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Bank of Japan

An Economy with Positive Interest Rates

Speech at Hitotsubashi University Policy Forum

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(English translation based on the Japanese original)

Introduction

After a quarter century with near zero or negative policy interest rates, the Japanese economy is transitioning to a state with positive rates. People have mixed feelings about a state that has been unknown for decades. Let me pose three questions regarding an economy with positive interest rates.

I. What Kind of Economy to Anticipate?

The first is the question of what kind of economy with positive interest rates to anticipate and what kind of path to pursue toward it. The difference between an economy with and without positive rates is not merely the presence or absence of positive rates. There are many possible forms of an economy with positive rates, and the path toward such an economy, including the causes and the speed of transition, can also be diverse.

To explore what can lie behind positive policy rates, I would like to begin with a conceptual framework for policy rate setting (Chart 1). First, let us assume that economic activity is affected by the level of the real policy rate, which is the nominal policy rate minus inflation expectations. A central bank will set its nominal policy rate to attain the desired level of the real policy rate.

The appropriate level of the real policy rate could be derived by adding to or subtracting from the natural rate of interest, the rate that is neutral to the economy, according to the policy stance toward how restrictive or accommodative the central bank desires its monetary policy to be. In the case of a central bank with a price stability mandate, the policy stance is set so as to bring the inflation rate in line with the price stability target.

There can be various approaches in determining the policy stance. One example could be (1) to look at the extent to which the current inflation rate and medium- to long-term inflation expectations deviate from the target, and (2) to assess how the deviation is likely to develop going forward by examining slack or bottlenecks in the economy and the persistence of the impact of external shocks, as well as structural factors.

Where inflation expectations are well anchored at 2 percent, the central bank will pay particular attention to the risk of de-anchoring. Where inflation expectations are not anchored at 2 percent, the central bank will consider how they could be anchored.

In short, policy stance is set based on a judgment regarding underlying inflation.

What I have explained is one example among many possible formulations. In this example, none of the factors mentioned can be directly observed except for the current inflation rate, the nominal policy rate, and the price stability target. Inflation expectations, their degree of anchoring, the natural rate of interest, economic slack and bottlenecks, the persistence of the effects of external shocks, and structural factors can only be estimated or evaluated by making various assumptions and processing multiple sources of data using complex methodologies.

Therefore, it is not easy to verify with real data whether the framework has helped attain desired outcomes, or whether the actual conduct of policy has been in line with the framework. Moreover, since many factors that stand between the actual inflation rate and policy decisions are not directly observable, the framework can be confusing when used as a means of communication.

However, even simpler policy rules, such as the Taylor rule, still have at their core factors that are not directly observable, such as the natural rate of interest and the output gap. Also, many central banks do not mechanically apply simple rules. Rather, their policy discourse is often based on some kind of conceptual framework not dissimilar to the one I have described.

I would argue that the framework can help us interpret, for example, the rapid policy tightening in the United States in 2022 (Chart 2). In the United States, inflation expectations had been anchored at 2 percent, but soaring commodity prices as well as narrower slack resulting from the economy's recovery from the pandemic and fiscal stimulus caused a sharp rise in inflation, which posed the risk that inflation expectations could be de-anchored to the upside. These developments, in particular the de-anchoring risk, led to a restrictive

policy stance. I would say that the policy response successfully contained the risk of de-anchoring.

On the other hand, what has happened in Japan is, despite some resemblance, quite distinct from what happened in the United States. In Japan, inflation expectations were clearly below 2 percent and then gradually shifted toward 2 percent. The economy had significant slack but the slack has gradually narrowed. In view of these factors, the policy stance has been gradually adjusted to reduce the degree of monetary accommodation.

A desirable development in the latter type of direction would be something like the following: a virtuous cycle of growth and distribution moves forward, in which firms invest and conduct R&D, workers accumulate skills, the economy grows, and the fruits of this growth result in greater wages and corporate profits, leading to stronger consumption and investment, and, supported by this cycle, moderate inflation takes hold and brings the economy gradually towards a state with positive interest rates.

In this case, the economy with positive interest rates is not simply accompanied by positive rates, but also by growth, wage increases, flexible pricing, vigorous investment, and productivity improvements. It may be hoped that the rigidity entrenched in the behavior of the corporate and other sectors may gradually become more flexible, leading possibly to a slight increase in the natural rate of interest.

