



Financial Markets Report
— *Developments during the First Half of 2007* —

Bank of Japan
Financial Markets Department

October 2007

- This is a translation of the Japanese version published on July 31, 2007.
- This report covers the market developments during the first half of 2007, unless otherwise stated.
- In the charts, the shadowed portion represents the period from January to June 2007.

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Executive Summary

In the first half of 2007, the Bank of Japan decided to change the guideline for money market operations and encourage the target rate, the uncollateralized overnight call rate, to remain at around 0.5 percent from the previous 0.25 percent at the February Monetary Policy Meeting. This was the first policy interest rate rise since July 2006. Meanwhile, the complementary lending facility rate was set to 0.75 percent, expanding the spread between the basic loan rate of the complementary lending facility and the policy interest rate to 0.25 percent points from the previous 0.15 percent points. The increase in spread was based on the judgment that it would not impair money market operations, in light of improvements in the functioning of the money market. After the increases in rates, money market transactions picked up, and arbitrage transactions, among others, became more active, supporting smooth interest rate developments. The Japanese economy continued to expand in this financial environment.

With respect to global financial markets, from late February to early March, as market participants became more risk averse, stock prices declined in many economies, credit spreads widened somewhat, and the yen appreciated against other major currencies with the unwinding of speculative positions in the foreign exchange market. Background factors included the stock market decline in China, as well as the increase in uncertainty about the stability of the U.S. economy, especially the housing market, and financial markets. Subsequently, investor risk aversion subsided amidst market participants in many countries widely sharing the view that the global economy would continue to expand on the whole. Price developments in equity and credit markets also regained strength, underpinned by the positive outlook of market participants on firms' earnings, as well as brisk merger and acquisition activity. After May, a significant rise in long-term interest rates in the United States and Europe, reflecting a stronger outlook on the U.S. economy, led to some price adjustments in the equity and credit markets, but only to a small extent.

In Japan, prices in equity and credit markets continued to be firm overall, reflecting robust corporate performance among other factors. However, the rise in stock prices after the temporary decline in line with global equity market declines at the end of February and early March was moderate compared to those in the U.S. and European markets. Against the backdrop of a rise in interest rates in major economies in May and thereafter, long-term interest rates in Japan rose to temporarily exceed 1.95 percent. Short-term interest rates also rose. The yen weakened against other major currencies on the whole in the first half of 2007, against a background of relatively low interest rates, continued low volatility in the foreign exchange markets, and an increase in foreign asset investments by individual investors in Japan.

1. Money Market

In the money market, overnight rates temporarily rose around the time of the February Monetary Policy Meeting (MPM) when the policy interest rate was raised, and at the end of March (fiscal year-end in Japan), but rates became more stable after the beginning of April.¹ Meanwhile, short-term rates rose gradually after April, reflecting developments in economic and price indicators. Money market transactions continued its increasing trend, and arbitrage transactions, among others, became more active, supporting smooth interest rate developments.

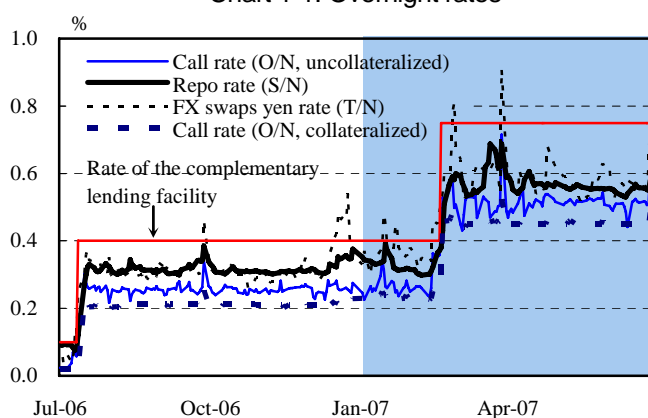
(1) Overnight Rates

Overnight Rates Temporarily Rose until the End of FY 2006

At the MPM held on February 20 and 21, 2007, the Bank decided to change the guideline for its money market operations. With this decision, the uncollateralized overnight (O/N) call rate target was raised to around 0.5 percent from around 0.25 percent. The basic loan rate of the complementary lending facility was also raised to 0.75 percent from 0.4 percent.

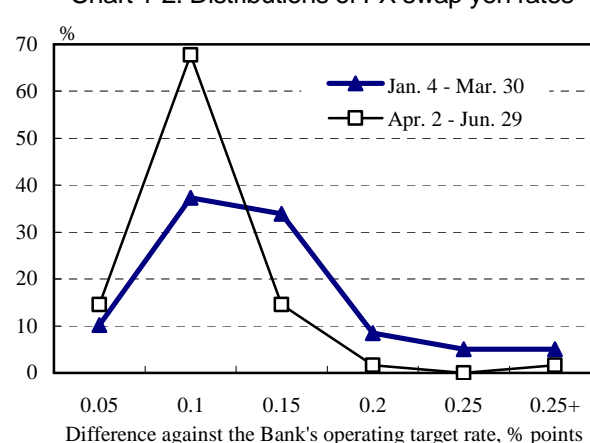
In the overnight money market, repo rates for spot/next day (S/N) transactions and yen rates implied by the foreign exchange swap rate (FX swap yen rates) for tomorrow/next day (T/N) transactions temporarily became volatile around the time of the February MPM and at the end of March, but became more stable thereafter (Charts 1-1 and 1-2). While O/N call rates broadly stayed around the target rate, upward pressure was observed in some periods. This was attributed to the shift in demand for reserve balances ahead of an expected rise in O/N call rates, as well as the rise in T/N FX swap yen rates and Euroyen rates in offshore markets, which is explained as follows.

Chart 1-1: Overnight rates



Note: Horizontal axis indicates the dates on which the transactions begin.
Sources: Meitan Tradition Co., Ltd.; Association of Call Loan and Discount Companies; Bank of Japan.

Chart 1-2: Distributions of FX swap yen rates



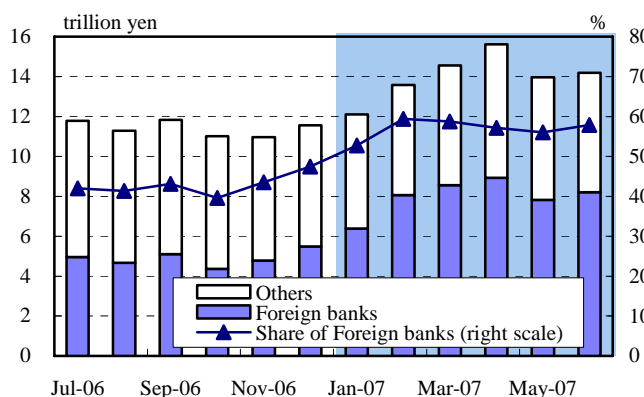
Note: Vertical axis indicates the total percentage of dates on which the stated % point difference was seen in each period.
Sources: Meitan Tradition Co., Ltd.; Bank of Japan.

Rise in T/N FX Swap Yen Rates and Euroyen Rates Put Upward Pressure on O/N Call Rates

At around the time of the February MPM and at the end of March, along with the rise in T/N FX swap yen rates and Euroyen rates, reflecting market expectations about interest rate hikes and increasing uncertainty about future funding, arbitrage transactions between these offshore markets and the call market increased. This put upward pressure on call rates, mainly through the activities of some foreign banks that secured adequate credit lines with counterparties in the O/N call market. They shifted their yen-funding activities from these offshore markets to the O/N call market, and invested the funds procured in the O/N market in FX swap yen market. As a result, the volume of call transactions by foreign banks increased from the beginning of the year to the end of March (Chart 1-3).

The upward pressure on O/N rates in this period also came from increasing yen demand from foreign financial institutions that increased demand for yen-denominated assets.

Chart 1-3: Amounts outstanding in the uncollateralized call market

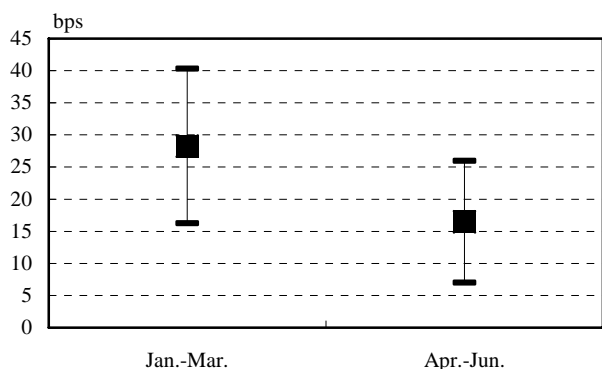


Note: Shares are the ratio of amounts of funds raised to the amounts outstanding.
Source: Bank of Japan.

Overnight Rates Became More Stable after April

As the influence of the above factors began to subside, these O/N rates as a whole became more stable in the second quarter of 2007, except on specific dates such as the end of each month and the corporate tax collection dates. Intraday fluctuations in O/N call rates decreased in the second quarter of 2007 as compared with those in the first quarter of 2007 (Chart 1-4). This was partly attributed to the Bank's arrangement to bring forward the release time for the reserve balance projection from April 16, 2007, to around 8:00 a.m. from around 9:20 a.m.

Chart 1-4: Intraday fluctuations in O/N call rates



Note: The average of the difference between the intraday high rate and the intraday low rate ± 1 standard deviation.

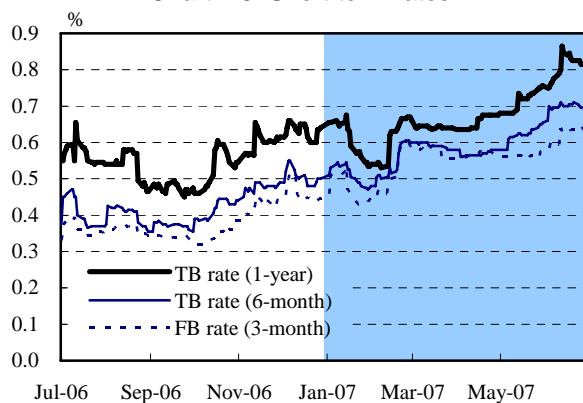
Source: Bank of Japan.

(2) Short-Term Rates

Short-Term Rates Gradually Rose

Short-term rates, such as FB/TB rates, moved reflecting market participants' expectations about policy interest rate changes. After a temporary decline in January, short-term rates gradually rose in the lead up to the February MPM, due to growing anticipation of a policy change at the time. After the policy interest rate hike in February, short-term rates remained almost flat for some time. Rates began to rise again in April reflecting changes in market participants' expectation regarding policy interest rate change, following the releases of stronger than expected economic indicators (Chart 1-5).

Chart 1-5: Short-term rates



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

Charts 1-6 and 1-7 show that developments in Overnight Index Swap (OIS) rates and Euroyen futures rates were broadly consistent with those in FB/TB rates, though FB/TB rates remained relatively low (see Box 1 for details on market expectations implied in short-term rates and economist surveys).

