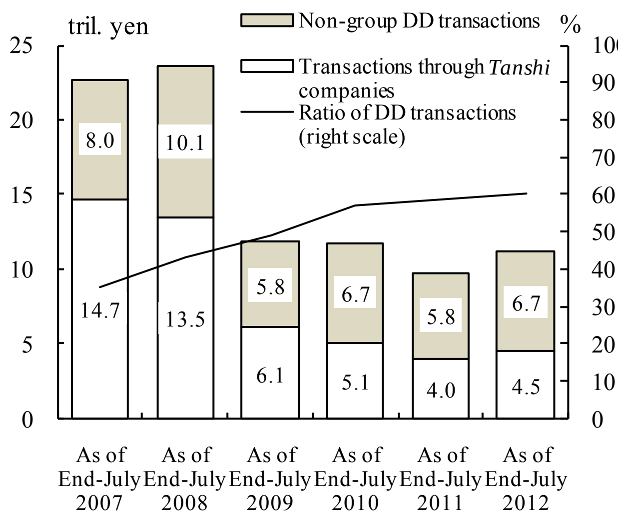
Chart 3: Amounts Outstanding in the Uncollateralized Call Market

▽Cash Borrowing Side ▽Cash Lending Side



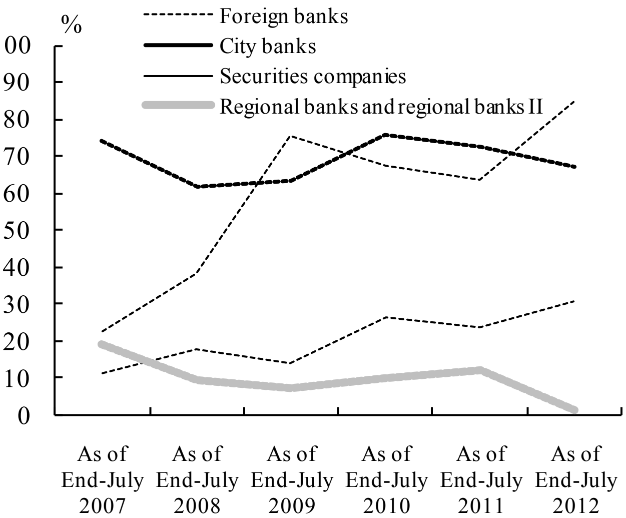
A review of transaction type broken down into transactions through *tanshi* companies (money market brokers) and direct dealing transactions outside the group (DD transactions) shows that the share of the amounts outstanding of the DD transactions to the total (hereafter the "ratio of DD transactions") has continued to rise gradually since the previous survey and recently reached about 60% (Chart 4). A major reason behind this trend includes the fact that city banks, with their relatively higher ratio of DD transactions, increased their share of fundraising, while the share of regional banks and regional banks II, with their relatively lower ratio, decreased. By sector, we can see that the ratio of DD transactions (on the cash borrowing side) of foreign banks rose as their volume of funding in the uncollateralized call market showed a sharp decline right after the Lehman shock, while the ratio of regional banks and regional banks II recently declined to around 0% (Chart 5). The ratio of city banks generally remained at around 70%.

Chart 4: Amounts Outstanding in the Uncollateralized Call Market and Ratio of DD Transactions



Note: Cash borrowing side.

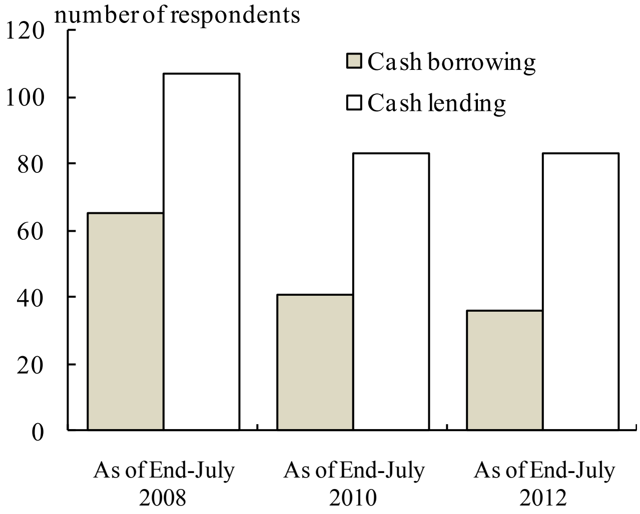
Chart 5: Ratio of DD Transactions by Sector



Note: Cash borrowing side.

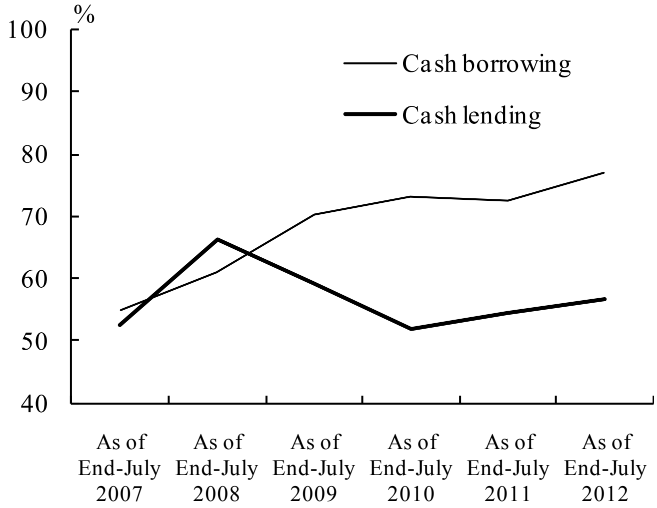
With regard to the participation of financial institutions in the uncollateralized call market, the number of cash lenders has generally remained flat since the previous survey after showing a significant decrease right after the Lehman shock. The share of the amounts outstanding held by the top 10 players on the cash lending side in terms of the balance has remained at about 50% since the previous survey. On the other hand, the number of cash borrowers continued to decline gradually after the Lehman shock, and the share of the amounts outstanding held by the top 10 participants, most of which are city banks, continued to increase and recently reached nearly 80% (Charts 6 and 7). To sum up, in the uncollateralized call market, the decrease in the number of cash lenders seems to have come to a halt, while such a declining trend on the cash borrowing side remains, demonstrating that the influence of city banks and other major players on the market continues to grow.

Chart 6: Number of Participants in the Uncollateralized Call Market



Note: Number of respondents covered by the survey since 2008 (excluding *tanshi* companies and asset management companies) for which the amounts outstanding of uncollateralized call transactions can be confirmed at each point in time (excluding intragroup DD). Adjusted for the impact of mergers between financial institutions.

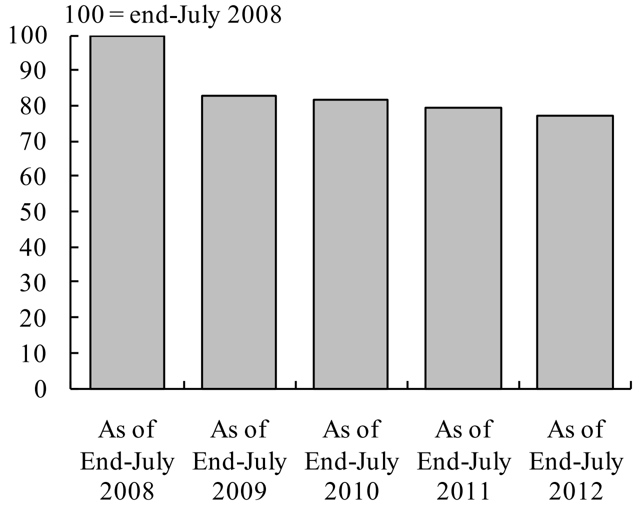
Chart 7: Share of the Amounts Outstanding Held by the Top 10 Market Participants



Note: The categories are the same as in Chart 6.

Immediately after the Lehman shock, credit lines for uncollateralized cash lending transactions declined sharply reflecting the heightened caution about counterparty risks among Japanese financial institutions. This survey examined changes in the number of credit lines established for such uncollateralized cash lending transactions, and found that a very gradual movement toward reduction continued, while the abrupt narrowing-down seen immediately after the Lehman shock had not been observed since then (Chart 8). Concerning these recent trends, some market participants that had reduced their credit lines since the previous survey stated, "We adjusted the number of credit lines according to the trade records, as the number of cash borrowers in the uncollateralized call market has declined and is not expected to rebound for the time being."

Chart 8: Number of Credit Lines Established



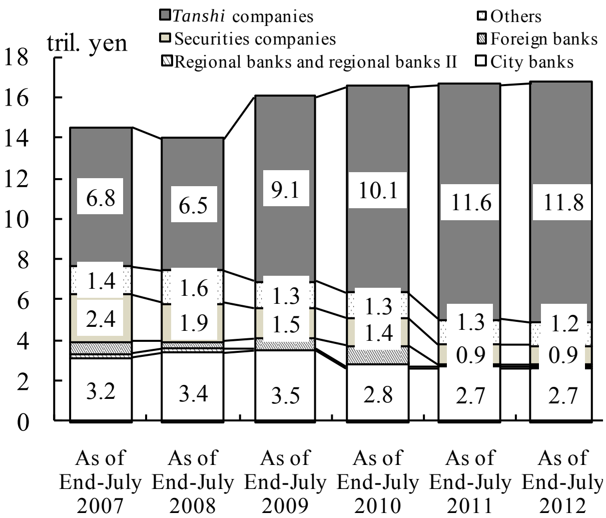
Note: Number of respondents whose total number of credit lines established can be confirmed for all years from 2008 to 2012.

3. Collateralized Call Market

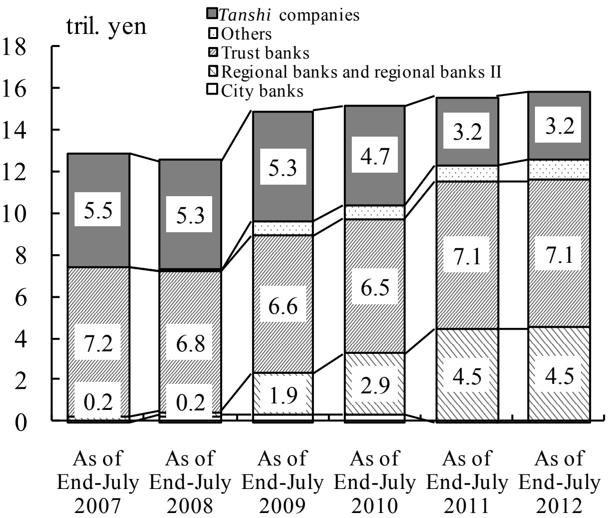
The amounts outstanding in the collateralized call market generally remained flat after increasing significantly immediately following the Lehman shock (Chart 9). The trend in the trade volume share of major cash lenders by sector since the previous survey shows that regional banks and regional banks II have continued to increase their trade volume reflecting a preference for a relatively safe investment, while cash lending activities by *tanshi* companies have decreased. On the cash borrowing side, the trade volume share of *tanshi* companies has increased significantly while those of other sectors, such as city banks and securities companies, have continued to decrease. As just described, in the collateralized call market, in a situation where there exists a mismatch between supply and demand, *tanshi* companies compensated for the mismatch by increasing the net funding amount in the market and the cash lending amount in other markets. This trend was also observed under the Bank's quantitative easing policy from 2002 to 2006.

