

Financial
System
Report

Visual Summary

October 2013
Bank of Japan



Contents of the *Financial System Report*

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- V. Risks borne by financial intermediaries
- VI. Risk assessment of the financial system from a macroeconomic perspective

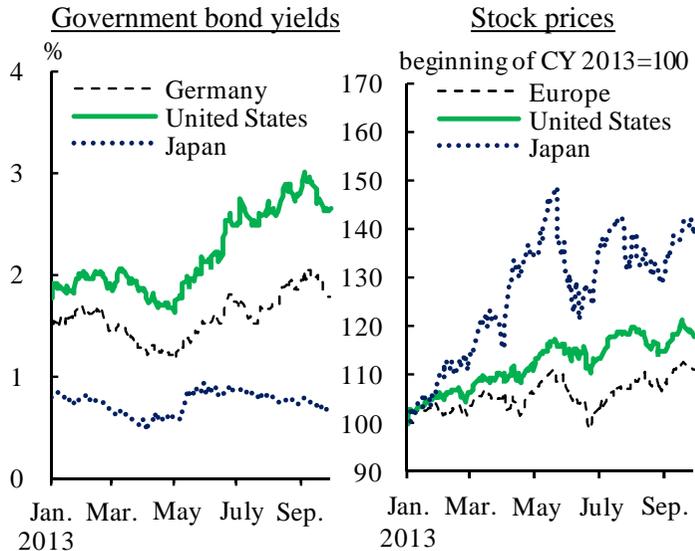
I. Comprehensive assessment of the financial system and overview

- Japan's financial system as a whole has been maintaining stability.
- Judging from developments in financial markets and financial institutions' behavior, there is no indication warning of financial imbalances such as excessively bullish expectations.
- Volatility increased in each market after fiscal 2013 began, but the increase in volatility remains limited compared with that seen in previous stress periods.
- Capital bases of financial institutions such as banks and *shinkin* banks have on the whole been adequate in terms of capital adequacy ratios based on the regulatory requirements and capital relative to the amount of risk they bear. These institutions also have sufficient funding liquidity.
 - ✓ Even if interest rates rose substantially without any improvement in economic activity, the stability of Japan's financial system would basically be maintained. However, attention should be paid to the possibility that the impacts of an interest rate rise will exceed those estimated under the assumptions, depending on the speed and extent of the rise in interest rates and the factors behind it.
 - ✓ Some financial institutions have relatively weak capital bases, and are behind the curve in improving asset quality following the Lehman shock. They need to steadily strengthen their capital.
- Financial intermediation has operated more smoothly than it did at the time of the previous *Report*.
 - ✓ Financial institution lending has gradually grown, and financial intermediation through financial markets has been prevalent, as seen in the issuance of corporate bonds and equity financing.
- Financial institutions' core profitability has remained on a downtrend.
 - ✓ This does not immediately threaten the stability of the financial system and the functioning of financial intermediation, but the declining trend in core profitability is a challenge that should be resolved in the medium to long term.

Developments in the global financial system and financial and economic activity overseas

- In the global financial markets and overseas economies, concerns over the European debt problem and over the effects of U.S. fiscal austerity that heightened in the first half of 2013 subsided somewhat compared with the situation at the time of the previous *Report*.
- On the other hand, concerns intensified over a possible rise in interest rates worldwide and over an outflow of funds from financial markets in emerging countries.

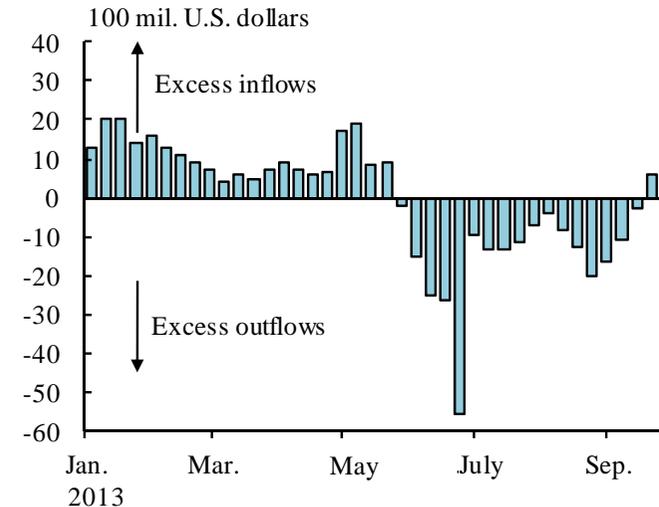
Chart II-1-4: Government bond yields and stock prices^{1,2}



Notes: 1. The latest data are as of September 30.
 2. The left chart shows 10-year government bond yields. In the right chart, S&P 500 is used for the United States, STOXX Europe 600 for Europe, and TOPIX for Japan.

Source: Bloomberg.

Chart II-1-2: Bond flows into emerging markets¹



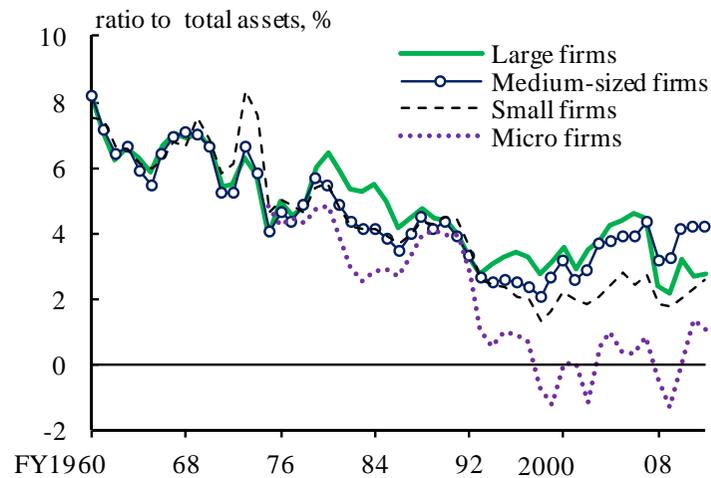
Note: 1. The latest data are from September 26 to October 2, 2013.

Source: EPFR Global.

Domestic economy, financial conditions among firms and households, and fiscal conditions

➤ In Japan, financial conditions among firms have generally improved, and the employment and income situation in the household sector has also shown some improvement. In these circumstances, households slightly raised their ratio of risky assets including investment trusts.

Chart II-2-3: Operating profit ROA of firms^{1,2}

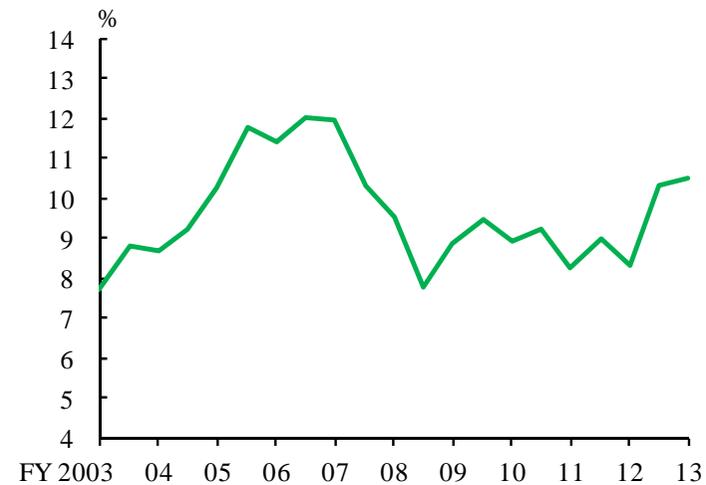


Notes: 1. The latest data are as of fiscal 2012.

2. Large firms: capital of 1 billion yen or more.
 Medium-sized firms: capital of 100 million yen to less than 1 billion yen. Small firms: capital of 10 million yen to less than 100 million yen.
 Micro firms: capital of less than 10 million yen.

Source: Ministry of Finance, "Financial statement statistics of corporations by industry."

Chart II-2-6: Ratio of "equities and investment trusts, etc."^{1,2,3}



Notes: 1. The latest data are as of end-June 2013.

2. "Equities and investment trusts, etc." includes equities, investment trusts, outward investment in securities, and foreign currency deposits. The ratio to household financial assets.
 3. Changes in the outstanding amount of financial assets are partly attributable to movements in market value.

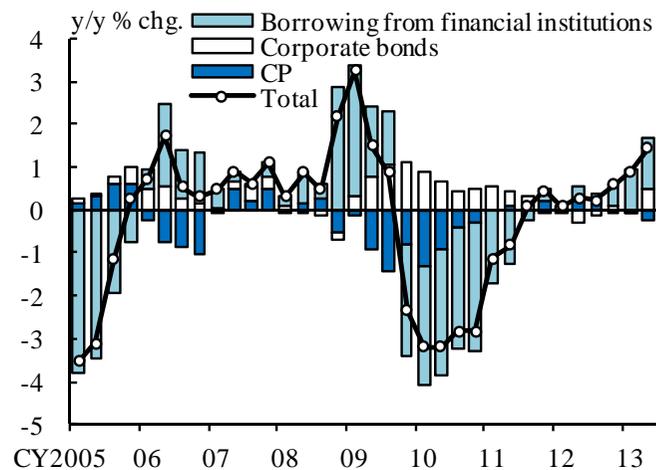
Source: BOJ, "Flow of funds accounts."

III. Examination of financial intermediation -- focusing on developments after introduction of quantitative and qualitative monetary easing

Financial conditions among firms and households

➤ Financial conditions among firms and households have become more accommodative than they were at the time of the previous *Report*.

Chart III-1-3: Outstanding amount of firm funding^{1,2}



Notes: 1. The latest data are as of end-June 2013.
 2. CP issued by banks is excluded. Corporate bonds issued by banks and those issued in overseas markets are included.
 Sources: I-N Information Systems; Japan Securities Dealers Association; Japan Securities Depository Center; BOJ, "Loans and bills discounted by sector."

Chart III-1-5: Housing loans outstanding^{1,2}

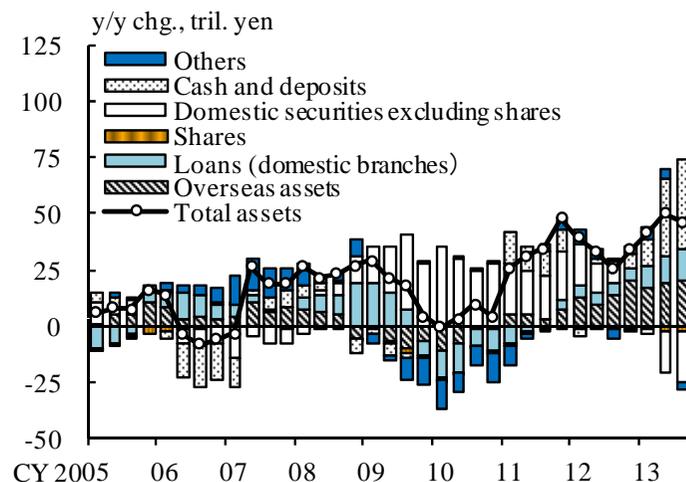


Notes: 1. Banks and *shinkin* banks are counted. The latest data are as of end-June 2013.
 2. Housing loans outstanding are household loans for fixed investment for housing funds and consumer credit (with installment repayments).
 Source: BOJ, "Loans and bills discounted by sector."

