Financial System Report

Summary

October 2016

Bank of Japan

October 2016: Comprehensive assessment and highlights

Financial intermediation

- While the funding environment among firms and households has been highly accommodative with continued monetary easing, signs of overheating, such as excessive risk taking and credit growth, have not been observed on the whole.
- However, attention should be paid to developments in the real estate market and to financial instability risks that could arise if competition among financial institutions overly intensifies.

Stability of the financial system

- Japan's financial system has been maintaining stability.
- Financial institutions' capital adequacy ratios are sufficiently above regulatory requirements, and their capital levels are generally adequate relative to the amount of macro risks undertaken. Results of macro stress testing suggest generally strong resilience against stresses.
- In terms of liquidity, financial institutions have sufficient yen funds. Their liquidity buffer can cover funding shortages in foreign currencies, even if funding conditions become difficult for a certain period. Bolstering stable foreign currency funding bases remains a challenge, as the share of market funding is still large.

Potential vulnerabilities due to the decline in financial institutions' profitability

- Financial institutions have sufficient capital bases at present, which will allow them to continue risk taking even if profitability remains subject to downward pressure for the time being.
- However, if the recent trend of declining profits persists further, as the regional population and customer base continue to shrink alongside the effects of negative interest rates, this could have a negative impact on the accumulation of capital, leading to a weakening in the financial intermediation function.
- At the same time, financial system stability could be impaired, in a case where financial institutions shift toward excessive risk taking in view of maintaining their profitability.
- Regarding potential vulnerabilities due to the declining profitability, it is necessary to examine both the risk of overheating and of a gradual pullback in financial intermediation.

Challenges from a macroprudential perspective

- From the viewpoint of the accumulation of macro risks, the challenge is to (1) strengthen the ability to respond to risks in areas where Japanese financial institutions are proactively stepping up their risk taking.
- The challenges from the perspective of structural changes are to respond to (2) the increasing systemic importance of large financial institutions and (3) the decline in profitability associated with domestic deposit-taking and lending activities.

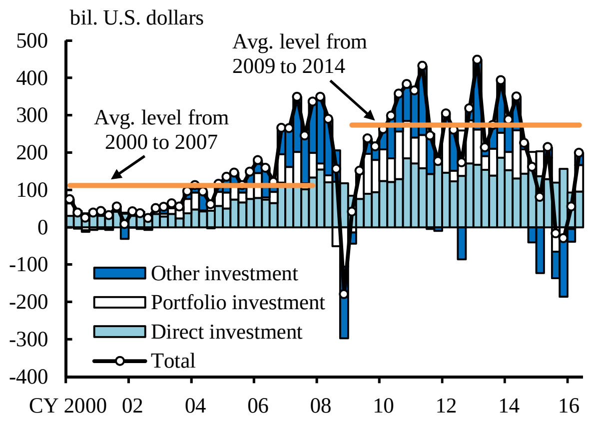
Contents

1. Developments in financial markets

- In global financial markets, while investors' risk aversion temporarily heightened following the result of the U.K. referendum in late June -- in which a majority voted to leave the EU -- calm gradually returned to markets thereafter. There are signs that search for yield activities are becoming active again, against the background of advanced economies' long-term interest rates at low levels. Careful attention should thus be paid to whether global fund flows suddenly change.
- Meanwhile, although there were phases during which developments overseas affected Japanese markets as seen particularly in stock price declines and the continued appreciation of the yen, highly accommodative financial conditions have been maintained with the Bank of Japan's introduction of "Quantitative and Qualitative Monetary Easing with Yield Curve Control" in September 2016.

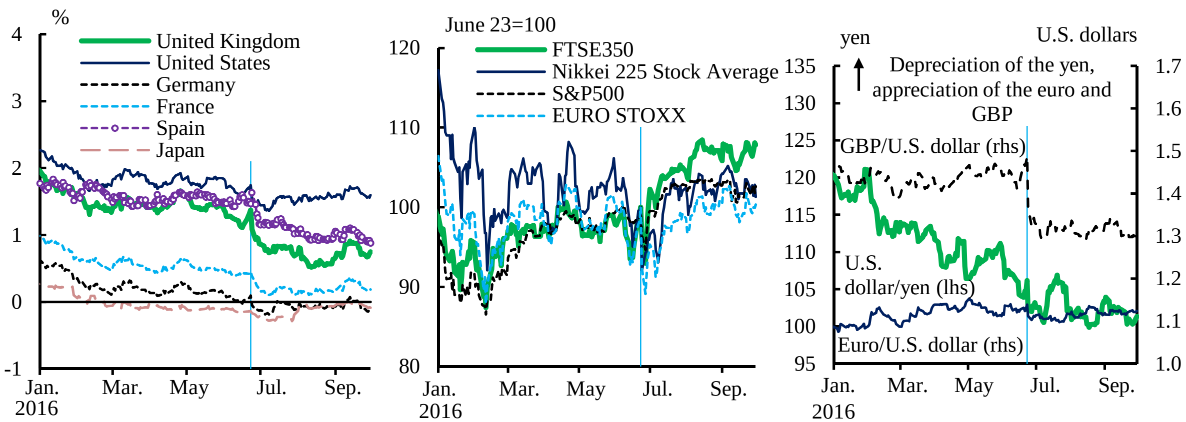
Chart II-1-9: Capital flows into emerging markets

Balance of payment statistics



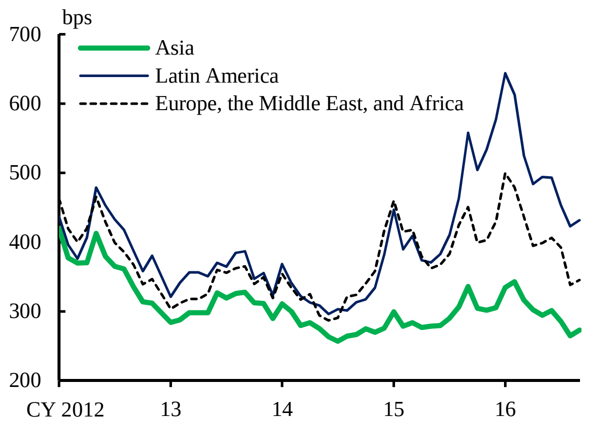
Source: Haver Analytics.

Chart II-1-2: Market reaction to the result of the U.K. referendum



Note: *1.* The vertical lines indicate the U.K. referendum on June 23, 2016.
Source: Bloomberg.

Chart II-1-10: Credit spreads of EM corporate bonds



Source: J.P. Morgan.

2. Examination of financial intermediation

(1) Financial institutions' domestic loans

- Financial institutions' lending stances have remained accommodative, and the year-on-year growth rate in their domestic loans outstanding has been around 2 percent.
- Loans have continued to grow, particularly loans to firms. While loans to a large number of industries have been increasing, real estate loans have been growing at an even faster pace.
- Financial institutions' domestic loan interest rates have continued to decline. In this situation, some financial institutions have been taking a more proactive stance with regard to loans with relatively wider profit margins (subordinated loans, loans to local firms, and card loans).

Chart III-1-1: Domestic loans outstanding among financial institutions

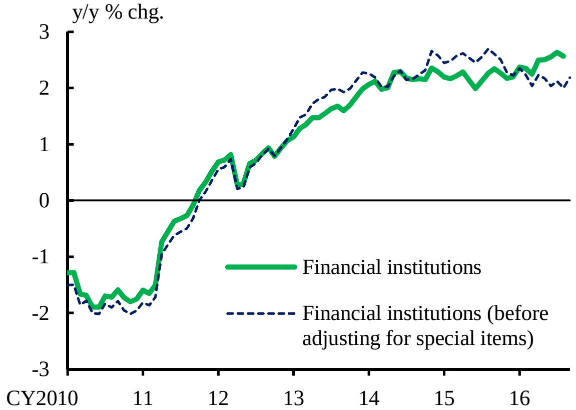


Chart III-1-5: Loans outstanding among financial institutions by type of borrower

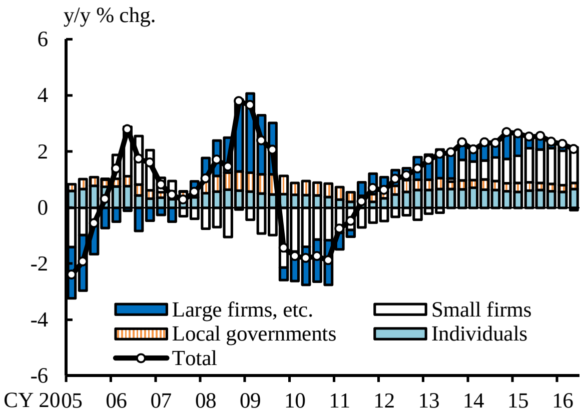


Chart III-1-12: Loans to the real estate industry among financial institutions

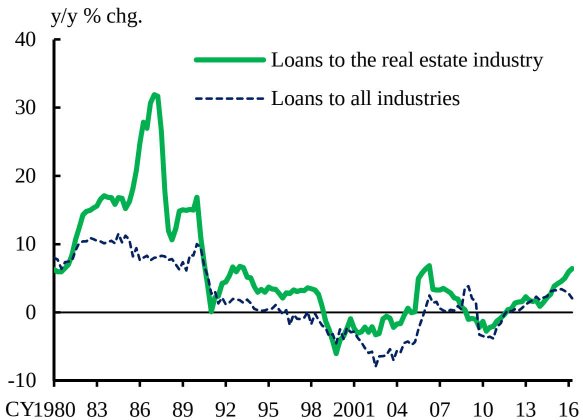
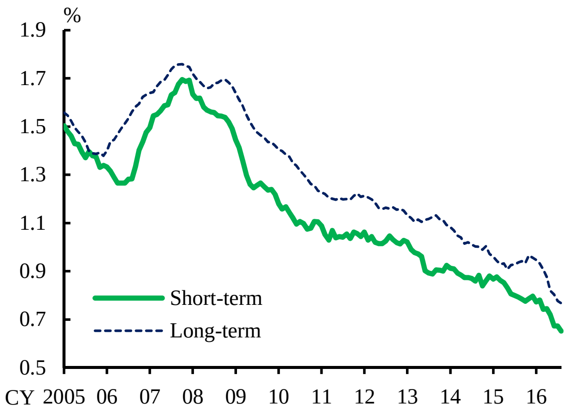


Chart III-1-15: Average contract interest rates on new loans and discounts among domestically licensed banks



2. Examination of financial intermediation

(2) Financial institutions' overseas loans

- Banks' overseas loans, particularly loans to advanced economies such as North America, have continued to show growth, increasing by over 10 percent on a year-on-year basis in U.S. dollar terms. Loans to Asia have remained more or less unchanged in a situation where demand for funds has ebbed in tandem with slower economic growth.
- Banks have maintained a proactive stance on overseas business expansion on the whole. Recently, however, some have taken a cautious turn in their initial assessment of loans in terms of both creditworthiness and profitability amid the slowdown in emerging economies, low commodity prices, and shrinkage of lending margins due to the rise in foreign currency funding costs.

