

Summary

April 2024 Bank of Japan



Note: This document presents a summary of the April 2024 issue of the *Financial System Report*. See the *Report* for more details on the analyses as well as notes and sources of the charts.

Stability assessment of Japan's financial system

- Japan's financial system has been maintaining stability on the whole.
- Financial intermediation has continued its smooth functioning.
 - In the loan market, banks' lending stance has remained active and loans outstanding have continued to increase. No major financial imbalances can be observed in these financial intermediation activities.
- Japanese banks have sufficient capital bases and stable funding bases to withstand various types of stress.
 - However, vigilance against tail risks continues to be warranted. The period of stress may be prolonged further with continuing global monetary tightening and the resultant concerns about a slowdown in foreign economies.
 - From a long-term perspective, a decline in banks' loss-absorbing capacity could lead to a contraction of financial intermediation activities or an overheating, such as excessive search for yield.
 - With these in mind, it is necessary to address the potential vulnerabilities appropriately and ensure the stability of Japan's financial system into the future.

Financial intermediation

> In the loan market, loans outstanding have continued to increase.

- Banks' lending attitudes as perceived by both large and small firms have been accommodative.
- Firms' demand for loans as perceived by banks has continued to rise.





DI of demand for loans





Note: See Chart III-1-3.

Note: 4-quarter backward moving averages. See Chart III-1-3.

Financial cycle

- > No major financial imbalances can be observed in current financial activities.
 - In the heat map, the *stock prices* indicator has turned "red," which signals an overheating. However, 13 of 14 Financial Activity Indexes (FAIXs) are "green," which signals neither an overheating nor a contraction.
 - Looking at the financial gap, which is a summary measure of the 14 FAIXs, the positive gap has narrowed recently.



Heat map

Interest rates after the changes in the monetary policy framework

Various movements, albeit modest, in a range of interest rate markets have been observed.

- Bond market: 10-year and 5-year JGB yields have remained flat.
- Loan market: TIBOR has risen moderately. Short-term prime rates have been flat.
- Deposit market: The yield curve for deposit rates has steepened.



Note: See Chart B4-1.

Note: See Chart B4-2.

Note: Indicates the typical interest rates posted at banks. Covers major, regional, and *shinkin* banks. Shows the median values. See Chart B4-3.

Motivations behind the April 2024 issue

- Dive into real estate risk and interest rate risk, which should be closely monitored for the time being.
- Assess the resilience of and potential vulnerabilities in the financial system.

Domestic and foreign real estate risk and its impact

• Foreign funds' investment

- ➔ Contagion risk from foreign markets
- Banks' lending and investment
- ➔ Common exposures and concentration risk



Resilience to rising interest rates by economic entity

- Banks' resilience
- → Differences in balance sheet structures
- Households' and firms' resilience
- ➔ Heterogeneity in financial conditions

Other notable developments

Increase in corporate bankruptcies
 Polarization in firms' financial conditions
 Default risk of common loan exposures
 Market risk and unrealized gains
 Market valuation and banks' capital policies
 Foreign private funds
 Investment stance of institutional investors
 Borrower firms' interest payment capacity

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1. Domestic and foreign real estate risk and its impact

- How the risks in the domestic office market have changed.
- How the risks in the foreign office market have changed.
- Potential vulnerabilities in the financial system associated with the correction in the domestic and foreign office markets.

Chapter V. Resilience of the financial system

A. Banks' capacity to absorb losses

B. Macro stress testing

Box 1: U.S. and Japanese commercial real estate markets

Box 2: Credit risk of housing loans Box 3: The evolving private fund market Box 4: Recent developments in interest rates Box 5: Scenario analysis of transition risks

Japan's real estate market (1) The office market

- In the commercial real estate (CRE) market, valuations of some properties seem relatively high.
 - The CRE prices to rent ratio in Japan as a whole has been above the level seen in the mini-bubble period.
 - This tendency is particularly pronounced in commercial areas in central Tokyo.
 - A rise in office vacancy rates, mainly due to a large supply of offices, has been limited to parts of central Tokyo. This differs from the U.S., where the rates have been pushed up mainly by falling demand for offices due to remote work.



"Real Estate Transaction-price Information."

See Chart III-3-11.

 "Grade A" covers the buildings with a large floor area and an age of 15 years or less. "Local cities" indicates the average rates of 5 local major cities.
 See Chart III-3-9.

Japan's real estate market (2) The transaction market

- > In the transaction market, foreign investors, who had been active buyers, became net sellers.
 - The main sellers in 2023 were U.S. funds, with non-U.S. foreign funds also becoming sellers in the second half.
 - Yield spreads of central Tokyo properties held by foreign funds are below those of properties held by domestic investors.