Developments in investment by financial intermediaries

- The outstanding amount of investment at financial institutions such as banks and *shinkin* banks has continued to increase as a whole.
 - ✓ The outstanding amount of their Japanese government bond (JGB) holdings has decreased particularly at major banks, as the Bank's JGB purchases under QQE expanded. On the other hand, there have been increases in the outstanding amount of current accounts held at the Bank, lending, and overseas assets.
- No major changes have been observed in investment by other financial intermediaries such as institutional investors.

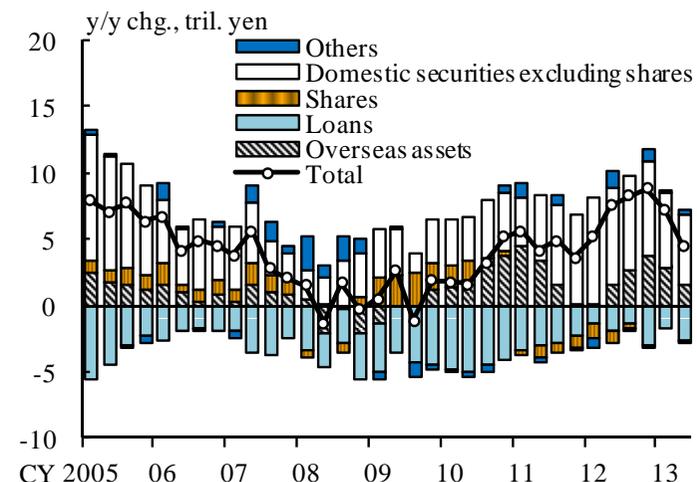
Chart III-3-1: Asset investment of banks and *shinkin* banks^{1,2,3}



- Notes: 1. Banks and *shinkin* banks are counted. Both domestic and overseas branches are included.
2. The data for domestic branches are based on an average amount outstanding. The data for overseas branches are based on an amount outstanding of end-month. The chart shows changes from the last month of each quarter of the previous year. The latest data are changes from August 2012 to August 2013.
3. Overseas assets are the sum of foreign securities and loans of overseas branches.

Source: BOJ.

Chart III-3-3: Asset investment of life insurance companies^{1,2}



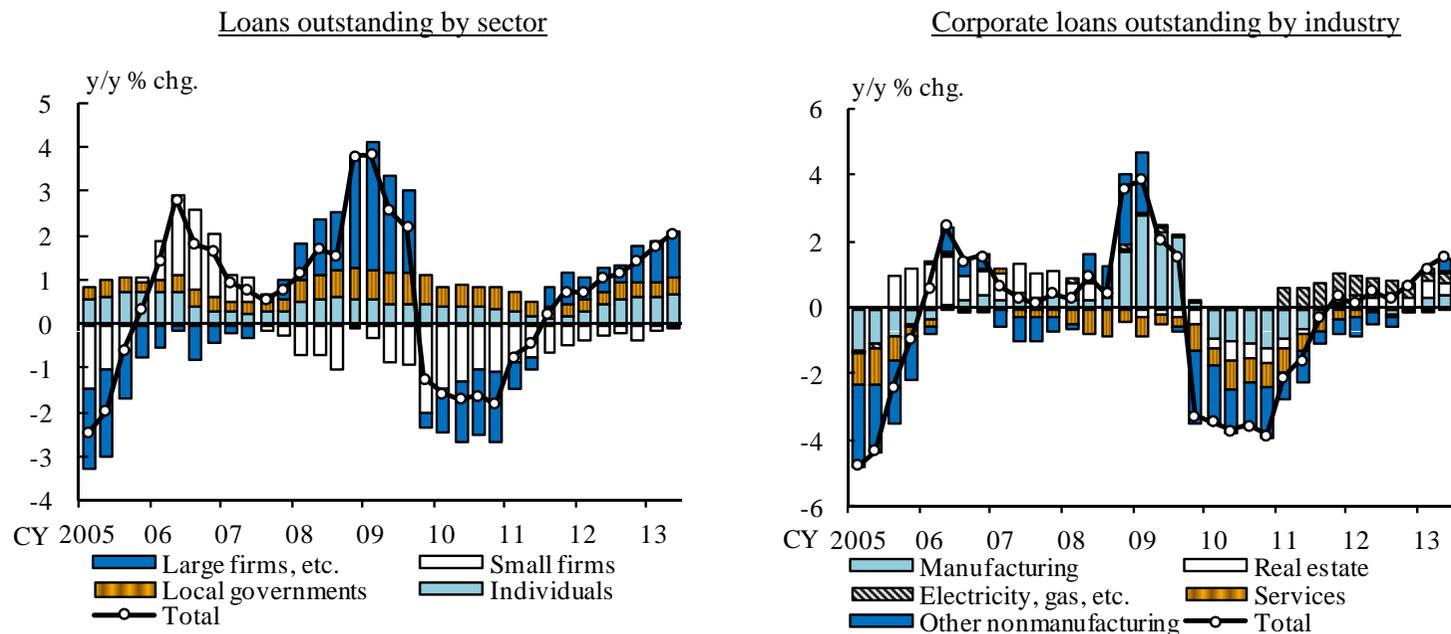
- Notes: 1. The latest data are as of June 2013. The chart shows the sum of financial transactions in the last 4 quarters.
2. "Others" includes cash and deposits. "Shares" includes investment trust beneficiary certificates and other equities. "Loans" excludes repurchase agreements and securities lending transactions.

Source: BOJ, "Flow of funds accounts."

Developments in domestic loans

- The amount of financial institutions' domestic loans outstanding has accelerated its growth. Lending increased, particularly to large firms, and that to small and medium-sized firms remained generally sluggish. However, some positive developments can be observed recently in lending to small and medium-sized firms.
- By industry, the outstanding amounts of loans to electric power companies, real estate companies, and firms in the medical care and welfare industry have increased.

Chart III-4-2: Domestic loans outstanding among financial institutions by sector and industry¹



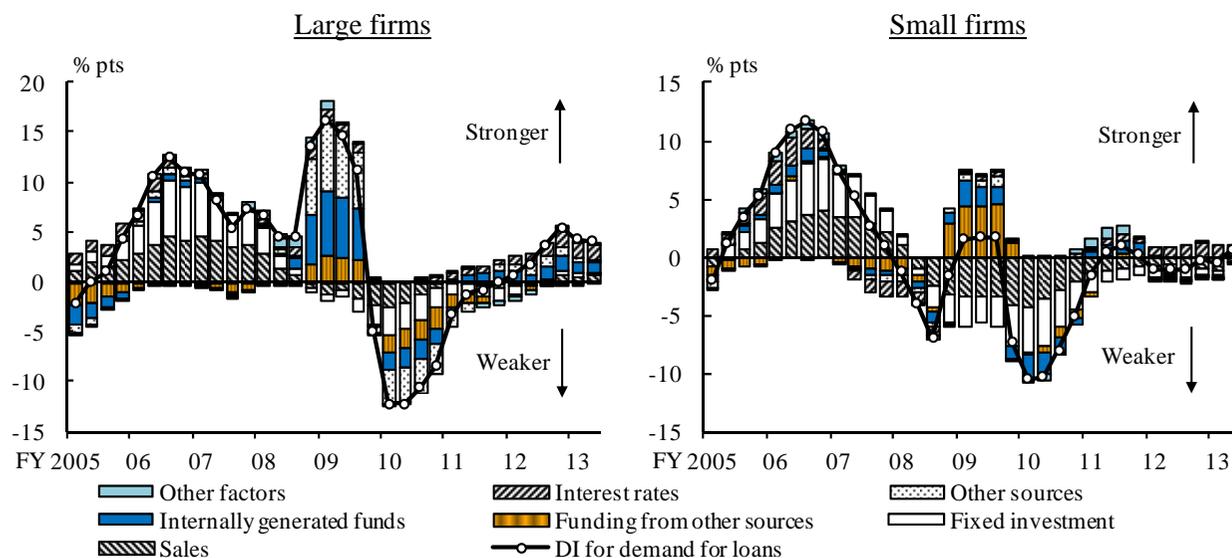
Note: 1. Banks and *shinkin* banks are counted. The latest data are as of end-June 2013.
Source: BOJ, "Loans and bills discounted by sector."

Firms' demand for funds and financial institutions' lending attitudes

III. Examination of financial intermediation -- focusing on developments after introduction of QQE

- Firms' demand for funds has gradually been increasing as a whole, but the momentum of growth is not strong enough yet.
- Financial institutions' lending attitudes have become more accommodative since the beginning of fiscal 2013.

Chart III-4-3: Determinants of DI for demand for loans^{1,2}

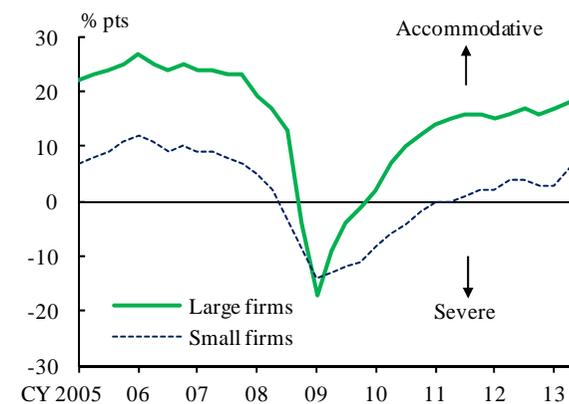


Notes: 1. The latest data are as of July 2013; 4-quarter moving averages.

2. DI for demand for loans = (percentage of respondents selecting "substantially stronger" + percentage of respondents selecting "moderately stronger" × 0.5) - (percentage of respondents selecting "substantially weaker" + percentage of respondents selecting "moderately weaker" × 0.5).

Source: BOJ, "Senior loan officer opinion survey on bank lending practices at large Japanese banks."

Chart III-1-1: DI of lending attitudes of financial institutions¹



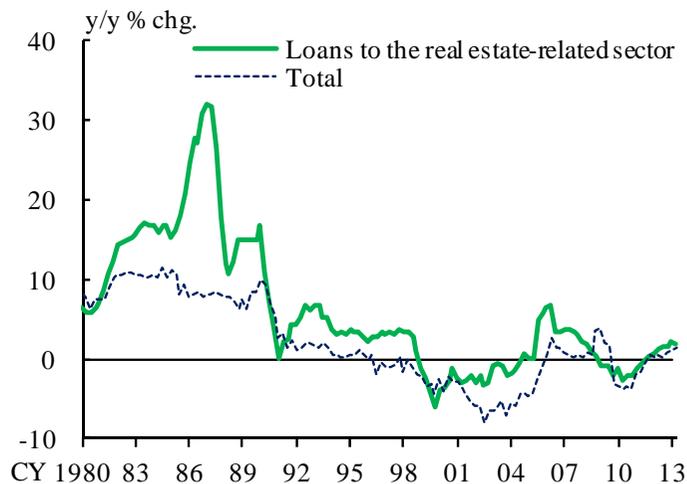
Note: 1. The latest data are as of September 2013.

Source: BOJ, "Tankan."

Developments in real estate-related loans

- The outstanding amount of real estate-related loans extended by financial institutions has grown at a higher rate. Nonetheless, growth in real estate-related loans remains generally the same as that observed in overall lending.
- Office rents in metropolitan areas are no longer declining and the condominium contracting rate has recovered.

