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Bank of Japan

Transformation of the Global Economy and Developments in Monetary Policy

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(English translation based on the Japanese original)

Introduction

It is my pleasure to have the opportunity to speak at this meeting. In my speech today, I would like to offer my overview of how the focus of monetary policy of central banks, including the Bank of Japan, has changed to date in light of the global economic environment, which has undergone a major transformation in the wake of the Global Financial Crisis (GFC) and the COVID-19 pandemic. Since April 2021, I have been involved in monetary policy conduct as a Policy Board member of the Bank. Before that, as an academic researcher, I was engaged in analyzing monetary policy and other macroeconomic policy measures. Today, I will talk about developments in monetary policy from the past and into the future by trying to get back to a scholarly, somewhat holistic point of view.

Triggered mainly by the GFC from 2008 and the COVID-19 pandemic from 2020, the monetary policy of major central banks shifted dramatically from conventional policy, in which the central bank guides the interest rate as a policy tool, to unconventional policy, such as quantitative easing (QE). To come right to the point, the changes brought about by this policy shift to a considerable extent have been irreversible. Although many major central banks have returned from unconventional policy to conventional policy, their policy framework is very different from what it looked like before the GFC. That is, these central banks are now conducting monetary policy in the context of reserve balances that are significantly larger than before the GFC.

The crucial thing is that, despite such changes in policy measures, the established role of a central bank -- which is to ensure sustainable price stability by guiding the policy interest rate -- is not undermined. In response to the globally high inflation in the wake of the pandemic, many central banks in the United States and Europe discontinued unconventional policy and actively raised their policy interest rates, successfully containing inflation on the whole. This suggests that, in the end, adjusting policy interest rates is an effective tool in maintaining price stability, and that central banks' large reserve balances do not impede this process.

Turning to the Bank of Japan, at the March 2024 Monetary Policy Meeting, the Bank changed its unconventional policy -- namely, the framework of Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control and the negative interest rate policy -- and returned

to conventional policy, in which it guides the policy interest rate as a primary policy tool. The Bank made this decision because it judged at that point that it was now within sight that the price stability target of 2 percent would be achieved in a sustainable and stable manner. The Bank also raised the policy interest rate in July 2024 and again in January 2025, judging that the likelihood of achieving the target was increasing.

For a long time, prices and wages barely rose in Japan despite improvements in economic conditions. However, the impact of global inflation following the pandemic spread throughout the country in the form of higher import prices, causing Japan's economy to be struck with the kind of high inflation it had not experienced for a prolonged period. As a result, wages -- which tended to decline and not rise after the collapse of the bubble economy in the early 1990s -- have recorded their highest growth since the bubble period. This is partly because, while labor market conditions had begun to tighten due to labor shortages before the pandemic, they have now grown tighter across a wider range of industries following the pandemic. These developments indicate that Japan's economy is transitioning from a very unique economy with a "zero norm" -- which assumes that both prices and wages are unchanged -- back to a normal, growing economy -- where both prices and wages continue to rise in interaction with each other.

Another change in monetary policy was that the Bank in July 2024 decided on a guideline for reducing its purchases of Japanese government bonds (JGBs) for the period until March 2026. Subsequently, the Bank in June 2025 decided on a guideline for the period until March 2027. This means that the Bank will slowly reduce its balance sheet, which expanded with the conduct of unconventional policy, to restore the functioning of the JGB market. I personally think the Bank should take sufficient time in reducing its JGB purchases to minimize any disruptive impact on the market. Going slowly is possible because, as I mentioned earlier, the large size of the balance sheet will not hinder the conduct of monetary policy aimed at price stability. Rather, under the current policy framework, the smooth conduct of monetary policy necessitates that the Bank's balance sheet remain at a decent size.

Especially since April 2025, the global economy has faced large downside risks arising from U.S. tariff policy. It is not yet clear at what point and to what extent these risks will be resolved.

On the other hand, various economic indicators for Japan show steady progress in achieving the 2 percent price stability target. This suggests that the need to adjust the policy interest rate is increasing more than ever. Put differently, in terms of making policy decisions, upside risks to prices and economic activity in Japan are currently outweighing the downside risks. In this sense, it can be said that monetary policy in Japan is now entering a phase in which a careful assessment of the situation is necessary.

I. Developments in the Global Economy and Macroeconomic Policy Since the 2000s

A. From Economic Globalization to Deglobalization

In the early 2000s, the global economy entered an era marked by widespread globalization, in the sense of the expansion of cross-border economic activity. This trend was driven particularly by emerging economies such as China, India, Russia, and Brazil. These four countries came to be known as the BRICs after an acronym coined by Goldman Sachs in a 2001 report.[1] Moreover, Europe saw the introduction of a single currency, the euro, in January 1999, with banknotes and coins entering circulation in January 2002. This represented deeper economic integration among European countries.

A major catalyst for reversing this trend was the GFC, which began with the collapse of the U.S. investment bank Lehman Brothers in September 2008. The underlying cause was the U.S. subprime mortgage problem, triggered by a reversal of credit for mortgages extended to low-income borrowers, which had expanded unsustainably. The resulting financial shock spread to other countries, setting in motion what has been called a "once-in-a-century" economic crisis comparable only to the Great Depression.

Countries around the world subsequently experienced rapid economic contraction, and their public finances were hit hard. This is because an economic downturn typically reduces tax revenues while driving up government spending. In 2009, concerns surfaced about Greece, which had long-standing fiscal problems. These concerns soon spread to other European countries, and by 2010 had grown into what became known as the European sovereign debt

[1] Jim O'Neill, "Building Better Global Economic BRICs," *Goldman Sachs Global Economics Paper*, no. 66 (November 2001), https://www.goldmansachs.com/pdfs/insights/archive/archive-pdfs/build-better-brics.pdf.

crisis. The five euro area countries that were seen as facing a particularly severe fiscal situation were Portugal, Italy, Greece, Spain, and Ireland. The severity of the crisis was such that, at one point, it was feared that the euro might collapse.

As I will discuss later, governments and central banks across the world responded to the financial and economic crisis that began in 2008 with a variety of policy measures. As a result, some economies began to gradually recover from the 2010s onward. The pace of recovery was extremely slow, however, and the global economy as a whole increasingly appeared to be in what former U.S. Treasury Secretary Lawrence Summers termed "secular stagnation."[2]

Against this background, the process of globalization began to reverse, and the trend toward deglobalization gradually gathered strength. In June 2016, the United Kingdom in a national referendum voted to leave the European Union. In the United States, concerns about the threat posed by China gained momentum and, in October 2018, then-Vice President Mike Pence delivered a speech marking the onset of what has since come to be called the "new Cold War" between the United States and China. Most recently, the second Trump administration, which took office in January 2025, has introduced a new tariff policy that poses a fundamental challenge to the postwar international trade system advocating the expansion of free trade.

B. Macroeconomic Policy in the Wake of the GFC

Amid these developments in the global economy, the most significant watershed in the evolution of macroeconomic policy, including monetary policy, was the GFC that began in 2008. Prior to this crisis, the global economy -- or more specifically, advanced economies from the mid-1980s to the early 2000s -- experienced a period of relative stability in both output and prices, a period known as the Great Moderation.[3] Regarding the conduct of macroeconomic policy, the established approach had been that the role of ensuring macroeconomic stability -- such as stability in prices, employment, and income -- fell primarily to conventional monetary policy, while the primary role of fiscal policy was public

[2] View Summers' recorded remarks at a panel discussion at the Fourteenth Jacques Polak Annual Research Conference held by the International Monetary Fund in Washington D.C., November 8, 2013, 1:32:54, https://www.imf.org/en/Videos/view?vid=2821294542001.

[3] Ben Bernanke, "The Great Moderation," remarks at the meetings of the Eastern Economic Association in Washington D.C., February 20, 2004.

goods provision and income redistribution. However, the "once-in-a-century" shock of the GFC forced governments and central banks to adopt entirely new approaches.

One such approach was the full-fledged shift to unconventional monetary policy. Until then, monetary policy had relied solely on guiding the money market rate as the policy interest rate. That is, to realize stable growth in prices and employment, central banks lowered their policy interest rates when deterioration in economic conditions led to a decline in prices and employment, and raised policy interest rates in the opposite case. However, confronted by rapid economic contraction following the GFC, many central banks were forced to lower their policy interest rates to around 0 percent (Chart 1). These central banks then embarked on a new dimension of monetary policy by expanding their purchases of various assets, including long-term government bonds. This unconventional monetary policy measure of making large-scale asset purchases is generally known as quantitative easing or QE. Incidentally, the Bank of Japan pioneered this QE policy and implemented it from 2001 to 2006 to overcome deflation in the country.

The primary objective of unconventional monetary policy, typified by QE, was to purchase more assets and thereby apply an easing effect to overall financial conditions, including real long-term interest rates. Furthermore, some central banks -- including the Bank of Japan -- introduced a negative interest rate policy, under which a negative interest rate is applied to current account balances held by financial institutions at a central bank, and yield curve control, in which they controlled not only short-term but also longer-term interest rates. It can be said that, similar to QE, these policy measures were aimed at an enhanced easing of overall financial conditions. In this regard, unconventional monetary policy differs from conventional monetary policy, because the latter focuses on the effects generated through the transmission of interest rate changes in the money market to other financial markets.

The second distinctive approach of macroeconomic policy in the wake of the GFC was that, alongside unconventional monetary policy, many countries and regions once again began implementing fiscal policy as an economic stimulus measure. While there were exceptions, such as Japan in the 1990s, fiscal policy had long been largely absent from the global macroeconomic toolkit. Immediately after the GFC, however, many countries introduced

fiscal stimulus measures, such as the American Recovery and Reinvestment Act (2009) implemented by the Obama administration in the United States. This marked the return of fiscal policy as an integral part of macroeconomic policy.

