

Summary

October 2024 Bank of Japan



Stability assessment of Japan's financial system

- Japan's financial system has been maintaining stability on the whole.
- Financial intermediation has continued to function smoothly.
 - In the loan market, despite the increase in lending rates, firms' demand for loans has risen. Banks' lending stance has also remained accommodative. 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 stress events equivalent to the global financial crisis that cause a major correction in financial markets and the real economy at home and abroad.
 - However, vigilance against tail risks, including developments in global financial markets and geopolitical risks, continues to be warranted.
 - From a long-term perspective, if the structural decline in firms' loan demand
 reflecting the shrinking population and other factors continues, depending on the
 supply and demand balance in the loan market, banks' profitability and lossabsorbing capacity could decline, and this 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.

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- 2. Corporate bankruptcies and defaults amid economic improvement
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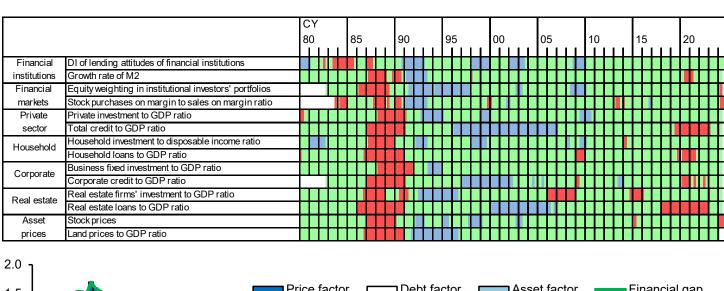
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1. Financial cycle and developments in asset prices

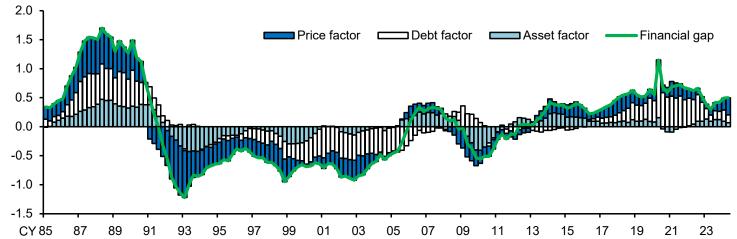
- Financial cycle
- Stock market
- Real estate market

Financial cycle

- ➤ No major financial imbalances can be observed in current financial activities based on the heat map and the financial gap.
 - The latest heat map shows that 3 Financial Activity Indexes (FAIXs) related to the stock market are "red." However, 11 out of the 14 FAIXs are "green." In addition, looking at the financial gap, which is a summary measure of the 14 FAIXs, the positive gap has remained narrower than a while ago.



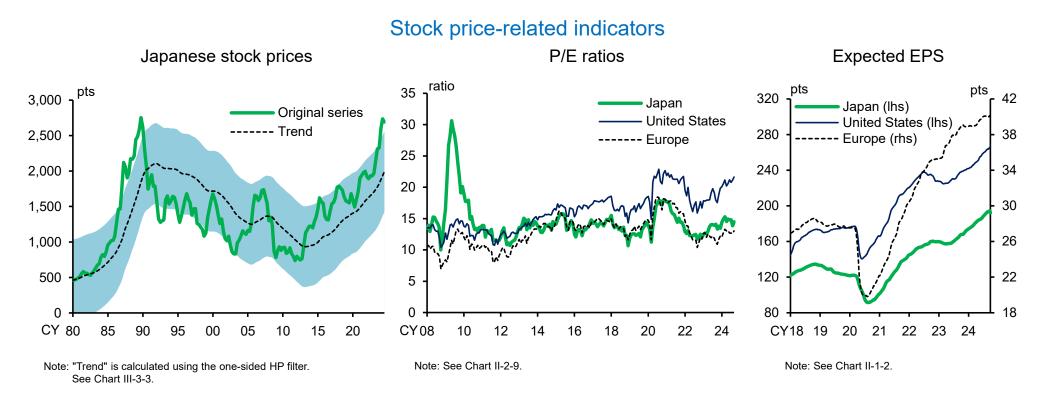
Note: See Chart III-3-1.



Heat map

Asset prices: Japan's stock market

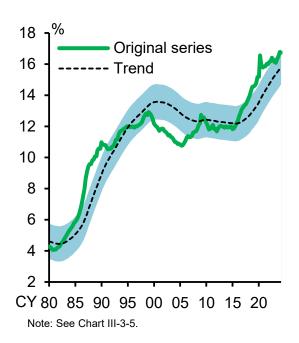
- Japan's stock prices have been above the historical trend since the beginning of 2024.
 - Japan's stock prices fluctuated significantly at the beginning of August amid the increased volatility in asset prices worldwide.
- Price-earnings (P/E) ratios have remained at their historical average, and, in terms of stock valuations, there is no significant overheating.
- Considering that Japanese banks have a certain amount of market risk associated with stockholdings, developments in asset prices warrant attention.



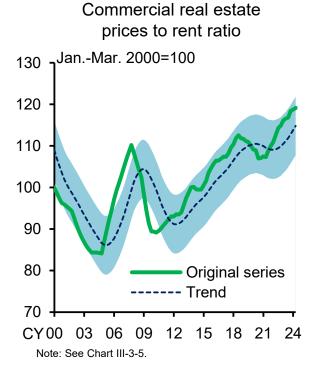
Asset prices: Japan's real estate market (1)

- ➤ Loans to real estate businesses have continued to grow at a relatively high rate. The commercial real estate prices to rent ratio has been above the level seen in the mini-bubble period.
 - Commercial real estate prices have been rising, and transactions in some limited commercial areas in central Tokyo have been at high price ranges.
 - As stated in the previous Report, even if the shock of a repricing of commercial real estate in metropolitan
 areas is assumed, banks' economic losses are limited on a macro basis; however, given that real estaterelated exposure has been on an increasing trend, it is necessary to continuously pay attention to the outlook
 for the real estate market.