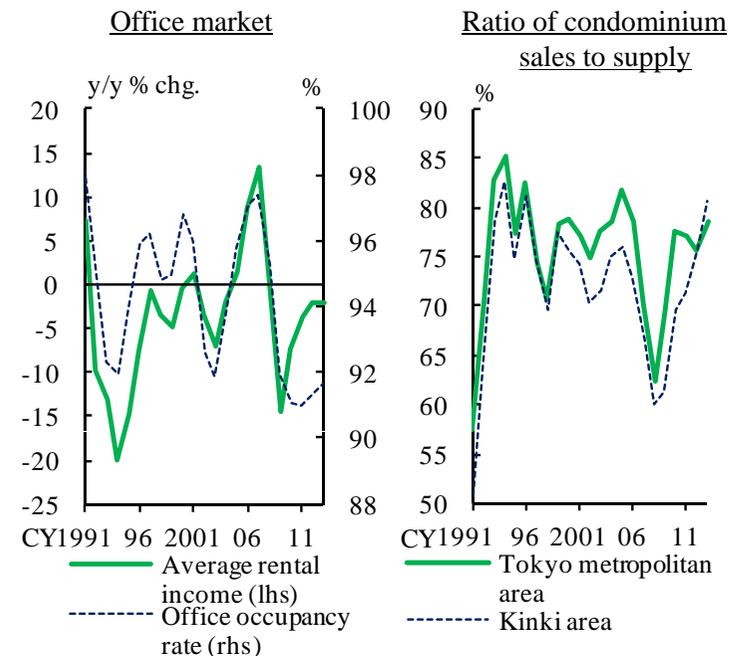
Chart III-4-5: Loans outstanding for real estate-related loans¹



Note: 1. Banks and *shinkin* banks are counted. The latest data are as of end-June 2013.

Source: BOJ.

Chart III-4-6: Real estate market conditions^{1,2}



Notes: 1. In the left-hand chart, offices in the Tokyo business district (Chiyoda-City, Chuo-City, Minato-City, Shinjuku-City, and Shibuya-City in Tokyo) are counted. The latest data are the average from January to September 2013.

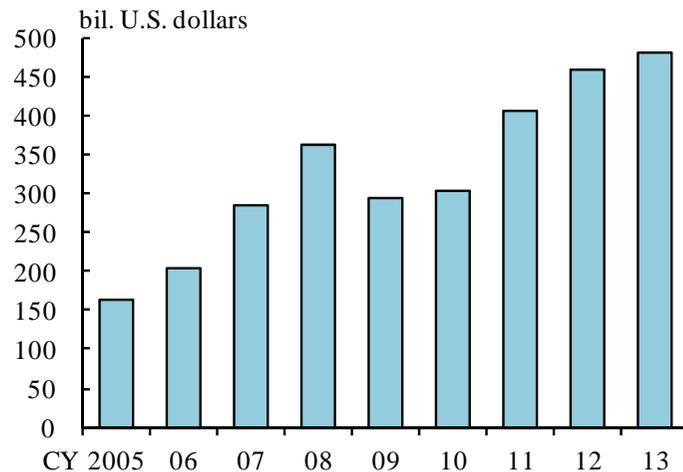
2. In the right-hand chart, the latest data are the average from January to August 2013.

Sources: Financial Quest; Miki Shoji Co., Ltd.

Developments in overseas loans

- Banks, particularly major banks, have continued to actively extend overseas loans.
- The credit cost ratio of loans to Asia, where Japan's banks have actively expanded loans in recent years, is at a low level.

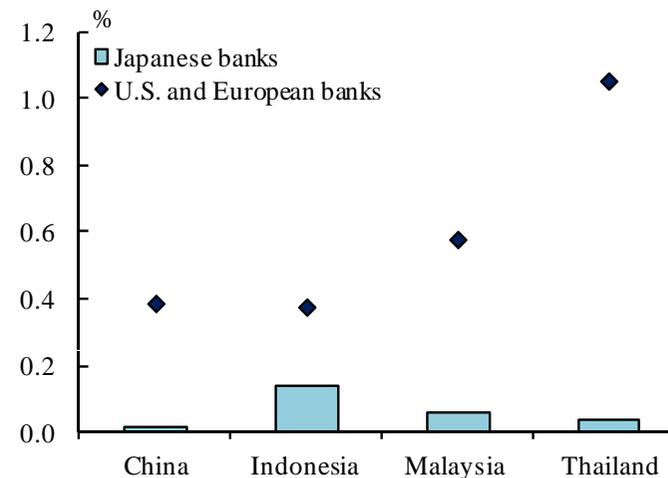
Chart III-4-11: Overseas loans of major banks¹



Note: 1. The data are as of end-December of each year, converted to U.S. dollars. For 2013, the data are as of end-August, converted to U.S. dollars. The chart shows loans outstanding at overseas branches of major banks.

Source: BOJ.

Chart V-1-10: Credit costs of loans to Asian countries^{1,2}



Notes: 1. For Japanese banks, overseas subsidiaries and branches in Asia for which financial information is available are counted. For U.S. and European banks, overseas subsidiaries and branches in four countries where those Japanese banks' subsidiaries and branches are located are counted.

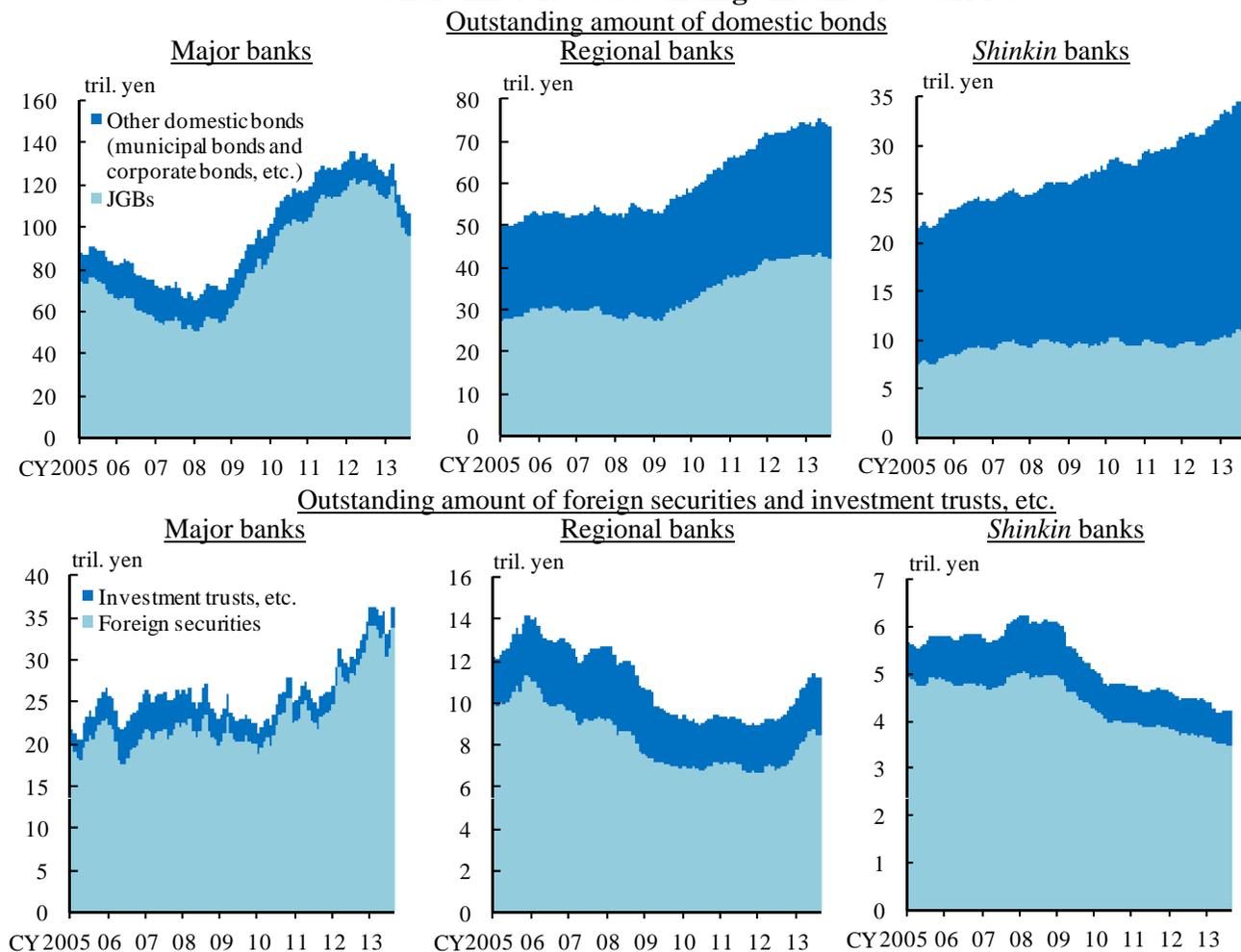
2. Figures are averages from fiscal 2008 to 2012.

Source: Bureau Van Dijk, "Bankscope."

Developments in securities investment

- Financial institutions' investment in domestic bonds such as JGBs continued to increase, but decreased after the beginning of fiscal 2013.
- The outstanding amount invested in risky assets other than yen interest rate instruments such as foreign securities followed a rising trend, but growth has recently been sluggish due to heightened uncertainty over developments in overseas economies and global financial markets.

Chart III-4-15: Outstanding amount of securities¹



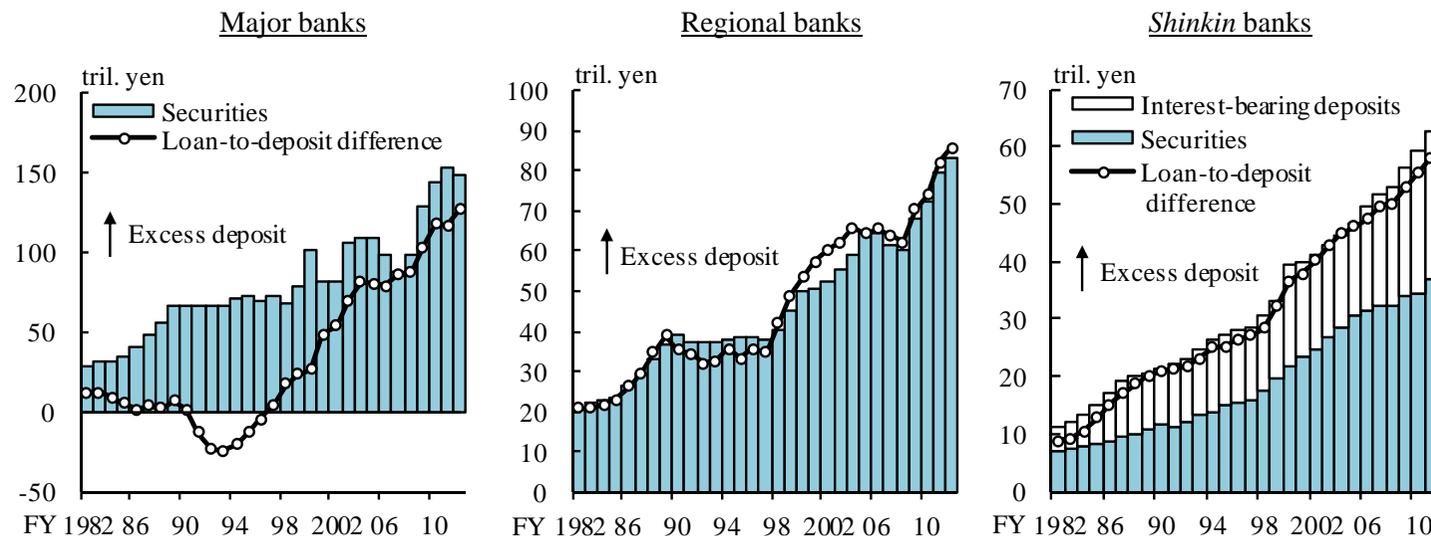
Note: 1. The latest data are as of August 2013.

