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Financial
System
FSR Report

Bank of Japan
March 2009

This report mainly covers 12 major banks and 109 regional banks.

The 12 major banks comprise Mizuho Bank, The Bank of Tokyo-Mitsubishi UFJ, Sumitomo Mitsui Banking Corporation, Resona Bank, Mizuho Corporate Bank, Saitama Resona Bank, Mitsubishi UFJ Trust and Banking Corporation, Mizuho Trust and Banking Company, The Chuo Mitsui Trust and Banking Company, The Sumitomo Trust and Banking Company, Shinsei Bank, and Aozora Bank. The 109 regional banks comprise the 64 member banks of the Regional Banks Association of Japan and the 45 member banks of the Second Association of Regional Banks (44 member banks of the Second Association of Regional Banks as of December 31, 2008).

In the charts, "I" and "II" represent the first half and second half of the relevant year, respectively.

Unless otherwise stated, this document uses data available as of February 27, 2009.

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Preface

The Bank of Japan publishes the *Financial System Report* biannually with two objectives. The first is to present a comprehensive analysis and assessment of the stability of Japan's financial system. The second is to facilitate two-way communication with economic agents in order to contribute to the stability of the financial system.

The *Financial System Report* analyzes the stability of the financial system from two perspectives: the functioning of the system and its robustness. The functioning of the system is assessed in terms of whether it promotes an efficient allocation of economic resources, thereby contributing to the sustained development of the economy. The robustness is assessed in terms of whether the financial system is sufficiently robust to absorb factors that may emerge and jeopardize the financial intermediation function. Macroprudential research also provides a valuable insight into the assessment of monetary policy's transmission channels.

The turmoil in the global financial system stemming from the U.S. subprime mortgage problem has evolved into the global financial crisis accompanied by rapid deleveraging. Against this backdrop, the March 2009 issue of this report reexamines the stability of Japan's financial system in terms of the financial intermediation function and its robustness. Given rapid changes in the financial and economic environment, this issue incorporates as much as possible the latest developments in firms' funding and banks' lending.

The Bank intends to contribute to ensuring the stability of Japan's financial system through research and analyses of the financial system, together with proper pursuit of central banking operations.

An Assessment of the Current State of Japan's Financial System: An Overview

An assessment of the current state of Japan's financial system

1. As the strains in global financial markets are continuing and economic conditions are changing rapidly at home and abroad, Japan's financial system, which maintained stability on the whole, is gradually influenced in terms of financial intermediation function and robustness, mainly through the growing losses on securities and the rise in credit costs.

Since the autumn of 2008, financial conditions for firms' funding have been severe as seen in the declining function of CP and corporate bond markets. Against such a backdrop of the firms' severe financial conditions on the whole, Japan's financial institutions have retained the financial intermediation function accordingly, by supporting firms which have difficulty funding from capital markets. So far, the Japanese banks have shown robustness to a certain degree amid the turbulence of the global financial system, partly because they had been fortifying their financial bases, and also because they had limited investments to overseas structured credit products. Looking ahead, however, there is growing concern over the level of profits of financial institutions, and it is necessary to monitor closely how the banking sector will carry out the financial intermediation function adequately while it achieves sufficient robustness.

2. In terms of profits, a downtrend for the major banks and the regional banks has become obvious, reflecting the deterioration in the domestic and global economic environments. Looking at net income for the first half of fiscal 2008, the major banks posted their second consecutive declines year-on-year, and the regional banks

recorded their third if the extraordinary factor was set aside.

The decline in profits became even more pronounced when the books were closed for the October-December quarter of 2008. Several factors were behind this deterioration in profits, including the increase in credit costs because of the economic downturn, significant deterioration in gains/losses on securities, and the declines in non-interest income. Meanwhile, banks' capital adequacy ratios as of end-September 2008 remained more or less unchanged.

Developments in the financial intermediation function

3. The funding conditions for firms through capital markets have continued to be daunting, as witnessed by a substantial decline in the issuance of CP and corporate bonds and their widening spreads. Against a backdrop of the rapid fall in corporate sales and profits, the financial indicators concerning short-term debt or ability to pay interest have been deteriorating rapidly.

4. Bank lending to large firms has recently been increasing in response to increased funds demand, as those firms faced difficulties including the decline in the functioning of capital markets. Meanwhile, the funding conditions of small and medium-sized firms have continued to tighten, with the shrinkage in trade credits and a cautious lending stance by banks that have been concerned over the rise in credit costs associated with worsening business conditions. In this environment, financial institutions have been receptive to the expansion of the emergency guarantee system and other measures.

As such, with supporting firms' funding in the face of the declining function in capital markets, Japan's financial institutions have retained the financial intermediation function accordingly under the firms' severe financial conditions. Whether they will be able to respond properly to changes in firms' funds demand amid the worsening economy in the period ahead warrants careful monitoring.

Robustness of the financial system

5. In terms of the risks held by the banking sector, there has been an increase in credit risk, which had previously been in decline, for the major banks and the regional banks. In addition, market risk associated with stockholdings has increased for the major banks, and interest rate risk has increased for the regional banks. With declining stock prices, a substantial amount of both realized and unrealized losses on stockholdings has been reported amid a leveling off in the outstanding amount of banks' stockholdings. In the face of unstable stock prices at present, the management of market risk associated with stockholdings remains an important challenge for banks.

6. The banking sector's expected losses, estimated on the assumption of future economic downturns with different degrees of severity, are not likely to substantially lower banks' Tier I capital ratios, although they may temporarily but substantially exceed operating profits from the core business. This shows that Japan's financial system remains robust on the whole. However, if both an economic downturn and stagnating stock prices occur simultaneously, there are risks that banks' Tier I capital ratios, especially the ratios of banks whose capital strength is relatively weak, might decline and remain at

similar or lower levels, compared with the levels in the late 1990s and early 2000s. Against such a backdrop, if banks become more conscious of capital constraints in the future, there might be a case in which the financial intermediation function would not be carried out smoothly from a macro perspective.

7. As Japan's economy has significantly deteriorated and the financial environment has continued to be severe, it has become increasingly important for financial institutions to have a sufficient capital base and carry out properly their financial intermediation function. In that regard, Japan's financial institutions have been seeking to fortify their capital strength through various measures including capital reinforcement and refined credit exposure management. In the long run, financial institutions will face a critical challenge of securing stable profitability as a source of capital from a viewpoint of ensuring the stability of the financial system.

Initiatives to stabilize the financial system

8. Japan carried out various policy measures on the financial system front in response to the turmoil in the global financial markets. First, in terms of capital reinforcement of financial institutions, the act for strengthening financial functions was amended to establish a framework for public funds utilization. In addition, a partial relaxation of capital adequacy requirements, an expansion of the emergency guarantee system aiming at supporting firms' funding, and revisions of accounting standards regarding fair value evaluation and reclassification of holding bonds were put into effect.

9. The Bank of Japan, in view of the need to support the economy from the financial front, not only cut the policy rate but also introduced measures to stabilize financial markets and special funds-supplying operations to facilitate corporate financing. Specifically, the target uncollateralized overnight call rate was cut by 0.2 percentage point in October and December 2008, respectively, to 0.1 percent. To stabilize financial markets, U.S. dollar funds-supplying operations were initiated, and, aiming at further permeating the effects of monetary easing, a variety of measures were taken to expand liquidity provision. In addition, taking into account the increasingly severe environment surrounding corporate financing, special funds-supplying operations to facilitate corporate financing were introduced and expanded, and outright purchases of financial products including CP and the range of collateral regarding private corporate debt that was eligible for the Bank's open market operations was expanded. Furthermore, the Bank decided to resume its purchases of stocks held by financial institutions to support financial institutions' future endeavors to reduce market risk associated with stockholdings and to ensure financial system stability.

The Bank of Japan will make the maximum contribution as a central bank to ensure financial system stability and to help Japan's economy return to a sustainable growth path with price stability.

I. Changes in the Environment Surrounding Japan's Financial System, and the Current Assessment

This chapter identifies risks and their development, which could bring instability to Japan's economy and financial system. First, the turmoil in the global financial markets since the autumn of 2008 and the impact on financial institutions are summarized. Second, the chapter reviews the impact that the turbulence in the global financial system has had on Japan's economy and financial system before providing a summary of recent developments in banks' profits. Finally, the stability of Japan's financial system is assessed, in terms of financial intermediation function and robustness. Chapter II will discuss developments in the financial intermediation function, and Chapter III will discuss the robustness of the financial system. Appendix will outline policy initiatives by governments and central banks at major economies after September 2008.

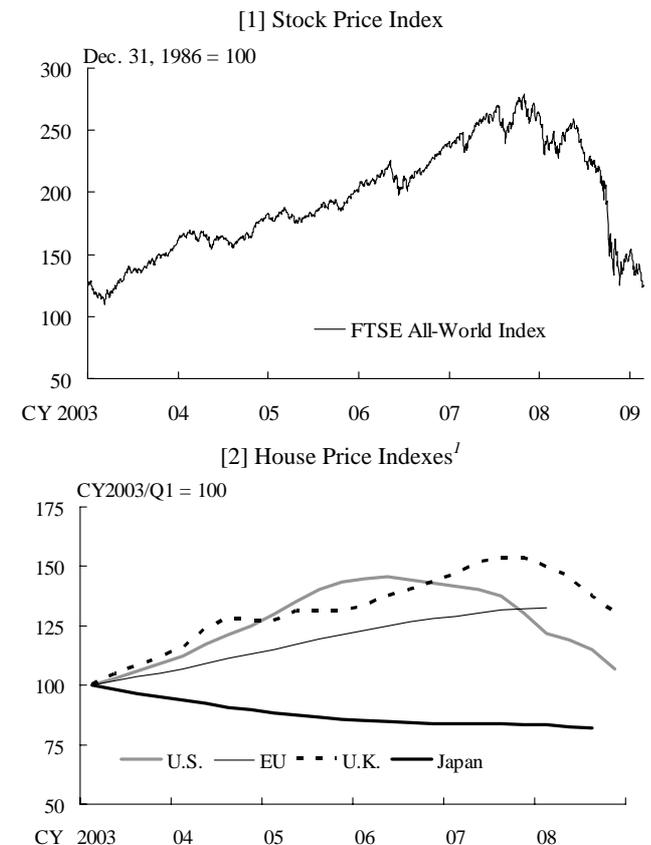
A. Turbulence in the Global Financial System

1. Turmoil in the global financial markets

The global financial markets have remained unstable since the summer of 2007, when the U.S. subprime mortgage problem surfaced. The bankruptcy of Lehman Brothers, an investment bank in the United States, in September 2008 greatly deepened the crisis, and markets have remained under strain ever since (see the March 2009 issue of the *Financial Markets Report*, Bank of Japan, for the recent developments in the global financial markets).

Against a backdrop of increased uncertainty in the financial system and a rapid worsening in business sentiment, stock prices around the world declined

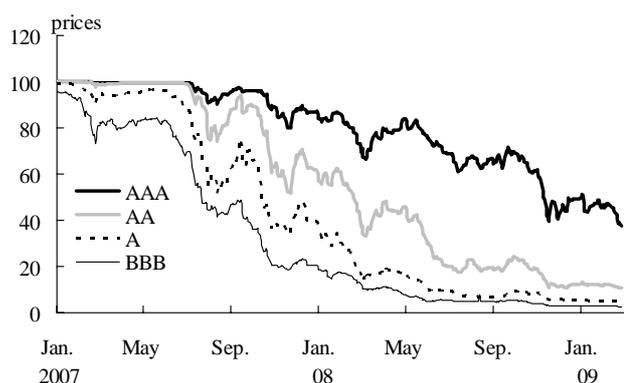
Chart 1-1: Global Asset Prices



Note: 1. U.S.: S&P/Case-Shiller index, U.K.: Nationwide House Price Index, Japan: Urban Land Price Index, EU: Residential Property Price Index Statistics.

Sources: FTSE; Standard and Poor's; Nationwide, Japan Real Estate Institute; European Central Bank.

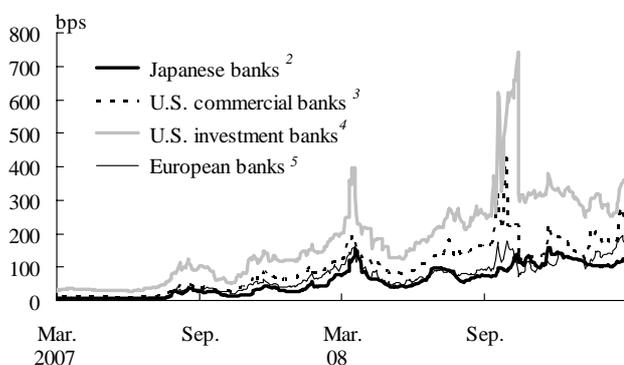
Chart 1-2: Market Condition of Residential Mortgage-Backed Securities¹



Note: 1. Data are on ABX-HE 2006-2, which is a credit default swap index linked to subprime residential mortgage-backed securities (RMBS). Its reference pool is 20 subprime RMBS issued within the period between January and June 2006.

Source: JPMorgan.

Chart 1-3: CDS Premiums of Major Banks¹



Notes: 1. The values are calculated as the simple average of the CDS premiums.

2. The values of Japanese banks include those of The Bank of Tokyo-Mitsubishi UFJ, Sumitomo Mitsui Banking Corporation, and Mizuho Corporate Bank.

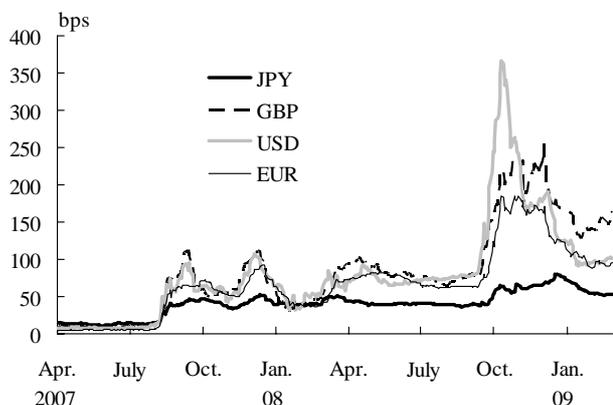
3. The values of U.S. commercial banks include those of Citigroup, Bank of America, JPMorgan Chase, Wachovia, and Wells Fargo.

4. The values of U.S. investment banks include those of Goldman Sachs, BofA Merrill Lynch, Morgan Stanley, Bear Stearns, and Lehman Brothers.

5. The values of European banks include those of HSBC, UBS, The Royal Bank of Scotland, Barclays, Santander, BNP Paribas, Unicredito Italiano, Intesa Sanpaolo, and BBVA.

Sources: Tokyo Financial Exchange; Bloomberg.

Chart 1-4: Three-Month Spreads between LIBOR and OIS



Sources: Bloomberg; Meitan Tradition.

substantially from the latter half of September 2008 and remain depressed (Chart 1-1 [1]). Housing prices in the United States and other countries have been stagnant (Chart 1-1 [2]).

Meanwhile, the prices of residential mortgage-backed securities, a representative structured product, have been on a sharp declining trend, albeit with some partial improvement lately (Chart 1-2).

2. Assessment of financial markets for the financial institutions

Amid persistent strains in the global financial markets, major financial institutions in the United States and Europe continue to be exposed to stringent assessments of the financial markets. Credit default swap (CDS) premiums increased sharply between the latter half of September 2008 and early October of that year, mainly for those of the U.S. investment banks (Chart 1-3). The CDS premiums subsequently declined after governments and central banks implemented policy responses, but they still remain at high levels.

Concurrently, financial institutions increased tendency to secure funds in their hands because of heightened awareness of counterparty risk. The spread between interbank interest rates on term instruments and the overnight index swap (hereafter, LIBOR-OIS spread), one of the indicators for measuring the funding liquidity risk of financial institutions, widened rapidly for the U.S. and European currencies in the latter half of September 2008 and has remained at comparatively high levels since then (Chart 1-4).

Meanwhile, Japan's banking sector has received relatively stable assessments in the financial markets compared to its counterparts in the United States and Europe, but many indicators have increasingly been showing signs of deterioration since the autumn of

2008.

The CDS premium for Japan's financial institutions is trending higher, although it is still relatively low compared to that for the major U.S. financial institutions. The LIBOR-OIS spread for yen gradually widened toward the end of 2008 (Charts 1-3 and 1-4). The banks' stock prices have been on a declining trend, and there has been a sharp rise in the number of rating downgrades for banks (Chart 1-5).

3. Effects on financial institutions' behavior

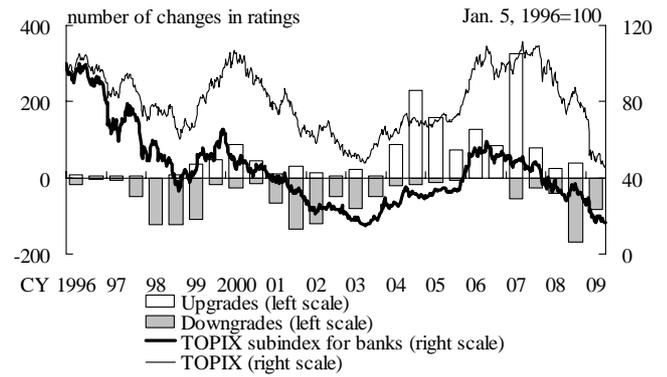
The turmoil in the global financial markets has placed financial institutions' profitability under enormous strain due to the growing losses on securities holdings and the rise in credit costs brought on by worsening economic conditions. Some major financial institutions of the United States and Europe have been working to reduce assets (so-called "deleveraging"), while aggressively raising capital to restore their capital base.

The leverage ratios of the U.S. investment banks declined sharply from 2007 to 2008, while deleveraging has not been seen for Japanese financial institutions (Chart 1-6).

To raise capital, the major U.S. and European financial institutions initially, around the autumn of 2007, issued preferred stocks and hybrid capital instruments mainly to sovereign wealth funds, but after the spring of 2008 they turned to public offering and allotment of common stocks to existing shareholders. Since October 2008, as the turmoil in global financial markets aggravated, they have been receiving large capital injections using public funds (Chart 1-7). Meanwhile, the size of losses at Japanese financial institutions has been limited compared to the losses of the U.S. and European financial institutions.

Regarding lending attitudes, the U.S. and European

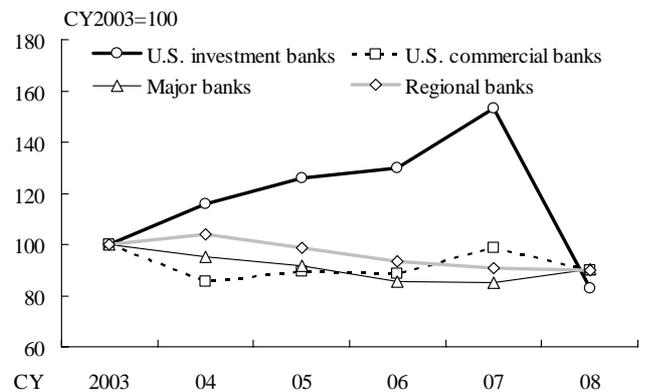
Chart 1-5: Credit Rating and Prices of Bank Stocks¹



Note: 1. The number of upgrades and downgrades is the sum of the number of changes in ratings made by the following credit rating agencies: Moody's Investors Service, Standard and Poor's, Fitch Ratings, Rating and Investment Information, and Japan Credit Rating Agency.

Sources: Tokyo Stock Exchange; Bloomberg.

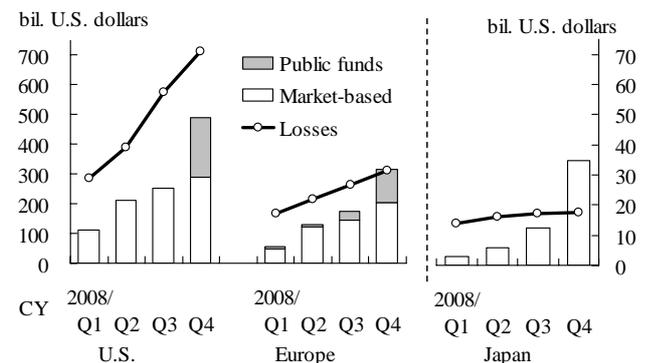
Chart 1-6: Leverage Ratios of the U.S. and Japanese Banks^{1,2,3}



Notes: 1. Leverage ratio = total assets/total shareholders' equity .
2. The values of U.S. investment banks include those of Goldman Sachs, Morgan Stanley, and Merrill Lynch.
3. The values of U.S. commercial banks include those of JPMorgan Chase, Citigroup, Bank of America, Wachovia, and Wells Fargo.

Sources: Published accounts, etc.