Chart III-1-19: Banks' foreign currency-denominated loans and loans by overseas branches

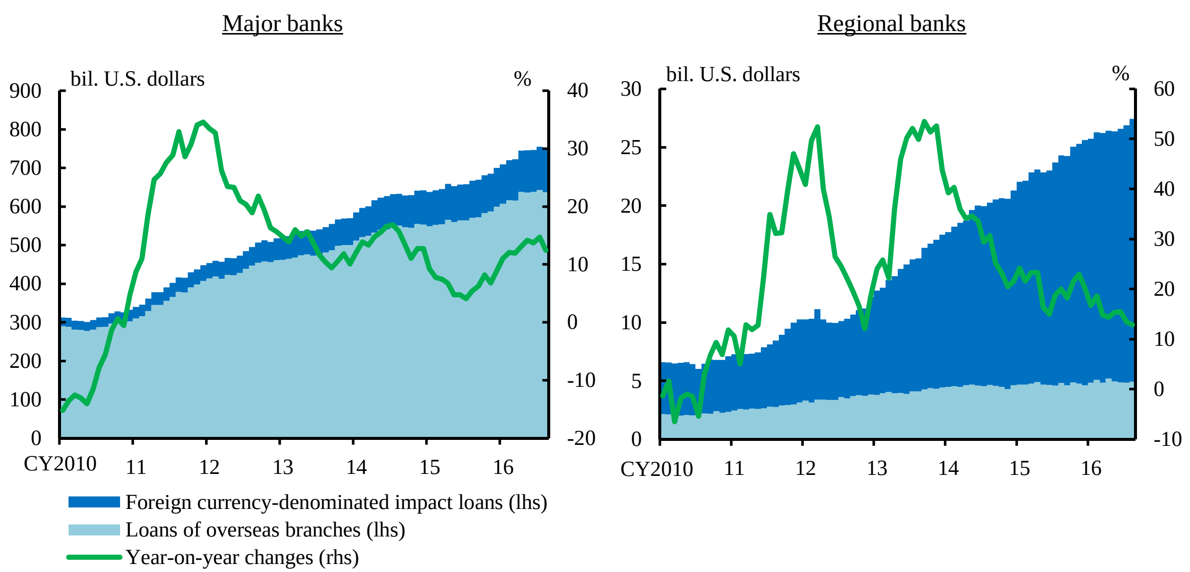
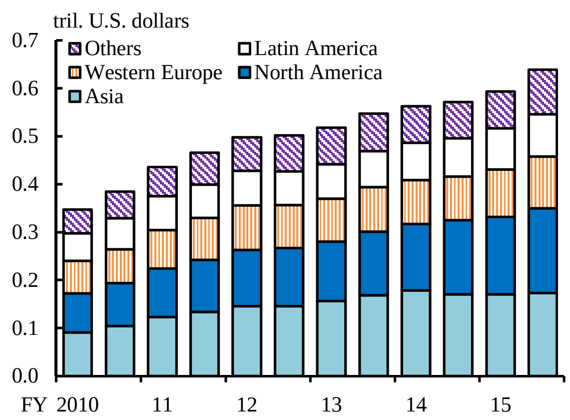


Chart III-1-20: Overseas loans outstanding of three major banks by region



Sources: Published accounts of each bank.

2. Examination of financial intermediation

(3) Securities investment by financial institutions

- Yen-denominated bond investment by financial institutions is on a declining trend on the whole, although it remains at a high level compared with the past, particularly among regional financial institutions.
- Meanwhile, financial institutions have continued to augment their risk-taking stance by increasing their outstanding amount of investments in risky assets, such as foreign bonds and investment trusts. However, a temporary restraint in foreign bond investment can be seen, partly due to the rise in foreign currency funding costs.

Chart III-1-24: Outstanding amount of yen-denominated bonds among financial institutions

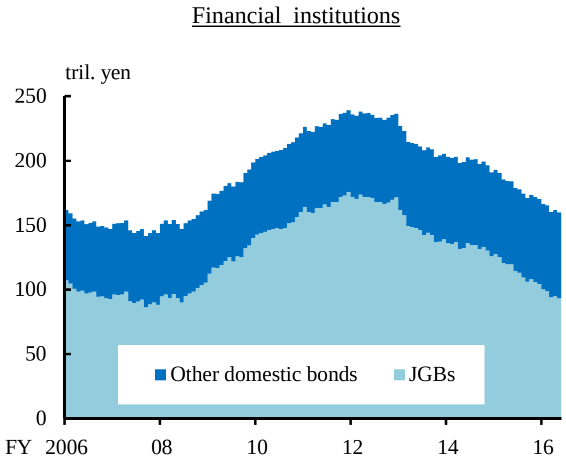


Chart III-1-25: Outstanding amount of foreign bonds among financial institutions

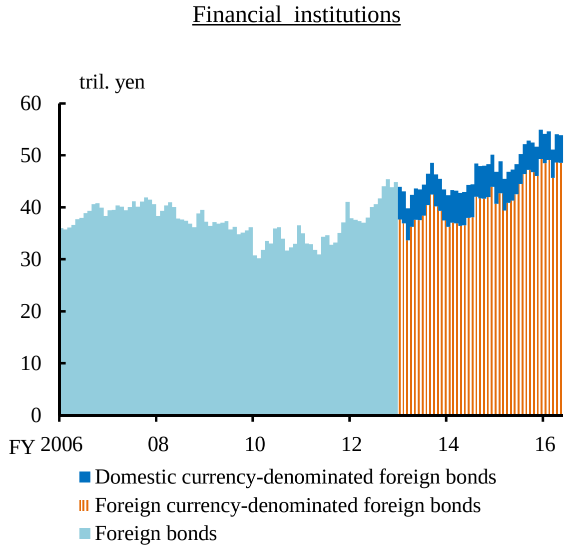
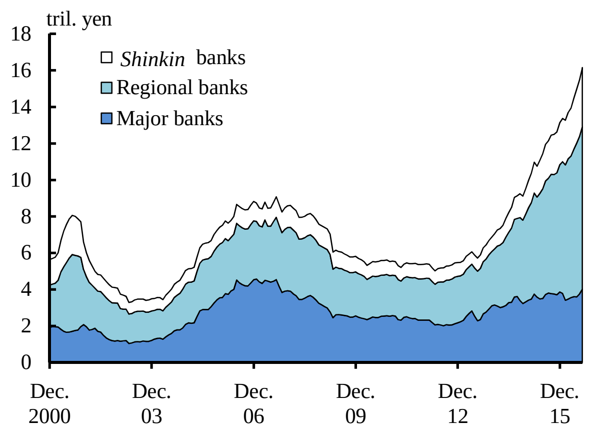


Chart III-1-26: Outstanding amount of investment trusts, etc. among financial institutions

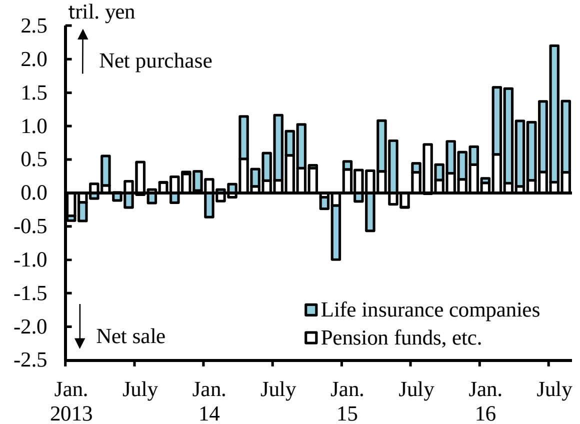


2. Examination of financial intermediation

(4) Developments in investment by institutional investors

- As domestic interest rates have declined further, institutional investors -- such as life insurance companies and pension funds -- and depository institutions with a focus on market investment -- such as Japan Post Bank and central organizations of financial cooperatives -- have further increased their propensity to accumulate foreign bonds and other risky assets in their investment portfolio.

Chart III-2-2: Medium- and long-term foreign bonds investment by institutional investors



Source: Ministry of Finance.

Chart III-2-3: Outstanding amount of yen-denominated bonds and foreign bonds of Japan Post Bank and central organizations of financial cooperatives

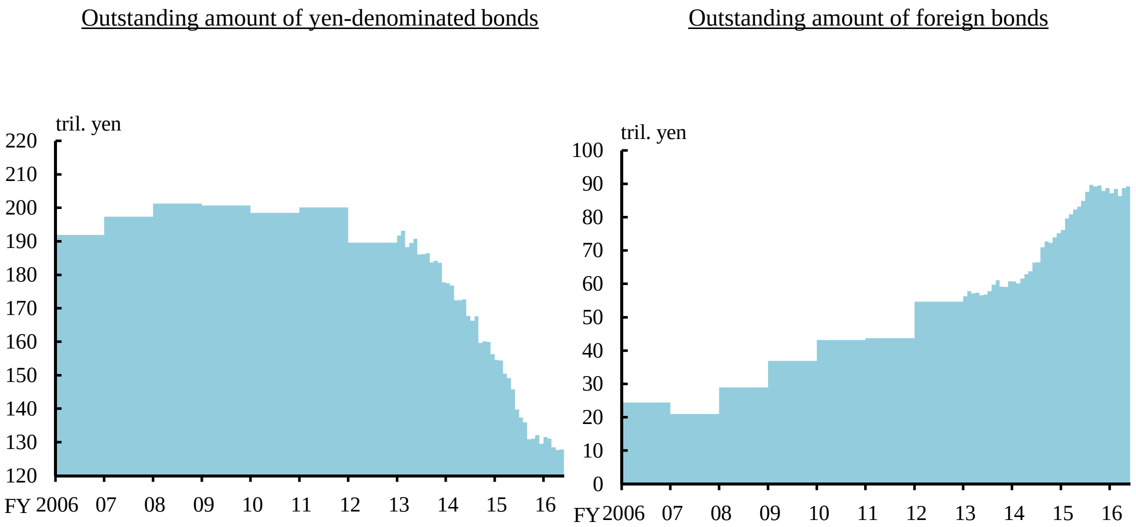
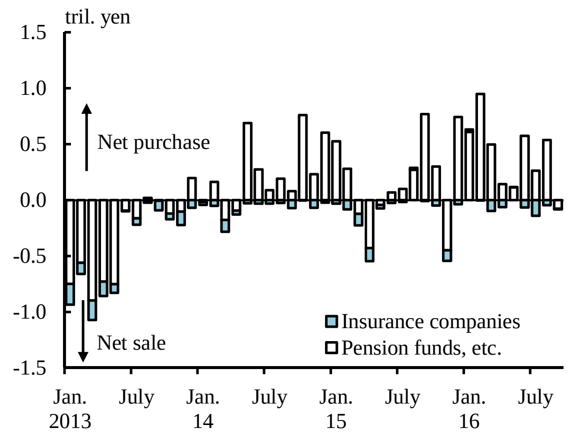


Chart III-2-4: Stock investment by institutional investors



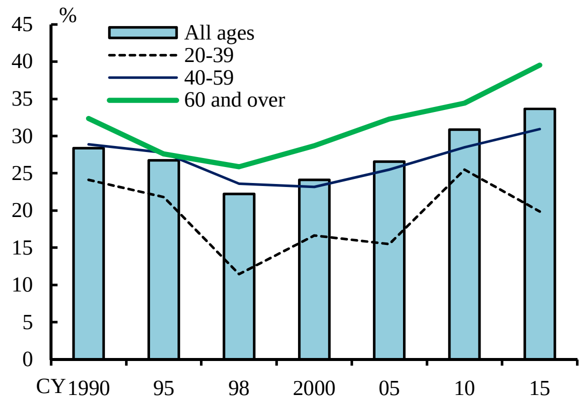
Source: Tokyo Stock Exchange.

2. Examination of financial intermediation

(5) Developments in households' investment activities

- Households' moves to diversify their asset portfolios have lost momentum somewhat since the summer of 2015. While the inflow of individuals' funds to stock investment trusts has been weak, the pace of inflow into bonds, particularly JGBs issued exclusively to retail investors, has picked up.
- Nevertheless, the trend of gradually increasing the share of risky assets in households' financial portfolios appears to have been maintained. Households are placing more emphasis on total returns, taking into account long-term unrealized gains as well, and financial institutions have continued to make efforts to increase their client assets.

Chart B1-1: Proportions of households holding risky assets



Source: Central Council for Financial Services Information.