Keidanren (the Japan Business Federation) conducted a survey of its member firms regarding an economy with positive interest rates and published the results in December last year (Chart 3). According to the survey, approximately 70 percent of firms had a positive impression of such an economy, while 30 percent had a negative impression. Many firms that responded positively explained their view, saying "because it is the economic environment as it should be" or "because it signifies the good state of the economy." In addition, when asked what kind of strategy is required of firms in an economy with positive rates, by far the most common answer was "providing high value-added products and services," according to the survey. The image of the economy with positive interest rates these respondents held seems to be close to the desirable developments I described earlier.

These are indeed the kind of developments that the Bank of Japan wishes to see, and so far the Japanese economy seems to be gradually moving toward that goal.

At its Monetary Policy Meeting in January, the Bank decided to raise the policy rate from 0.25 percent to 0.5 percent (Chart 4). Even after the rate hike, real interest rates will remain significantly negative, and accommodative financial conditions will be maintained, which will continue to provide solid support for economic activity. Looking ahead, the Bank will adjust the degree of monetary accommodation by raising the policy rate, if the outlook we have for the economy and prices continues to be realized. We will strive to conduct monetary policy so as to maximize the likelihood that we follow a favorable path.

How should we proceed in the future in order to reach a better form of an economy with positive interest rates? What should be expected of monetary policy? What should be expected of firms, households, and the government? These are aspects of the first point on which I would like to seek your views.

II. Is an Economy with Positive *Real* Interest Rates Forthcoming?

The second question is whether an economy with positive real interest rates is coming.[1] We are entering an era with positive nominal interest rates, but are some way off from having positive real interest rates (Chart 5).

The economy with negative nominal interest rates, where one was worse off by depositing cash with the Bank of Japan than by keeping it under the mattress, ended last March, but we are still in an economy with negative real interest rates, where the real value of money lent or deposited decreases as the interest cannot keep up with inflation.

A negative real interest rate means that it pays to borrow and invest in a project whose real economic value gradually erodes.

[1] See also Ryozo Himino, "Japan's Economy and Monetary Policy," speech at a meeting with local leaders in Kanagawa," January 14, 2025.

Can negative real rates persist indefinitely? According to Ben Bernanke, Paul Samuelson taught him in graduate school at MIT that it is questionable.[2] Samuelson argued that, if real interest rates are expected to be negative indefinitely, almost any investment is profitable. To demonstrate his point, Samuelson cited a counterexample: at a negative interest rate, it would pay to level the Rocky Mountains to save even the small amount of fuel expended by trains and cars that currently must climb steep grades.

Indeed, even small cash flows, if they were to continue indefinitely, would have an infinite present value under a negative real interest rate.

I think this story gives us food for thought. Samuelson's argument has a whiff of an era when the prosperity of the U.S. economy was believed to last forever. If Samuelson were to come to Japan today and say the same thing, however, I am sure students would immediately retort: "Professor, if the amount of traffic crossing the Rocky Mountains continues to decline in the future, your counterexample does not hold. In an economy like Japan's, where the working-age population continues to decline and the size of the economy is expected to shrink eventually, is it not possible for the real interest rate to stay negative?"

I would like to respond to such students as follows: "A decreasing working-age population does not necessarily mean a shrinking economy. In Japan, firms largely completed the process of adjusting the excess employment resulting from the collapse of the bubble economy by around 2004 and, since then, although the working-age population has recorded a steep decline, the total number of working hours was largely maintained by means of greater labor participation, and real GDP continued to grow (Chart 6). Japan has had and will continue to have positive growth in real terms. Although some individual activities may decrease, economic activity as a whole will continue to grow. Samuelson's argument may hold true for Japan as well."

The merits of this reply depend on the prospect of continued positive growth. I think it is attainable.

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[2] Ben Bernanke, "Why are interest rates so low, part 2: Secular stagnation," *Brookings commentary*, March 2015.

Allow me to make a brief detour to recall an experience I had. From 1985 to 1987, I was a student at a business school in the United States. A professor showed the class a video of a machine tool factory in Japan after showing a video of a U.S. factory. I still remember my classmates being shocked to see robots building robots and even repairing robots. Japan in the late 1980s looked like a super-advanced technology giant.