Source: BOJ.

Developments in securities investment (continued)

- Financial institutions' securities investment has been on an uptrend since the end of the 1990s as the amount of deposits of financial institutions continued to exceed the amount of loans, i.e., a deposit surplus. The deposit surplus was caused by the fact that firms and households remained risk-averse in funding and investment in view of the prolonged period of economic stagnation and deflation.
- As positive signs have been widely observed in economic activity in Japan, recently financial institutions have increased the amount of loans extended and households have slightly increased their share of risky assets. We should monitor whether these recent changes become persistent or spread through Japan's economy. In these circumstances, it will be worth observing how financial institutions change their securities investment behavior in future.

Chart III-4-16: Loan-to-deposit difference and securities investment¹



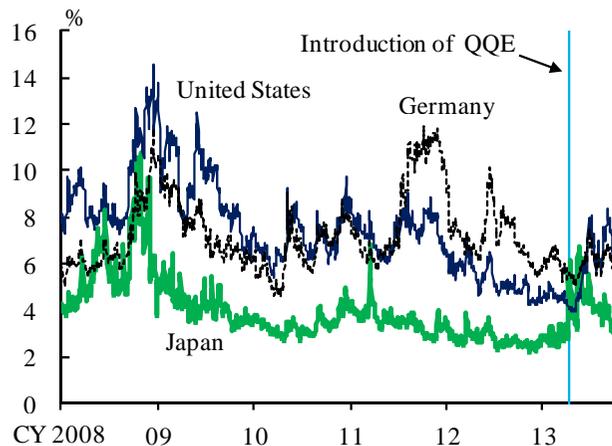
Note: 1. Domestic business sector. Loan-to-deposit difference = (deposits + CDs + bonds – checks – bills) – loans. "Interest-bearing deposits" of *shinkin* banks includes deposits with the Shinkin Central Bank. The latest data are as of fiscal 2012.

Source: BOJ.

Risks implied in government bond markets

- The volatility (model-free implied volatility [MFIV]) of JGB prices increased in April 2013, but has since declined to a moderate extent. JGB yields have been notably stable while overseas yields have moved up on the whole. This has been partly due to the tightening of supply and demand conditions in the JGB market prompted by the Bank's large-scale JGB purchases as concerns over fiscal imbalances have not appeared to heighten.
- In the JGB market, however, an asymmetric relationship has been observed in which volatility is higher when interest rates rise. Attention should therefore be paid to the risk that an upward shock to interest rates will increase volatility, leading to a further rise in interest rates.

Chart IV-2-1: MFIVs of government bond prices^{1,2}

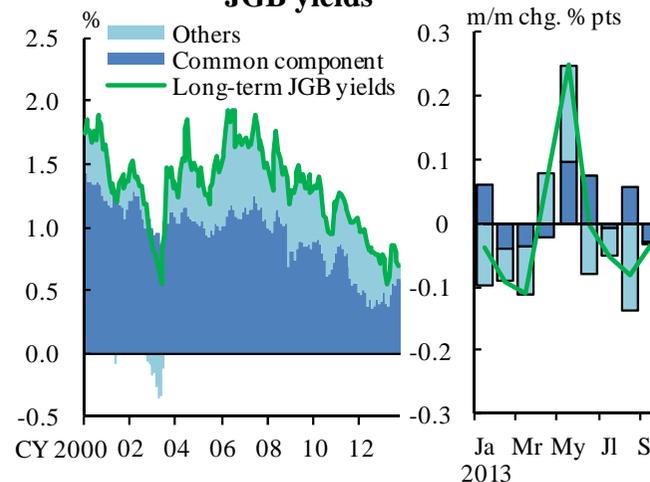


Notes: 1. Options on JGB futures traded on the Tokyo Stock Exchange for Japan; options on U.S. Treasury futures traded on the Chicago Board of Trade for the United States; options on Euro-Bund futures traded on Eurex for Germany.

2. The latest data are as of September 30, 2013.

Sources: Bloomberg; BOJ.

Chart IV-2-8: Decomposition of long-term JGB yields^{1,2,3}



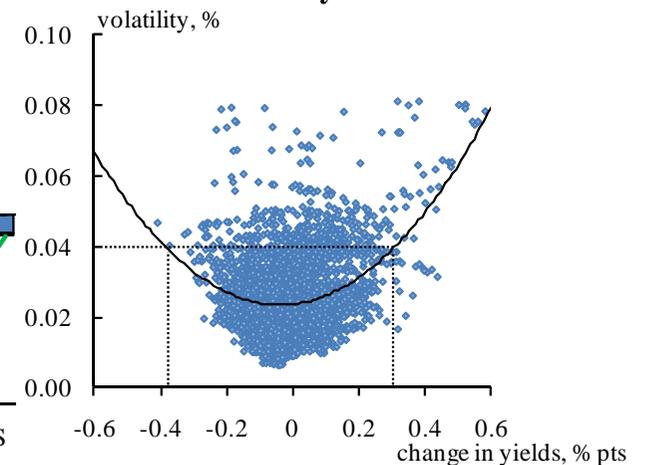
Notes: 1. "Common component" is extracted from a principal component analysis and is defined as the first principal component of U.S., German, U.K., and Japanese government bond yields (the contribution ratio is 0.88).

2. "Others" is the sum of the constant term and residuals from regression of JGB yields on "common component" and the constant term.

3. The estimation uses month-end data from January 2000 to September 2013.

Sources: Bloomberg; BOJ.

Chart B-1: Changes in yields and volatility^{1,2,3,4}



Notes: 1. Yields on 10-year JGBs.

2. Volatility is the 20-day standard deviation of daily changes in yields, and changes in yields are differences from 20 days earlier.

3. Samples represent daily data from January 2000 to end-September 2013.

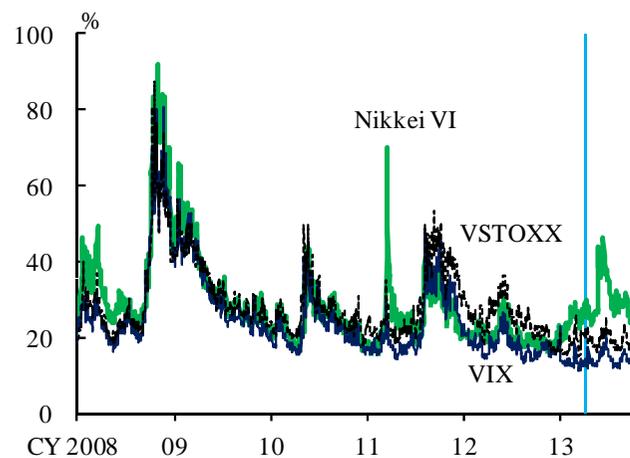
4. The solid line indicates quadratic regression.

Source: Bloomberg.

Risks implied in stock markets and foreign exchange markets

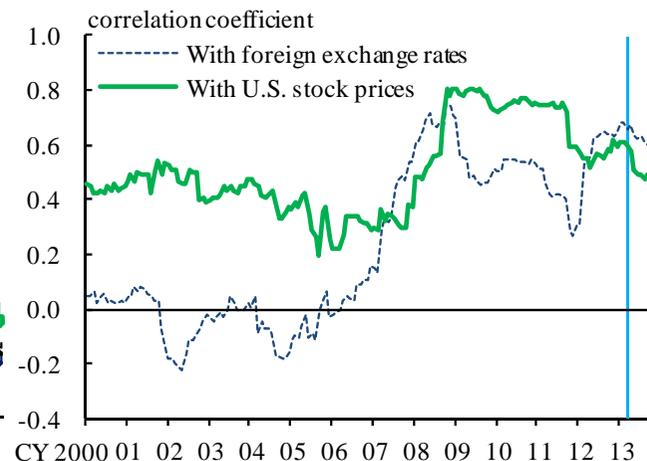
- The volatility of Japanese stock prices has regained stability, but stock prices are still subject to somewhat large fluctuations. Japanese stock prices remain susceptible to the external environment such as foreign stock markets and foreign exchange markets.
- In foreign exchange markets, volatility remained at a high level partly due to speculation about the direction of U.S. monetary policy, but has recently seen a gradual decline.

Chart IV-3-1: MFIVs of stock prices¹



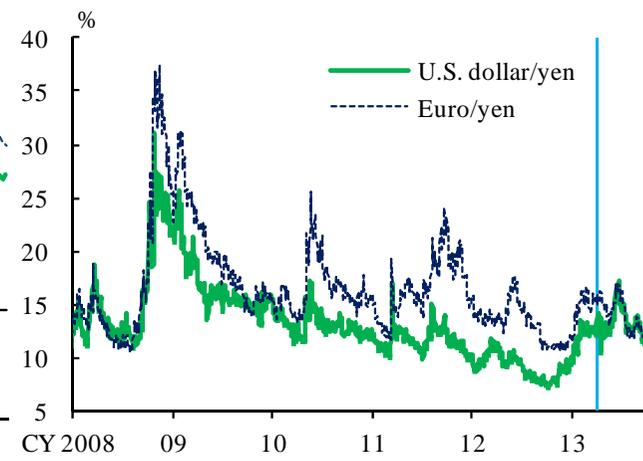
Note: 1. The latest data are as of September 30, 2013.
Source: Bloomberg.

Chart IV-3-3: Correlation of Japanese stock prices with U.S. stock prices and foreign exchange rates^{1,2,3}



Notes: 1. 3-year rolling correlation of monthly rate of price change.
2. TOPIX for Japanese stock prices; S&P 500 for U.S. stock prices; U.S. dollar/yen for foreign exchange rates.
3. The latest data are as of September 2013.
Source: Bloomberg.

Chart IV-4-1: MFIVs of U.S. dollar/yen and euro/yen rates^{1,2}

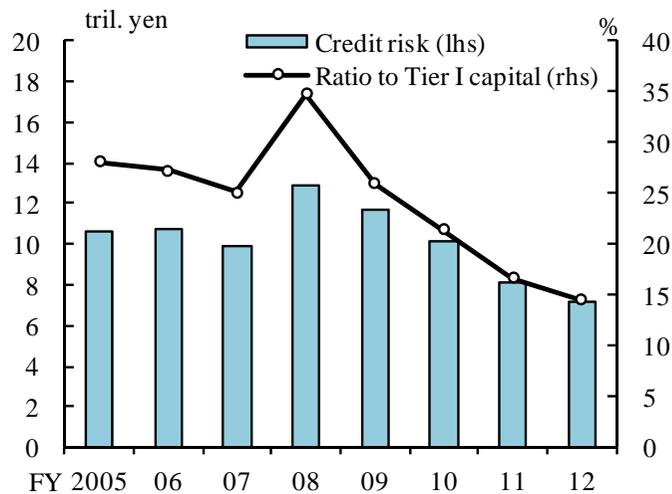


Notes: 1. MFIVs are calculated by using data on 3-month over-the-counter option prices.
2. The latest data are as of September 30, 2013.
Sources: Bloomberg; BOJ.