Chart 1-6: OIS rates

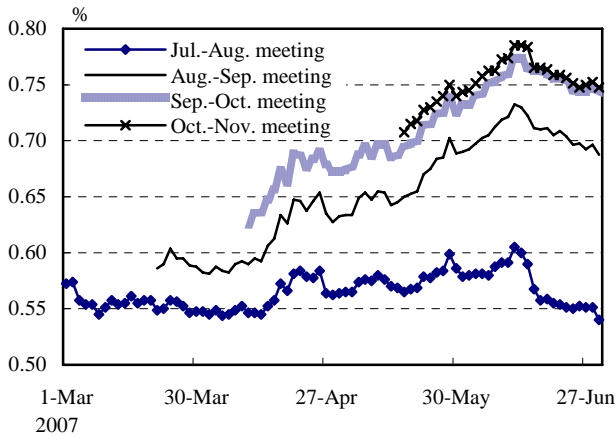
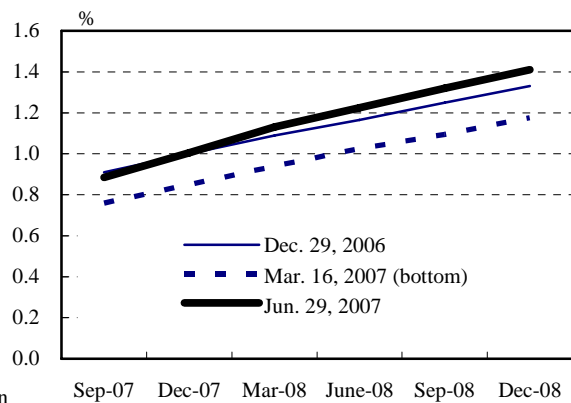


Chart 1-7: Euroyen futures yield curve



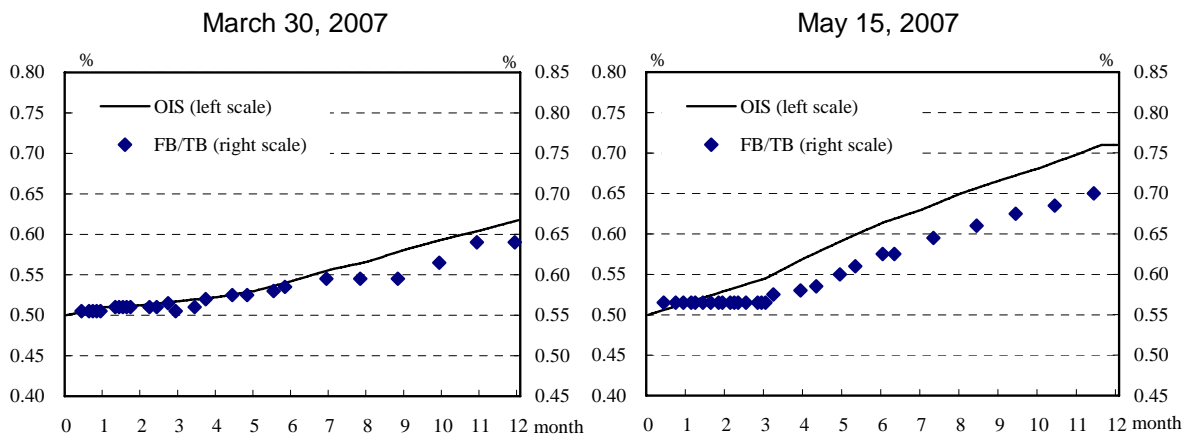
Note: Rates for inter-meeting trades. An inter-meeting trade is a forward trade in which the contract period corresponds to the interval between BOJ MPMs.

Sources: Tokyo Financial Exchange; Bank of Japan.

Sources: Meitan Tradition Co., Ltd.; Bank of Japan.

As shown in Chart 1-8, FB/TB rates remained lower than OIS rates from April to May, after adjusting for rate differentials due to the trading and funding costs involved in investing in a particular asset. In addition to the difference in main market participants in these markets, the supply-demand imbalance in FB/TB markets was likely a contributing factor. The imbalance occurred as some market participants began to increase short-term investment as their funding environments improved. Temporary increase in demand for FB/TBs, caused by the repayment of the Fiscal Loan Fund on April 2,² was also believed to have contributed to lower FB/TB rates.

Chart 1-8: Yield curves for OIS and FB/TBs



Notes: 1. Closing rates on March 30 and May 15.

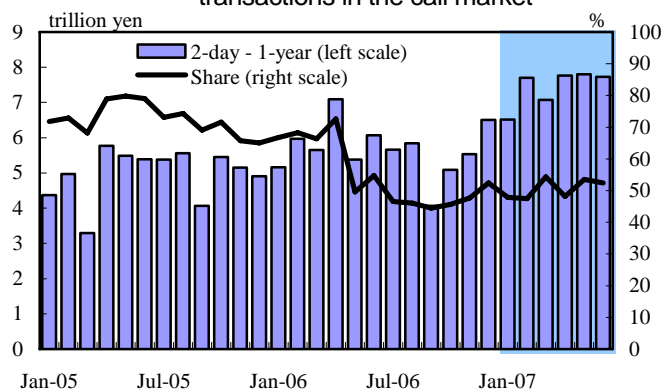
2. Adjustments have been made for average basis spreads, reflecting the differences in funding costs.

Sources: Japan Bond Trading Co., Ltd.; Meitan Tradition Co., Ltd.; Bank of Japan.

Short-Term Transactions in the Call Market Also Increased

Short-term transactions (excluding O/N transactions) in the call market intermediated by *tanshi* (money market brokers) also increased, in line with O/N transactions (Chart 1-9).

Chart 1-9: Amounts outstanding for short-term transactions in the call market



Note: Share is the ratio of transaction amounts longer than 2 days to total amounts outstanding.

Source: Bank of Japan.

¹ For more detail on money market developments, see "Money Market Operations in Fiscal 2006," July 2007, Financial Markets Department, Bank of Japan.

² On May 24, 2000, the Diet passed the "Bill for the Amendment to the Trust Fund Bureau Fund Act and Others," setting the stage for fundamental reforms that will better suit the Fiscal Investment and Loan Program (FILP). The new FILP eliminated the requirement that all Postal Savings and Pension Reserves be deposited with the Trust Fund Bureau (Fiscal Loan Funds) in April 2001, and Postal Savings and Pension Reserves switched to discretionary investment in the financial markets. The gradual elimination of compulsory deposits has accompanied this change.

Box 1: Market Expectations on Monetary Policy Changes Implied in Short-Term Rates and Economist Surveys

Market expectations on policy interest rate changes can be derived from short-term rates including OIS rates, Euroyen futures rates, and FB/TB rates, as well as economist surveys.

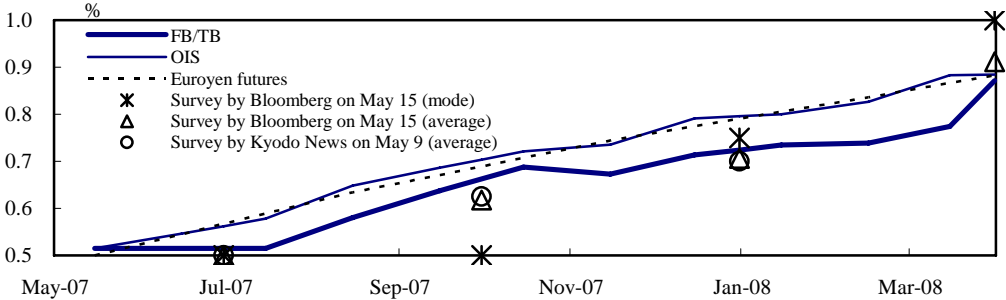
The expectations derived from market rates and surveys, however, do not necessarily concur. Box 1 Chart shows the expectations on the policy interest rate derived from short-term rates and surveys as of May 15, 2007. All expected policy interest rates derived show a gradual upward trend, but non-negligible spreads were observed among various expected rates.

OIS and Euroyen futures rates were about the same level after adjusting for the difference in trading and funding costs, reflecting active arbitrage transactions between these markets. By contrast, FB/TB rates were lower than the derivatives rates throughout the forward rate curve (see text and charts on page five).

Furthermore, market expectations extracted from forward rates are not always consistent with survey results. Some possible factors that account for such inconsistencies are listed below: (1) divergence in views between market participants and economists who answered survey questionnaires; (2) while survey results often reflect mode answers, forward rates show expected values (means); (3) bias in forward rates arising from possible supply-demand imbalances – for instance, in the first half of 2007, demand for FB/TBs occasionally increased, which exerted downward pressure on forward rates; and (4) differences in sensitivity to news – economists tend to attach more importance to long-term trends, while forward rates are more sensitive to the latest news.

Market rates and survey results have different characteristics as shown above. There are notable differences even among market rates due to difference in market participants, market liquidity, risk premiums, and interrelationships with other markets, which sometimes result in different expectations on policy interest rates. Therefore, a comprehensive examination of various kinds of market rates and surveys is needed upon extracting market expectations on monetary policy changes.

Box 1 Chart: Forward rates and survey results

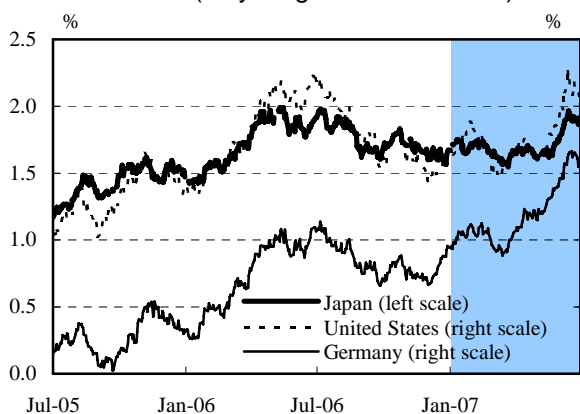


Note: OIS and FB/TB forward rates are 1-month forward rates. Euroyen futures forward rates are 3-month forward rates calculated from Euroyen TIBORs (1-3M) and Euroyen futures rates. The average basis spreads against O/N call rates, 5 bps and 15 bps respectively, are subtracted from the FB/TB and Euroyen futures forward rates.
Sources: Japan Bond Trading Co., Ltd.; Tokyo Financial Exchange; Meitan Tradition Co., Ltd.; Bloomberg; Kyodo News; Bank of Japan.

