

Financial
System
Report

Visual Summary

April 2013
Bank of Japan



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Developments in the global financial system and overseas economies

- In global financial markets, investors' risk aversion has gradually abated.
 - ✓ Stock prices have risen in a wide range of countries and regions, and government bond yields in peripheral European countries have declined. The value of the yen, for which demand was strong as a safe-haven currency, has fallen.
- Nevertheless, many problems remain to be resolved for the fundamental resolution of the European debt problem.
 - ✓ In peripheral European countries, further efforts are still necessary for fundamental resolutions of deleveraging and fiscal consolidation, and many European banks have maintained cautious lending attitudes.

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

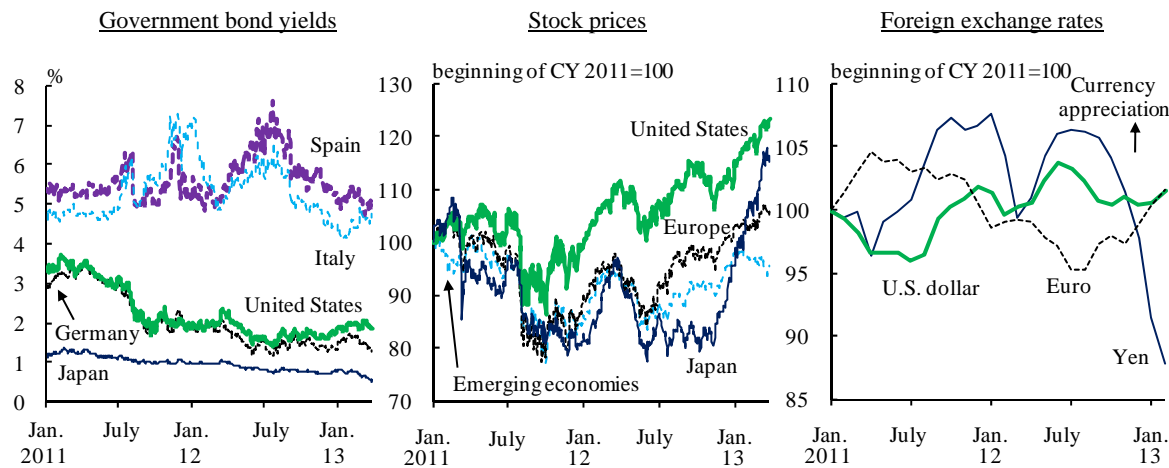
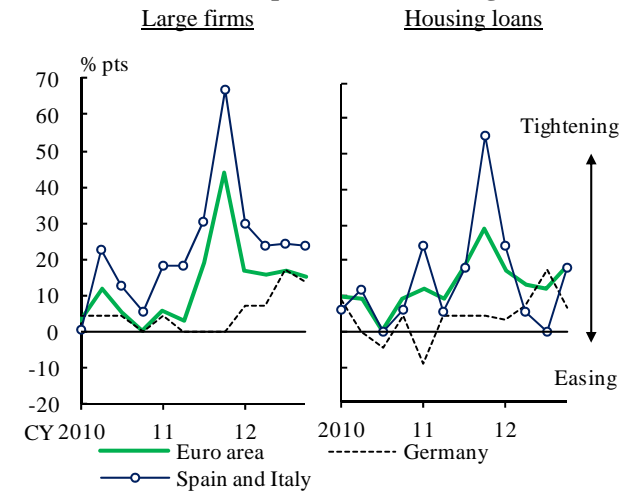


Chart II-1-5: European banks' lending attitudes¹



Notes: 1. The left chart shows 10-year government bond yields. The middle chart shows United States (S&P 500), emerging economies (MSCI Emerging), Europe (STOXX Europe 600), and Japan (TOPIX). The right chart shows nominal effective exchange rates.

2. The latest data in the left and middle charts are as of March 29, 2013, and those in the right chart are as of February 2013.

Sources: BIS; Bloomberg.

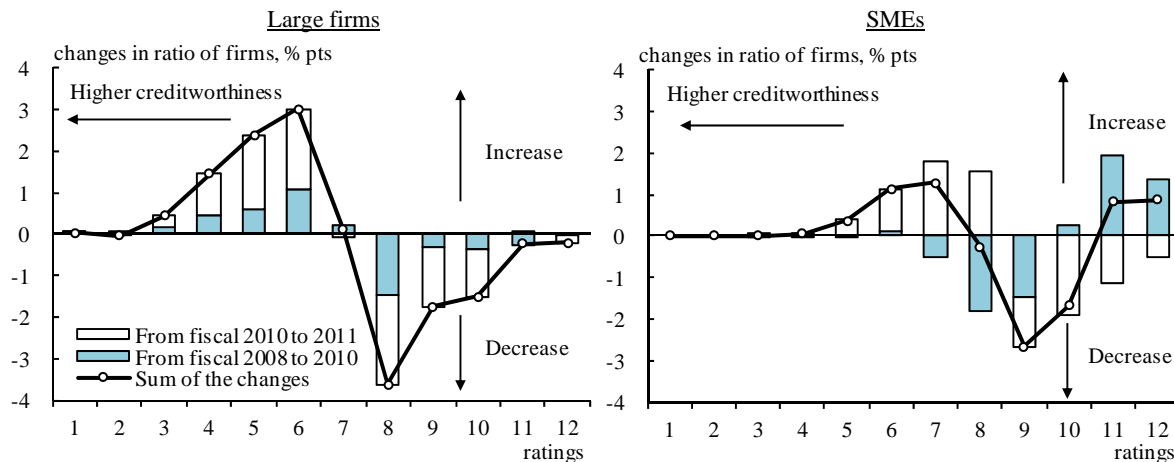
Note: 1. Changes in banks' lending attitudes over the past 3 months. Figures for Spain and Italy are the average of the two countries. The latest data are as of the October-December quarter of 2012.

Source: ECB, "The euro area lending survey."

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

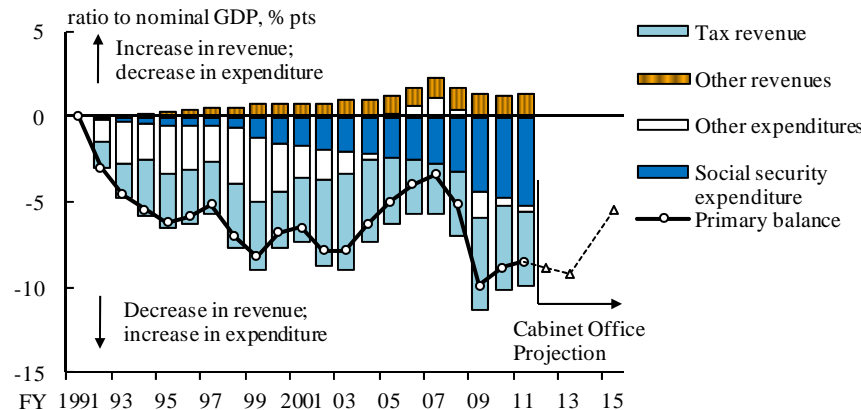
- Firms have been taking a cautious stance in financing, and firms' financial conditions have generally improved. However, some small and medium-sized firms have continued to face severe financial conditions.
- In the public sector, government debt has accumulated, with a continuing fiscal deficit.
 - ✓ As the aging of society will advance further, Japan's fiscal conditions are expected to remain severe. Efforts to achieve fiscal consolidation are still important.

Chart II-2-5: Changes in distributions of credit ratings¹



Note: 1. Figures are changes in distributions from fiscal 2008 to fiscal 2011.
Source: Teikoku Databank, "SPECIA."

Chart II-2-10: Primary balance^{1,2,3,4}



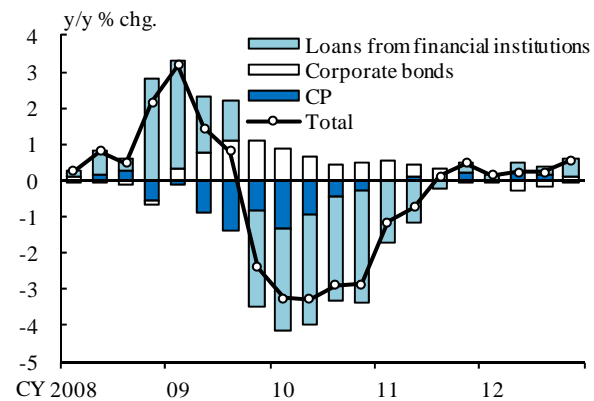
Notes: 1. Changes from fiscal 1991 in the ratios of revenues, expenditures, and the primary balance to nominal GDP.
2. The data are for the central and local governments.
3. The social security expenditure comprises the following items: social benefits other than social transfers in kind; social transfers in kind; and current transfers from the central and local governments to the social security funds.
4. Breakdown figures are calculated by the BOJ. The primary balances in fiscal 2012 and fiscal 2013 are estimates from the Cabinet Office. The figure for fiscal 2015 is the fiscal consolidation goal set by the government.

Sources: Cabinet Office, "Annual Report on the Japanese Economy and Public Finance 2012," "National accounts," "Recent economic and fiscal conditions."

Financial market conditions

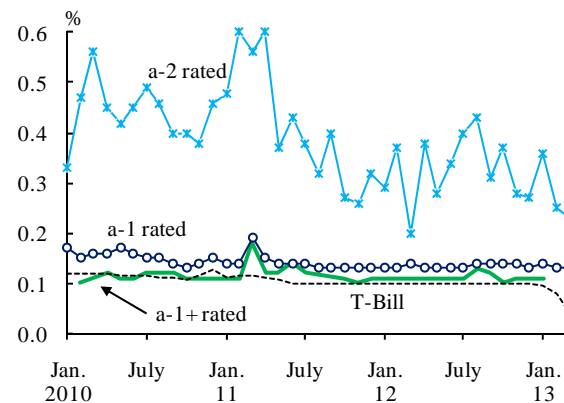
- The amount outstanding of funding has increased at firms.
- Issuing conditions for CP and corporate bonds have remained favorable on the whole.