However, this coordination of fiscal and monetary policy aimed at overcoming economic stagnation was quite short-lived. The reason for this is that, after fiscal concerns arose in Greece in 2009 and escalated into the European sovereign debt crisis, many countries began to turn to austerity measures out of fear of further deterioration in their fiscal situation. The upshot was that, despite patient monetary easing by central banks, escaping from low growth and low inflation proved difficult, and extremely low nominal interest rates became entrenched in many countries and regions. In Europe, for instance, not only policy interest rates but also long-term interest rates were occasionally negative in the second half of the 2010s (Chart 2). This was the clearest manifestation of what Summers termed "secular stagnation." In the end, the resumption of macroeconomic coordination had to wait until the onset of the COVID-19 pandemic.

C. Global Inflation Stemming from the COVID-19 Pandemic

The pandemic that first broke out in 2020 utterly transformed secular stagnation in the global economy. Initially, the pandemic triggered a sharp decline in production activity -- the largest such decline since the GFC. Conditions then reversed, however, with rapid inflation emerging across countries and regions. In response, many central banks in the United States and Europe began implementing strong monetary tightening measures in 2022, with a view to curbing high inflation and thereby achieving their inflation targets. From around mid-2024, given their progress in bringing inflation down toward the target rate, these central banks gradually lowered policy interest rates to appropriate levels.

When the pandemic started to spread, governments first imposed restrictions on economic activity to contain infections. Income and consumption in each country decreased and inflation slowed as a result, since many of the infection prevention measures not only intensified supply-side constraints but also reduced demand. As economic activity began to resume in spring 2021, however, prices started to rise in many countries and regions. Two factors were at work here: supply-side constraints and excess savings. Specifically, the

contraction in economic activity brought about by the pandemic created supply bottlenecks in different places through disruptions in supply chains and logistics networks; however, since these bottlenecks took time to resolve, supply-side constraints materialized once economic activity resumed. In addition, curbed consumption and public support led households to accumulate savings during the pandemic, and these excess savings fueled a surge in pent-up demand after the resumption of economic activity. This surge in demand in the absence of a normal supply capacity inevitably drove a sharp acceleration in inflation worldwide.

Many experts and policymakers initially regarded high inflation in the post-pandemic period as merely a temporary phenomenon that would subside naturally once pent-up demand dissipated and supply-side constraints waned. In reality, subsequent developments unfolded quite differently. From 2021 to 2022, consumer price inflation reached 9 percent in the United States, 11 percent in the United Kingdom, and 10 percent in the euro area. Many countries and regions faced their highest level of inflation since the early 1980s (Chart 3).

Essentially, the reason inflation was this high was excess demand at the macroeconomic level -- that is, aggregate demand exceeded aggregate supply at full employment. This was particularly evident in the U.S. economy. In the United States, the unemployment rate, which had risen sharply during the pandemic, started to decline in 2021, whereas the job vacancy rate soared. As a result, the ratio of job openings to unemployment reached roughly 2 (Chart 4). The fact that the average of this ratio since the 2000s has been around 0.7 implies that such tight labor market conditions had hardly ever been seen in the United States. Firms facing job vacancies typically try to secure a workforce by raising wages. In the post-pandemic period, however, wage hikes instead set off an upswell in employees leaving their jobs in search of higher wages, a phenomenon known as the Great Resignation. Labor market conditions in the United States tightened further in consequence, propelling wage growth to its highest rate since the early 1980s, when prices and wages were locked in an upward spiral (Chart 5).

Compared to the United States, inflation in Europe was less demand-driven and more cost push-driven. Inflation was mainly caused by rising energy prices, partly reflecting the fact that Russia's invasion of Ukraine in February 2022 brought about an energy supply shortage

in neighboring Europe. That said, even in Europe, excess demand led to a significant tightening of labor market conditions. Many European countries reached near-full employment by 2022 and, in some countries, there were concerns about excessive wage increases. In the United Kingdom, for example, wage growth at one point marked a historically high level of over 7 percent; services prices, which are susceptible to wage increases, rose in turn, leading to persistent high inflation that has lasted to the present day (Chart 6).

II. Japan's Economy Making Progress in Overcoming the Zero Norm

A. Exiting from Prolonged Deflation and Zero Inflation

The global economy first shifted from secular stagnation, in which the economy experienced low inflation and low interest rates in the wake of the GFC, to a temporary deceleration phase following the COVID-19 pandemic, and then to what experts call a high-pressure economy, in which high inflation rates and low unemployment rates coexist.[4] This shift in the global economic environment unquestionably affected Japan's economy. Japan, ahead of other economies, had already fallen into secular stagnation in the 1990s, and the consequent rigidity in its economic structure developed into a semi-permanent condition, reflected in people's beliefs and in the social norm. However, intense pressure from global inflation ushered in by the pandemic shattered such beliefs and upset the norm, in the sense that it eliminated the persistent rigidity in prices and wages, although this was accompanied by the pain of inflation.

Japan's economy faltered for a significantly protracted period after the collapse of the bubble economy in the early 1990s. In particular, following the financial crisis in the second half of the 1990s, the economy fell into severe deflation where unemployment rates surged and both prices and wages continued to decline. In the first half of the 2000s, the economy picked up somewhat, buoyed in part by the effects of the U.S. subprime bubble, but deflation was not dispelled. In the wake of the GFC in 2008, the economy once again experienced a serious surge in unemployment rates and a decline in prices and wages. The Bank started its large-

[4] Arthur M. Okun, "Upward Mobility in a High-Pressure Economy," *Brookings Papers on Economic Activity*, no.1, The Johns Hopkins University Press (1973), and Janet L. Yellen, "Macroeconomic Research after the Crisis," remarks at the 60th annual economic conference sponsored by the Federal Reserve Bank of Boston titled "The Elusive 'Great' Recovery: Causes and Implications for Future Business Cycle Dynamics," October 14, 2016.

scale monetary easing policy in 2013, against the background of "Abenomics" under the second administration of then-Prime Minister Abe. Aided by the tailwind of moderate recovery in the global economy, this easing policy contributed significantly to improvement in Japan's economic conditions, especially the recovery in employment (Chart 7). Japan's economy thereby managed to dispel deflation, in the sense of a sustained decline in prices. Nevertheless, the policy target of "2 percent in terms of the year-on-year rate of change in the consumer price index," as spelled out in the joint statement issued by the government and the Bank in January 2013, was ultimately not achieved in the 2010s.

As I explained, before the onset of the pandemic, prices and wages declined and did not increase in Japan's economy for nearly 30 years. In a normal economy, when economic conditions improve, employment expands, and labor market conditions tighten in the way that they did in Japan during the Abenomics period, prices and wages rise, and conversely fall when economic conditions worsen. This economic cycle operates consistently overseas, and did in Japan as well through the 1980s, before the collapse of the bubble economy. Subsequently, however, a very unique situation became entrenched in Japan, in which prices and wages ceased rising, almost as if frozen, despite an improvement in economic conditions.

In a complete about-face from that situation, Japan's economy is currently experiencing high inflation for the first time in decades. The direct cause of this turnaround has been the strong cost-push pressure on domestic prices, resulting from a surge in import prices caused by global inflation in the wake of the pandemic. If this were the sole cause, however, inflation would have subsided at the point where the surge in import prices abated. In fact, cost-push inflation in the past, such as what was seen in 2008, was only temporary. At present, however, what we see is that the rate of increase in the consumer price index (CPI) has remained high despite the decline in yen-denominated import prices, with the sizable contribution of the increase in rice prices, which is a special factor (Chart 8). The current high inflation is therefore probably due to a major shift in firms' price- and wage-setting behavior.

B. How the Zero Norm with Regard to Prices and Wages Emerged

Now, let me explain the background as to why prices and wages remained unchanged in Japan's economy. The cause may be that, through the experience of deflation and zero

inflation that started in the 1990s, the widespread belief that prices and wages do not rise had become deeply entrenched among firms and households. When people come to believe that prices and wages will not rise, they in fact become less likely to do so. This is what is referred to as the zero norm with regard to prices and wages.[5] People's perceptions of prices and wages exert a significant influence on their developments.

The zero norm with regard to prices and wages implies that firms actually continued to restrain prices and wages. They did so because, for them, it was a rational business strategy. In a sense, it may be natural for firms to restrain wages as much as possible, as wages basically represent costs for firms. As for prices, although it could be considered that firms in general would raise selling prices whenever they have the chance, they in fact often avoid raising prices as much as possible even when faced with a certain degree of higher costs or stronger demand. One reason for this is that price hikes carry a high possibility of leading directly to a significant decline in sales volume. While cutting prices tends to induce competitors to lower their prices as well, price hikes do not necessarily draw competitors to follow suit. Another reason to avoid raising prices is to retain frequent customers; since consumers' daily purchasing behavior is by and large routine, price hikes may trigger customer defection.[6]

As I have explained, even if demand or costs increase somewhat, under certain circumstances firms intentionally ignore the increase and choose to keep selling prices unchanged. To put it differently, firms opt to raise prices only when they are certain that the price hikes will not significantly reduce sales volume, or when costs increase to the extent that the firms cannot secure adequate profits without passing on the increase. During the period of secular

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[5] The price and wage norm refers to the implicit beliefs people have about how prices and wages evolve. The concept was first proposed in the early 1980s by the American economist Arthur Okun. See Arthur M. Okun, *Prices and Quantities: A Macroeconomic Analysis*, The Brookings Institution (1981).

[6] Such cases of firms being averse to price hikes suggest that the downward-sloping individual demand curve they face is kinked at the prevailing prices. The conventional explanation for this kinked demand is the asymmetric behavior of competitors. Okun, on the other hand, argues that the reason why firms are more averse to raising prices than lowering them is the fear of damaging their relationship of trust with frequent customers. Meanwhile, Takashi Negishi attributes this aversion to asymmetry in the communication of information to customers. See Okun, op. cit, ch. 4, and Negishi, T., *Microeconomic Foundations of Keynesian Macroeconomics*, North-Holland Publishing Co. (1979).

stagnation after the collapse of the bubble economy, the mindset of prioritizing cost-cutting spread among Japanese firms, as price hikes would have directly resulted in a decrease in sales volume or profits. This entrenched mindset therefore drove firms to avoid price hikes for a prolonged period.