Chart III-3-1: Client assets held by major securities companies

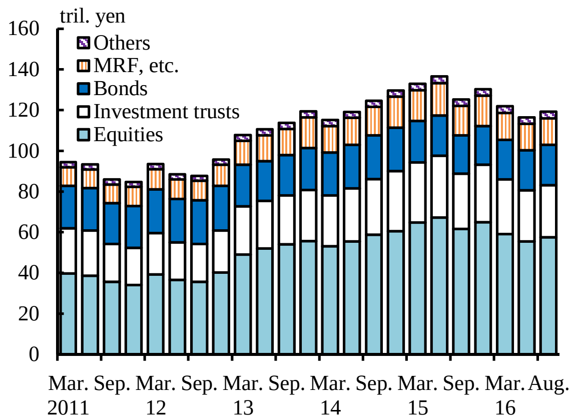


Chart III-3-2: Capital flows by product among major securities companies

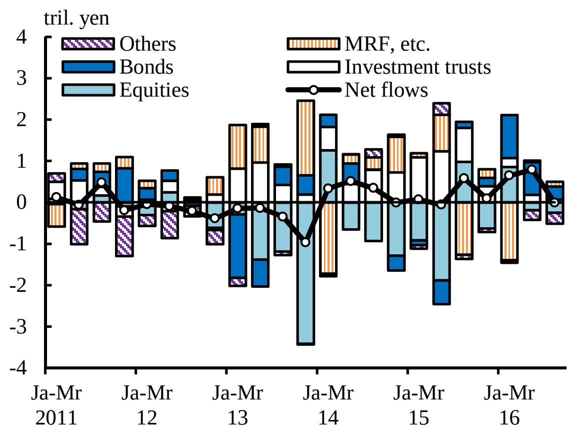
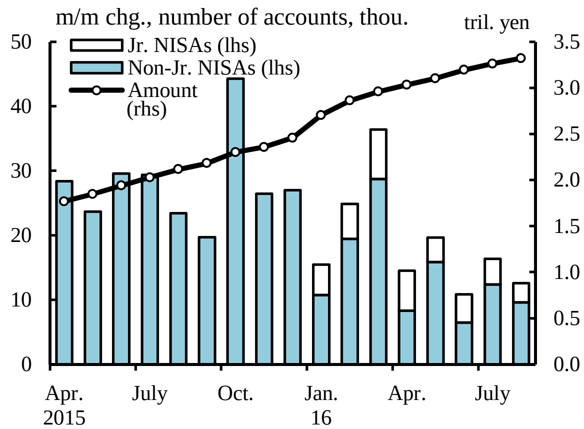


Chart III-3-3: Purchases through NISAs and the number of NISAs opened

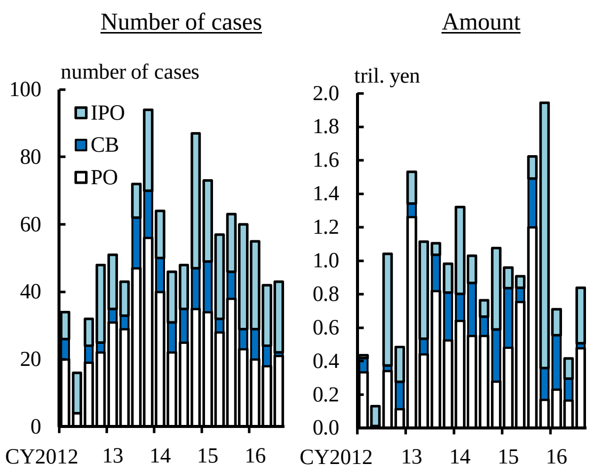


2. Examination of financial intermediation

(6) Financial intermediation through financial markets

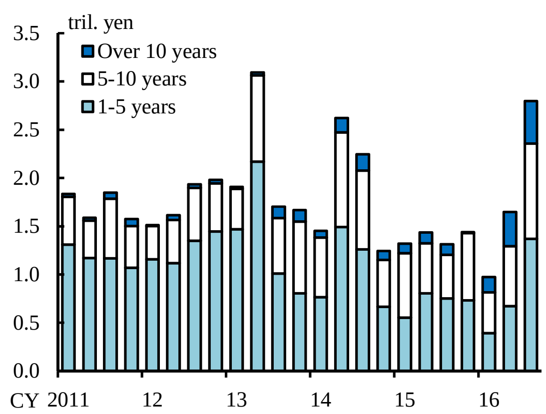
- In terms of equity financing through the stock market, transactions have remained lackluster against the backdrop of volatile stock prices, although firms' proactive financing stance seems to have been largely unchanged.
- Issuing conditions for CP and corporate bonds continue to be favorable, as seen from the further decline in yields on new issues. Under these circumstances, in the corporate bond market, an increasing number of firms have issued super-long-term bonds.

Chart III-4-1: Equity financing



Source: I-N Information Systems.

Chart III-4-4: Amount of corporate bonds issued



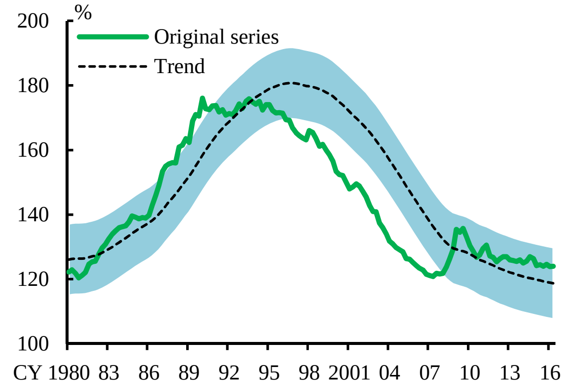
Source: I-N Information Systems.

2. Examination of financial intermediation

(7) Examination of signs of overheating -- Financial Activity Indexes --

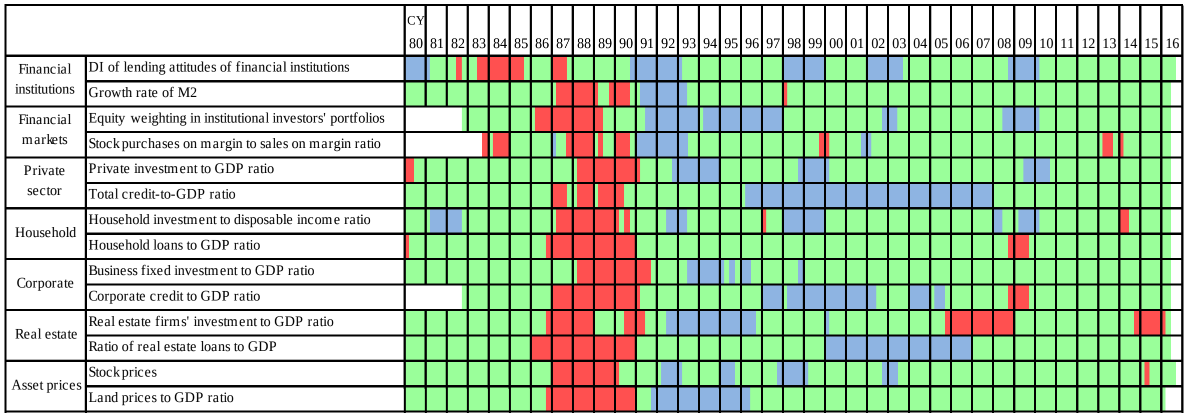
- The funding environment among firms and households has been highly accommodative, in light of the aforementioned financial intermediary activities. On the whole, even in such a situation, signs of overheating such as excessive risk taking and credit growth, have not been observed.
- Looking at the Financial Activity Indexes, all 14 indicators are "green," at present showing that many financial activities exhibit no significant deviation from their trends. However, the "real estate firms' investment to GDP ratio" and the "DI of lending attitudes of financial institutions" warrant close monitoring, as they are "green" but approaching "red."

Chart III-5-2: Total credit-to-GDP ratio



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

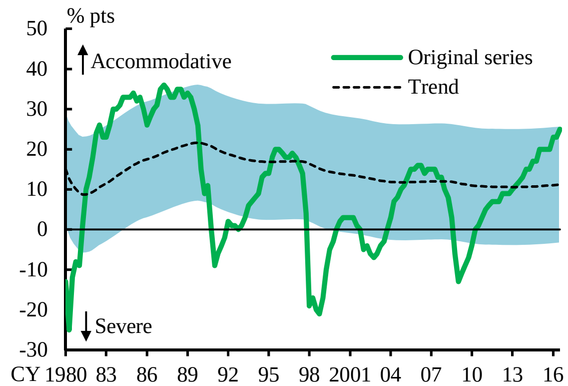
Chart III-5-1: Financial Activity Indexes



Sources: Bloomberg; Cabinet Office, "National accounts"; Japan Real Estate Institute, "Urban land price index"; Ministry of Finance, "Financial statements statistics of corporations by industry"; Tokyo Stock Exchange, "Outstanding margin trading, etc."; BOJ, "Flow of funds accounts," "Loans and bills discounted by sector," "Money stock," "*Tankan*."

Note: *1.* Shaded areas in the above chart represent the following: (1) red areas show that an indicator has risen above the upper threshold, that is, it is tending toward overheating; (2) blue areas show that an indicator has declined below the lower threshold, that is, it is tending toward excessive contraction; (3) green areas show a limited tendency toward either extreme.

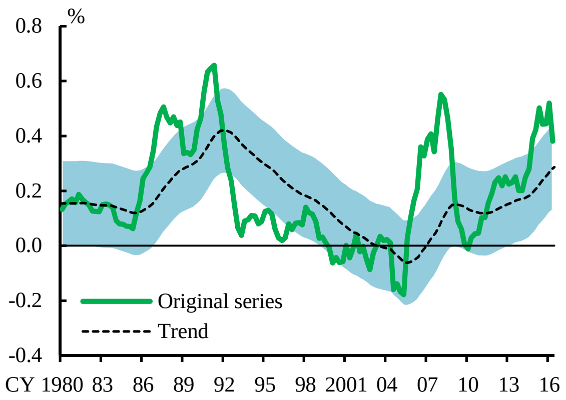
Chart III-5-6: DI of lending attitudes of financial institutions



Developments in the real estate market

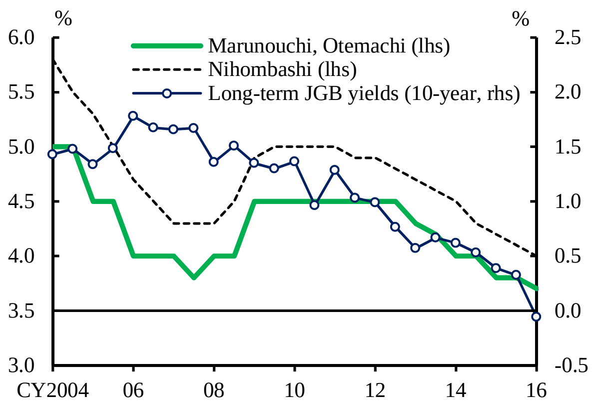
- Although the real estate market currently does not appear to show signs of overheating on the whole, some developments at the margin warrant attention.
- For example, as capitalization rates have declined and real estate prices have continued to increase in metropolitan areas, lofty transaction prices with low yields have been seen in some cases. Moreover, it can be observed that J-REITs and other firms have been acquiring properties not just in metropolitan areas, but also in provincial regions. Regional banks have stepped up equity investments in real estate funds further, including J-REITs, while the growth rate of banks' real estate loans has increased further.
- Thus, developments in real estate markets continue to warrant close monitoring henceforth.