Note: See Chart III-3-12.

Note: Covers Tokyo. The bars show the yield spreads of foreign investors minus those of J-REITs. See Chart III-3-13.

Note: Shows the share of real estate acquisition amount by foreign investors. See Chart III-3-15.

Japan's real estate market (3) Banks' exposure

- The real estate loans to GDP ratio has remained high at its historical peak range.
- The number of banks with real estate-related exposure has been on the rise, in terms of both loans and \geq securities investment.
 - If the CRE market were to enter a phase of correction, this would likely have a broad impact on the financial system.



Note: See Chart III-3-3.

Note: Covers major, regional, and shinkin banks. Loans exclude those for house and room leasing by households. Data as of end-September. See Charts IV-1-8 and IV-2-14.

U.S. real estate market

three months or more in the U.S. See Chart B1-2.

- The delinquency rate of loans for offices has risen further.
- Most of the loans maturing in a few years are loans extended by small and medium-sized banks.
 - If these banks become reluctant to refinance loans, it will be difficult for the borrowers to complete a large amount of refinancing.
 - If borrowers cannot complete refinancing, this could exert even greater downward pressure on market prices.



- Note: 1. The left-hand chart shows the U.S. commercial real estate (nonfarm nonresidential) loans outstanding. "Large banks" indicates the top 25 banks in terms of domestic assets.
 - 2. The right-hand chart shows the loans outstanding to real estate investment funds in Japan.
 - 3. See Chart B1-4.

Note: Covers commercial real estate loans in the U.S. See Chart B1-3.

Stress testing (1) Real estate shock scenario

- > Assume repricing of CRE in some limited metropolitan areas triggered by a correction in foreign markets.
 - In the scenario, office market prices in the three major metropolitan areas decline significantly triggered by fire sales by foreign funds, with foreign yield curves remaining inverted.
 - The correction in the real estate market is limited to the three major metropolitan areas. It does not spread to other regions or affect the real economy or other financial variables.



Note: The left-hand chart shows the Japan Commercial Property Price Index. The middle chart shows the Tokyo Stock Exchange REIT Index. The right-hand chart shows the Services Producer Price Index (office space rental). See Chart V-2-7.

Stress testing (2) Economic losses by type of bank

- Banks' economic losses due to the real estate shock are limited on a macro basis.
 - Since Japanese banks' foreign real estate financing is small, additional economic losses would be limited even when assuming a considerable correction in the U.S. market.
 - The type of economic loss for banks differs by type of bank. Credit costs are concentrated among major banks, and valuation losses are concentrated among *shinkin* banks.



Note: Shows economic loss ratios for the first year of the real estate shock scenario. "Valuation losses on securities" includes impairments. See Chart V-2-8.

Stress testing (3) Inverted yield curve and the real estate shock

- Additional economic losses from the real estate shock tend to be greater for banks with a higher economic loss ratio under the inverted yield curve scenario.
 - The inverted yield curve scenario assumes that yield curves in the United States and Europe become further inverted and remain so for a prolonged period.
 - Economic losses from the real estate shock tend to be concentrated among the banks with relatively low profitability.



Distribution of economic loss ratios

Note: For each quartile of economic loss ratios under the inverted yield curve scenario, shows the medians (markers) and 25th-75th percentile ranges (bands) of economic loss ratios for the first year of the real estate shock scenario. See Chart V-2-9.

Stress testing (4) Economic losses by bank

- Even a shock limited to the CRE market in the metropolitan areas could affect a wide range of banks nationwide.
 - Not a few banks suffer relatively large economic losses as a result of both credit costs and valuation losses.
 - The share of banks that suffer sizeable economic losses is 80% today compared to only 40% in 2006.



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2. Resilience to rising interest rates by economic entity

- How the interest rate risk profiles of banks have changed.
- How differences in balance sheet structures can make a difference in banks' profits.
- Whether households and firms are resilient to rising interest rates.

Interest rate risk in the banking sector

- Interest rate risk (IRR) in the banking book for yen (in terms of the 100 BPV; taking core deposits into account) has remained low.
 - As a whole, IRR is generally in balance between assets and liabilities.
 - The IRR-to-capital ratio of individual banks is negative for half of all banks.
 - That said, there is uncertainty over the stickiness of deposits.