It should be noted that Japanese firms remained capable of maintaining selling prices because they were able to continue restraining wage costs. As the ultimate objective of firms is to maximize profits, they attempt to minimize wage costs. This is not always possible, however, because excessively restraining wages may make it difficult to recruit new employees or may cause an exodus of existing employees. Both situations tend to happen more often when employment increases on the whole due to economic improvement and labor market conditions are tight. Thus, firms wishing to retain a sufficient workforce raise wages in line with the actual trend in the labor market. Then, in such cases, unless they can absorb the cost of wage hikes by improving productivity, firms will have no choice but to pass on cost increases to selling prices, thereby elevating the prices of their products.

This brings us to the point that the reason why CPI inflation remained extremely low in Japan from the 1990s until quite recently is that many firms were able to restrain wages, which allowed them to continue to avoid raising selling prices.[7] In Japan's economy, it was not until near the second half of the 2010s that employment increased and labor market conditions started tightening. The labor market prior to that continued to be a buyer's market (Chart 7). In particular, there was a considerable imbalance in labor market conditions for people who were recruited during the so-called employment ice age, from the second half of the 1990s through the 2000s. During that period, many new workers were shut out of regular employment. This suggests that firms were able to secure a sufficient workforce without raising wages.

Another reason why Japan's wage growth rate remained at around 0 percent lies in the unique structure of its employment system. Japan's labor market can be broadly divided into two

[7] This kind of wage restraint is referred to as wage markdowns, as contrasted with price markups. See Aoki, K., Hogen, Y., and Takatomi, K., "Price Markups and Wage Setting Behavior of Japanese Firms," *Bank of Japan Working Paper Series*, no. 23-E-5 (April 2023).

categories: regular employment that is premised on long-term employment and non-regular employment that is premised on temporary employment. Since it is difficult to dismiss regular employees, faced with secular stagnation after the collapse of the bubble economy, many firms reduced the new recruitment of regular employees and instead increased that of non-regular employees. At the same time, those firms embarked on an employment approach to restrain the wages of existing regular employees as much as possible. Their management strategy of retaining regular employees in exchange for wage freezes was generally accepted by labor unions. This is how the unique situation in which prices and wages barely rose became entrenched in Japan's economy for an extremely long period from the mid-1990s.

C. Breaking the Zero Norm

The zero norm with regard to prices does not simply mean that the inflation rate -- meaning the average rate of increase in prices of various goods and services -- is close to 0 percent; it refers to the severity of price rigidity -- in that prices of individual items barely change. Indeed, if the rates of change in individual prices are 0 percent, the average will also be 0 percent, so the inflation rate is generally low in an economy where price rigidity is strong. On the other hand, even if the average rate of price increase is around 0 percent, individual prices of goods and services could be changing flexibly in line with supply and demand in each market. Thus, price rigidity is not always strong when the inflation rate is around 0 percent. To grasp the degree of price rigidity more accurately, it is necessary to examine not only the average rate of price increase, but also the price change distribution, particularly the share of items for which prices are unchanged.

The unusual nature of Japan's economy with the zero norm, which persisted from the second half of the 1990s, can be confirmed by comparing its price change distribution with that of other economies at the time. For example, when comparing the price change distribution by item between Japan and the United States in 10-year increments, there is a significant difference in both the position of the peak of the distribution and its dispersion, particularly from the 2000s (Chart 9). Specifically, in Japan, many items cluster around the point where the rate of price change is 0 percent, and the degree of concentration is high. By contrast, in the United States, the largest number of items cluster around the rate of price increase of about 2 percent, but the degree of concentration is low, and the overall dispersion of price changes

is significant. In other words, price rigidity clearly increased to a striking degree in Japan's economy.

It is worth noting that, from the late 1990s, price rigidity increased in Japan mainly in services and housing rent, not in goods (Chart 10). In this regard, since wages likely represent the majority of the costs of providing services, this rigidity of services prices can be interpreted as reflecting the fact that wages stopped rising in the country. While it is rare for there to be no change in wages or housing rent as in this case, these elements are known to be essentially stickier than goods prices. This is because, in terms of employment and the housing rental business, it is particularly costly to match jobseekers to jobs and potential tenants to housing. Apart from part-time work and other non-regular forms of employment, considerable costs and time are required for jobseekers to find a job that meets their criteria and for firms to search for necessary human resources. As both employers and employees try to avoid repeatedly incurring these costs, employment relationships tend to be continuous. This implies that, in the labor market, the mechanism whereby supply and demand are adjusted through changes in wages does not function well, or only sluggishly. The same can be said of housing rent. Basically, what had been essentially sluggish changes in wages and housing rent hardly occurred in Japan from the late 1990s.

The zero norm with regard to prices and wages had been as solid as bedrock in Japan, but is now finally about to be broken. This is particularly clear from the change in shape of the price change distribution. While there is far less clustering around 0 percent compared to the pre-pandemic period, the overall distribution has shifted to the right and the 2-4 percent range has become thicker (Chart 11). It can be said that the distribution is currently returning to the original shape seen around 1990, when price rigidity was not yet strong.

Moreover, although the rigidity of housing rent is still strong, the rigidity of services prices is gradually weakening (Charts 10 and 11). This trend in services prices is likely to continue, considering that the wage growth rate is close to that in the bubble period, as wage increases have gained much more momentum and have taken root much more firmly, driven by the annual spring labor-management wage negotiations over the past few years (Chart 12). The rate of increase in the services producer price index (SPPI) has begun to remain stable at

around 3 percent; this is particularly pronounced in services with a high labor cost ratio, where wages account for a large share of total costs (Chart 13). Going forward, it will be important for this trend to steadily expand to small and medium-sized firms and regional economies, and for the mechanism in which wages and prices continue to rise moderately in interaction with each other to be established as a new norm.

III. Conduct of Monetary Policy After the COVID-19 Pandemic

A. Macroeconomic Policy Responses to the Pandemic and Lessons Learned

As the global economy is finally making progress in overcoming post-pandemic high inflation, it faces a new risk -- U.S. tariff policy, the outcome of which is being closely watched. Despite the significant uncertainty posed by this and other factors, the core challenge for many governments and central banks is the same: how to maintain near-full employment while keeping inflation rates close to the target level. Regarding the conduct of monetary policy, major central banks face a common challenge: while monitoring economic conditions, they must adjust policy interest rates appropriately and, at the same time, reduce their balance sheets, which expanded as a result of unconventional policy, to an appropriate level. This means that central banks all have the task of managing balance sheets that expanded significantly following the GFC while smoothly fulfilling their traditional mandate of maintaining price stability through policy interest rate adjustments.

Let us remind ourselves why central banks' balance sheets expanded to their current levels and what the significance of this expansion is. In essence, the expansion was the result of policy measures adopted to support economies that were shrinking due to the GFC and the pandemic, and it can be assessed that these measures certainly achieved their purpose, considering that they served a particularly significant role in responding to the pandemic.

When COVID-19 broke out across the world, governments imposed restrictions on economic activity to prevent the spread of infection. In many cases, this gave rise to the need for income support for individuals and firms, which caused fiscal deficits to expand rapidly. At the same time, to support rapidly shrinking economies, central banks such as in the United States and Europe halted monetary tightening -- which they had embarked on as their economies were recovering from the downturn triggered by the GFC -- and instead reverted to monetary

easing. However, because inflation had been low, most central banks in the United States and Europe had little room to lower interest rates. Many monetary easing measures inevitably took the form of QE through the expansion of purchases of government bonds and other assets. As a result, central banks' balance sheets expanded rapidly once again (Chart 14).

In other words, the pandemic ultimately resulted in coordination between fiscal and monetary policy on a global scale, through fiscal expansion by governments and monetary easing by central banks. This fiscal-monetary policy mix further amplified the demand-boosting effect of fiscal expansion by holding down interest rates through monetary easing. In this context, Athanasios Orphanides -- economist and former governor of the Central Bank of Cyprus -- noted that, with extraordinary fiscal expansions by governments during the pandemic, the expansion of central banks' balance sheets through asset purchases kept the cost of government debt finance low, thereby helping to both prevent economic stagnation and support reflation of the economy.[8]

The expansionary fiscal policies in tandem with monetary easing implemented in many countries during the pandemic presumably also led to the expansion of asset balances in the private sector. That is, when a government increases its debt, those liabilities become assets for the private sector, and unless the government achieves a fiscal surplus, the assets will remain, even if the asset holders change. This means that as long as private economic entities are non-Ricardian, in the sense that they do not expect the value of the assets to decline through future tax increases, part of the excess savings accumulated during the pandemic should be regarded as assets remaining permanently in the private sector. Although the stock effect of government debt may have gradually declined, in that the real value of these asset balances subsequently diminished due to inflation, the expansion of assets in the private sector surely contributed to a certain extent to post-pandemic economic recovery.[9]

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[8] Athanasios Orphanides, "The Power of Central Bank Balance Sheets," *IMES Discussion Paper Series*, no. 2021-E-10, Institute for Monetary and Economic Studies, Bank of Japan (August 2021).

[9] The effect of the opposite situation, in which deflation promotes consumption through a rise in the real value of assets, is known as the Pigou effect, taken from Arthur Cecil Pigou, who first proposed this theory.

Provided that their purpose was to support and revive the economy, macroeconomic policy responses to the pandemic can be considered to have been quite successful. This is because the coordination of fiscal and monetary policy functioned fully, as I described. Similar macroeconomic coordination was achieved temporarily after the GFC, but its impact was limited, since many countries and regions turned to fiscal austerity following the European sovereign debt crisis. As a result, subsequently the global economy long remained mired in a state of secular stagnation with low growth, low inflation, and low interest rates.

The lesson here is that we should not have underestimated the effects of macroeconomic coordination implemented after the pandemic's outbreak; the subsequent surge in inflation seen mainly in the United States and Europe indicates that the coordinated policies were actually far more effective in boosting demand than originally anticipated. Until this high inflation materialized, many experts and policymakers paid little attention to the risk of inflation, being more concerned about the risk of deflation due to the pandemic. Even after inflation picked up, it was initially assumed to be a temporary phenomenon. This may have been because many experts remained firmly wedded to the secular stagnation hypothesis that low growth and low inflation cannot be reversed through macroeconomic policy.