Chart III-5-3: Real estate firms' investment to GDP ratio



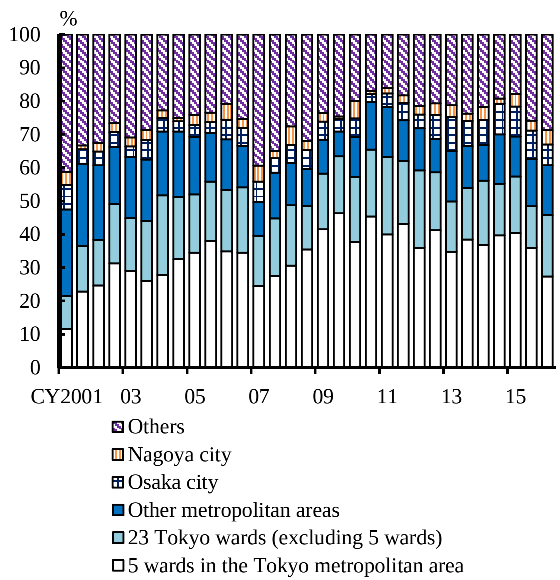
Sources: Cabinet Office, "National accounts"; Ministry of Finance, "Financial statements statistics of corporations by industry."

Chart III-5-4: Capitalization rates of office buildings in Tokyo metropolitan area



Sources: Bloomberg; Japan Real Estate Institute, "The Japanese real estate investor survey."

Chart III-5-5: Number of real estate transactions by region



Source: Japan Real Estate Institute.

3. Stability of the financial system: a static assessment

(1) Macro risk profile and capital bases of financial institutions

- Financial institutions' capital adequacy ratios are sufficiently above regulatory requirements.
- Financial institutions' capital levels are generally adequate relative to the amount of risk undertaken. It can be judged that financial institutions currently have sufficient capacity to absorb losses and ability to take on risks.

Chart IV-4-1: Capital adequacy ratios

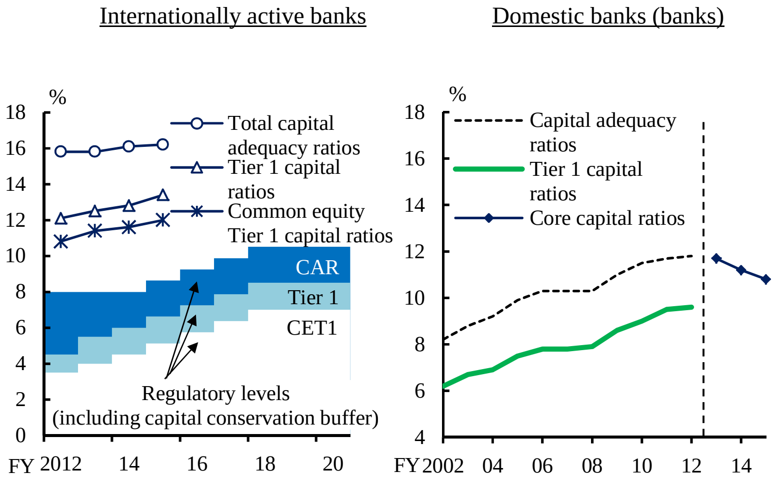
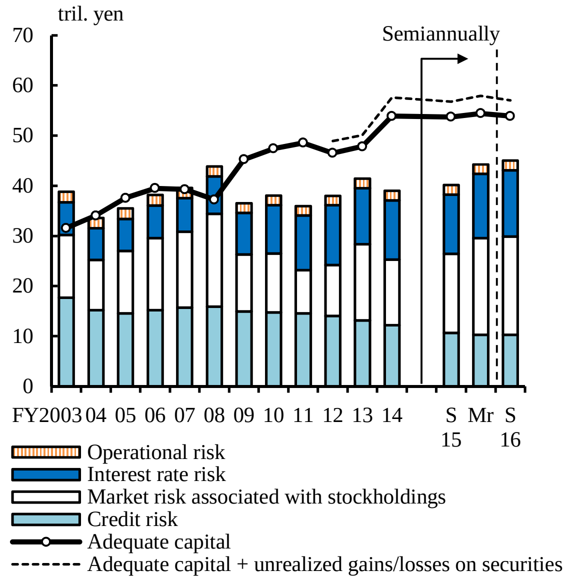


Chart IV-4-2: Risks borne by financial institutions and amount of adequate capital



Risks borne by financial institutions

- Looking at financial institutions' risks by risk category, (i) the amount of financial institutions' credit risk has decreased compared to the previous *Report*, due to an improvement in asset quality. (ii) The amount of interest rate risk associated with financial institutions' yen-denominated bondholdings has increased somewhat and remains at a high level compared with the past. (iii) The amount of foreign currency interest rate risk has increased, particularly among regional banks, whose increase has been relatively large. (iv) The amount of market risk associated with stockholdings has increased mainly due to the rise in market volatility.

Chart IV-1-1: Credit risk by type of bank

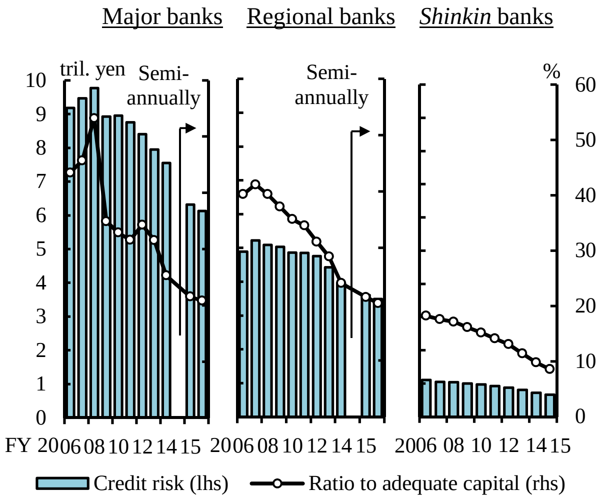


Chart IV-2-1: Interest rate risk associated with yen-denominated bondholdings among financial institutions

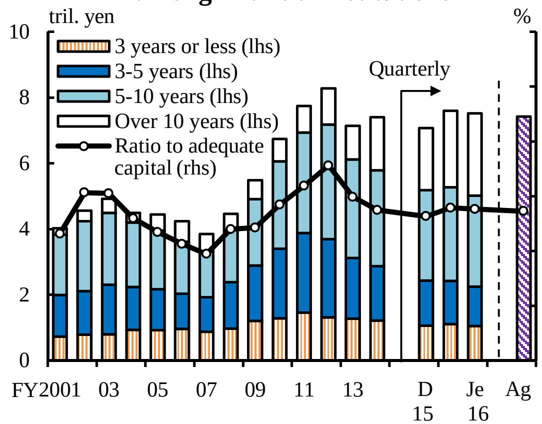


Chart IV-2-8: Market risk associated with stockholdings among financial institutions

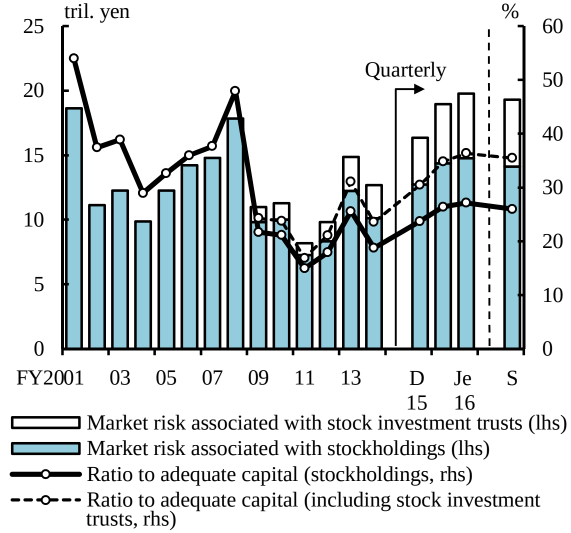
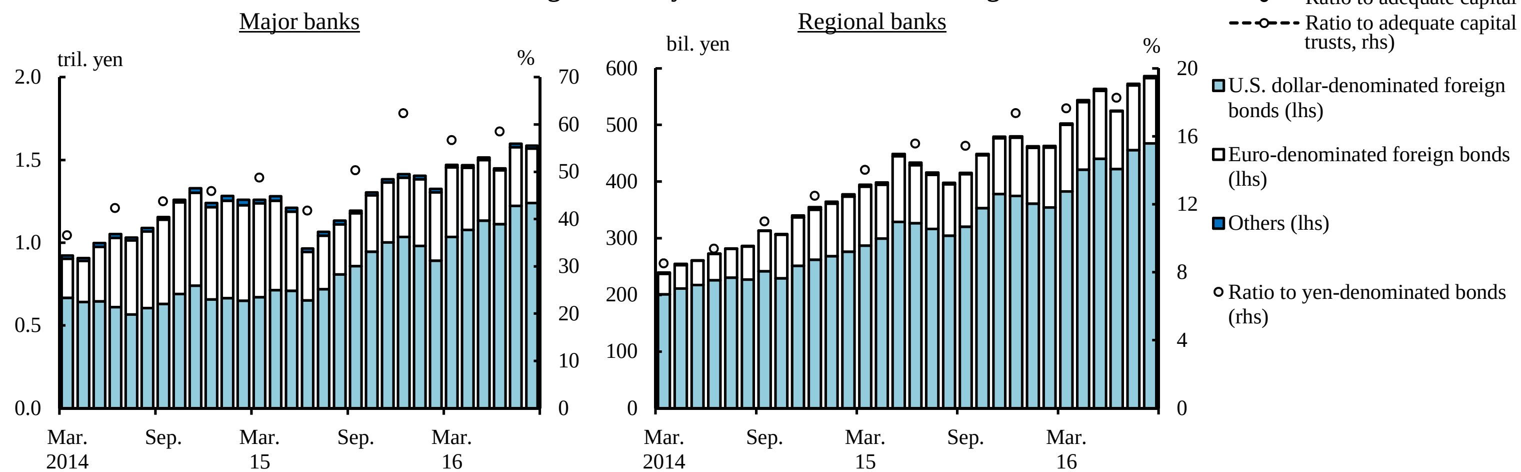


Chart IV-2-7: Interest rate risk of foreign currency-denominated bonds among banks

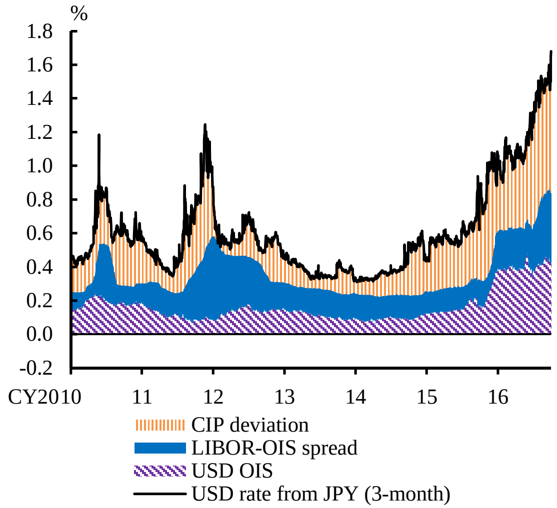


3. Stability of the financial system: a static assessment

(2) Funding liquidity risk

- Financial institutions have sufficient yen funds.
- For foreign currency funding, financial institutions have a liquidity buffer that can cover funding shortages, even if market funding conditions become difficult for a certain period. Moreover, they continue to make progress in bolstering funding bases. However, market funding continues to account for a large share of foreign currency funding, and the funding premium in foreign currencies has been on a trend of increase partly because a wide range of financial institutions and institutional investors have been accumulating overseas assets. Therefore, financial institutions need to persevere with efforts to secure stable funding bases in foreign currencies.

Chart IV-3-8: Breakdown of the short-term U.S. dollar funding costs (FX swaps)



Source: Bloomberg.