2. JGB Market

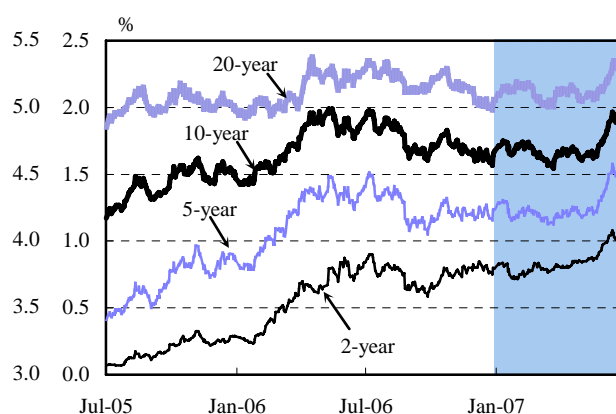
Until mid-May, long-term interest rates in the Japanese government bond (JGB) market moved in a narrow range, reflecting market participants' cautious outlook on economic activity and price developments (Chart 2-1). Subsequently, long-term interest rates rose significantly. This was attributed to (1) a substantial rise in long-term rates in the United States and Europe due to improvement in the economic outlook, and (2) releases of stronger-than-expected economic indicators in Japan. Rate on newly-issued 2-year JGB reached its highest level since June 1997, and that for 5-year JGB reached the highest since its introduction in February 2000 (Chart 2-2).

Chart 2-1: Global long-term interest rates
(10-year government bonds)



Sources: Japan Bond Trading Co., Ltd.; Bloomberg.

Chart 2-2: JGB interest rates by maturity

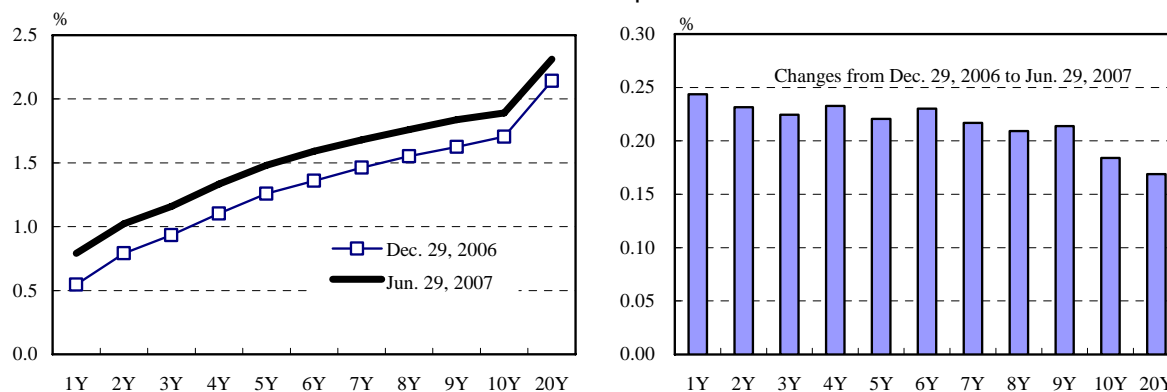


Note: Rates on newly-issued JGBs.
Source: Japan Bond Trading Co., Ltd.

Short and Medium-Term Rates Rose Significantly

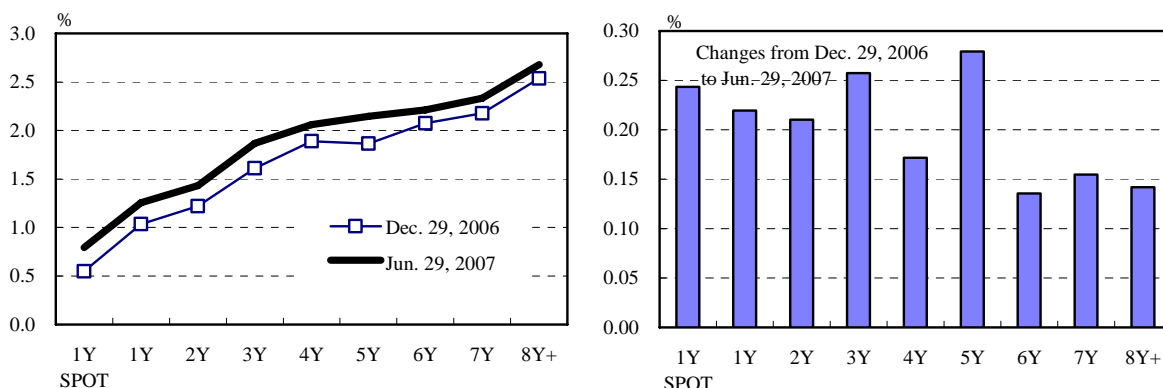
As shown in Chart 2-3, JGB spot rates rose across all maturities, particularly in short and medium maturities, making the yield curve slightly flatter. Similarly, 1-year forward rates rose, particularly in the short and medium-maturity zone (Chart 2-4).

Chart 2-3: JGB spot rates



Sources: Japan Securities Dealers Association; Bank of Japan.

Chart 2-4: 1-year JGB forward rates



Note: "8Y+" is the average of 1-year forward rates which start 8-19 years ahead.

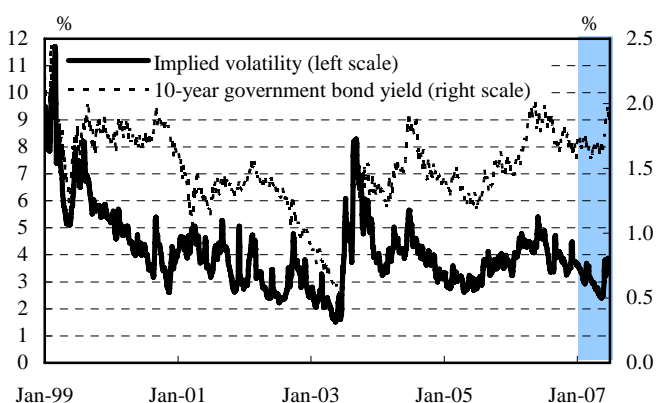
Sources: Japan Securities Dealers Association; Bank of Japan.

The rise in rates was attributed to the rise in long-term rates in the U.S. and European markets due to improvements in the economic outlook on these economies. In the second quarter of 2007, short and medium-term rates began to rise, factoring in a near-term change in the policy interest rate, based on stronger-than-expected economic indicators in Japan.

Volatility Declined and then Rebounded

Reflecting the narrow-range movements in long-term rates until mid-May, implied volatility derived from options on JGB futures listed on the Tokyo Stock Exchange followed a declining trend and reached the lowest level since June 2003 (Chart 2-5). Subsequently, implied volatility rebounded along with the rise in long-term rates.

Chart 2-5: Implied volatility of JGB futures



Note: Implied volatility is a 5-day backward moving average.

Source: Bloomberg.

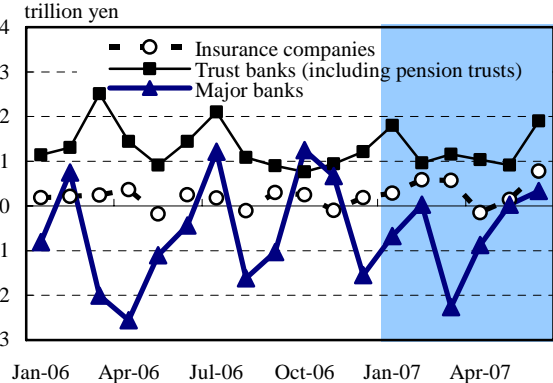
The market experienced markedly low volatility both in June 2003 and in May 2007. Nevertheless, there may have been some difference in market expectations. The implied probability density functions estimated from the implied volatility for each strike price, shows that in June 2003, market participants expected limited room for further decline in interest rates, given the preceding decline. The estimation result also implies that market participants' view on the possibility of a sharp increase in long-term rates was relatively higher in June 2003 than in May 2007 (Box 2).

Trading Activities by Investor Type

As for the JGB trading activities of domestic investors, public pension funds remained on the buy side of JGBs and increased the weight of JGB in their assets to adjust their portfolios toward the "basic portfolio" by the end of fiscal 2008. Corporate pension funds, while cautious about a possible rise in interest rates, gradually increased their investments in JGBs to maintain their asset class allocations against the backdrop of a rise in the marked-to-market values of their non-JGB assets. Life insurance companies bought long and super-long JGBs, mainly during periods in which interest rates rose, to reduce mismatches between the durations of their assets and liabilities in the general account. Although banks purchased JGBs in the early part of the second quarter of 2007, they sold more JGBs (excluding FB/TB) than they bought in the first half of 2007, in view of the risk of possible interest rate appreciation (Chart 2-6).

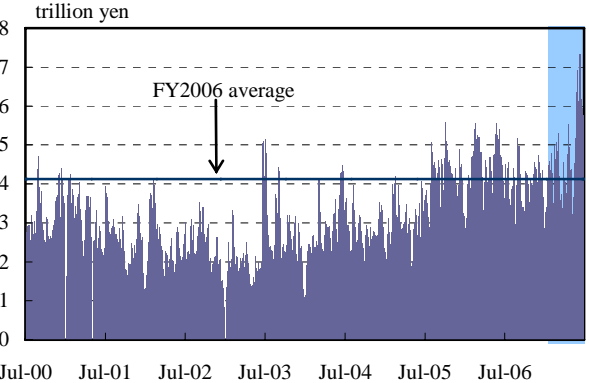
After the rise in interest rates in mid-May, some life insurance companies purchased long and super-long JGBs, while searching for the new level at which the market would stabilize again. Some banks sold JGBs, aiming to accelerate the reduction of their exposure to interest rate risks. Some overseas investors traded actively in the JGB futures market, taking advantage of arbitrage opportunities between JGB futures and U.S. Treasury bond futures. Such activities by overseas investors, in addition to hedge transactions against the risk of interest rate appreciation, boosted the trading volume in JGB futures (Chart 2-7).

Chart 2-6: Bond transactions by investor type



Note: Excluding FB and TB transactions. Major banks include city banks, Shinsei Bank, and Aozora Bank.
Source: Japan Securities Dealers Association.

Chart 2-7: Trading volume in the JGB futures market



Note: Volume is a 5-day backward moving average.
Source: QUICK.

Box 2: Implied Probability Density Functions Estimated from JGB Futures Options

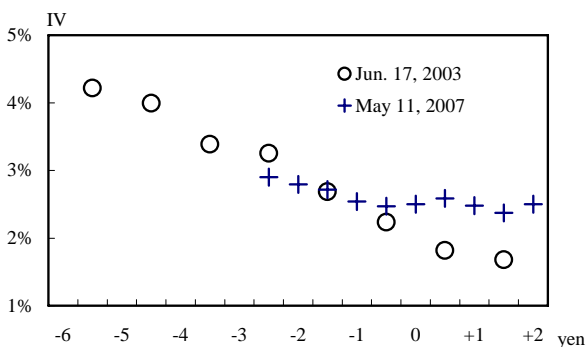
Implied volatility (IV) is widely viewed as a useful indicator of market sentiment about the uncertainty of interest rate movements. Many applications simply use IVs of at-the-money options, in which the strike price is the same as the underlying asset's price. However, due to the actual difference in volatility at different strike prices, more detailed information can be extracted from IVs of different strike prices.