B. A New Stage of Conventional Monetary Policy

Once it became clear that post-pandemic high inflation was not merely temporary, central banks in the United States and Europe rapidly shifted their monetary policy to contain inflation. That is, they discontinued QE and returned to the conventional policy of raising policy interest rates. Globally, central banks kept interest rates high by means of policy rate hikes over a period of roughly two years, from around spring 2022 to around summer 2024, although the period in question varied by country and region.

Central banks, including those in the United States and Europe, seem to have transitioned seamlessly from unconventional to conventional policy, but how was this possible? This is an important issue, since the "exit problem" -- that is, the concern that, while adopting unconventional monetary policy was easy, exiting from it might be difficult -- had long been a topic of debate among experts. Reality has shown, however, that the transition itself did not

pose any particular challenges: many central banks, such as those in the United States and Europe, steadily raised policy interest rates, and inflation was indeed contained (Chart 15).

The reason the transition in the monetary policy regimes was so smooth is that the way central banks adjusted policy interest rates differed substantially before and after the introduction of unconventional policy. Before the introduction, the banks controlled the money market rate as the policy interest rate by adjusting the amount of funds through daily money market operations. To guide the money market rate toward the target level, reserve balances held by financial institutions at the central bank were kept close to the minimum needed. This is because, if reserve balances exceed the required amount, there will be a surplus of funds in the market, causing the money market rate to fall below the target level.

Following the outbreak of the GFC in 2008, the U.S. Federal Reserve (FRB) and the Bank of England (BOE) were among the first to implement QE. In April 2013, the Bank of Japan introduced QQE as part of its large-scale monetary easing policy. Moreover, the European Central Bank (ECB), which had already implemented a negative interest rate policy, began full-fledged QE in March 2015. After the onset of the pandemic in 2020, central banks in Canada, Australia, New Zealand, and other countries likewise began QE. As a result of their asset purchases, the reserve balances and balance sheets of central banks expanded (Chart 14). Therefore, to raise policy interest rates in the same manner as they did prior to QE, central banks need to return their reserve balances close to pre-QE levels by selling assets. However, selling assets on such a scale all at once carries extremely high risks, as it could disrupt the financial markets.

This led central banks to adopt the approach of controlling policy interest rates by setting and then raising or lowering the interest rate applied to reserve balances -- that is, the interest rate on current account balances held by financial institutions at the central bank -- and in that way adjusting the money market rate as the policy interest rate.[10] If a central bank pays a certain amount of interest on reserve balances, much of the excess funds held by financial

[10] In some countries and regions, financial institutions are required to deposit a certain amount of reserves at the central bank. In many of these cases, including in Japan, the interest rate is only applied to excess reserves. However, for the sake of simplicity, this speech assumes that the interest rate is applied to the total amount of reserve balances.

institutions will presumably be absorbed into reserve balances through interbank lending and borrowing, thus preventing the money market rate from falling significantly below the interest rate on reserve balances. In practice, the lower bound on the money market rate is slightly below the interest rate on reserve balances, on account of costs for the intermediation of funds among financial institutions and other factors (Chart 16). The point is that, if a central bank intends to adjust the money market rate as the policy interest rate, it simply needs to adjust the interest rate on reserve balances, rather than adjust the supply of funds.

Adopting this approach, the FRB raised its policy interest rate in December 2015 for the first time since halting QE. Following the pandemic, other central banks also ended QE and returned to interest rate policy, similarly taking the approach of adjusting policy interest rates by guiding the interest rate on reserve balances. In that sense, this new approach to controlling policy interest rates has spread rapidly among major central banks and is now one of their standard methods.

It is important to note that, while this current standard method may be novel, it is essentially a conventional monetary policy measure, in that it seeks to ensure price and economic stability by adjusting the policy interest rate. In the history of economic thought, the role of interest rate adjustments in price stability is said to have been first proposed by the British economist Henry Thornton, who was active around the beginning of the 19th century. Back then, however, the BOE -- which had begun to function in practice as a central bank -- set the de facto policy rate mainly through the discounting of commercial bills, and Thornton's discussion of monetary policy was based on this premise.[11] In other words, it is natural for specific methods of monetary policy conduct to evolve over time.

C. Basic Concept of Balance Sheet Policy

As I have described, under the current policy regime, unlike before the GFC, the amount of a central bank's reserve balances and the size of its balance sheet do not directly impose restrictions on its monetary policy. Large reserve balances or a large balance sheet does not make it more difficult to contain inflation through monetary tightening. This is because raising the interest rate on reserve balances can serve as a way to tighten monetary policy.

[11] Henry Thornton, *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain* (1802).

On the other hand, this does not mean that it is appropriate for a central bank to maintain an excessively large balance sheet. That is, a central bank is allowed to intervene in markets only to the extent that this is necessary for fulfilling its basic mandate of maintaining price and financial market stability. In other circumstances, it is preferable for the central bank to be market-neutral, meaning it should exert as little influence on the markets as possible. From this perspective, a central bank with an excessively large balance sheet should reduce the amount outstanding of its assets with due consideration to market stability, and thus leave the determination of asset prices to the markets as much as possible.

That said, in the process of reducing the balance sheet, a central bank must be most careful not to impede the core component of monetary policy, namely, controlling the money market rate. This concern is not merely hypothetical: in 2019, when the United States was in the midst of quantitative tightening, money market rates actually rose sharply (Chart 17). Confronted with this situation, the FRB attempted to stabilize the market by temporarily supplying liquidity and ultimately halted quantitative tightening altogether.

This experience demonstrates that, when adopting a monetary policy approach that involves guiding the interest rate on reserve balances as a policy tool, a central bank must carefully monitor whether it holds a necessary amount of reserve balances to adequately control the money market rate. When the interest rate on reserve balances rises, financial institutions profit more from holding funds in central bank current accounts. Thus, their demand for reserves, or the amount of funds they seek to hold in the current accounts, increases. Moreover, uncertainties arise regarding financial institutions' demand for reserves, as such demand is influenced by, for example, regulatory requirements or market structures. Therefore, if a central bank engages in excessive quantitative tightening and reduces the supply of reserves too much relative to demand, it may not be able to adequately control the money market rate. That is the essence of what happened in 2019 in the United States.

Another reason why it is appropriate for a central bank to maintain ample reserve balances is financial market efficiency. As in the case of the United States, when money market rates deviate substantially from the interest rate on reserve balances, the opportunity cost for financial institutions to hold reserves increases accordingly. Conversely, to minimize this

opportunity cost, it is necessary that a central bank firmly control the money market rate via the interest rate on reserve balances by maintaining ample reserve balances.[12]

The Bank of Japan's reserve balances and balance sheet remain significantly large, and it is currently unlikely that the money market rate will deviate from its lower bound. For the time being, therefore, the Bank can move forward with reducing its balance sheet without facing this issue. However, even if the balance sheet's shrinking to an appropriate size is a long way off, controlling the money market rate will likely be the most important challenge for the Bank.

IV. Toward the Establishment of the 2 Percent Inflation Norm

Many major central banks have come close to successfully containing high inflation and are currently making careful adjustments to their monetary policy to achieve both price stability and sustainable economic growth. By contrast, it was not until March 2024 -- when these central banks were already in their final phase of monetary tightening -- that the Bank of Japan returned to implementing conventional policy. This was owing to the existence of the zero norm with regard to prices and wages, a situation unique to Japan's economy. It is true that post-pandemic global inflation acted as a so-called big push that played a role in starting to break down the zero norm. However, prices and wages in Japan stopped rising in the second half of 1990, when severe deflation occurred, and subsequently barely rose for nearly a quarter of a century. Considering this context, before changing its monetary policy, the Bank needed to carefully examine whether the zero norm, which had been as solid as bedrock, had been sufficiently eroded, and whether the rigidity of prices and wages had been truly overcome.

Price developments in the post-pandemic period also reveal how the situation in Japan differed from other economies. In many countries and regions, high inflation in the wake of the pandemic first emerged as a surge in producer prices, and most of this surge was passed on directly to consumer prices. When producer prices rose in Japan, however, the pass-

[12] This issue is frequently discussed in connection with the Friedman rule regarding the opportunity costs of holding money. See Lorie Logan, "Ample Reserves and the Friedman Rule," keynote speech at the ECB Conference on Money Markets, Frankfurt am Main, November 10, 2023.

through to consumer prices was limited (Chart 8). This suggests that, fearing that sales would decline if they raised prices, many firms that sell products to consumers did not pass on the cost increases to selling prices immediately, but instead bore the cost increases themselves, at least temporarily. That said, corporate profits have been growing on the whole, which should be interpreted as a gradual progression of cost pass-through (Chart 18). The fact that the rise in producer prices has mostly been reflected in a corresponding rise in consumer prices when inflation began rising again in the second half of 2024, with a certain time lag, is also evidence that it is becoming easier for firms to pass on cost increases to prices.

Another phenomenon unique to Japan associated with the zero norm is that expected inflation rates for a long time remained below the 2 percent inflation target. If their inflation expectations are anchored at around the inflation target, people see deviations of the observed inflation rate from the target rate as only temporary. In such an environment, it is easier for a central bank to bring the observed inflation rate back to the inflation target, since people generally make decisions based on the targeted inflation rate. This is evident by how high inflation stemming from the pandemic subsided in about two years. In Japan, however, where the zero norm was entrenched, firms and households acted on the premise of zero inflation, which resulted in prices and wages barely rising. In this situation, even if prices rose temporarily due to cost-push factors, it was difficult to realize the stable achievement of 2 percent inflation.

Even in Japan, however, various indicators of inflation expectations are gradually approaching 2 percent in the current inflationary phase (Chart 19). This signifies that now, during the prolonged period of inflation exceeding 2 percent, firms and households have started to slowly factor in inflation. In other words, it seems clear that people are acting on the assumption that the economy will not return to zero inflation. Many corporate managers used to believe that they could not raise wages because they could not raise prices, and made actual business decisions based on this belief. Recently, however, many firms have expressed their intention to continue raising wages to an extent significantly exceeding the 2 percent inflation target. Stable achievement of the 2 percent target will finally become possible when such wage-setting behavior of firms is established as a new norm.