Credit risk at financial institutions

- Credit risk at financial institutions such as banks and *shinkin* banks declined partly due to improvement in the quality of assets. The credit cost ratios remained at low levels.

Chart V-1-1: Credit risk^{1,2}

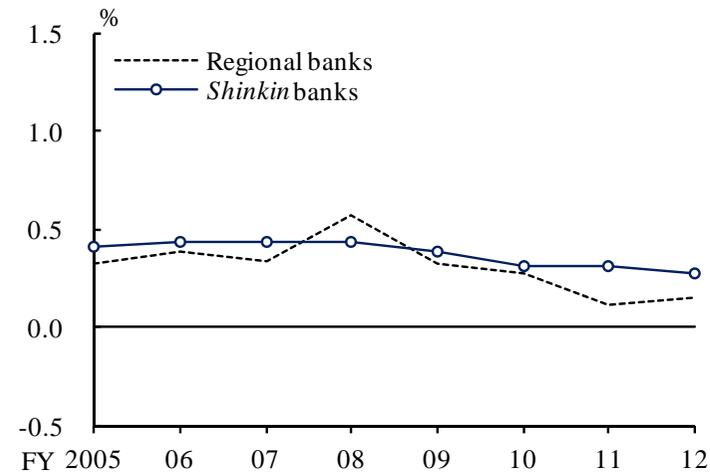


- Notes: 1. Banks and *shinkin* banks are counted.
 2. Credit risk is unexpected losses with a 99 percent confidence level.

Source: BOJ.

Unexpected losses: the maximum amount of losses with a certain probability of occurrence minus the average amount of losses.

Chart V-1-3: Credit cost ratio (regional financial institutions)

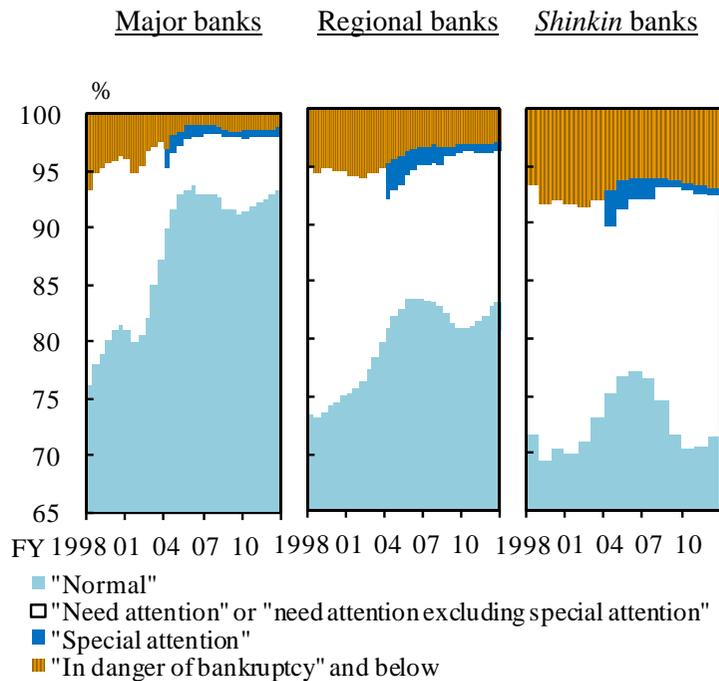


Source: BOJ.

Credit risk at financial institutions (continued)

➤ Nevertheless, the quality of loans among financial institutions varies.

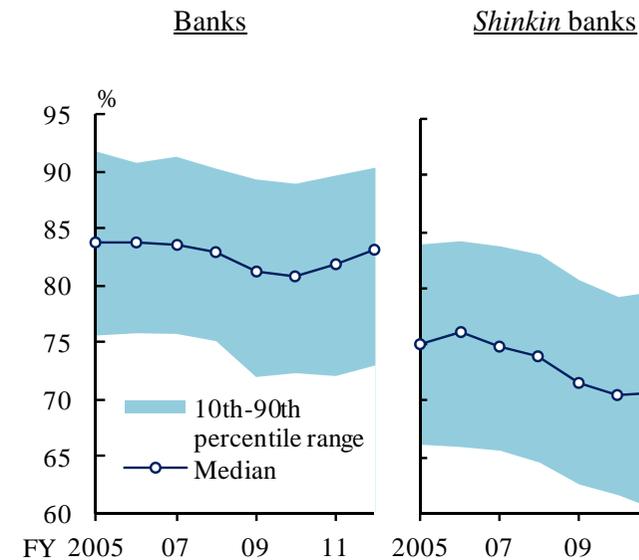
Chart V-1-5: Loans outstanding by borrower classification^{1,2}



Notes: 1. The latest data are as of end-March 2013.
2. "Need attention" or "need attention excluding special attention" indicates "need attention" until fiscal 2003 and "need attention excluding special attention" from fiscal 2004.

Source: BOJ.

Chart V-1-6: Ratio of "normal" loans outstanding^{1,2}



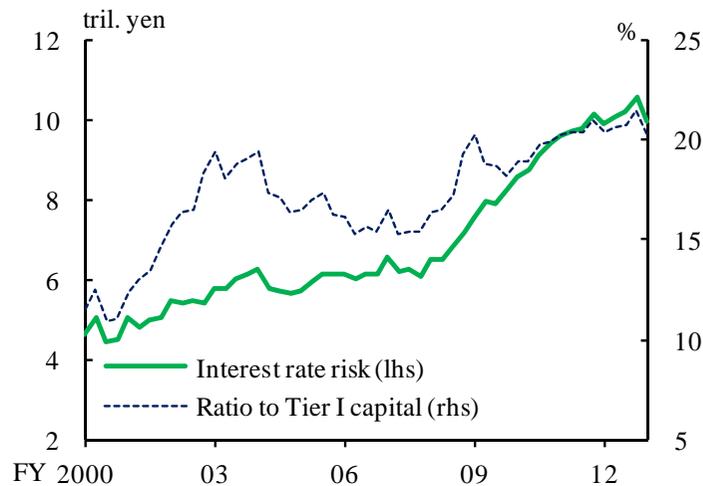
Notes: 1. In the left-hand chart, major banks and regional banks are counted.
2. The latest data are as of end-March 2013.

Source: BOJ.

Interest rate risk at financial institutions

- The amount of interest rate risk (100 basis point value) has started declining since the beginning of fiscal 2013.

Chart V-1-12: Interest rate risk^{1,2,3}



- Notes: 1. Banks and *shinkin* banks are counted.
 2. The latest data for interest rate risk are as of end-June 2013, and those for Tier I capital are assumed to be unchanged from end-March 2013.
 3. The 100 basis point value in the banking book. Off-balance-sheet transactions are excluded.

Source: BOJ.

100 basis point value: the amount of losses when market interest rates for all maturities rise by 1 percentage point.

Chart V-1-15: Effects of a rise in interest rates on capital losses on bondholdings

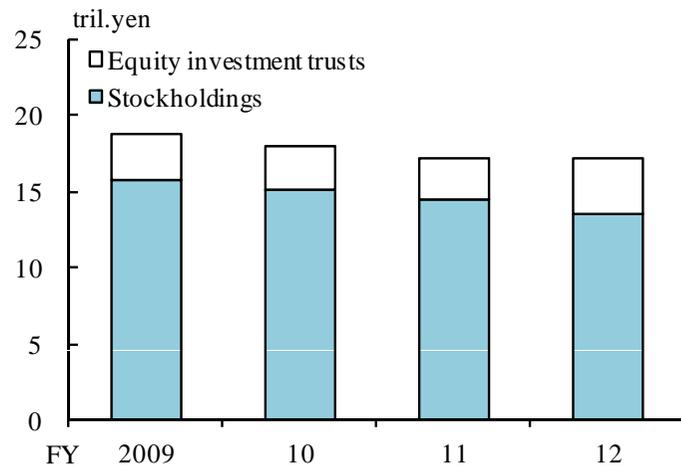
		Upward shift					
		end-March 2013			end-June 2013		
		1 % pt	2 % pts	3 % pts	1 % pt	2 % pts	3 % pts
Banks	Steepening scenario	▲4.1	▲7.1	▲10.2	▲3.5	▲5.9	▲8.5
	Parallel shift scenario	▲6.9	▲12.3	▲17.7	▲6.0	▲10.6	▲15.3
Major banks	Steepening scenario	▲1.9	▲3.4	▲4.9	▲1.4	▲2.4	▲3.5
	Parallel shift scenario	▲3.7	▲6.7	▲9.7	▲2.9	▲5.2	▲7.5
Regional banks	Steepening scenario	▲2.1	▲3.7	▲5.3	▲2.1	▲3.5	▲5.0
	Parallel shift scenario	▲3.2	▲5.6	▲8.0	▲3.2	▲5.5	▲7.8
<i>Shinkin</i> banks	Steepening scenario	▲1.3	▲2.3	▲3.2	▲1.5	▲2.4	▲3.4
	Parallel shift scenario	▲1.8	▲3.1	▲4.4	▲1.9	▲3.2	▲4.6

Source: BOJ.

Market risk associated with stockholdings at financial institutions

- Financial institutions' outstanding amount of stockholdings decreased on a book value basis.
 - ✓ Although financial institutions' investment in stock investment trusts has increased somewhat, their total outstanding amount of stockholdings including stock investment trusts remains more or less unchanged.
- However, the amount of market risk associated with stockholdings has increased slightly at financial institutions because the outstanding amount of stockholdings rose on a market value basis, reflecting the rise in stock prices, and stock price volatility increased.

Chart V-1-18: Outstanding amount of stockholdings and equity investment trusts^{1,2}

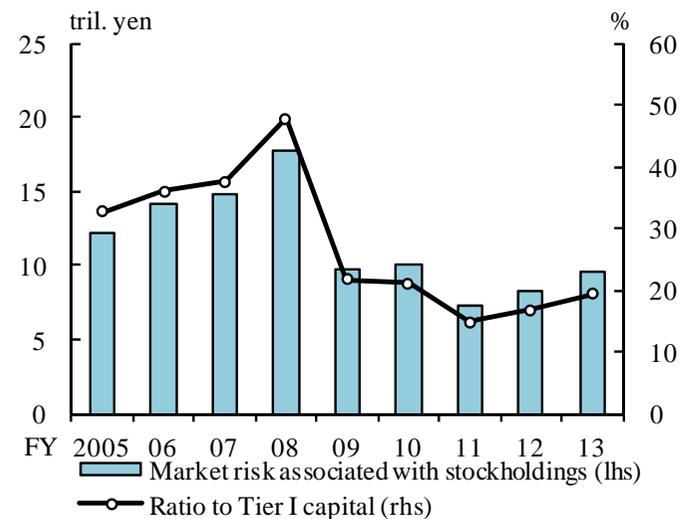


Notes: 1. Banks and *shinkin* banks are counted. This chart is based on book value.