Chart III-1-2: Amount outstanding of firms' funding^{1,2}



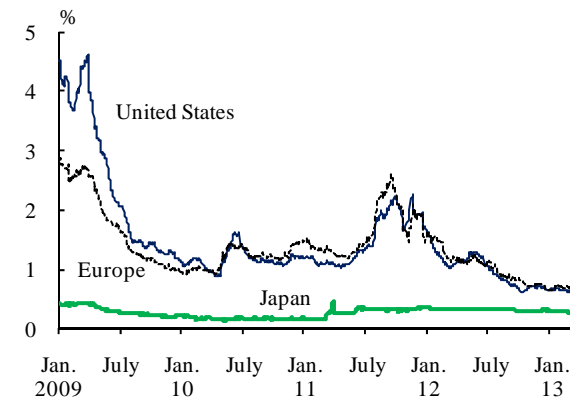
Notes: 1. The latest data are as of end-December 2012.
 2. Figures for CP are those for short-term corporate bonds registered under the book-entry transfer system. Those issued by banks, securities companies, and others such as foreign corporations are excluded; ABCP is included. Figures for corporate bonds are the sum of straight bonds issued in both domestic and overseas markets. Bonds issued by banks are included. Bonds that are issued in the domestic market are bonds registered under the book-entry transfer system.
 Sources: I-N Information Systems; Japan Securities Dealers Association; Japan Securities Depository Center; BOJ, "Loans and bills discounted by sector."

Chart III-2-1: CP issuance rates^{1,2}



Notes: 1. Monthly average 3-month rates weighted by issuance volume.
 2. The latest data are as of March 2013.
 Sources: Bloomberg; Japan Bond Trading; Japan Securities Depository Center.

Chart III-2-4: Yield spreads between corporate bonds and government bonds^{1,2,3,4}

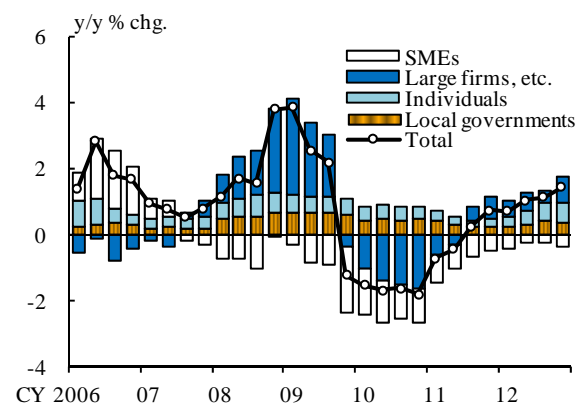


Notes: 1. Rated AA by R&I, Fitch, Moody's, and S&P.
 2. For Japan, average yield spreads of bonds with a residual maturity of 3 years or more but less than 7 years.
 3. For the United States and Europe, average yield spreads of bonds with a residual maturity of 3 years or more but less than 5 years. Bank of America Merrill Lynch, used with permission.
 4. The latest data are as of March 29, 2013.
 Sources: Bloomberg; Japan Securities Dealers Association; BOJ.

Loan market conditions: Developments in loans outstanding

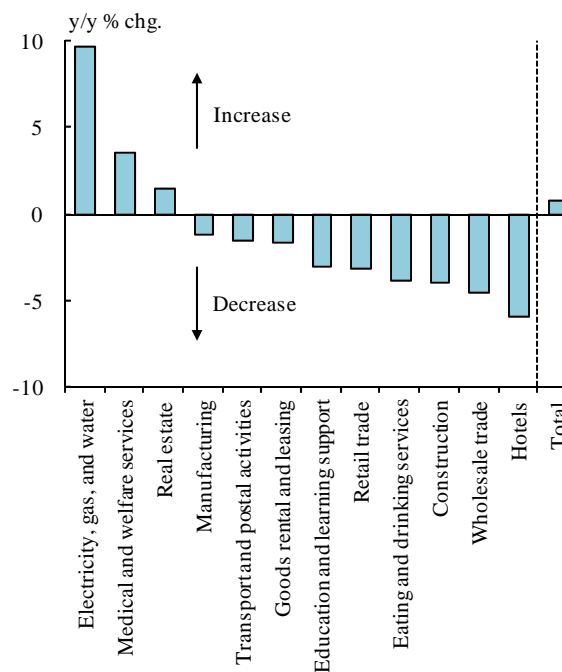
- Banks' domestic loans outstanding have increased, particularly for working capital and funds related to mergers and acquisitions.
 - ✓ Although loans for business fixed investment have been sluggish in many industries, they have increased among firms in the electric power, medical care and welfare, and real estate industries, among others.
 - ✓ Financial institutions have increased domestic loans especially to large firms. In particular, there has been a prominent increase in loans from regional banks to large firms.

Chart III-3-3: Domestic loans outstanding of financial institutions¹



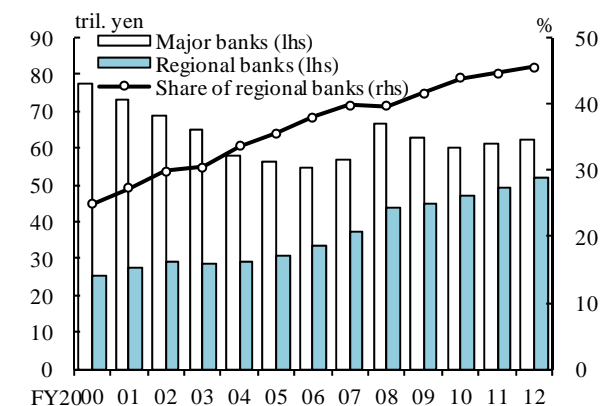
Note: 1. Banks and *shinkin* banks are counted. The latest data are as of end-December 2012.
Source: BOJ, "Loans and bills discounted by sector."

Chart III-3-5: Loans outstanding for business fixed investment¹



Note: 1. Banks and *shinkin* banks are counted. The data are as of end-December 2012.
Source: BOJ, "Loans and bills discounted by sector."

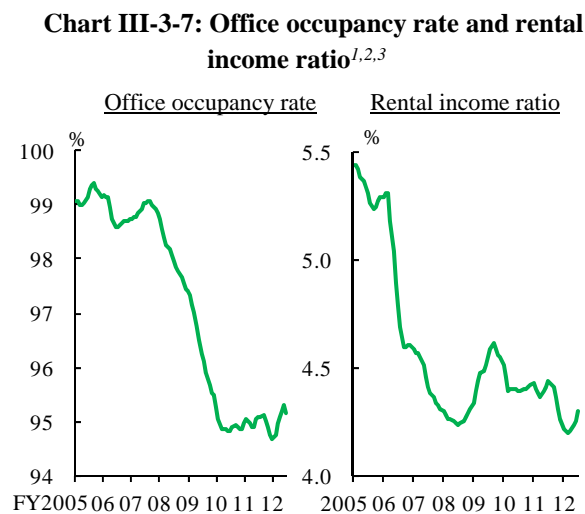
Chart III-3-6: Loans outstanding for large firms¹



Note: 1. The latest data are as of end-December 2012.
Source: BOJ.

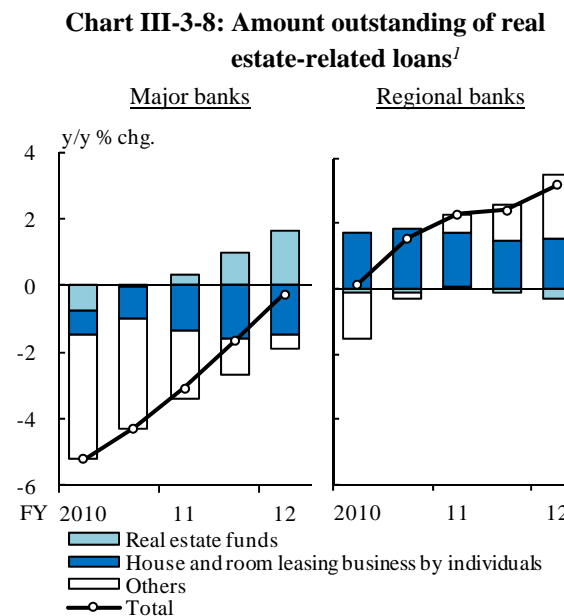
Loan market conditions: Developments in real estate-related loans

- It appears that both major banks and regional banks have been actively extending real estate-related loans recently.
 - ✓ In metropolitan areas, the supply-demand balance in the real estate market has been improving, as seen in the gradual rise in the occupancy rates of real estate such as offices, and rental income from J-REITs has also started to recover.
 - ✓ Major banks have expanded loans to real estate funds including J-REITs.
 - ✓ Regional banks, which have been making efforts to secure an adequate volume of loans, have increased loans to individuals for the house and room leasing business, and loans to real estate companies have also recently grown.



Notes: 1. The latest data are as of October 2012; 3-month moving averages. Offices in Chiyoda-City, Chuo-City, and Minato-City in Tokyo possessed by listed J-REITs are counted.
 2. Occupancy rate = total leased areas / total leasable areas.
 3. Rental income ratio = net operating income from real estate / market values of real estate at the beginning of each period.

Source: Association for Real Estate Securitization.

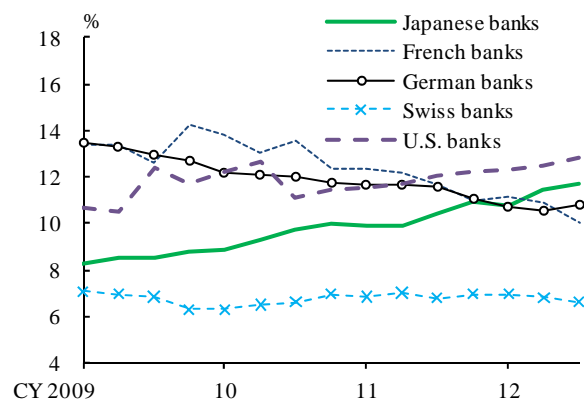


Note: 1. The latest data are as of end-September 2012.
 Source: BOJ.

Loan market conditions: Initiatives in extending overseas loans

- Major banks have increased overseas loans, and the share of their loans has grown in the global loan market.
 - ✓ The increase in overseas loans has helped boost major banks' profits.
- Some regional financial institutions have strengthened their initiatives to support overseas business expansions by small and medium-sized firms in their local areas.
 - ✓ In recent years, small and medium-sized firms have increased their overseas business expansions to reduce costs and tap demand overseas.
 - ✓ Some regional financial institutions have established overseas branches and provided a range of services in cooperation with other financial institutions at home and abroad as well as with the government.

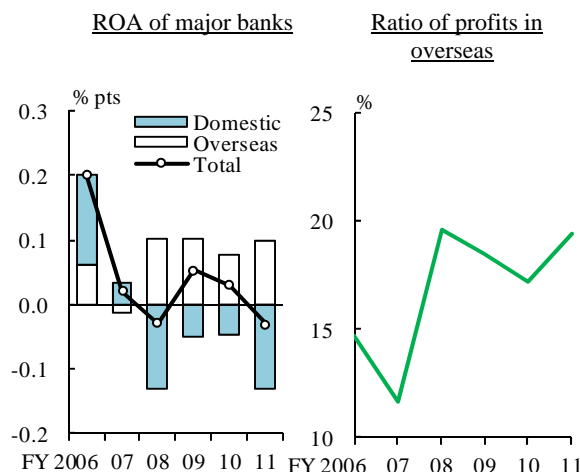
Chart III-3-12: Share in cross-border claims of banks¹



Note: 1. The share is based on the cross-border claims on banks, the public sector, and the nonbank private sector on an ultimate risk basis. The latest data are as of end-September 2012.