Japan's economy is in the midst of shifting away from the zero norm and adapting to the new 2 percent norm. In this process, the recent rise in prices has taken a toll on households, as they have not experienced inflation for a long time. One reason why this has been a burden for households is that the current inflation was triggered by cost-push factors resulting from a rise in import prices, and price increases exceeding wage growth were inevitably prolonged. Since the rise in import prices has already slowed, the rate of increase not only in producer prices but also in consumer prices will probably slow as well, as the price pass-through of cost increases peaks out. Still, it may take some more time for real wages -- which are calculated by excluding the effects of inflation from nominal wages -- to turn to an uptrend.

I personally believe that the Bank needs to flexibly adjust its monetary policy while examining price developments, in response to economic developments at home and abroad at the time. This is because, now that Japan's economy is making progress in overcoming the zero norm, it is increasingly important from the standpoint of price and economic stability for the Bank to adjust the degree of monetary accommodation with appropriate timing. When Japan's economy was experiencing prolonged zero inflation, downside risks to prices required more attention than upside risks, and maintaining accommodative financial conditions was therefore a top priority. In the current situation, however, where it is likely that the labor market is close to full employment and that the output gap has almost reached 0 percent, it is necessary to consider not only downside risks but also upside risks. When focusing only on the domestic economic situation, I believe Japan will, in the not-too-distant future, require a new policy perspective that addresses the upside risks. On the other hand, as Japan's economy faces significant downside risks stemming from the U.S. tariff policy, it is necessary that the Bank assess underlying inflation as carefully as possible for the time being.

Thank you.

Transformation of the Global Economy and Developments in Monetary Policy

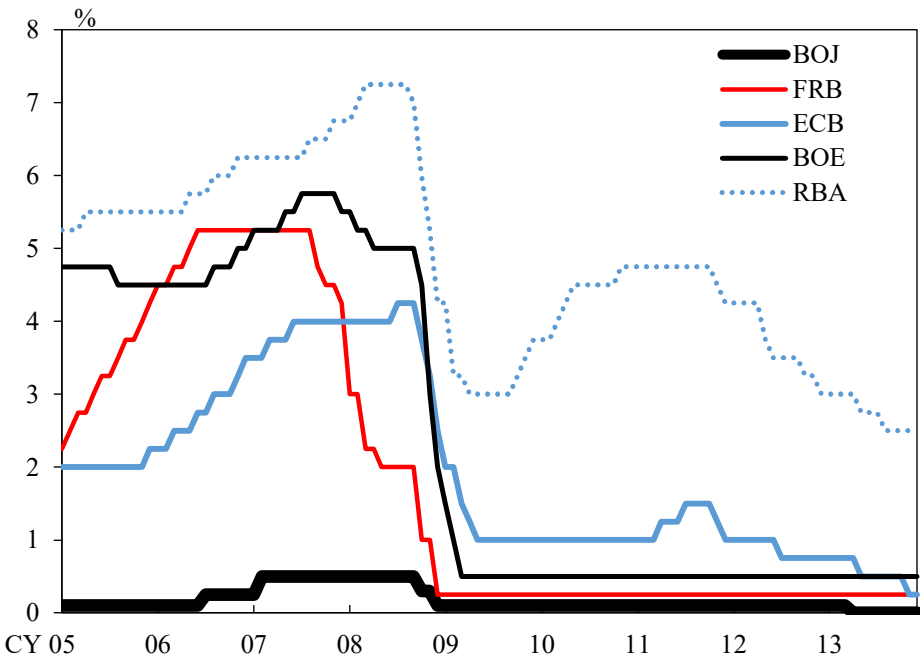
Speech at a Meeting Held by the Sapporo Chamber of Commerce and Industry

September 29, 2025

NOGUCHI Asahi
Member of the Policy Board
Bank of Japan

Chart 1

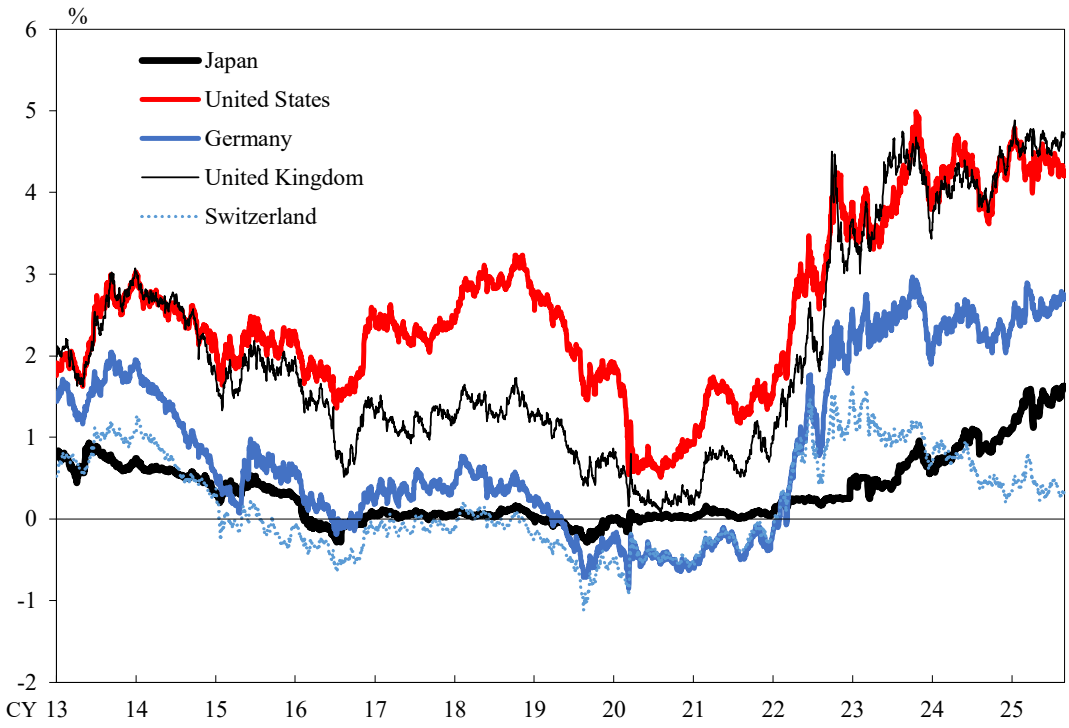
Central Bank Policy Interest Rates



Note: Figures for the Federal Reserve (FRB) are the upper limits of the target range for the federal funds rate. Figures for the European Central Bank (ECB) are the interest rates on the main refinancing operations.
Sources: Bank of England (BOE); ECB; FRB; Reserve Bank of Australia (RBA); Bank of Japan.

Chart 2

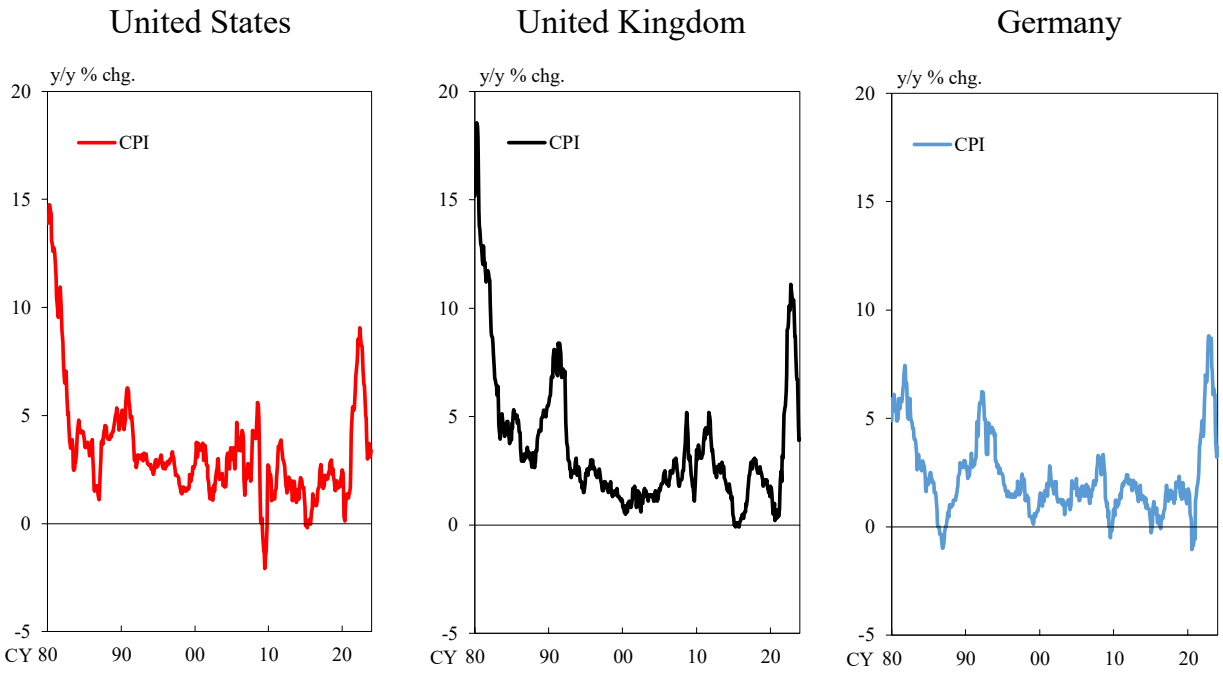
10-Year Government Bond Yields



Source: Bloomberg.