The volatility curve formed by IVs of options at different strike prices shows a positive correlation between long-term rates and IVs (Box 2 Chart (1)). A steeper volatility curve implies that market participants are more cautious about a sharp decline in JGB prices and that the implied probability density functions of JGB futures (implied pdfs) are skewed.

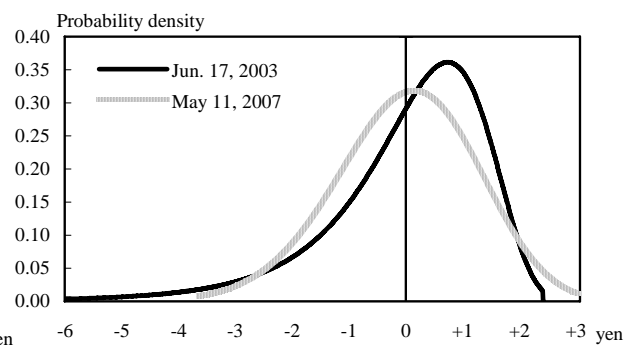
Comparing the implied pdfs for June 17, 2003 and May 11, 2007, for instance, the former volatility curve was steeper than the latter due to the highly asymmetric implied pdf, though there was no significant difference in the respective IVs of at-the-money options on these dates (Box 2 Chart (2)). The implied pdf on June 2003 suggests that while interest rates were perceived to have nearly reached a lower limit, the risk of a sharp rise, in the wake of its upturn, had been factored in. Hence, the low volatility in June 2003 largely depended on the view that there was a limited possibility of a further decline in rates. By contrast, in May 2007, the volatility curve was almost flat and the implied pdf was almost symmetrical, suggesting that the predominant view in the market was that the risk of a sharp rise was relatively low and that the increase would be limited, if any.

Box 2 Chart: Implied probability density functions

(1) Volatility curve



(2) Implied pdf



Notes: 1. Horizontal axis indicates the difference from the price of JGB futures.

2. Implied pdf is estimated as follows: (1) estimate the volatility curve using cubic spline interpolation; (2) convert the curve back into the option price function using the Black-Scholes formula; and (3) derive the implied pdf for each price by taking the second partial derivative of the option price function with respect to each strike price.

Sources: Bloomberg; Bank of Japan.

3. Equity Market

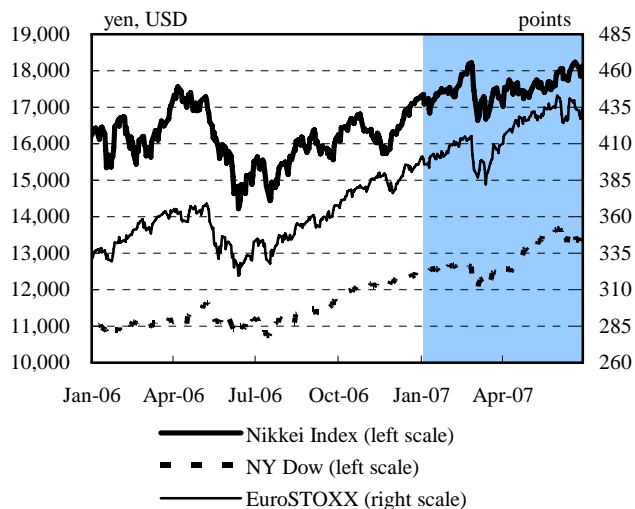
With regard to stock prices, the Nikkei 225 Stock Average (Nikkei Index) rose in late February to reach new highs for the first time since May 2000 (18,215 yen on February 26, 2007). This rise reflected rising stock prices in overseas markets, as well as expectations for robust corporate performance supported by the prolonged weakness of the Japanese yen in the foreign exchange market, under the continued expansion of the global economy. Subsequently, although stock prices temporarily dropped sharply amid a decline in global stock prices, the Nikkei Index rose beyond its previous peak in late February as investor risk aversion, which had induced declines in global stock prices, soon subsided. However, Japanese stock price developments deviated from those in U.S. and European stock markets, in that the former did not move far above the highs marked in late February, while the latter have continuously renewed their highs since the beginning of this year (Chart 3-1).

Stock Prices Increased in the First Half of 2007, but the Rise Was Limited Compared to Increases in U.S. and European Stock Prices

From January to late February, Japanese stock prices continued on a rising trend, with the Nikkei Index up to its highest since May 2000 (18,215 yen on February 26). However, as global stock prices declined from February 27 to March 5, triggered by a plunge in Chinese (Shanghai) stock prices, Japanese stock prices dropped most heavily among the major market indices (Nikkei Index declined 8.6 percent, Dow Jones Industrial Average Index (NY Dow) declined 4.6 percent, and Dow Jones EuroSTOXX Index (EuroSTOXX) declined 6.8 percent). The reasons reported for such performance include the significant rise in stock prices since the beginning of the year and the appreciation of the yen (to about 115 yen from over 120 yen against the U.S. dollar), leading to concerns about a deterioration in the corporate performance of exporters.

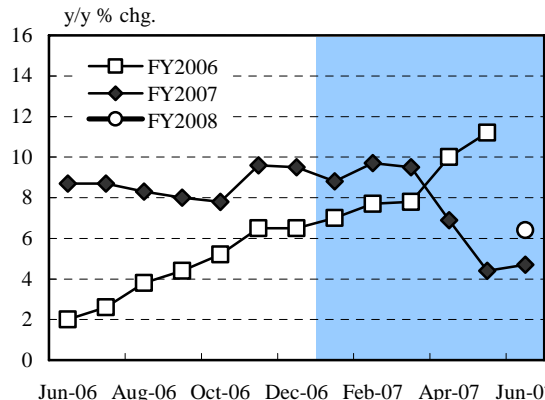
From mid-March, stock prices in the U.S. and European markets recovered and continued to renew their highs for the year. However, Japanese stock prices were suppressed by widespread cautiousness with regard to earnings results for fiscal 2006 and earnings forecasts for fiscal 2007. While announced earnings results were better than expected (Chart 3-2), earnings forecasts for fiscal 2007 turned out to be conservative, which disappointed investors, inhibiting stock prices from renewing their year-to-date highs. From mid-May, although stock prices temporarily rose, especially those of banks whose earnings results were favorable, Japanese stock prices declined with the fall in U.S. stock prices following a global rise in interest rates. Subsequently, as domestic and overseas long-term interest rates again settled down, the Nikkei Index rose again to over 18,000 yen, against a background of robust fundamentals in the global economy and continued depreciation of the Japanese yen.

Chart 3-1: Global equity prices



Source: Bloomberg.

Chart 3-2: Outlook on corporate earnings



Notes: Weighted average forecast of consolidated recurring profit growth of companies

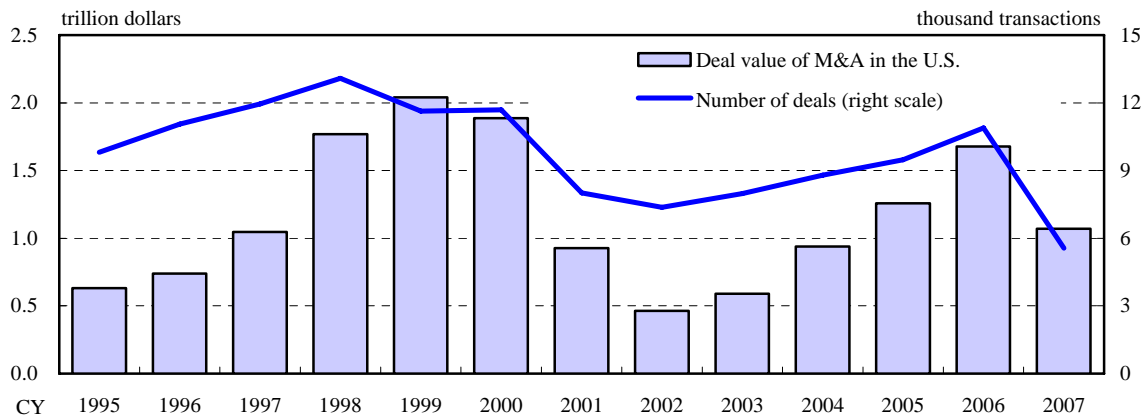
- i) listed on the TSE, First Section;
- ii) not categorized in the financial services sector;
- iii) with fiscal year ending in March;
- iv) that have not changed their accounting practices materially in the previous fiscal year;
- v) that are not involved in mergers in the previous fiscal year;
- vi) that are not subsidiaries of listed companies.

Source: Daiwa Institute of Research based on data from Toyo Keizai Inc.

Over the same period, U.S. stock prices temporarily dropped at the end of February, amid a decline in global stock prices. In the United States, concerns were mounting that the adjustment in the housing market would become more serious in response to the rise in delinquency rates for subprime mortgage loans and the subsequent bankruptcies of mortgage banks. The reason behind the declines in the prices of U.S. stocks at the end of February is reportedly explained on the basis that while an optimistic outlook on the U.S. economy had been modified to some extent, and that uncertainty had grown under these circumstances, a sudden plunge in Chinese stock prices fueled uneasiness among market participants. However, from mid-March, U.S. stock prices followed a recovery path, as the view became widely shared that credit deterioration in subprime mortgage loans would not seriously influence the U.S. financial system or its economy, calming investor risk aversion. The NY Dow subsequently renewed its year-to-date high (Chart 3-3), supported by favorable earnings results and brisk merger and acquisition (M&A) activity. However, in June, U.S. stock prices deviated from their upward trend, as long-term interest rates rose markedly, the 10-year U.S. Treasury yield surpassed 5 percent, and attention was again focused on concerns about subprime mortgage loans due to the possibility of the collapses of some hedge funds.

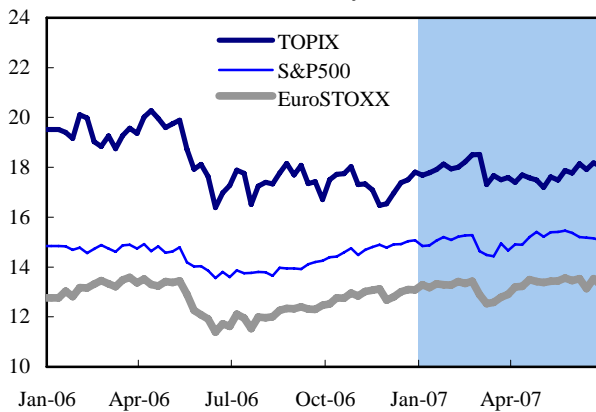
While some point out a temporary overshooting of stock prices in the U.S. and European markets, the rises in their price earnings ratios (PER) were not necessarily acute (Chart 3-4).