Chart 9: Amounts Outstanding in the Collateralized Call Market

∇ Cash Borrowing Side

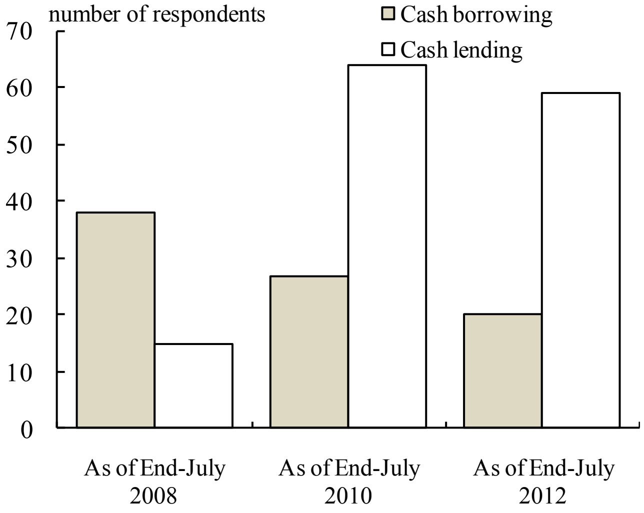


∇ Cash Lending Side



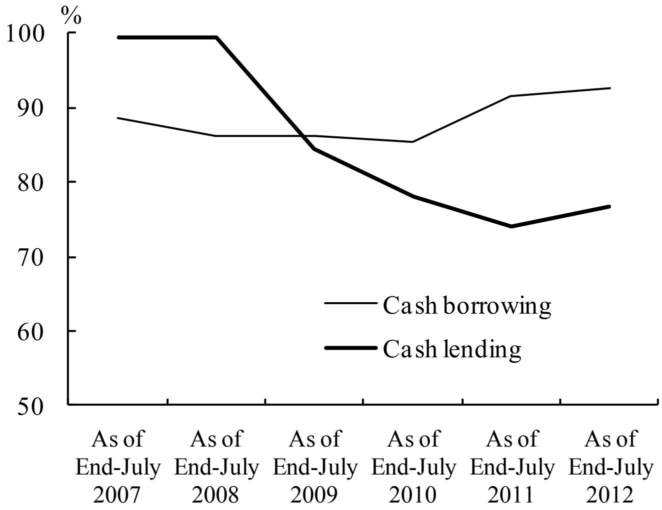
With regard to the participation of financial institutions in the collateralized call market, the number of cash lenders has remained at around 60 since the previous survey after increasing significantly following the Lehman shock, partly because regional banks and regional banks II entered the market. In these circumstances, the share of the amounts outstanding held by the top 10 players on the cash lending side, most of which are trust banks, declined to 70% from the 100% prevailing prior to the Lehman shock. On the other hand, the number of cash borrowers has continued its gradual decline since the Lehman shock, similar to the pattern in the uncollateralized call market, and the share of the amounts outstanding held by the top 10 players, most of which are city banks, has increased to exceed 90% (Charts 10 and 11). As just described, the number of cash lenders in the collateralized call market increased after the Lehman shock as they sought an opportunity to invest short-term funds, but the number of cash borrowers has continued to fall.

Chart 10: Number of Participants in the Collateralized Call Market



Note: Number of respondents covered by the survey since 2008 (excluding *tanshi* companies and asset management companies) for which the amounts outstanding of collateralized call transactions can be confirmed at each point in time. Adjusted for the impact of mergers between financial institutions.

Chart 11: Share of the Amounts Outstanding Held by the Top 10 Market Participants



Note: The categories are the same as in Chart 10.

C. Repo Market[1]

1. General Collateral (GC) Repo Market

Although the amounts outstanding in the GC repo market continued to fall after the Lehman shock, mainly because of reduced inventory financing activities among securities companies, they have recently increased significantly (Chart 12). With regard to recent trends by sector share, the amounts outstanding of funds raised expanded among securities companies, which are the major players on the cash borrowing side. On the cash lending side, the amounts outstanding of investments is increasing for all categories including trust banks, which have the largest share. A number of market

[1] In this paper, the market for cash-collateralized securities lending transactions (so called *gentan* repo) and securities repurchase transactions (so called *gensaki* repo) is called the "repo market."

participants pointed out that a factor behind this increase in the amounts outstanding in the GC repo market was that the fundraising methods of securities companies are shifting from the Bank's money market operations to GC repos. More specifically, many market participants commented, "As money market operations with longer durations increased under the Bank's comprehensive monetary easing policy, we reduced fundraising activities through the Bank's money market operations and increased those through GC repo transactions to use collateral more efficiently." In fact, while the amounts outstanding of the variable-rate funds-supplying operations with relatively short durations decreased, the amounts outstanding of repo transactions increased (Chart 13).

Chart 12: Amounts Outstanding in the GC Repo Market

▽Cash Borrowing Side ▽Cash Lending Side

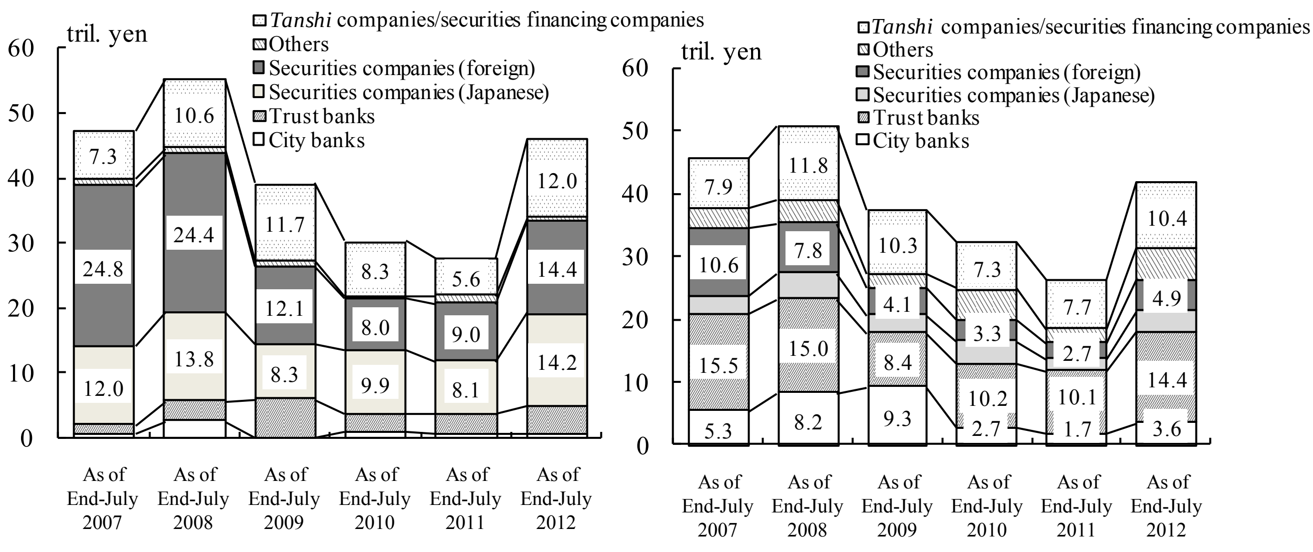
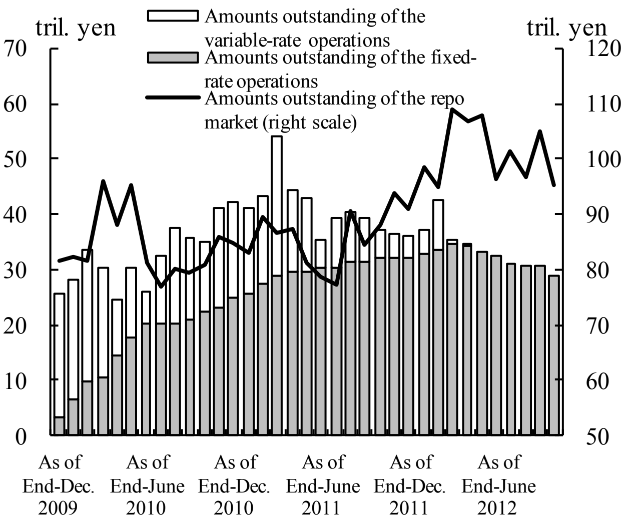


Chart 13: Amounts Outstanding of the Variable-Rate/ Fixed-Rate Operations and the Amounts Outstanding in the Repo Market

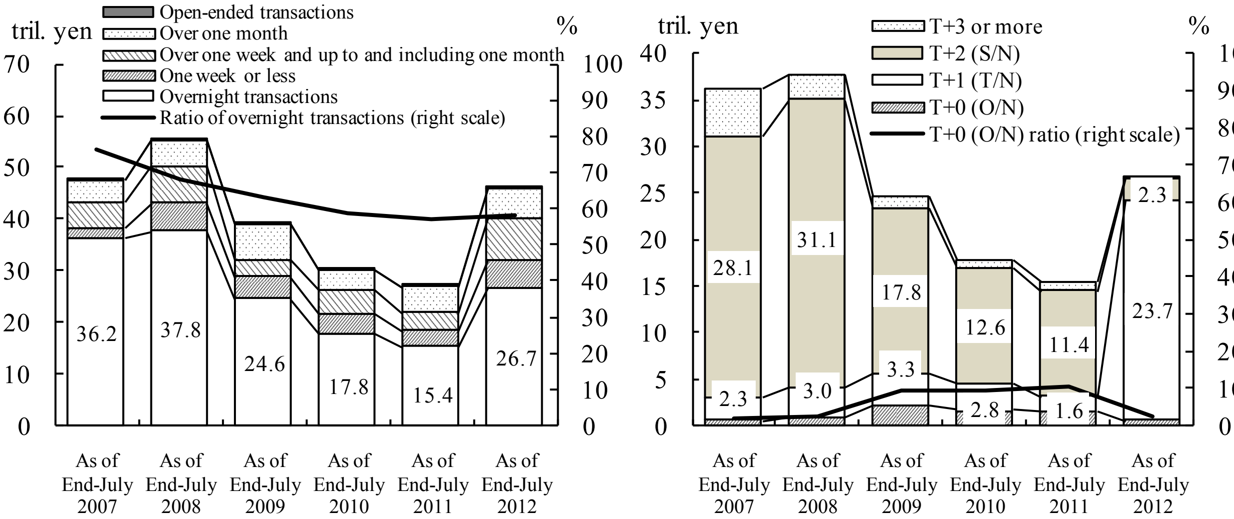


Sources: Bank of Japan, "Sources of Changes in Current Account Balances at the Bank of Japan Market Operations (Final Figures)"; Japan Securities Dealers Association, "Balance of Bond Transactions with Repurchase Agreements (By Investor Type)," "Bond Margin Loans".