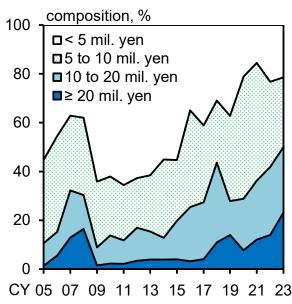
Real estate loans to GDP ratio



Real estate-related indicators



Distribution of commercial land transaction prices in 5 central wards of Tokyo



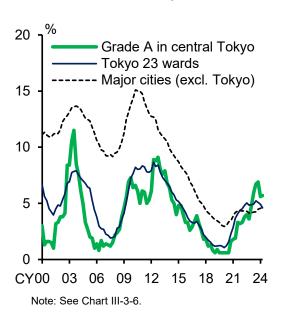
Note: Shows the composition of land transaction prices per unit in 5 central wards of Tokyo based on individual transaction data of "Real Estate Transaction-price Information." See Chart III-3-7.

Asset prices: Japan's real estate market (2)

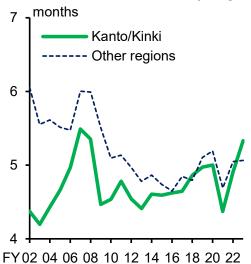
- ➤ Vacancy rates for office buildings in Tokyo, after continuing to rise following the outbreak of the pandemic, mainly due to the large supply of office buildings, have recently begun to decline.
- Among real estate transaction businesses in major urban areas, such as the Kanto and Kinki regions in particular, inventory turnover periods have increased.
 - During the mini-bubble period, default rates increased especially among small and medium-sized real estate transaction businesses that had built up inventories.
- However, with the improvement in the ICRs of real estate transaction and leasing businesses, which represent their interest payment capacity, their default rates remain at a low level.

Supply-demand conditions in the real estate markets and default rates of real estate businesses

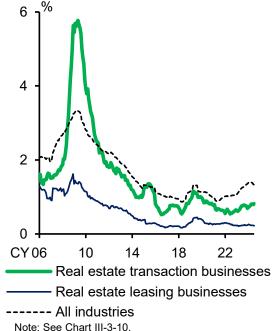
Office vacancy rates



Inventory turnover periods of real estate transaction businesses by region



Note: Covers SMEs in real estate transaction businesses for land, offices, and used houses. Shows the median of each region. See Chart III-3-8. Default rates of real estate businesses



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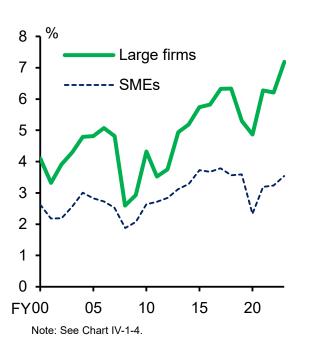
2. Corporate bankruptcies and defaults amid economic improvement

- Firms' financial conditions
- Recent developments in corporate bankruptcies
- Impact of rising costs

Current situation of firms' financial conditions

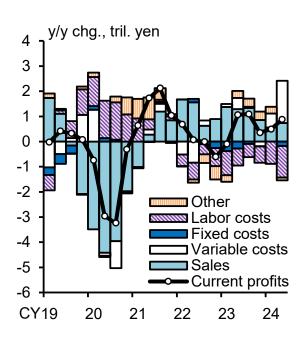
- > Amid continuing moderate economic recovery, corporate profits have been improving as a whole.
- > Compared to large firms, the pace of increase in corporate profits of SMEs -- despite a recovery in sales -- has been slow, partly due to rises in raw material costs and labor costs.
- ➤ The distribution of SMEs' ratio of operating profits to sales shows that there are firms whose pace of improvement in corporate profits has been slower than that of SMEs overall. As a result, the skew of the distribution to the downside seen since the pandemic has remained.

Ratio of operating profits to sales

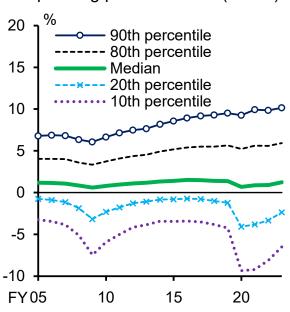


Firms' financial conditions

Current profits (SMEs)



Distribution of the ratio of operating profits to sales (SMEs)

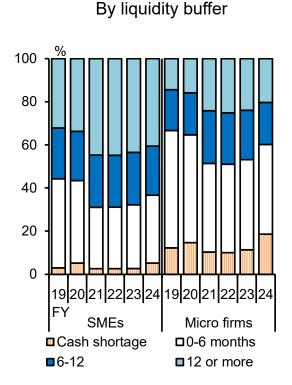


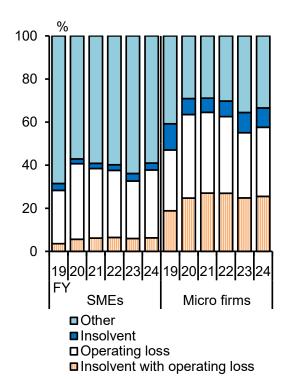
Composition of SMEs and micro firms by financial characteristic

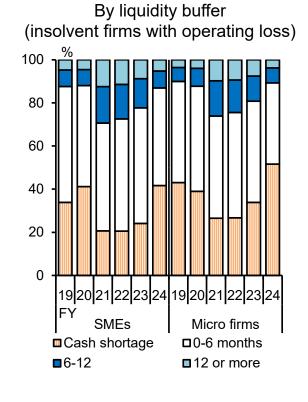
- Firms that have secured ample cash reserves continue to be in the majority, due in part to the various measures to support corporate financing since the pandemic.
- However, most recently there have been signs of an increase in the share of firms with relatively little cash reserves.
- ➤ Although the share of firms that are both making operating losses and are insolvent overall is limited, it rose during the pandemic and remains elevated.