Chart 3-3: M&A activity in the United States



Notes: 1. Based on announced date.
 2. Transactions until June are included in data for 2007.
 Source: Thomson Financial.

Chart 3-4: PERs of major markets

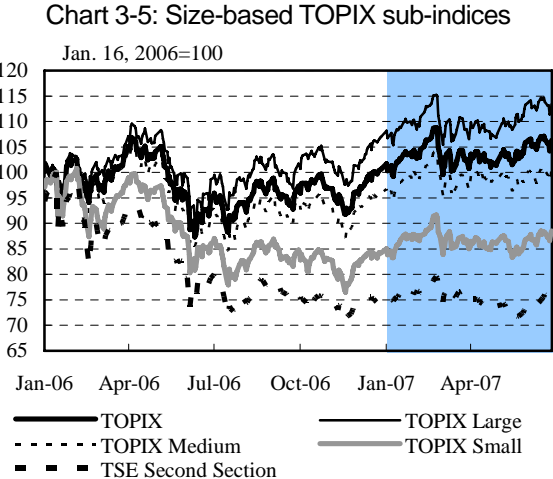


Notes: 1. 12-month forward expected EPS is used to calculate PER.
 2. Monthly data until Jan. 12, 2006 and weekly data from Jan. 19, 2006.
 Source: Thomson Financial.

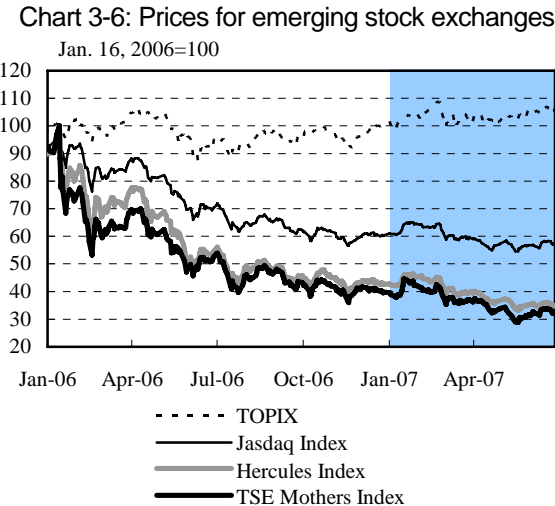
Large-Cap Stocks Continued to Outperform

One notable feature during the first half of 2007 was that large-cap stocks continued to be favored, as they were in 2006, and outperformed the stocks of smaller companies (between the end of December 2006 and the end of June 2007, TOPIX Large-Sized Stocks Index increased 6.0 percent, TOPIX Medium-Sized Stocks Index increased 4.8 percent, and TOPIX Small-Sized Stocks Index increased 5.1 percent – see Chart 3-5). This trend was also observed in the U.S. stock market. NY Dow, a major large-cap index, continued to renew all-time highs. The main contributing factor in this trend was that market participants expected the profits of large globally active companies would continue to grow, supported by robust performance in overseas operations.

Stock prices of small and new corporations have remained weak since the beginning of the year (between the end of December 2006 and the end of June 2007, JASDAQ Index declined 4.7 percent, Mothers Index declined 17.6 percent, and Hercules Index declined 17.7 percent – see Chart 3-6). The lack of credibility in the accounting practices of newly-established companies, as well as wider concerns over possible downward revisions to earnings, were cited as reasons for this weakness.



Sources: Tokyo Stock Exchange; QUICK.

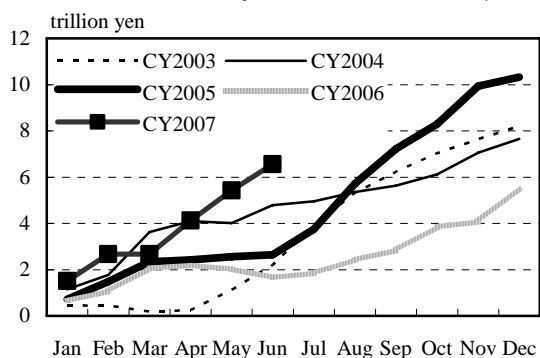


Sources: Tokyo Stock Exchange; Osaka Stock Exchange; JASDAQ Securities Exchange; QUICK.

Main Net Buyers Continued to Be Overseas Investors

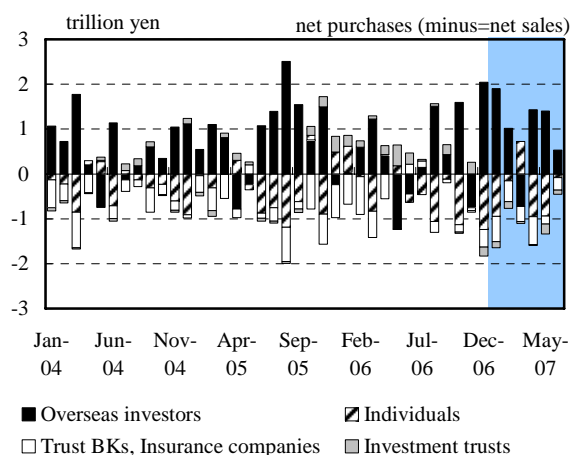
Overseas investors channeled their money into Japanese stocks against a background of strong stock prices in overseas markets, as indicated by the higher level of cumulative net stock purchases compared to 2006 (Chart 3-7). However, as overseas investors tend to shift their trading positions using futures in price adjustment periods, some observed downward pressure led by futures market during period in which cash market stock prices declined both in Japan and abroad (Chart 3-8). Meanwhile, individual investors and investment trusts were net sellers of stock. Individual investors are likely to have sold stock to realize profits when stock prices were on the rise.

Chart 3-7: Cumulative net purchases
by overseas investors (stocks)



Note: Net purchases of stocks on the First and Second Sections of the Tokyo, Osaka, and Nagoya Stock Exchanges.
Source: Tokyo Stock Exchange.

Chart 3-8: Net trading value by investor segment

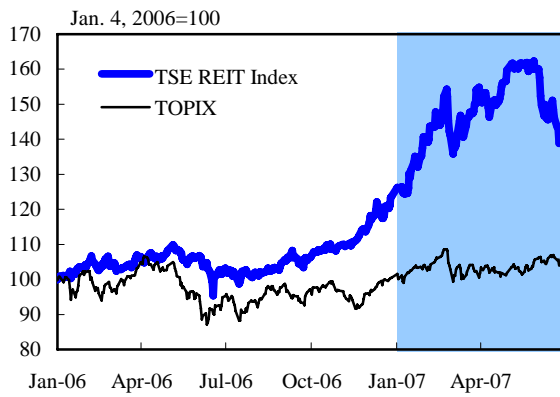


Note: Net trading value is the sum of traded amounts of cash stocks on the First and Second Sections of the Tokyo, Osaka, and Nagoya Stock Exchanges, and traded amounts of Japanese stock price index futures on the Tokyo and Osaka Stock Exchanges.
Sources: Tokyo Stock Exchange; Osaka Stock Exchange.

J-REITs Rose and then Fell Back Somewhat

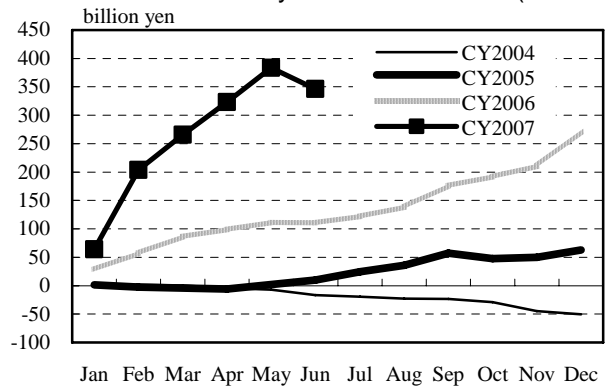
Prices of Japanese real estate investment trusts (J-REITs) rose from the beginning of the year, supported by substantial net purchases by overseas investors, but fell back somewhat in June (Chart 3-9). More specifically, although prices temporarily dropped when stock prices declined globally in February, they returned to an upward trend thereafter, supported by strong demand, especially from overseas investors. Cumulative net purchases by overseas investors exceeded the amount recorded for the full year of 2006 as early as April (Chart 3-10), and the Tokyo Stock Exchange REIT Index (TSE REIT Index) continuously renewed historical highs. However, prices fell in June, against a background of a global rise in interest rates. Meanwhile, the spread between J-REIT dividend yield and the 10-year JGB yield, or the yield spread, continued to narrow from the second half of 2006, due to an increase in J-REIT prices (Chart 3-11).

Chart 3-9: J-REITs



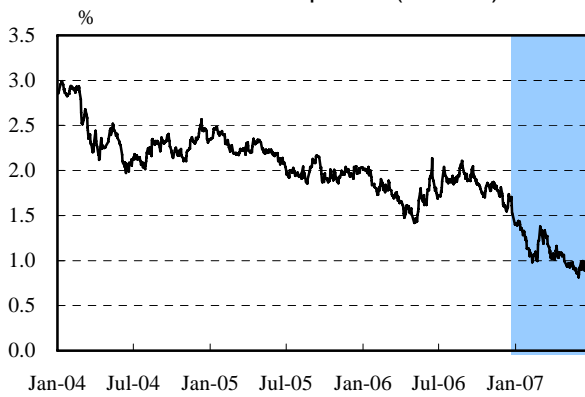
Note: TSE REIT Index is a capitalization-weighted index based on all REITs listed on the TSE.
Source: Bloomberg.

Chart 3-10: Cumulative net purchases by overseas investors (J-REITs)



Note: Net purchases.
Source: Tokyo Stock Exchange.

Chart 3-11: Yield spreads (J-REITs)

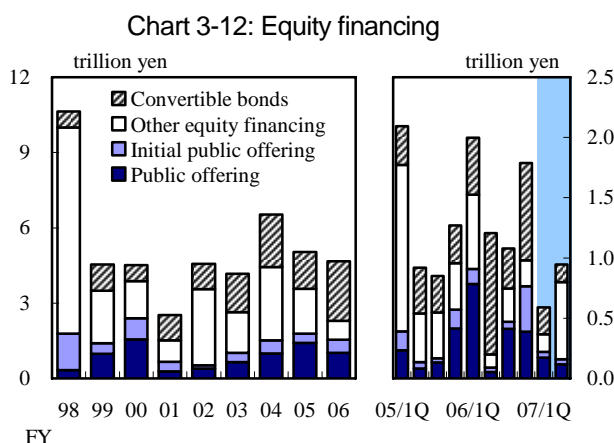


Notes: 1. Yield spread = dividend yield - 10 year JGB yield.
2. Dividend yield is the weighted average yield of firms included in the TSE REIT Index.
Sources: QUICK; Bank of Japan.