Indeed, two-thirds of the world's industrial robots were in operation in Japan at that time, but by 2020 that share had dropped to 12 percent.[3] Today, Japan is not on the world's frontier in the use of artificial intelligence, self-driving vehicles, or drones. This should mean that many things can be done to overcome the declining population and labor shortages and continue economic growth.

In my view, a negative real interest rate can be necessary, and needs not be considered abnormal, if negative external shocks are impacting the economy or strong structural deflationary factors are constraining it. For Japan, this was the case during the global financial crisis and the COVID-19 pandemic. It was the same for the period when the corporate sector was saddled with excess debt, capacity, and employment in the wake of the collapse of the bubble economy and for the ensuing period when a risk-averse culture was entrenched in the sector. Perhaps it may also become the case if in the future we fail to overcome the effects of population decline. On the other hand, I do not think it normal for distinctively negative real rates to persist on and on, once the shocks and deflationary factors are resolved.

The level of the real interest rate that is neutral to the economy, or the natural rate of interest, is affected by various factors, not just by demographics. There is a great deal of uncertainty surrounding estimates of this level, depending on the data and methods used. Indeed, estimates by the Bank's staff vary considerably depending on the approach. Some may argue that the estimates around minus 1 percent are too much influenced by data from past periods of strong monetary easing. Others may question the estimates around zero, asking

[3] Center for Research and Development Strategy of the Japan Science and Technology Agency, "Panoramic View Report: Systems and Information Science and Technology Field," September 2024.

why the output gap has not improved noticeably while real interest rates are clearly negative.

How should we think about the natural rate of interest for Japan? Can the arrival of an economy with positive real interest rates be considered a possibility in the future? This is the second point on which I would like to hear your views.

III. What Is the Impact of Changes in Balance Sheets?

The third question is: Since the previous period when Japan had positive nominal interest rates, which was decades ago, the balance sheets of firms and households have undergone dramatic changes. How do the changes affect what will occur this time?

I would first like to look at the example of the United States, which raised interest rates ahead of Japan. The IMF in July last year published an interesting analysis in its Article IV staff report.[4] The Federal Reserve raised interest rates significantly in 2022, but before that, during the pandemic, U.S. businesses and households refinanced themselves, paying down higher-cost floating-rate debt and locking in low rates at long maturities. By end-2021, 95 percent of mortgages carried low, fixed rates. The average duration of corporate bonds became longer.

At the same time, both firms and households increased their holdings of short-duration financial assets. Households increased their holdings of bank deposits and money market funds (MMFs) by nearly 3 percent of GDP, while firms held additional bank deposits and MMFs equivalent to 2.3 percent of GDP.

As a result, while corporate interest payments increased on a net basis during past interest rate hikes, they have decreased by 30-40 percent during the latest interest rate hike phase (Chart 7). Also, households' net interest payments increased only slightly overall, despite an increase in interest payments on auto loans and revolving credit.

[4] IMF, United States -- Staff Report for the 2024 Article IV Consultation, July 1, 2024.

Of course, there is a possibility that the impact of interest rate hikes will be felt later as maturing debts are refinanced. But, according to the IMF, the impact of interest rate hikes on household consumption and business fixed investment has been rather muted so far, as a result of balance sheet changes in which firms and households shifted debt to long-term fixed interest rates and increased short-term financial assets.

In Japan as well, the balance sheets of both firms and households have undergone significant changes (Chart 8).

In the corporate sector, the ratio of firms without debt (debt-free firms) or only with debt less than the amount of cash held (firms with a net cash position) has increased significantly. The ratio of such firms was 25 percent in 1999 and reached 46 percent in 2021. In addition, the ratio of floating-rate borrowing by firms is declining, and maturities are getting longer.

Financial assets held by households were 1,000 trillion yen in fiscal 1990, but have recently reached 2,200 trillion yen, an increase of 1,200 trillion yen over the period. On the other hand, financial liabilities increased only by 50 trillion yen, from 340 trillion yen in fiscal 1990 to 390 trillion yen at present. Unlike in the United States, however, the ratio of floating-rate mortgages has been increasing.

As a result of these changes, there may be differences between what we saw during the previous period with positive nominal interest rates and what we will see this time.

Conclusion

I have raised three points today. First, what path should we follow to reach a better form of an economy with positive interest rates? Second, assuming that we are heading toward an economy with positive nominal rates, can we assume that we are also heading toward an economy with positive real rates? Third, what differences could arise between the economy with positive rates we saw decades ago and what we will see this time due to changes in the balance sheets of firms and households?