Chart IV-3-3: Stability gap among banks

Major banks

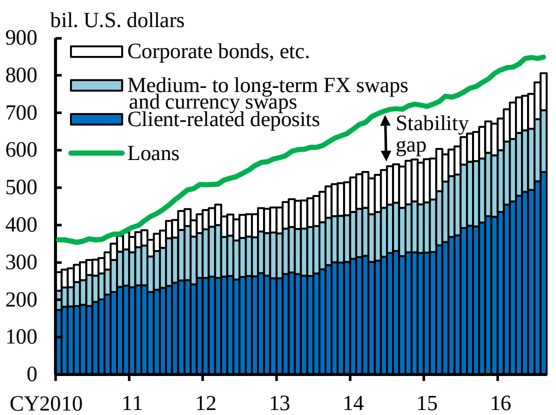


Chart IV-3-6: Resilience to foreign currency liquidity stress among banks

Major banks

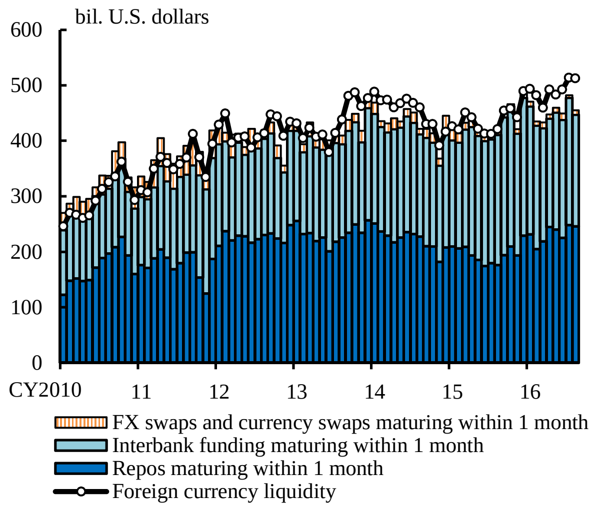
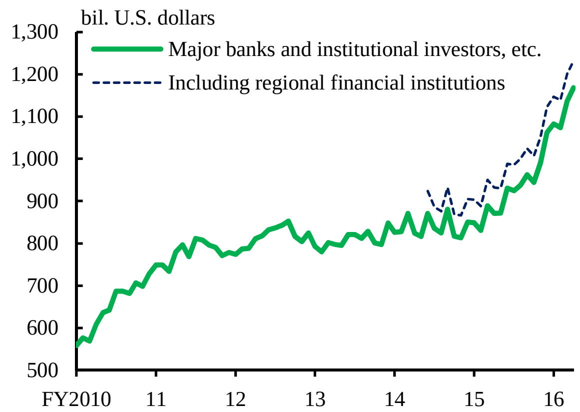


Chart IV-3-7: Amount of foreign currency funding via FX swaps and currency swaps by Japanese financial entities



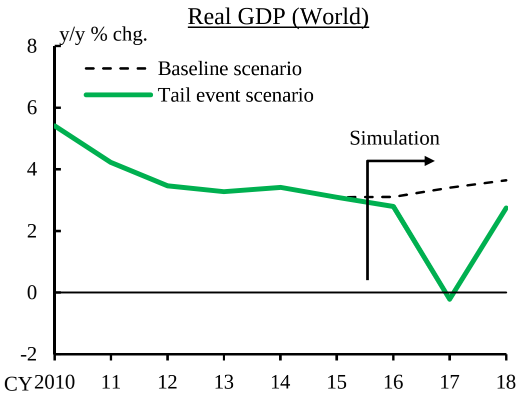
Sources: Bloomberg; The Life Insurance Association of Japan; Published accounts of each company; BOJ.

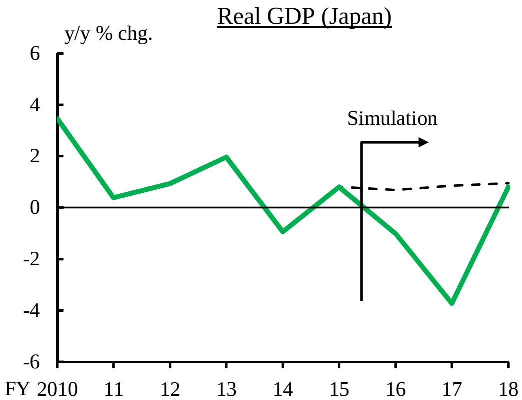
3. Stability of the financial system: a dynamic assessment (macro stress testing)

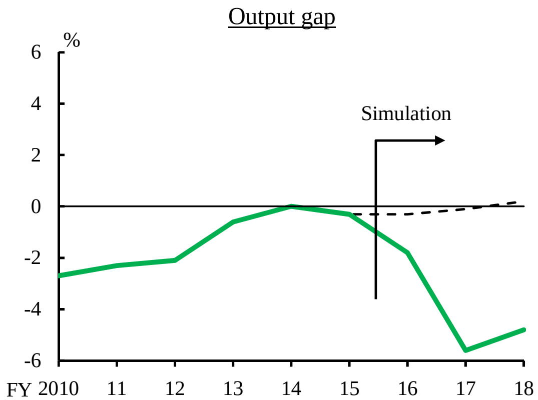
(1) Tail event scenario

- Envisages a situation whereby economic and financial developments at home and abroad deteriorate to a level comparable to that seen during the Lehman shock.
- The year-on-year growth rate of overseas loans outstanding turns deeply negative, while the growth rate of domestic loans outstanding falls to close to 0 percent partly because the sharp decline in the profitability of such loans forces financial institutions to adopt a tighter lending stance. While net interest income decreases substantially at internationally active banks, mainly due to the significant decline in overseas loans, the decline experienced by domestic banks -- with a smaller share of overseas loans -- remains moderate. Credit cost ratios at internationally active banks increase to levels just below their break-even points, while credit cost ratios at domestic banks rise to levels well above their break-even points.

Overseas economies and the domestic economy







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

Chart V-1-1: Loans outstanding

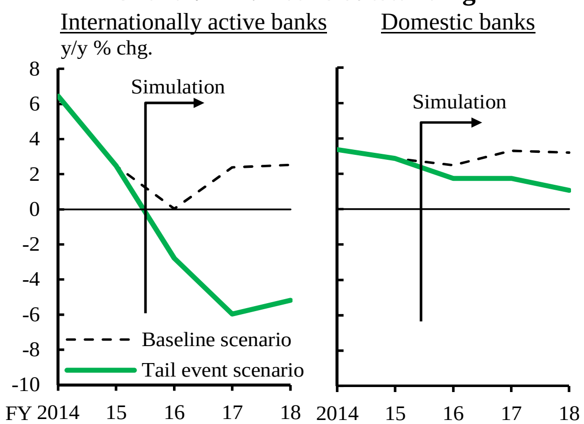


Chart V-1-2: Net interest income

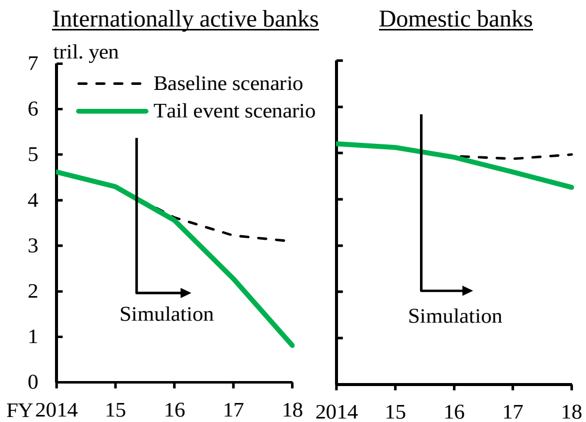
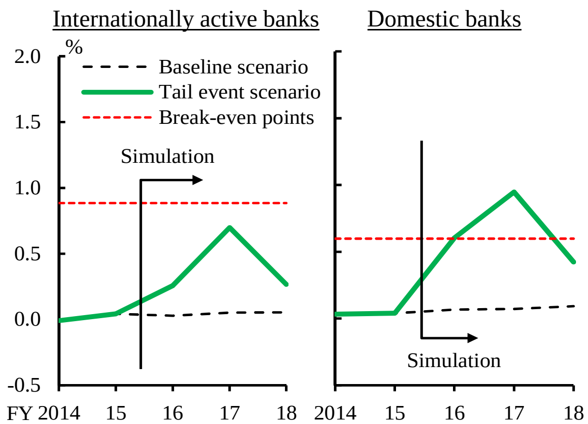


Chart V-1-3: Credit cost ratio

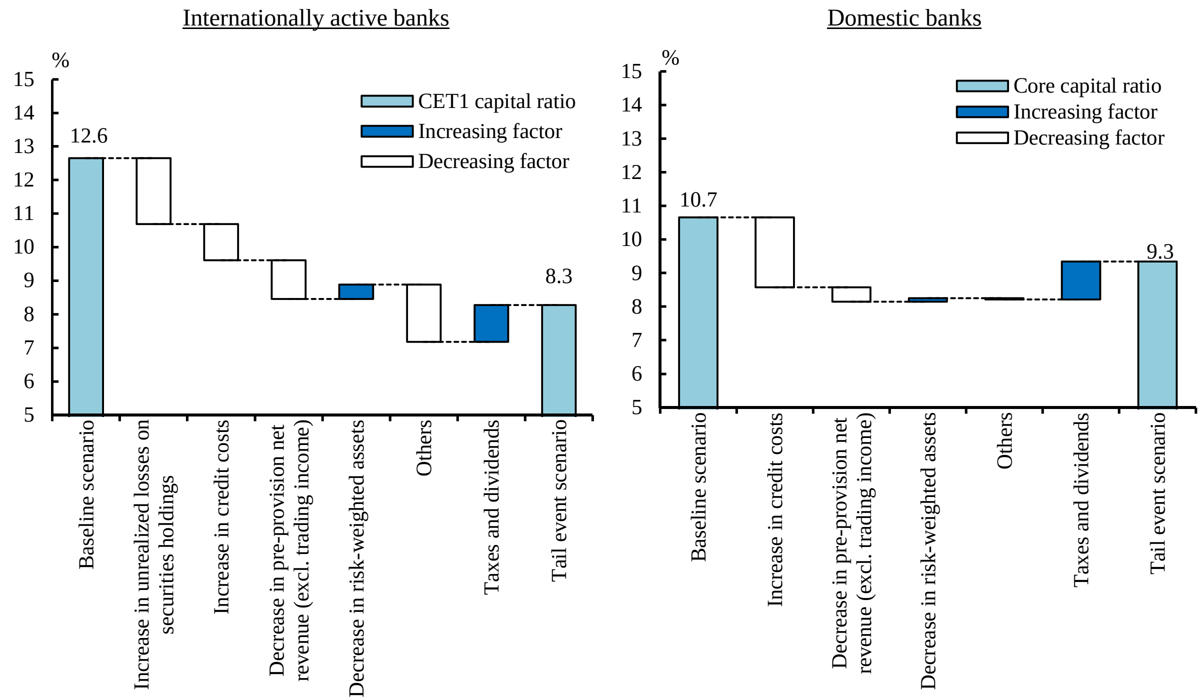


3. Stability of the financial system: macro stress testing

(2) Tail event scenario

- Under the tail event scenario, at internationally active banks, the CET1 capital ratio falls by 4.3 percentage points compared to the baseline scenario, due to a decrease in pre-provision net revenue (excluding trading income) and an increase in unrealized losses on securities holdings. However, on average, the capital adequacy ratio still remains above regulatory requirements.
- The core capital ratio for domestic banks declines by 1.4 percentage points, mainly due to an increase in credit costs, but remains well above regulatory requirements on average.
- The financial system is considered to have generally strong resilience against economic and financial shocks originating from home and abroad.