With regard to the amounts outstanding of GC repo transactions by maturity of transaction, overnight transactions still account for around 60% and term transactions account for around 40%, as in the previous survey. Furthermore, with regard to the breakdown of overnight transactions by start date, as the settlement cycle for JGB outright purchases was shortened in April 2012 by one day, from a T+3 basis to a T+2 basis, the settlement cycle for most of the overnight GC repo trades was also shifted from a T+2 basis to a T+1 basis (Chart 14). The percentage of T+0 basis transactions decreased during this period. By way of background, several market participants commented, "In terms of funding costs, T+0 basis transactions are no longer advantageous compared with forward-dated transactions since the GC repo rates remain stable at a low level. This lower incentive and liquidity risk management requirements led us to conclude adjustments of cash positions earlier than before."

Chart 14: Amounts Outstanding of GC Repo Transactions by Term

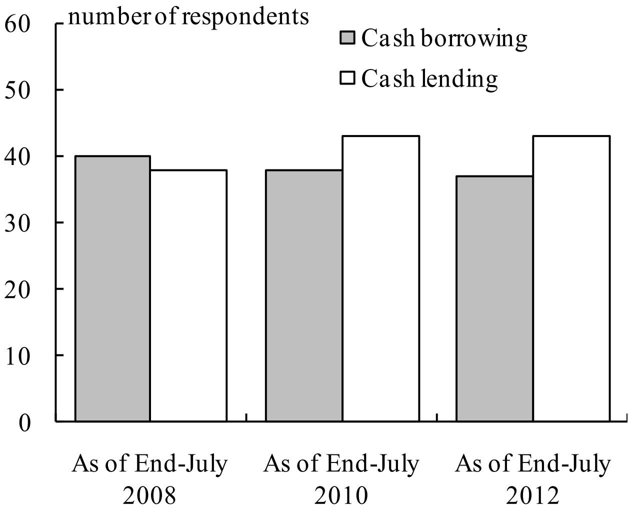
∇ By Term ∇ By Start Date of Overnight Transactions



Note: Cash borrowing side.

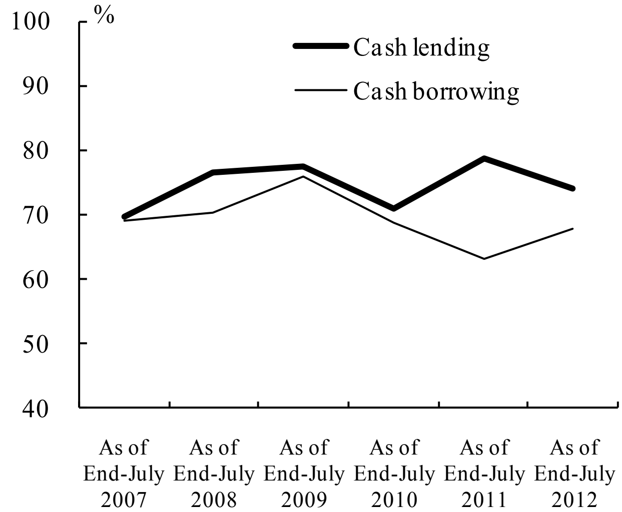
With regard to the participation of financial institutions in the GC repo market, the numbers of both the cash borrowers and the cash lenders have remained relatively stable at around 40, including during the period immediately before and after the Lehman shock (Chart 15). In this context, the share of the amounts outstanding held by the top 10 players in terms of the balance, most of which are major securities companies on the fund borrowing side and trust banks on the lending side, remained stable at around 70% on both sides (Chart 16). Thus, in the GC repo market, although the amounts outstanding of transactions fell significantly after the Lehman shock, the structure of market participants has not changed notably in terms of the participation of financial institutions.

Chart 15: Number of Participants in the GC Repo Market



Note: Number of respondents covered by the survey since 2008 (excluding *tanshi* companies, asset management companies, and some securities companies) for which the amounts outstanding of GC repo transactions can be confirmed at each point in time. Adjusted for the impact of mergers between financial institutions.

Chart 16: Share of the Amounts Outstanding Held by the Top 10 Market Participants

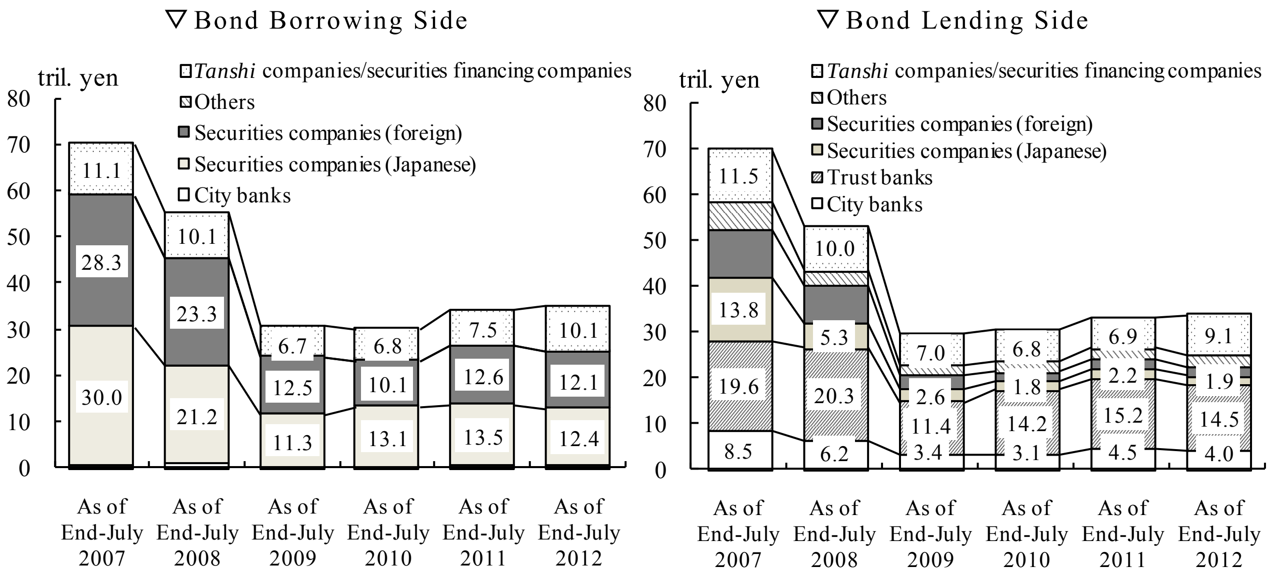


Note: The categories are the same as in Chart 15.

2. Special Collateral (SC) Repo Market

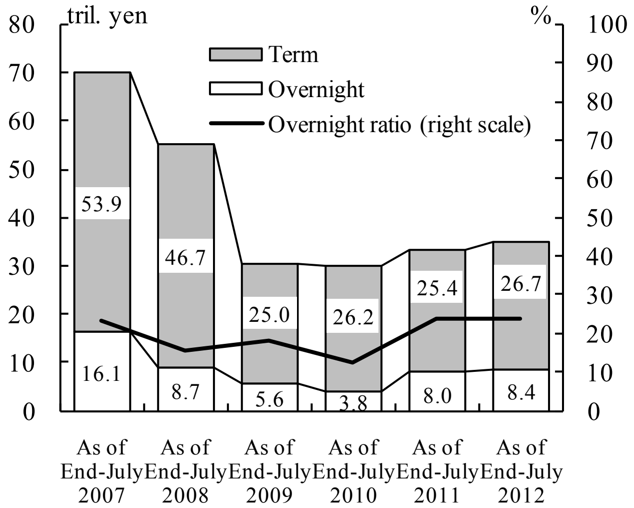
The amounts outstanding in the SC repo market have remained more or less flat at around 30 trillion yen since 2009 after a significant decrease in bond borrowing transactions to cover short positions due to the large fall in JGB outright purchases after the Lehman shock (Chart 17). By sector share, no drastic change has been seen in the share of the balance of transactions since the previous survey, either on the bond borrowing side or the bond lending side. Thus, securities companies that need to cover short positions when carrying out JGB outright purchases and others at the client's request hold a majority share in the amounts outstanding of bond borrowing. On the other hand, on the bond lending side, trust banks that need to invest in JGBs for securities trusts hold a large market share. In connection with recent trends in the SC repo market, some trust banks, which are the major entities involved in bond lending, commented, "Although we have maintained the investment utilization rate of JGBs held as trust assets by maintaining the amounts outstanding of SC repos, the profitability of investments has declined, as securities companies' demand for bond borrowing through the SC repos remains weak."

Chart 17: Amounts Outstanding in the SC Repo Market



By maturity of transaction, term transactions continue to play a central role in SC repo transactions (Chart 18). This partly reflects strong demand to reduce the rollover burden from the bond borrowing side (from securities companies in particular) and steadfast demand from the bond lending side (particularly from trust banks) for bond lending with longer durations to correspond to lengthening of the fund lending period, given that short-term interest rates -- including term rates -- remain stable at a low level. However, the percentage of overnight transactions is slightly higher than it was at the time of the previous survey. By way of background, many securities companies, which are major players in bond borrowing, commented, "As borrowers of bonds, we procure bonds flexibly according to our bond short positions by shortening the maturity of trades, as many issues and a high volume of bonds continue to be available from trust banks." Some trust banks, which are major players in bond lending, commented, "We essentially prefer term transactions given their high profitability and low administrative burden, but we accept overnight bond lending to accommodate securities companies' needs for the time being."

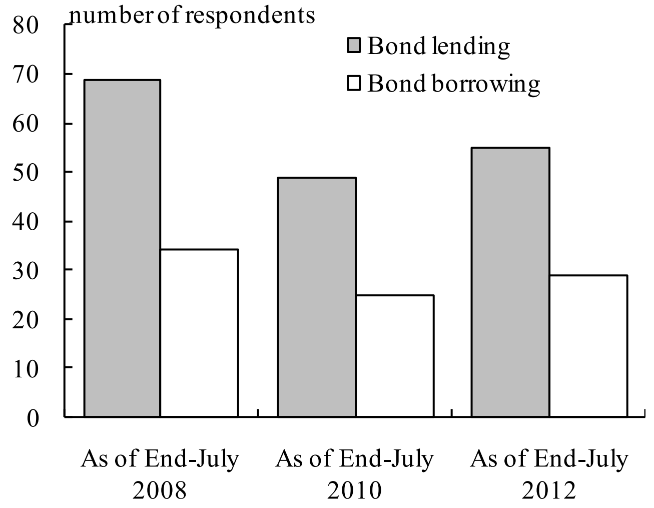
Chart 18: Amounts Outstanding of SC Repo Transactions by Term



Note: Bond borrowing side.