Today, I have only been able to raise questions. I hope that the leading experts who will speak in the following sessions will give me hints about how the questions can be answered.

Thank you for your kind attention.

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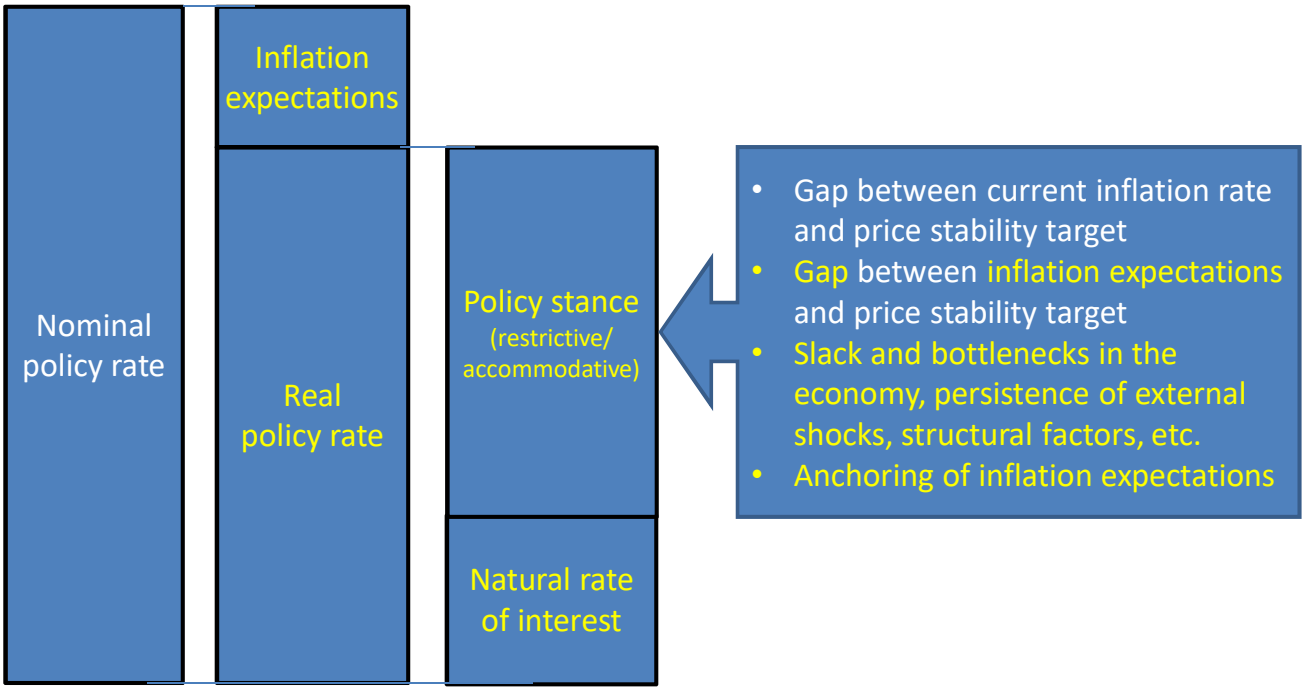
Chart 1

Conceptual Framework for Policy Rate Setting: An Example

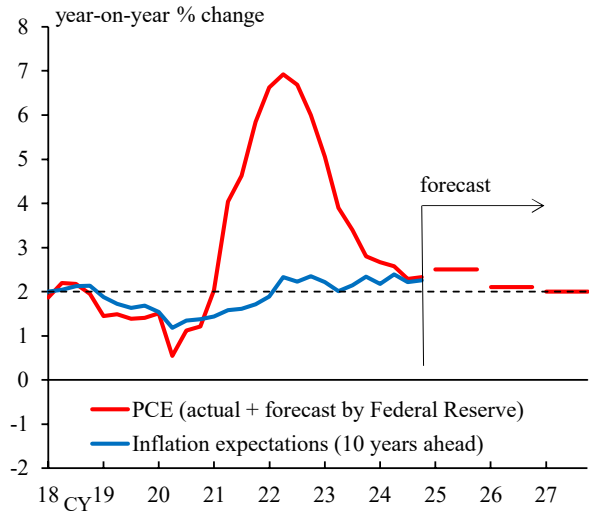


Note: Values of each box can be positive or negative. Elements shown in yellow are not directly observable.