Source: BIS, "Consolidated banking statistics."

Chart III-3-15: Profitability of major banks^{1,2}

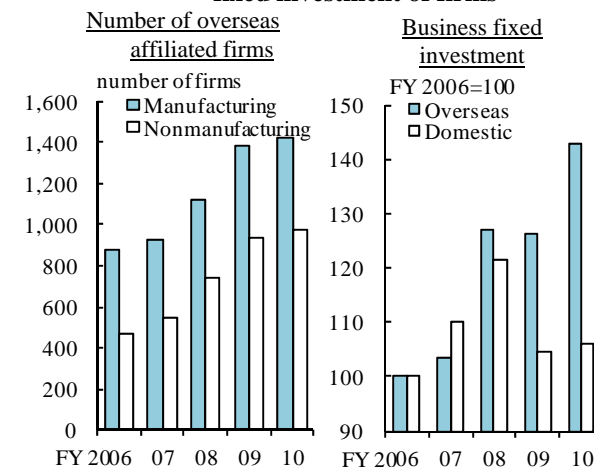


Notes: 1. The three major financial groups are counted on a consolidated basis.

2. The left chart shows the cumulative changes in gross operating profit ROA from fiscal 2005.

Sources: Published accounts of each group.

Chart III-3-16: Overseas expansion and business fixed investment of firms¹



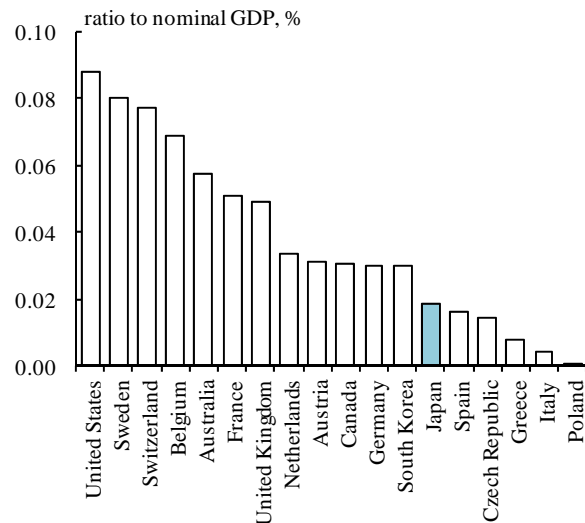
Note: 1. Japanese firms whose capital amounts to 100 million yen or less are counted.

Sources: Ministry of Economy, Trade and Industry, "Basic survey on overseas business activities"; Small and Medium Enterprise Agency, "Basic survey on small and medium enterprises."

Loan market conditions: Investments and loans to start-ups

- Growth in the amount of investments and loans to start-ups has been weak.
 - ✓ The amount of funds invested by venture capital funds in Japan is small by international standards.
 - ✓ The distribution of firms' sales growth rates shows that the proportion of firms with high growth rates has decreased. Nevertheless, a look at developments at start-ups shows that the proportion has not declined. The potential remains for investments and loans to start-ups to produce high returns.

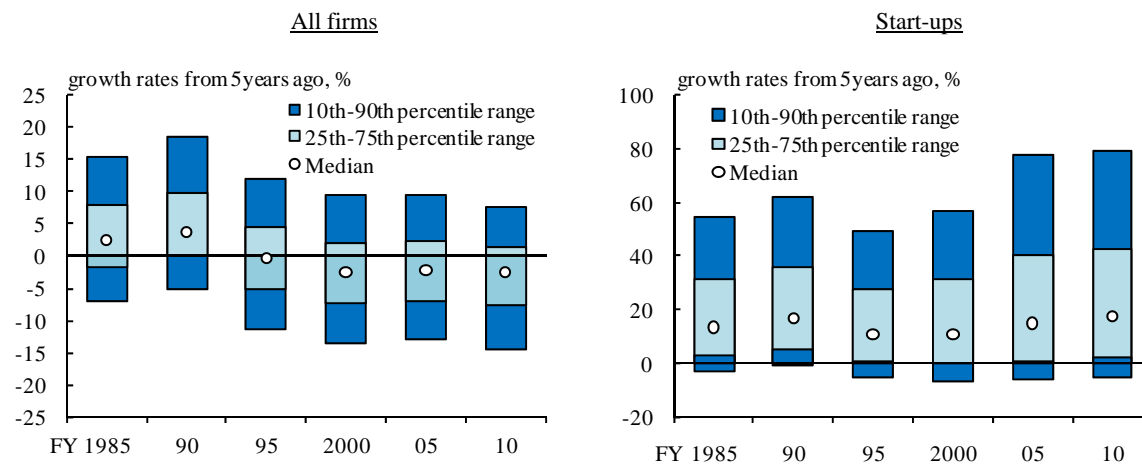
Chart III-3-17 Amount of funds invested by venture capital funds¹



Note: 1. The data are as of 2009. The top countries in terms of GDP among OECD members are counted.

Sources: Cabinet Office, "National accounts"; OECD, "Entrepreneurship at a glance 2010"; Venture Enterprise Center, "Survey on trends in venture capital investment 2010."

Chart III-3-18: Distributions of sales growth rates of firms (only surviving firms)^{1,2}



Notes: 1. Distributions of firms' sales growth rates from 5 years ago. Sales growth rates are annualized.

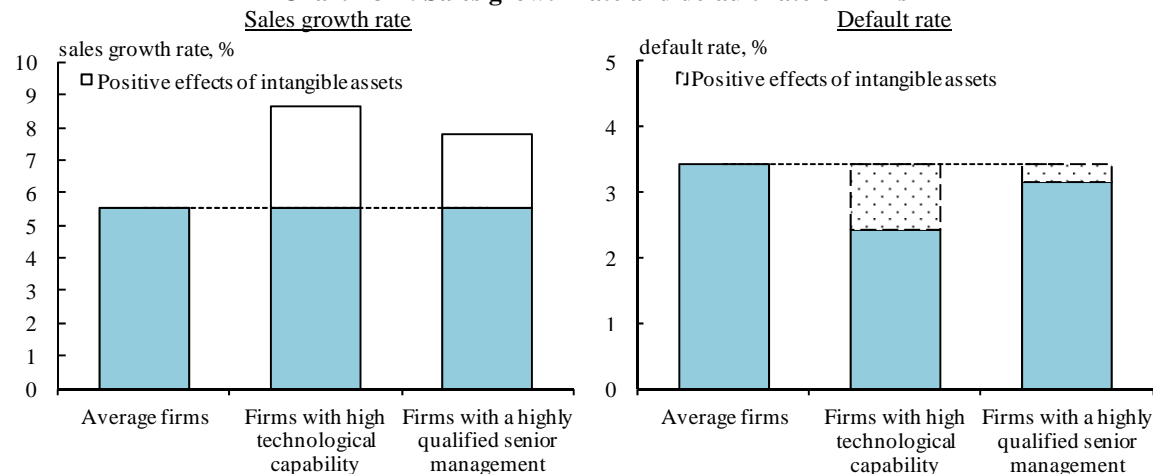
2. Firms with sales data available from 5 years ago are counted.

Source: Teikoku Databank, "SPECIA."

Loan market conditions: financial institutions' expertise in identifying the growth potential of projects and risks

- To smoothly provide funds to start-ups, it is vital for a wide range of financial intermediaries that develop and sell financial products or conduct investments and loans -- banks, investment trusts, securities companies, pension funds, and other funds -- to enhance their ability to identify the growth potential of projects and risks.
- ✓ In recent years, the importance of intangible assets in a broad sense -- the ability of research and development, branding techniques, and the qualifications of senior management -- as well as tangible assets in terms of enhancing firms' profitability has been rising. The results of an estimate suggest that the indicators for technological capability and senior management's qualifications may have significant explanatory power for the prospective growth rate and the default rate of firms.

Chart B3-1: Sales growth rate and default rate of firms^{1,2}



Notes: 1. For firms' prospective growth rate, a fixed-effects panel model was estimated using the 3-year-ahead cumulative sales growth rate as the dependent variable. Independent variables were the indicators for technological capability and senior management's qualifications, and total assets and tangible fixed assets per employee. For credit risk, a logit model was estimated using an indicator variable of whether the firm defaulted within 3 years as the dependent variable. Independent variables were the capital adequacy ratio and the on-hand liquidity ratio in addition to the independent variables used in the estimation of firms' prospective growth rate. The estimation period was from fiscal 2003 to fiscal 2010, and the sample included 3,691 firms.

2. Firms in the upper 10th percentile for indicators for technological capability and senior management's qualifications are counted.

Sources: Kudo & Associates; Teikoku Databank, "SPECIA"; BOJ.

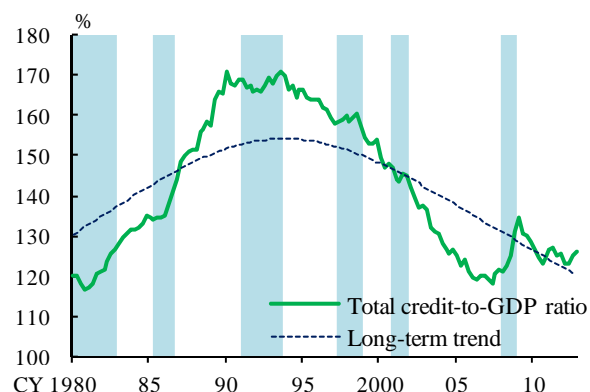
Indicator for technological capability: an index of the values of patents held by an individual firm, constructed using information on the degree of public interest in a firm's patents (measured in terms of requests for inspection, information provided to examiners to prohibit patent acquisition, requests for patent invalidation, and registrations of license agreements at the Japan Patent Office).

Indicator for senior management's qualifications: the sum of scores on 25 items related to senior management such as "decisive," "high planning capability," and "vision," each of which was one if qualified and zero otherwise, based on the grade provided by Teikoku Databank, whose investigators graded each firm's senior management.

Macro risk indicators

- Judging from the results of the examination of macro financial risk, thus far there is no indication that warns of financial imbalances stemming from bullish expectations.
 - ✓ The total credit-to-GDP ratio continues to hover around its long-term trend.
 - ✓ The Financial Activity Index (FAIX) does not show any sign of financial overheating.