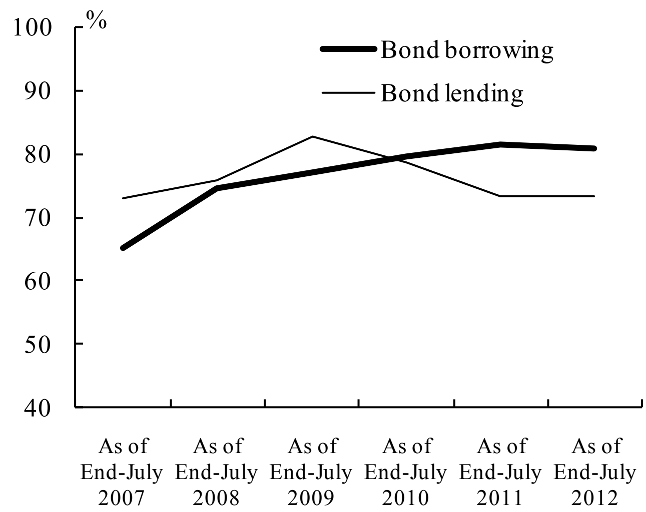
With regard to participation in the SC repo market, first, the number of bond borrowers has generally remained at around 30 (Chart 19). Among these borrowers, the share of the amounts outstanding held by the top 10 players in terms of the balance has remained at around 70-80% (Chart 20). On the bond borrowing side, while the demand to cover short positions from securities companies remains low as described earlier, the situation has not yet reached a stage that would cause them to leave the market. The number of bond lenders has recently increased slightly after a significant drop following the Lehman shock. However, during this period, the share of the amounts outstanding among the top 10 participants, most of which are trust banks, generally remained stable in the 70-80% range.

Chart 19: Number of Participants in the SC Repo Market



Note: Number of respondents covered by the survey since 2008 (excluding *tanshi* companies, asset management companies, and some securities companies) for which the amounts outstanding of SC repo transactions can be confirmed at each point in time. Adjusted for the impact of mergers between financial institutions.

Chart 20: Share of the Amounts Outstanding Held by the Top 10 Market Participants



Note: The categories are the same as in Chart 19.

3. Legal Aspects and Haircut Behavior

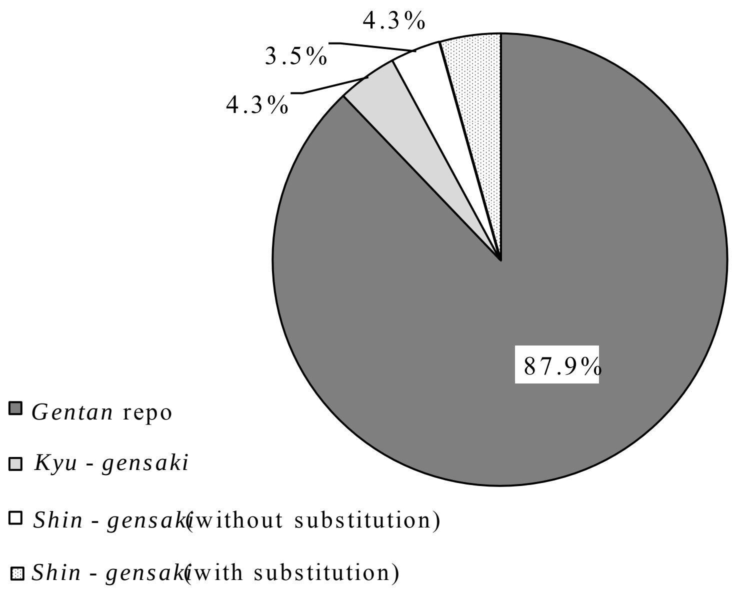
We have focused thus far on the quantitative aspect of the repo market, looking separately at the GC and the SC repo markets. However, this survey also examines legal aspects and haircut behavior for repo transactions in general.

First, we examined the distribution of the amounts outstanding of the repo transactions by form of contract. We found that (1) the percentage of contracts called *shin-gensaki* contracts, which basically allow substitution of collateral assets, is lower than 10%[2] and nearly 90% of transactions are still

[2] Collateral substitution is a mechanism allowing a cash borrower to replace the bond to be collateralized before the maturity of the trade based on the counterparty's agreement. This mechanism is expected to facilitate term transactions for cash borrowers.
A "*shin-gensaki*" is a repo transaction under the "Master Agreement on the Transaction with Repurchase Agreement of the Bonds, etc." as revised in 2001. In this paper, any repo transaction under the master agreement before this revision is called a "*kyu-gensaki*."

cash-collateralized securities lending called *gentan* repos; and (2) nearly half of transactions using *shin-gensaki* contracts do not allow substitution of collateral assets (Chart 21). As for the reason why collateral substitution has not become a more widespread practice, several market participants commented, "Given the administrative burden of both counterparties to substitute collateral assets, the demand to use this practice is limited for the time being."

Chart 21: Percentage of the Amounts Outstanding of Repo Transactions by Form of Contract



The survey then asked whether haircuts were set or not and, if so, what was the haircut level by collateral assets to examine the behavior in the domestic repo market. The results show that for repo transactions secured by JGBs, which account for more than 99% of domestic repo transactions, a haircut was set for only a very limited number of transactions, and the level at which the haircut was set was very low, at 2% or less (Chart 22). As for the reason, many market participants commented, "Since JGBs have maintained a high degree of credibility, it is possible to control risks, through margin calls for example, without setting a haircut." In contrast, for repo transactions collateralized by bonds other than JGBs, such as corporate bonds, it seems that haircuts are basically implemented for all transactions at a relatively high level of around 3-10%. Thus, in the Japanese repo market, whether or not a haircut is set and the haircut level are determined according to the risks of collateral assets.

Chart 22: Haircut Setting Level

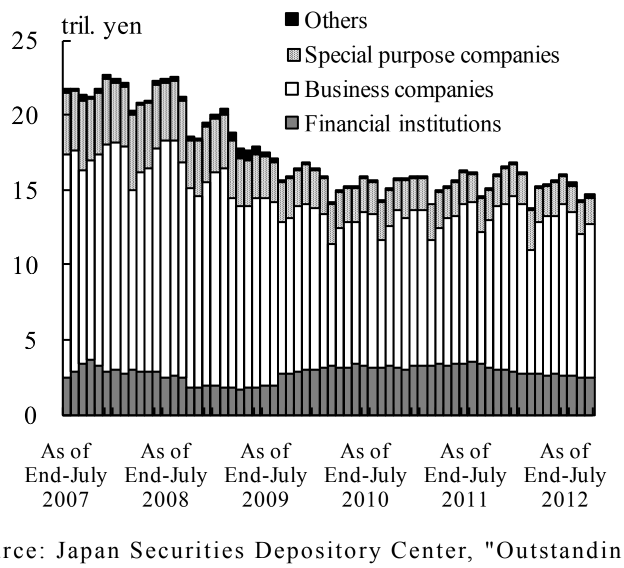
JGBs with coupons	0.0-2.0%
Treasury discount bills (T-Bills)	No haircut
Inflation indexed government bonds	0.0-1.0%
Floating-rate government bonds	0.0-1.5%
General bonds	3.0-10.0%

Note: Based on the balance as of the end of July 2012.

D. CP Market

In the CP market, the issuing environment deteriorated rapidly after the Lehman shock against the backdrop of heightened risk aversion among investors. Thereafter it began to improve, partly because of the effects of the Bank's special funds-supplying operations to facilitate corporate financing and the comprehensive monetary easing policy. On the whole, the stable conditions have continued. In these circumstances, the amounts outstanding generally remained at the previous year's level from 2011 to 2012 (Chart 23).

Chart 23: Amounts Outstanding of issued CP



Source: Japan Securities Depository Center, "Outstanding Amounts of CP by Issuer's category".

During this period, CP holdings among financial institutions remained flat after falling following the Lehman shock, while spreads between CP and treasury discount bills (T-Bills) have remained stable at low levels since the previous survey (Chart 24). By sector share, the amounts outstanding show that city banks and *tanshi* companies, both of which are underwriters of CP, hold 30-40% and nearly 20%, respectively, with the remaining balance held by the end-investors (Chart 25). This shows that the structure of market participants in the CP market did not change after the Lehman shock.

Chart 24: Amounts Outstanding of Financial Institutions' CP Holdings

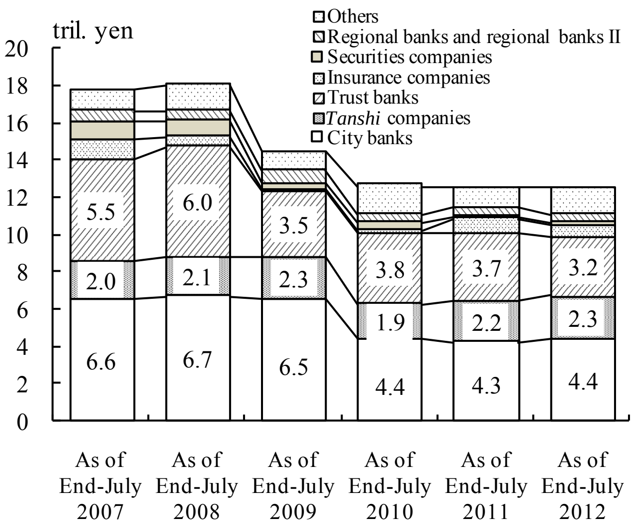
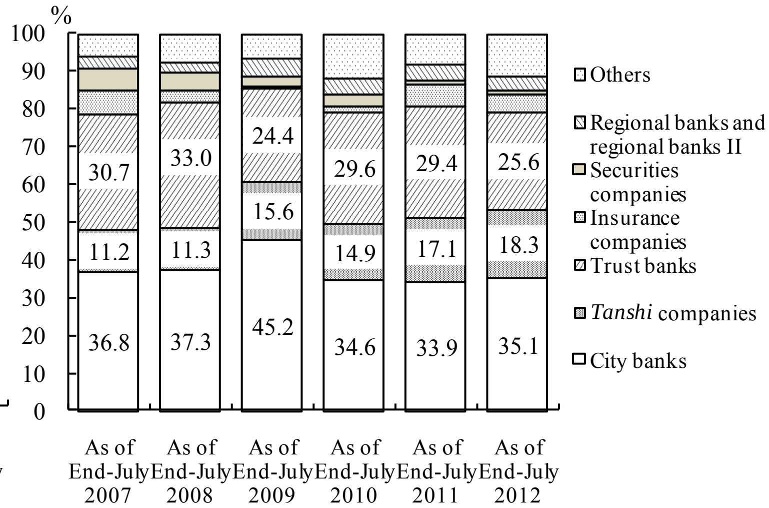


Chart 25: Share of the Amounts Outstanding of CP Holdings by Category



E. Yen Funding Activities with Foreign Investors

First, with regard to yen funding trades with overseas counterparties, the amounts outstanding of trades executed to raise yen funds from overseas -- such as by yen conversion -- generally remained flat within a range, as those executed by securities companies increased while those affected by foreign banks decreased[3] after the previous survey (Chart 26).