Composition of SMEs and micro firms by financial characteristic

By operating profits and insolvency



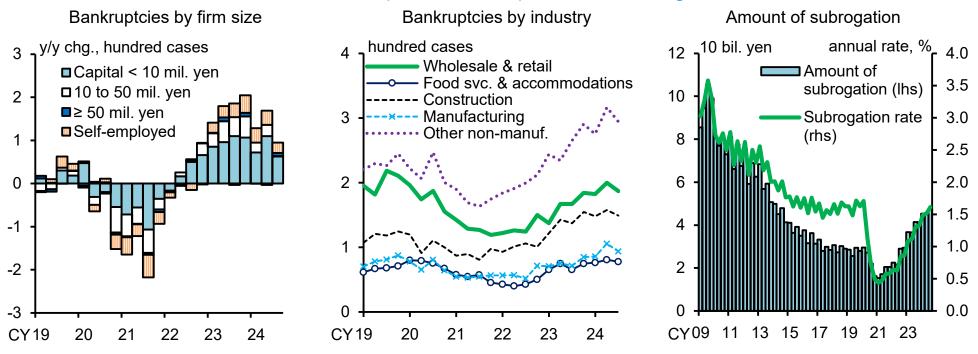




Recent developments in corporate bankruptcies

- ➤ Corporate bankruptcies have been increasing since the second half of 2022, particularly among small-sized firms.
 - By industry, firms in non-manufacturing, including the wholesale and retail industry, account for a large share of firms that have gone bankrupt.
 - Amid the increase in corporate bankruptcies and defaults, particularly among micro firms, credit guarantee corporations' subrogation has recently been rising.

Number of corporate bankruptcies and subrogation

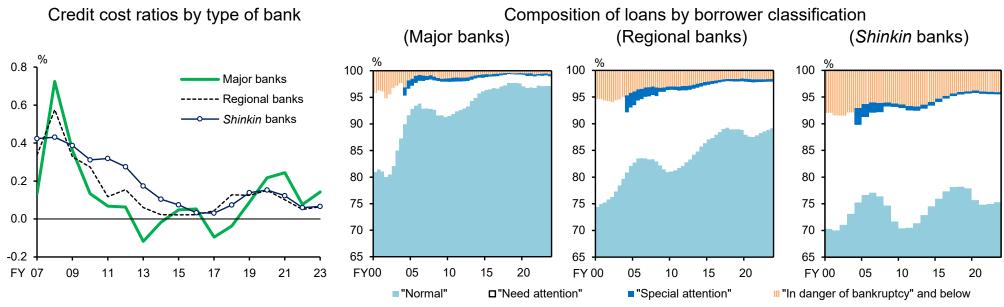


Note: See Chart IV-1-6.

Banks' credit costs

- Despite the increase in corporate bankruptcies, banks' credit cost ratios have remained at a low level.
 - Likely reasons include that many of the firms that have gone bankrupt or have defaulted are small, that major and regional banks in particular had built up precautionary loan-loss provisions in the early phase of the pandemic, and that some loans are covered by credit guarantees, including zero-zero loans.

Credit cost ratios and the composition of borrower classifications



Note: See Chart IV-1-1.

Note: See Chart IV-1-2.

Bankruptcies and defaults of financially vulnerable firms

- ➤ While the overall default rate has increased, the rise in the default rate of firms that are financially vulnerable -- i.e., firms with relatively little cash reserves and firms that are both making operating losses and are insolvent -- has been more pronounced.
- ➤ There has been a marked rise in the default rate of firms that were already vulnerable with respect to cash reserves and had low credit scores in fiscal 2018, before the pandemic. This indicates that past vulnerabilities have been materializing with a time lag.
- The default rate of firms that were not highly vulnerable before the pandemic has also been rising somewhat.

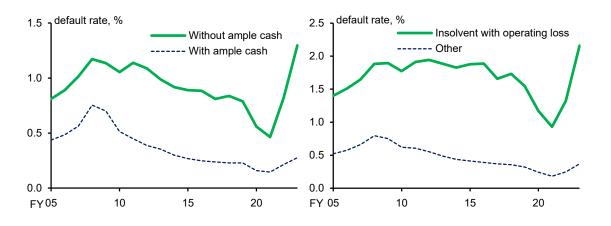
Default rates by firm's financial characteristic

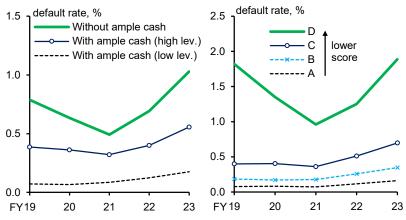
Based on financial conditions at each time point

(By amount of cash reserves) (By operating profits and insolvency)

Based on pre-pandemic financial conditions

(By amount of cash reserves) (By credit score)





Note: 1. Firms with cash reserves (the sum of cash, deposits, and short-term securities at the beginning of each year and net operating cash flow during the year) of less than half of their annual administrative expenses are grouped as "Without ample cash" and other firms as "With ample cash."

^{2. &}quot;Based on pre-pandemic financial conditions" is based on the classification in fiscal 2018 and covers firms with repeated observations since fiscal 2018.

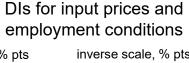
^{3. &}quot;By credit score" is based on quartiles of probability of default (PD) in fiscal 2018 (estimated using the PD model).

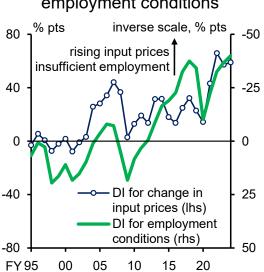
^{4.} See Charts IV-1-7 and IV-1-8.