Interest rate risk

Note: 1. The left-hand chart shows a 100 BPV as of end-September 2023. "Short-term" refers to 3 years or less; "Medium-term" refers to 3 to 5 years; "Long-term" refers to 5 to 10 years; "Longer-term" refers to over 10 years.

2. The right-hand chart shows the medians (markers) and 10th-90th percentile ranges (bands) of a 100 BPV as ratios to capital as of end-September 2023. Ratios to capital are calculated using Tier 1 capital for internationally active banks and core capital for domestic banks.

3. Covers all banks (excluding shinkin banks).

4. See Chart IV-3-1.

Changes in the duration gap

- The duration gap of yen balance sheets has been shrinking, especially for major and regional banks.
 - On the asset side, the duration of securities in the long- and longer-term zones has shortened somewhat.
 - For major and regional banks, the duration of funding in the medium-term zone has become longer.
 - For *shinkin* banks, some of the IRR associated with securities has shifted to that associated with transactions with their central organization.



Changes in duration by maturity

Note: 1. Shows the contribution to changes in the duration gap from end-2022 to end-September 2023.

2. "Short-term" refers to 3 years or less; "Medium-term" refers to 3 to 5 years; "Long-term" refers to 5 to 10 years; "Longer-term" refers to over 10 years.

3. See Chart IV-3-2.

Shorter durations of yen-denominated bondholdings

- Banks are in the process of rebalancing their yen-denominated bond positions.
 - All types of banks have shortened the duration of their yen-denominated bondholdings by reducing IRR, especially in the longer-term zone.
- Reflecting such rebalancing behavior, banks' resilience to rising interest rates is improving.
 - The maximum rate on 10-year JGBs at which banks can maintain sufficient loss-absorbing capacity is estimated.



Changes in yen interest rate risk

Maximum interest rate at which economic capital is maintained



regulatory level. See Chart IV-2-7.

Note: 1. Shows the weighted averages for each type of bank (markers) and 25th-75th percentile ranges for total banks (bands) of changes from end-2022 to September 2023 in a 100 BPV of yen interest rate risk as ratios to capital. Covers major, regional, and *shinkin* banks.

^{2.} Ratios to capital are calculated using CET1 capital for internationally active banks and core capital for domestic banks.

Longer durations of foreign bondholdings

- The amount of IRR in foreign bond positions is returning to previous levels.
 - Reinvestment focuses mainly on the longer-term zone, where banks until recently had substantially reduced the amount of risk.
 - Some banks are using held-to-maturity bonds for both foreign and yen-denominated bonds to maintain stable profits.



Changes in foreign currency interest rate risk

Ratio of bondholdings without mark-to-market valuations



Note: 1. Shows the weighted averages for each type of bank (markers) and 25th-75th percentile ranges for total banks (bands) of changes from end-2022 to September 2023 in a 200 BPV of foreign currency interest rate risk as ratios to capital. Covers major and regional banks.

- Ratios to capital are calculated using CET1 capital for internationally active banks and core capital for domestic banks.
- 3. See Chart IV-2-9.

Simulation of interest rate rises (1) Income on loans

- A simulation is conducted to compare the current situation with the previous phase of policy rate hikes in 2006-2007, assuming a uniform rise in market interest rates for all maturities of 0.1%pts.
- One source of income is floating-rate loans, in which banks expect an improvement in the short term.
 - That said, as the duration of overall loans has increased, the contribution of prime rate-linked floating-rate loans to income in the current phase is lower than in 2006.



Simulation results (1) Loans

Note: 1. The left-hand chart shows the cumulative changes in the income on loans (relative to loans outstanding) by product.
"0" on the horizontal axis represents end-fiscal 2006 for "Previous phase" and end-September 2023 for "Current phase."
2. The right-hand chart compares the composition of outstanding amounts as of end-fiscal 2006 and end-September 2023.
3. See Chart IV-3-3.

Simulation of interest rate rises (2) Income on securities

- Another source of income is investment in securities.
 - Major banks can expect a reasonable improvement in their income.
 - Regional and *shinkin* banks are unlikely to see an improvement in their income in the short term.
 - The difference between the types of banks is due to the differences in duration structures.



Simulation results (2) Securities

Note: 1. The left-hand chart shows the cumulative changes in the income on securities (relative to securities outstanding).
"0" on the horizontal axis represents end-fiscal 2006 for "Previous phase" and end-September 2023 for "Current phase."
2. The right-hand chart compares the composition of outstanding amounts as of end-fiscal 2006 and end-September 2023.
3. See Chart IV-3-5.