Chart IV-1-1: Total credit-to-GDP ratio¹



Note: 1. Shaded areas indicate recession periods. The latest data are as of the October–December quarter of 2012.

Sources: Cabinet Office, "National accounts"; BOJ, "Flow of funds accounts."

Chart IV-1-3: Heat map of Financial Activity Index¹

	CY	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13
DI of financial institutions' lending attitudes		Green	Green	Red	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	
Total credit to GDP ratio		Green	Green	Red	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	
Equity weighting in institutional investors' portfolios		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Money multiplier (ratio of M2 to the monetary base)		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Gross rent multiplier (ratio of land prices to rent)		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Stock price		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Spread between expected equity yields and government bond yields		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Ratio of business investments to operating profits		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Ratio of firms' CP outstanding to their liabilities		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Households' debt-to-cash ratio		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

Note: 1. The latest data for DI of financial institutions' lending attitudes, stock price, and spread between expected equity yields and government bond yields are as of the January-March 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 January-February 2013 average and the July-September quarter of 2012, respectively. Those for other indicators are as of the October-December quarter of 2012.

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, quarterly"; 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."

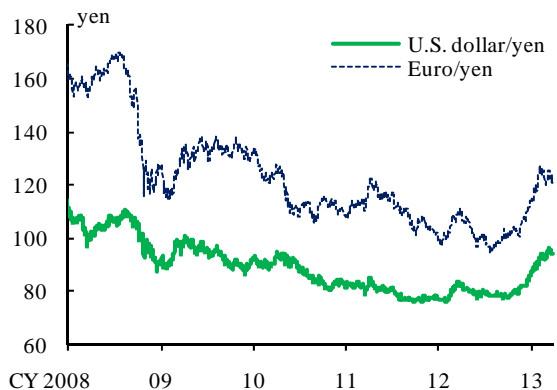
Heat map of Financial Activity Index

- 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.

Market risk: Risks implied in foreign exchange and stock markets

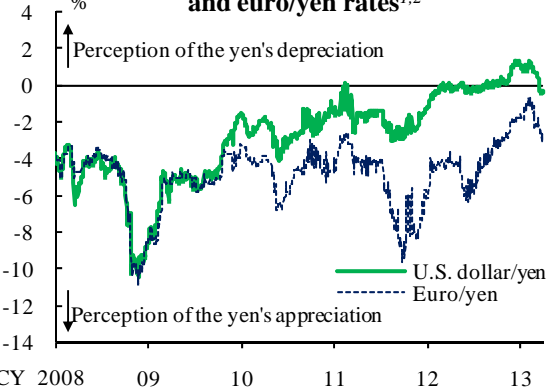
- In foreign exchange markets, the yen has depreciated against a wide range of currencies compared with autumn 2012. Since the middle of March 2013, however, the U.S. dollar/yen risk reversal has skewed faintly toward dollar puts, implying lowered expectations of substantial depreciation of the yen (see a dotted box below on the right for developments in foreign exchange markets since early April 2013).
- Japan's stock prices have been on an uptrend since autumn 2012. Since late February 2013, however, due to growing uncertainty over the situation in Italy and Cyprus, the negative value of risk reversals has increased in both Japan and Europe, indicating the heightening of concern over a decline in stock prices. Attention should be paid to the possibility that Japan's stock market will be strongly affected by developments in overseas stock markets.

Chart IV-2-1: U.S. dollar/yen and euro/yen rates¹



Note: 1. The latest data are as of March 29, 2013.
Source: Bloomberg.

Chart IV-2-3: Risk reversals of U.S. dollar/yen and euro/yen rates^{1,2}



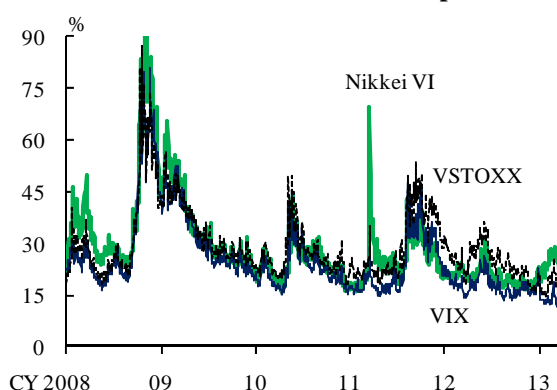
Developments in foreign exchange markets since early April 2013

- Since early April 2013, reflecting the Bank's introduction of quantitative and qualitative monetary easing, the yen has depreciated further. In addition, some developments, such as the slight skew favoring dollar calls in the U.S. dollar/yen risk reversal, suggest that market participants have factored in further depreciation of the yen.

Notes: 1. 1-year risk reversals.
2. The latest data are as of March 29, 2013.

Source: Bloomberg.

Chart IV-2-4: MFIVs of stock prices¹

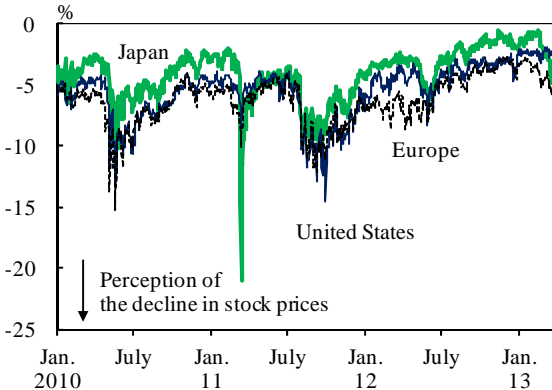


MFIVs

- MFIVs of stock prices correspond to options market participants' expected rate of change in stock prices for the next month. The larger the indicator becomes, the stronger the risk recognition of stock price fluctuations grows.

Note: 1. The latest data are as of March 29, 2013.
Source: Bloomberg.

Chart IV-2-5: Risk reversals of stock prices^{1,2}



Risk reversals

- Risk reversals indicate the difference in implied volatilities between call and put options.
- The deeper the indicator moves into negative territory (put-over), the stronger the risk recognition grows of the yen's appreciation and a decline in stock prices.

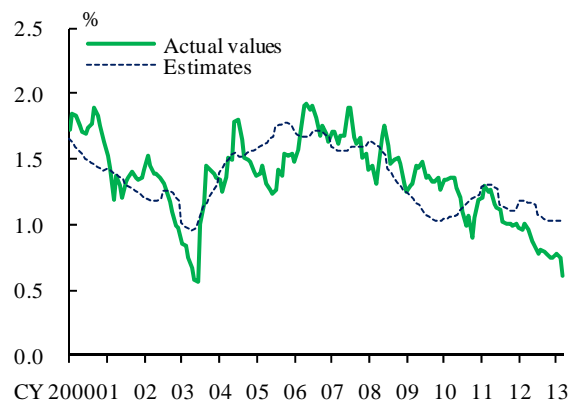
Notes: 1. Nikkei 225 options for Japan; S&P 500 options for the United States; EURO STOXX 50 options for Europe.
2. The latest data are as of March 29, 2013.

Source: Bloomberg.

Market risk: Risks implied in government bond markets

- Japanese government bond (JGB) yields have declined.
 - ✓ When long-term yields are regressed on expectations for growth and inflation, the result suggests that other factors have recently exerted downward pressure on long-term yields.
 - ✓ The declining trend of long-term JGB yields in recent years has been affected significantly by the global common component.
 - ✓ Specifically, it is possible that increased demand for government bonds -- mainly due to strengthened financial regulations and a growing demand for secured funding -- or central banks' purchases of safe assets have exerted downward pressure on long-term JGB yields as a trend through the tightening of the supply-demand balance of government bonds.
- Attention should also be paid to, for example, a potential rise in long-term JGB yields if overseas long-term yields rise, triggered by factors such as speculation about future unwinding of unconventional monetary policy measures, as well as interest rate risk arising from concern over Japan's fiscal imbalances.

Chart IV-2-13: Estimation results of long-term JGB yields^{1,2}

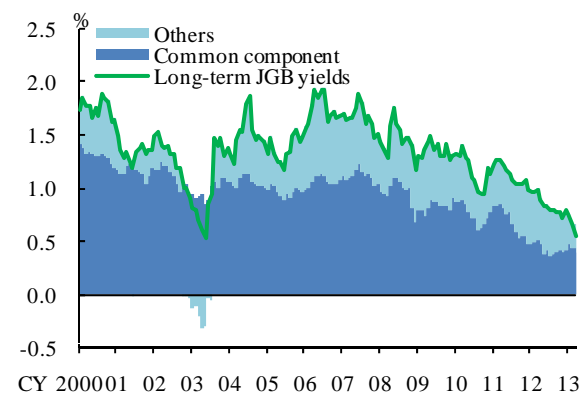


Notes: 1. Constant term, economists' forecasts of long-term CPI changes, and potential growth rates are used as explanatory variables. All estimates are significantly different from zero at the 1 percent level.

2. The latest data are as of March 2013.

Sources: Bloomberg; Consensus Economics Inc.; BOJ.

Chart IV-2-15: Decomposition of long-term JGB yields^{1,2,3}



Notes: 1. "Common component" is defined as the first principal component of U.S., U.K., German, and Japanese government bond yields.

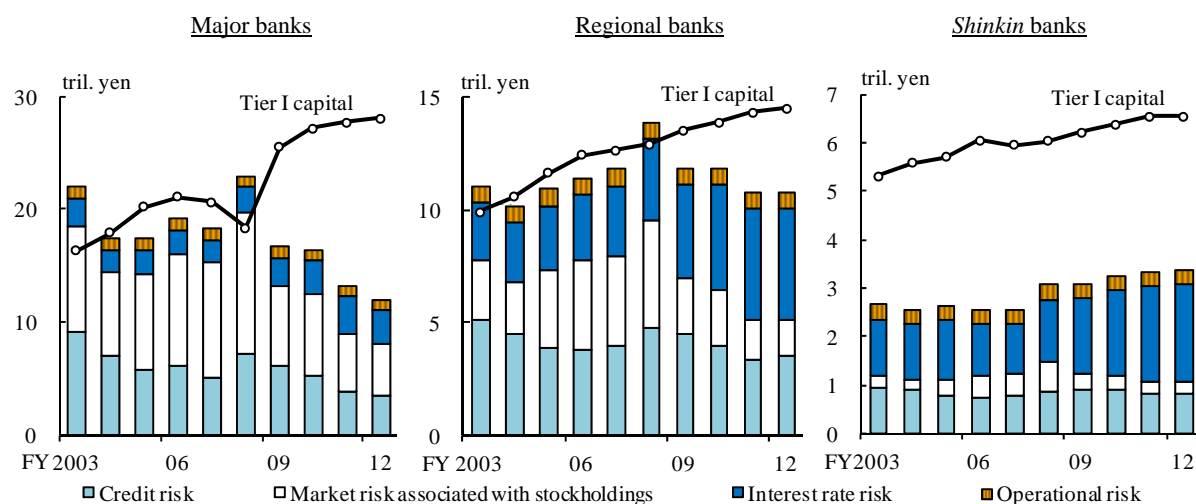
2. "Others" is the sum of the constant term and residuals from regression of JGB yields on "common component" and the constant term.