Rising costs and corporate bankruptcies

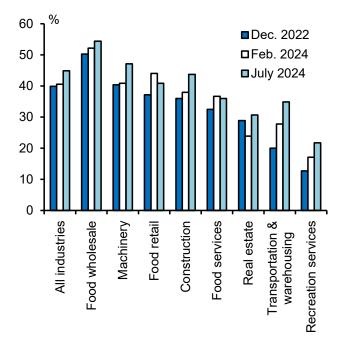
- > While the upsurge in import prices has ceased, the rising cost pressure has remained, as suggested by the DIs for input prices and employment conditions in the *Tankan*.
 - Pass-through from costs to prices has been spreading recently, although the degree varies by industry.
- The rise in costs on the whole has been absorbed by increased sales. However, there have been bankruptcies due to rising prices and labor shortages.

Environment surrounding firms' financial conditions

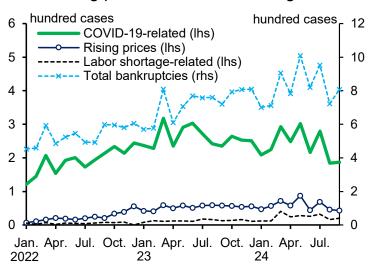




Price pass-through rates by industry



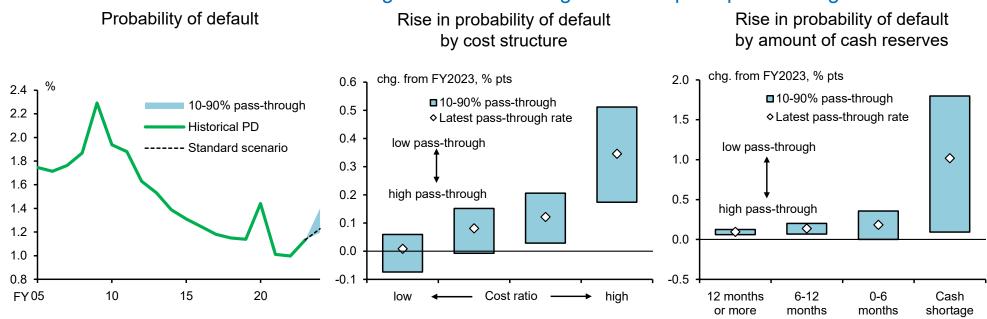
Bankruptcies related to COVID-19. rising prices, and labor shortage



Simulation results on rising costs and defaults

- ➤ With some assumptions on sales and price pass-through, the estimation results on the impact of rising costs show that the probability of default could increase, compared to fiscal 2023, for firms whose business conditions are unfavorable and those with high cost ratios through a decline in cash reserves.
- While it is unlikely that the credit cost ratio overall will increase substantially, with the price passthrough gradually spreading, future developments warrant careful attention.

Default simulation taking into account rising costs and price pass-through



Note: 1. Values for fiscal 2024 are the average probability of default (PD) estimated from the PD model. Covers SMEs.

- 2. Cost ratio represents firms' variable and labor costs relative to their sales. The amount of cash reserves represents cash reserves (the sum of cash, deposits, and short-term securities at the beginning of each year and net operating cash flow during the year) relative to monthly average administrative expenses.
- 3. "Standard scenario" is estimated using the sales and profits forecasts for fiscal 2024 in the *Tankan*. The bands show the range in which the PD would change depending on the rate of price pass-through.

4. See Charts IV-1-11 and IV-1-12.

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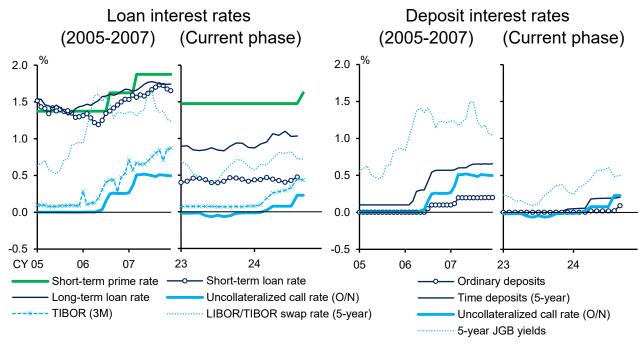
3. Impact of rising interest rates

- Firms
- Households and housing loans
- Banks

Impact of rising interest rates: loan and deposit interest rates

- ➤ The Bank decided to change the monetary policy framework in March 2024, and raised the policy rate in July.
- ➤ The five-year TIBOR swap rate, which serves as the base rate for fixed-rate loans, and the three-month TIBOR, which is the base rate for loans linked to market interest rates, have been rising moderately since the start of 2024. Since the turn of September, many banks have raised their short-term prime rate, which is the base rate for prime rate-linked loans.
- ➤ In the deposit market, while interest rates on time deposits were raised before ordinary deposits, interest rates on ordinary deposits have risen to around 0.1 percent recently.

Loan and deposit interest rates (compared to the previous phase of policy rate hikes)



Note: 1. Loan rates indicate average contract interest rates on new loans and discounts (3-month backward moving averages). Deposit rates indicate the typical rates posted at banks.

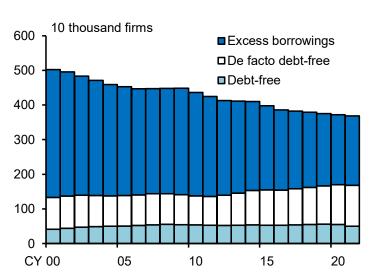
2. The latest data for market rates, short-term prime rates, and deposit rates are as of September 2024. Those for loan rates are as of August 2024. See Chart IV-4-7.

Impact of rising interest rates: firms

- ➤ Looking at firms as a whole, there has been an increase in the number of firms that are either debtfree or de facto debt-free, while the number of firms with borrowings exceeding cash and deposits has decreased.
- The terms of corporate loans are becoming longer, and more loans are at fixed interest rates for firms with borrowings.
- Firms' interest payment capacity, measured by ICR, declined temporarily after the pandemic, but has improved recently on the whole. However, the pace of improvement has been modest for firms whose financial conditions are vulnerable.