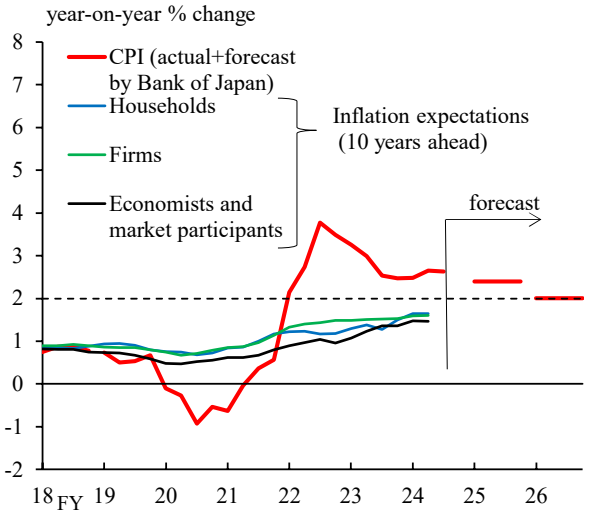
Chart 2

Developments in Consumer Prices and Inflation Expectations in the U.S. and Japan

United States



Japan

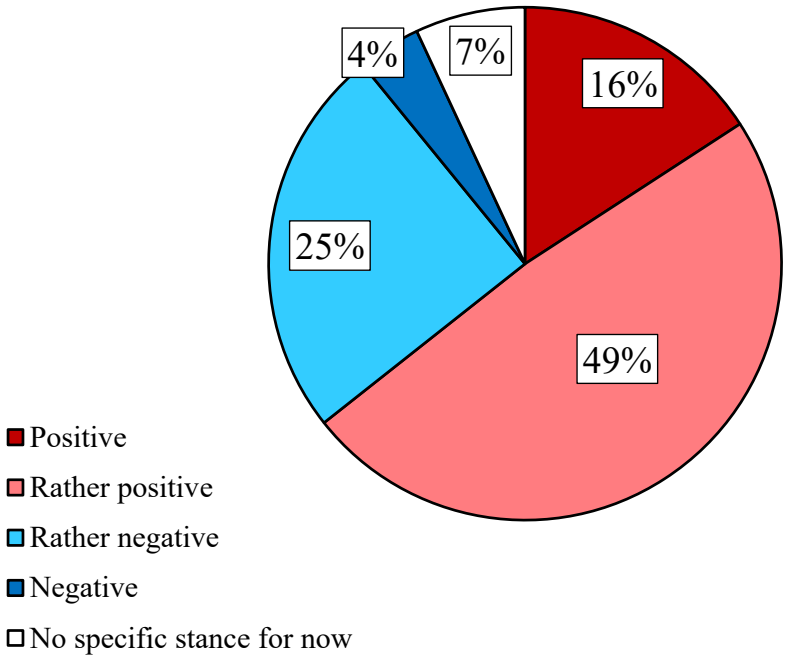


Note: The figure for the actual PCE for 2024/Q4 is the October-November average. Figures for Japan exclude fresh food.

Sources: Ministry of Internal Affairs and Communications; Bank of Japan; QUICK, "QUICK Monthly Market Survey <Bonds>"; Consensus Economics Inc., "Consensus Forecasts"; Bloomberg; BEA; Fed Cleveland; FRB.

Chart 3

Keidanren Firms' Perceptions of an Economy with Positive Interest Rates



Note: The chart shows the results of the survey of Keidanren member firms conducted between July 30 and September 17, 2024, to which 181 firms responded.
Source: Keidanren (Japan Business Federation).

Chart 4

Decision at the January 2025 MPM

Japan's economic activity and prices have been **developing generally in line with the Bank's outlook**, and **the likelihood of realizing the outlook has been rising**.

Medians of the Policy Board Members' Forecasts (y/y % chg.)

	Fiscal 2024	Fiscal 2025	Fiscal 2026
Real GDP	0.5 (-0.1)	1.1 (—)	1.0 (—)
CPI (all items less fresh food)	2.7 (+0.2)	2.4 (+0.5)	2.0 (+0.1)
CPI (all items less fresh food and energy)	2.2 (+0.2)	2.1 (+0.2)	2.1 (—)

Note: Figures in parentheses indicate changes from the October 2024 Outlook Report.