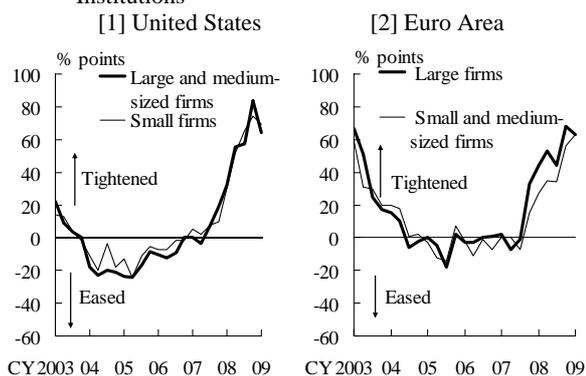
Chart 1-7: Losses vs. Capital Raising by Global Financial Institutions^{1,2,3}



Notes: 1. Figures are cumulative from July 2007. As of February 24, 2009.
2. The values are the sum of those of brokerage firms, insurance companies and GSEs, as well as banks. Figures in the United States, Europe, and Japan are the sum of 43, 45, and 9 financial institutions, respectively.
3. Losses are the value of write-offs and credit losses for each period.

Source: Bloomberg.

Chart 1-8: Lending Attitude of the U.S. and European Financial Institutions¹



Note: 1. The values are net percentage of respondents' tightening standards for loans.

Sources: FRB, "Senior Loan Officer Opinion Survey on Bank Lending Practices"; ECB, "The Euro Area Bank Lending Survey."

Chart 1-9: Year-on-Year Change of Loans in Domestic and International Sectors

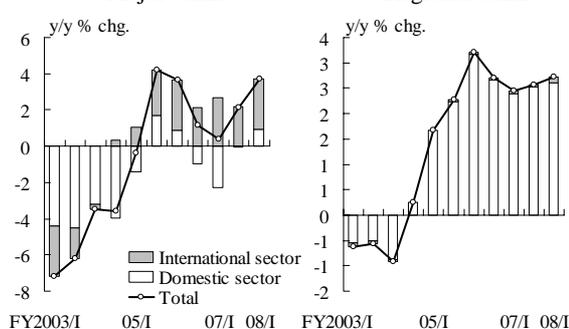
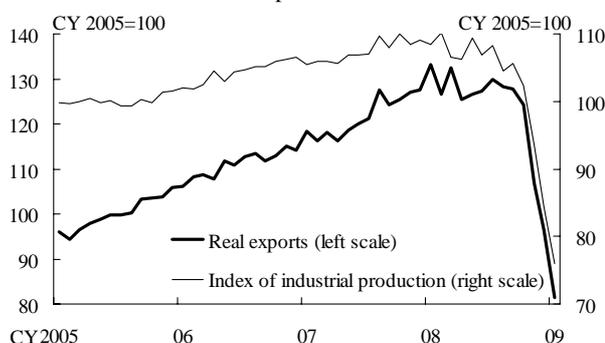
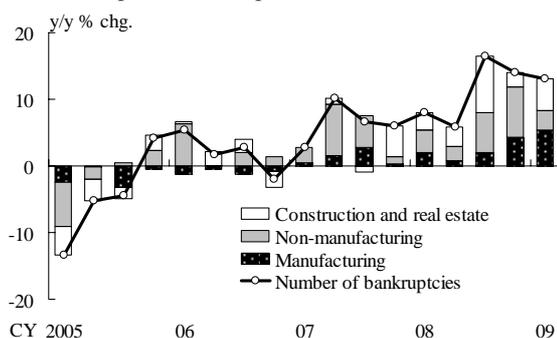


Chart 1-10: Production and Exports



Sources: Ministry of Finance, "The Summary Report on Trade of Japan"; Ministry of Economy, Trade and Industry, "Indices of Industrial Production"; Bank of Japan, "Corporate Goods Price Index."

Chart 1-11: Corporate Bankruptcies



Source: Tokyo Shoko Research, "Tosan Geppo."

financial institutions have become more cautious due to their capital and liquidity constraints (Chart 1-8). In contrast, the Japanese banks increased their total lending, which is the sum of domestic and overseas loans (Chart 1-9).

B. Effects on Japan's Economy and Financial System

The turmoil in the global financial system has had effects on financial conditions surrounding Japanese firms and Japan's financial system.

1. Effects on corporate finance

In Japan, economic conditions have deteriorated significantly. Exports have declined substantially and production has decreased at a much faster pace (Chart 1-10).

Bankruptcies have been on the sharp rise in various industries in both the non-manufacturing and manufacturing sectors, and the number of bankrupt listed firms hit a postwar record (Chart 1-11).

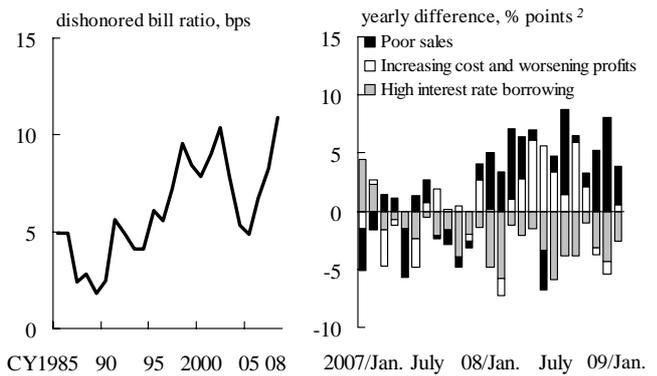
In addition, the number of dishonored bills at bill clearing houses has been increasing rapidly. The incidence of dishonored bills during 2008, on a value basis, reached the highest level after 1985. Looking at the causes of the dishonored bills, while the component ratio of "high interest rate borrowing" has declined since 2007 due to the amendment of the Money Lending Business Act, the component ratio of "increasing costs and worsening profits" due to the rise in energy and raw material prices has increased. In addition, since the autumn of 2008, the component ratio of "poor sales" has been rising rapidly (Chart 1-12). Furthermore, payment under guarantee by the credit guarantee corporations has also been on the rise since the beginning of fiscal 2008, and the pace of payment is accelerating (Chart 1-13).

Amid the sharp deterioration in the economy and rapid increase in bankruptcies, the conditions for firms' funding and firms' demand for loans have undergone significant changes. The diffusion index (DI) for firms' funding has been increasing at the number of firms that consider their funding conditions to be tightened since mid-2008. The DI for firms' demand for loans as seen from the perspective of financial institutions has been showing a sharp increase (Chart 1-14). The primary reasons for the increase in demand for loans are "customers' borrowing shifted from other sources to your bank" for large firms, "customers' internally generated funds" for medium-sized firms, and "customers' funding from other sources became difficult to obtain" for small firms respectively. These indicate that firms have been increasing their demand for loans to secure liquidity in their hands (Chart 1-15 [1]). By comparison, the DI for firms' demand for loans as of January 2002 (a recent economic trough) showed a decline and the most common reason given was "customers' fixed investment decreased" (Chart 1-15 [2]).

2. Effects on Japan's financial system

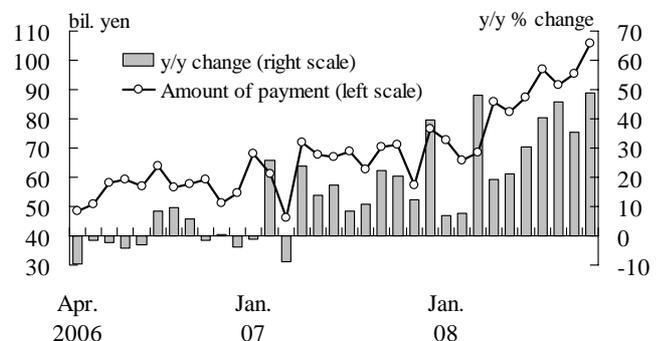
The turbulence in the global financial system and the deterioration in Japan's economy have impacted Japan's financial system as well. The functioning of Japan's financial markets has worsened, as can be seen from the sharp declines in the outstanding issues on the CP and corporate bond markets. Since the autumn of 2008, outstanding issues on the CP and bond markets have turned negative year-on-year, and both markets have experienced rapid widening in the spread against the risk-free rate (Charts 1-16 and 1-17). The CP market has recently been showing a sign of recovery, due partly to the Bank of Japan's decision on the outright purchase of CP to facilitate corporate financing.

Chart 1-12: Dishonored Bill Ratio¹



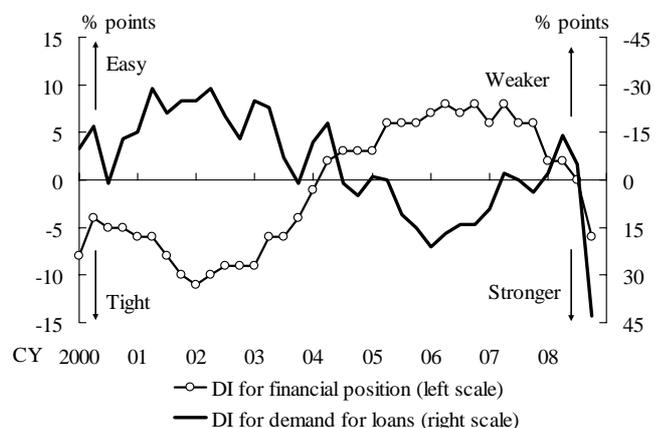
Notes: 1. Dishonored bill ratio = amount of dishonored bills / amount of clearance bills.
2. The difference in component ratio.
Source: Japanese Bankers Association.

Chart 1-13: Amount of Payment under Guarantee by the Credit Guarantee Corporations



Source: Small and Medium Enterprise Agency.

Chart 1-14: DI for Demand for Loans and Financial Position^{1,2}



Notes: 1. DI for demand for loans = (percentage of respondents selecting "substantially stronger" + percentage of those selecting "moderately stronger" × 0.5) - (percentage of those selecting "substantially weaker" + percentage of those selecting "moderately weaker" × 0.5).
2. Financial Position DI = "Easy" - "Tight".
Source: Bank of Japan, "Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks."

Chart 1-15: Factors of Changes of Demand for Funds¹
[1] January 2009

To what factors do you attribute this increase?

	Large firms	Medium-sized firms	Small firms
	Average	Average	Average
(1) Customers' sales increased	1.00	1.00	1.00
(2) Customers' fixed investment increased	1.05	1.13	1.00
(3) Customers' funding from other sources became difficult to obtain	1.55	2.13	2.45
(4) Customers' internally-generated funds	2.34	2.20	1.95
(5) Customers' borrowing shifted from other sources to your bank	2.71	1.60	1.27
(6) Decline in interest rates	1.18	1.20	1.14
(7) Other factors	1.05	1.00	1.14
Number of banks responding	38	15	22

[2] January 2002

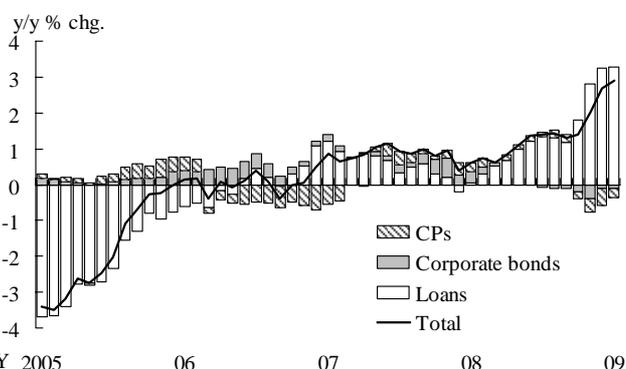
To what factors do you attribute this decrease?

	Large firms	Medium-sized firms	Small firms
	Average	Average	Average
(1) Customers' sales decreased	2.18	2.33	2.52
(2) Customers' fixed investment decreased	2.41	2.67	2.62
(3) Customers' funding from other sources became easy to obtain	1.12	1.06	1.05
(4) Customers' internally-generated funds	1.76	1.61	1.57
(5) Customers' borrowing shifted from your bank to other sources	1.94	1.17	1.10
(6) Rise in interest rates	1.00	1.00	1.00
(7) Other factors	1.75	1.75	2.00
Number of banks responding	17	18	21

Note: 1. Here the "average" indicates the weighted average of responses by borrowers through banks, using the following scale: 3 = important, 2 = somewhat important, 1 = not important.

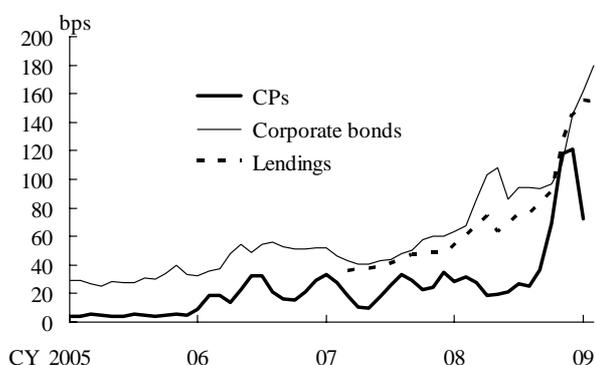
Source: Bank of Japan, "Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks."

Chart 1-16: Amount Outstanding of CPs, Corporate Bonds, and Loans^{1,2}



Source: Bank of Japan, "Financial Markets Report."

Chart 1-17: Firms' Funding Spreads^{1,2}



Notes: 1. Corporate bond rates and lending rates are rated A by R&I.

2. Corporate bond spreads and lending spreads are over 5-year JGBs, and CP spreads are over O/N rates.

Sources: Japan Securities Dealers Association; Reuters; Bloomberg.

Reflecting the worsened functioning of the financial markets, large firms tend to have been shifting away from direct finance including CP and bonds in favor of bank loans as a means of funding since the autumn of 2008. As a result, bank loans have been on the rise, in tandem with the firms' conservative attitude to secure liquidity in their hands (Chart 1-16).

Meanwhile, the funding of small and medium-sized firms has continued to be severe. To cope with such a situation, banks have been actively using the emergency guarantee system of the credit guarantee corporations (Chart 1-18). The development of bank loans according to the size of firms is analyzed in detail in Chapter II.

3. Japan's policy response

Considering the deterioration in the financial and economic environment, various policy measures regarding the financial system have been implemented in Japan. First, in terms of capital reinforcement of financial institutions, the Act on Special Measures for Strengthening Financial Functions was amended to establish a framework to utilize public funds. As a temporary measure until March 2012, partial relaxation of capital adequacy requirements also went into effect. In addition, the requirement for restructured loans of small and medium-sized firms was relaxed. This means that loans to firms with sufficient revitalization plans are more likely to be treated as normal loans instead of NPLs even if financial institutions relax their lending conditions such as by reducing the loan interest rate. Furthermore, the emergency guarantee system to support firms' funding was expanded, and the accounting standard has been revised with respect to fair value valuation and the reclassification of holding bonds.

The Bank of Japan, in view of the need to support the

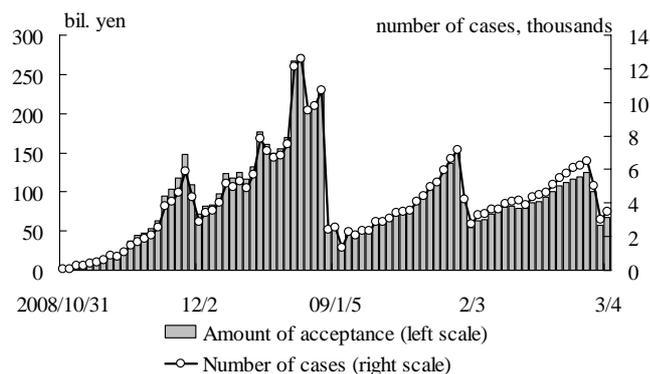
economy from the financial front, not only cut the policy rate but also introduced measures to stabilize financial markets and implemented special funds-supplying operations to facilitate corporate financing after the autumn of 2008. In addition, the Bank decided to resume its purchases of stocks held by financial institutions to ensure financial system stability.

First, the target uncollateralized overnight call rate was cut by 0.2 percentage point percent in October and December 2008, respectively, to 0.1 percent.

Second, as a measure to stabilize financial markets, the Bank has been providing ample liquidity, and initiated U.S. dollar funds-supplying operations in close cooperation with other major central banks, including the Federal Reserve. With respect to provision of yen liquidity, complementary deposit facility to pay interest on excess reserve balances was introduced in October 2008. The frequency and amount offered in market operations were increased centering on term funds, and 30-year, floating rate, and inflation-linked government bonds were included in the Bank's repo operations in October 2008. Furthermore, bonds and CP issued by real estate investment corporations (in January 2009) and government-guaranteed dematerialized CP (in February 2009) were included in eligible collateral, and the range of Japanese government securities offered in the security lending facility was broadened (in February 2009).

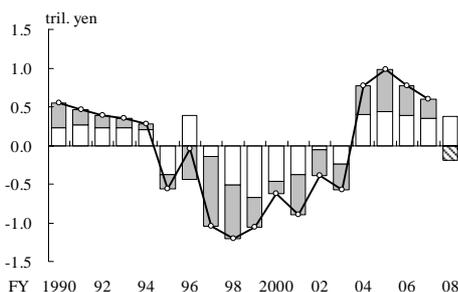
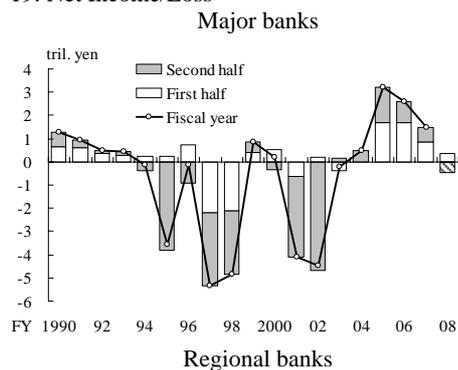
Third, to support smooth corporate financing, the Bank has been actively using CP repo operations, introduced (December 2008) and expanded (February 2009) the "special funds-supplying operations to facilitate corporate financing," decided on outright purchases of CP and asset-backed CP (January 2009), expanded the range of eligible collateral for the outright purchases of

Chart 1-18: Acceptance of Emergency Guarantee



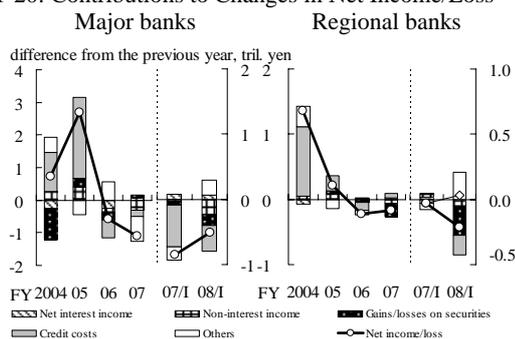
Source: Small and Medium Enterprise Agency.

Chart 1-19: Net Income/Loss^{1,2}



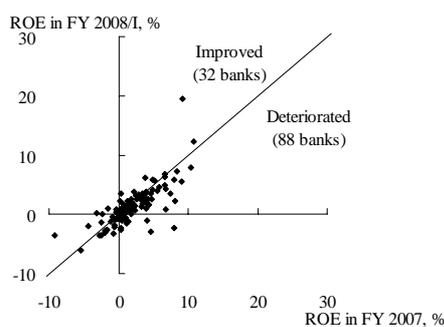
Notes: 1. Diagonal lines of FY2008 show net losses in the October-December quarter.
2. The regional banks include Ashikaga Bank.

Chart 1-20: Contributions to Changes in Net Income/Loss^{1,2,3}



Notes: 1. Non-interest income = net fees and commissions + profits on specified transactions + other operating profits - net realized bond-related gains/losses.
2. Credit costs = loan loss provisions + write-offs - recoveries of write-offs. Reversal of allowances and others are also included.
3. Ashikaga Bank, which was funded by the Deposit Insurance Corporation of Japan in the first half of fiscal 2008, is excluded from the most recent regional banks' figure. The difference in regional banks' net income including Ashikaga Bank between the first half of fiscal 2008 and that of fiscal 2007 is indicated by \diamond and the thin line.

Chart 1-21: Banks' Core ROEs^{1,2}



Notes: 1. Credit cost ratio is assumed to be 60 basis points.
2. Ashikaga Bank is excluded.

corporate financing instruments (January 2009), and made on the outright purchase of corporate bonds (March 2009).

Fourth, the Bank decided to resume its purchases of stocks held by financial institutions in February 2009 to support financial institutions' future endeavors to reduce market risk associated with stockholdings, and thereby ensure the stability of the financial system.

C. Developments in Banks' Profits

It has become apparent that the profits of both the major banks and the regional banks are on a declining trend.

Looking at net income for the first half of fiscal 2008, the major banks posted their second consecutive declines year-on-year, and the regional banks recorded their third, if extraordinary factor (funding assistance from the Deposit Insurance Corporation of Japan to Ashikaga Bank) is set aside (Chart 1-19). There were several factors at work in this, in addition to sluggish growth in net interest income: (1) increases in credit costs due to the worsening economy; (2) worsening in the gains/losses related to stocks and some bonds (hereafter, gains/losses on securities) due to declining prices; and (3) declines in non-interest income due to lower revenues from commission businesses and trading (Chart 1-20). Furthermore, the declining trend in net income became more obvious during the October-December quarter of 2008.

The degree of changes in banks' core profitability can be measured in terms of "core return on equity (core ROE)," which is calculated by excluding the impact of volatile components such as credit costs and gains/losses on securities from net income; approximately 70 percent of all banks experienced declines in core ROE during the first half of fiscal

2008 to varying degrees (Chart 1-21).

The following section summarizes the characteristics of the financial statements mainly for the first half of fiscal 2008, focusing on (1) credit costs, (2) gains/losses on securities, and (3) non-interest income.