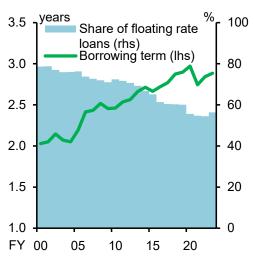
Developments in borrowing in the corporate sector

Number of firms by borrowing status



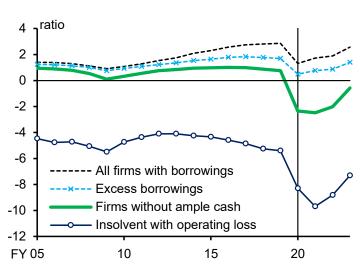
Note: Shows the number of privately owned establishments. The breakdown is estimated based on data from the Teikoku Databank. "De facto debt-free" indicates firms with cash and deposits equal to or more than their interest-bearing debt. See Chart IV-1-13.

Borrowing term and share of floating rates for corporate debt



Note: See Chart IV-1-15.

ICR by firm's financial characteristic



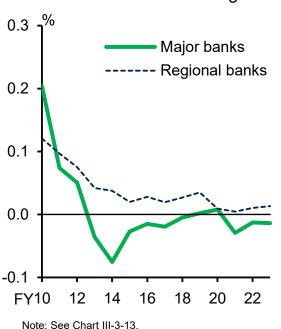
Note: Covers SMEs (medians). See Chart IV-1-14.

Impact of rising interest rates: households and housing loans

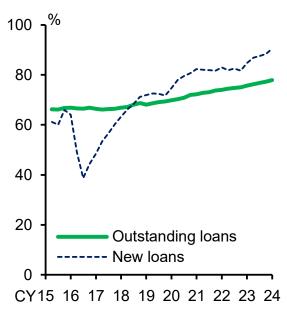
- Credit cost ratios of housing loans have been at a low level in recent years.
 - Housing loan delinquency rates have been trending downward since the global financial crisis, when employment conditions were under severe stress.
 - Floating-rate loans account for about 80 percent of housing loans, and the LTI ratio has risen, especially for younger households. That said, rules to prevent drastic changes in payments for housing loans, such as the "5-year rule" and the "125 percent rule," act to curb short-term increases in the repayment burden.

Circumstances surrounding housing loan repayments

Credit cost ratios of housing loans

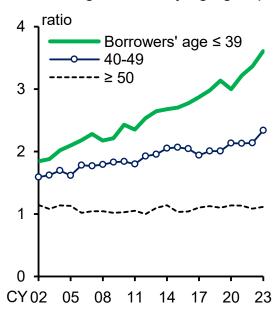


Share of floating-rate housing loans



Note: See Chart III-3-12.

Housing loan LTI by age group



Note: LTI is the ratio of borrowers' loans outstanding to their annual income. Covers two-or-more-person households with liabilities. See Chart III-3-11.

Impact of rising interest rates: banks (1)

- ➤ Looking at banks as a whole, yen IRRBB has remained low as the amount of yen interest rate risk on the asset side and the liability side is more or less in balance.
- Banks' risk on yen-denominated bonds has been suppressed compared to before. Banks' overall interest rate risk-to-capital ratio -- calculated by adding the interest rate risk associated with yen-denominated bonds and that associated with foreign currency bonds -- has generally been unchanged.
 - There are a number of banks with high interest rate risk associated with securities investment, and continuous careful management of interest rate risk is needed.

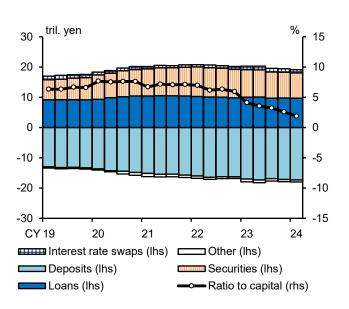
Banks' interest rate risk

(Major banks)

tril. yen

8

Interest rate risk in the banking book



70
60
50
40
30
20
10
CY14 15 16 17 18 19 20 21 22 23 24 14 15 16 17 18 19 20 21 22 23 24

Yen interest rate risk (lhs)

Foreign currency interest rate risk (lhs)

Ratio to capital (rhs)

Interest rate risk of securities holdings

(Regional banks)

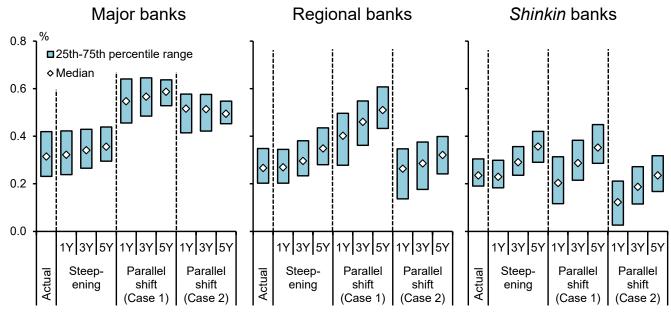
Note: Shows interest rate risk in terms of the 100 BPV for yen and 200 BPV for foreign currency. See Chart IV-2-2.

(Shinkin banks)

Impact of rising interest rates: banks (2)

- ➤ The impact of rising interest rates on banks' profits depends on the type of bank, the shape of the yield curve, the time horizon, and the pass-through of interest rates to loan and deposit rates.
- A steepening of the yield curve leads to an increase in PPNR excluding trading income across all types of banks, as it suppresses an increase in funding costs.
- ➤ A parallel upward shift of the yield curve temporarily suppresses PPNR excluding trading income for some regional and *shinkin* banks, since they have few assets coming up for interest rate renewal in the near term. That said, PPNR excluding trading income subsequently improves as their interest rate-related assets come up for renewal.