Chart V-1-5: Decompositions of the CET1 capital ratio and the core capital ratio



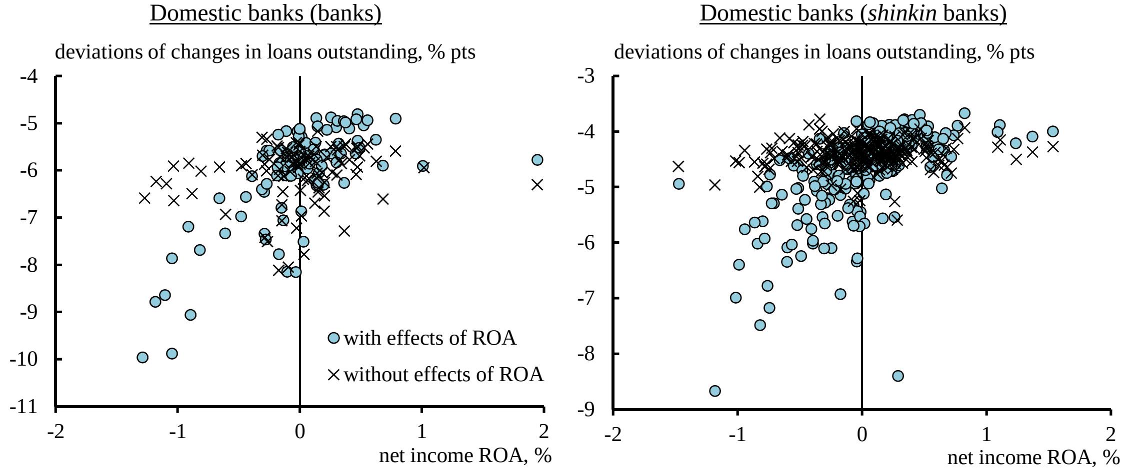
Note: *1*. Data for end-March 2019.

Issues in interpreting the results of the tail event scenario

- Even if financial institutions' capital adequacy ratios are above regulatory requirements, amid the occurrence of stresses, financial institutions' stance toward risk taking could retreat, for instance when net losses in their financial statements or unrealized losses on securities holdings are incurred. This could in turn adversely impact the financial intermediation function.

- The results for the tail event scenario show that more than 70 percent of the banks tested could temporarily record net losses. Moreover, there is significant heterogeneity with regard to the capital adequacy ratios of domestic banks. Financial institutions that record net losses or those whose capital adequacy ratios are comparatively low have been found to exhibit a tendency to tighten their lending stance to a greater extent than that predicted by the deterioration of their profitability and the impairment of their adequate capital.

Chart V-1-10: Distribution of profitability and loans outstanding



Note: *1.* In Chart V-1-10, "with effects of ROA" refers to the case where the Financial Macro-econometric Model incorporates non-linear effects of the level of financial institutions' net income ROA on their lending stance.

Chart V-1-8: Distribution of net income ROA

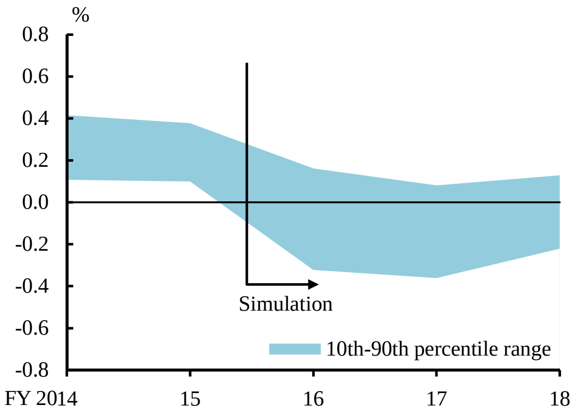
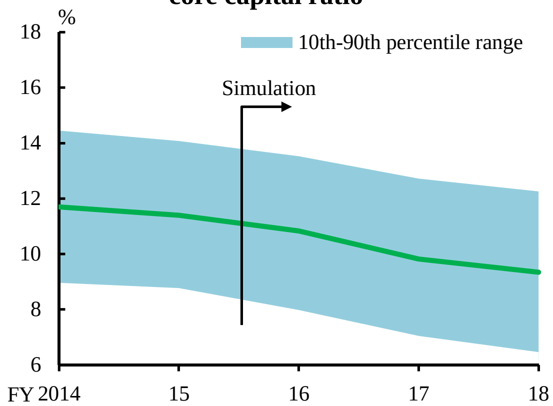


Chart V-1-9: Distribution of domestic banks' core capital ratio



3. Stability of the financial system: macro stress testing

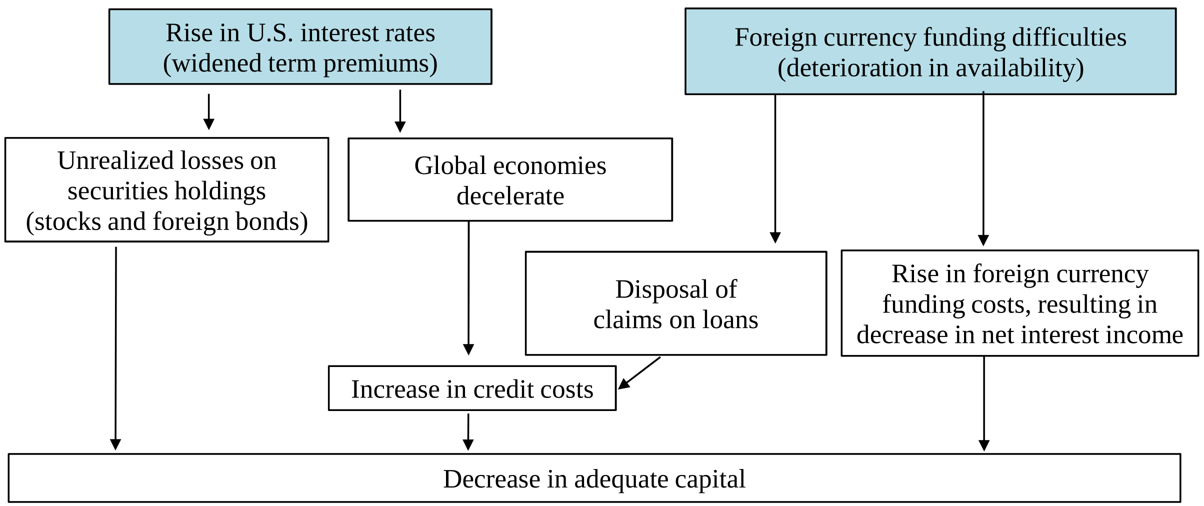
(3) Tailored event scenario

- The tailored event scenario is characterized not only by a widening of foreign currency funding premiums, but also constraints on the availability of foreign currency funding, as stresses in foreign currency funding markets occur. The stress test focuses on internationally active banks.

  —— Specifically, term premiums for U.S. interest rates are assumed to widen by 200 basis points, due to rising uncertainty in global financial markets, among other factors. At the same time, conditions in foreign currency funding markets deteriorate, and foreign currency funding premiums widen by 50 basis points. Moreover, the availability of foreign currency market funding is also constrained, which triggers forced disposals of foreign currency-denominated loans in response to the shortage in foreign currency funding, resulting in capital losses.

  —— Upon a rise in long-term U.S. interest rates, the following developments affect Japan's economy through various trade and financial channels: (i) a temporary slowdown in overseas economies; and (ii) a repatriation of funds to advanced economies, including the United States, and the resultant adverse effects on emerging and other economies.

Transmission channels of risks in tailored event scenario



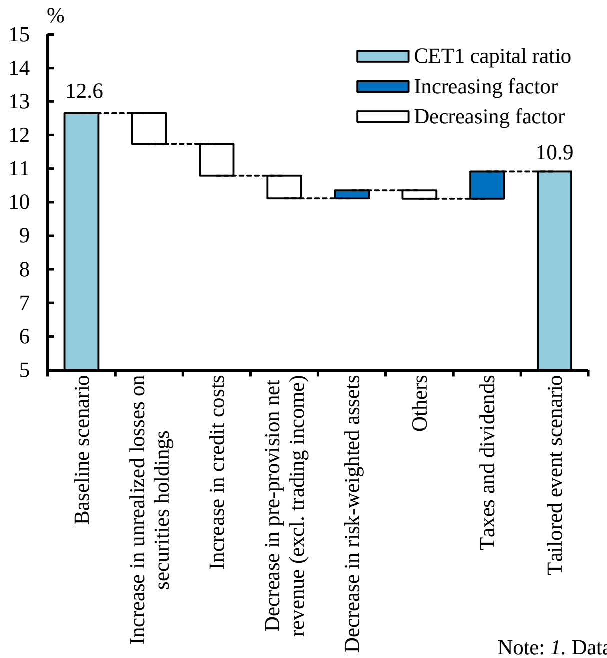
3. Stability of the financial system: macro stress testing

(4) Tailored event scenario

- The CET1 capital ratio declines by around 1.7 percentage points, compared to the baseline scenario. However, it is maintained above regulatory requirements. Key factors contributing to the decline in the ratio are as follows. The rise in U.S. interest rates and decline in stock prices result in unrealized losses on securities holdings. Credit costs increase, due partly to the disposal of loans, while pre-provision net revenue (excluding trading income) contracts, due in part to the decrease in lending.

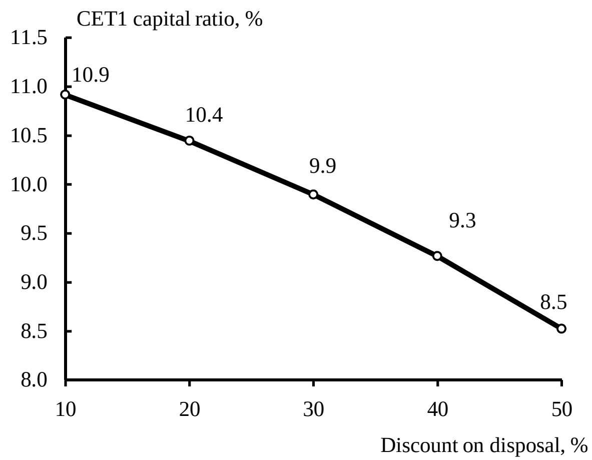
- In the case where foreign currency funding markets come under stress, foreign currency funding constraints could be observed not only among Japanese financial institutions but also among financial institutions in other countries at the same time, which could result in a situation where disposals of foreign currency-denominated assets gather pace. If many financial institutions attempt to dispose of their assets simultaneously, the discount on disposal could be even larger. As more loans then need to be disposed of to secure the same amount of foreign currency funds, the impact of the deeper discount in the disposal of loans on capital adequacy could become larger in a non-linear fashion.

Chart V-1-6: Decomposition of the CET1 capital ratio



Note: *1.* Data for end-March 2019.

Chart V-1-11: Discount on disposal and CET1 capital ratio

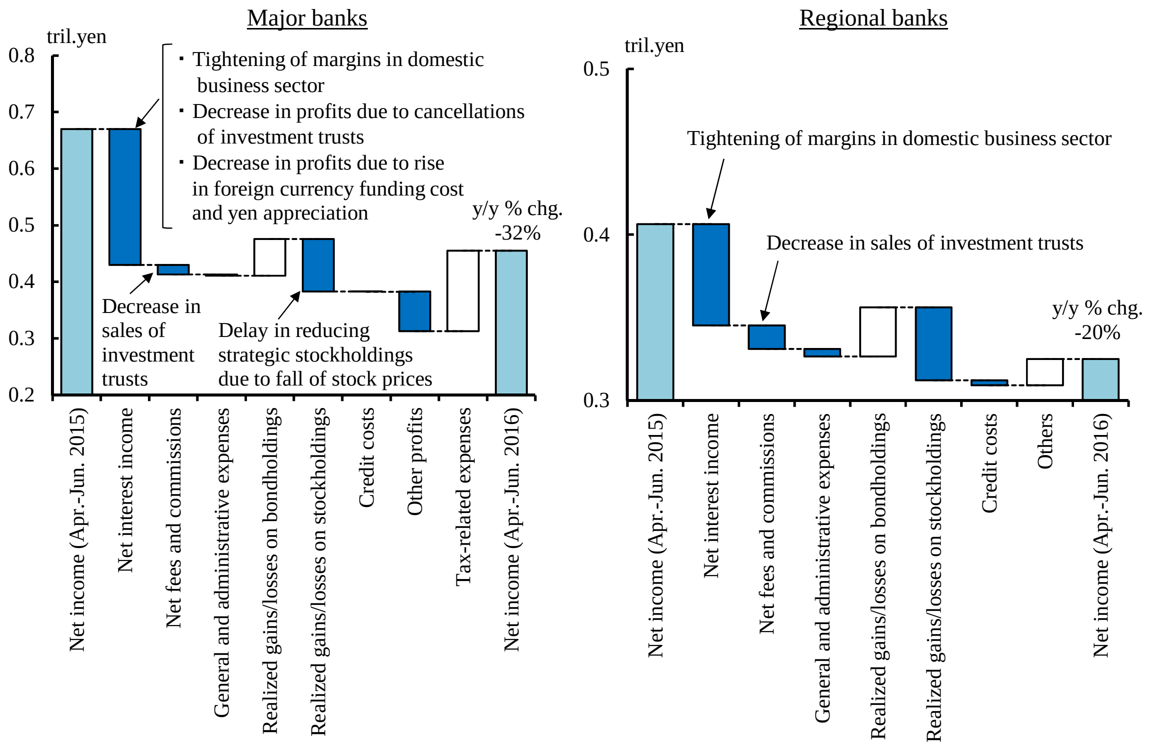


Note: *1.* Data for end-March 2019.