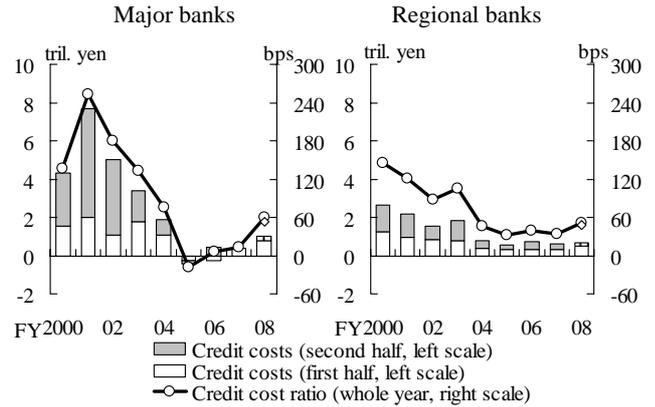
1. Credit costs

Credit costs for both the major banks and the regional banks recorded their second consecutive increases year-on-year, for the first half of fiscal 2008. The primary factors behind this were the deterioration in borrowers' business and increase in bankruptcies caused by economic stagnation.

The credit cost ratio for the major banks was 60 bps (annualized), a sharp increase from the 13 bps recorded for fiscal 2007; for the regional banks, the credit cost ratio was 52 bps (annualized), also up from the 34 bps for fiscal 2007 (Chart 1-22). Credit cost ratios for both the major and regional banks followed an uptrend as a whole even when the results of the October-December quarter of 2008 were taken into account, but the level of the credit costs was much lower than that in the early 2000s in spite of the postwar peak in bankruptcies of listed firms and sharp deterioration in the economy. The background is explained in detail in Chapter III, in which scenario analysis for credit risk with a macro perspective is conducted.

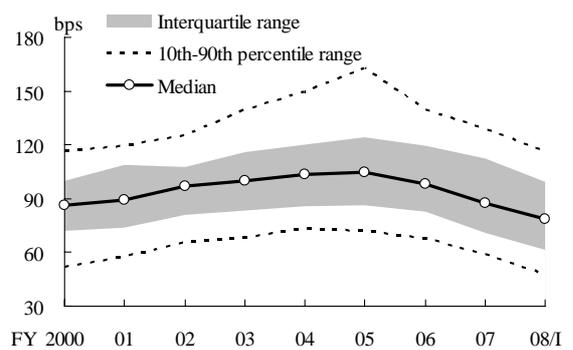
Given the sluggish growth in the core profitability of Japanese banks, there is a possibility that, if credit costs sharply increase, there will be a rise in number of banks unable to cover the increasing credit costs using their current profits. In point of fact, the distribution of breakeven credit cost ratios (the ratio at which credit costs and net operating profits from core business match) among the major banks and the regional banks show a decline in the median value for the first half of

Chart 1-22: Credit Costs and Credit Cost Ratios^{1,2,3}



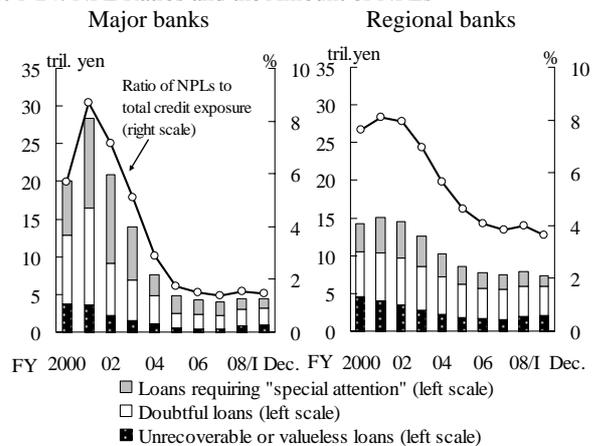
Notes: 1. Credit cost ratio = credit costs/total loans outstanding. Credit costs are net base, with reversals of allowances for loan losses. Figures include credit costs of subsidiary companies for corporate revitalization.
2. As for credit cost ratios in fiscal 2008, ○ shows the annualized ratio during the first half of fiscal 2008 and ◇ shows the annualized ratio during the nine-month period ended December 2008.
3. Vertical-striped sections in fiscal 2008 show credit costs recorded in the October-December quarter.

Chart 1-23: Breakeven Credit Cost Ratios^{1,2}



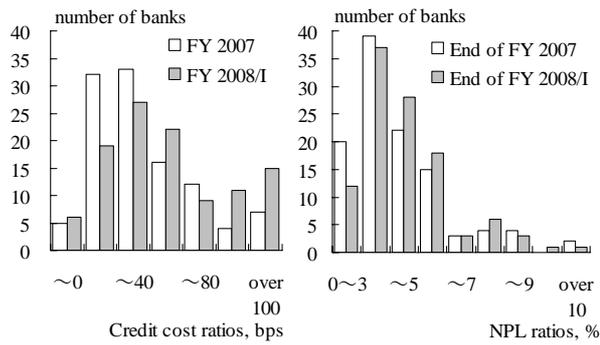
Notes: 1. Breakeven credit cost ratio = operating profits from core business / loans outstanding.
2. Breakeven credit cost ratios are sorted in ascending order. 10th, 25th, 50th (median), 75th, and 90th percentiles are shown.

Chart 1-24: NPL Ratios and the Amount of NPLs^{1,2}



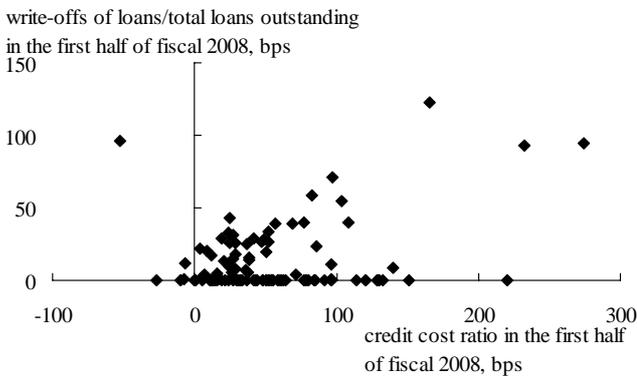
Notes: 1. NPLs disclosed under the Financial Reconstruction Law.
2. Figures include NPLs that are transferred to subsidiary companies for corporate revitalization.

Chart 1-25: Distribution of Credit Cost Ratios and NPL Ratios at the Regional Banks¹



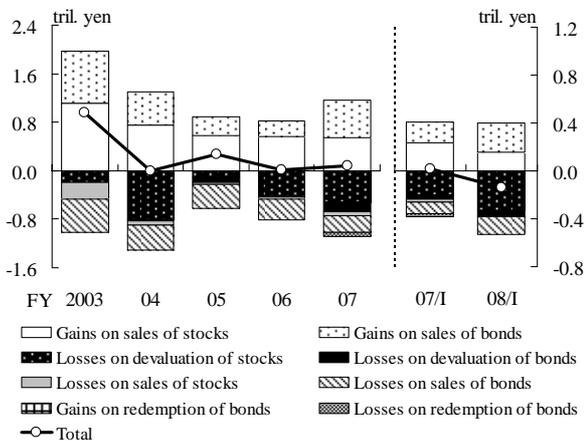
Note: 1. Figures for credit cost ratios in the first half of fiscal 2008 are annualized. "~" on the horizontal axis denotes ranges.

Chart 1-26: Credit Cost Ratios and Write-Offs of Loans of the Regional Banks¹

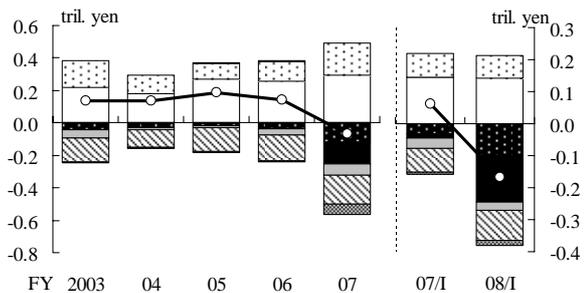


Note: 1. Figures are annualized.

Chart 1-27: Realized Gains/Losses on Securities Major banks



Regional banks



fiscal 2008 to 79 bps, and in the 25th percentile to 61 bps (Chart 1-23). This indicates that an increase in the credit cost ratio to 61 bps would potentially result in approximately 25 percent of all banks falling into the red just because of credit cost factors.

Meanwhile, the NPL ratio rose for the first time in seven years for both the major banks and the regional banks at the end of the first half of fiscal 2008 (Chart 1-24). The NPL ratio is higher for the regional banks than for the major banks, and the regional banks' NPL ratios as well as their credit cost ratios are worsening on the whole, looking at the distribution of each bank's ratios (Chart 1-25). The proportions of unrecoverable or valueless loans and doubtful loans to total NPLs were higher at the regional banks relative to the major banks. Those proportions further increased toward end-December 2008, both for the major banks and the regional banks.

The breakdown of credit costs for the regional banks indicates that there are some banks whose credit costs consisted mostly of provisions for loan losses and no loan write-offs (Chart 1-26). Given that the economy and business performance of firms is rapidly deteriorate, additional losses may occur for some banks in which provisions for loan losses are added to the allowance while maintaining outstanding credits on the balance sheet. It will therefore be necessary to closely monitor future developments in banks' credit costs.

2. Realized and unrealized gains/losses on securities

Both the major banks and the regional banks recorded net losses on securities during the first half of fiscal 2008, the primary factor being an increase in write-off losses (losses on devaluation) for stocks and bonds (Chart 1-27). The detailed breakdown shows an expansion in losses on write-offs of stocks at both the major banks and the regional banks, reflecting

declining stock prices. The regional banks also recorded higher write-offs for some structured products and foreign securities.

The unrealized gains/losses on securities in the first half of fiscal 2008 showed a considerable decline reflecting a plunge in stock prices at both the major banks and the regional banks for "domestic stocks" excluding those of affiliated firms (Chart 1-28). The unrealized gains/losses on securities worsened further during the fourth quarter of 2008. An examination of individual regional banks shows that more banks moved into the unrealized loss territory in their overall securities portfolios (Chart 1-29).

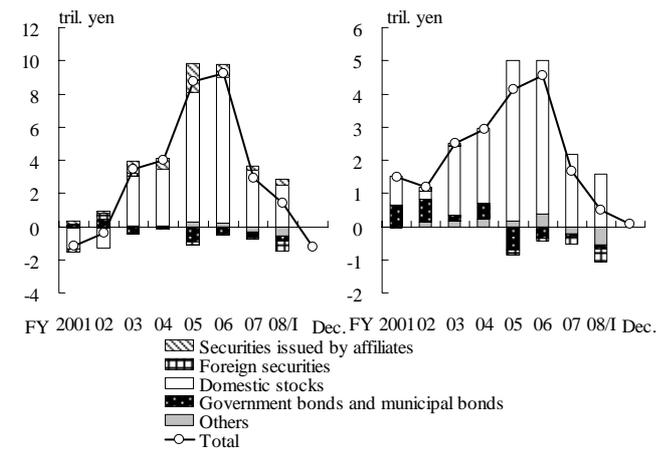
More than 60 percent of all the major banks and the regional banks recorded declines in Tier I capital due to the posting of unrealized losses on securities at the end of the first half of fiscal 2008 (Chart 1-30). Approximately 20 percent saw their Tier I capital decline by 10 percent or more.

As such, for Japanese banks, the deterioration in realized and unrealized gains/losses on securities has had a grave impact. Meanwhile, outstanding stockholdings at the major banks and the regional banks have been more or less unchanged (Chart 1-31). At present, when stock prices are unstable, coping with market risk associated with stockholdings — and reducing that risk for the overall banking sector from a long-term perspective — while making appropriate assessment of the risks and returns of stockholdings continues to be a very important managerial challenge for Japanese banks.

3. Non-interest income

Non-interest income decreased in the first half of fiscal 2008 (Chart 1-32). Net fees and commissions declined by more than 10 percent on a year-on-year basis for

Chart 1-28: Unrealized Gains/Losses on Securities¹
Major banks Regional banks



Note: 1. Total unrealized gains (losses) at the end of December 2008 are tallied based on published accounts regarding net unrealized gains (losses) on securities available for sale.

Chart 1-29: Distribution of Unrealized Gains/Losses on Securities at Banks

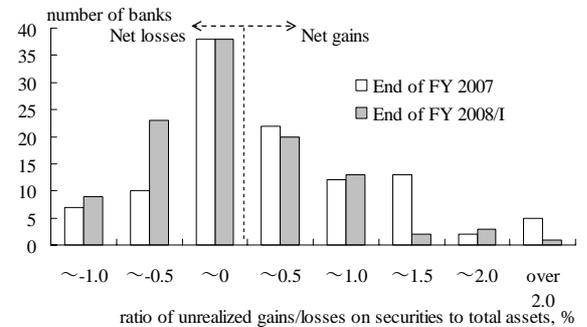
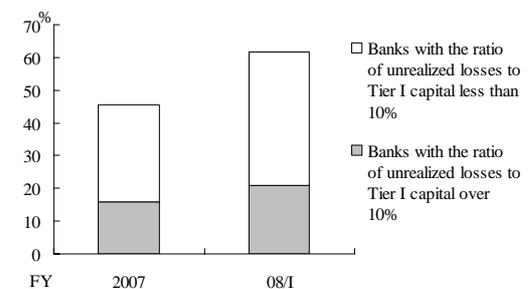
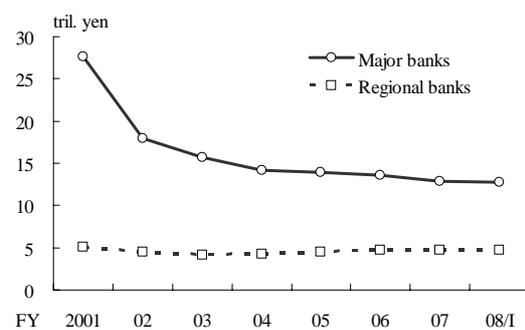


Chart 1-30: Percentage of Banks Registering Net Unrealized Losses on Securities¹



Note: 1. The percentage of banks registering net unrealized losses on securities.

Chart 1-31: Banks' Stockholdings^{1,2}



Notes: 1. Figures are based on acquisition prices.
2. On a consolidated basis.

Chart 1-32: Composition of Non-Interest Income
Major banks Regional banks

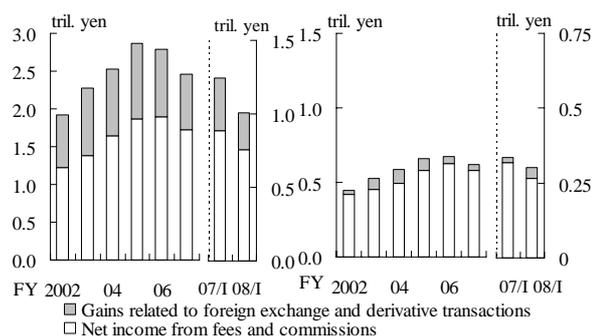
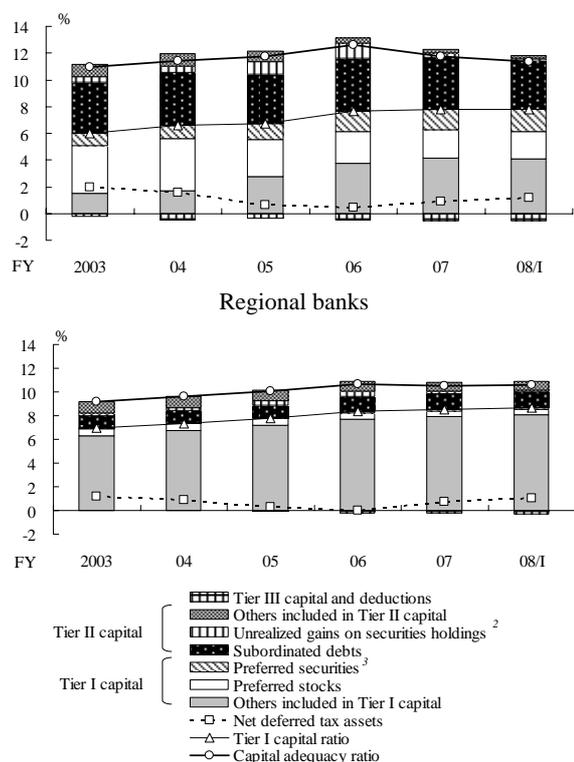
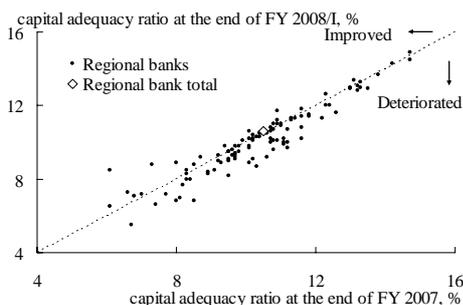


Chart 1-33: Composition of Capital¹
Major banks Regional banks



- Notes: 1. On a consolidated basis.
2. Only banks subject to the international standard are allowed to include unrealized gains in Tier II capital. The proportion of unrealized gains at the regional banks is smaller than that at the major banks, many of which are subject to the international standard.
3. Issued by consolidated offshore special purpose companies.

Chart 1-34: Changes in Capital Adequacy Ratio at the Regional Banks¹



Note: 1. The observation for one of the banks falls outside this chart.

both the major banks and the regional banks, primarily because of a slump in commission and fee businesses such as sales of investment trusts. The major banks also saw more than 30 percent declines from the previous year in profit on foreign exchange and derivative transactions, reflecting the poor performance of trading-related business.

4. Banks' capital

At the end of the first half of fiscal 2008, overall capital adequacy ratios of both the major banks and the regional banks remained almost unchanged. Looking first at the major banks, the Tier I capital ratio was flat, but the overall capital adequacy ratio inclusive of Tier II capital declined from 11.7 percent at the end of March 2008 to 11.3 percent at the end of September 2008, primarily because of a decline in unrealized gains on securities (Chart 1-33). At the regional banks, due partly to a special factor (financial assistance from the Deposit Insurance Corporation of Japan to Ashikaga Bank), the Tier I capital ratio rose slightly and the overall capital adequacy ratio increased marginally from 10.5 percent at the end of March 2008 to 10.6 percent at the end of September 2008. However, at the same time, approximately 70 percent of the regional banks actually recorded declines if examined individually (Chart 1-34).

The breakdown of capital into components shows that the major banks have a high degree of dependence on preferred stocks, preferred investment securities, and hybrid debt capital instruments.

Decomposing the changes in the capital components into items that relate to unrealized gains/losses on securities and other categories, it is observed that the decline in unrealized gains on securities and increase in unrealized losses on securities have contributed to a decline in banks' capital after fiscal 2007 (Chart 1-35).

In addition, the partial relaxation of capital adequacy requirements, as a temporary measure from the financial closing of December 2008 until that of March 2012, allowed the banks adopting domestic standards to avoid subtracting unrealized losses on securities from Tier I capital (unrealized gains on securities are not reflected in capital as they were previously). At the same time, the banks adopting international standards are also allowed not to consider unrealized gains/losses on credit risk-free bonds such as government bonds in calculating regulatory capital (unrealized gains/losses on securities such as stocks and corporate bonds continued to be treated as they were previously).

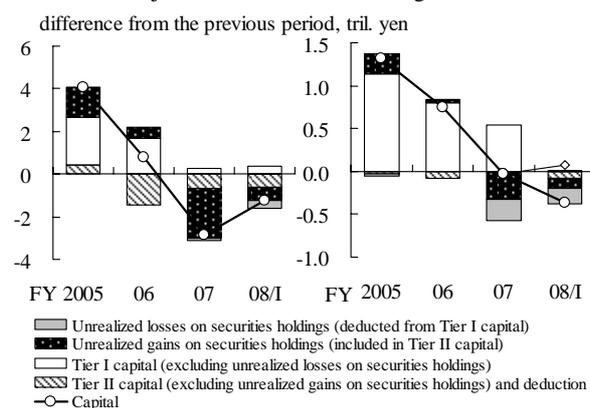
D. Current Assessment of the Stability of Japan's Financial System

Considering the discussion above and the main results that will be presented in Chapters II and III, the current status of the financial system is assessed as follows.

As the strains in global financial markets are continuing and economic conditions are changing rapidly at home and abroad, Japan's financial system, which maintained stability on the whole, is gradually influenced in terms of financial intermediation function and robustness, mainly through the growing losses on securities and the rise in credit costs.

In terms of the financial intermediation function, the functioning of domestic financial markets declined, with a decrease in outstanding issues and widening spreads in the CP and corporate bond markets. In these severe circumstances, Japan's financial institutions supported firms which have difficulty funding from capital markets. Meanwhile, the funding conditions of small and medium-sized firms have continued to tighten, with the shrinkage in trade credits and a cautious lending stance by banks that have been concerned over the rise in credit costs associated with

Chart 1-35: Contributions to Changes in Capital
Major banks Regional banks¹



Note: 1. Ashikaga Bank, which was funded by the Deposit Insurance Corporation of Japan in the first half of fiscal 2008, is excluded from the most recent regional banks' figure. The difference in regional banks' capital including Ashikaga Bank between the first half of fiscal 2008 and fiscal 2007 is indicated by \diamond and the thin line.

worsening business conditions. In this environment, financial institutions have been receptive to the expansion of the emergency guarantee system and other measures. As such, with supporting firms' funding in the face of the declining function in capital markets, Japan's financial institutions have retained the financial intermediation function accordingly under the firms' severe financial conditions.