3. The latest data are as of end-March 2013.

Source: Bloomberg.

Risks at banks and *shinkin* banks: Amount of risks relative to capital

- The amount of risks banks and *shinkin* banks bear as a whole has been decreasing relative to their capital.
 - ✓ However, the amount of interest rate risk borne by regional financial institutions has increased, as the weight of investment in securities including JGBs has risen in their portfolios. In addition, major banks are still exposed to a high degree of market risk associated with stockholdings.

Chart IV-3-1: Risks and Tier I capital^{1,2,3}

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. Interest rate risk: 100 basis point value. Operational risk: 15 percent of gross profits.

2. The latest data are as of end-September 2012.

3. For *shinkin* banks, figures for Tier I capital, the amount outstanding of stockholdings, and credit risks in fiscal 2012 are assumed to be unchanged from end-March 2012, and those for gross profits are assumed to be unchanged from fiscal 2011.

Source: BOJ.

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

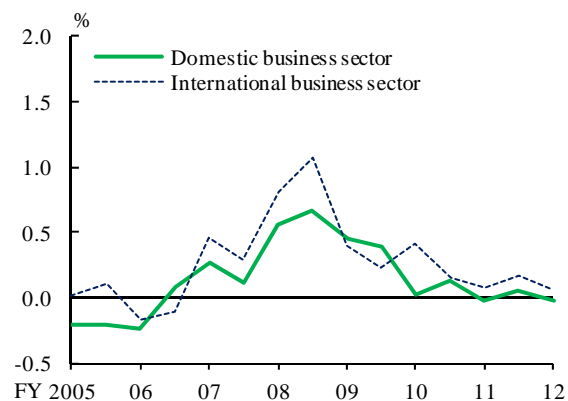
Value-at-risk: the maximum amount of losses with a certain probability of occurrence.

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

Risks at banks and *shinkin* banks: Credit costs

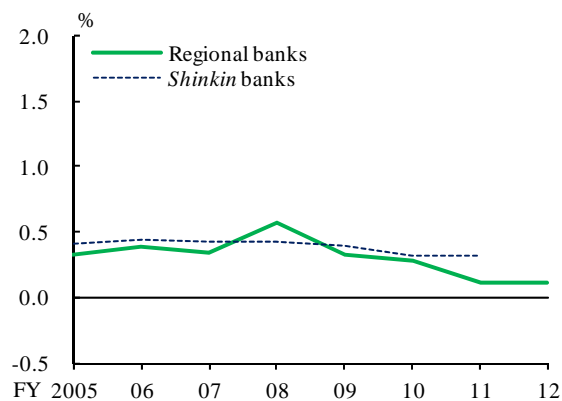
- Banks' credit cost ratio remains at low levels.
- However, the quality of loans has not improved substantially at some regional financial institutions, as some small and medium-sized firms remain in severe financial conditions.

Chart IV-3-2: Credit cost ratio (major banks)¹



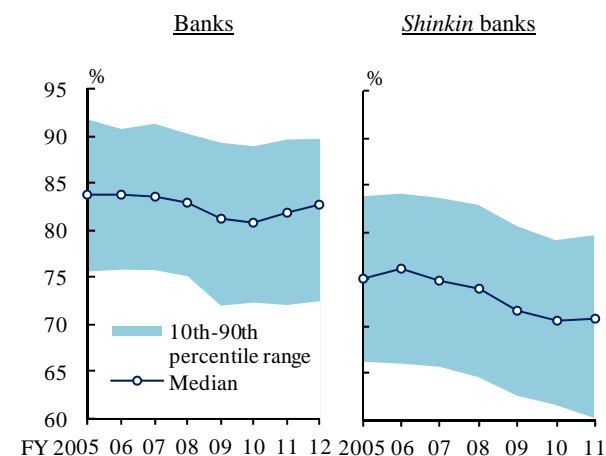
Note: 1. The latest data are as of the first half of fiscal 2012 (annualized).
Source: BOJ.

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



Note: 1. The latest data for regional banks are as of the first half of fiscal 2012 (annualized), and those for *shinkin* banks are as of fiscal 2011.
Source: BOJ.

Chart IV-3-7: Ratio of "normal" loans outstanding^{1,2}

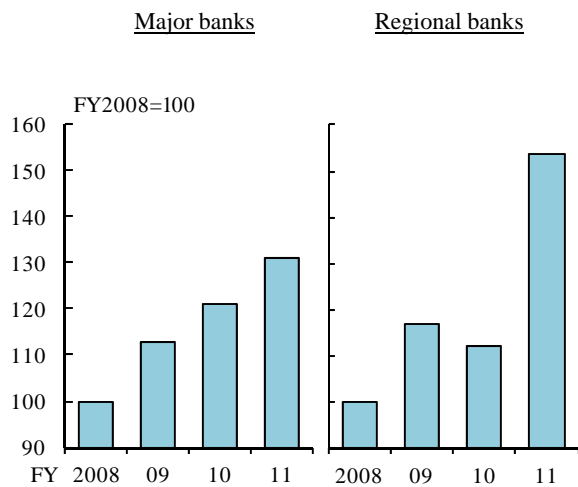


Notes: 1. In the left chart, major banks and regional banks are counted.
2. The latest data for major banks and regional banks are as of end-September 2012, and as of end-March 2012 for *shinkin* banks.
Source: BOJ.

Risks at banks and *shinkin* banks: Developments in loans to large-lot borrower firms

- An increase has been observed in the amount outstanding of loans to large-lot borrower firms.
 - ✓ Many large-lot borrower firms' credit ratings have been relatively high. However, credit ratings of some of large-lot borrower firms have deteriorated somewhat since the Lehman shock.

Chart IV-3-9: Amount outstanding of loans to large-lot borrowers^{1,2}

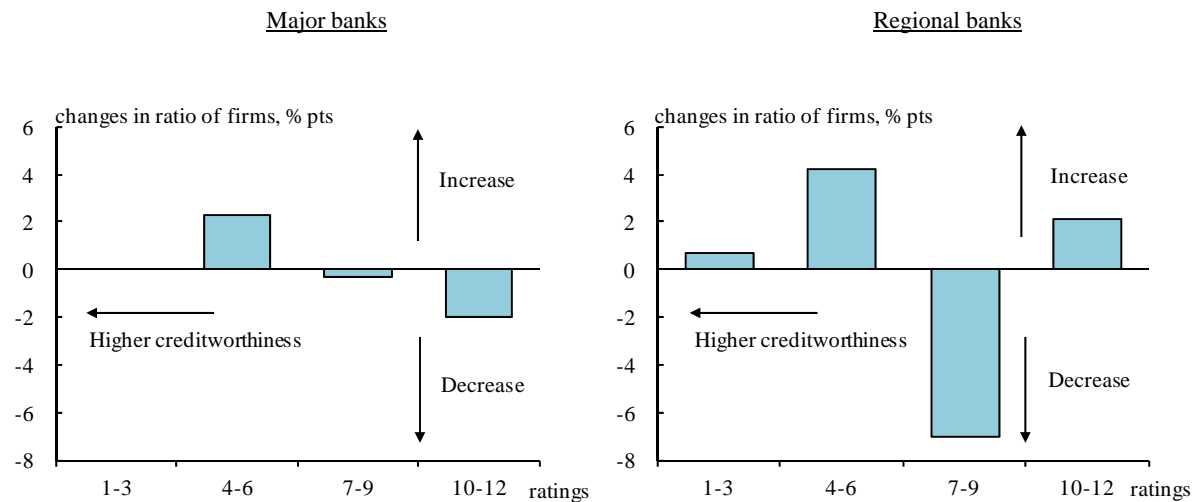


Notes: 1. Large-lot borrowers are defined as borrower firms whose amount of loans from a bank exceeds 3 percent of the bank's capital.

2. Figures are the amount outstanding of loans to firms that were large-lot borrowers as of fiscal 2011.

Source: Teikoku Databank, "SPECIA."

Chart IV-3-11: Changes in distributions of large-lot borrowers' credit ratings^{1,2}



Notes: 1. Figures are changes in distributions from fiscal 2008 to fiscal 2011.

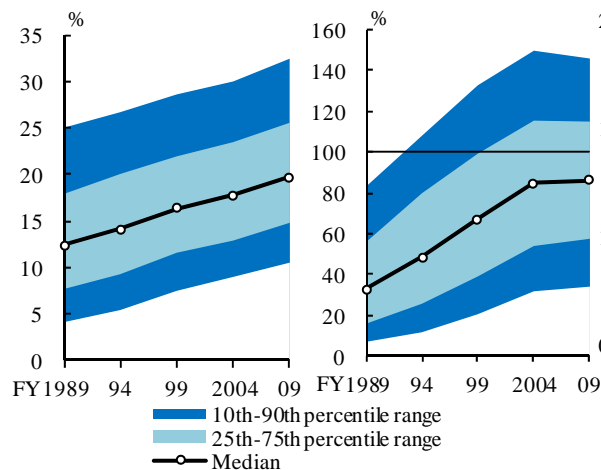
2. Large-lot borrowers are defined as borrower firms whose amount of loans from a bank exceeds 3 percent of the bank's capital.

Source: Teikoku Databank, "SPECIA."

Risks at banks and *shinkin* banks: Credit risk on housing loans

- Banks have eased their lending standards for and reduced interest rates on housing loans.
 - ✓ The debt-to-income (DTI) ratio and the loan-to-value (LTV) ratio for housing loans among young people in their 20s and 30s are both estimated to be on an uptrend.
 - ✓ Housing loan rates have been declining, and some banks have been providing housing loans at very low rates.
 - ✓ In metropolitan areas, where the competition among banks appears to be intense, housing loan rates have declined at a fast pace and the size of increase in the DTI ratio has been large. This suggests that the easing of lending standards and a reduction in interest rates are progressing particularly in these areas.