Chart 3

High Inflation in the United States and Europe

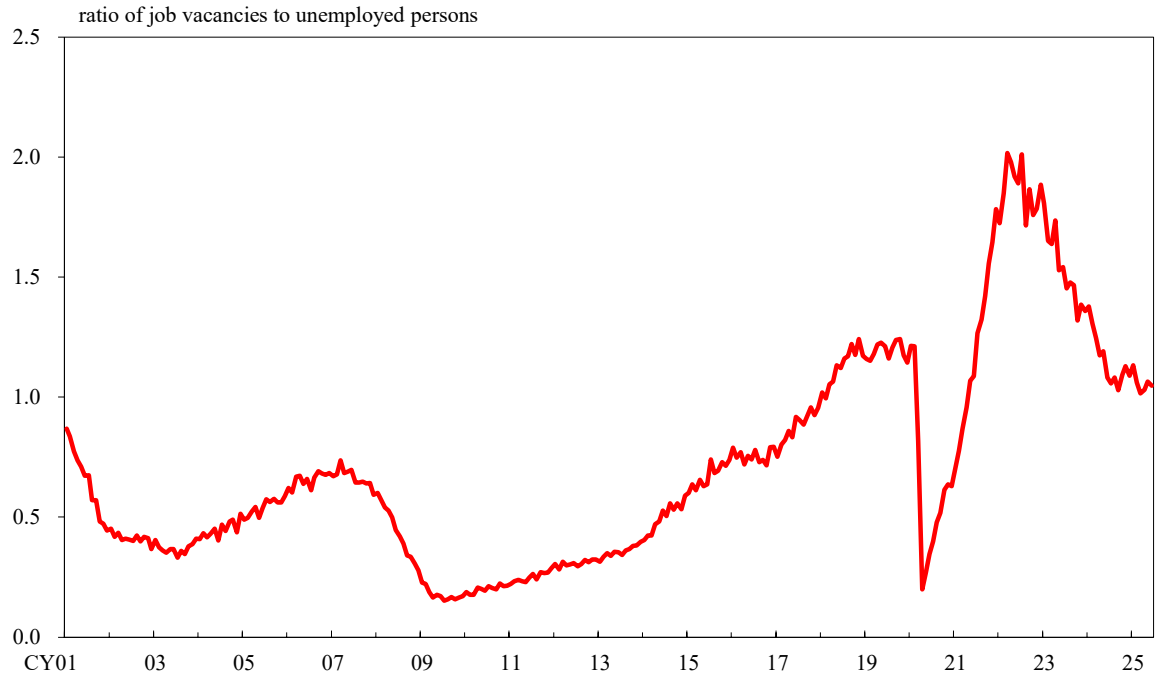


Note: Figures for Germany prior to reunification are those for the former West Germany. Figures for the United Kingdom prior to 1989 are from data compiled by the BOE, and those from 1989 onward are from Office for National Statistics (ONS) data.

Sources: BOE; OECD; ONS.

Chart 4

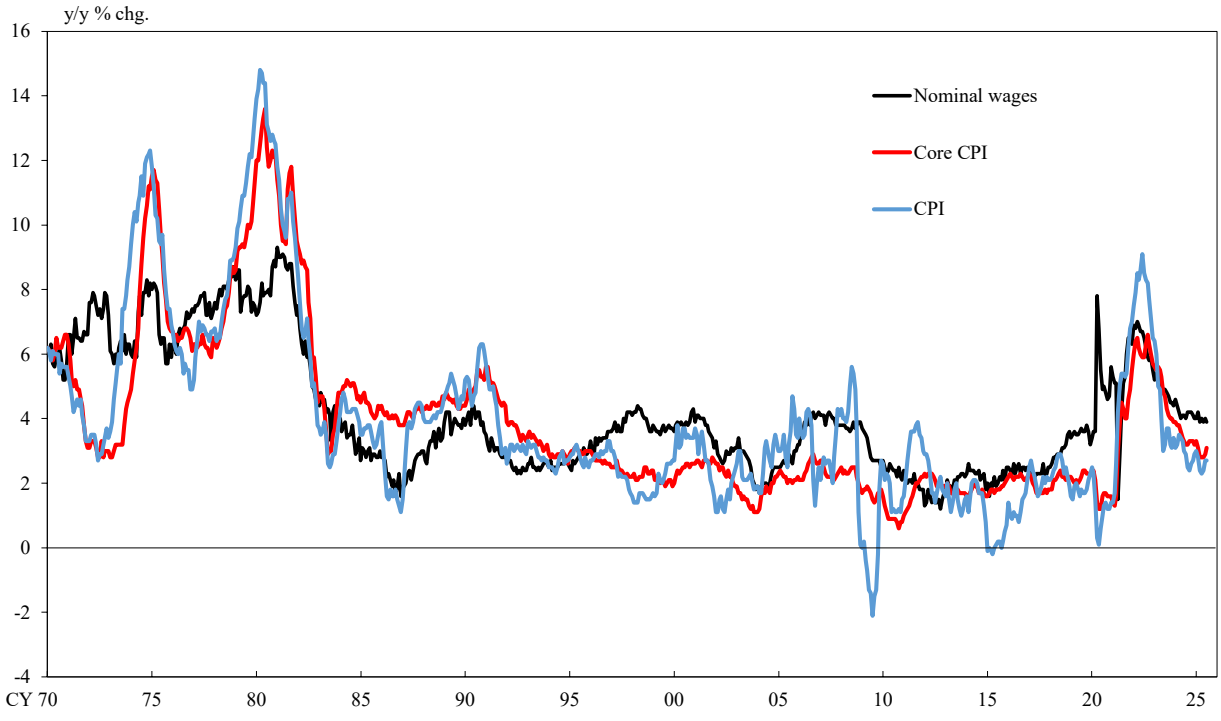
Job Vacancies in the United States



Source: Bureau of Labor Statistics (BLS).

Chart 5

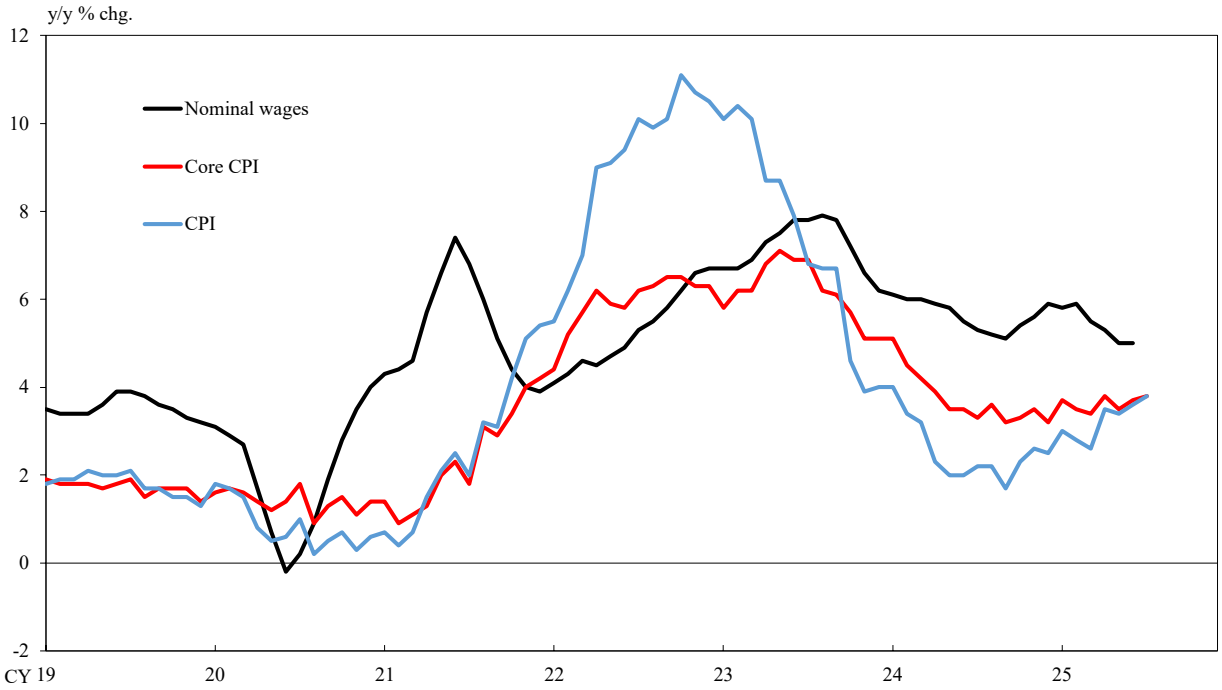
Prices and Wages in the United States



Note: Figures for nominal wages are for hourly wages.
Source: BLS.

Chart 6

Prices and Wages in the United Kingdom

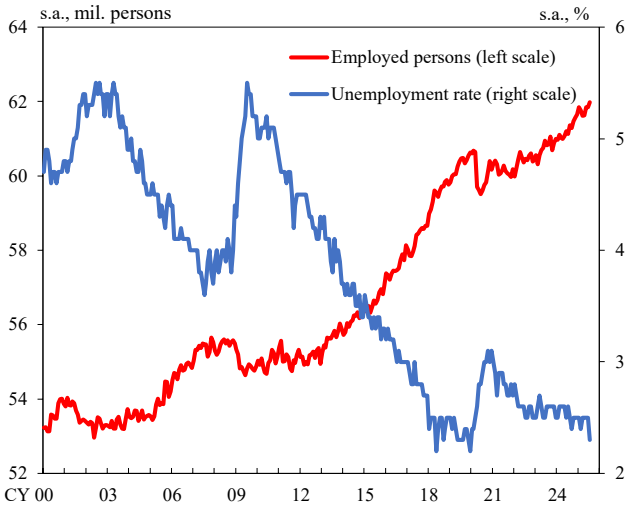


Note: Figures for nominal wages are for weekly wages (excluding bonuses).
Source: ONS.