Next, in terms of robustness of the financial system, the Japanese banks have shown robustness to a certain degree amid the turbulence of the global financial system, partly because they had been fortifying their financial bases through disposal of NPLs and enhancement of capital adequacy, and also because they had limited investments to overseas structured credit products. Meanwhile, banks' capital has remained more or less unchanged, while market risk associated with stockholdings has increased, and credit risk that had previously been in decline has turned upward. Regarding market risk associated with stockholdings, a substantial amount of both realized and unrealized losses on stockholdings has been reported amid a leveling off in the outstanding amount of banks' stockholdings. In the face of unstable stock prices at present, the management of market risk associated with stockholdings remains an important challenge for banks.

Looking ahead, there is growing concern over the level of profits of financial institutions, and it is necessary to monitor closely how the banking sector will carry out the financial intermediation function adequately while it achieves sufficient robustness.

II. Developments in the Financial Intermediation Function

This chapter provides an overview of domestic financial developments concerning the Japanese corporate sector in order to assess whether the financial system has properly functioned to meet the financial requirements of the corporate sector.

First, this chapter analyzes the recent developments in the capital market and bank loan market. Second, the chapter touches on the funding trend of the Japanese corporate sector from a long-term perspective, and then describes recent developments in it. Lastly, the chapter assesses the functioning of the financial system.

A. Funding in the Corporate Sector

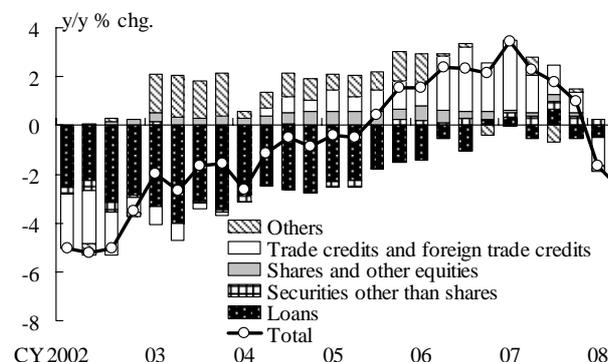
Financial conditions in Japan have remained tight. After 2002, financial conditions improved in the midst of economic recovery. After the autumn of 2007, the negative effect stemming from shrinking trade credits and foreign trade credits, as well as the activity of downsizing foreign financial institutions, started to materialize. Since the autumn of 2008 after the bankruptcy of Lehman Brothers, financial conditions have remained tight amid the turbulence of the global financial system.

1. Firms' funding environment from a macro perspective

This section reviews funding conditions from a macro perspective. From 2002 to the beginning of 2007, a decreasing pace of loans slowed and the pace of trade credits and foreign trade credits accelerated (Chart 2-1).

After the autumn of 2007, however, corporate funding dropped markedly as funding by means of loans and shares and other equities stagnated and funding by

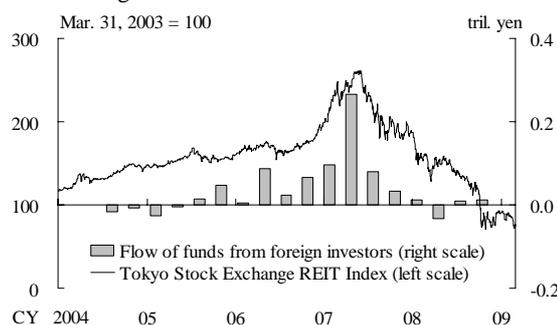
Chart 2-1: Financial Liabilities of Private Nonfinancial Firms¹



Note: 1. Loans, shares and other equities, and securities other than shares are valued at face or book values.

Sources: Cabinet Office, "National Accounts"; Bank of Japan, "Flow of Funds Accounts."

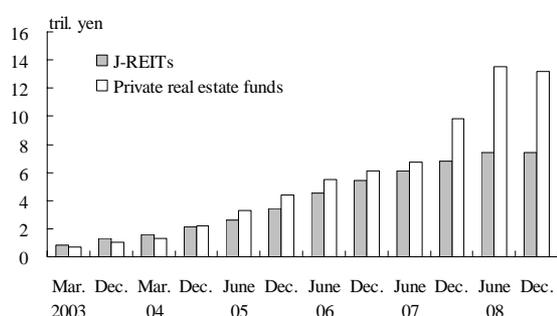
Chart 2-2: Price Index of J-REITs¹ and Flow of Funds from Foreign Investors



Note: 1. The Tokyo Stock Exchange REIT Index is a capitalization-weighted index based on all REITs listed on the Tokyo Stock Exchange.

Source: Tokyo Stock Exchange.

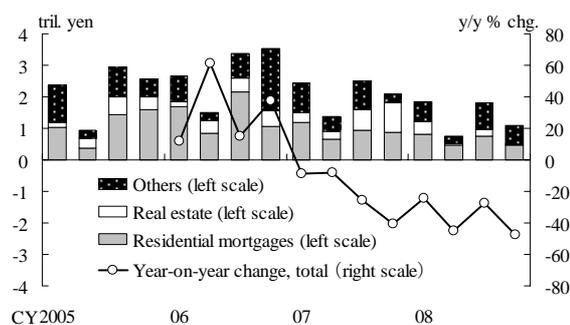
Chart 2-3: Size of the J-REIT and the Private Real Estate Fund Market¹



Note: 1. Figures for private real estate funds do not include foreign funds doing business in Japan. According to the STB Research Institute, if foreign funds were included, the figure for December 2008 would reach 15.8 trillion yen.

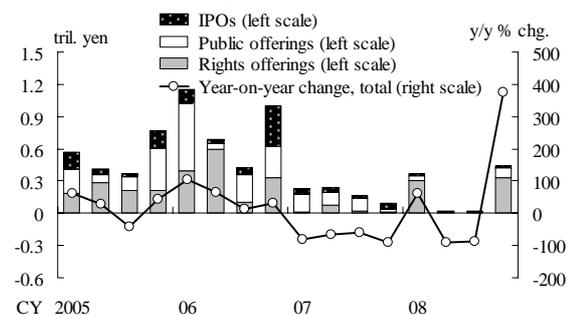
Source: STB Research Institute.

Chart 2-4: Outstanding Issue of Structured Credit Products by Type of Underlying Assets



Source: Deutsche Securities, "Securitization."

Chart 2-5: Equity Financing by Corporations



Source: Japan Securities Dealers Association, "Equity Financing by Corporations."

means of trade credits and foreign trade credits decreased. Consequently, the decreasing tempo of financial liabilities in the corporate sector widened to the same degree as had been registered in 2002.

2. Funding through the capital markets

This section reviews the chronological changes in firms' funding through the capital markets.

In Japan, the turmoil in global financial markets appeared first in the real estate-related markets including the J-REIT markets. The J-REIT markets experienced a sharp correction in prices after 2007, reflecting a significant drop in inflows from foreign investors. Moreover, financing became difficult for real estate-related funds (Chart 2-2). As a result, some of the listed J-REITs and their former-sponsors began legal liquidation procedures because of funding difficulties, and a large number of inventory properties accumulated at private real estate funds since it became difficult to implement an exit strategy of selling properties to J-REITs (Chart 2-3).

In the structured credit product markets, the market conditions for new issues, in particular those of real estate-related products, worsened due to a series of downgrades after 2007 (Chart 2-4).

In the stock market, equity funding remained sluggish after 2007, partly due to stagnation in stock market prices (Chart 2-5). While equity funding increased in October-December quarter of 2008, this was mainly due to funding by some of securities firms and nonbanks.

After the bankruptcy of Lehman Brothers, the turmoil in the global financial markets spread to the CP and bond markets, and affected the funding of large firms significantly (Chart 1-16).

Meanwhile, funds invested in Japan by foreign investors, regardless of their origins or types of investment, have flown out rapidly since the autumn of 2008 (Chart 2-6).

In sum, the turmoil in the global financial markets first appeared in the real estate-related markets and then influenced the market conditions for funding materially, reflecting a sharp decline in funding by large firms through the CP and bond markets after the bankruptcy of Lehman Brothers.

3. Credit risk of bank borrowers

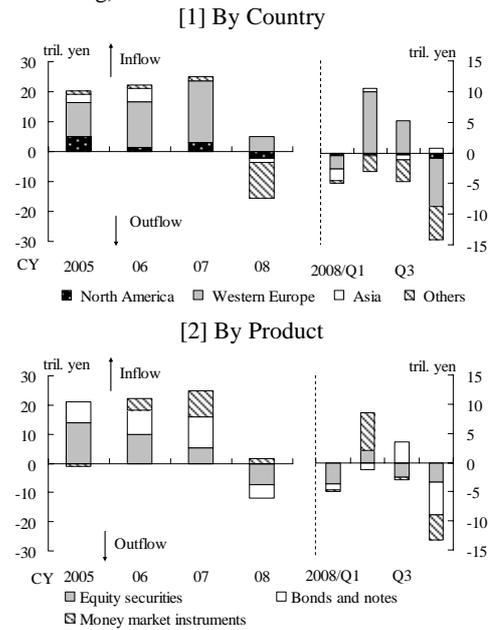
Next, this section examines the developments in credit risk of bank borrowers.

"Borrowers' Business Sentiment" — a weighted average indicator of business conditions DI by industry group and firm size based on the *Tankan* (Short-Term Economic Survey of Enterprises in Japan) — shows a steady downtrend after 2007 (Chart 2-7). This indicates that bank borrowers' business sentiment started to deteriorate after 2007.

While bank borrowers' credit risk evaluation appears to move in parallel with borrowers' business sentiment, recently it has tended to lag behind a sharp drop in business sentiment. A similar tendency appeared around 2000 during the collapse of the IT bubble.

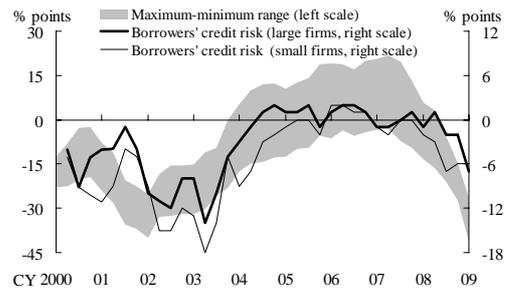
Looking at the "migration ratio," which is a ratio indicating the percentage of loans that changed from normal loans to NPLs, the ratio indicates the worsening quality of banks' loan assets (Chart 2-8). With respect to the default probability of each industry, the indicator also increased across the industry, showing that the quality of loan assets worsened for banks (Chart 2-9). Given that economic conditions have deteriorated significantly, further development in the default probability should be monitored.

Chart 2-6: Inward Portfolio Investment (Excluding Securities Lending)



Source: Ministry of Finance, "Japan's Balance of Payments."

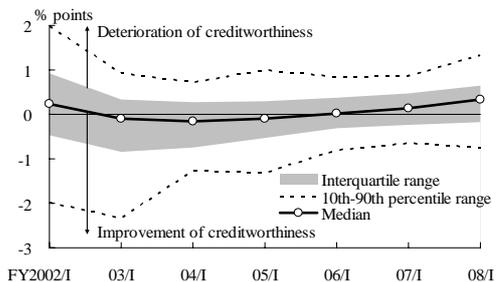
Chart 2-7: Borrowers' Business Sentiment



Note: 1. Bank of Japan estimation. Borrowers' business sentiment of the first quarter of 2009 is calculated using the forecast DI for business conditions at the latest survey.

Sources: Bank of Japan, "Senior Loan Officer Survey on Bank Lending Practices at Large Japanese Banks"; "Tankan (Short-Term Economic Survey of Enterprises in Japan)."

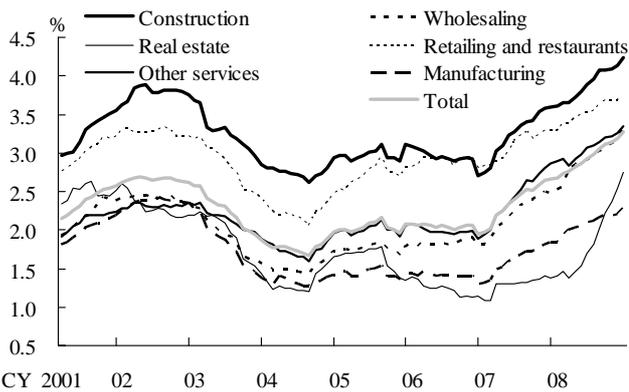
Chart 2-8: Changes in the Migration Ratio to NPLs^{1,2,3,4}



Notes: 1. Bank of Japan estimation.

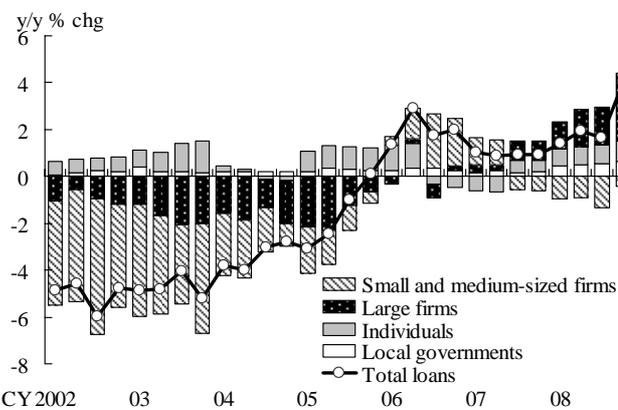
- Changes in the migration ratio of downgrade to NPLs for the major banks and the regional banks are sorted out in ascending order. 10th, 25th, 50th, 75th, and 90th percentiles are shown.
- The migration ratio of downgrade to NPLs = Loans outstanding that are classified in "Normal" and "Need attention" less "Loans requiring special attention" at the beginning of the period and downgraded to "Loans requiring special attention" and lower classifications at the end of the period/Loans outstanding that are classified in "Normal" and "Need attention" less "Loans requiring special attention" at the beginning of the period.
- Excludes banks that experienced mergers in past periods.

Chart 2-9: Default Probability by Type of Industry



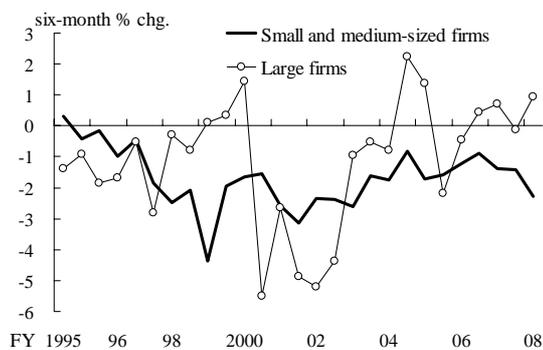
Source: The Risk Data Bank of Japan, Ltd. "RDB Kigyo Default Ritsu (Corporate Default Probability)."

Chart 2-10: Bank Loans Outstanding by Type of Borrower

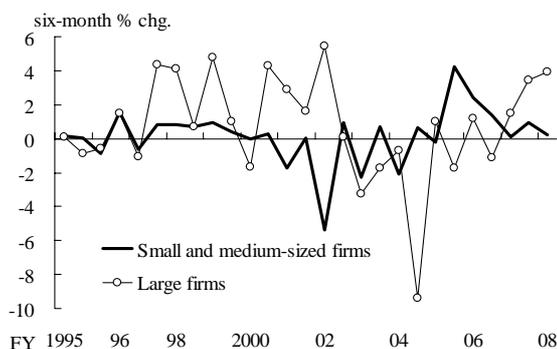


Source: Bank of Japan, "Loans and Discounts Outstanding by Sector."

Chart 2-11: Number of Borrowers and Loan Size per Borrower
[1] Number of Borrowers



[2] Loan Size per Borrower



4. Developments in bank loans

Next, domestic loans have been increasing briskly (Chart 2-10). While bank loans for small and medium-sized firms remained slightly below the previous year's level, those for large firms increased at a brisk pace, reflecting a funding shift from capital markets to bank loans. Loans outstanding for individuals and local public entities also increased.

Disaggregating bank loans into the "number of borrowers" and the "loan size per borrower" respectively, the number of borrowers increased and the loan size per borrower increased sharply for large firms. By contrast, for small and medium-sized firms, the pace of decrease in the number of borrowers appeared to widen and the pace of increase in the loan size per borrower slowed after the end of 2006 (Chart 2-11).

Furthermore, examining both the number of borrowers and the loan size per borrower by industry group, the number of borrowers declined mainly in the construction, wholesaling and retailing, financial and insurance, and services sectors, and this contributed to slowing the pace of increase in domestic loans from the end of September 2006 to the end of September 2008 (Chart 2-12).

Next, the banks' lending attitude from the perspective of borrowers is examined. The relationship between the number of borrowers and the banks' lending attitude from September 2006 to September 2008 shows that those industries with accelerating pace of decrease in the number of borrowers face a tighter lending attitude by banks (Char 2-13).

Comparing the business condition DI and the banks' lending attitude DI for small and medium-sized firms, there is a statistically significant relationship that the firms in the industry group with severer business

condition tend to perceive banks' lending attitude as tighter (Chart 2-14).

Moreover, the relationship between the business condition DI and the lending attitude DI shift downward after 2008. This indicates that the small and medium-sized firms tend to perceive the lending attitude of financial institutions as more tightened relative to the severity in their business conditions, regardless of industry group.

As described, the funding conditions for small and medium-sized firms continue to tighten, with shrinkage in trade credit. In this environment, financial institutions have been receptive to the expansion of the emergency guarantee system of the credit guarantee corporations. Those moves are expected to contribute to relaxing firms' funding conditions.

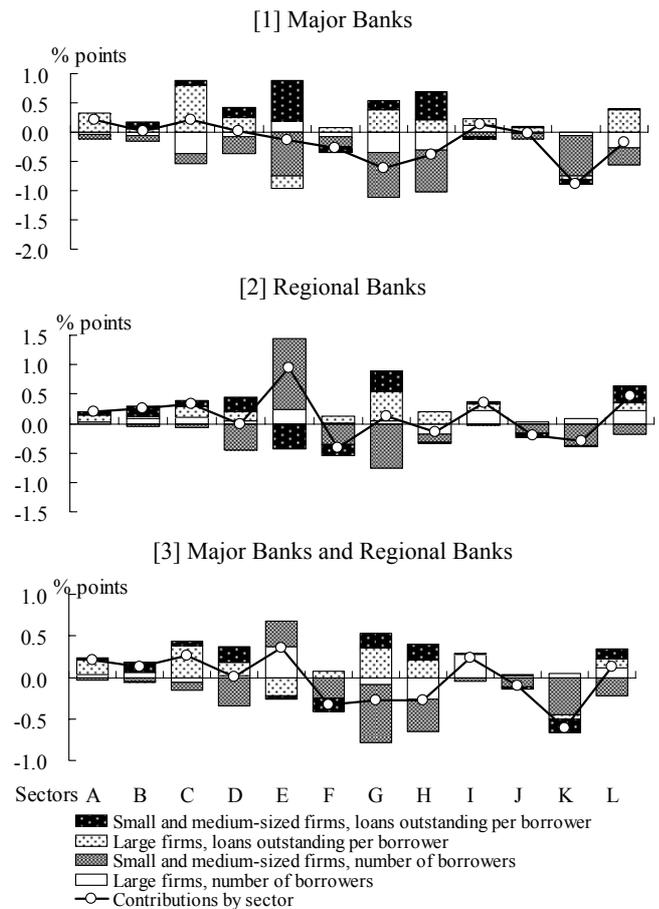
5. Banks' interest rate margins on loans

Finally, the impact of changes in the composition of loan portfolios in terms of increasing shares of large firms, local public entities, and individuals is clearly seen in the changes in interest rate margins.

Total interest margins on loans (i.e., the interest rate on lending minus the interest rate on interest-bearing liabilities) narrowed for the major banks and continued to narrow for the regional banks (Chart 2-15). This appears to reflect the changes in the composition of loan portfolios, in addition to the longer average term to maturity for loans (see Chapter II of the September 2008 issue of the *Financial System Report*).

The multivariate time-series model is employed for examining the changes. The model decomposes changes in short-term interest rate spreads on loans into (1) cyclical changes induced by the business cycle, (2) short-term changes reflecting the fact that loan interest rates do not immediately follow the change in

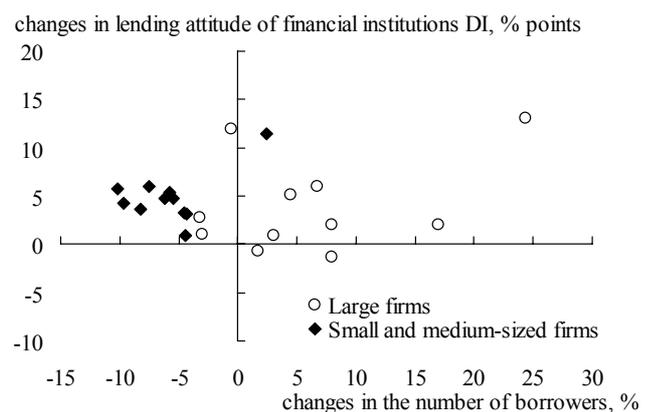
Chart 2-12: Loan Change by Type of Contribution between September 2006 and September 2008



A: Chemicals, B: Iron & steel, C: Machinery, D: Other manufacturing, E: Real estate, F: Construction, G: Wholesaling and retailing, H: Financial & insurance, I: Leasing, J: Restaurants & accommodations, K: Services, L: Other non-manufacturing.