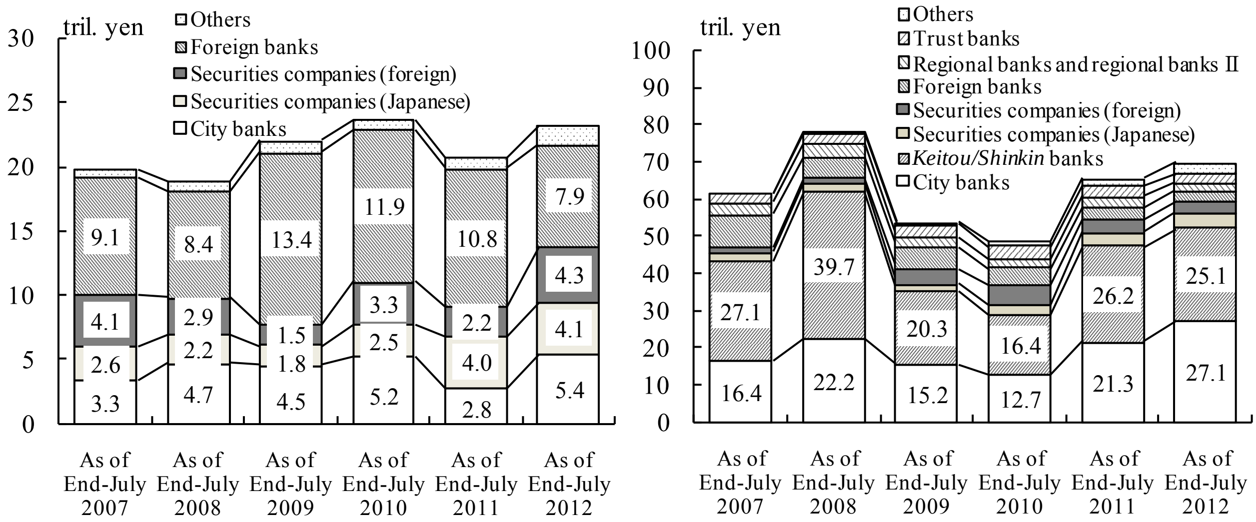
On the other hand, the amounts outstanding of yen investment trades with

[3] Yen funding transactions with overseas parties are the total of conversion into yen/conversion into foreign currency (including transactions with a term of more than one year), Euroyen transactions, and yen lending transactions with the overseas offices of financial institutions.

overseas counterparties, such as raising yen funds in exchange for foreign currency, increased markedly among city banks in particular. As for the reason, many market participants cited the increase in U.S. dollar funding through the conversion of yen into foreign currency, reflecting the growth in loans to overseas, while the decline in new investments in dollar-denominated bonds and securitization products due to deterioration of the investment environment such as in overseas credit markets, had come to a halt.

Chart 26: Amounts Outstanding of Yen Fund Transactions with Overseas

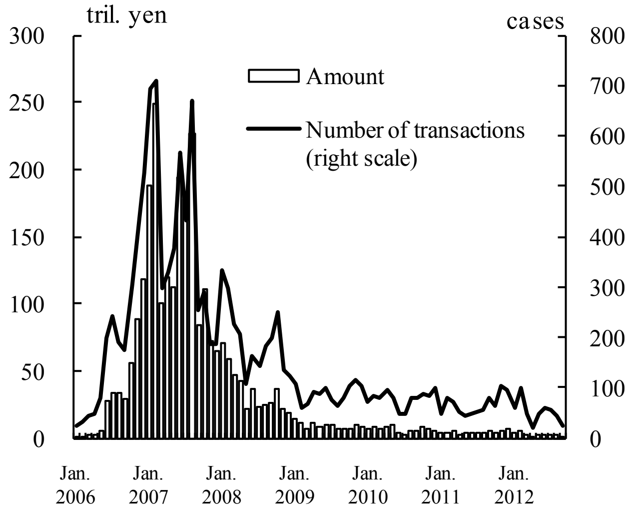
▽ Yen Borrowing from Overseas ▽ Yen Lending to Overseas



F. Yen Overnight Index Swap Market

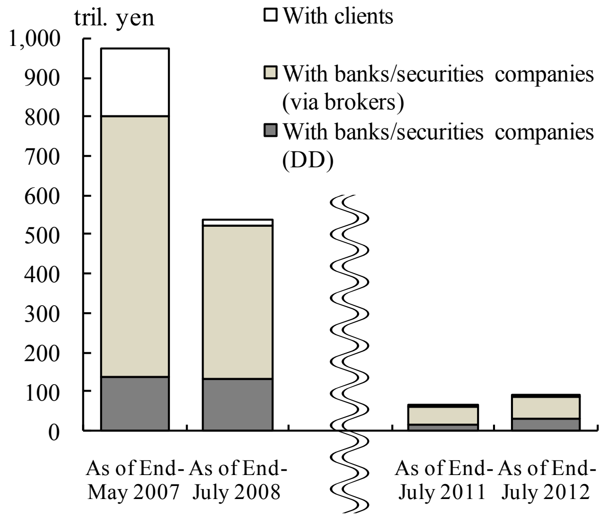
With regard to the yen overnight index swap (OIS) market, which is a major short-term interest rate derivatives market, after the lifting of the Bank's quantitative easing policy in 2006, the volume of transactions -- particularly in transactions speculating on the change in monetary policy -- increased sharply. However, given the market consensus that short-term interest rates would remain stable at a low level after the Lehman shock, the volume of transactions decreased dramatically and most of the trades reflected an incentive among securities companies to hedge the price volatility risk associated with their JGB and derivative positions (Chart 27). As a result, the amounts outstanding in the market is currently about 100 trillion yen (Chart 28).

Chart 27: Volume and Number of Yen OIS Transactions via Brokers



Source: Money Brokers Association.

Chart 28: Amounts Outstanding in the Yen OIS Market



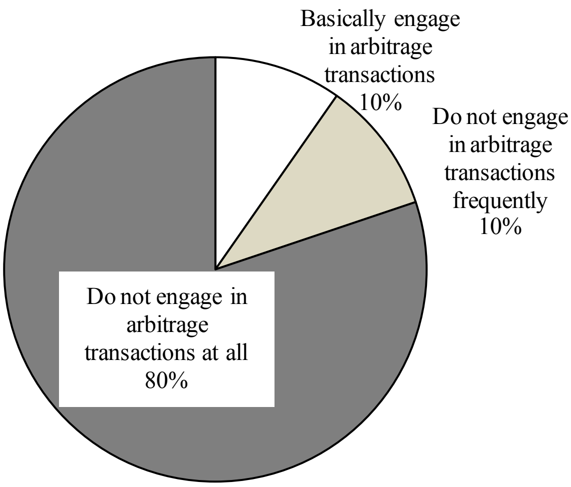
As to the reasons yen OIS transactions are not active, in addition to the abovementioned macroeconomic environment, market participants pointed out that (1) the transactions are not very common among their client companies; and (2) there is still much room for improvement in rates and trade volume statistics related to such transactions.

G. Market Participants' Attitudes toward Arbitrage Trading and Operational Issues

We have focused thus far on the amounts outstanding of major transactions in the money market. In addition to this analysis, to understand whether the market can function smoothly as a venue for lending and borrowing of funds, it is important to ascertain what attitudes market participants have on such transactions and the administrative structure -- which can be characterized as the market infrastructure -- behind the developments in trade volume.

On this point, first, with regard to their attitudes toward arbitrage trading, short-term interest rates including term rates in general remain stable and at a low level, but no positive movement has been seen since the previous survey, as 80% of respondents commented that they "do not engage in arbitrage transactions at all"[4] (Chart 29). We asked the 20% of respondents who said that they "basically engage in arbitrage transactions " or "do not engage in arbitrage transactions frequently" about the specific nature of the transactions in which they engaged. Most of them listed (1) transactions to invest cash collateral obtained by SC repos in GC repos; and (2) transactions to invest funds obtained at a rate of 0.10% or lower in the call market in GC repos or their current account balances at the Bank. On the other hand, very few respondents said that they engaged in arbitrage trading focused on distortions in daily fluctuations in interest rates in different markets.

Chart 29: Stance on Arbitrage Transactions

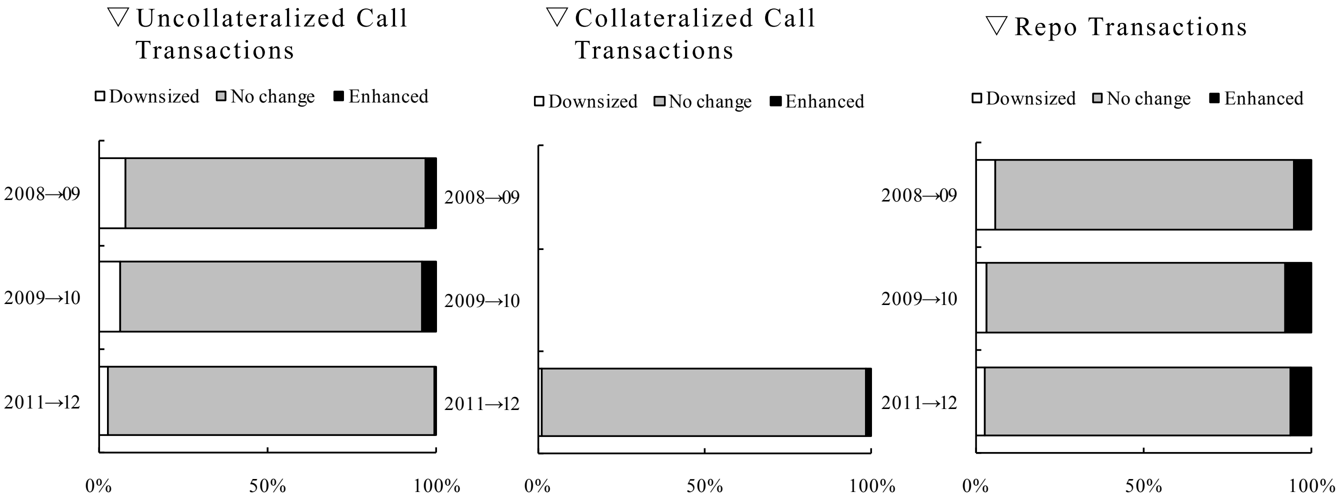


Next, with regard to changes in the administrative structure for call and repo transactions, the trend toward downsizing was seen obviously to have weakened in comparison with the situation immediately after the Lehman shock. In addition, at this point in time, unlike the situation when quantitative easing policy was being implemented, most respondents maintain the administrative structure necessary to carry out transactions at both their front and back offices. For example, with regard to uncollateralized call and

[4] The previous survey examined arbitrage transactions between the uncollateralized call market and other short-term money markets, with 70% of the respondents saying they "do not engage in such transactions at all" and 20% that they "do not engage in such transactions frequently."

repo transactions, which were examined in the previous surveys, the number of respondents who said they had "downsized" their administrative structure over the past year has been decreasing. Furthermore, with regard to the collateralized call transactions, which were surveyed for the first time in this survey, only a very limited number of respondents said that they had "downsized" their administrative structure over the past year (Chart 30). By way of background, a number of market participants pointed out that because there is a remuneration rate under the complementary deposit facility -- unlike the situation when the quantitative easing policy was being implemented -- some financial transactions are carried out to capture the divergence if the market rate exceeds or falls below this rate.

Chart 30: Changes in Administrative Structure by Type of Transaction



Note: Surveys regarding collateralized call transactions were not implemented at the end of 2009 (balance between 2008 and 2009) and 2010 (balance between 2009 and 2010).