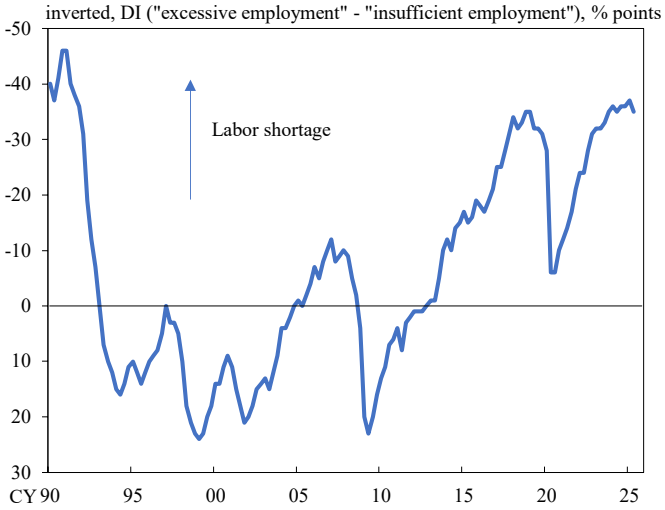
Chart 7

Employment Situation in Japan

Number of Employed Persons and Unemployment Rate



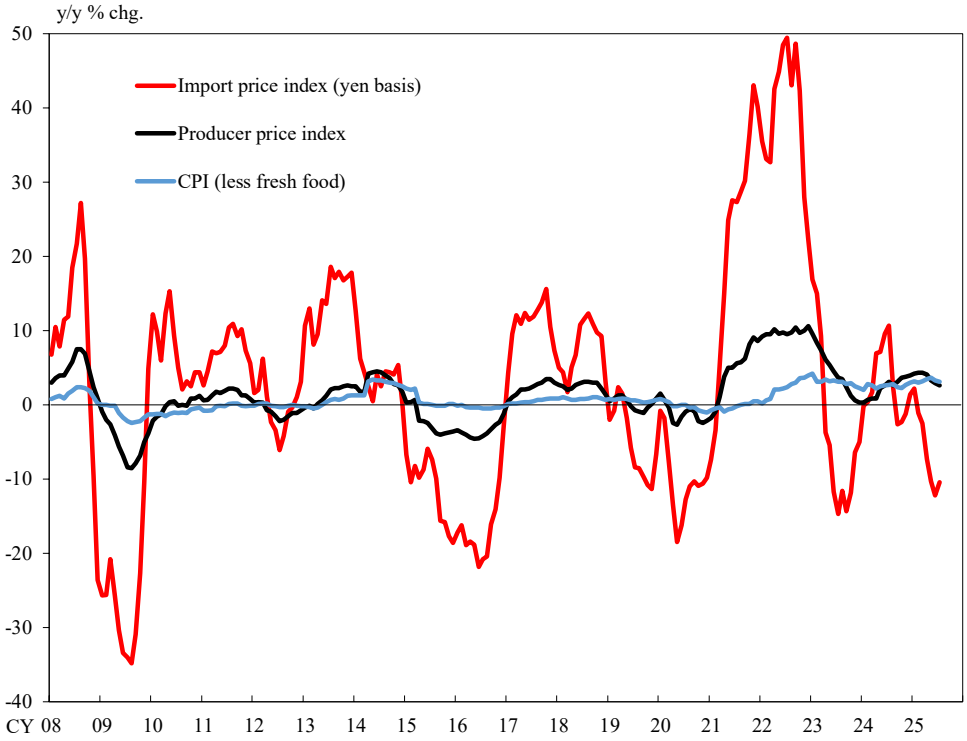
Labor Market Conditions



Sources: Ministry of Internal Affairs and Communications; Bank of Japan.

Chart 8

Prices in Japan

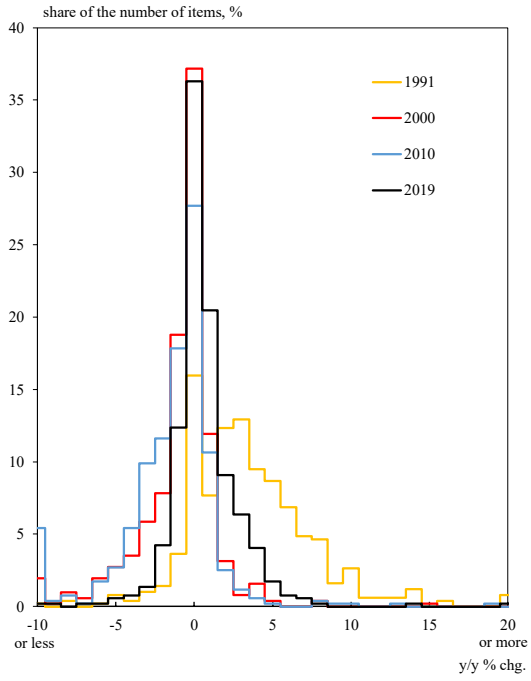


Sources: Ministry of Internal Affairs and Communications; Bank of Japan.

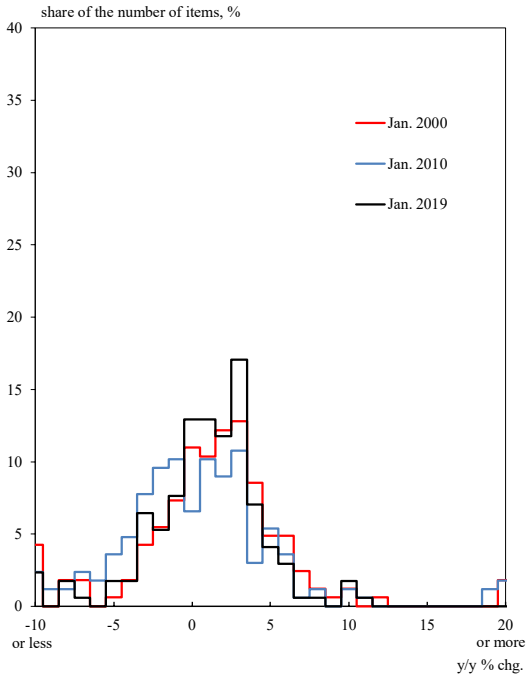
Chart 9

Distribution of Consumer Price Changes

Japan



United States

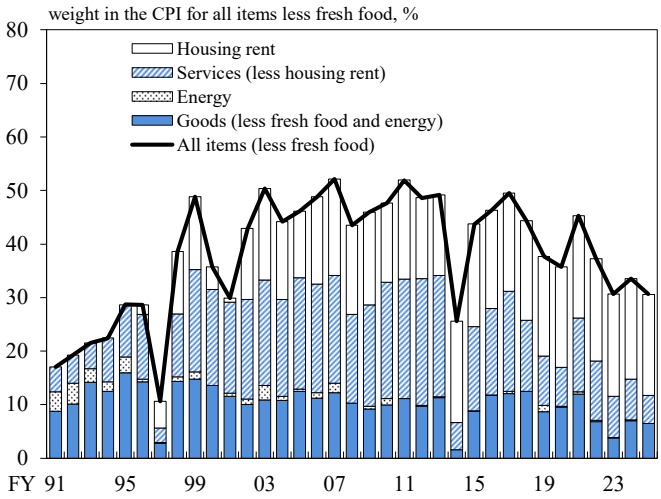


Note: Figures for Japan are based on items excluding fresh food and energy. Those for the United States are based on items excluding energy.
Sources: BLS; Ministry of Internal Affairs and Communications.

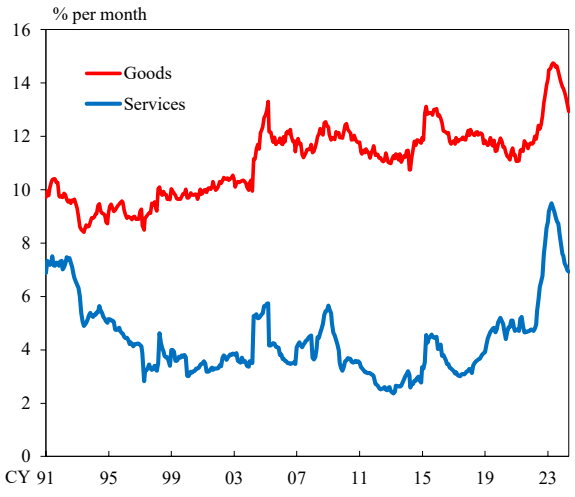
Chart 10

Price Revisions in Japan

Share of Items for Which Prices Were Unchanged



Frequency of Price Revisions



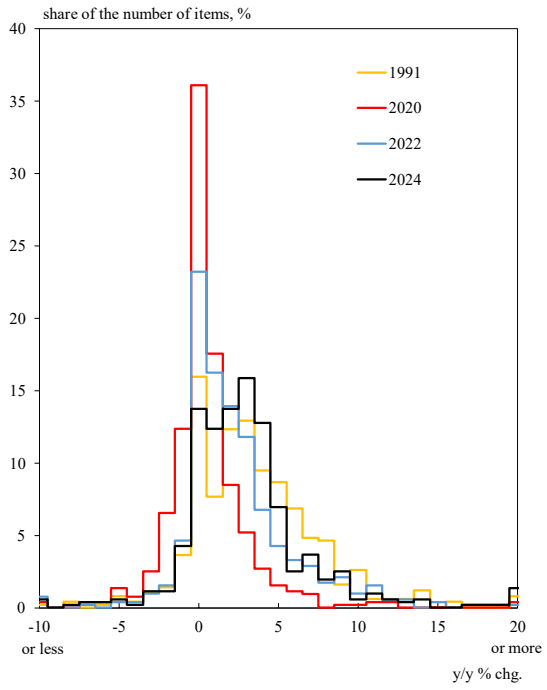
Notes: 1. In the left panel, figures are the share of items for which year-on-year price changes were within plus or minus 0.5 percent. The figure for fiscal 2025 is the April-July average.
2. In the right panel, figures are calculated based on the proportion of cities where the average price of individual items changed from the previous month (12-month backward moving averages). Data exclude fresh food, electricity, manufactured and piped gas, water charges, and housing rent. Temporary price changes due to, for example, consumption tax hikes and special sales are not incorporated.

Source: Ministry of Internal Affairs and Communications.