Source: Bank of Japan, "Loans and Discounts Outstanding by Sector."

Chart 2-13: Number of Borrowers and Lending Attitude of Financial Institutions by Industry^{1,2}

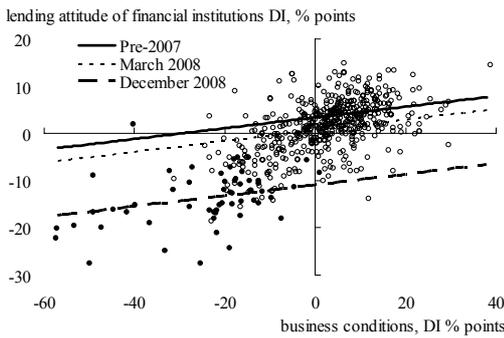


Notes: 1. Lending attitude of financial institutions DI = "accommodative" - "severe."

2. As of the end of the first half of fiscal 2008. The changes in DI and the numbers are between the first half of fiscal 2008 and the first half of fiscal 2006.

Sources: Bank of Japan, "Loans and Discounts Outstanding by Sector"; "Tankan."

Chart 2-14: Business Condition and Lending Attitude for Small and Medium-sized firms^{1,2}



Notes: 1. Data range is from March 2006 to December 2008. ● indicates sample in December 2008.
2. Each sample plot is indicated by the deviation from the mean of the industry.

Source: Bank of Japan, "Tankan."

Chart 2-15: Total Interest Margins on Domestic Loans
Major banks Regional banks

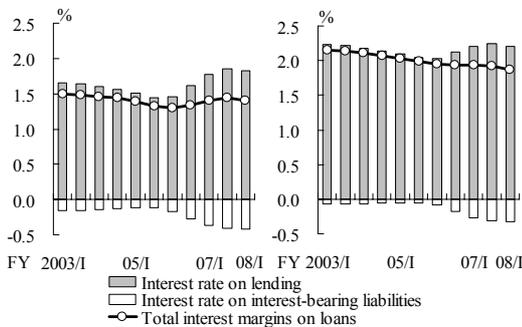
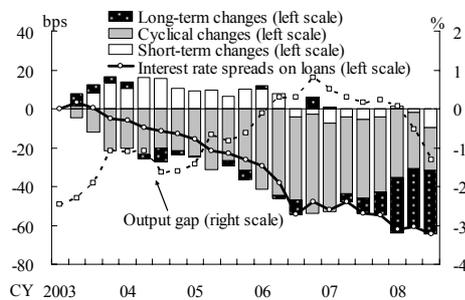
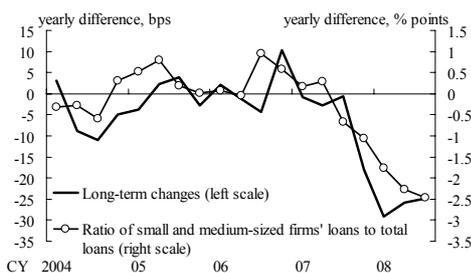


Chart 2-16: Decomposition of Changes in Interest Rate Spreads on Loans^{1,2,3,4}



Notes: 1. Bank of Japan estimation.
2. Interest rate spread on loans = average contracted interest rate on new loans and discounts (short-term) - CD interest rate (3-month).
3. Figures are the deviation from those in the first quarter of 2003 except for the output gap.
4. For details, see Box 1 of the *Financial System Report* published by the Bank of Japan in March 2007.

Chart 2-17: Identified Long-Term Changes and Ratio of Small and Medium-Sized Firms' Loans



market interest rates, and (3) long-term changes in the lending market environment (Chart 2-16). The result shows that the cyclical changes, which capture the impact of economic stagnation, contributed to widening the short-term interest rate spreads approximately by 20 bps from July-September 2006 to July-September 2008. It further shows that the long-term changes contributed to narrowing the short-term interest rate spreads. In total, the impact stemming from the long-term changes exceeds that from the cyclical changes, and the short-term interest rate spreads on loans narrowed.

Comparing the year-on-year difference in the long-term changes and the year-on-year difference in the lending ratio to small and medium-sized firms, there is a strong positive correlation between the differences (Chart 2-17). This suggests that the impact stemming from the long-term changes reflects the changes in the composition of loan portfolios.

Next, a comparison is made between short-term interest rate spreads on loans and the spread in the CP market. From July-September 2006 to July-September 2008, the cyclical changes contributed to widening the spreads by approximately 20 bps, while the credit risk premiums in the CP market also widened by 20 bps (Chart 1-17).

Since October 2008, credit risk premiums of firms in the credit market have widened. Going forward, the adjustment of the spread on loans in line with widening credit premiums may increase the burden on firms by increasing interest payments. In contrast, the failure to adjust the spread on loans in line with credit market developments may jeopardize the risk-return balances on the part of banks, thereby making banks' risk-taking behaviors more cautious. In sum, it is necessary to monitor any development in interest rate spreads on

loans by taking account of developments in credit premiums.

The spread on long-term lending continues to shrink, while the composition of loan portfolios in terms of shares of local public entities and individuals is on an increasing trend. This indicates that the spread on long-term lending should narrow in line with the changes in the composition of loans in addition to the deteriorating profitability in housing loans (Chart 2-18; see also Chart 1-58 of the September 2008 issue of the *Financial System Report*).

B. Firms' Financial Conditions

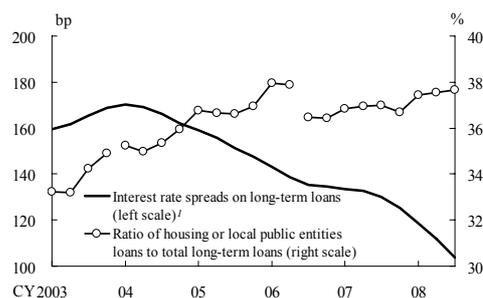
This section reviews long-term trend of firms' corporate finance and accompanying changes in light of the recent severe business environment.

Since the collapse of the bubble economy, firms have consistently sought to strengthen their financial conditions. As a result, the capital adequacy ratio has increased markedly for both large firms and small and medium-sized firms (Chart 2-19). In contrast, quick ratio — firms' ability to pay in the short term — has shown something of a contrast between small and medium-sized firms and large firms: the ratio increased for small and medium-sized firms, while it was on a downtrend for large firms (Chart 2-20).

Firms' dependence on loans trended down after the end of the 1990s. Since 2007, however, it has been on an uptrend for small and medium-sized firms (Chart 2-21). This is partly due to a sharp drop in trade credits as well as a decrease in firms' borrowing (Chart 2-22). This indicates that the funding environment for small and medium-sized firms has been increasingly severe in the face of a sharp deterioration in the economy.

Furthermore, reflecting recent conditions for profit

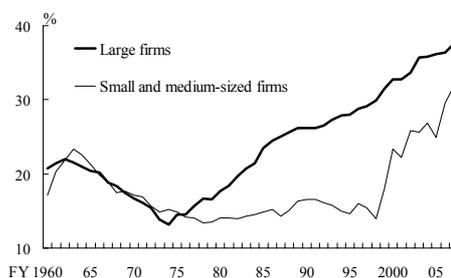
Chart 2-18: Interest Rate Spreads on Long-Term Loans and the Ratio of Housing or Local Public Entities to Total Long-Term Loans



Note: 1. Interest rate spreads on long-term loans = average contracted interest rate on loans and discounts (long-term) - twelve-quarter moving average of CD interest rate (3-month).

Sources: Bank of Japan, "Loans and Discounts Outstanding by Sector"; "Loans and Discounts Outstanding by Interest Rate."

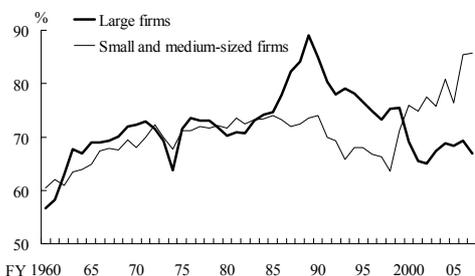
Chart 2-19: Ratio of Equity¹ to Assets in the Corporate Sector



Note: 1. Equity is stockholders' equity.

Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually."

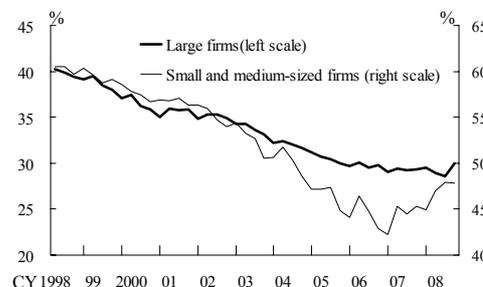
Chart 2-20: Quick Ratio¹



Note: 1. Quick ratio = Quick assets / Short-term debt.

Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually."

Chart 2-21: Ratio of Bank Loan to Debt in the Corporate Sector¹

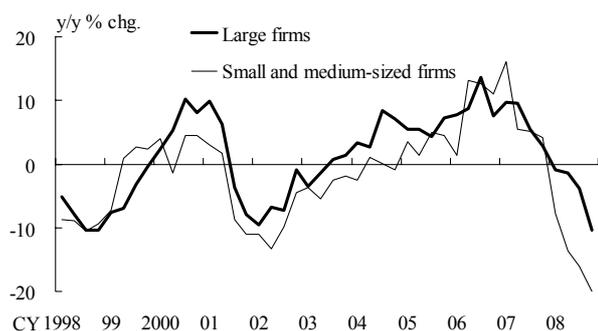


Note: 1. Financial liabilities include bank borrowings, bonds, bills and accounts payable, other borrowings, capital stock and capital surplus.

2. Financial liabilities include bank borrowings, bonds, bills and accounts payable, other borrowings, capital stock and capital surplus.

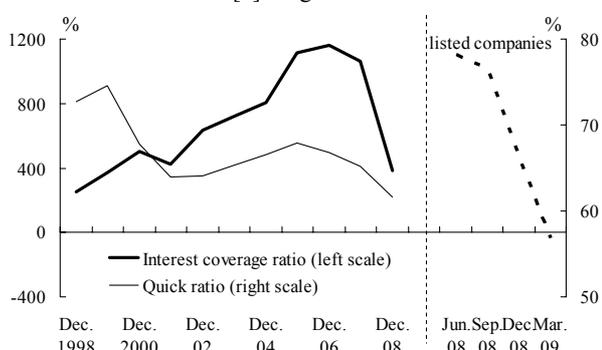
Source: Ministry of finance, "Financial Statements Statistics of Corporations by Industry, Annually."

Chart 2-22: Financing by Trade Credits and Foreign Trade Credits

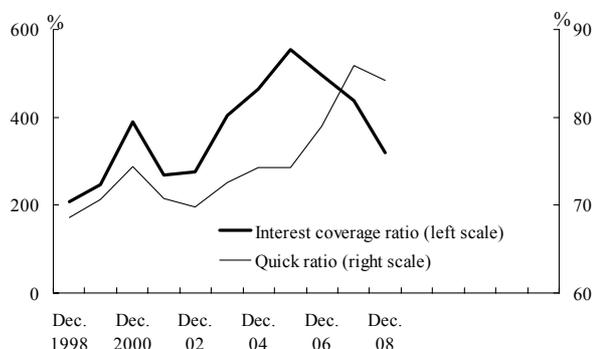


Note: 1. Trade credits are the sum of bills and accounts payable.
Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually."

Chart 2-23: Interest Coverage Ratio^{1,2,3,4} and Quick Ratio [1] Large Firms



[2] Small and Medium-Sized Firms



Notes: 1. As of March 6, 2009.

2. Interest coverage ratio = (operating income + interest and dividends received)/interest expense.

3. Solid line is based on "Financial Statements Statistics of Corporations by Industry, Seasonally".

4. Dotted line shows quarterly interest coverage ratio using listed companies' available data. March 2009 operating income is calculated by subtracting accumulated data from April to December in 2008 from fiscal year 2008 forecast data. March 2009 interest and dividends received and interest expenses are calculated by dividing the accumulated data from April to December in 2008 by three.

Sources: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Seasonally"; Financial Quest.

which deteriorates sharply, both quick ratio and interest coverage ratio — a paying capability of interest payment — have sharply dropped (Chart 2-23). Meanwhile, demand for bank loans increased largely (Chart 2-24).

In sum, firms' capital adequacy ratio has been largely enhanced regardless of firm size compared with the 1990s, and the small and medium-sized firms have achieved more solid financial bases, reflected in an uptrend in the ability to pay short-term debt. Recently, however, financial indicators such as the interest coverage ratio and quick ratio have been decreasing rapidly for both large firms and small and medium-sized firms, mainly due to a sharp drop in sales and operating profits, and the dependence on loans by financial institutions has been increasing again for small and medium-sized firms.

C. Assessment of the Financial Intermediation Function

Based on the above analyses, this section summarizes the function and risk in the financial system.

Since the autumn of 2008, financial conditions for firms' funding have been severe as seen in the declining function of CP and corporate bond markets.

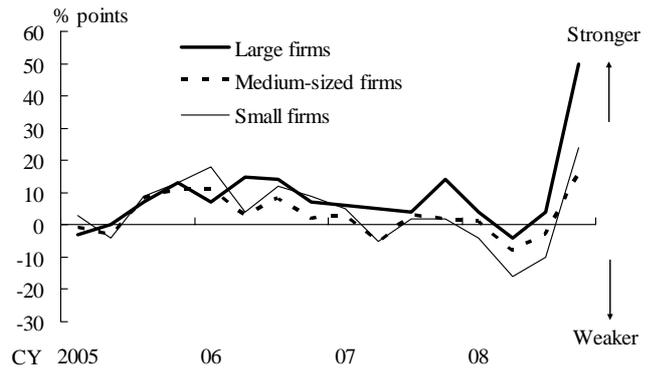
Against such a backdrop of the firms' severe financial conditions on the whole, Japan's financial institutions have retained the financial intermediation function accordingly, by supporting firms which have difficulty funding from capital markets.

One factor that might have contributed to the functioning of the financial system is the banks' efforts to fortify their capital base, as seen in Chapter I. Another factor is the Japanese firms' efforts to solidify their capital base after the collapse of the bubble economy.

At the same time, however, the funding environment for small and medium-sized firms — an important part of Japan's economy in terms of production and employment — has become severe at an early stage. In addition, the financial position of large firms has tended to promote large demand for funds in the markets for financing the firms' short-term debt in the face of a sharp drop in sales and operating profits.

Looking ahead, in order for banks to satisfy firms' demand for funds properly, it is necessary to establish stable and sufficient business base as a prerequisite for taking on risks. Based on these considerations, scenario analyses are employed in Chapter III to examine the impacts of the emergence of credit risk and market risk associated with stockholdings on banks' capital position, on the assumption of an economic downturn and stagnating stock prices in the future.

Chart 2-24: Demand for Loans: Classified by Borrower Type



Source: Bank of Japan, "Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks."

III. Robustness of the Financial System

This chapter begins by examining the current state of banks' overall amount of risk. It then conducts scenario analyses against the four risk categories, that is, credit risk, market risk associated with stockholdings, interest rate risk, and funding liquidity risk, based on a framework of stress-testing employed in the previous issues of the *Financial System Report*. These analyses aim at clarifying risk characteristics faced by banks and assessing robustness of the financial system, although the results highly depend on presumptions and should be treated with some circumspection.

In face of deteriorating economic and financial conditions, various measures for capital reinforcement of financial institutions, such as the amendment of the act on special measures for strengthening financial functions, were conducted in Japan. This issue of the *Report* assesses whether the estimated credit costs and unrealized losses on securities in the scenarios are largely restrained, not only in comparison with Tier I capital, but also in comparison with core profitability. Specifically, robustness of the financial system is assessed by (1) comparing credit costs and unrealized losses on securities with operating profits from core business in economic downturns, and assessing the resulting impact on the Tier I capital ratio, and (2) observing how the Tier I capital ratio declines for banks with relatively weaker capital strength.

A. Risks and Tier I Capital

Looking at the development of each risk item relative to Tier I capital toward the end of the first half of fiscal 2008, credit risk, which had been in decline up to then, has turned upward. In addition, market risk associated with stockholdings has increased for the major banks,

and interest rate risk has increased for the regional banks (Chart 3-1).

For the major banks, the expected losses due to the sharp decline in stock prices (i.e., market risk associated with stockholdings) to Tier I capital are quite large, and it remains a critical challenge to manage this risk adequately. For the regional banks, interest rate risk has a larger proportion than the major banks.

Taking into account the risk profile of such banks, the following sections will conduct scenario analyses from a macro perspective for the four risk categories, i.e., credit risk, market risk associated with stockholdings, interest rate risk, and funding liquidity risk to examine the impact of the scenarios on banks' capital strength.

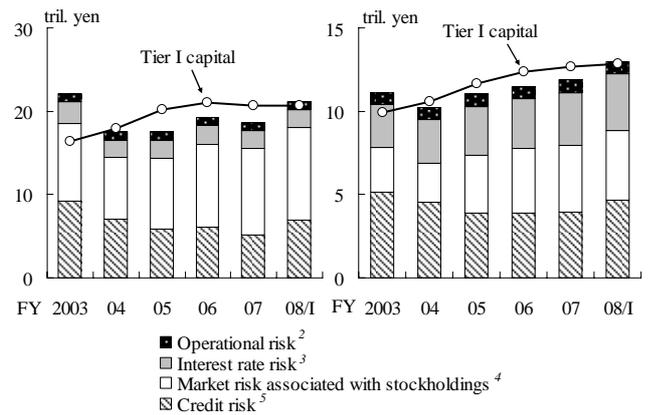
B. Credit Risk and Market Risk Associated with Stockholdings

1. Credit risk

Credit risk is assessed by using a framework incorporating a mechanism in which an economic downturn increases credit risk by downgrading firms' creditworthiness. Specifically, the credit cost under the scenario of an economic downturn is estimated. On the presumption in the scenario analyses, an economic downturn worsens firms' business conditions, resulting in a decline in the firms' creditworthiness and a downward shift in the firms' borrower classification.

To check the adequacy of the presumption, developments in both the economic growth rate and firms' financial indicators are examined. It shows that the real GDP growth rate has a close relationship with changes in the retained earnings of firms as a source for capital and changes in quick assets as a source of firms' liquidity (Charts 3-2 and 3-3).

Chart 3-1: Risks¹ and Tier I Capital
Major banks



Notes: 1. Bank of Japan estimation.

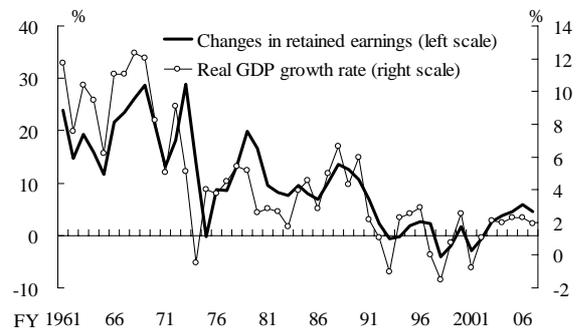
2. Operational risk is defined as 15 percent of gross profits based on the Basel II basic indicator approach.

3. Interest rate risk is limited to yen-denominated bond portfolios and calculated by the same method as in Chart 3-13.

4. Market risk associated with stockholdings is measured using TOPIX as a risk factor, given 1-year holding period and 99 percent VaR.

5. Credit risk is calculated by subtracting the expected loss (EL) from the maximum loss (EL + UL) based on the Basel II risk weight formulas with a confidence interval of 99 percent. In the estimation, borrowers classified as requiring "special attention" or below (in terms of credit quality) are considered to be in a state of default. The relaxation of requirement for restructured loans is not taken into account.

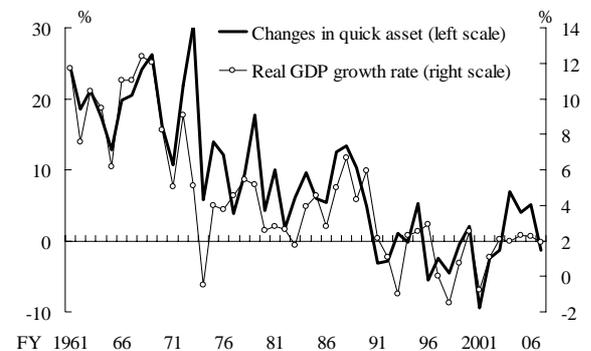
Chart 3-2: Retained Earnings¹ and the Real GDP Growth Rate



Note: 1. The changes in retained earnings are divided by accumulated retained earnings at each previous year.

Sources: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually"; Cabinet Office, "National Accounts."

Chart 3-3: Quick Assets and the Real GDP Growth Rate



Sources: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually"; Cabinet Office, "National Accounts."