2. "Stockholdings" excludes shares of subsidiaries and affiliated companies.

Source: BOJ.

Chart V-1-17: Market risk associated with stockholdings^{1,2}



Notes: 1. Banks and *shinkin* banks are counted. In fiscal 2013, figures for market risk associated with stockholdings are as of end-June 2013, and those for Tier I capital are assumed to be unchanged from end-March 2013.

2. Market risk associated with stockholdings is value-at-risk with a 99 percent confidence level and 1-year holding period.

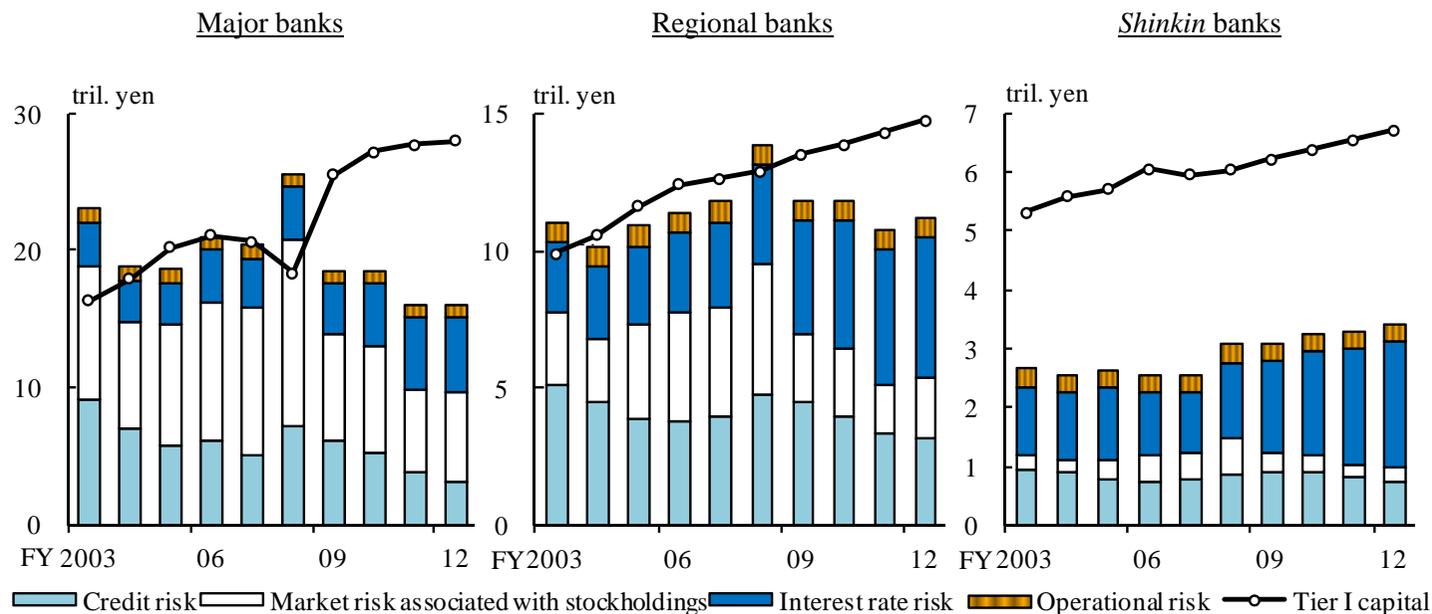
Source: BOJ.

Value-at-risk: the maximum amount of losses with a certain probability of occurrence.

Bank capital adequacy and the amount of risk borne by financial institutions

➤ The capital bases of financial institutions have on the whole been adequate in terms of capital adequacy ratios based on the regulatory requirements and capital relative to the amount of risk they bear.

Chart V-1-22: Risks and Tier I capital^{1,2}



Notes: 1. Credit risk: unexpected losses with a 99 percent confidence level. Market risk associated with stockholdings: value-at-risk with a 99 percent confidence level and 1-year holding period. Interest rate risk: 100 basis point value.

Operational risk: 15 percent of gross profits.

2. The risks at major banks include foreign currency-denominated risk.

Source: BOJ.

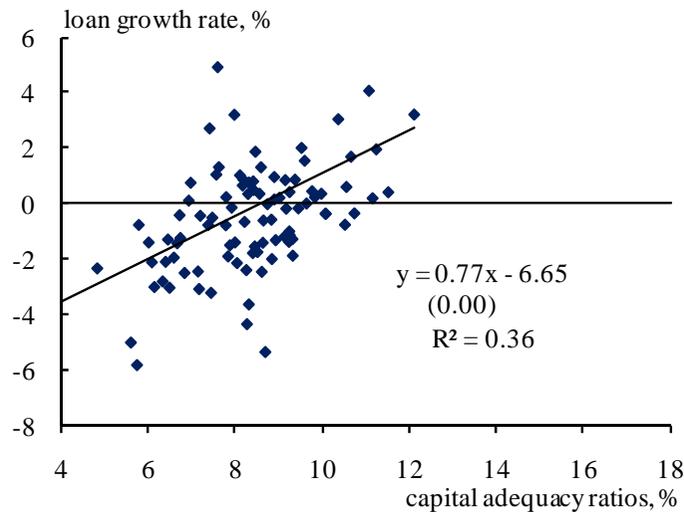
Unexpected losses: the maximum amount of losses with a certain probability of occurrence minus the average amount of losses.
 Value-at-risk: the maximum amount of losses with a certain probability of occurrence.
 100 basis point value: the amount of losses when market interest rates for all maturities rise by 1 percentage point.

Financial institutions' ability to take on risks

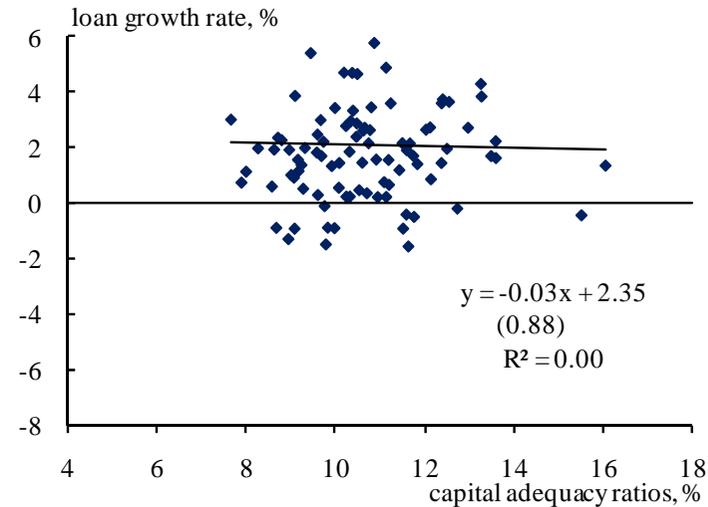
- The ability of financial institutions to absorb losses and take on risks has increased. Their level of capital does not impose any constraints on the extension of loans.

Chart V-1-26: Loans and capital adequacy ratio of regional banks^{1,2,3,4}

Average from fiscal 1998 to fiscal 2002



Average from fiscal 2008 to fiscal 2012

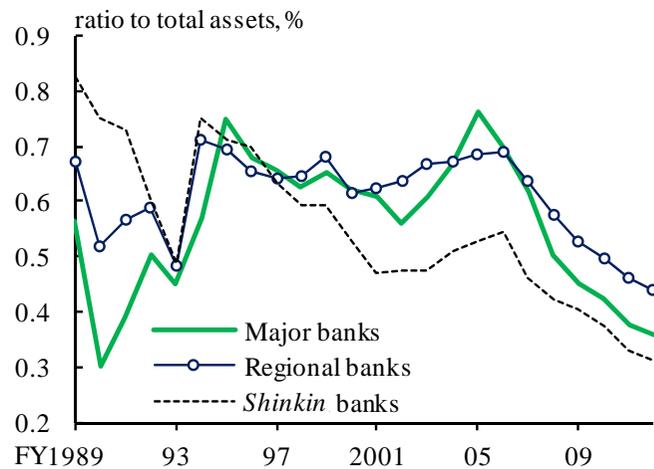


- Notes: 1. Regional banks that are domestic banks are counted.
 2. The vertical axes show annualized growth rates from fiscal 1998 to fiscal 2002 in the left-hand chart and from fiscal 2008 to fiscal 2012 in the right-hand chart.
 3. The horizontal axes show averages from fiscal 1998 to fiscal 2002 in the left-hand chart and from fiscal 2008 to fiscal 2012 in the right-hand chart.
 4. Figures in parentheses are p-value.
- Source: BOJ.

Financial institutions' profitability

- The core profitability (the ratio of operating profits from core business to total assets) of banks and *shinkin* banks has remained on a downtrend.

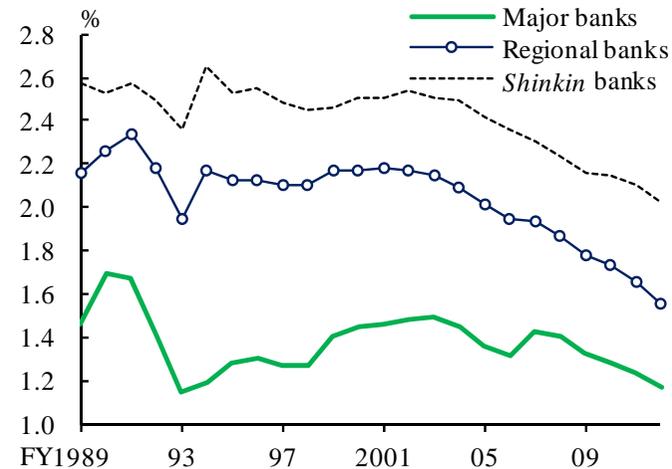
Chart V-1-27: Operating profit ROA from core business¹



Note: 1. Domestic business sector. The latest data are as of fiscal 2012.

Source: BOJ.