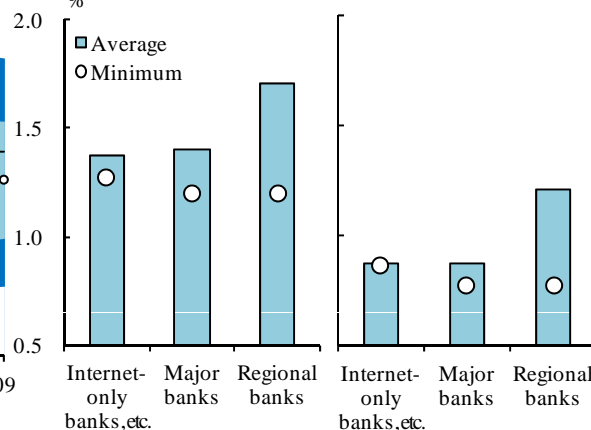
Chart IV-3-13: DTI and LTV of households with housing loans^{1,2,3,4}



- Notes: 1. The DTI is the ratio of payments of debt for houses and land to disposable income.
 2. The LTV is the ratio of liabilities for purchase of houses and/or land to the prices of houses and residential land.
 3. Two-or-more person households with housing loans whose household heads are less than 40 years old are counted.
 4. For this chart, the data in "National survey of family income and expenditure" provided by the Ministry of Internal Affairs and Communications were reorganized by the BOJ.

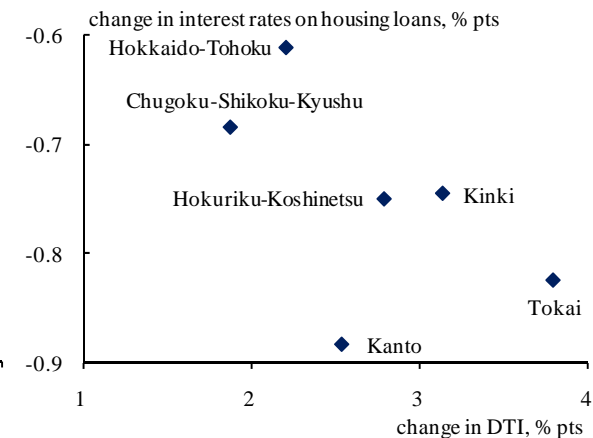
Source: Ministry of Internal Affairs and Communications, "National survey of family income and expenditure."

Chart IV-3-14: Interest rates on housing loans¹
 Initial 10-year fixed interest rates Floating interest rates



- Note: 1. Figures are effective interest rates (offered rates minus preferential rates) as of October 1, 2012.
 Source: Japan Financial News, "Nikkin report."

Chart IV-3-15: Interest rates on housing loans and DTI^{1,2,3}

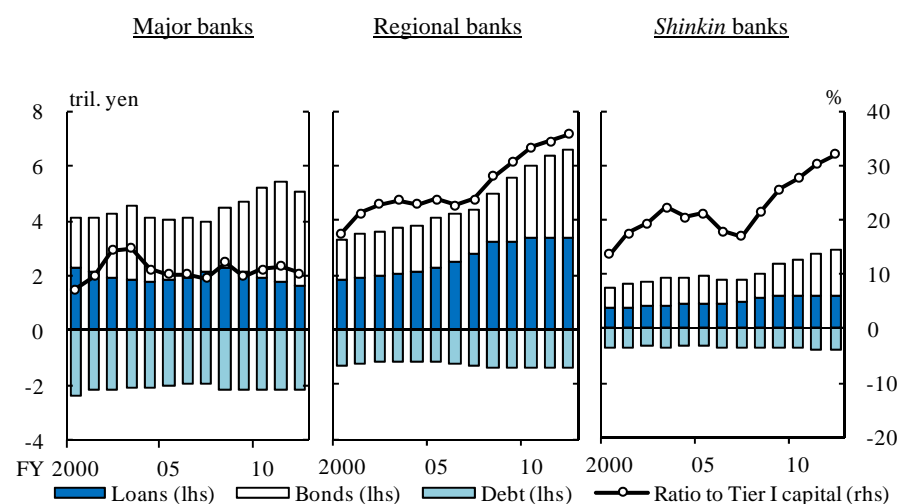


- Notes: 1. The changes in interest rates on the housing loans and the DTI are from October 2004 to October 2012 and 2004 to 2009, respectively.
 2. The interest rates on housing loans are weighted averages of floating and initial 2-year to 20-year fixed interest rates. Weights are based on the composition of newly extended housing loans by type of interest rate and region. Interest rates on housing loans are effective interest rates (offered rates minus preferential rates).
 3. For this chart, the data in "National survey of family income and expenditure" provided by the Ministry of Internal Affairs and Communications were reorganized by the BOJ.
 Sources: Japan Financial News, "Nikkin report"; Japan Housing Finance Agency, "Survey of private mortgage loans"; Ministry of Internal Affairs and Communications, "National survey of family income and expenditure"; BOJ.

Risks at banks and *shinkin* banks: Interest rate risk

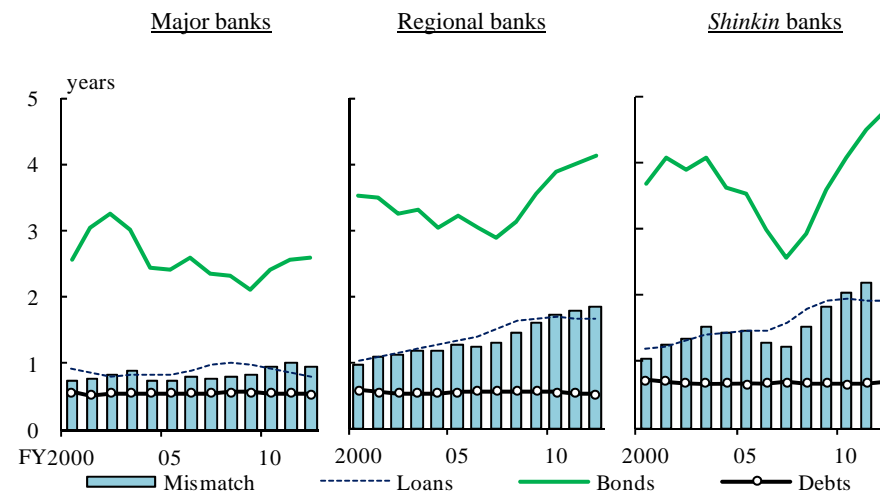
- The amount of interest rate risk borne by banks and *shinkin* banks has generally been increasing.
 - ✓ Although the ratio to Tier I capital of the 100 basis point value of interest rate risk has been more or less unchanged at major banks, it has continued to increase at regional and *shinkin* banks.
 - ✓ The average remaining maturity of bond investment has been at around 2.5 years at major banks, whereas it has lengthened to around 4 years at regional banks and nearly 5 years at *shinkin* banks.

Chart IV-3-17: Interest rate risk (100 basis point value)^{1,2}



Notes: 1. 100 basis point value in the banking book. Off-balance-sheet transactions are not included.
 2. The latest data for interest rate risk are as of end-December 2012. Those for Tier I capital of major banks and regional banks are as of end-September 2012, and those of *shinkin* banks are as of end-March 2012.
 Source: BOJ.

Chart IV-3-20: Average maturity and maturity mismatch¹

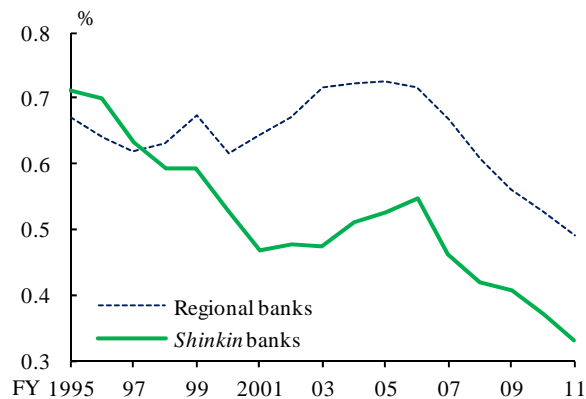


Note: 1. The latest data are as of end-December 2012.
 Source: BOJ.

Risks at banks and *shinkin* banks: Profitability

- Reflecting weak demand for funds at small and medium-sized firms and active lending attitudes at financial institutions, the profitability of regional and *shinkin* banks has weakened.
 - ✓ A look at the breakdown of firms' main banks by type of financial institution shows that a large proportion of firms changed their "main banks" from *shinkin* banks to regional banks during the last decade.
 - ✓ At financial institutions with low profitability, the profitability of their lending is low and the ratio of general and administrative expenses to interest-earning assets is high.

Chart IV-3-34: Operating profit ROA from core business¹



Note: 1. Operating profits ROA from core business = operating profits from core business / total assets.
Source: BOJ.

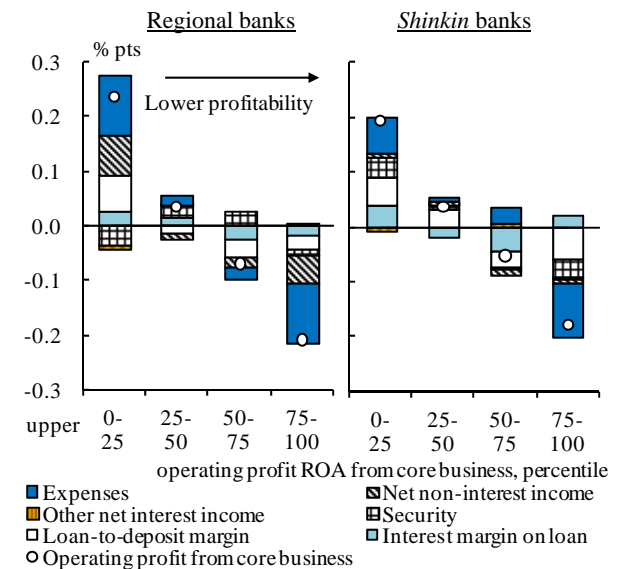
Chart IV-3-33: Shift in main banks^{1,2}

		Main banks as of fiscal 2010			
		Shinkin banks	Regional banks	Major banks	Other financial institutions
Main banks as of fiscal 2000	Shinkin banks	-	10.3	5.6	0.9
	Regional banks	2.7	-	2.9	1.1
	Major banks	3.9	7.2	-	1.1

Notes: 1. The share of firms that changed their main banks as of fiscal 2000 to different main banks in fiscal 2010.
2. SMEs with capital of less than 1 billion yen that are in the upper 25th percentile in terms of credit rating are counted.

Source: Teikoku Databank, "SPECIA."

Chart IV-3-36: Difference from the average for the same type of institution in operating profits from core business¹



Note: 1. The data are as of fiscal 2010. The figures are differences from the averages for the same type of institution.

Source: BOJ.