Wages

- Firms have expressed the view that they will **continue to raise wages steadily**, following the solid wage increases last year.

Prices

- With wages continuing to rise, **underlying CPI inflation has been increasing gradually toward 2 percent**.
- CPI inflation is likely to be at around 2.5 percent for fiscal 2025, due to the higher import prices stemming from the yen's depreciation etc.

Overseas economies

- Global financial and capital markets have been **stable on the whole**, while attention has been drawn to various uncertainties.

Adjusting the degree of monetary accommodation from the perspective of sustainable and stable achievement of the price stability target of 2 percent

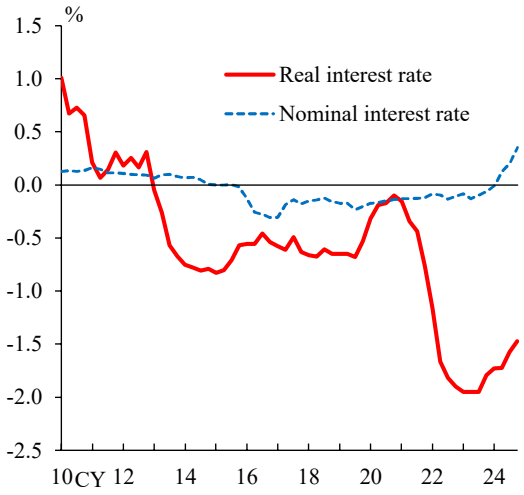
Short-term interest rate : (uncollateralized overnight call rate) **raised to "around 0.5%"** (previously "around 0.25%")

- Real interest rates are expected to remain significantly negative, and accommodative financial conditions will continue to **firmly support economic activity**.
- If the outlook presented in the January Outlook Report will be realized, the Bank will accordingly continue to raise the policy interest rate and adjust the degree of monetary accommodation.

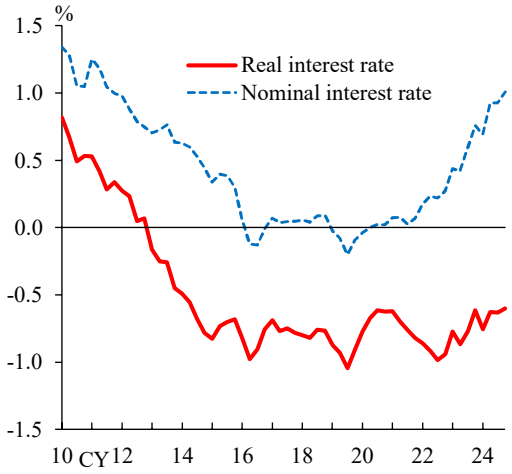
Chart 5

Developments in Real Interest Rates

Real Interest Rates (1-Year)



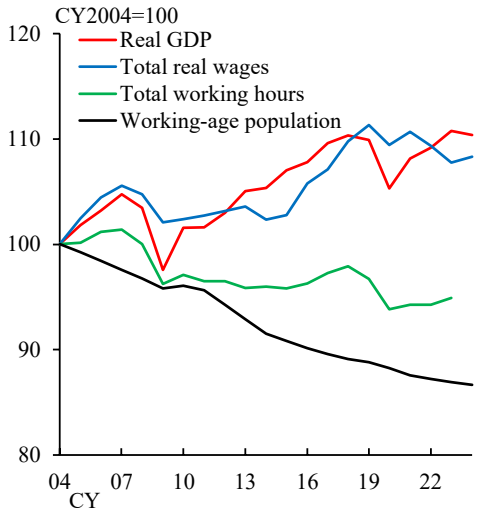
Real Interest Rates (10-Year)



Note: Figures for real interest rates are calculated as government bond yields minus the composite index of inflation expectations (Bank of Japan staff estimates).
Sources: Bank of Japan; QUICK, "QUICK Monthly Market Survey <Bonds>"; Consensus Economics Inc., "Consensus Forecasts"; Bloomberg.