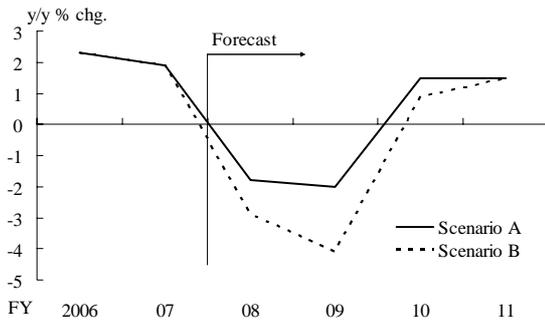
It should be noted that, due to increased capital adequacy ratios, firms' robustness against changes in the real GDP growth rate may have improved in terms of capital, and in terms of liquidity, large firms may have been confronting difficulties (Charts 2-19, 2-20, and 2-23).

Two paths are provided for the scenario of an economic downturn (Chart 3-4). Scenario A uses the median of Policy Board members' economic forecast published by the Bank of Japan's Policy Board on January 22, 2009 as the real GDP growth rates for fiscal 2008 through fiscal 2010. Scenario B uses the average of private forecasts after February 16, 2009, when a preliminary quarterly estimate of GDP for October-December quarter was released. In both scenarios a real GDP growth rate in fiscal 2011 is assumed to be 1.5 percent.

Credit cost ratios of the major banks and the regional banks for fiscal 2008 under these scenarios were estimated to be about 90 bps in scenario A and about 110 bps in scenario B (Chart 3-5). These estimates are substantially higher than the actual credit cost ratios during nine-month period ending December 2008 (Chart 1-22).

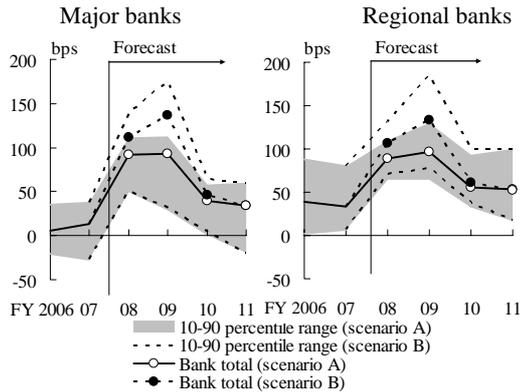
In spite of a sharp economic downturn, actual credit cost ratios have been relatively restrained, and several factors behind this can be pointed out: (1) increased capital adequacy ratios of borrowing firms compared with those in the past financial crisis (Chart 2-19); (2) a time-lag in the increase in credit cost in response to the recent rapid economic downturn; (3) improvement in coverage by collateral and guarantee; and (4) policy measures taken in response to restructured loans. There is also a view that diversification of loan portfolios might have contributed to restraining credit cost ratios so far, although such diversification cannot restrain

Chart 3-4: GDP Growth Rate for the Scenarios¹



Note: 1. Scenario B from fiscal 2008 to fiscal 2010 is the average of forecasts of the GDP growth rate at private forecasting agencies.

Chart 3-5: Credit Cost Ratios under the Scenarios¹



Note: 1. Bank of Japan estimation.

increases in credit costs when firms' creditworthiness declines uniformly in response to rapid changes in the macroeconomic environment.

In considering the outlook of the credit cost ratio, it should be noted that firms' financial bases might have worsened rapidly through a drop in operating profits due to the economic downturn.

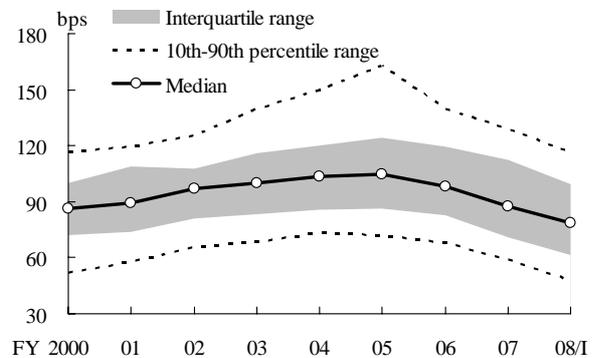
The estimates of credit cost ratios in fiscal 2009 for both the major banks and the regional banks are about 90 bps under scenario A, but the estimates become above 130 bps under scenario B that assumes a more serious economic downturn.

By subtracting the estimated credit cost ratio from the breakeven credit cost ratio for each bank, the estimates of net income/loss and Tier I capital ratio are obtained for each bank. The breakeven credit cost ratios are on a downward trend due to a decline in banks' core profitability and the distribution shows wide differences from bank to bank (Chart 1-23).

As for banks registering net losses, the proportion of their loans to total bank loans (hereafter, the lending share) is estimated. In scenario A, the estimates of the lending share are 38 percent in fiscal 2008 and 44 percent in fiscal 2009, and in scenario B, the estimates are 49 percent in fiscal 2008 and 56 percent in fiscal 2009. These estimates indicate a sharp worsening of banks' profit in both scenarios (Chart 3-6).

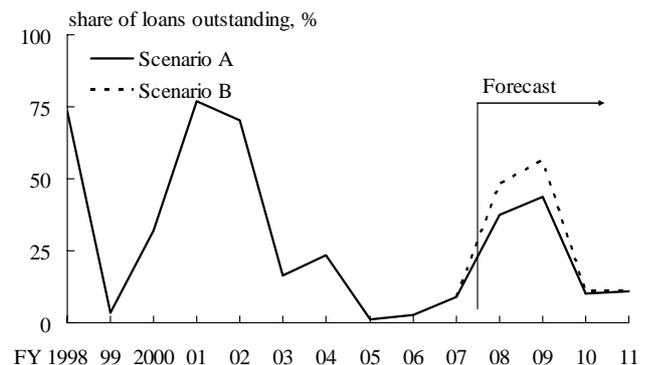
As for the Tier I capital ratios of banks, the estimates do not decline significantly in scenario A, because credit costs almost match operating profits from core business. In scenario B, on the contrary, the estimates of Tier I capital ratios in fiscal 2009 decline to a level slightly below those in fiscal 2006 (with a decline of 0.6 percentage point within two years). In addition, the estimates after fiscal 2009 remain lower than the level

Chart 1-23 (reprint): Breakeven Credit Cost Ratios^{1,2}



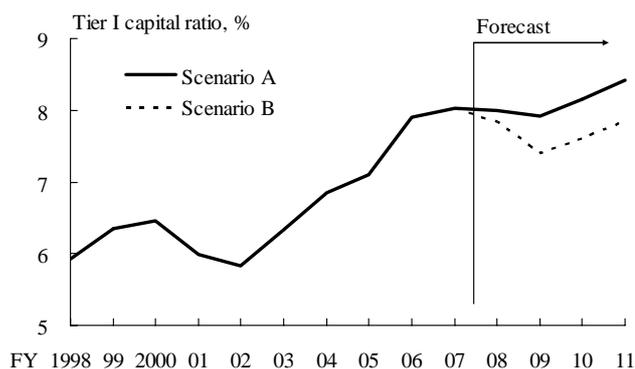
Notes: 1. Breakeven credit cost ratio = operating profits from core business / loans outstanding.
2. Breakeven credit cost ratios are sorted in ascending order. 10th, 25th, 50th (median), 75th, and 90th percentiles are shown.

Chart 3-6: Share¹ of Loans Outstanding by Banks Registering Net Losses



Note: 1. Share = loans outstanding by banks with net loss / Total loans outstanding

Chart 3-7: Tier I Capital Ratio of Banks



Note: Bank of Japan estimation.

of the actual Tier I capital ratio in fiscal 2007 due to sluggishness in operating profits from core business in relation to credit costs (Chart 3-7).

To summarize, if the scenario of an economic downturn materializes, the banking sector's overall Tier I capital ratio will decline but remain higher than the level in the late 1990s and early 2000s.

2. Market risk associated with stockholdings

The scenario analysis of market risk associated with stockholdings assumes that (1) the market value of the stockholdings of individual banks is 100 percent linked to the TOPIX, and (2) the stock prices at the end of fiscal 2008 will be at the same level as the bottom of the TOPIX after the collapse of the bubble economy (730 points). Under these assumptions, net unrealized losses for stocks (the difference between book value and market value) for individual banks in fiscal 2008 are estimated. In light of assessing banks' de facto capital strength, the analyses here estimate a lending share and the Tier I capital ratio of banks registering net losses, on the assumption that net unrealized losses are deducted from operating profits from core business for each bank.

Under the above-mentioned scenario, the lending share of banks registering net losses is more than 45 percent, and the estimate of Tier I capital ratio of the banking sector will decrease about 0.5 percentage point. Those indicate that even if current stock prices remain almost unchanged in the future at the current level, the net unrealized losses on stocks may exceed the estimate of the credit costs arising in fiscal 2009 under scenario B (see Chart 3-1 for estimated losses assuming a sharp decline in stock prices).

The results indicate that the management of market risk associated with stockholdings remains an

important challenge for banks.

3. Simultaneous occurrence of economic downturn and stagnating stock prices

Next, by combining the two above-mentioned scenario analyses, impact on banks' capital strength is estimated when both an economic downturn and stagnating stock prices occur simultaneously.

Specifically, by subtracting the estimates of credit costs and net unrealized losses on stocks from operating profits from core business in the case of simultaneous occurrence of an economic downturn and stagnating stock prices, individual banks' net income and Tier I capital in fiscal 2008 are estimated. After fiscal 2009, estimates of net income and Tier I capital levels for individual banks are obtained by subtracting the estimates of credit costs from the operating profits from core business with an assumption of unchanged stock prices (Chart 3-8).

The estimated results show that the lending share of banks registering net losses in 2008 is 82 percent in scenario A, which is slightly higher than that in fiscal 2001, and 85 percent in scenario B. As a result, the estimate of the Tier I capital ratio of the banking sector in fiscal 2009 will decline by 0.9 percentage points (within two years) to a level equivalent to that in fiscal 2005 in scenario A, and decline by 1.4 percentage points to a level equivalent to that in fiscal 2000 in scenario B (Chart 3-9).

Furthermore, in both scenario A and B, the estimated Tier I capital ratio in fiscal 2011 is lower than the actual Tier I capital ratio in fiscal 2007, reflecting banks' sluggish core profitability and time needed for Tier I capital to recover.

In sum, the results indicate that, under a simultaneous occurrence of an economic downturn and stagnating

Chart 3-8: Framework of the Analysis of Credit Risk and Market Risk Associated with Stockholdings

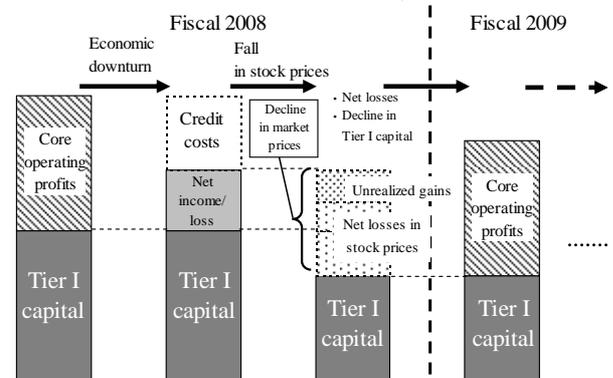
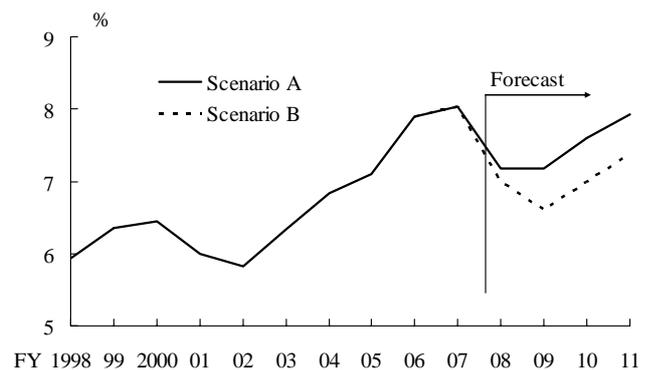
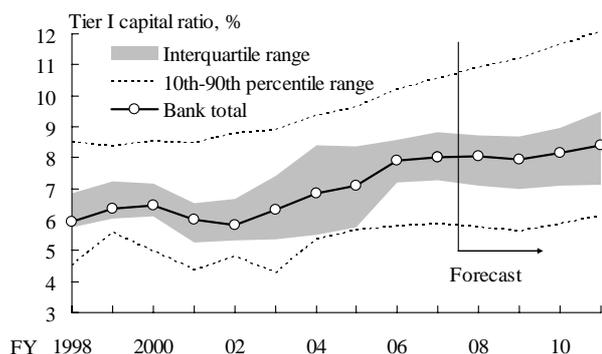


Chart 3-9: Tier I Capital Ratio in Simultaneous Occurrence of Economic Downturn and Stagnating Stock Prices¹

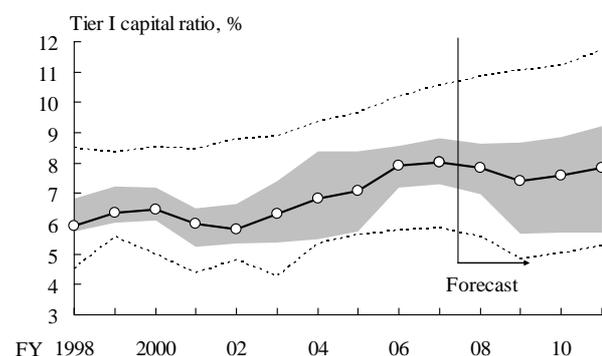


Note: 1. Bank of Japan estimation.

Chart 3-10: Dispersion of Tier I Capital Ratios where only Economic Downturn Occurs¹
[1] Scenario A

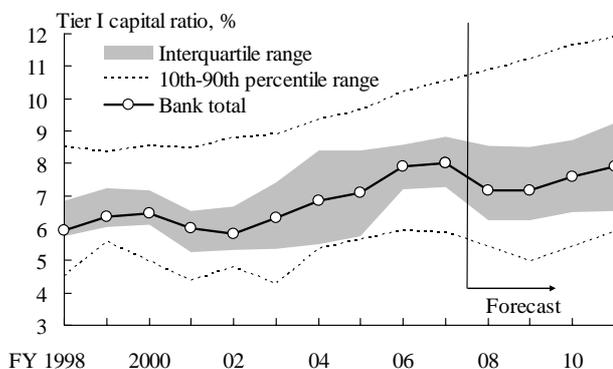


[2] Scenario B

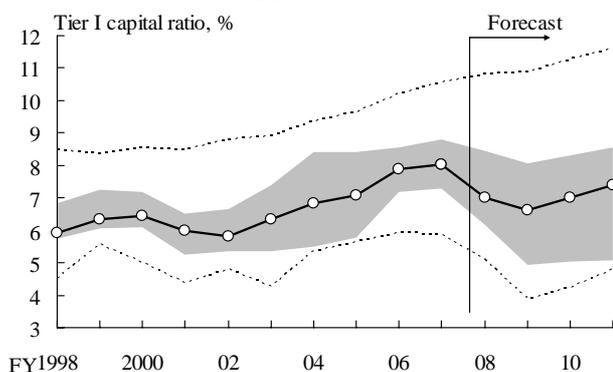


Note: 1. Bank of Japan estimation.

Chart 3-11: Dispersion of Tier I Capital Ratios where both Economic Downturn and Stagnating Stock Prices Occur¹
[1] Scenario A



[2] Scenario B



Note: 1. Bank of Japan estimation.

stock prices, banks' estimated losses will be considerably larger than banks' operating profits from core business and the Tier I capital ratio will decline to a level equivalent to that in fiscal 2000 in scenario B. However, in both scenarios, a sharp drop in the Tier I capital ratio is not likely to take place.

4. Dispersion of capital strength

Finally, the extent of dispersion of banks' capital strength in terms of the Tier I capital ratio is analyzed in two cases: (1) only an economic downturn occurs; and (2) both an economic downturn and stagnating stock prices occur. In the analysis, focus is on the development of Tier I capital ratios of banks whose capital strength is relatively weak.

First, in the case of (1) where only an economic downturn occurs, the left-hand side of distribution represented by the 10th percentile and 25th percentile shifted down to levels similar to those in the late 1990s and early 2000s in scenario B (Chart 3-10). Second, in the case of (2) where both an economic downturn and stagnating stock prices occur, both the 10th percentile and 25th percentile will be lower than those in the late 1990s and early 2000s in scenario B (Chart 3-11).

In sum, when a serious economic downturn and stagnating stock prices occur simultaneously, a proportion of banks with higher credit costs relative to their core profitability will be considerably large and the Tier I capital ratio of banks with relatively weak capital strength on the whole may decline to levels below those in the late 1990s and early 2000s.

C. Interest Rate Risk

1. Interest rate risk analysis

Next, interest rate risk on the banking accounts of the major banks and the regional banks is examined.

The average length of time until the renewal of the interest rate for major items on banking accounts (hereafter, average maturity) for bonds and loans has been almost unchanged for the major banks, but it has lengthened slightly for the regional banks (Chart 3-12).

As a result, the maturity gap between assets and liabilities on the banking accounts for the regional banks has grown to twice that of the major banks, and the ratio of interest rate risk to Tier I capital has increased to 27.3 percent for the regional banks and 10.8 percent for the major banks.

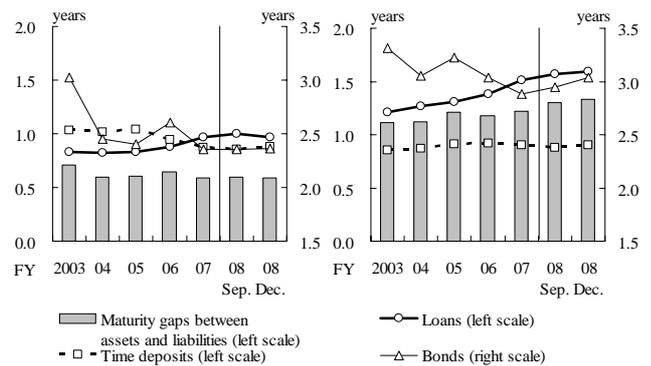
Examining components of year-on-year differences in the ratios of interest rate risk relative to Tier I capital, it shows that increases in bond interest rate risk have contributed to the overall increase in the ratio of interest rate risk to Tier I capital for the major banks, while increases in loan interest rate risk continue to be a contributing factor for the regional banks (Chart 3-13).

2. Simulation analysis of interest rate risk

For the periodical assessment of the interest rate risk of the banks as in the previous issues of the *Financial System Report*, a simulation model that incorporates the balance-sheet structure of the major banks and the regional banks at the base point in time (the end of the first half of fiscal 2008) as well as their interest-rate-setting behavior in the past was employed for the analysis (see Chart 3-14 for an outline).

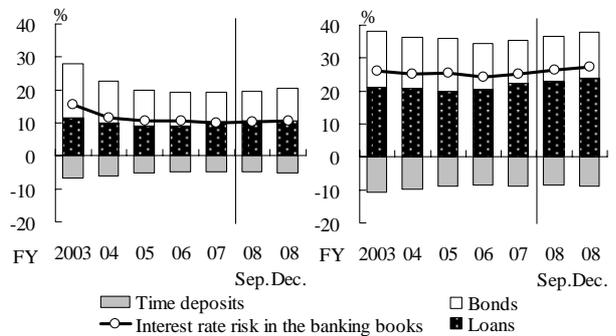
With respect to the future path of market interest rates, four scenarios are considered: (1) a baseline scenario (the future short-term interest rate follows the path implied by the forward rate curve at the end of March 2009); (2) a parallel shift scenario; (3) a steepening scenario; and (4) a flattening scenario (see Chart 3-15 for the assumptions of each scenario).

Chart 3-12: Average Maturities of Banks' Assets and Liabilities¹
Major banks Regional banks

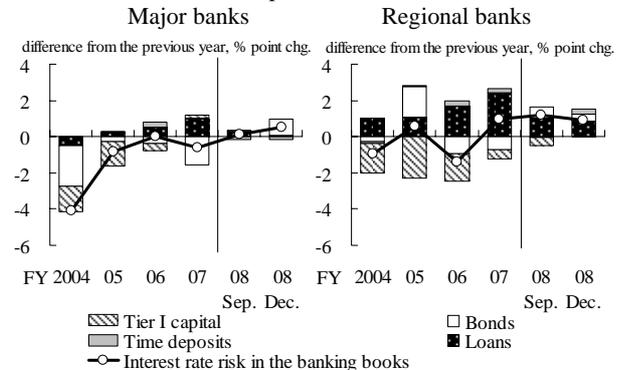


Note: 1. Bank of Japan estimation.

Chart 3-13: Interest Rate Risk in the Banking Books (100 bpv)^{1,2}
[1] Ratio of Interest Rate Risk to Banks' Tier I Capital
Major banks Regional banks



[2] Contributions to Changes in Ratios of Interest Rate Risk to Banks' Tier I Capital



Notes: 1. The risk is estimated based on the assumption that market interest rates rise by 100 basis points at all maturities.
2. Bank of Japan estimation.