Risks at banks and *shinkin* banks: Changes in the profitability due to mergers

- Business integration or mergers are a potential option to improve management efficiency.
 - ✓ The record of mergers of *shinkin* banks shows that overall the profitability of *shinkin* banks improved to a level above the average in more cases after the mergers than otherwise. The decrease in the ratio of general and administrative expenses to interest-earning assets and the improvement in interest rate margins on loans grow particularly large when the geographical distance between the merged *shinkin* banks is short.
 - ✓ In cases where core profitability increased because of mergers to a level above the average profitability of *shinkin* banks, interest rate margins on loans rose, while the amount of deposits and the loans outstanding decreased to the same extent. On the other hand, in cases where profitability declined after mergers, both the loan-to-deposit ratios and interest rate margins on loans tended to decrease as the amount of deposits rose significantly faster than the pace at which loans increased.

The share of *shinkin* banks that succeeded in improving core profitability within 5 years after mergers (relative to the average of all *shinkin* banks)

59%

- Notes: 1. Core profitability is operating profit ROA from core business.
 2. The cases of mergers of *shinkin* banks since fiscal 1991 are considered.
 3. Changes in core profitability from the previous year of the merger to 5 years after the merger are depicted. The figures are the difference from the average for *shinkin* banks.

Source: BOJ.

Chart B4-2: Factors for changes in core profitability after a merger^{1,2,3}

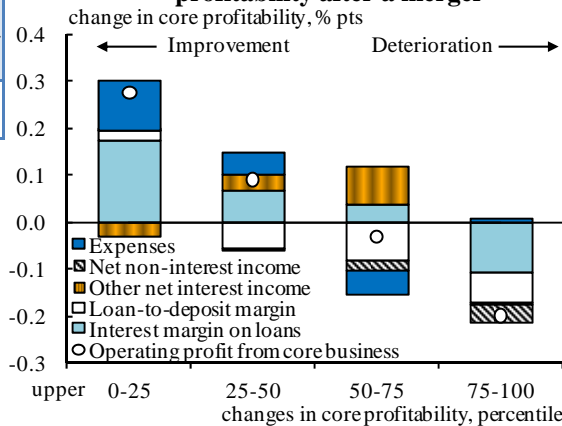
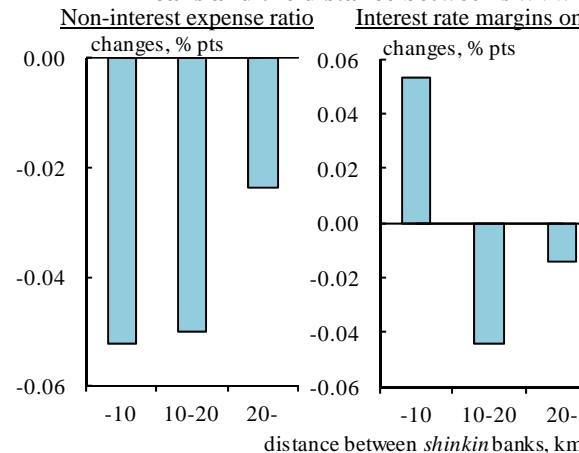
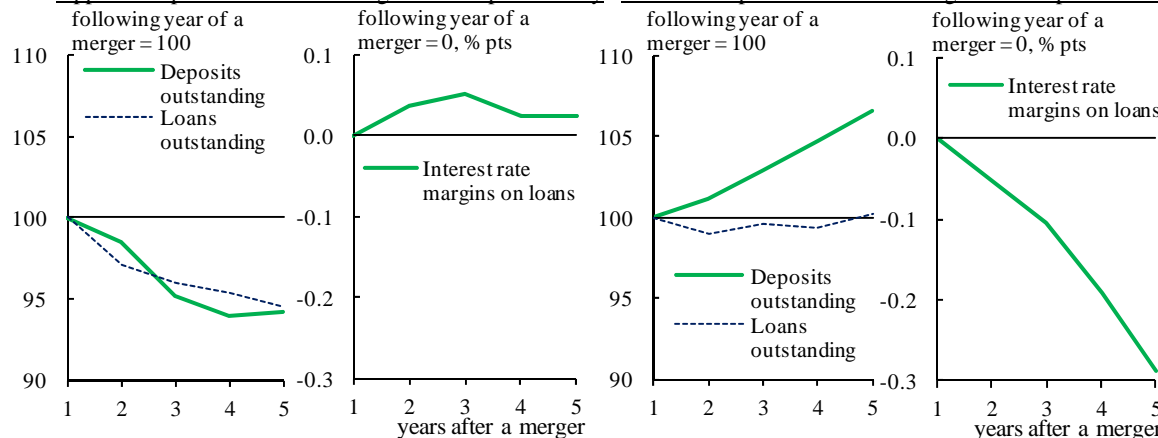


Chart B4-3: Changes in the non-interest expense ratio and interest rate margins on loans and the distance between *shinkin* banks before a merger^{1,2,3,4}



- Notes: 1. The cases of mergers of *shinkin* banks since fiscal 1991 are considered.
 2. Non-interest expense ratio = general and administrative expenses / interest-earning assets.
 3. Interest rate margins on loans = loan interest rate - funding rate.
 4. Changes in the non-interest expense ratio and interest rate margins on loans from the previous year of the merger to 5 years after the merger are depicted. The figures are the difference from the average for *shinkin* banks.
- Sources: National Association of Shinkin Banks; BOJ.

Chart B4-4: Outstanding amounts of deposits and loans, and interest rate margins on loans after a merger^{1,2,3}



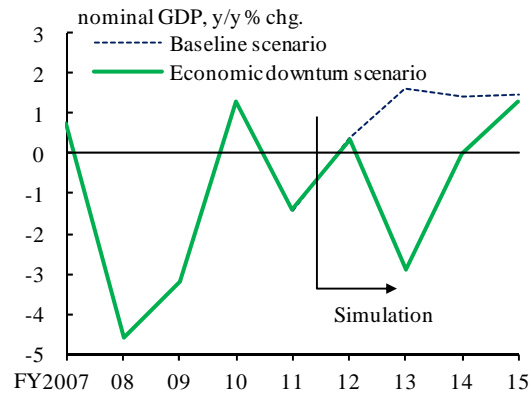
- Notes: 1. *Shinkin* banks that underwent mergers in and after fiscal 2000 are counted.
 2. Interest rate margins on loans = loan interest rate - funding rate.
 3. Changes in operating profit ROA from core business are those between the previous year of the merger and 5 years after the merger.

Source: BOJ.

Resilience against shocks in the economy and financial markets: Economic downturn scenario

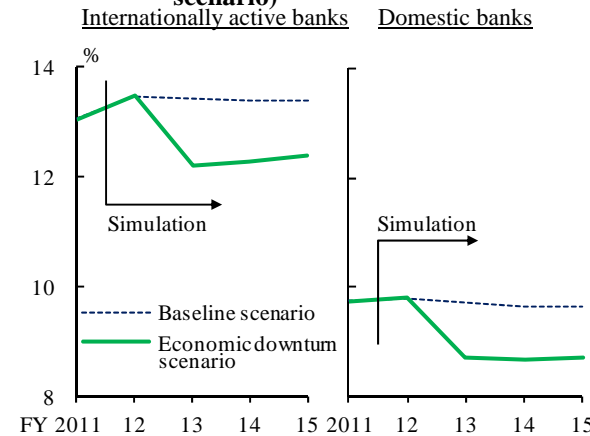
- Banks' capital bases would be able to avoid significant impairment, even if a significant negative shock occurred such as the economic downturn similar to that observed after the Lehman shock.
- Nevertheless, capital adequacy ratios may plunge at banks whose core profitability or quality of loans is low.

Chart V-1-4: The domestic economy (economic downturn scenario)



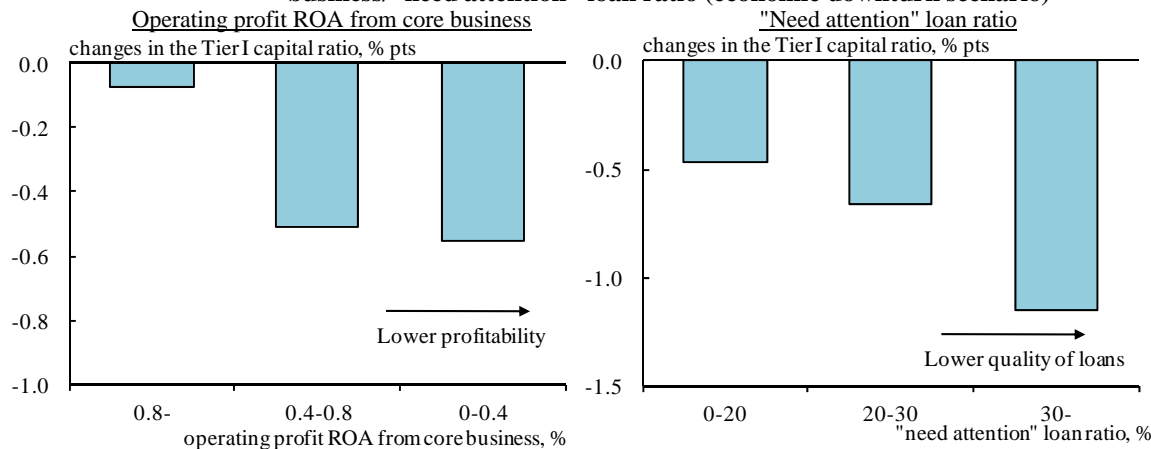
Sources: Cabinet Office, "National accounts"; Japan Center for Economic Research, "ESP forecasts"; BOJ.

Chart V-1-6: Tier I capital ratio (economic downturn scenario)¹



Note: 1. Major banks and regional banks are counted. Source: BOJ.

Chart V-1-9: Changes in the Tier I capital ratio and operating profit ROA from core business/"need attention" loan ratio (economic downturn scenario)^{1,2}



Notes: 1. Regional banks are counted.

2. The horizontal axis in the left chart shows the operating profit ROA from core business, and that in the right chart shows the share of "need attention" loans in the total amount outstanding of loans. The vertical axis shows the average of each bank's difference between the Tier I capital ratio under the economic downturn scenario and that under the baseline scenario as of the end-March 2014.

Source: BOJ.

Resilience against shocks in the economy and financial markets: Interest rate rise and unrealized losses on bondholdings

- In the case of the steepening scenario with a significant rise in long-term interest rates and a marginal rise in short-term interest rates, the effects on the Tier I capital ratios are estimated to be trivial.
- Under the parallel shift scenario in which interest rates for all maturities shift upward uniformly, unrealized capital losses on bondholdings would exceed the buffers such as the profits and unrealized gains on securities holdings, but the Tier I capital ratios would generally exceed the regulatory level.