III. Measures Taken to Address Issues Surrounding the Money Market

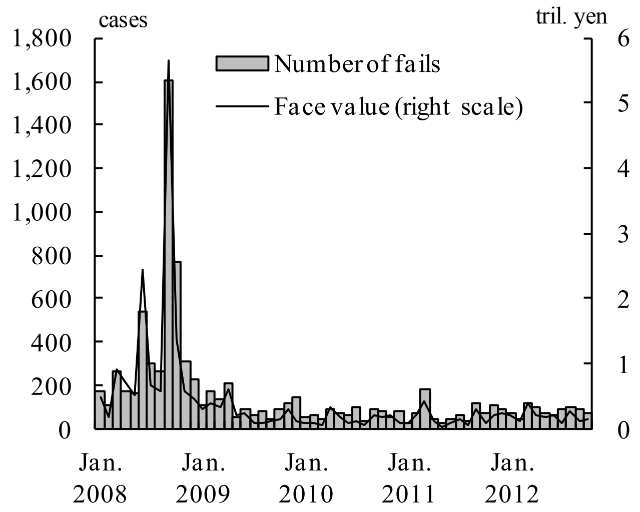
Based particularly on the experience of deterioration in the repo and JGB market functions after the Lehman shock, since the previous survey market participants have continued to proceed with examinations and actions with regard to the issues under consideration. Market participants recognize the issues as matters that must be addressed by the market as a whole, including the "widespread adoption of the fails practice for JGBs," the "enhancement of risk management through a shortening of JGB settlement cycle, etc." and

"Improving Robustness and Participation of Central Clearing of JGBs. In addition, the Great East Japan Earthquake, which occurred in March 2011, resulted in greater recognition among market participants of the importance of a BCP for the money market transactions in the event of a disaster or other emergency, and they are proceeding to strengthen their efforts.

A. Widespread Adoption of Fails Practice for JGBs

The fails practice was introduced in Japan in January 2001, when the Bank made real-time gross settlement (RTGS) the sole settlement mode. However, a number of market participants did not accept the fails practice because of a lack of understanding of fails, given that they recognized a fail as a debt default, and the administrative capacity to handle fails was underdeveloped. Therefore, the number of firms that had adopted the fails practice was insufficient. In this situation, following the Lehman shock enormous debt defaults occurred in JGB transactions, triggering a significant increase in fails, and as a result, the time schedule of JGB settlements was significantly delayed (Chart 31). As a result, liquidity declined not only in the JGB market but also in the repo market, which was assumed to be a relatively robust funding channel as secured transactions, and market functioning deteriorated notably in these markets. This experience demonstrated the importance of ensuring that the fails practice was adopted more widely, and boosted awareness of the need to review the practice. In May 2009, the Working Group concerning Review of Fails Practice for Bond Trading was established as a subordinate organization of the Japan Securities Dealers Association Bond Committee, and examinations were held on appropriate measures to ensure that the fails practice was adopted more widely while preventing the frequent occurrence of fails under a cross-sectional review system. The working group's final report was published in April 2010. In addition, a partial revision of "The Japanese Government Securities Guidelines for Real Time Gross Settlement" was publicly announced in June 2010, and the revised fails practice, including the introduction of the fails charge trading practice, was implemented in November 2010.

Chart 31: Basic Figures on Fails



Source: Bank of Japan, "Basic Figures on Fails."

This survey investigated the level of acceptance for fails and the widespread adoption of the fails practice for JGBs among market participants, given the revisions made before and after the previous survey.

First, with regard to the level of acceptance for fails, 78% of respondents said that they "accept fails." In particular, all of the participants in the Japan Government Bond Clearing Corporation (JGBCC), whose JGB settlement amount is relatively large, said that they "accept fails" (Chart 32). However, the remaining 22% of respondents said they "do not accept fails," and some of them commented as follows: "We do not want to accept fails if at all possible, because we have not experienced any fails yet, and administrative tasks such as paying or receiving the fails charge trading practice cause exceptionally large handling costs." However, the volume of JGBs these respondents settle is relatively small, and their share of JGB settlement transactions amounts to only 0.3% of the total (Chart 33).

Chart 32: Level of Acceptance for Fails

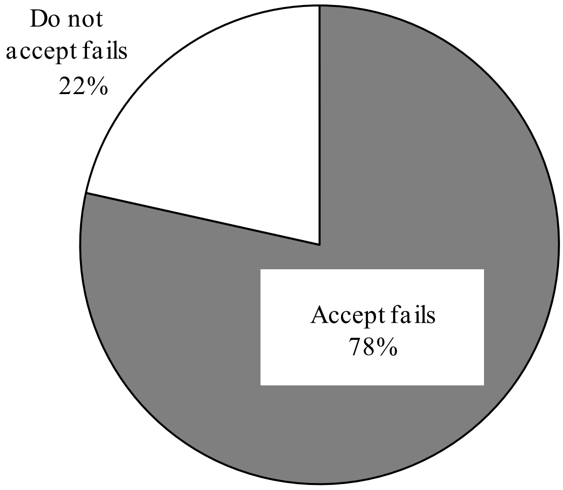
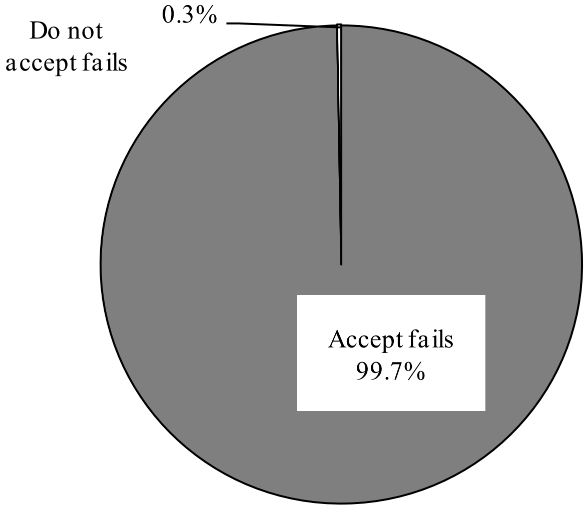


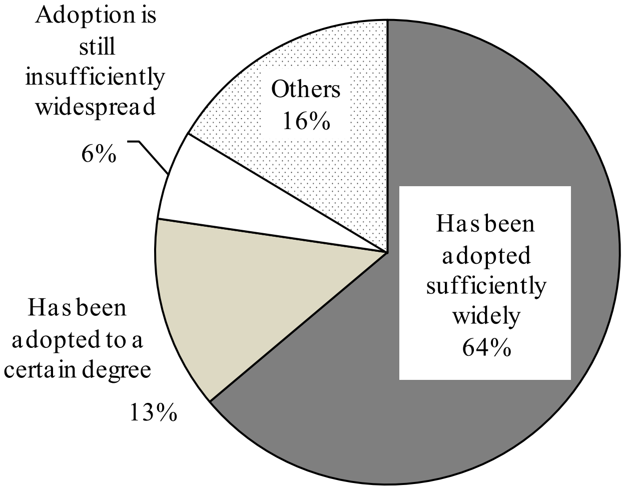
Chart 33: Level of Acceptance for Fails Weighted by Number of Settlements in the JGB Market



Note: Weighted average of the survey respondents' answers using the number of JGB delivery versus payment (DVP) settlements as of July 31 2012.

In addition, with regard to the degree of adoption of the fails practice for JGBs as a whole, 64% of respondents said that it "has been adopted sufficiently widely," while 13% said it "has been adopted to a certain degree." Thus, nearly 80% of respondents suggested that the fails practice had been adopted to some degree (Chart 34). Nevertheless, 6% of respondents said "adoption is still insufficiently widespread." As described earlier, these respondents cited the reason that some investors in certain markets avoid fails because they have never experienced them.

Chart 34: Adoption of the Fails Practice



As just described, the number of fails in Japan is quite small, partly because market participants try to avoid fails in advance, and some market participants have never experienced fails. The situation is quite different from that prevailing in the United States, where fails occur much more frequently than in Japan and market participants take action in accordance with the fails practice on a daily basis. However, it is still possible to conclude that the fails practice has generally been adopted in Japan, in the sense that major participants in the JGB and the repo markets have accepted this practice.

B. Shortening of the Payment and Settlement Period for JGBs

As mentioned previously, when the Lehman shock occurred, enormous debt defaults occurred in JGB transactions, triggering a significant increase in the number of fails. In these circumstances, market participants attempted to dispose of the enormous volume of fails, and engaged in the procurement and disposal of JGBs pledged as collateral to reestablish fund and JGB positions, which were determined to be unavailable for payment or receipt through close-out netting for repo transactions. Based on this experience, market participants started to place a greater emphasis on recognizing liquidity risk, which makes it impossible to receive funds or securities as planned when the market faces significant stress and debt defaults and/or fails occur.

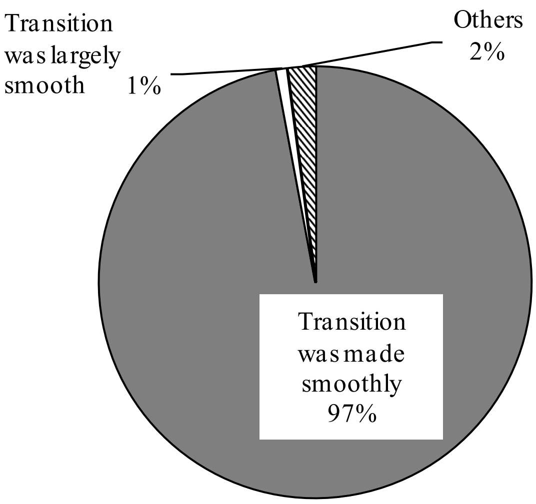
To effectively prevent/resolve these risks and the confusion they entail, it is effective to reduce the unsettled amount of bonds and accelerate the dissolution of fails. Market participants understand that shortening of the payment and settlement period for JGBs is essential to achieving these objectives. In September 2009, the Working Group on Shortening of JGB Settlement Cycle was established under the Council on Reform of Delivery and Clearing/Settlement of Securities and the Forum on Reform of Securities Clearing and Settlement System to promote securities settlement system reforms. Since then, discussions have been held on basic issues and the concepts underlying settlement practices/trading administration to promote a shortening of the payment and settlement period for JGBs through related market infrastructure and a broad range of market participants. In November 2011, the "Working Group on Shortening of JGB Settlement Cycle Final

Report" was published, summarizing the results of examinations carried out by the working group over nearly two years. It contained the following suggestions: (1) the payment and settlement period for JGB outright purchases should be shortened to a T+2 basis from April 2012; and (2) deliberations should be resumed on a further shortening of the payment and settlement period for JGB outright purchases from T+2 to T+1 in the second half of fiscal 2012, with the goal of starting such implementation as early as possible in 2017 or later. In response, the settlement for JGB outright purchases was shortened to a T+2 basis on April 23 2012, and the working group was relaunched in October 2012 to advance deliberations aimed at shortening the settlement for JGB outright purchases to a T+1 basis.