Levels of ROA based on PPNR excluding trading income



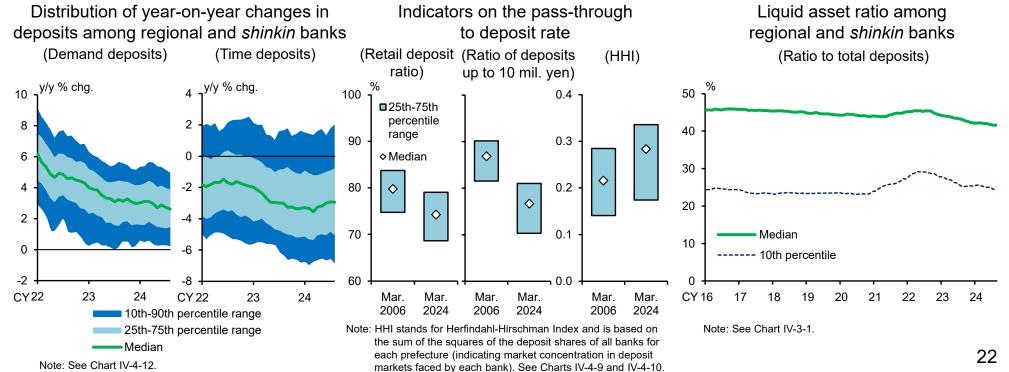
Note: 1. Shows the simulation results when 10-year JGB yields increase by 1 percentage point (short-term rates remain unchanged for "Steepening" and increase by 1 percentage point for "Parallel shift"). Interest rate pass-through for short-term prime rate-linked loans and fixed-rate loans is assumed to be 100 percent for "Steepening" and "Parallel shift (Case 1)" and 50 percent for "Parallel shift (Case 2)."

^{2.} Actual values are as of fiscal 2023 (profits and losses from investment trusts due to cancellations are excluded). The horizontal axes indicate the number of years after an increase in interest rates. See Chart IV-4-6.

Impact of rising interest rates: banks (3)

- Looking at year-on-year rates of change in deposits shows that demand deposits have continued to increase at many banks, with no major change seen around the time of the policy rate hike. There has also been no major change in the growth of time deposits.
- ➤ Compared to the previous phase of policy rate hikes in 2006, the share of sticky deposits has declined, and it warrants attention that this could push up the pass-through of market rates to deposit rates. Meanwhile, the rise in market concentration in regional deposit markets could push down the pass-through rate.
- ➤ Yen funding liquidity has remained highly stable as a large portion of the loan-to-deposit gap is invested in highly liquid securities.

Deposits outstanding, pass-through to deposit rate, and yen funding liquidity



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4. Macro stress testing

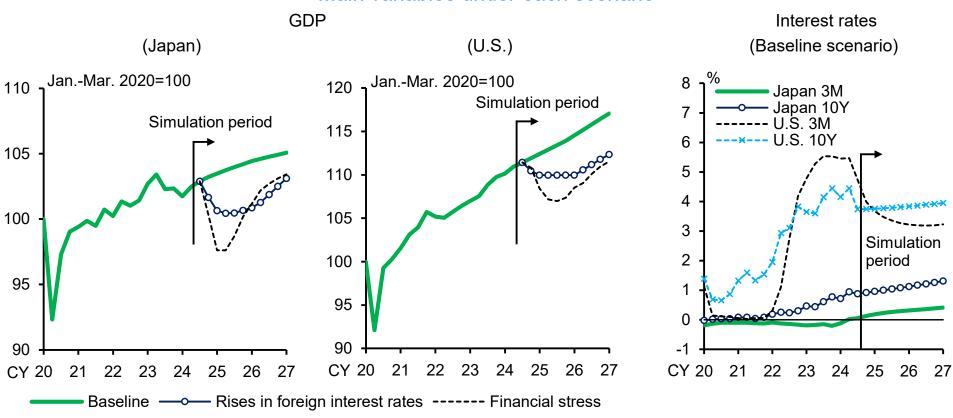
- Baseline scenario
- "Rises in foreign interest rates" scenario
- "Financial stress" scenario

Stress testing: Overview of scenarios

- ➤ Uncertainty surrounding domestic and foreign financial markets remains high, as seen in global market volatility at the beginning of August. Market participants have paid attention to the effects of monetary policy in the United States and Europe on economic activity and financial systems, to uncertainty over the U.S. economy and its fiscal management, and to geopolitical risks.
- ➤ Macro stress testing is conducted to examine the stability of the financial system under (1) the baseline scenario, (2) a "rises in foreign interest rates" scenario, and (3) a "financial stress" scenario.
 - (1) The baseline scenario assumes that Japan's economy keeps growing with foreign economies continuing to grow moderately, based on forecasts for economic variables by private research institutions and international organizations as of September 2024. It assumes that domestic and foreign interest rates will move in line with the forward rate curve as of late September 2024.
 - (2) The rises in foreign interest rates scenario assumes rises in foreign interest rates against the background of increasing raw material costs at home and abroad, triggered by geopolitical or other exogenous events, and slowdowns in foreign economies.
 - (3) The financial stress scenario assumes repricing in global financial markets of the same magnitude as that observed at the time of the global financial crisis, mainly of risky assets, and a significant deterioration in domestic and foreign economies.
- In addition, a sensitivity analysis is conducted assuming a 1 percentage point parallel upward shift in short- and long-term interest rates from the baseline scenario.

Stress testing: Variables under each scenario

Main variables under each scenario

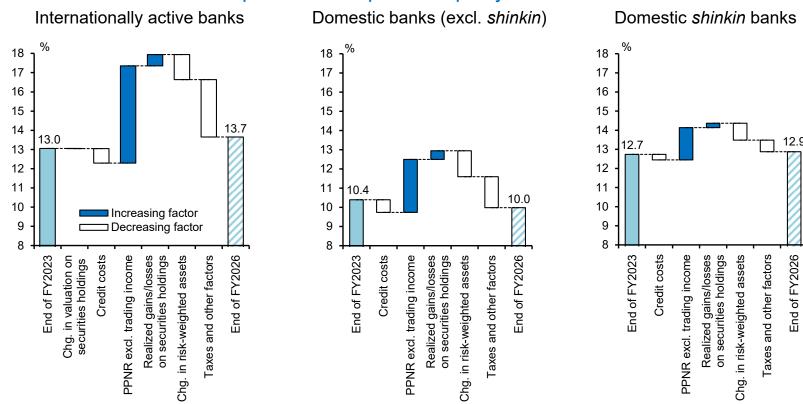


Note: See Chart V-2-1. Note: See Chart V-2-2.