4. Decline in financial institutions' profitability and its effects on financial system functioning and stability (1) Current situation of profitability

- Banks' financial results for fiscal 2015 show that changes have been observed in the factors previously responsible for lifting profits: (i) as the credit cost ratio is already fairly low, the scope for further falls is limited. Indeed, credit costs at major banks have begun to rise; (ii) profits from fees and commissions, which had been increasing for some time, have begun to fall, mainly due to stagnant sales of investment trusts given the decline in stock prices and other factors; and (iii) gross operating profits from international operations at major banks, a main driver of profit growth, have declined, due to the translation effects of foreign currency-denominated profits during a yen appreciation phase and to an increase in foreign currency funding costs.
- The dissipation of factors supporting profit growth has rendered the declining profitability of domestic deposit-taking and lending businesses more likely to directly affect overall profits. Indeed, the financial results for the April-June quarter of fiscal 2016 showed a sharp decline in the financial institutions' profits mainly due to shrinking profit margins under a negative interest rate.

Chart IV-5-2: Decomposition of change in net income from the previous year

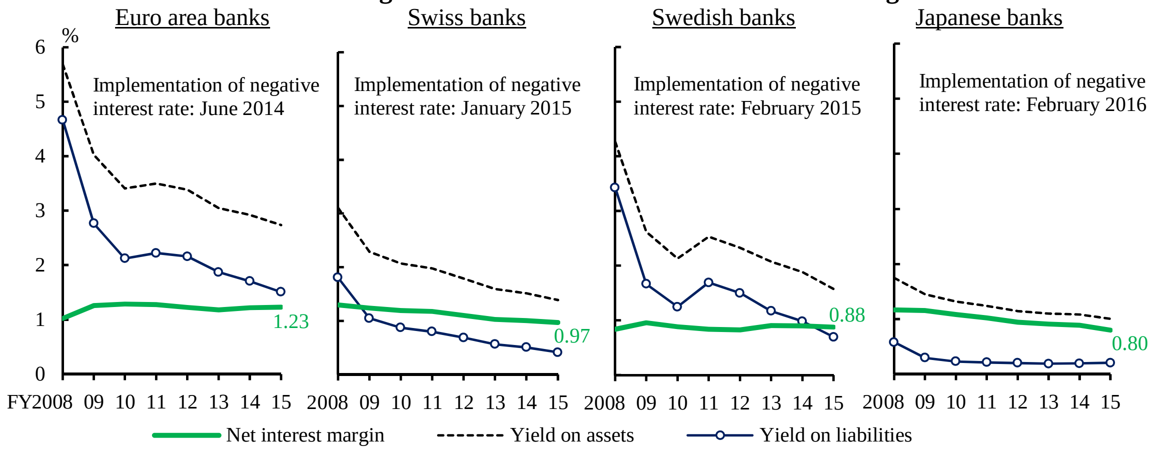


Sources: Published accounts of each bank.

Box 3: The profit structure of banks in countries adopting negative interest rate policies

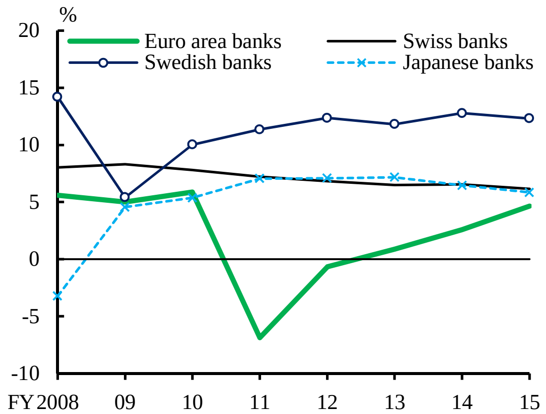
- In European countries that have adopted negative interest rate policies ahead of Japan, banks' profitability for fiscal 2015 has not declined significantly, due in part to the following: (i) deposit interest rates were high when the policies were introduced, so there was room to cut them; and (ii) the share of deposits thought to be incompatible with the application of a negative interest rate as a proportion of total liabilities was small.
- In contrast, low or zero interest rates had persisted for a longer time in Japan than in Europe. Japanese banks' deposit rates were already low when the negative interest rate policy was introduced. Furthermore, the share of deposits in total funding was high. As a result, the effect of negative interest rates on Japanese banks' profit margins tended to be larger compared to European banks.

Chart B3-1: Net interest margins of banks in countries that introduced negative interest rates



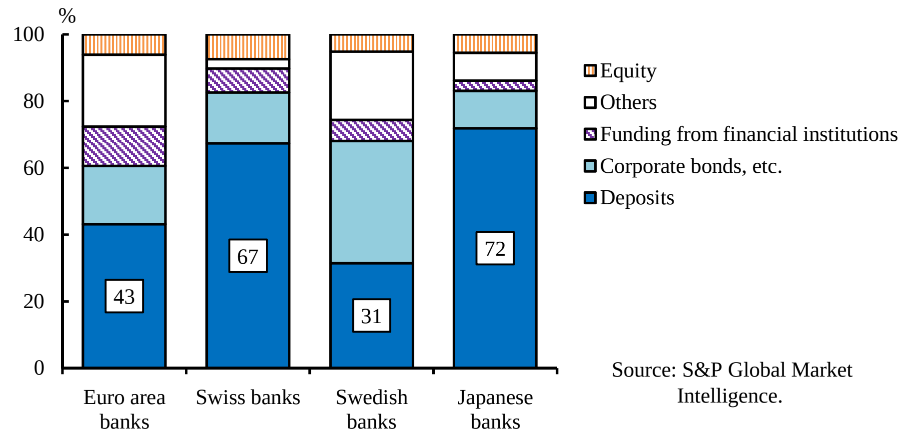
Source: S&P Global Market Intelligence.

Chart B3-2: ROE of banks



Source: S&P Global Market Intelligence.

Chart B3-3: Breakdown of funding of banks



Source: S&P Global Market Intelligence.

4. Decline in financial institutions' profitability and its effects on financial system functioning and stability (2) Risk-taking capability

- Financial institutions have sufficient capital bases at present, which will allow them to continue risk taking even if profitability remains subject to downward pressure for the time being. Going forward, if financial institutions' portfolio rebalancing activities lead to an improvement in economic and price developments, this is in turn likely to bring about a recovery in core profitability.
- However, it is necessary to pay attention to the possibility that financial system stability will be impaired, in a case where financial institutions shift toward excessive risk taking in view of maintaining their profitability, amid a decline in the profitability of their loans and securities investment mainly due to the effects of low and negative interest rates (Box 2).
  - -- It can be confirmed that when lending margins contract, a regional financial institution whose capital adequacy ratio is high tends to increase risky asset holdings. In particular, a financial institution whose core profitability is poor tends to increase its risky assets to a greater extent in order to compensate for its lackluster profits. Conversely, a financial institution with poor financial strength is less likely to increase its risky assets even when lending margins contract.

Chart B2-1: Ratio of investment trusts to total assets

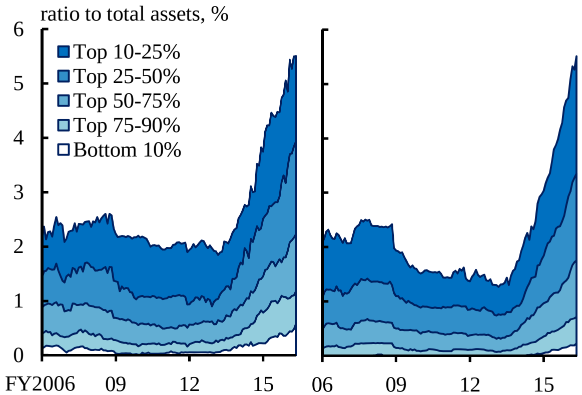


Chart B2-3: Estimation results (estimated values of λ)

		Regional banks: Core profitability Low	Regional banks: Core profitability High	*Shinkin* banks: Core profitability Low	*Shinkin* banks: Core profitability High
Financial strength	High	-4.90 ***	-2.73 ***	-3.07 ***	-0.78 **
Financial strength	Low	-1.59	0.58	-0.90	1.39 *

Notes: *1*. The estimation period is from fiscal 2006 to fiscal 2015. Estimation with fixed effects.
2. ***, **, and * indicate statistical significance at 1 percent, 5 percent and 10 percent levels, respectively.

Panel estimation based on the following equations.

$$\Delta(\text{Risky asset-to-total assets ratio}_{i,t}) = \lambda \cdot \Delta(\text{Lending margin}_{i,t}) + \text{Constant}$$

$$\lambda = \alpha + \beta(\text{Financial strength}_{i,t}) + \gamma(\text{Core profitability}_{i,t})$$

Here, the dummy variable for financial strength takes the value of 0 when the capital adequacy ratio is less than 8 percent, and 1 when it is 8 percent or above. The dummy variable for profitability takes the value of 0 when net operating profits (excluding securities-related items) is negative, and 1 when positive.

4. Decline in financial institutions' profitability and its effects on financial system functioning and stability (3) Effects on loss-absorbing capacity

➢ If the recent trend of declining profits persists, the number of financial institutions experiencing an erosion of their loss-absorbing capacity could increase, leading to a weakening in the financial intermediation function. In fact, the number of financial institutions -- in particular regional institutions -- that are unable to cover their expenses with income from deposit-taking and lending activities as well as fees and commissions has been increasing, and should a shock materialize, causing credit costs to increase, these institutions could more easily record losses, being unable to absorb the credit costs with pre-provision net revenue.