Given these circumstances, this survey investigated the transition to T+2 for the settlement for JGB outright purchases. It also examined the shift of a common settlement cycle for repo transactions (T+3 to T+2 for SC repos, and T+2 to T+1 for GC repos) and the impact of the shifts on the volume of transactions in the money market.

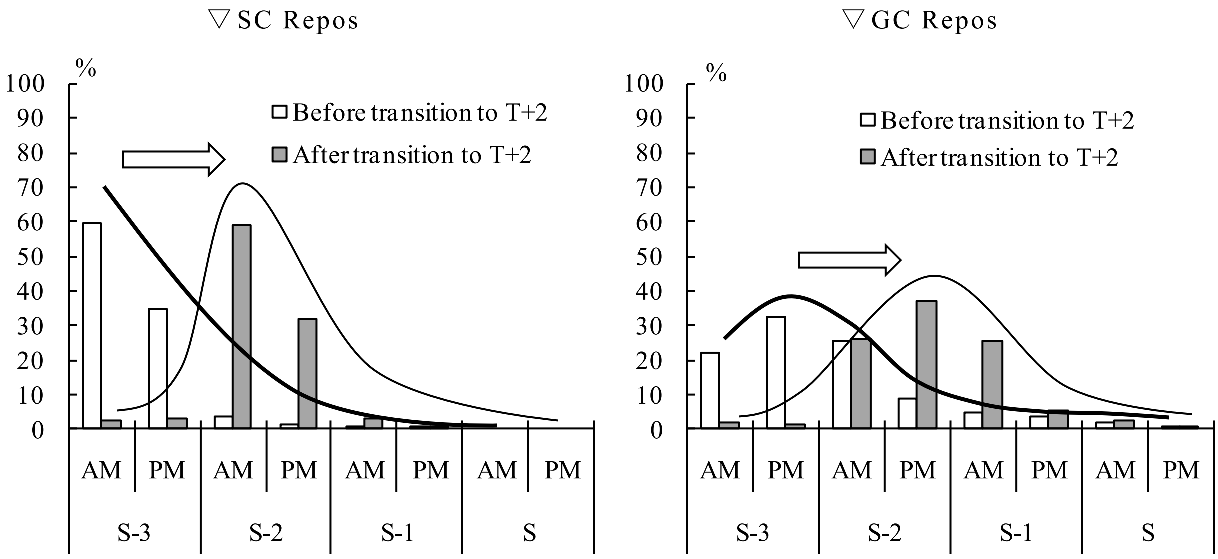
In terms of results, concerning the transition to T+2 for the settlement for JGB outright purchases, 98% of respondents said that the "transition was made smoothly" or the "transition was largely smooth," confirming the smooth transition (Chart 35).

Chart 35: Transition to T+2



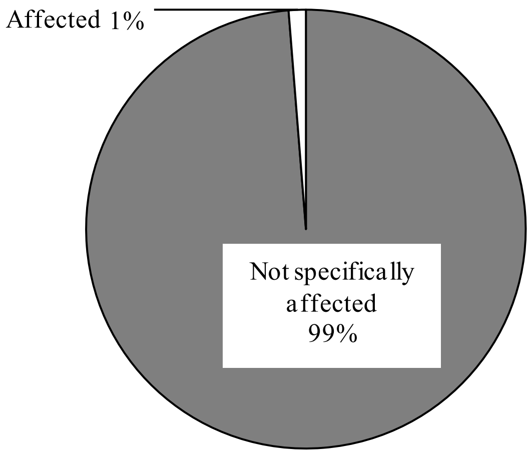
To confirm how the shift of settlement cycle in the repo market proceeded, we focused on the timing of the contract with reference to the start date of the transaction. First, we can see that before the transition most SC repo contracts were executed on the morning of the day three business days prior to the start date (S-3), after the transition, but most were executed on the morning of the day two business days prior to the start date (S-2). Thus, the timing of contract execution was generally postponed by about one business day (Chart 36). In this context, most GC repo contracts before the transition were also executed on the afternoon of the day three business days prior to the start date (S-3), but most are now executed on the afternoon of the day two business days prior to the start date (S-2); thus, their timing has generally been postponed by about one business day. This shows that the shift in the common settlement cycle for repo transactions implemented in response to the reduced settlement period for JGB outright purchases to T+2 has advanced smoothly.

Chart 36: Shift in the Timing of the Repo Contract



With regard to the impact of this shortening of the payment and settlement cycle on the volume of money market transactions, 99% of respondents said that they were "not specifically affected" (Chart 37). From this, it can be concluded that this shortening of the settlement period did not lower market liquidity.

Chart 37: Impact of Shortening to T+2 on the Volume of Money Market Transactions



The shortening of the payment and settlement cycle is a measure taken to contribute to the stability and efficiency of the JGB and money markets. This has been achieved through support measures such as mitigating settlement risks by reducing the unsettled amount for contracted trades and accelerating actions to resolve fails. In addition, given that the payment settlement period for government bond outright purchases has already been shortened to T+1 in countries such as the United Kingdom and the United States, realizing a reduced T+1 period in Japan may also strengthen the competitiveness of Japanese financial markets. Although it appears that some issues remain to be resolved to accomplish the shortening to T+1 rather than T+2, going forward it is expected that market participants will deepen their understanding of the significance of shortening the payment and settlement cycle for JGBs, and that they will make steady progress in their efforts to achieve a shortened T+1 period.

The Bank aims to continue providing positive support to these efforts.

C. Improving the Robustness and Participation of Central Clearing of JGBs

When the Lehman shock occurred, market participants reiterated the importance of the functions of a central clearing, including their guarantee of settlement, from the perspective of dealing smoothly with debt defaults and fails and reducing counterparty risks. In this context, the JGBCC faces a range of issues in regard to further enhancing the existing functions of central clearing of JGBs and using such functions more effectively by expanding the number of participants. The Bank supports the JGBCC's efforts in these areas.

As part of its efforts, the JGBCC announced in September 2010 that it was boosting collaboration with the Japan Securities Clearing Corporation to proceed with activities to enhance governance, and in November 2010 it clarified the fail assignment rules with its clearing participants in line with the revision of the fails practice. The JGBCC is also continuing with deliberations to enhance its fundraising scheme in the event of an emergency. Moreover, as part of its efforts to expand participants, it agreed with trust banks, which are major players in the JGB and repo markets, on the basic scheme of their participation, with due consideration given to their characteristics. The JGBCC and trust banks are developing systems for participation, which is expected to begin in the first half of 2014.

Given these circumstances, this survey asked respondents who are not JGBCC participants about their views on participation in the JGBCC. Although no new respondent had participated in the JGBCC since the previous survey, some respondents said that they "plan to participate" or are "considering participation," including the trust banks mentioned previously. To capture the approximate quantitative impact of such an expansion in JGBCC participants, we estimated the percentage of the transaction volume cleared by the JGBCC against the entire market under certain assumptions. We found that the percentage of transactions cleared by the JGBCC, which is now 46%, would rise to 80% if all respondents that plan to participate or are considering participation were added, including trust banks, which are major JGB lenders in the SC repo market[5] (Chart 38).

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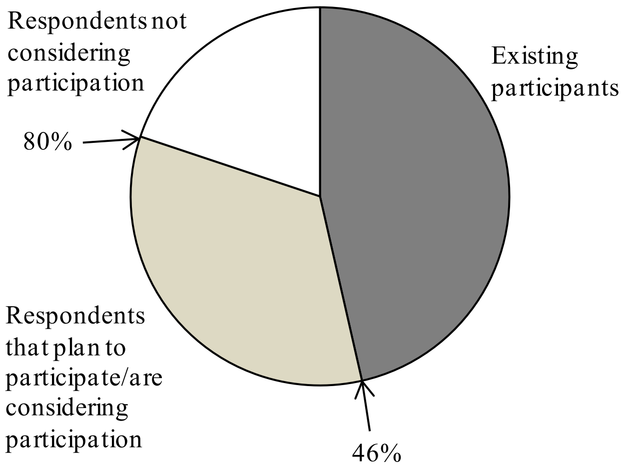
[5] The estimated figures were obtained by multiplying the outstanding balance of repo transactions among JGBCC participants (and those planning to participate/considering participation) on the fund lending (bond borrowing) and fund borrowing (bond lending) sides, respectively. (For the purpose of calculation, their share was divided into the share of the outstanding balance of funds managed by counterparty business category and the share of the outstanding balance of funds raised by business category.) Because these are only approximate trial calculations based on the outstanding balance figures obtained by this survey, some leeway should be allowed.

Chart 38: Ratio of Repo Transactions among JGBCC Participants
(Trial Calculation)



Note: Based on the balance as of the end of July 2012.

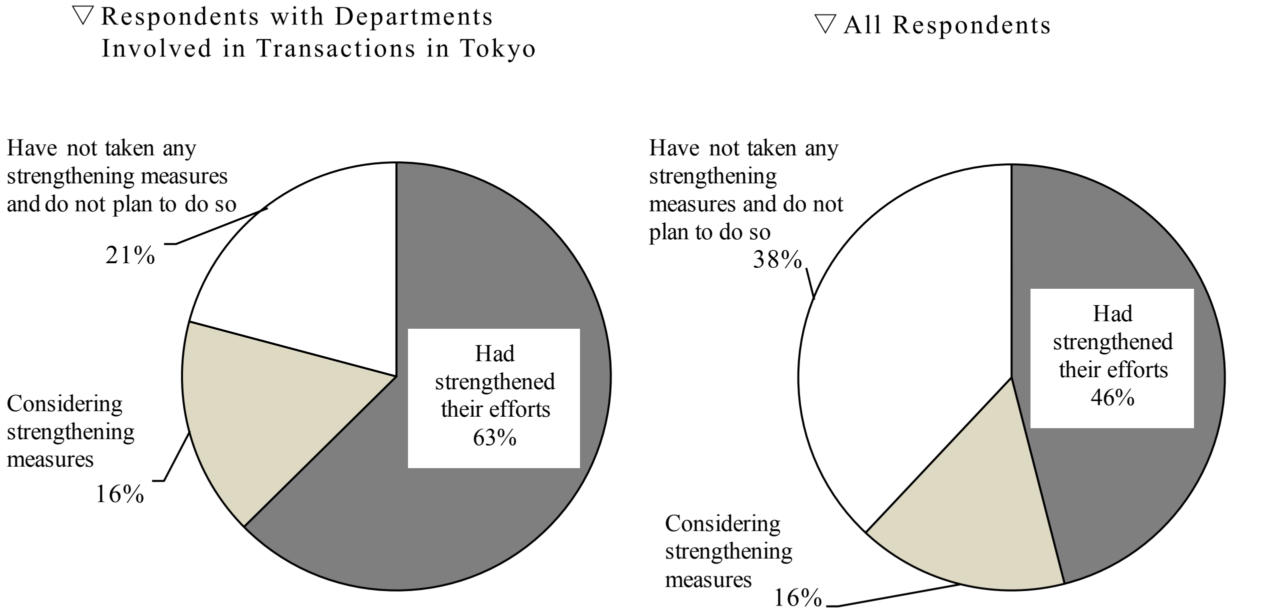
D. Enhancing Effectiveness of the BCP

Although the Great East Japan Earthquake of March 2011 occurred following the previous survey, inflicting enormous social and economic damage on the country, the settlement system and financial institutions continued to operate smoothly even after the earthquake took place, and they maintained their normal functions as the financial infrastructure. By way of background, in addition to the efforts of financial institutions located in disaster-stricken areas to maintain their financial and settlement functions, patient efforts by the domestic payment and settlement infrastructure and financial institutions to enhance the effectiveness of their BCPs seem to have made a significant contribution. In these circumstances, awareness of the importance of BCPs in the money market has increased among market participants to a higher level than before, and moves to strengthen BCP efforts have become more widespread.