Chart 3-14: Basic Structure of Banks' Income Simulation Model

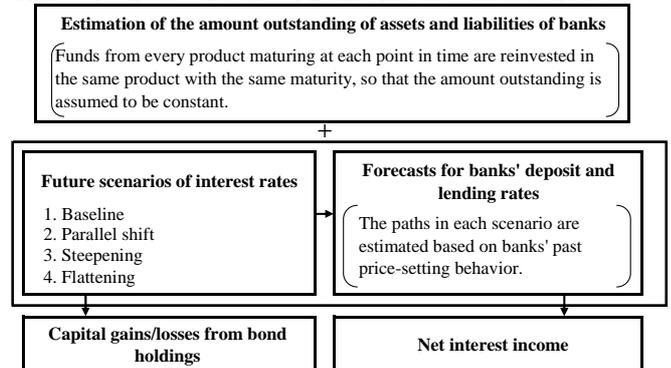
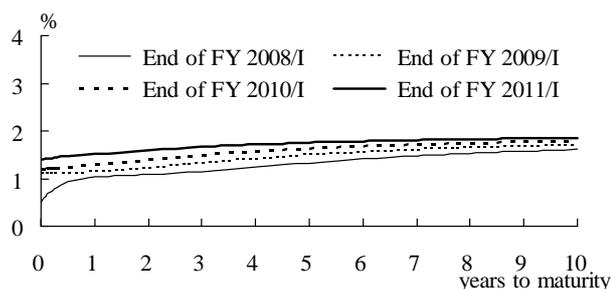
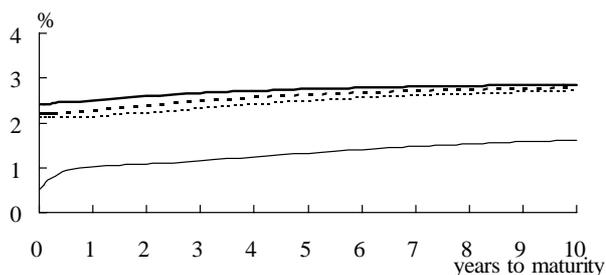


Chart 3-15: Spot Rate Curves¹

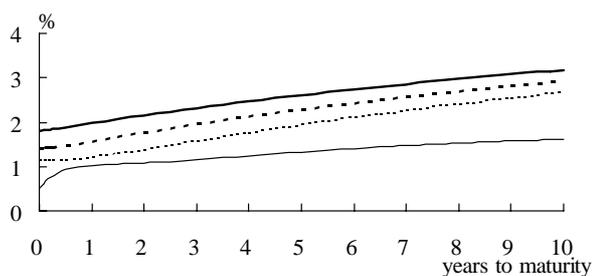
[1] Baseline Scenario²



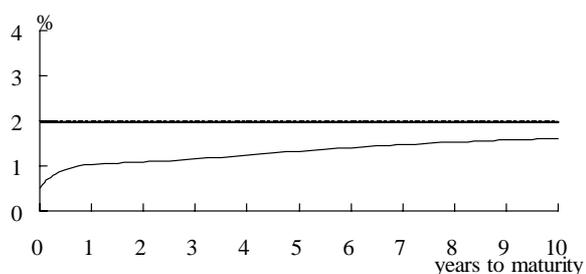
[2] Parallel Shift Scenario³



[3] Steepening Scenario⁴



[4] Flattening Scenario⁵



Notes: 1. Bank of Japan estimation.

2. The baseline scenario is that future short-term interest rates follow the path implied by the forward rate curve at the end of September 2008.

3. The parallel shift scenario is that interest rates at all maturities shift upward compared with the baseline scenario by 1 percentage point over the year.

4. The steepening scenario is that the 10-year spot rate shifts upward compared with the baseline scenario by 1 percentage point, and the upward shift becomes smaller as time-to-maturity shortens.

5. The flattening scenario is that the overnight rate shifts upward compared with the baseline scenario by 1 percentage point, and the upward shift becomes smaller as time-to-maturity lengthens, thereby flattening at the level of the long-term forward rate.

In the estimation of the future path of deposits and lending rates under these scenarios, it is assumed that (1) the spread between time deposit/lending rates and the corresponding market rate with a similar maturity converges on its historical average in the long term; and (2) based on the past rates, the ratio of the ordinary deposit rates to 1-month LIBOR is approximately 25 percent.

Using the scenarios and the estimation results mentioned above, future capital gains/losses from bond holdings, various interest receipts/payments, and changes in net interest income are calculated. In three scenarios of upward shifts in yield curves, unexpected yield curve shifts lead to unexpected changes in the present value of bond holdings, which are treated as capital gains/losses from bond holdings as before. It should be noted that future capital gains/losses on bond holdings are based on the estimates of the theoretical price instead of the market price.

The overall picture of the simulation results can be summarized as follows (Chart 3-16). When the yield curve shifts upward gradually, an increase in interest payments on short-term debt such as deposits and market-based financing tends to exceed the increase in interest income from lending and bond holdings in the short term. Therefore, in all the scenarios, net interest income for both the major banks and the regional banks declines compared with the end of the first half of fiscal 2008. Meanwhile, over the medium term, net interest income for the major banks exceeds the initial level at a relatively early stage, while for the regional banks it takes time to reach the initial level reflecting the longer average maturity of both lending and bonds relative to the major banks. The medium-term recovery in interest income is clearer in scenarios assuming an upward break in interest rates, but there is also a starker difference in the speed of recovery between the

major banks and the regional banks.

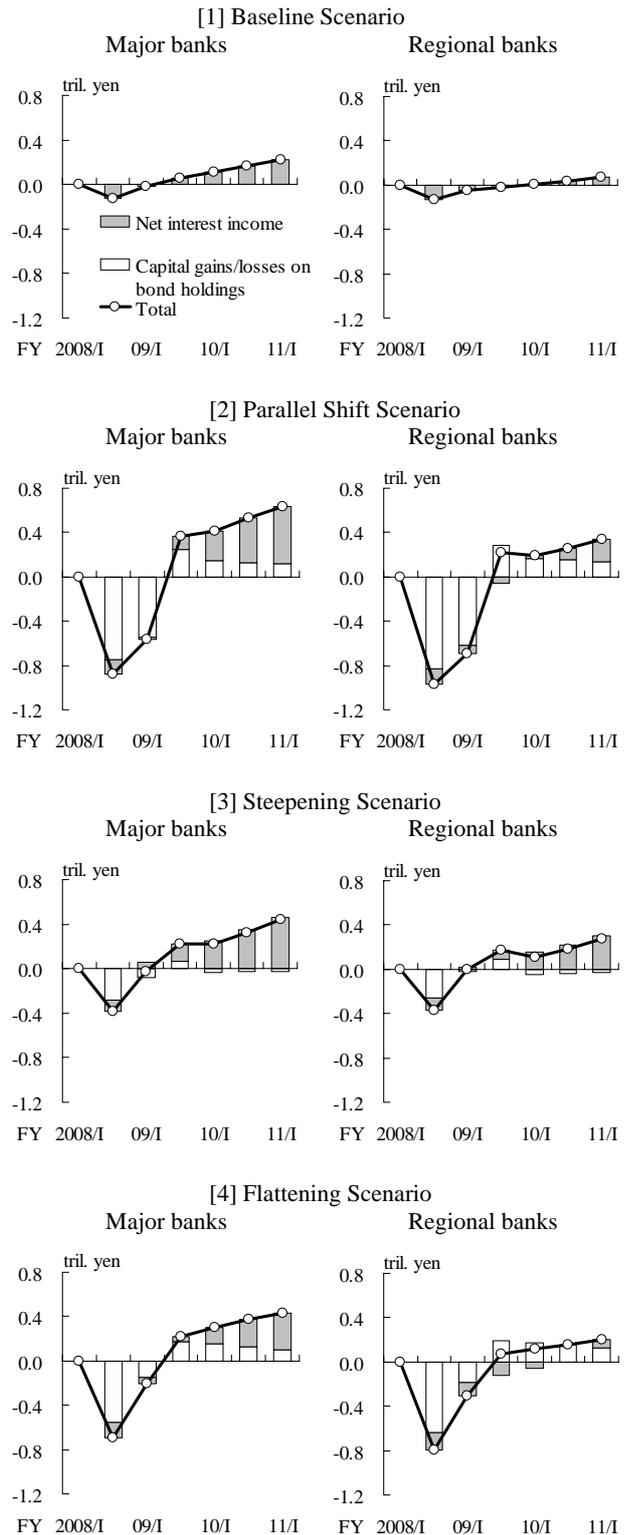
In scenarios assuming an upward shift in yield curves, capital losses of bond holdings occur in the short term. The size of the capital losses tends to be larger for the parallel shift and flattening scenarios than for the steepening scenario, because hedging effects of floating-rate government bonds are more pronounced under the steepening scenario.

Because the yield curve assumed in this simulation has a substantial upward shift compared to those in the September 2008 issue of the *Financial System Report*, the future recovery of net interest income will be earlier on the whole than in the previous simulation (Chart 3-17). Meanwhile, market interest rates on the whole declined compared with the end of September 2008 in line with the cut in the policy rate by the Bank of Japan after the autumn of 2008. It should be noted that the earlier recovery of net interest income on the whole is not likely to occur if the recent decline in market interest rates is taken into consideration.

Finally, considering a scenario that consumers' preference for a higher interest rate strengthens in the future, the impact on net income by higher response rate of the ordinary deposit rate against market rates is examined (Chart 3-18).

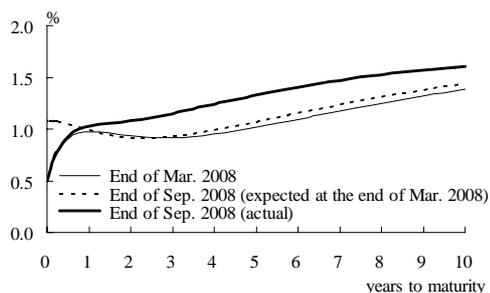
Ordinary deposits account for approximately 40 percent of the liabilities of Japanese banks, and the higher response rate will have a significant impact on interest income. For the major banks, a response rate of 50 percent would bring interest income in three years to a level that is lower than the first half of fiscal 2008 in all scenarios. For the regional banks, a response rate of 40 percent would bring interest income in three years to a level that is lower than the first half of fiscal 2008 in all scenarios.

Chart 3-16: Impact of Rises in Market Interest Rates on Banks' Profit^{1,2}



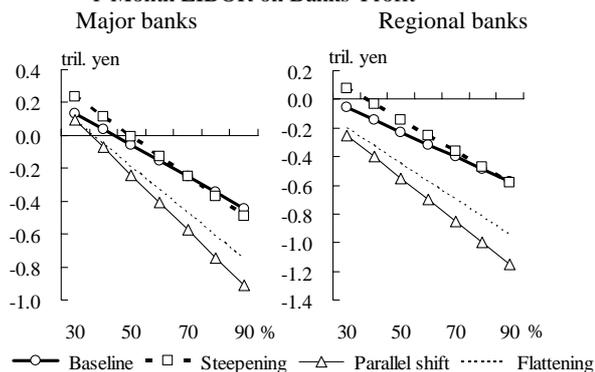
Notes: 1. Bank of Japan estimation. Figures for net interest income are changes from actual results in the first half of fiscal 2008.
2. Net interest income from domestic operations in the first half of fiscal 2008 was 1.9 trillion yen for the major banks and 2.1 trillion yen for the regional banks.

Chart 3-17: Spot Rate Curves¹



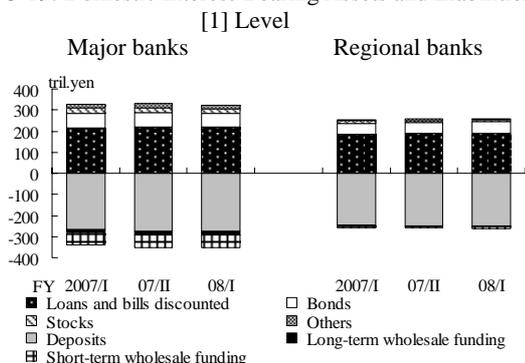
Note: 1. Bank of Japan estimation.

Chart 3-18: Impact of the Ratio of the Ordinary Deposit Rate to 1-Month LIBOR on Banks' Profit¹

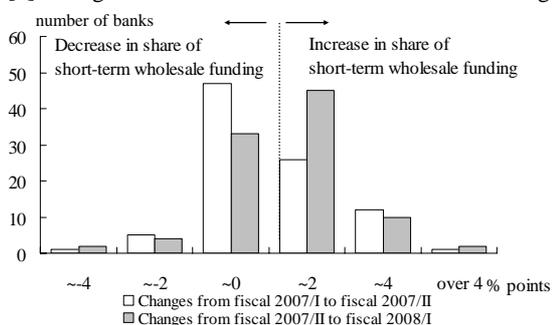


Note: 1. Bank of Japan estimation. Figures for net interest income in the first half of fiscal 2011 are changes from actual results in the first half of fiscal 2008.

Chart 3-19: Domestic Interest-Bearing Assets and Liabilities^{1,2}



[2] Changes in Share of Short-Term Wholesale Funding^{3,4}



- Notes: 1. Long-term wholesale funding = bonds and notes + borrowed money (excluding borrowed money from the Bank of Japan).
- 2. Short-term wholesale funding = CDs + call money + payables under repurchase agreements + payables under securities lending transactions + short-term corporate bonds + borrowed money from the Bank of Japan.
- 3. Share of short-term wholesale funding = short-term wholesale funding / liabilities.
- 4. Data exclude banks with no short-term wholesale funding.

These findings indicate the large interest rate risks inherent in ordinary deposit financing by Japanese banks, and should consumers be more interest rate sensitive and banks be more responsive, there could be a further weakening of profitability.

In this regard, the September 2008 issue of the *Financial System Report* noted that banks were taking on larger interest rate risk in the housing loan business with an expectation that they might continue to be able to enjoy low funding costs in the future at the current level of deposit interest rates, which are lower than the long-term market rates. Housing loans are long-term financial services, and on execution of loans, it is necessary to acknowledge the potential for vast changes in the future macroeconomic environment and to pursue efforts including funding in the longer term from medium and long-term perspectives.

In sum, banks need to manage interest risk of the entire portfolio properly, through larger long-term funding or off-balancing the loans, for example, in order to properly manage the lengthening of average maturity of loans, while taking due account of banks' own expectation of the future course of interest rates.

D. Funding Liquidity Risk

Regarding the funding liquidity risk of Japanese banks, it appears that the risk continues to be restrained on the whole, but dispersion across individual banks has widened.

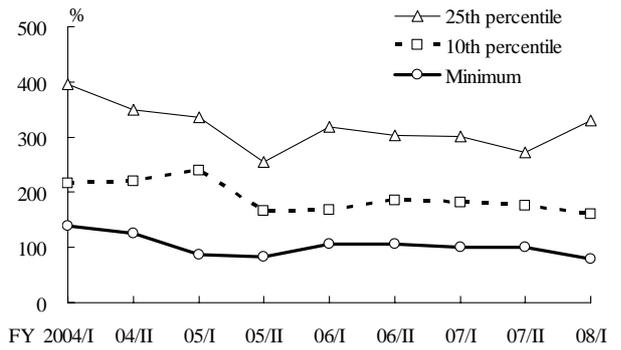
As for yen-denominated liquidity, the asset/liability structure of banks' balance sheets shows that the majority of funding is in the form of deposits. Meanwhile, the proportion of banks with a higher share of short-term funding increased between March and September 2008 (Chart 3-19).

Next, under a stress of full termination of short-term funding via the markets, the extent to which funding demand can be covered with secured finances, such as borrowings from the central bank or reductions in short-term surplus fund investments, is estimated. The results show that most Japanese banks appear to have sufficient collateral margin to meet all of their short-term market funding demand, partly because of the large quantities of government bonds that they hold due to a lack of alternative investment opportunities (Chart 3-20). Robustness of Japanese banks against funding liquidity risk appears to be one reason that domestic balance sheets have not downsized despite the turmoil in global financial markets.

At the same time, given the experience during the current global financial crisis, it should be noted that unexpected events could occur even though there is abundant collateral, during a phase in which market liquidity substantially declines in line with the turbulence in the financial markets (Chart 3-21).

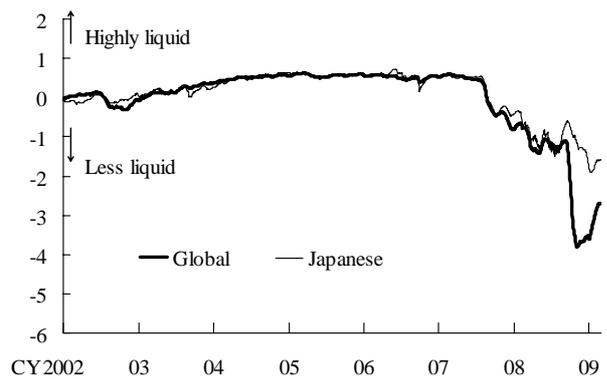
Turning to the risks inherent in foreign currency funding, there has recently been an increase in foreign currency denominated assets as a result of increases in overseas lending. Although there are signs that banks show a conservative lending attitude due to liquidity risk in foreign currency or a constraint in risk assets, a large gap between investment and funding remains (Chart 3-22). Banks have relied so far primarily on yen investment funds and interbank transactions to increase U.S. dollar-denominated funding, but since September 2008 they have made use of the U.S. dollar-funds supplying operations by the Bank of Japan as a source of foreign currency. The ability to use eligible collateral accepted by the Bank of Japan in those operations has presumably contributed to the mitigation of foreign currency liquidity risks.

Chart 3-20: Ratios of Banks' Funding Capacity to Their Market Borrowing^{1,2,3,4}



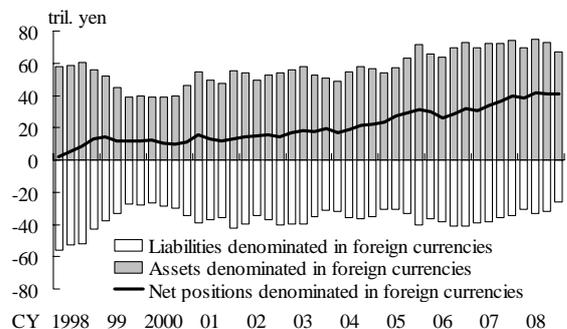
Notes: 1. Ratios of banks' funding capacity to their market borrowing = (market lending up to three months + reserve deposits + government bond holding)/market borrowing up to three months.
 2. Ratios of banks' funding capacity to their market borrowing are sorted out in ascending order. The minimum, 10th percentile, and 25th percentile are shown.
 3. Government bond holding is adjusted according to the ratio of the collateral value to the face value of the government bonds accepted by the Bank of Japan at the end of September 2008.
 4. Banks consolidated by another bank or one holding company are summed up to one banking group. Data exclude banks with no market borrowing.

Chart 3-21: Financial Market Liquidity^{1,2}



Notes: 1. Normalized measure of deviation from the mean between 1999 and 2004. See the March 2008 issue of the *Financial Markets Report* for details.
 2. Japanese liquidity index aggregates information based on stock, bond, foreign exchange, and credit and money markets.
 Source: Bank of Japan, "Financial Markets Report."

Chart 3-22: External Assets and Liabilities Denominated in Foreign Currencies



Source: Bank of Japan, "External Assets and Liabilities of Banks, etc."

E. Assessment of the Robustness of the Financial System

This section summarizes the risk assessment and considers its implications on financial and economic conditions in the near future.

As indicated in the statement issued after the Bank of Japan Monetary Policy Meeting (the "Statement on Monetary Policy" released on February 19, 2009), economic conditions have deteriorated significantly and are likely to continue deteriorating for the time being. The baseline scenario through fiscal 2010 projects that the economy will start recovering from the latter half of fiscal 2009, as global financial markets regain stability and overseas economies move out of their deceleration phase. Although the scenario offers a prospect of the economy returning to a sustainable growth path, uncertainty is high.

The results of various scenario analyses should be treated with care. The banking sector's expected losses, estimated on the assumption of future economic downturns with different degrees of severity, are not likely to substantially lower banks' Tier I capital ratios, although they may temporarily but substantially exceed operating profits from the core business. This shows that Japan's financial system remains robust on the whole.

However, if both an economic downturn and stagnant stock prices occur simultaneously, there are risks that banks' Tier I capital ratios, especially the ratios of banks whose capital strength is relatively weak, might decline and remain at similar or lower levels compared with the levels in the late 1990s and early 2000s. Against such a backdrop, if banks become more conscious of capital constraints in the future, there might be a case that financial intermediation function may not be carried out smoothly from a macro

perspective.

As Japan's economy has significantly deteriorated and the financial environment has continued to be severe, it has become increasingly important for financial institutions to have a sufficient capital base and carry out properly their financial intermediation function. In that regard, Japan's financial institutions have been seeking to fortify their capital strength through various measures including capital reinforcement and refined credit exposure management. In the long run, financial institutions will face a critical challenge of securing stable profitability as a source of capital from a viewpoint of ensuring the stability of the financial system.

Appendix: Initiatives to Stabilize the Global Financial System

This appendix gives an overview of the measures taken by governments and central banks in each country to address the increasing stress on the global financial markets and the increasing anxiety regarding the financial system in the wake of the bankruptcy of Lehman Brothers in September 2008. It then compares these measures with Japan's experience. Specifically, it outlines policy measures by governments and central banks with respect to: (1) support for liquidity and financing; (2) write-off of nonperforming assets and recapitalization; (3) temporary nationalization and public management; and (4) globalization and spillover effects of national policy programs. After comparing those with Japan's measures taken in and after the 1990s, this appendix also outlines the movement for enhancing international regulatory and supervisory systems from a medium and long-term perspective (see Chart A-1 for a chronology of major events in the global financial system).