Decrease in Equity Financing

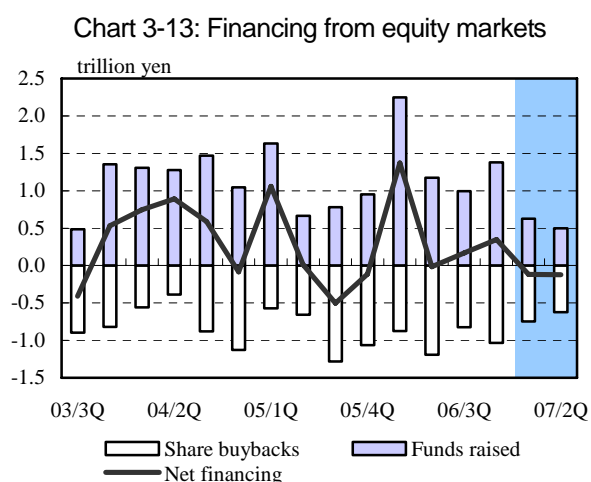
In the primary markets in the first half of 2007, initial public offerings (IPOs), other public offerings, and convertible bond issuances decreased in terms of both the amounts raised and the number of issuances in comparison with 2006 (Chart 3-12). Such decreases can be explained in part by the absence of idiosyncratic factors observed in 2006, such as large-scale financing by banks accompanying repayments of public funds and large-scale financing related to business reorganizations. In addition, companies began to diversify their financing activities, selecting the financing methods best-suited for each purpose, as they became increasingly conscious of the cost of capital. While share buybacks were active, equity financing decreased. As such, net financing from equity markets was negative, and fell substantially compared to the same period in 2005 and 2006 (Chart 3-13).

Compared to 2006, there were more cases where the price of an IPO stock fell below its initial offer price immediately after listing. One background factor was that stock prices for small and new corporations were lackluster.



Note: "Other equity financing" includes allotments to existing shareholders and third parties.

Source: Japan Securities Dealers Association.



Notes: 1. Transactions in companies listed on the TSE.

"Funds raised" is the sum of equity financing (including preferred stock and distribution of treasury stock, but excluding IPOs), warrants exercised, and convertible bonds. "Share buybacks" excludes purchases from subsidiaries.

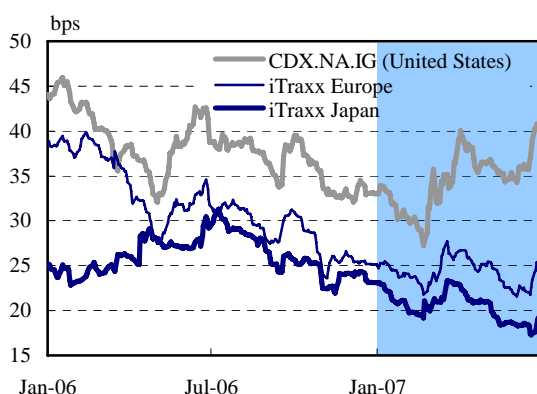
2. Transactions in June 2007 are not included in the data for 07/2Q.

Source: Tokyo Stock Exchange.

4. Credit Market

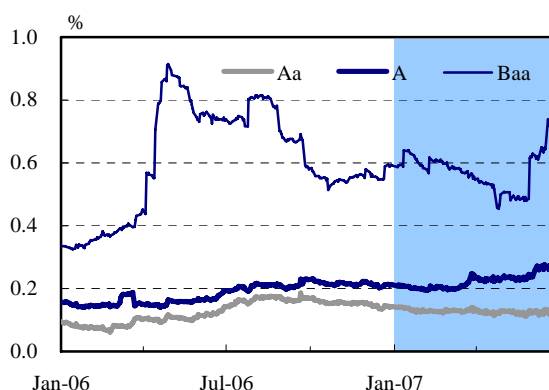
In the credit market, corporate bond spreads over JGB yields and credit default swaps (CDS) premiums for firms with higher credit ratings were stable. Meanwhile, those for some firms with lower credit ratings or wider spreads gradually tightened due to strong demand from yield-seeking investors. These factors resulted in a narrowing of credit spreads on the whole. This result was attributed to investors' stable views of strong and healthy corporate fundamentals, such as favorable earnings and debt-equity ratios, and the stable outlook on interest rates. In the U.S. and European credit markets, credit spreads widened due to investor risk aversion triggered by concerns over the deteriorating quality of subprime mortgage loans in the U.S. housing market, as well as the decline in global stock prices between the end of February and early March. However, the Japanese credit market was largely unaffected by this global downturn (Chart 4-1).

Chart 4-1: CDS index



Source: Markit Group.

Chart 4-2: Corporate bond spreads



Notes: 1. Spreads for bonds with 4 to 6-year maturities over 5-year JGBs.
 2. The ratings indicated are those of Moody's.
 3. In the chart, spreads for Baa-rated bonds widened on May 29 and June 18, and spreads for A-rated bonds on June 4, because of the replacement of issues included in the respective rating groups.

Sources: Bank of Japan; Japan Securities Dealers Association.

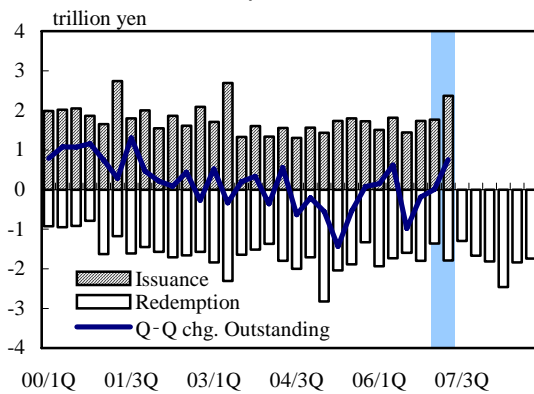
Corporate Bond Spreads Remained Stable for Single and Double-A and Narrowed for Triple-B Rated Bonds

With respect to corporate bond spreads (Chart 4-2), spreads for firms with a credit rating of single or double-A remained stable at low levels. Meanwhile, spreads for firms with a triple-B rating narrowed gradually under the favorable investment environment referred to above. However, spreads of some bonds temporarily became highly volatile. These bonds were mainly issued by firms with individual factors, or by consumer finance companies, which were affected

by investor concern over a possible business contraction and asset quality deterioration against a background of changes in the business environment due to legislative reforms related to consumer lending.

The amount of corporate bond issuances exceeded the amount in the same period last year. Particularly in June, some companies seemed to accelerate their issuance schedules or lengthened their funding maturities (Charts 4-3 and 4-4), as interest rate volatility rose somewhat.

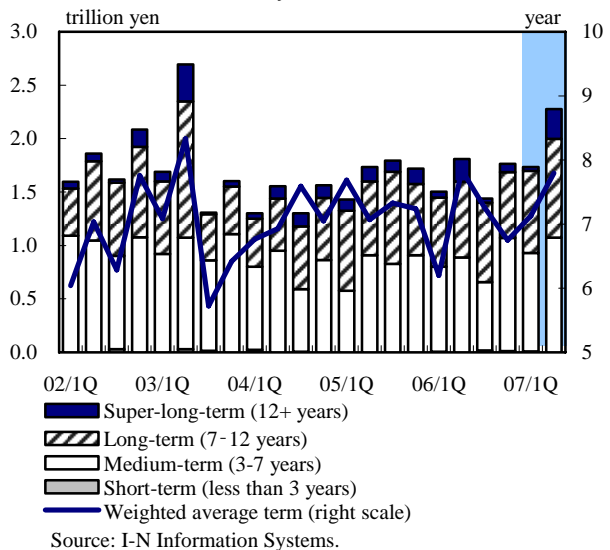
Chart 4-3: Corporate bond issuance and redemption



Note: The amount of redemptions after the third quarter of 2007 is estimated.

Source: I-N Information Systems.

Chart 4-4: Corporate bond issuance by maturity



Source: I-N Information Systems.

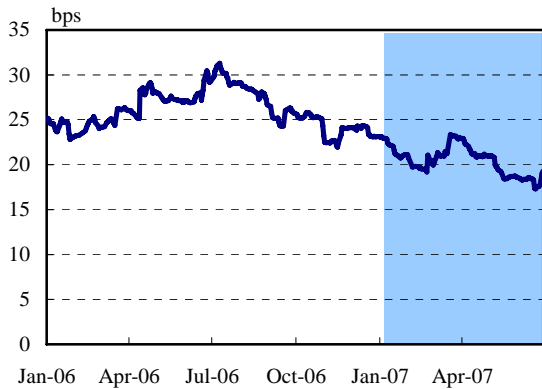
CDS Premiums Widened Slightly in the First Half of 2006 and then Gradually Narrowed

The spread/premium on the CDS index (iTraxx Japan), which consists of 50 major entities, widened slightly in the first half of 2006 and then gradually narrowed. After May 2007, it stayed stable at low levels (Chart 4-5). The main factors behind these developments, in common with those for corporate bond spreads, were strong financial fundamentals in the corporate sector and the stable outlook on interest rates. Another possible factor behind the tightening of the CDS premium was that investor demand for credit products was stimulated by the active origination of structured products such as first-to-default (FTD) notes.¹ As for single name CDS spreads, this tightening trend was most notable in CDS premiums for firms with lower ratings or wider spreads, while spreads narrowed for almost all firms.

A new CDS index composed of 80 entities was introduced as an addition to the existing index

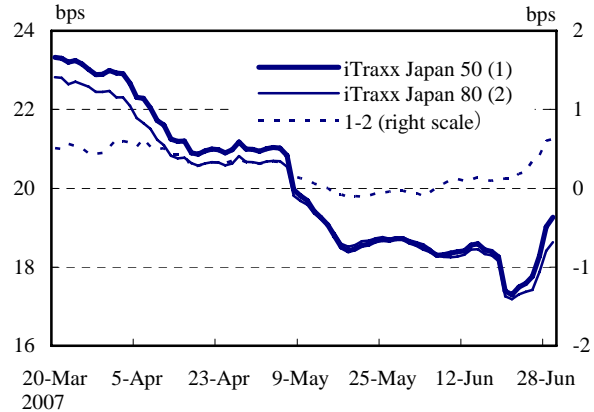
composed of 50 entities on March 20, 2007 when the series number 7 was launched. So far, the premium movements of both indices have generally run in parallel with each other, with little deviation between the new index and the existing index (Chart 4-6).

Chart 4-5: iTraxx Japan (50 entities)



Source: Markit Group.