Simulation of interest rate rises (3) Deposit costs

- The contribution of demand deposits is larger than during the previous phase of policy rate hikes.
 - As demand deposits have increased, they likely put downward pressure on profits in the short term.
- The contribution of time deposits is smaller than during the previous phase.
 - For *shinkin* banks, the contribution of time deposits is larger than for major banks, since short-term time deposits make up a larger proportion of their overall deposits.



Simulation results (3) Deposits

Note: 1. The left-hand chart shows the cumulative changes in the deposit costs (relative to deposits outstanding) by product.
"0" on the horizontal axis represents end-fiscal 2006 for "Previous phase" and end-September 2023 for "Current phase."
2. The right-hand chart compares the composition of outstanding amounts as of end-fiscal 2006 and end-September 2023.
3. See Chart IV-3-6.

Simulation of interest rate rises (4) Interest income balance

- The impact of market interest rate rises on banks' profits also depends on the interest rate pass-through.
 - 100% for prime rate-linked loans and 40% for demand deposits: the improvement in the interest income balance is smaller than during the previous phase as the contribution of deposit costs becomes larger.
 - 50% for prime rate-linked loans and 40% for demand deposits: banks' profits are unlikely to improve.



Simulation results (4) Changes in interest income balance

Note: Shows the distribution of changes in the interest income balance as ratios to domestic net interest income one year after an increase in interest rates. Markers and bands indicate medians and 25th-75th percentile ranges weighted by banks' domestic net interest income, respectively. The pass-through rates for loans other than prime rate-linked loans and securities are 100 percent, and those for time deposits are 80 percent. The chart covers major, regional, and *shinkin* banks. See Chart IV-3-7.

Household sector's resilience to rising interest rates

- From a macro perspective, an improving economy and the resulting rise in interest rates can be expected to lead to an improvement in household income and the interest-related balance.
 - · Here, the impact of a 1%pt increase in short-term interest rates is estimated.
 - There is considerable heterogeneity in household finances. Households with a high debt servicing ratio (DSR) are less resilient to higher interest rates.



Financial assets and liabilities of households by DSR

Note: 1. The left-hand chart shows the averages per household. Figures in brackets indicate the share of households.

2. Interest-related balance in the right-hand chart includes principal payments of housing loans.

3. See Chart III-3-20

Corporate sector's resilience to rising interest rates

- Even with higher borrowing interest rates, many firms have sufficient profitability to withstand the interest payment burden.
 - The left panel shows the estimated borrowing rates at which the interest coverage ratio (ICR) falls below one.
 - There is considerable heterogeneity in firms' financial conditions as well.



Financial indicators by cash reserves

Note: 1. Financial leverage is the ratio of borrowings to total assets. Cash reserve ratio is the ratio of cash reserves to short-term borrowings.

2. Shows the median values. Covers SMEs with excess borrowings. "Firms with/without ample cash" indicate firms with cash reserves equal to half or more and less than half of their annual administrative expenses, respectively.

3. See Chart IV-1-5.

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3. Other notable developments

- Whether there is any potential credit risk stemming from the heterogeneity in firms' financial conditions.
- How the financial conditions of banks have changed amid rising stock prices.
- What is happening in the foreign private fund market.

Increase in bankruptcies (1)

- Corporate bankruptcies have increased even though economic activity has been on a recovery trend.
 - With the labor market tightening, there have been bankruptcies resulting from labor shortages.
 - Even in this situation, banks' credit costs have remained limited. This is partly because small-sized firms account for the overwhelming majority of recent bankruptcies.



Number of corporate bankruptcies and credit cost ratios

Note: 1. The shaded areas in the left-hand chart indicate recession phases. The data for "Number of bankruptcies" are quarterly averages.

- 2. The data for the middle chart are quarterly averages.
- 3. The right-hand chart covers domestic and foreign loans.

4. See Charts IV-1-3 and IV-1-6.

Increase in bankruptcies (2)

- There have been some cases where banks have recorded large credit costs on common loan exposures among banks.
 - The actual default rate among common exposure borrowers is high on average.
 - Since it is difficult for banks to obtain monitoring information on such borrower firms for which they are not the main banks, debt governance is unlikely to operate effectively.



Actual default rates

Note: The vertical axis shows the occurrence rate from fiscal 2001 to 2022 for each actual default rate. Actual default rates are defined as the ratio of SMEs that meet one of the following conditions within one year for the first time: (1) being delinquent for 3 months or longer, (2) being downgraded to "in danger of bankruptcy" or below, or (3) being subject to subrogation by a credit guarantee corporation. See Chart IV-1-10.