A. Responses of Governments and Central Banks

Though it is difficult to distinguish a liquidity shortage and a capital shortage, measures taken in each country to stabilize the financial system can be classified into those that focus on the concerns about liquidity and financing of financial institutions and others that focus on the write-off of nonperforming assets and accompanying recapitalization of financial institutions. On the liquidity and financing side, central banks initially responded with substantial provision of liquidity; however, the financing environment is still difficult for financial institutions, leading governments to take more far-reaching measures by providing government guarantee for financial institutions'

market-based funding and expansion of deposit protection. In terms of the write-off of nonperforming assets and recapitalization, governments injected public funds into financial institutions and took measures to determine the amount of losses on nonperforming assets held by financial institutions. In addition, there were cases in which governments strengthened their involvement in the management of financial institutions through temporary nationalization and public management.

The remaining sections provide an overview of measures taken in each country to address the current financial crisis, commenting on the Japan's measures taken in and after the 1990s (see Chart A-2 for the initiatives to stabilize the financial system in selected countries).

1. Support for liquidity and financing

Central banks took measures to provide substantial liquidity to address the increasing stress on the global financial markets after the bankruptcy of Lehman Brothers (see the March 2009 issue of the *Financial Markets Report*, Bank of Japan, for more detailed discussion of the responses of central banks).

Specifically, strong awareness of counterparty risk heightened liquidity pressure in the market, and central banks responded by expanding the terms and scope of collateral, currency, and eligible institutions. With regard to the expansion of the scope of eligible institutions, the Federal Reserve provided emergency liquidity support to securities companies, insurance companies and money market funds in the United States. The move by several investment banks and other non-banks in the United States to become bank holding companies was intended to gain access to the lending facilities available to depository institutions by coming under the regulation and supervision of the

Federal Reserve.

In addition to these responses of central banks, comprehensive policy packages to stabilize the financial system have been announced, particularly in the United States and the European countries. In these packages, initiatives to address issues regarding liquidity and financing of financial institutions included government guarantee for financial institutions' market-based funding and expansion of deposit protection.

More specifically, with financial markets increasingly strained, countries provided government guarantee for financial institutions' market-based funding, and contributed to stabilizing the conditions for bond issuance.

With depositors growing increasingly uneasy over the stability of the financial system, countries also moved to avoid serious upheavals such as bank runs, and to provide a stable source of fund-raising from deposits by, in most cases, increasing the ceilings of the deposit insurance system and, providing full protection in particular for personal deposits.

Reviewing Japan's experience, Japan likewise responded to the financial crisis of the 1990s by protecting all liabilities including deposits in the case of failures of depository institutions between 1996 and 2002. These measures were to some extent effective in heightening confidence in the financial system by, for example, preventing bank runs.

2. Write-off of nonperforming assets and recapitalization

Measures to support liquidity and financing are considered crucial for preventing the emergence of systemic risk and stabilizing financial markets. Nonetheless, the fundamental resolution of problems in

the financial system requires that the amount of losses arising from nonperforming assets held by financial institutions be determined and accompanying capital shortages be covered and recapitalized. To facilitate the process, countries have introduced measures for public capital injection and measures to determine the maximum amount of losses on nonperforming assets (public purchase of nonperforming assets and loss guarantee to those assets).

Countries began with public capital injection in their policy packages. Fairly different approaches were taken in this respect in different countries, and even within one country depending on the different phases. In some cases, injection was made across the board, even to sound banks, as a preemptive measure, while in other cases, injection was intended to bail out financial institutions that had recorded large losses and significantly impaired their capital. The terms and conditions on public capital injection also differed in the design of instruments (preferred share and subordinated debt; setting of voting rights, dividend rates, conversion to common share, etc.), and accompanying conditions (restrictions on executive pay and common share dividends, commitment to maintain and increase lending, etc.). It has been noted that these differences in the terms and conditions on public capital injection can potentially impact the terms of competition among financial institutions from different countries.

Given the adverse feedback loop between the financial system and the real economy, these packages were not sufficient to remove the concern about expanding losses at financial institutions, and in some cases there was no restoration of market confidence and the financial intermediation function even after recapitalization. The United States and European countries adopted public purchase of nonperforming

assets and loss guarantee in order to determine the maximum amount of losses on nonperforming assets. While the two measures differ in terms of whether assets are actually insulated from balance sheets, timing when accounting losses on these assets are recognized, and necessity for pricing of individual assets (loss guarantee is generally provided on a pool of assets as a whole at a certain percentage), these measures are effective in removing concern about the soundness of financial institutions in that they relieve the uncertainty on greater-than-expected losses. It can be pointed out that such measures were introduced after public capital injection, primarily because most of the eligible assets for such measures were complex mortgage-related structured credit products and, with market function drastically reduced, it was difficult to set purchasing prices, guarantee levels, and guarantee fees for these assets. As such, in the United States, the originally considered asset purchase plan was retracted. Nonetheless, the determination of nonperforming-asset values, their write-offs, and recapitalization are an essential process in dealing with problems in the financial system, and thus attention should be paid to how these measures are used.

In Japan, to address the financial crisis in the 1990s, from the viewpoint of promoting the disposal of NPLs by financial institutions themselves, the Cooperative Credit Purchase Corporation (CCPC) was established in 1993. The CCPC's funding source for the purchase of NPLs was provided by the financial institutions themselves, and the additional losses arising from a fall in collateral values were also covered by financial institutions concerned. Therefore, the CCPC scheme achieved little in insulating financial institutions' balance sheets from NPL price volatility risk. Consequently, for the purpose of promoting the disposal of NPLs of solvent financial institutions, the

system to purchase assets such as NPLs from sound financial institutions (the so-called "asset purchase based on the Financial Revitalization Law, Article 53") was introduced in October 1998, and assets equal to approximately 4 trillion yen were purchased by the end of March 2005.

Japan also responded to the financial crisis by introducing measures for public capital injection and, under five separate laws, injected a total of approximately 12 trillion yen. Under the Early Strengthening Law, which injected the largest amounts, existing managers were forced to resign only if they failed to achieve their recovery plans. With respect to the design of share for public capital injection, preferred share with options for conversion to common share were adopted. Existing shareholders were required to assume a certain responsibility in the sense that the injected share was given priority over existing common share regarding dividend payment and left the option of dilution of existing share. However, there were no explicit dividend restrictions. In this regard, the framework did not pursue the strict responsibility of existing managers and shareholders, and in addition, the supervisory authority required financial institutions to strictly assess their assets and reinforce capital shortages. That framework resulted in large capital injection.

Under the current safety net framework that was introduced in Japan in the early 2000s, while the failures of depository institutions are dealt with primarily by limited protection of deposits under the "minimum cost" principle, there are also provisions for the use of public funds to inject capital, to provide financial assistances in excess of payout amount or to temporarily nationalize financial institutions in the case that there is a threat of systemic risk, conditional upon compliance with strict procedures (Article 102 of

the Deposit Insurance Law).

3. Temporary nationalization and public management

In addition to public capital injection, which focuses on reinforcing the capital base of financial institutions (typically through acquiring preferred share with no voting rights), there are cases in which countries have strengthened their involvement in the management of financial institutions by acquiring a majority of the voting rights or by electing new management. The objective of such measures is to maintain financial intermediation function by ensuring the smooth settlement of all obligations including bonds, interbank transactions, and derivative transactions. Differences exist among countries and among individual cases within a country regarding the treatment of existing shareholders (from limitation of shareholder rights and dividend payment to mandatory acquisition of share based on the special law) and treatment of existing management (from restitution of compensation to resignation).

In Japan, two long-term credit banks (Long Term Credit Bank of Japan and Nippon Credit Bank) were placed under "special public administration" (so-called temporary nationalization). The existing outstanding share was compulsorily acquired by the government (the Deposit Insurance Corporation of Japan) against zero consideration, and existing management resigned. Furthermore, in 2003, "special crisis management" pursuant to the Deposit Insurance Law, a permanent measure equivalent to the "special public administration", was applied to Ashikaga Bank.

4. Globalization and spillover effects of national policy programs

The increase in the number of financial institutions with cross-border activities envisages that the measures

adopted by one government to address the current crisis will also impact the financial institutions and markets of other countries.

Specifically, regarding government guarantee, it has been pointed out that (a) whether or not the guarantee program was adopted, and (b) if adopted, how different the scope of eligible obligation as well as the level of guarantee might affect competitive conditions of financial institutions' market-based funding. Regarding the deposit insurance system, the difference in the scope of deposit protection in each country and on the level of protection with other financial instruments in one country may invite a shift of funds to countries that have a relatively high level of protection and to deposits from other financial instruments. In this regard, for instance, the European Union has responded by introducing initiatives to unify measures within the region, specifically to adopt the guidance to clarify the conditions for public capital injection as well as that regarding the treatment of nonperforming assets.

The response to the financial crisis requires the use of public funds and other fiscal measures, and therefore will necessarily entail different systems among different countries; however, the current crisis has highlighted the importance to take account of the impact on other countries and their financial institutions and markets when formulating policies.

In comparison with the current crisis, Japan's financial crisis in the 1990s was limited in its impact on other countries.

5. Implications of Japan's experience

In the case of Japan's financial crisis in the 1990s, in addition to the full protection of all liabilities, the disposal of NPLs and capital reinforcement using

public funds were introduced as more drastic measures. Through such measures, further deterioration in the financial system was avoided. The recovery of Japanese financial institutions' profitability and capital strength, however, was deferred until after 2003, when Japan's economy returned to a full-fledged recovery path supported by global economic growth.

Though Japan's experience should not be applied as it is to the current crisis, there is merit in reviewing its implications, the first of which is to underscore the difficulty of accurately ascertaining the impact of the NPLs problem on the macro economy. Japan ultimately wrote off approximately 110 trillion yen in losses on NPLs, and in the process, the amount of NPLs was increasing in the adverse feedback loop between the financial system and the real economy.

Since the middle of 2007, the current crisis has generated losses of approximately 1.1 trillion dollars worldwide, and has so far required capital reinforcement worth approximately 1.0 trillion dollars, including approximately 380 billion dollars in public funds (Chart 1-7). Thus, it can be said that the recognition of the issue and the importance of recapitalization including public capital injection occurred more quickly compared with Japan's response in 1990s. However, attention should be paid to a risk of expanding losses in the adverse feedback loop between the financial system and the real economy. In this regard, the estimate by the IMF in the *Global Financial Stability Report (GFSR)* is rising quickly as the financial crisis becomes more pronounced and has larger spillover effects on the real economy (approximately 0.9 trillion dollars as of April 2008; approximately 1.4 trillion dollars as of October 2008; and approximately 2.2 trillion dollars as of January 2009).

Second, the public capital injection did not immediately restore bank lending and the financial intermediation function. It was after 2003 that Japanese financial institutions' profitability and capital strength bottomed out and the robustness and financial intermediation function of the financial system started to improve, when Japan's economy returned to a full-fledged recovery path supported by global economic growth. This can be interpreted as an indication that resolving issues related to excess debt, as well as issues related to employment and capacity, were significant tasks for the Japan's post-bubble economy, and even after the robustness of the financial system had been restored to some extent, the demand for funding may have continued to decline. It is important that policy measures to address the financial crisis be taken promptly and boldly. At the same time, however, it is necessary to acknowledge that responses to the crisis do not eliminate the excesses themselves accumulated in the periods preceding the crisis and, in the case that those excesses are massive, it may take a long time for the economy to return to a sustainable growth path.

Currently, initiatives in each country are focusing on strengthening the financial intermediation function in the face of continuing deterioration in the real economy. In several cases, loss guarantee and capital injection have been made conditional upon increase in lending to small businesses and other contributions to corporate finance. Considering that the current crisis has its roots in the excessive leverage of financial institutions, a dilemma may exist that financial institutions will need to promote deleveraging, but if the process of deleveraging proceeds too quickly, it in turn may have a negative impact on the real economy.

B. Discussion on Global Regulation and Supervision

Parallel to the efforts by national authorities to deal with the financial crisis, there has been an active discussion to review the global regulation and supervision system. One of the goals in this discussion has been how to induce financial institutions to adopt more sophisticated risk evaluation and management approaches and improve the transparency of financial markets. Another has been to examine whether capital adequacy rules spurred banking behavior that amplified effects on the real economy.

On October 10, 2008, the G-7 announced a plan of action consisting of five items, among which was the use of all available policy tools to ensure the fair valuation and transparency of financial instruments. On November 15, 2008, the G-20 (including both G-7 and emerging countries) convened a summit that adopted an action plan for priority measures to be completed by a deadline of March 31, 2009 and medium-term measures based on common principles for reform of financial markets. These comprise (1) strengthening the transparency and accountability of financial markets; (2) enhancing sound financial supervision and regulation; (3) promoting integrity in global financial markets; (4) reinforcing international coordination on crisis prevention, management, and resolution; and (5) reforming international financial institutions, including an expansion of member countries. Under this action plan, measures are expected to be formulated to (1) mitigate against procyclicality in regulatory policy, (2) review global accounting standards to be used during times of stress, and (3) strengthen the transparency of credit derivatives markets and reduce their systemic risks. The Financial Stability Forum and the Basel Committee on Banking Supervision (hereafter, the

Basel Committee) are now at work on these tasks.

The Basel Committee issued consultative documents to strengthen the three pillars of the new capital adequacy framework (Basel II) in January 2009. Among them, the Committee is proposing changes to enhance the first pillar (minimum capital requirements) in light of weaknesses revealed by the financial market crisis. A specific review is being undertaken to enhance the framework for market risk, including a review of capital requirements for the trading book, increasing the risk weight of multi-layered structured credit products, and increasing multipliers for liquidity facilities. For the second pillar (financial institution self-management and supervisory review), the Committee is examining additional guidance to supplement the Basel II framework on issues of overall group and individual risk management within banking groups for the purpose of verifying capital adequacy while promoting improvements to stress testing practices in accordance with the guidance. For the third pillar (market discipline through public disclosure), the Committee is studying significant enhancements in public disclosure, including matters related to the calculation of minimum capital requirements under the first pillar. Specifically targeted for enhancement are information on the sponsorship of off-balance-sheet vehicles, information on exposures to securitized instruments and instruments in the process of securitization on the trading book, and information on the valuation with regard to securitized instruments.

Along with reviews of the three pillars, the Basel Committee and other global forums are continuing examinations of frameworks to mitigate the procyclicality of bank behavior and the need to supplement capital ratios with other simple and non-risk-based indicators.

Chart A-1: Major Events in the Global Financial System

Sep. 7, 2008	U.S.: The government announced measures to support two GSEs, including government control through conservatorship and public capital injection.
Sep. 15	U.S.: Lehman Brothers Holdings filed for bankruptcy under Chapter 11 of the U.S. Bankruptcy Code. U.S.: Bank of America announced the acquisition of Merrill Lynch.
Sep. 16	U.S.: The Federal Reserve Board (FRB) announced the establishment of a lending facility to American International Group (AIG).
Sep. 18	U.K.: Lloyds TSB announced the acquisition of HBOS.
Sep. 21	U.S.: The FRB approved the application of Goldman Sachs and Morgan Stanley to become bank holding companies.
Sep. 22	The G-7 released a statement on the global financial market turmoil. U.S.: Mitsubishi UFJ Financial Group announced a plan to acquire common share of Morgan Stanley. On Oct. 13, the group closed on the equity investment under the revised terms of the transaction.
Sep. 25	U.S.: Washington Mutual Bank went bankrupt. The Federal Deposit Insurance Corporation was appointed as a receiver and the bank was acquired by JP Morgan Chase.
Sep. 29	Belgium, Netherlands and Luxembourg: The three governments announced measures to support Fortis. U.S.: Citigroup offered to purchase the banking assets of Wachovia. On Oct. 3, Wells Fargo offered to purchase all assets of Wachovia. On Oct. 12, the FRB approved Wells Fargo's acquisition. Germany: The government announced measures to support Hypo Real Estate Group. On Oct. 4, the measures were withdrawn. On Oct. 6, the government announced the new measures with revised conditions. U.K.: Bradford & Bingley was taken under public management.
Sep. 30	Belgium, France, and Luxembourg: The three governments announced measures to support Dexia.
Oct. 3	U.S.: The Emergency Economic Stabilization Act of 2008 (EESA) was enacted.
Oct. 7-9	Iceland: The three major banks were taken under public management.
Oct. 8	U.K.: The government announced initiatives to stabilize the financial system.
Oct. 10	The G-7 adopted a plan of action.
Oct. 12	The Summit of the Euro Area Countries adopted a concerted European action plan.
Oct. 13	Germany: The government announced initiatives to stabilize the financial system. France: The government announced initiatives to stabilize the financial system.
Oct. 14	U.S.: The government and the FRB announced initiatives to stabilize the financial system.
Oct. 16	Switzerland: The government announced initiatives to stabilize the financial system, and measures to support UBS.
Oct. 19	Netherlands: The government announced measures to support ING.
Oct. 27	The G-7 released a statement on excessive volatility in the exchange rate of the yen, etc.
Nov. 9	The G-20 released a joint statement.
Nov. 10	U.S.: The government and the FRB announced new measures to support AIG.
Nov. 15	G-20 Summit adopted common principles and an action plan.
Nov. 23	U.S.: The government and the FRB announced measures to support Citigroup.
Nov. 25	U.S.: The government and the FRB announced further initiatives to stabilize the financial system.
Dec. 19	U.S.: The government decided to support major U.S. automakers based on the EESA.
Jan. 16, 2009	U.S.: The government and the FRB announced measures to support Bank of America. The Basel Committee on Banking Supervision released consultative documents concerning the enhancements to the Basel II framework.
Jan. 19	U.K.: The government announced further initiatives to stabilize the financial system.
Feb. 10	U.S.: The government and the FRB announced a new framework to stabilize the financial system.
Feb. 14	The G-7 released a joint statement.
Feb. 27	U.S.: The government announced further measures to support Citigroup.
Mar. 2	U.S.: The government announced further measures to support AIG.

Chart A-2: Initiatives to Stabilize the Financial System in Selected Countries

As of March 7, 2009

		U.S.	U.K.	Germany	France	Japan's measures in and after the 1990s
Support for liquidity and financing	A. Guarantee for market-based funding	Yes Senior unsecured debt which maturity is 30 days and more	Yes Short and medium-term bonds	Yes Mainly medium-term debt	Yes Mainly medium-term debt	(Yes) (Full protection for all debt of depositary institutions)
	B. Expansion of deposit protection	Yes 100,000 dollars → 250,000 dollars Full protection for a certain deposit transaction account	Yes 35,000 pounds → 50,000 pounds	Yes Full protection for personal deposits	— (maintaining the ceiling of 70,000 euros)	Full protection for all debts including deposits ¹ (from 1996 to 2002)
Write-off of nonperforming assets and recapitalization	C. Public capital injection	Yes Up to 700 billion dollars	Yes Up to 50 billion ² pounds	Yes Up to 80 billion euros	Yes Up to 40 billion euros	Total 12.4 trillion yen (result)
	Size of funds					Financial Function Stabilization Law: 1.8 trillion yen into 21 banks
	Example	The government: Injected approximately 200 billion dollars into about 500 institutions as preemptive measures. Injected capital as measures to support individual institutions. Released a new capital assistance plan with supervisory capital assessment for major banks.	The government injected 37 billion pounds into three major banks. Injected capital as measures to support individual institutions.	The SoFFin (the Financial Market Stabilization Fund) injects public funds on request.	The government: Injected 10.5 billion euros into six major banks at once as preemptive measures. Prepared public funds of 10.5 billion euros for capital injection on request.	Early Strengthening Law: 8.6 trillion yen into 32 banks Deposit Insurance Law: 2 trillion yen into one bank Law on Organizational Restructuring: 6 billion yen to one bank Law on Strengthening Financial Functions: 40.5 billion yen to two banks
	D. Measures to determine the amount of losses	Yes Financed by the funds stated in C. above.	Yes	Yes Financed by the funds stated in C. above.	—	Yes
Example	(Asset purchase) Originally considered asset purchase plan was retracted. Establishment of public-private investment fund was announced. (Loss guarantee) The government provides loss guarantee as measures to support individual institutions.	(Loss guarantee) The government provides loss guarantee program for nonperforming assets. Two major banks announced to participate in the program.	(Asset purchase, Loss guarantee) The SoFFin can take such measures as purchase of nonperforming assets and asset guarantee		(Asset purchase) Cooperative Credit Purchase Corporation: 15.4 trillion yen Asset purchase based on the Financial Revitalization Law, Article 53: 4 trillion yen (The amounts are those of loans purchased [principal].)	
E. Temporary nationalization and public management ³	—	Two banks were nationalized based on the special law.	The special law for nationalization was adopted by the Cabinet.	—	Three banks were nationalized based on the special laws.	

Notes: 1. Full protection for a certain deposit transaction account as a permanent measure from April, 2003.

2. 50 billion pounds were the size of public funds originally established.

3. In addition, major banks were taken under public management in countries such as Iceland and Ireland. In the United States and the United Kingdom, the government converted part of preferred share on a few major banks into common share with voting rights.