Chart V-1-28: Interest rate spreads on loans¹



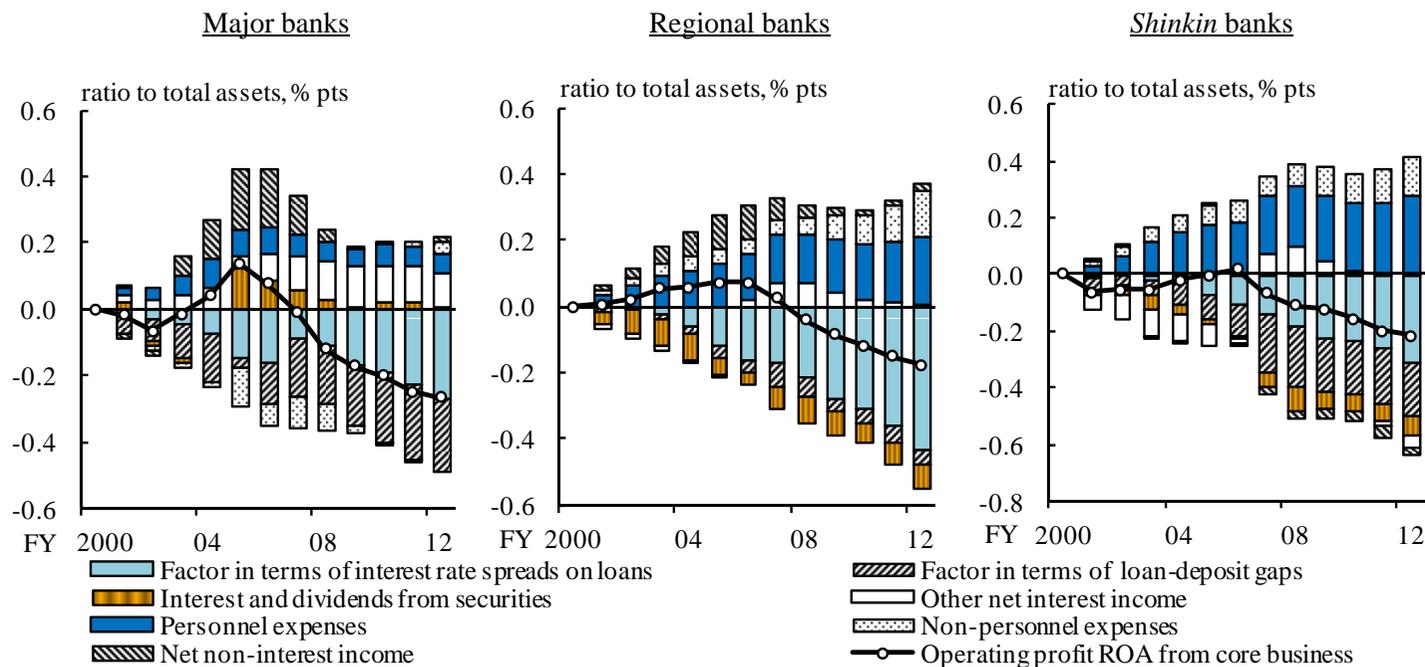
Note: 1. Domestic business sector. The latest data are as of fiscal 2012.

Source: BOJ.

Financial institutions' profitability (continued)

- The decline in core profitability has been observed for nearly a decade among a wide range of financial institutions, and it largely reflects the trend of an increasing surplus of deposits and decreasing interest rate spreads on loans. Thus, it is necessary to boost the dynamism of Japan's economy and of the corporate sector as a whole in order to dramatically enhance financial institutions' profitability.
- From this viewpoint, financial institutions need to tap potential demand for funds in areas with potential growth, and enhance the effectiveness of borrower firms' efforts in improving business conditions and business reconstruction.

Chart V-1-29: Determinants of operating profit ROA from core business¹



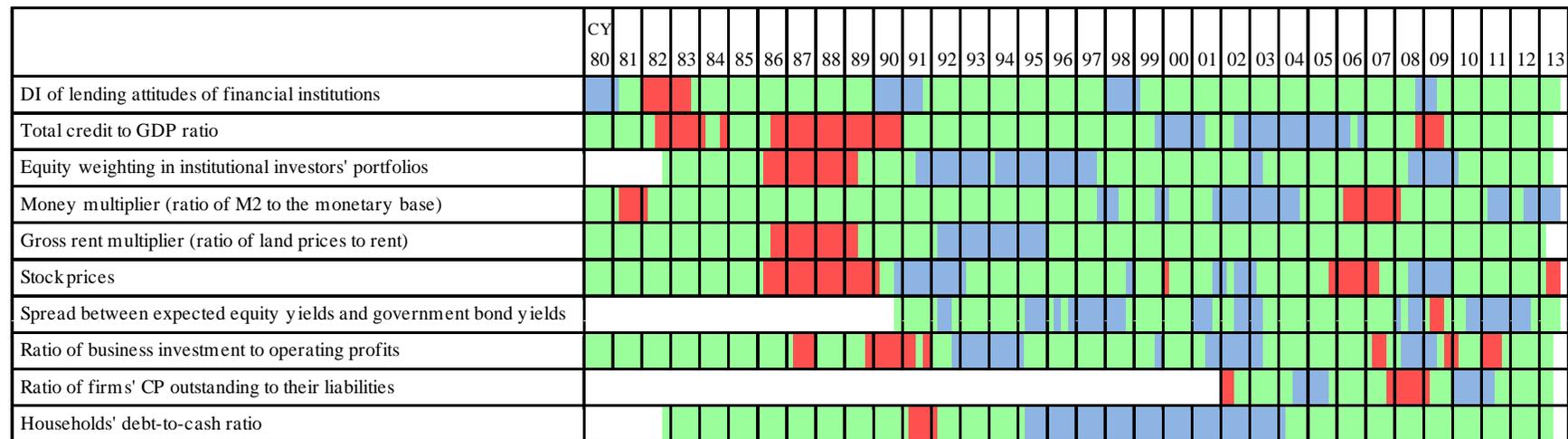
Note: 1. Figures show cumulative changes from fiscal 2000. Domestic business sector.

Source: BOJ.

Macro risk indicators

- Most financial risk indicators do not show any signs of overheating that should be noted from a macroeconomic perspective.

Chart VI-1-3: Heat map of Financial Activity Indexes¹



Note: 1. The latest data for DI of lending attitudes of financial institutions, stock prices and spreads between expected equity yields and government bond yields are as of the July-September quarter of 2013. Those for money multiplier (ratio of M2 to the monetary base) and gross rent multiplier (ratio of land prices to rent) are as of the July-August of 2013 and the January-March quarter of 2013, respectively. Those for other indicators are as of the April-June quarter of 2013.

Sources: Bloomberg; Cabinet Office, "National accounts"; Japan Post Holdings, "The former Japan Post statistical data"; Japan Real Estate Institute, "Urban land price index"; Ministry of Finance, "Financial statements statistics of corporations by industry,"; Ministry of Internal Affairs and Communications, "Consumer price index"; Ministry of Posts and Telecommunications, "Annual statistical report of postal services," "Annual statistical report of postal service administrations"; Thomson Reuters; BOJ, "Flow of funds accounts," "Monetary base," "Money stock," "Tankan."

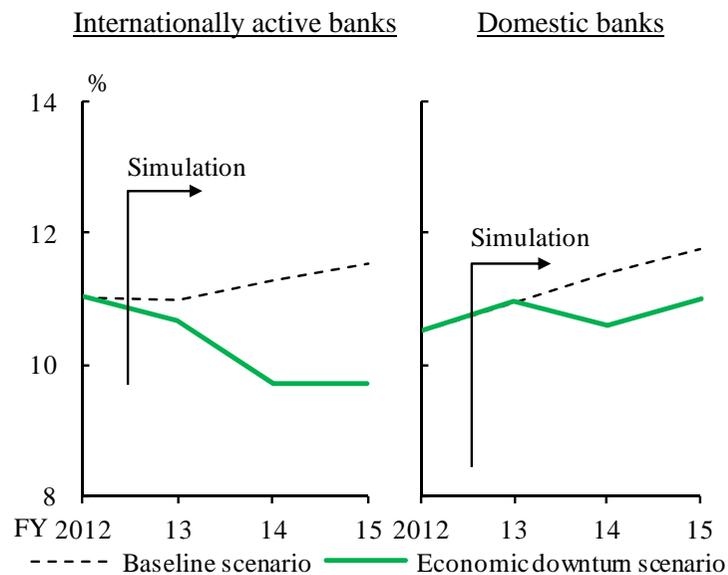
Heat map of Financial Activity Indexes

- Red (darkest areas): overheating (a rise by more than one standard deviation from the trend).
- Blue (second darkest areas): overcooling (a decline by more than one standard deviation from the trend).
- Green (most lightly shaded areas): everything in between above.
- White: periods without data.

Macro stress testing: Economic downturn scenario

- Financial institutions would be able to maintain a sufficient level of capital even if a significant economic downturn equivalent to the Lehman shock occurred.
- At some domestic banks, capital adequacy ratios would remain at low levels, indicating that the extent of the impact of an economic downturn differs among banks.

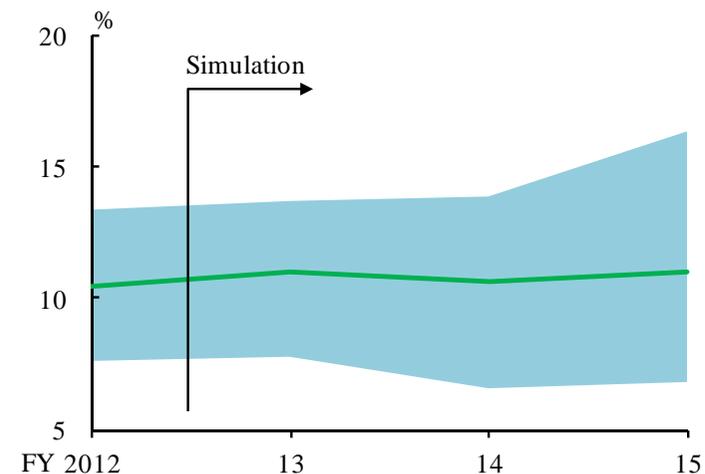
Chart VI-2-6: CET I capital ratio and Tier I capital ratio (economic downturn scenario)^{1,2,3}



- Notes: 1. Banks and *shinkin* banks are counted.
2. The left-hand chart shows the CET I capital ratio of internationally active banks. The right-hand chart shows the Tier I capital ratio of domestic banks.
3. The CET I capital ratio of internationally active banks is based on the Basel III requirements (taking grandfathering measures into consideration).

Source: BOJ.

Chart VI-2-8: Domestic banks' distribution of Tier I capital ratio (economic downturn scenario)^{1,2}



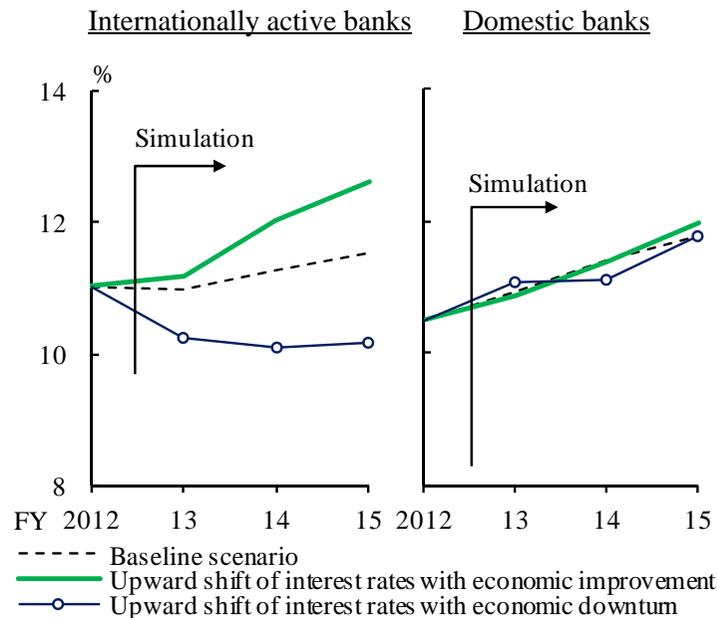
- Notes: 1. Banks and *shinkin* banks are counted.
2. The shaded area indicates the 10th-90th percentile range measured by each bank's share of loans.

Source: BOJ.

Macro stress testing: Upward interest rate shift scenarios

- Financial institutions would be able to maintain a sufficient level of capital even if interest rates rose substantially (a 2 percentage point steepening) without any improvement in economic activity.
- Similar to the economic downturn scenario results, the magnitude of the impact differs among individual financial institutions.