Chart 4-6: iTraxx Japan (50 & 80 entities)



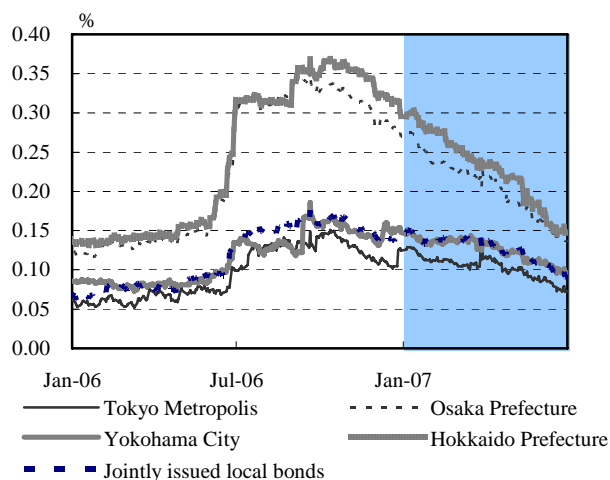
Source: Markit Group.

Credit Spreads for Municipal Bonds and FILP Agency Bonds Temporarily Widened toward the Second Half of 2006 and then Gradually Narrowed

After temporarily widening toward the second half of 2006, spreads over JGBs for municipal bonds gradually narrowed during the first half of 2007. Meanwhile, there was a narrowing in the differences in credit spreads between issuers, as spreads for higher-rated municipal bonds remained stable, while spreads for lower-rated bonds tightened (Chart 4-7). Many factors contributed to this development: the outlook for interest rates remained stable, and market participants' prolonged concerns over the issues surrounding municipal bonds became somewhat subdued after the outline of a reform plan for the local government finance system was presented in "The Report" (December 8, 2006) of a government council. The Report proposes the introduction of a new scheme consisting of two phases. The first phase is the introduction of new financial indicators and detailed information disclosure requirements, and the second is the taking of prompt corrective action and the implementation of a revitalization process. Under the new scheme, it is expected that a severe financial crisis will be averted through transparent and prompt corrective action based on sufficient information disclosure.

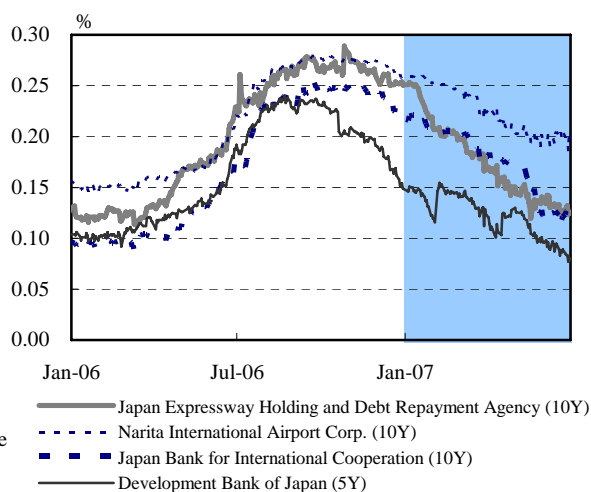
Fiscal Investment and Loan Program (FILP) agency bond (Zaito-Kikan bond) spreads continued to tighten during this period, following the trend that has continued since last year, when the framework for the policy-based finance reform was revealed. On the whole, these spreads steadily tightened, albeit with temporary fluctuations in the spreads of some issuers (Chart 4-8).

Chart 4-7: Municipal bond spreads



Note: Spreads on 10-year bonds against JGBs.
Sources: Bank of Japan; Japan Securities Dealers Association.

Chart 4-8: FILP agency bond spreads



Note: Spreads against JGBs.
Sources: Bank of Japan; Japan Securities Dealers Association.

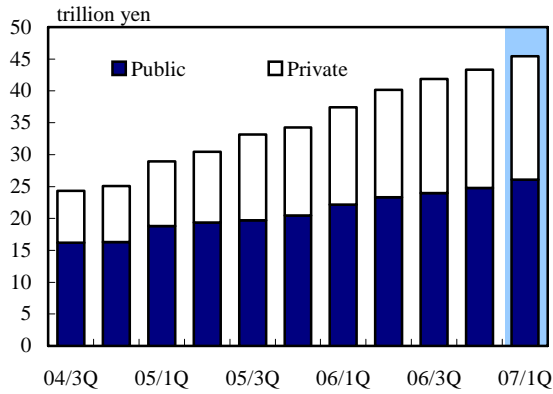
Continued Developments of Various Credit Channels

The amount of syndicated loans outstanding showed an increasing trend, although the rate of increase slowed down somewhat (Chart 4-9).

Issuances of securitized products during the period were steady, particularly for products backed by real estate mortgage loans, such as RMBSs and CMBSs. Total CMBS issuances displayed a year-on-year increase, and for RMBSs, the number of originations was almost unchanged compared with the previous year, although total issuances during the period was down by 14 percent, mainly due to the absence of the large RMBS issuances by commercial banks noted during the same period last year (Chart 4-10). The influence on Japanese markets of ratings reviews on securitized products and the widening of their spreads in the U.S. market since February 2007, which stemmed from concerns over subprime mortgage loans, remained modest as at the end of June.

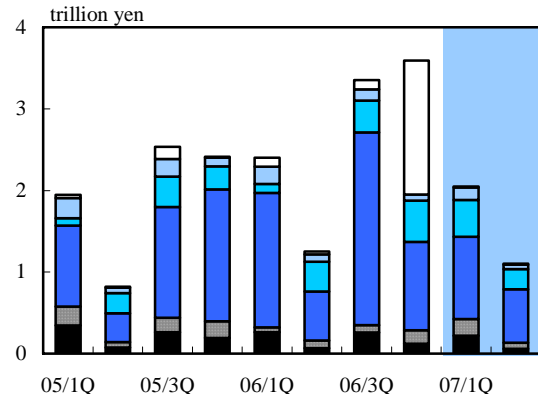
In the yen-denominated foreign bond (so-called "Samurai bond") market, there was a significant decrease in last year's total issuances because of uncertainty over tax treatment in issuers' home countries after the book-entry transfer system for corporate bonds was applied to these bonds in January 2006. However, new issuances from U.S. firms, especially in the financial sector, bottomed out, and has begun to recover since the beginning of this year, after the U.S. Internal Revenue Service clarified the conditions for exempting withholding tax on interest income in November 2006. As a result, total issuances have far exceeded last year's volume (Chart 4-11).

Chart 4-9: Amount of syndicated loans outstanding



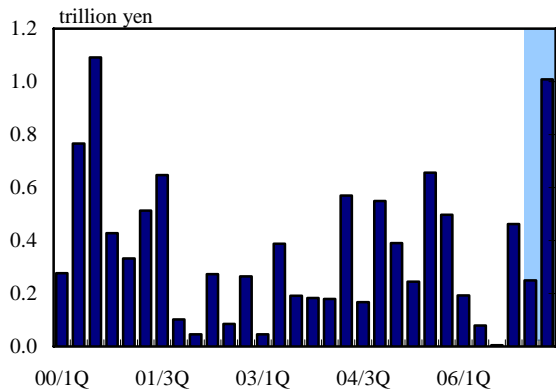
Source: Bank of Japan.

Chart 4-10: Issuances of securitized products



Sources: Bank of Japan; Japan Securities Dealers Association.

Chart 4-11: Issuances of Samurai bonds



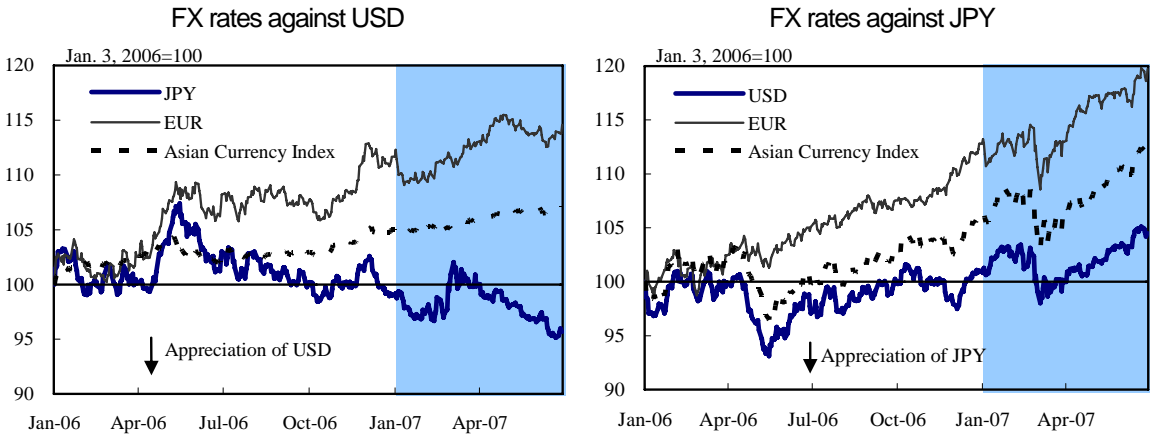
Sources: Japan Securities Dealers Association; I-N Information Systems.

¹ First-to-default (FTD) notes are products that are structured with reference to multiple corporates and other credit risks. The first credit event with regard to any of the reference entities, such as a default or a failure to pay, leads to redemption (full payout and termination) of the bond. The payout amount is generally set based on the market value of the outstanding debt, such as a corporate bond or a bank loan, of the entity subject to the credit event. Because a single credit event for any of the reference entities leads to redemption, the return on such structured products is likely to be higher than that on bonds based on a credit event of a single reference entity.

5. Foreign Exchange Market

In the foreign exchange (FX) market, the Japanese yen (JPY) continued to depreciate and reached its lowest level since 1985 in terms of the real effective exchange rate (Chart 5-1). However, between the end of February and early March 2007, global stock prices declined, which made investors more risk averse, and the JPY temporarily appreciated against other currencies. The Euro (EUR) appreciated slightly against the U.S. dollar (USD), reflecting firm economic indicators in the euro area and speculative movement based on the view that some countries would increase the share of the EUR in their official foreign reserves.

Chart 5-1: Foreign exchange rates



Note: Asian Currency Index (against JPY) is calculated from Asian Currency Index (against USD) and USD/JPY.
Sources: Bloomberg; Bank of Japan.