Stress testing: Baseline scenario

- ➤ The simulation results indicate that capital adequacy ratios at the end of fiscal 2026 -- the end of the simulation period -- are sufficiently above the regulatory requirements for all types of banks.
 - While the cumulative increase in PPNR excluding trading income as a result of the recovery of the economy contributes to boosting capital, the increase in lending makes a negative contribution to the capital adequacy ratio, reflecting the increase in risk-weighted assets, which is the denominator of the ratio.

Decomposition of capital adequacy ratio: Baseline

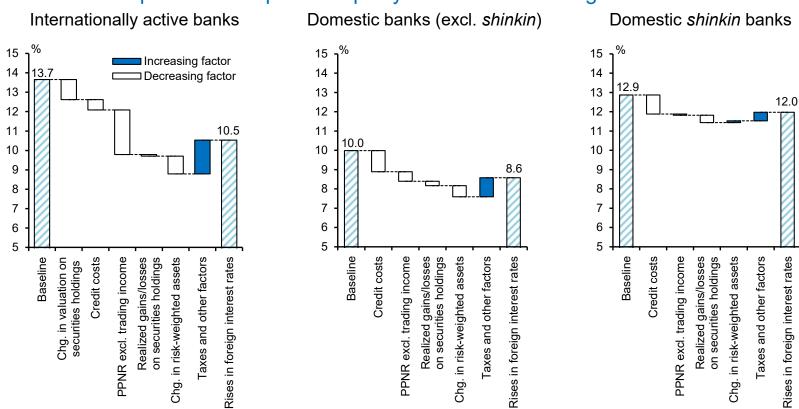


Note: Indicates the contribution of each factor to the difference between the capital adequacy ratios at end-fiscal 2023 and the end of the simulation period (as of end-fiscal 2026). See Chart V-2-3.

Stress testing: Rises in foreign interest rates scenario

- The simulation results indicate that capital adequacy ratios at the end of fiscal 2026 are lower than in the baseline scenario for all types of banks.
 - The ratios are pushed down by a decrease in foreign net interest income (decline in PPNR excluding trading income) due to rising foreign currency funding costs, particularly among internationally active banks. In addition, credit costs increase for all types of banks due to a deterioration in corporate profits through rising raw material costs.

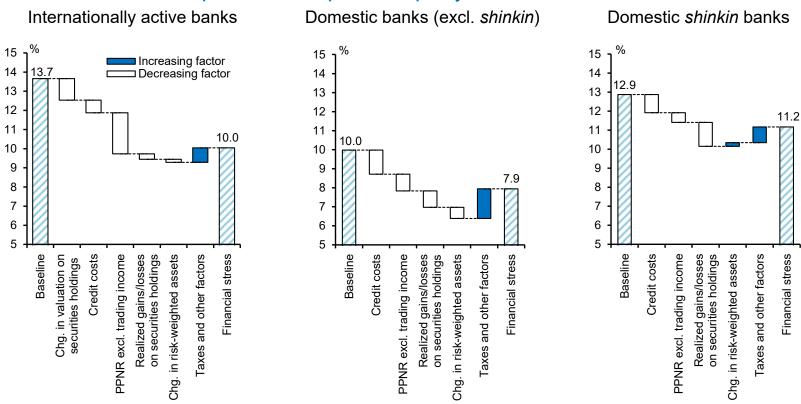
Decomposition of capital adequacy ratio: Rises in foreign interest rates



Stress testing: Financial stress scenario

- ➤ The simulation results indicate that capital adequacy ratios at the end of fiscal 2026 are substantially lower than in the baseline scenario for all types of banks.
 - The decrease in capital adequacy ratios reflects a deterioration in both valuation and realized gains/losses on securities holdings owing to a decline in the prices of risky assets, a decline in PPNR excluding trading income due to the fall in interest rates, and an increase in credit costs resulting from the economic downturn.

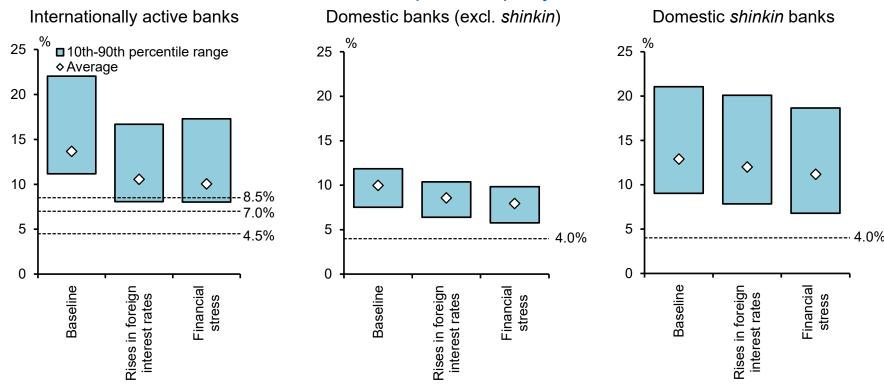
Decomposition of capital adequacy ratio: Financial stress



Stress testing: Distribution of capital adequacy ratios

- ➤ The results of the macro stress testing indicate that Japanese banks have sufficient capital bases and stable funding bases to withstand these substantial and acute stress events, since capital adequacy ratios are above the regulatory requirements on average under the "rises in foreign interest rates" scenario and the "financial stress" scenario.
 - However, as shown in the analysis in the previous Report, there are many banks whose core profitability has become lower than in the past, and it is possible that more banks would require a certain amount of time to restore their capital if it is impaired.