Given this situation, the survey investigated the financial institutions' efforts regarding their BCPs.

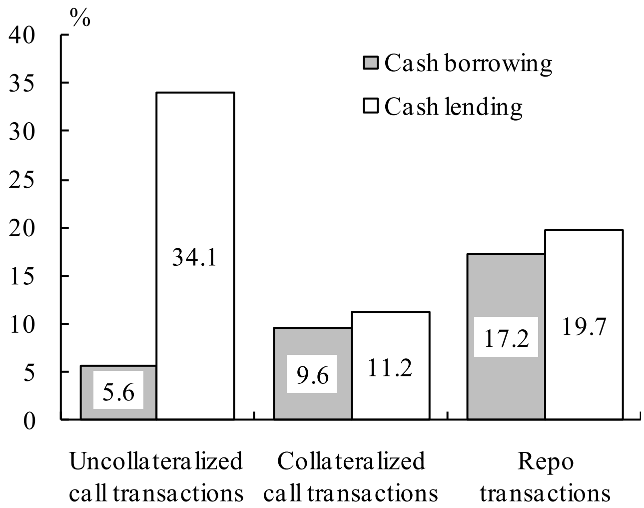
With regard to BCP efforts related to money market transactions following the earthquake, 63% of respondents with departments involved in money market activities in Tokyo and 46% of all respondents said that they had strengthened their efforts (Chart 39). The specific strengthening measures they listed included (1) upgrading and reviewing the organizational status of the backup system in the Tokyo metropolitan area and Osaka, including revising their BCPs and related training; (2) reviewing and revising their emergency response manual and other internal rules; and (3) relocating departments involved in money market transactions.

Chart 39: BCP Efforts Relating to Money Market Transactions after the Great East Japan Earthquake



As part of a quantitative analysis of efforts regarding BCPs, we calculated the functional loss ratio, defined as the "ratio of the amounts outstanding of respondents who said they would be unable to carry out transactions, even if their backup sites are went into operation, to the market as a whole if the functions of the Tokyo office were lost (even if settlement infrastructure including the BOJ-Net is operating and market transactions and funding settlements are available) in the early morning on a weekday," separately for the uncollateralized and the collateralized call and the repo transactions. The results show that the functional loss ratio on the cash lending side, and in the call markets in particular, would be higher than the ratio on the cash borrowing side (Chart 40). This implies that the way in which the market as a whole compensates for the existing gap in the functional ratio on the cash borrowing and the cash lending sides is a major issue that should be addressed in BCP efforts.

Chart 40: Functional Loss Ratio in the Disaster Period



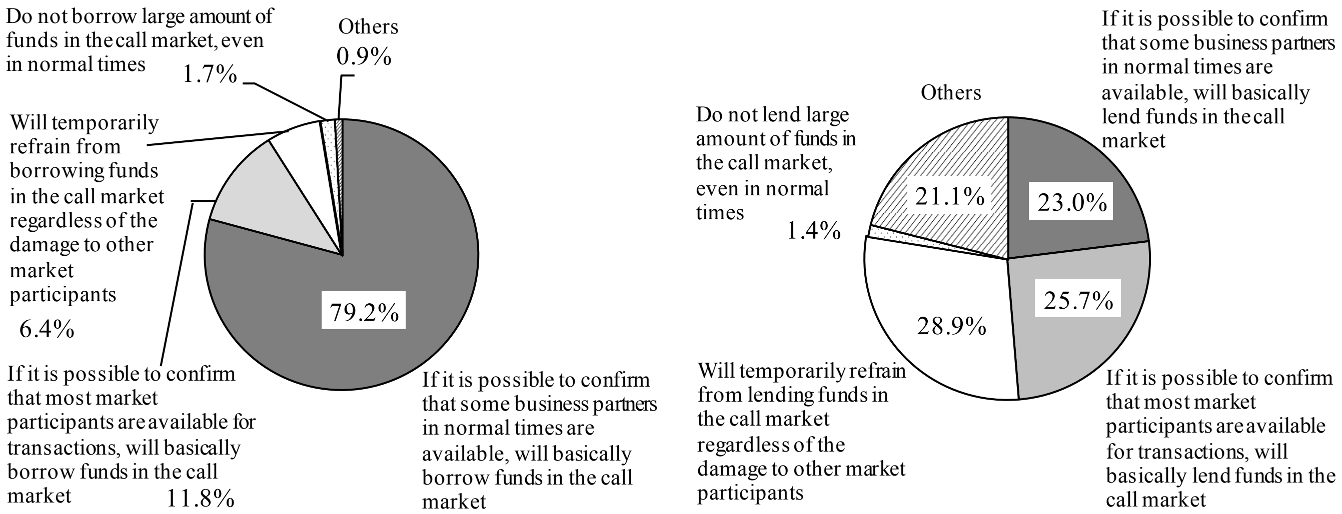
Note: Based on the balance as of the end of July 2012.

In addition, if we aggregate the amounts outstanding of each respondent's transactions in the call markets, adjusting for their attitudes toward trades immediately after the loss of Tokyo office functions as described earlier, the following observations can be made. While respondents that said, "If it is possible to confirm that some business partners in normal times are available, will basically borrow funds in the call market" or "If it is possible to confirm that most market participants are available for transactions, will basically, borrow funds in the call market" accounted for 91% of the total on the cash borrowing side, the corresponding percentage of respondents on the cash lending side was only 49% (Chart 41). As shown earlier, coupled with the fact that the functional loss ratio is greater on the cash lending side in the call market, this implies that some issues remain outstanding to ensure call market functions when BCPs are implemented.

Chart 41: Stance on Transactions Immediately after a Disaster in the Tokyo Metropolitan Area

—Stance on borrowing/lending transactions in the call market if the functioning of the Tokyo market deteriorates in the event of an earthquake directly beneath the Tokyo metropolitan area (early morning on a weekday) (assuming that settlement infrastructure including the BOJ-Net is operating and market transactions/fund settlements are available).

▽Cash Borrowing Side ▽Cash Lending Side



Note: Weighted average of the survey respondents' answers using the amounts outstanding of uncollateralized/collateralized call transactions as of the end of July 2012.

With regard to how they could strengthen their BCPs, several respondents commented that it was desirable for the market as a whole to improve the effectiveness of BCPs through industry-wide efforts, such as sharing action guidelines when their BCPs were put into practice and the implementation of joint training. The Bank will continue to provide positive support for the market participants' efforts to strengthen their BCPs.

IV. Conclusion

This paper reviewed recent developments in money market transactions in Japan and examined how a number of related issues were being addressed, based on the results of the Tokyo Money Market Survey (August 2012).

The money market is the venue where financial institutions raise liquidity and invest excess funds. Therefore, the potential feasibility of carrying out such transactions smoothly in the market can be used as an indicator to assess how well the market is functioning. Although this is difficult to capture directly from the observed data, it can be assumed to a certain degree based on the findings of this survey, including (1) attitudes regarding transactions; (2) trends in factors that play a role in terms of market infrastructure, such as administrative structure and credit line-setting behavior; and (3) trends in the amounts outstanding of transactions. In other words, if market participants have positive attitudes regarding transactions, and if market infrastructure is maintained, it should be possible to carry out transactions in the market more smoothly. Furthermore, such attitudes on transactions and market infrastructure should be maintained more readily if active trading takes place in the market.

Based on this idea, a review of trade developments in the domestic money market since the previous survey uncovers no sign of market participants' attitudes becoming more active in terms of arbitrage trading, and shows that the amounts outstanding of transactions remains below the level prior to the Lehman shock. This is because short-term rates, including term rates, remain stable at a low level due to the provision of ample funds by the Bank. In these circumstances, moves to downsize the administrative structure have not come to a halt, although they are clearly progressing more slowly than they were immediately after the Lehman shock. Furthermore, the number of credit lines established for uncollateralized trades has continued to decline, albeit very gradually.

However, under the complementary deposit facility, since financial transactions occur when the market interest rate exceeds or falls below the remuneration rate on reserve balances -- unlike when the quantitative easing policy was being implemented -- certain administrative structures required to carry out transactions in the short-term money market and credit lines for uncollateralized trades are being maintained. In addition, as the Bank increased the percentage of longer-term funds-supplying operations under its comprehensive monetary easing policy, the major fundraising method adopted by securities companies shifted from the Bank's operations to GC repo transactions, resulting in a recent increase in money market transactions. In this context, some market participants are taking a longer-term perspective in anticipation that the market will become more active.

Given the findings of this survey described above, conditions that reasonably support smooth trading seem to have continued in the domestic money market, as the venue for raising liquidity or investing excess funds as appropriate, while monetary easing has become more widespread since the previous survey. In fact, some market participants commented that the formation of short-term interest rates is less likely to be excessively affected by sudden events, compared with the period when the quantitative easing policy was being implemented. In this sense, it seems unlikely that the functions of the Japanese money market have suffered significant damage at this point in time.

With regard to the challenges faced by the domestic money market, efforts have intensified since the previous survey in regard to issues recognized as market-wide challenges given the experience of the Lehman shock. These efforts include the widespread adoption of the fails charge trading practice for JGBs, the shortening of the payment and settlement period for JGBs, and the improvement of robustness and participation of central clearing of JGBs. Looking at these efforts individually, the fails practice is being adopted, particularly among major participants in the JGB and the repo markets, since the review conducted in November 2010, including the introduction of the fails charge trading practice. With regard to shortening the settlement cycle for JGB outright purchases, T+2 basis outright purchases and T+1 basis GC repo trades were realized smoothly in April 2012. Deliberations are ongoing to shorten the settlement cycle to a T+1 basis for JGB outright purchases. In addition, regarding the improvement of robustness and participation of central clearing of JGBs, the JGBCC continues to consider enhancing the fundraising scheme for emergencies and advancing system development to prepare for the participation of trust banks, which is scheduled for the first half of 2014.

As for BCP-related efforts regarding money market transactions, the importance of which was further highlighted after the Great East Japan Earthquake, a number of financial institutions have already strengthened their activity, but further efforts may be necessary to secure money market functioning, even after BCPs are put into practice. This can be done, for example, by improving the effectiveness of the BCP for the market as a whole.

The Bank plans to conduct this survey each year based on market participants' needs to assess market trends more precisely and follow up on the challenges in the market. Based on the results of the survey, the Bank intends to provide support for market participants' efforts as they relate to issues in the money market.