Chart IV-5-4: Break-even credit cost ratios by type of bank

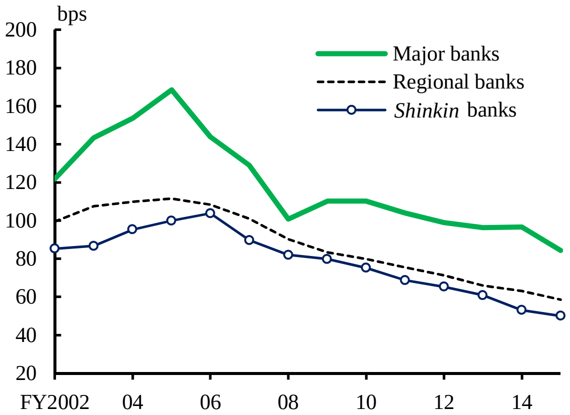
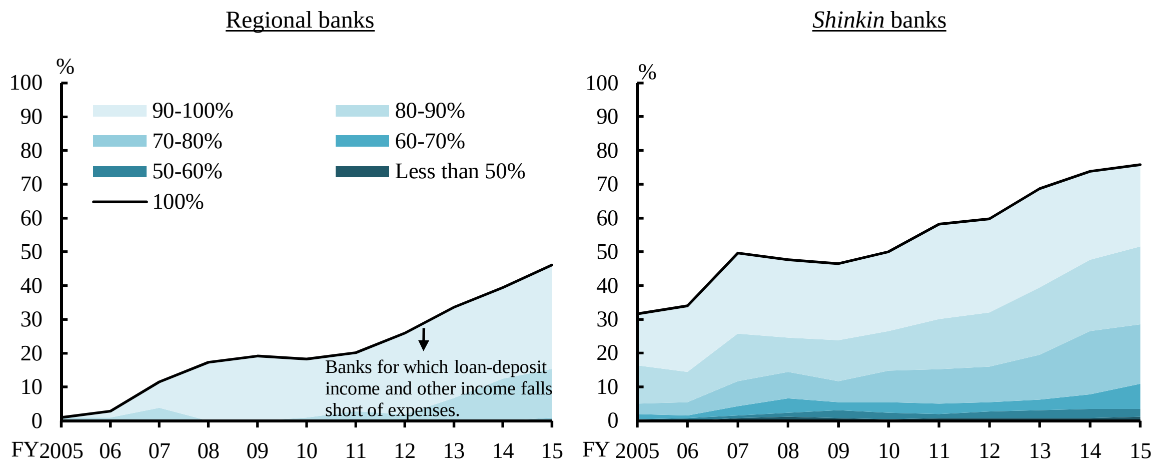


Chart IV-5-3: Ratios of banks for which loan-deposit income and other income falls short of expenses and distribution of their income-to-expenses



Box 4: Background of shrinking deposit and lending margins at regional financial institutions

- When changes in deposit and lending margins at regional financial institutions over the past 10 years are decomposed into its contributory factors, it can be confirmed that the fall in the population growth rate and in the loan-to-deposit ratio, in addition to the decline in interest rates, have played a key role. On the other hand, regional economic factors have not exerted a very large effect on margins.
- The results of the forecasting exercise for deposit and lending margins over the next 10 years show that in the "recovery scenario," population decline and the decline in the loan-to-deposit ratio alongside the aging population exert downward pressure on deposit and lending margins. Nonetheless, margins gradually recover with an increase in the market interest rate, and reach a level somewhat above the present level in fiscal 2025, 10 years from now. Conversely, in the "sluggish growth scenario," deposit and lending margins remain below the present level, because the increase in the market interest rate is limited.

Chart B4-2: Factor decomposition of deposit and lending margin

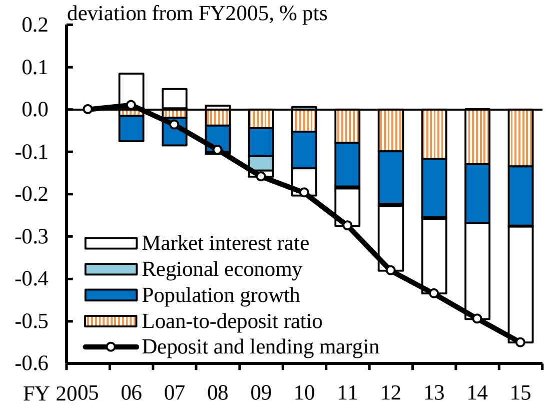


Chart B4-4: Distribution of predicted deposit and lending margins

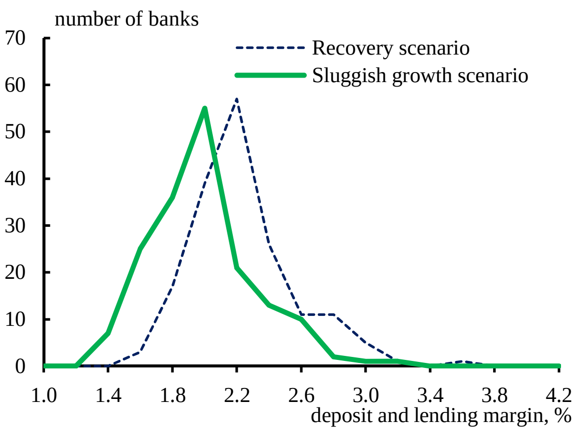
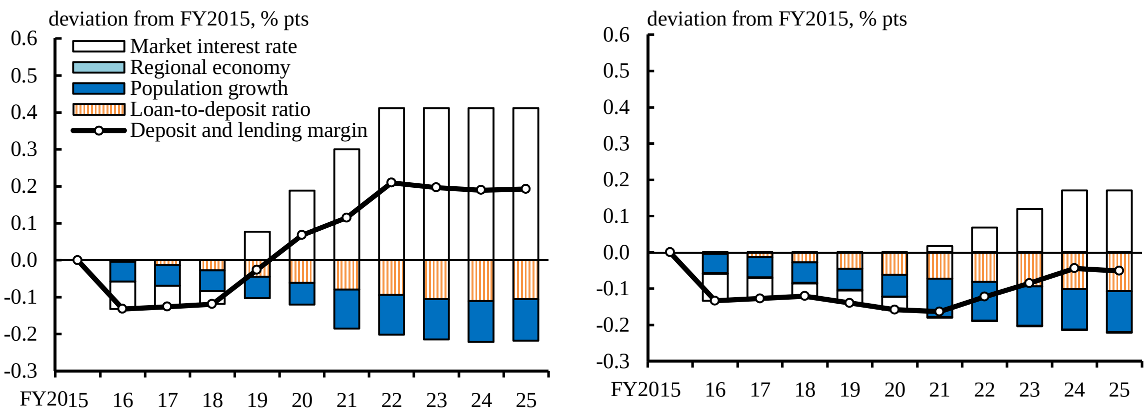


Chart B4-3: Simulation results of deposit and lending margin

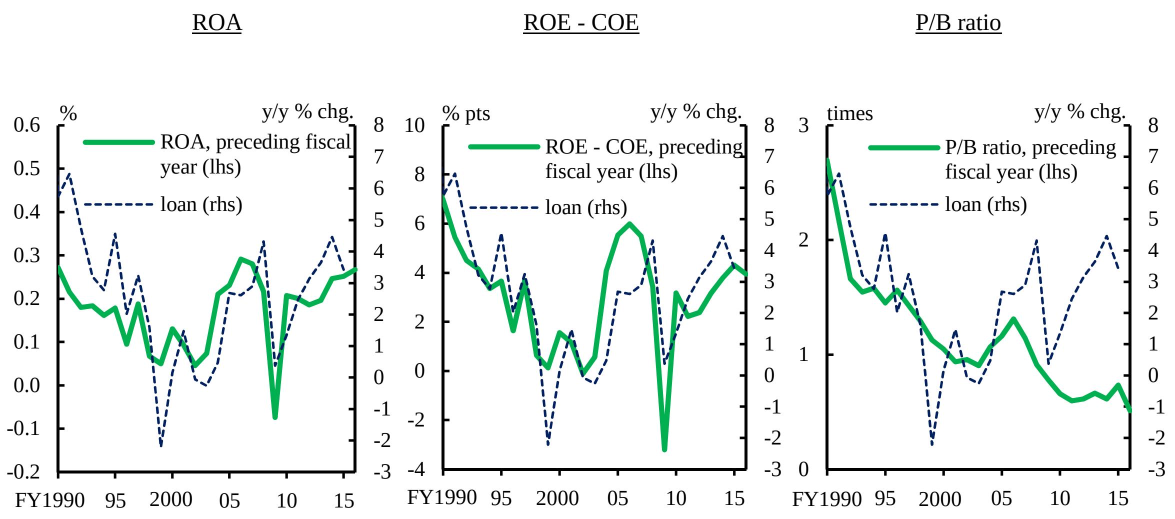


Sources: National Institute of Population and Social Security Research; BOJ.

Box 5: Bank profitability and loan supply incentives

- From a long-term perspective, profitability, which is the source of capital accumulation for banks, has had an influence on the lending stances of these institutions. Should downward pressure continue to be exerted on bank profits, keeping banks from securing returns that meet their capital costs for a prolonged period, the effects could spill over to the financial intermediation function even if they currently hold a sufficient amount of capital, as future capital losses will be factored in, in a forward-looking manner.
  - -- The low price-to-book (P/B) ratios in recent years may be a reflection of the belief held by market participants that "it has become difficult for banks to earn returns commensurate with the cost of capital, over an extended period." Although the relationship between banks' P/B ratios and their loan supply is weaker than before, how the low P/B ratios of banks at present will affect their future lending behavior warrants close monitoring.

Chart B5-1: Bank profitability and lending



Sources: Bloomberg; BOJ.

4. Decline in financial institutions' profitability and its effects on financial system functioning and stability (4) Summary

- Regarding the potential vulnerability of the financial system due to the declining profitability of financial institutions, it is necessary to examine both the risk of overheating -- excessive accumulation of macro risks and exuberant asset prices -- and the risk of a gradual pullback in financial intermediation due to a persistent decline in profits.
- In addition to assuming risks in lending, securities investment, and other activities under the auspices of an appropriate risk management framework, financial institutions need to improve their profitability in the following ways: (i) expansion of business areas, including internationalization of business operations; (ii) augmentation of non-interest income, such as fees and commissions; (iii) operational innovation, including the use of information technology, and review of the cost structure; and (iv) strengthening of regional industries and enhancement of the vitality of regional firms, among other measures.

5. Challenges from a macroprudential perspective (1)

- Japan's financial system has been maintaining stability on the whole. In order to ensure stability in the future, it is essential to steadily respond to the accumulation of macro risks and structural changes in the financial system that could become a source of potential vulnerability.
- From the viewpoint of the accumulation of macro risks, the challenge is to (i) strengthen the ability to respond to risks in areas where Japanese financial institutions are proactively stepping up their risk taking, such as overseas business and market investment.
- The challenges from the perspective of structural changes in the financial system are to respond to (ii) the increasing systemic importance of large financial institutions and (iii) the decline in profitability associated with domestic deposit-taking and lending activities.

5. Challenges from a macroprudential perspective (2)

- The Bank of Japan will continue to deal with these challenges toward ensuring financial system stability, through its off-site monitoring and on-site examinations, among other efforts. Recent efforts by the Bank are detailed below.

  (i) As for overseas activities, the Bank is improving its surveillance of developments in loan extension in areas of focus for financial institutions, such as merger & acquisition and resource development-related loans. At the same time, the Bank also exchanges views with financial institutions on conducting multi-faceted analyses, such as on how commodity prices affect the quality of their credit portfolios.

  (ii) Regarding foreign currency funding, the Bank has enhanced its surveillance of financial institutions' foreign currency liquidity risks, taking into account their international business strategies and increasingly stringent international financial regulations. The Bank has encouraged institutions to improve their risk management practices by, for example, preparing robust contingency measures that can be deployed in times of stress. In addition, it has been proceeding with efforts to develop the framework for foreign currency liquidity provision in an emergency situation, such as foreign currency swap arrangements established with overseas central banks.

  (iii) As for market investment risks, given that financial institutions are undertaking diverse risks in the low interest rate environment, the Bank is seeking to gain a deeper understanding of financial institutions' risk management frameworks and their planned responses in the event of the occurrence of market fluctuations, among other areas. It has also been holding discussions on conducting more robust risk management in line with the risk preferences of each financial institution.

  (iv) As for the systemic importance of major banks, the Bank of Japan has encouraged them to enhance their understanding of the complex and global risks they are undertaking, including through the maintenance of a management information system, to implement more effective stress tests as one way of analyzing such risks, and to strengthen their ability to respond to the occurrence of crises.

  (v) The Bank has also been analyzing the profitability of individual regional financial institutions, taking into account the impact of demographic factors, and has deepened and continued its dialogue with the relevant institutions on these medium- to long-term issues.