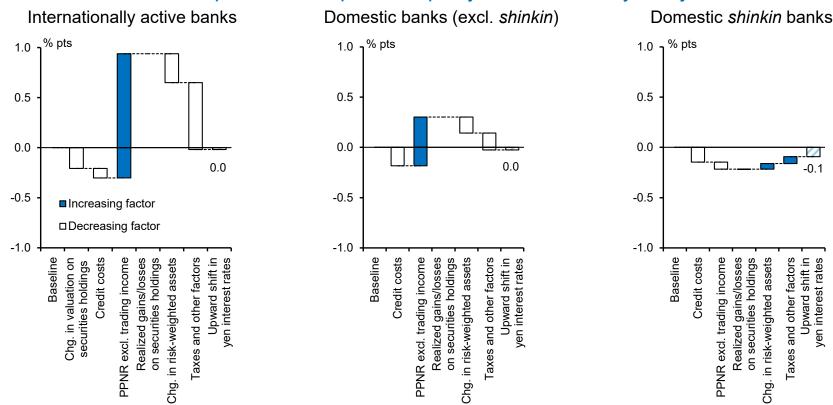
Distribution of capital adequacy ratios



Stress testing: Sensitivity analysis

- ➤ The sensitivity analysis assumes that there is a 1 percentage point parallel upward shift in shortand long-term interest rates from the baseline scenario. The simulation results indicate that average capital adequacy ratios are almost identical to those in the baseline scenario for all types of banks and remain sufficiently above regulatory levels.
 - Looking at changes in capital adequacy ratios, taking valuation gains/losses on all investment securities into
 account, shows that the ratios remain sufficiently above regulatory levels, although they are pushed down due
 to valuation losses on investment securities.

Decomposition of capital adequacy ratio: Sensitivity analysis



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5. Other notable developments

- Factors behind the volatility in asset prices at the beginning of August 2024
- Risks related to digital technologies

Factors behind the volatility in asset prices at the beginning of August 2024

- ➤ In global financial markets, stock prices declined worldwide at the beginning of August 2024, triggered by heightened concerns over a slowdown in the U.S. economy, leading to large fluctuations in asset prices. At the same time, yen carry trade positions were unwound and the yen appreciated against the dollar.
- ➤ In the Japanese stock market, stock prices declined further due to the decline in U.S. stock prices, the yen's appreciation, and follow-on selling by foreign investors.
- ➤ Prices of risky assets have subsequently risen. However, tightening of global financial conditions continues to warrant attention.

Developments in stock and foreign exchange markets through the beginning of August 2024

Major stock indexes in Japan, the U.S., and Europe in July-August

beg. of July 2024=100 beg. of July 2024=100 108 116 U.S. employment statistics (for July) released 104 108 100 100 96 92 84 92 88 76 29 Aug. 5 12 22 26 July 1 S&P 500 (lhs) NASDAQ (lhs) Note: See Chart B1-1. EURO STOXX (lhs) TOPIX (rhs) -- Nikkei 225 Stock Average (rhs)



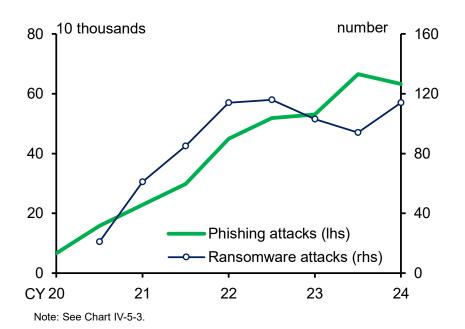
IMM yen positions

Note: See Chart B1-5.

Risks related to digital technologies

- ➤ The spread of digital technologies provides banks with opportunities to improve operational efficiency and provide new financial services. At the same time, it also represents a new source of risks.
- Although the number of cyberattack cases confirmed in Japan has been small compared to the number of cases seen abroad, the number of ransomware and phishing attacks has increased. Banks should continue to engage in initiatives to enhance operational resilience and risk management, including managing outsourcing partners.
- ➤ Regarding the adaptation to new technologies, for example, as generative AI has recently started to spread rapidly through society, banks need to adequately recognize its applicability and risks.

Number of cyberattacks in Japan



Applicability and risks of generative Al usage among financial institutions

	Data processing	Operation
Applicability	Text analysis	Summarizing/revising documents
	Preparation/review of documents	Translation
	Customer relations	System operation management
Risk	Hallucination	Unauthorized use of prompts
	Ethical bias	Leakage of confidential info.
	Blackbox	Infringement of copyrights, etc.

Note: See Chart IV-5-6.

(Conclusion) Stability assessment and caveats

- Japan's financial system has been maintaining stability on the whole.
- Financial intermediation has continued to function smoothly, and no major financial imbalances can be observed in these financial intermediation activities.

Risks faced by financial institutions

- The quality of banks' domestic and foreign loan portfolios has been maintained. That said, while corporate profits have been on a recovery trend on the whole, attention should be paid to the point that bankruptcies have been increasing in Japan, particularly among firms whose business conditions had already been unfavorable and small-sized firms whose profits have been improving only at a slow pace.
- Banks have been rebalancing their securities portfolios, and their resilience to rising yen interest rates has been increasing. Rising yen interest rates are likely to improve banks' interest income balances overall from a somewhat longer-term perspective. However, given the uncertainty of these effects, banks need to continue to adequately manage their duration and interest rate risks.
- Banks have sufficient yen funding liquidity. As for foreign currency, they have maintained stable funding. Banks need to continue to work toward establishing stable funding bases.
- Banks need to continue to properly manage risks related to digital technologies and climate-related financial risks.

Resilience of the financial system

- Looking at banks' loss-absorbing capacity, their capital well exceeds regulatory requirements.
- Based on the results of the macro stress testing, it can be judged that the stability of Japan's financial system is maintained even under stress which assumes foreign interest rates remain higher for longer and stress equivalent to the global financial crisis. However, some banks may need a certain amount of time to restore their capital if it is impaired. Banks need to continue to be prepared to appropriately manage a variety of risks.