Borrower classification mismatches for common exposure borrowers

Composition of borrower classification

Credit cost ratios that would arise from downgrades



Borrower classification by main banks

- Note: 1. The left-hand chart shows the loans outstanding among non-main banks by main banks' borrower classification.
 - 2. The right-hand chart shows the estimated average credit cost ratios of banks if common exposure borrowers with borrower classification mismatches were downgraded until the mismatches are eliminated. Shows the top 10 borrowers with the highest estimated credit cost ratios among those classified as "special attention" or below by at least one bank.
 - 3. Covers all large borrowers of major, regional, and shinkin banks. Data as of end-March 2023.
 - 4. See Chart IV-1-11.

Rise in stock prices (1)

- Stock prices have risen.
 - The impact of rising stock prices on the financial cycle has been limited.
 - Valuations of stock prices have remained at their past average.
- For banks, higher stock prices increase market risk associated with stockholdings, while they also improve room for realizing gains.



Stock prices

Note: "Trend" is calculated using the one-sided HP filter. The shaded area indicates 1.5 times the root mean square of the deviation from the trend. See Chart III-3-5.



P/E ratios

Note: The data for Japan, the United States, and Europe are calculated using expected EPS for the next 12 months of the TOPIX, the S&P 500, and the EURO STOXX, respectively. See Chart II-2-9.

Factors affecting market risk associated with stockholdings



Note: Market risk associated with stockholdings is VaR with a 99 percent confidence level and a 1-year holding period, and excludes risk associated with foreign currency-denominated stockholdings. The chart covers major, regional, and *shinkin* banks. See Chart IV-2-12.

Rise in stock prices (2)

- Listed banks have been increasing dividends and raising their dividend payout ratios in an effort to improve their market valuation.
 - This tendency has also been observed among banks with low profitability.
 - The distribution of profits in banks' capital policies should be based on their capital bases and profitability.



P/B ratios (lhs) and dividend payout ratios (rhs) of listed banks

Note: 1. The line charts show the median values of Japanese banks. The horizontal axes for the left- and right-hand charts indicate fiscal year-end and fiscal year, respectively. 2. Distributions in the left-hand chart are based on end-March 2024, and those in the right-hand chart are based on the average over the last three years. "G7" excludes Japan and the U.S.

^{3.} See Chart V-1-7.

Foreign private funds (1)

- > The private fund markets have been growing rapidly in recent years.
 - In the United States, the size of the private credit market has become comparable to the syndicated loan and highyield bond markets.
 - In Japan, the size of the private fund market is very small. The share of real estate funds is higher than in other countries.



Assets under management of private funds

Note: The left- and right-hand charts are based on funds' primary investment regions. See Chart B3-1.

Foreign private funds (2)

- There have been changes in the private fund market recently.
 - The increase in inflow of funds, which had been growing continuously, has been peaking out.
 - The credit risks of private funds and banks that extend loans to them have been rising, as seen in the increase in the interest payment burden of firms in which these funds invest.
 - Major banks' financing for foreign funds has been small.



U.S. private fund market

Note: 1. The left-hand chart shows the amount of capital raised from investors.

2. The middle chart shows the three major banks' outstanding loans to funds in the Americas as of end-September 2023.

3. In the right-hand chart, "Private credit" indicates direct lending to firms by funds (including exchange-traded funds).

4. See Chart B3-2.

Stability assessment and caveats

Japan's financial system has been maintaining stability on the whole.

Real estate risk

- In Japan, valuations of some properties seem relatively high.
- Foreign markets are in a phase of correction. Close attention should continue to be paid to the possible impact of this on Japan's market via foreign funds.
- Banks have built up real estaterelated exposures, resulting in concentration risk with regard to real estate in the metropolitan areas. Many of these exposures are also common exposures among banks.



Interest rate risk

- Banks have loss-absorbing capacity that is commensurate with IRR.
- However, compared to the previous phase of policy rate hikes, banks have larger deposits outstanding relative to their profitability.
- There is uncertainty over the interest rate pass-through to loans and deposits. The pass-through is affected by the supply/demand balance, the competitive environment, and relationships with customers.
- When setting interest rates, banks need to consider the sequence and timing of interest rate revisions and the interest rate pass-through, taking market developments and the competitive environment into account.

Banks' stress resilience

- Japanese banks on the whole are resilient to global financial crisistype stress or complex stress arising from an inverted foreign yield curve and a correction in the real estate markets.
- However, some banks would find it difficult to restore their capital once it is impaired.
- It is important for banks to ensure loss-absorbing capacity that is commensurate with macroeconomic and financial conditions, as well as their business models.