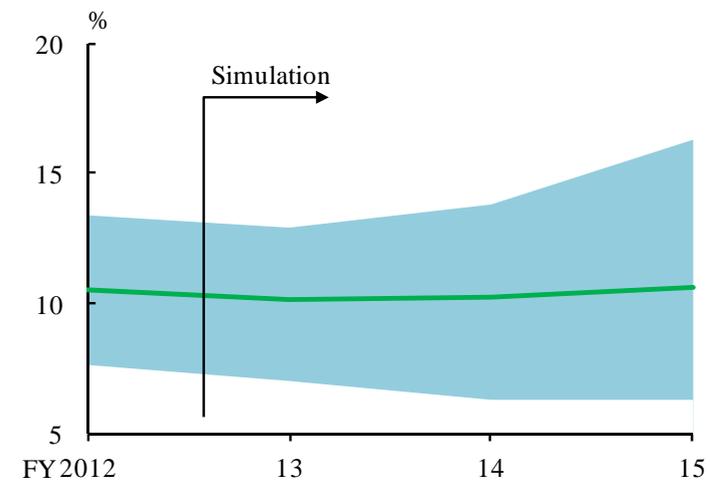
Chart VI-2-12: CET I capital ratio and Tier I capital ratio (upward interest rate shift scenarios)^{1,2,3}



- Notes: 1. Banks and *shinkin* banks are counted.
2. The left-hand chart shows the CET I capital ratio of internationally active banks. The right-hand chart shows the Tier I capital ratio of domestic banks.
3. The CET I capital ratio of internationally active banks is based on the Basel III requirements (taking grandfathering measures into consideration).

Source: BOJ.

Chart VI-2-16: Domestic banks' distribution of Tier I capital ratio (considering unrealized losses on securities holdings)^{1,2,3}



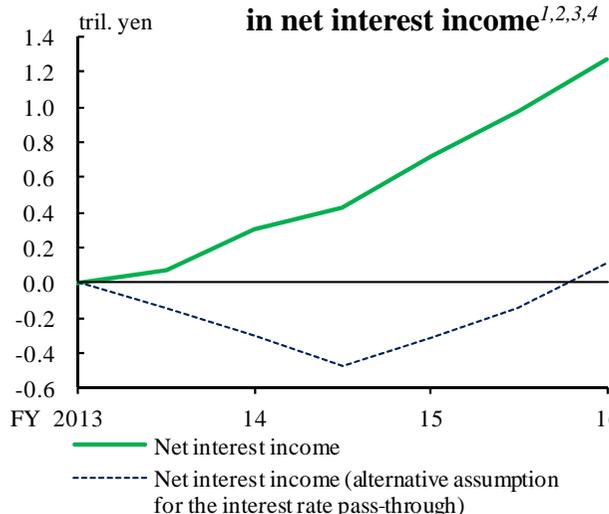
- Notes: 1. Banks and *shinkin* banks are counted.
2. The shaded area indicates the 10th-90th percentile range measured by each bank's share of loans.
3. The stress scenario is an upward interest rate shift scenario with economic downturn.

Source: BOJ.

Macro stress testing: Issues related to the results estimated under upward interest rate shift scenarios

- Depending on the speed and extent of an interest rate rise and the factors behind it, the impacts of the interest rate rise can exceed those presented above, through drastic changes in, e.g., financial institutions' net interest income and investment behavior and the burden of debt repayments on firms and households.
 - ✓ Depending on the pass-through of loan interest rates and deposit interest rates, an improvement in interest rate spreads on loans after the rise in market rates would be delayed and net interest income would be sluggish.
 - ✓ If banks reinvest all of their redemption money into short-term securities, their security interest income would decline.
 - ✓ A non-linear relationship is observed, in which the default rate surges when the burden of debt repayments on small and medium-sized firms exceeds a certain threshold.

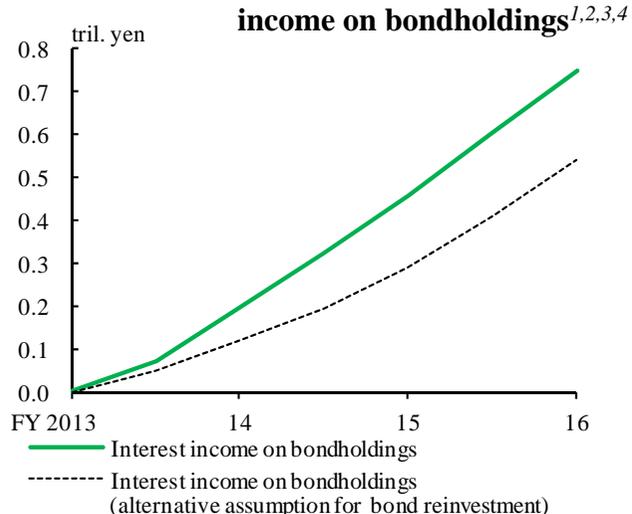
Chart VI-2-17: Assumptions for the interest rate pass-through and changes in net interest income^{1,2,3,4}



- Notes: 1. Major banks and regional banks are counted.
 2. A 2 percentage point parallel shift in interest rates is assumed.
 3. The vertical axis shows the difference in net interest income between the baseline scenario and the parallel shift scenario.
 4. The alternative assumption is a case in which the loan interest rate pass-through is lower by about 0.2 and the funding interest rate pass-through is higher by about 0.1 compared to the estimated value using the historical data.

Source: BOJ.

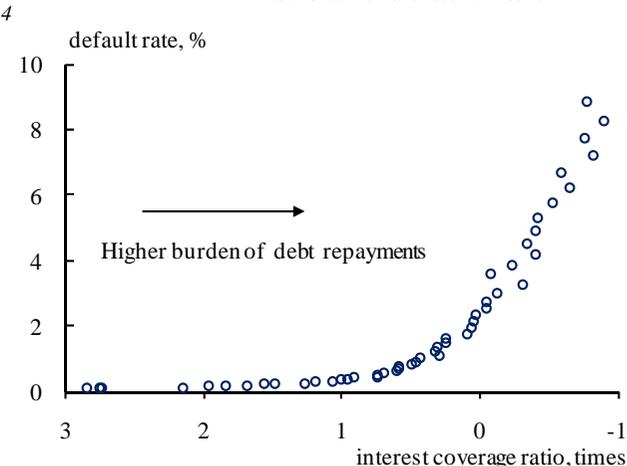
Chart VI-2-19: Assumptions for reinvestment and interest income on bondholdings^{1,2,3,4}



- Notes: 1. Major banks and regional banks are counted.
 2. A 2 percentage point steepening in interest rates is assumed.
 3. The vertical axis shows the difference in interest income on bondholdings between the baseline scenario and the steepening scenario.
 4. The alternative assumption for bond reinvestment is assumed, as bonds are all reinvested in 3-month bonds at the end of their terms.

Source: BOJ.

Chart VI-2-20: SME interest coverage ratio and default rate^{1,2,3,4}



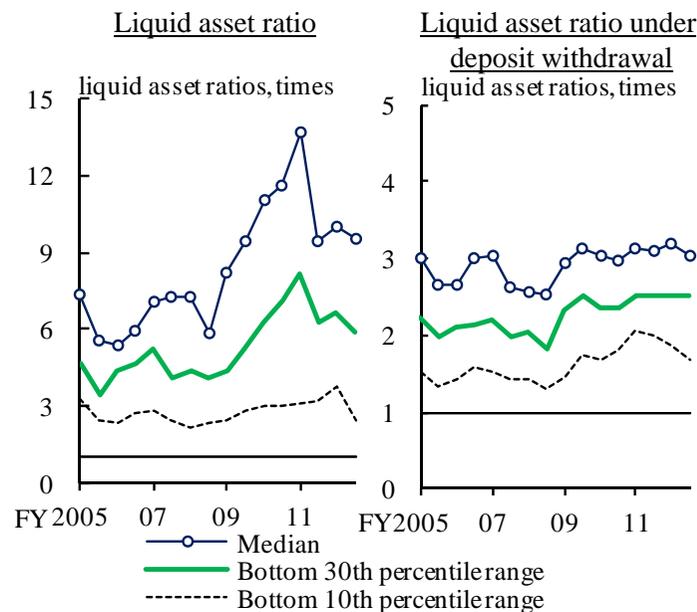
- Notes: 1. The data are as of 2012.
 2. Defaults are defined as loans delinquent for 3 months or more, downgraded to de facto bankrupt or bankrupt, or subrogated by credit guarantee corporations.
 3. Interest coverage ratio = operating profits / interest payments.
 4. "SMEs" stands for small and medium-sized enterprises.

Source: CRD.

Resilience against funding liquidity risk

- On the funding liquidity side, financial institutions have sufficient liquid assets to see themselves through stress events such as deposit outflows continuing for a certain period and a decline in the functioning of financial markets.
 - ✓ Under an assumption in which market funding in yen comes to a complete stop and deposits are withdrawn, many banks would have sufficient yen-denominated liquid assets to meet their funding needs.
 - ✓ Even under a stress scenario in which all of the foreign currency funding markets become unavailable for 1 month, banks' current foreign currency liquidity buffers would cover their funding shortages.

Chart VI-3-1: Stress testing against yen liquidity shock^{1,2,3}



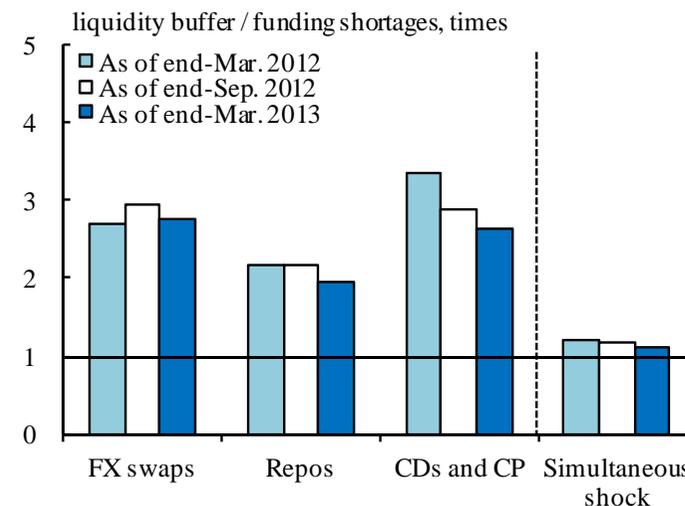
Notes: 1. Major banks (excluding trust banks) and regional banks are counted. Banks whose market investment exceeds their market funding are excluded. The latest data are as of end-March 2013.

2. Liquid asset ratio = (current accounts held at the Bank of Japan + cash + government bonds) / (net market funding maturing within 3 months + expected withdrawing of deposits with a term until renewal of the deposit rate of 3 months or less).

3. In the left-hand chart, it is assumed that 0 percent of deposits are withdrawn. In the right-hand chart, it is assumed that 10 percent of deposits with a term until renewal of the deposit rate of 3 months or less are withdrawn.

Source: BOJ.

Chart VI-3-2: Stress testing against foreign currency liquidity shock^{1,2}



Notes: 1. Major banks and regional banks are counted.

2. The duration of funding shortages in each market is 1 month.

Sources: Published accounts of U.S. MMFs; BOJ.