Chart 6

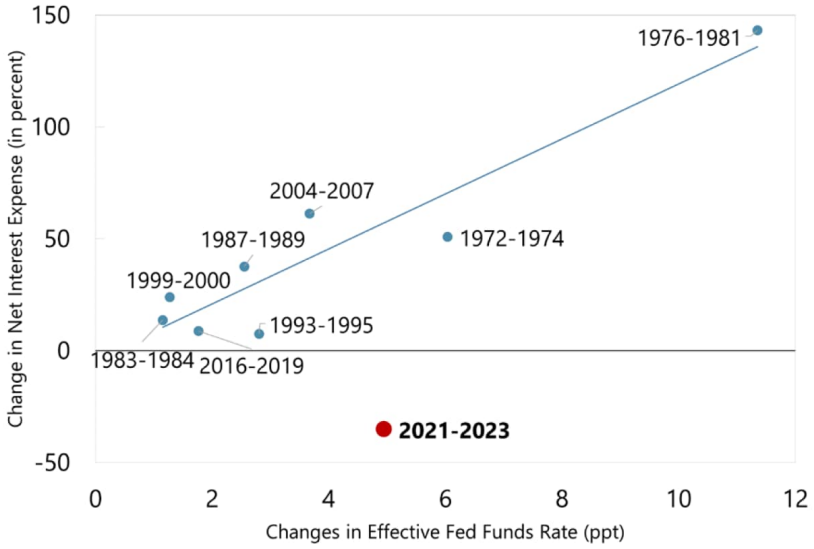
Shrinking Population, Working Hours, GDP, and Wages



Note: Total real wages are real compensation of employees in the System of National Accounts (SNA). Figures for real GDP and total real wages for 2024 are up to Q3. Total working hours are working hours of the total workforce.
Sources: Ministry of Internal Affairs and Communications; Cabinet Office.

Chart 7

Net Interest Payments by Nonfinancial Firms during Monetary Policy Tightening Cycle in the U.S.

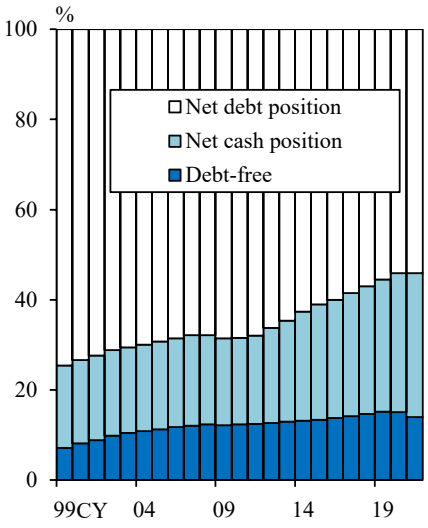


Source: IMF.

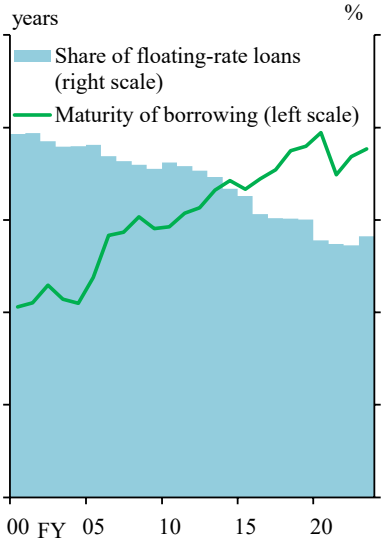
Chart 8

Developments in Firms' and Households' Balance Sheets in Japan

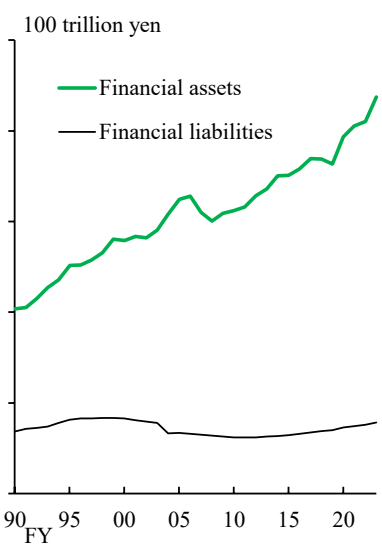
Ratio of Debt-Free Firms



Maturity of Borrowing by Firms



Financial Assets and Liabilities of Households



Note: In the middle chart, figures for the maturity of borrowing are estimated values based on borrowing data by maturity. Figures for the share of floating-rate loans are aggregate values of major and regional banks.
Sources: Teikoku Databank; Bank of Japan; Ministry of Finance.