JPY Temporarily Appreciated due to the Decline in Global Stock Prices

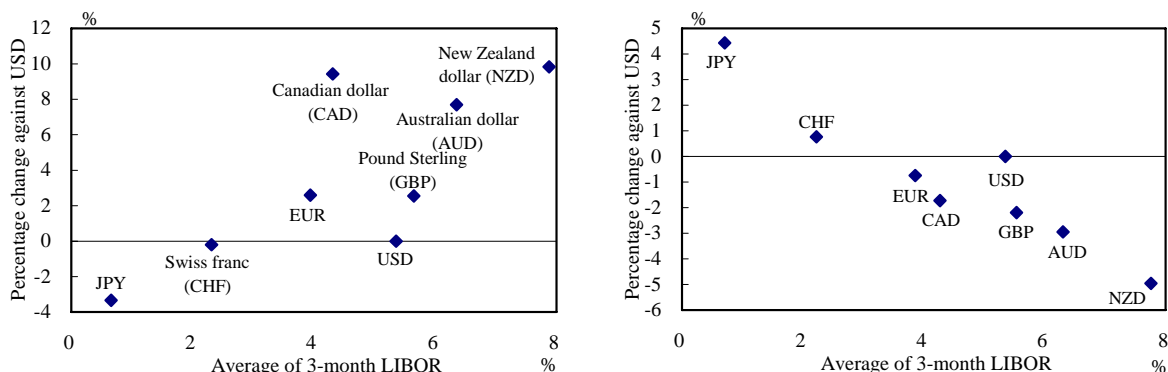
The JPY continued to depreciate against various other currencies. A high correlation was observed between short-term interest rates and the changes in the corresponding FX rates (Chart 5-2 (1)). The preference for high-yield currencies based on the assumption that the low volatility environment would not change presumably contributed to this phenomenon. However, from the end of February until early March 2007, the JPY largely appreciated against other currencies amidst a decline in global stock prices (Chart 5-2 (2)). The rapid unwinding of JPY short positions due to increased investor risk aversion seemed to have contributed to the appreciation. The IMM Commitments of Traders Report shows that non-commercial traders, mainly speculative investors, unwound their accumulated JPY short positions in the futures market during this period (Chart 5-3).

Chart 5-4 shows that the JPY became more volatile than other currencies in the first half of 2007, when the volatility of the major currencies continued on a downward trend. Moreover, the level of the implied correlation between USD/JPY and EUR/JPY also went up after the G7 meeting in February, suggesting that the JPY was in the spotlight among the major currencies at that time (Box 3).

Chart 5-2: Short-term interest rates and percentage changes in FX rates

(1) Jan. 2 - Jun. 29, 2007

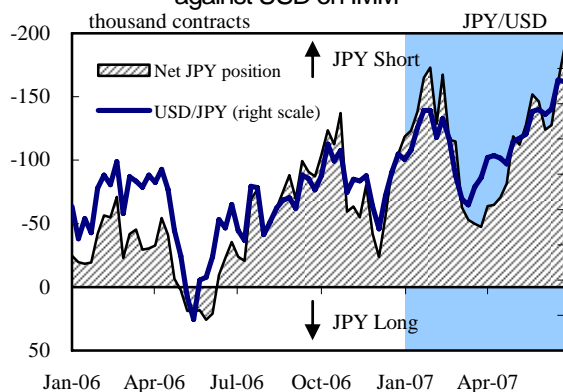
(2) Feb. 27 - Mar. 5, 2007



Note: Percentage changes against USD and averages of 3-month LIBOR are calculated for the above periods.

Source: Bloomberg.

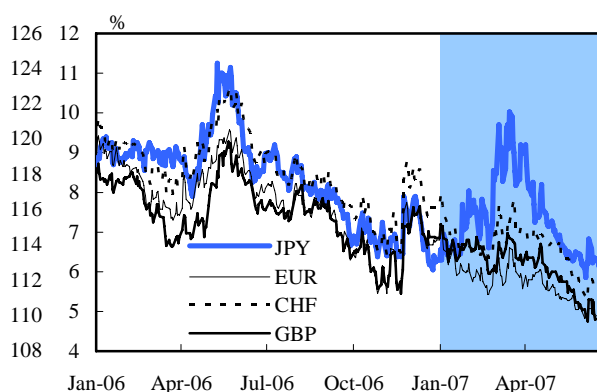
Chart 5-3: Net non-commercial JPY position against USD on IMM



Note: The contract size is 12.5 million yen.

Sources: CFTC; Bloomberg.

Chart 5-4: FX rate volatility against USD



Note: 1-month implied volatility.

Source: Bloomberg.

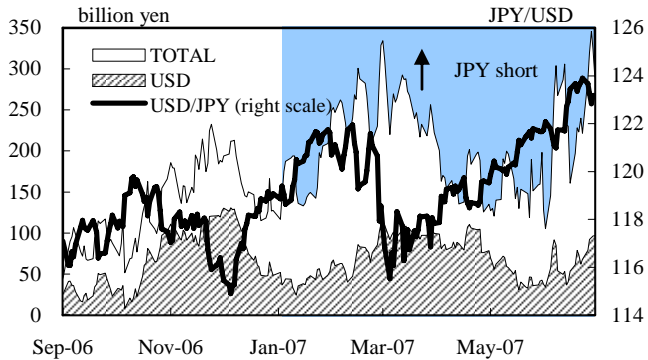
FX Transactions by Domestic Retail Investors

The behavior of domestic retail investors attracted close attention in the FX market. Their investments can be broadly classified into the following two types of transaction. One is short-term investments that aim for short-term gains, such as FX margin trades. The volume of this type of trade has been increasing. In the first half of 2007, margin traders increased their JPY short positions, even when other investors unwound their JPY short positions in the face of sharp increase in JPY volatility (Chart 5-5). FX margin trades seem to have increased its presence in the FX market, and is considered to have played a role in preventing FX rates from changing significantly during the period.

Another type of transaction is longer-term investments made through investment trusts that invest in foreign currency-denominated assets. Retail investors pursuing this type of trade had previously invested primarily in bond investment trusts, but recently increased their weight of investment in equity investment trusts leading to a stable

overall increase. The flow of investments into these investment trusts was a source of continuous downward pressure on the JPY (Chart 5-6).

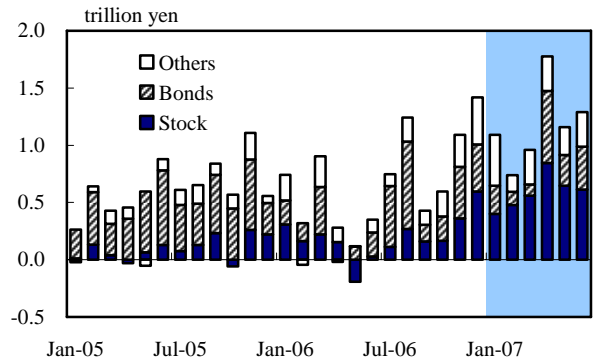
Chart 5-5: FX margin contracts on Tokyo Financial Exchange



Notes: 1. Net short position of the JPY against the other currencies.
 2. "Total" is the sum of positions in USD, EUR, GBP, AUD, CHF, CAD, and NZD.

Sources: Tokyo Financial Exchange; Bloomberg.

Chart 5-6: Monthly changes in total net assets of publicly offered investment trusts in foreign currencies



Source: Investment Trusts Association, Japan.

Box 3: Implied Correlation

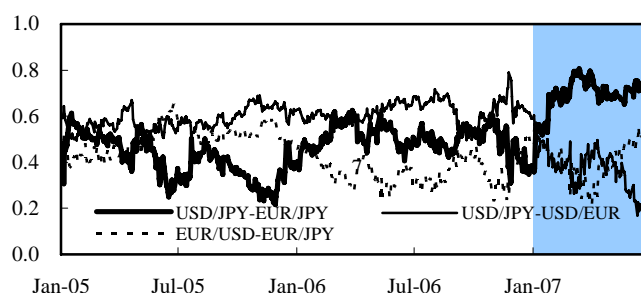
The correlation between FX rates is a useful indicator for specifying the currency that dominates the movement of FX rates. For instance, a high correlation between USD/JPY and EUR/JPY can be interpreted that the JPY is the dominant currency among the three currencies, and hence the two FX rates involving the JPY tend to move in the same direction. In this Box, we introduce the “implied correlation” that can be calculated from the implied volatilities among the three currencies using the equation below.

$$\rho_{USD/JPY, EUR/JPY} = \frac{\sigma^2_{USD/JPY} + \sigma^2_{EUR/JPY} - \sigma^2_{EUR/USD}}{2 \times \sigma_{USD/JPY} \times \sigma_{EUR/JPY}}$$

Note: This equation shows the correlation between USD/JPY and EUR/JPY. ρ and σ respectively represent correlation and volatility (standard deviation).

Box 3 Chart 1 shows that the implied correlation between USD/JPY and USD/EUR was relatively high until 2006, indicating that the USD was the currency that led price movements among the three currencies during this period.

Box 3 Chart 1: Implied correlations among G3 currencies



Note: Implied correlations are calculated from 1-month implied volatilities among USD, JPY, and EUR.

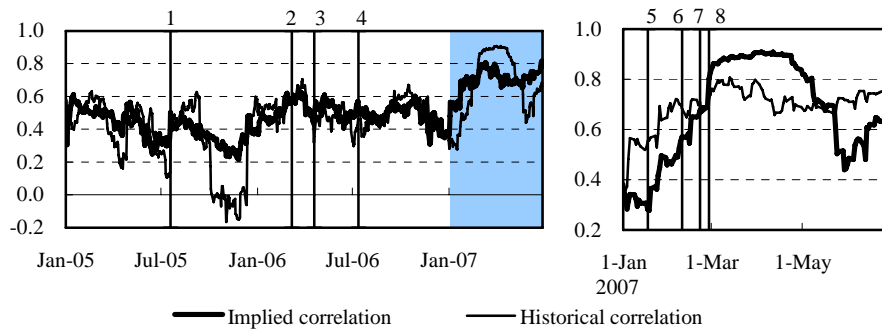
Sources: Bloomberg; Bank of Japan.

Until 2006, the implied correlation between USD/JPY and EUR/JPY rose along with the anticipation of policy changes or major events related to Japan, such as the end of the quantitative easing policy, the Bank’s policy interest rate hikes, renminbi appreciation, and the G7 meeting in Washington D.C. (Box 3 Chart 2).

After the beginning of 2007, the implied correlation went up amid growing anticipation over policy interest rate hikes in Japan and the interest in discussions on the FX market at the G7 meeting in Essen. Moreover, the correlation rose further after global stock prices declined at the end of February, signaling the possibility of an unwinding of JPY short positions in response to risk reduction of investors.

From the end of April, the historical 20-day correlation between USD/JPY and EUR/JPY declined because these FX rates tended to respond to positive U.S. economic indicators during this period. The implied correlation, however, remained high, implying that future movements in the JPY continued to attract the market’s attention the most.

Box 3 Chart 2: Correlation between USD/JPY and EUR/JPY



- 1. renminbi appreciation
- 2. end of the quantitative easing policy
- 3. G7 in Washington, D.C.
- 4. policy interest rate hike
- 5. January MPM
- 6. G7 in Essen
- 7. policy interest rate hike
- 8. decline in global stock prices

Note: Implied correlations are calculated from the 1-month implied volatilities of USD/JPY, EUR/JPY, and EUR/USD. Historical correlations are calculated as 20-day backward correlations.

Sources: Bloomberg; Bank of Japan.