Chart V-1-10: Effects of a rise in interest rates on capital losses on bondholdings¹

		Upward shift		
		1 % pt	2 % pts	3% pts
Internationally active banks	Steepening scenario	-1.7	-2.1	-3.6
	Parallel shift scenario	-3.2	-6.2	-8.0
Domestic banks	Steepening scenario	-1.9	-2.8	-4.2
	Parallel shift scenario	-3.4	-6.3	-8.6

Note: 1. Major banks and regional banks are counted.
Source: BOJ.

Chart V-1-12: Effects of a rise in interest rates on net interest income^{1,2}

		Baseline	Upward shift		
			1 % pt	2 % pts	3 % pts
Internationally active banks	Steepening scenario	3.8	3.9	4.0	4.2
	Parallel shift scenario		3.9	4.1	4.5
Domestic banks	Steepening scenario	3.4	3.5	3.6	3.7
	Parallel shift scenario		3.4	3.4	3.6

Notes: 1. Major banks and regional banks are counted.
2. Figures indicate net interest income under each scenario during the 1-year period starting from the base point (end-March 2013).
Source: BOJ.

Chart V-1-14: Effects of a rise in interest rates on internationally active banks' Tier I capital ratio^{1,2}

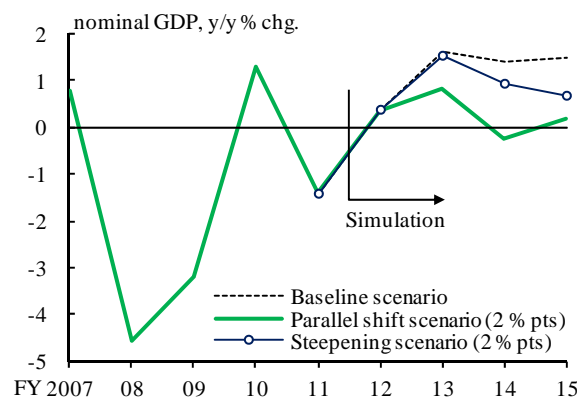
		Base point	Baseline	Upward shift		
				1 % pt	2 % pts	3 % pts
Steepening scenario	Tier I capital ratio (%)	13.4	14.1	13.9	13.9	13.5
	Changes (% pts)	—	0.7	0.5	0.5	0.0
Parallel shift scenario	Tier I capital ratio (%)	13.4	14.1	13.6	12.7	12.4
	Changes (% pts)	—	0.7	0.1	-0.7	-1.1

Notes: 1. Changes indicate the Tier I capital ratio at end-March 2014 under each scenario minus that at the base point (end-March 2013).
2. For the estimate of the Tier I capital ratio, profits, unrealized gains on securities holdings, and the tax effects are taken into account.
Source: BOJ.

Resilience against shocks in the economy and financial markets: Feedback loop between a rise in interest rates and the real economy

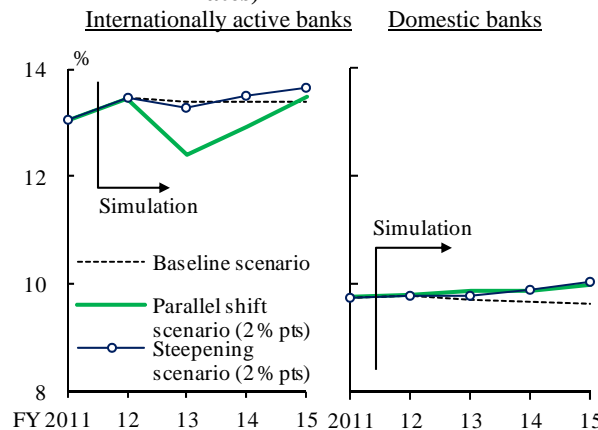
- How the banks' behavior and the real economy affect each other reflecting an upward shock to interest rates is estimated using the Financial Macro-econometric Model (FMM).
- Under the 2 percentage point steepening scenario, the effects on the real economy and banks' business are limited.
- Under the 2 percentage point parallel shift scenario, the Tier I capital ratios of internationally active banks would decline notably. The nominal GDP growth rate would deviate downward from the baseline scenario by about 1.7 percentage points at the maximum.
 - ✓ If the parallel shift scenario is accompanied by improvement in economic activity, the credit cost ratios would deviate slightly downward from the baseline scenario, indicating that the effects on banks' business would be limited.

Chart V-1-16: Domestic economy (upward shift scenarios of interest rates)



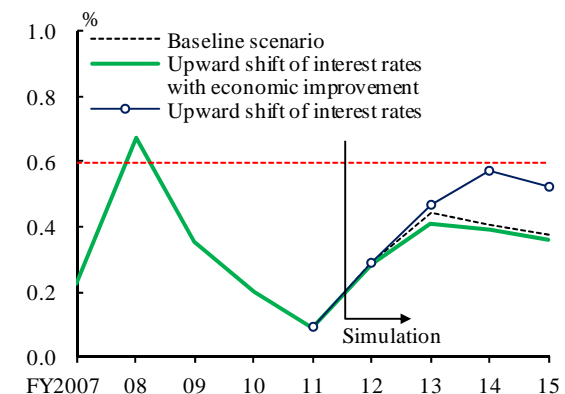
Sources: Cabinet Office, "National accounts"; Japan Center for Economic Research, "ESP forecasts"; BOJ.

Chart V-1-18: Tier I capital ratio (upward shift scenarios of interest rates)¹



Note: 1. Major banks and regional banks are counted.
Source: BOJ.

Chart V-1-20: Credit cost ratio (upward shift of interest rates with economic improvement)^{1,2}



Notes: 1. Major banks and regional banks are counted. The horizontal line indicates the break-even point in the first half of fiscal 2012.

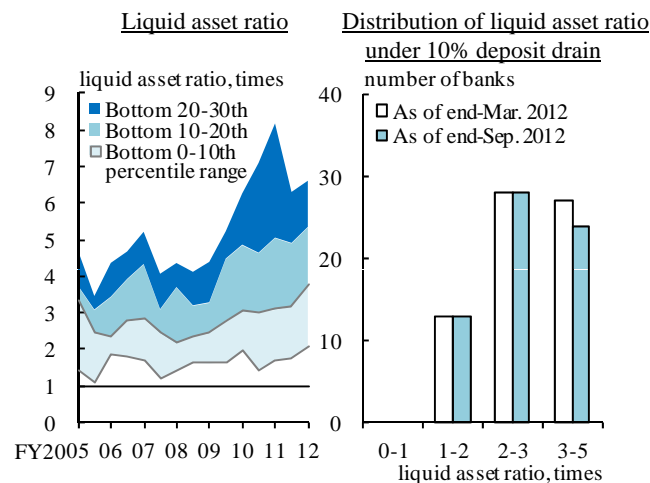
2. "Upward shift scenario of interest rates" is a parallel shift scenario (2 percentage points).

Source: BOJ.

Resilience against funding liquidity risk

- Even if banks become unable to raise funds from some markets, it is estimated that they would generally hold a sufficient amount of funding liquidity both in the domestic and foreign currencies.
 - ✓ Even under an assumption of a shock in which market funding in yen comes to a complete stop for 3 months and 10 percent are drained out of deposits whose term until the renewal of the deposit rate is 3 months or less, all banks would have sufficient liquid assets necessary for funding.
 - ✓ Even under an assumption that market funding in foreign currencies comes to a complete stop for 1 month, Japan's banks would still have an adequate amount of foreign currency liquidity buffers to cover funding shortages. However, under an extremely severe stress scenario in which all foreign currency funding markets become dysfunctional for 1 month, funding shortages would amount to almost the same level as the current foreign currency liquidity buffers.

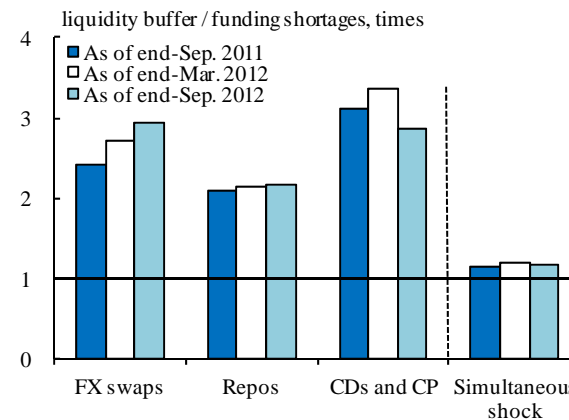
Chart V-2-1: Stress testing against liquidity risk in yen funding^{1,2,3}



- Notes: 1. Major banks (excluding trust banks) and regional banks are counted.
 2. Liquid asset ratio = (current accounts at the Bank of Japan + cash + government bonds) / net market funding maturing within 3 months. The latest data of the left chart are as of end-September 2012.
 3. The right chart indicates the distributions of liquidity asset ratios under the assumption that 10 percent are drained out of deposits whose term until the renewal of the deposit rate is 3 months or less.

Source: BOJ.

Chart V-2-2: Stress testing against foreign currency liquidity risk^{1,2}



- Notes: 1. Major banks and regional banks are counted.
 2. The duration of funding shortages in each market is assumed to be 1 month.

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

VI. Conclusion

Assessment of the financial system stability

■ Japan's financial system as a whole has been maintaining stability.

- Thus far, there is no indication that warns of financial imbalances stemming from bullish expectations. Due attention should be paid, however, to the fact that the amount outstanding of JGBs held by financial institutions remains large.
- The amount of risks banks and *shinkin* banks bear as a whole has been decreasing relative to their capital.
- The resilience of financial institutions is generally strong.
 - ✓ Banks' capital bases as a whole would be able to avoid significant impairment, even if a significant negative shock occurred such as the economic downturn similar to that observed after the Lehman shock.
 - ✓ Nevertheless, capital adequacy ratios may plunge at banks whose core profitability or quality of loans is low.

Management challenges for Japan's financial institutions

■ Financial institutions need to raise their profitability.

- It is important for financial institutions to tap potential demand for financial services by enhancing the effectiveness of their support for client firms that are reconstructing their business or that are engaged in growing business areas by, for example, strengthening their expertise to identify projects' growth potential and risks.
- One potential option for financial institutions seeking to raise their profitability is to improve their business efficiency through mergers.

■ Financial institutions need to strengthen their capital bases.

- It is indispensable for them to enhance their capital to continue financial intermediation in areas with high risk and return.

■ Financial institutions need to continue to enhance the effectiveness of risk management.

- It is vital for financial institutions to restrain concentration risk associated with loan portfolios at home and abroad and strengthen their risk management of large-lot loans, as well as to work further to support firms' reconstruction.
- It is important for them to grasp a range of risks associated with bondholdings.
- They need to continue to manage market risk associated with stockholdings appropriately, taking into account the effects of developments in stock prices on, for example, their profits.