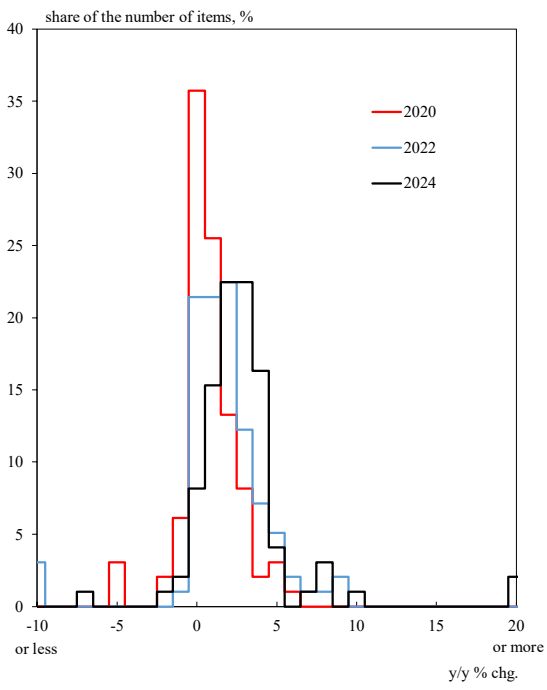
Chart 11

Distribution of Consumer Price Changes in Japan

All Items Less Fresh Food and Energy



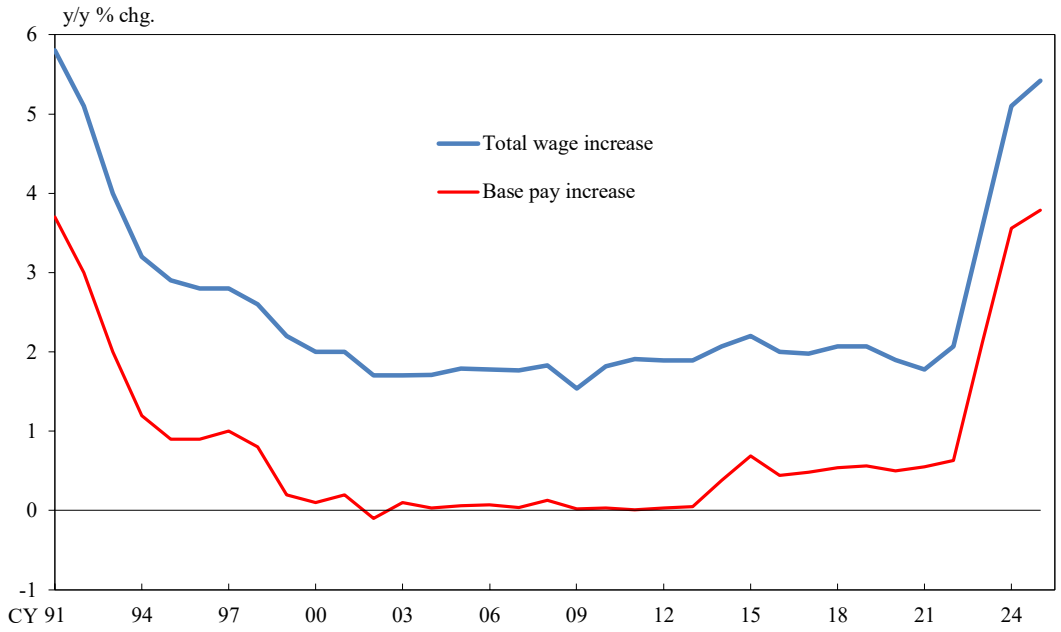
General Services Less Housing Rent



Source: Ministry of Internal Affairs and Communications.

Chart 12

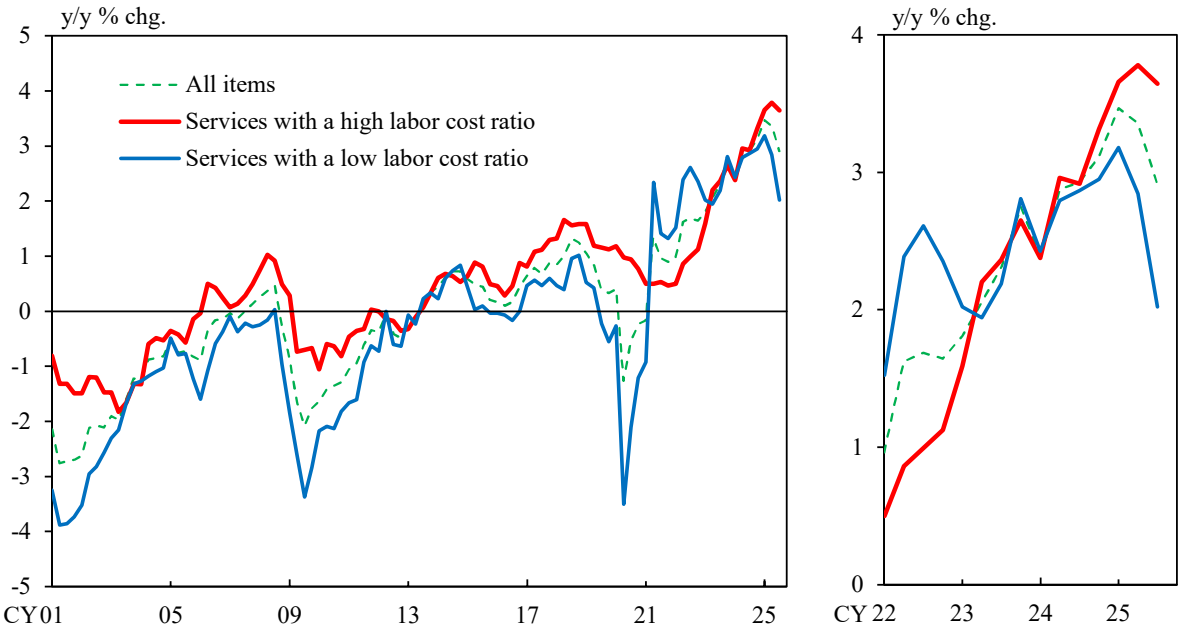
Wage Growth in Japan



Note: Figures from 1994 to 2013 are those published by the Central Labour Relations Commission, while those from 2014 to 2025 are figures released by the Japanese Trade Union Confederation (Rengo).
Sources: Central Labour Relations Commission; Rengo.

Chart 13

Services Producer Prices in Japan

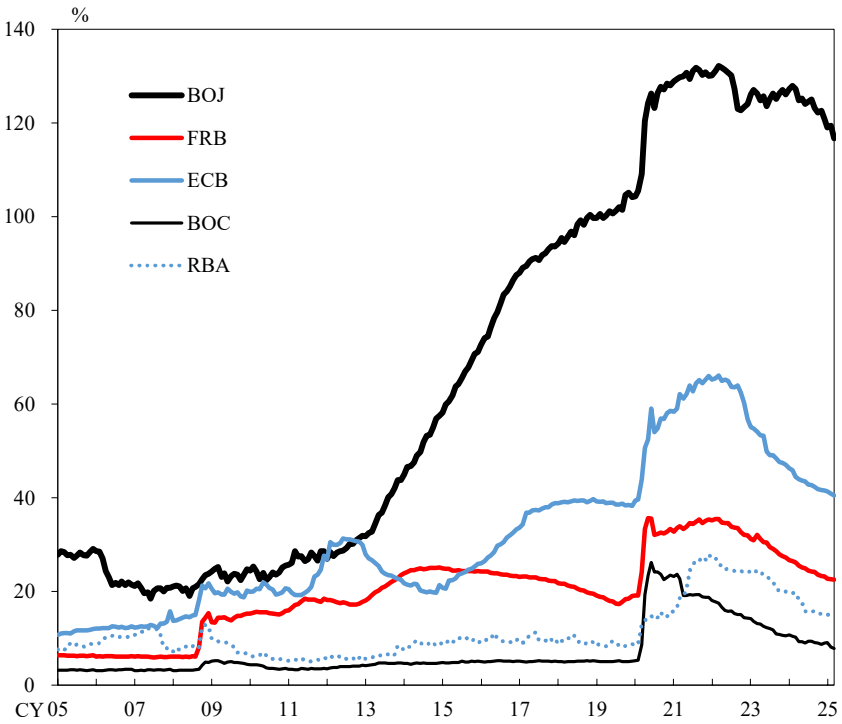


Note: Figures exclude the effects of consumption tax hikes.
Source: Bank of Japan.

Chart 14

Central Bank Balance Sheets

Ratio to Nominal GDP

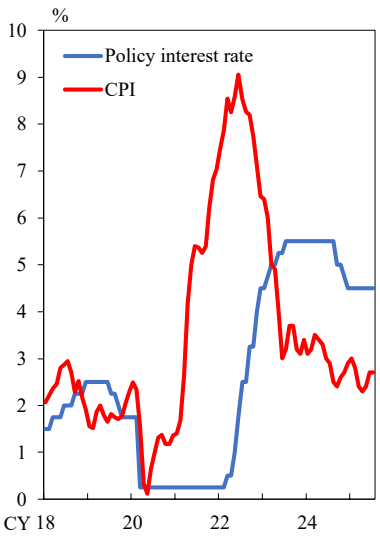


Note: BOC stands for Bank of Canada.
Sources: Data from central banks and statistical authorities.

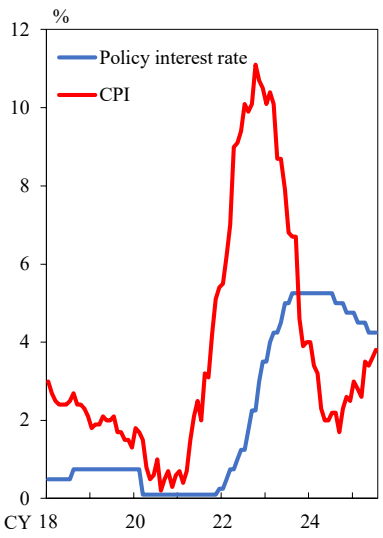
Chart 15

Prices and Policy Interest Rates

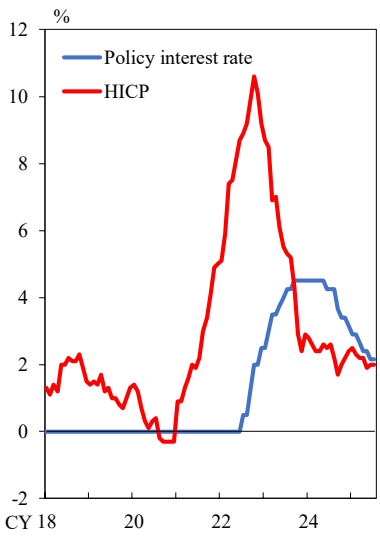
United States



United Kingdom



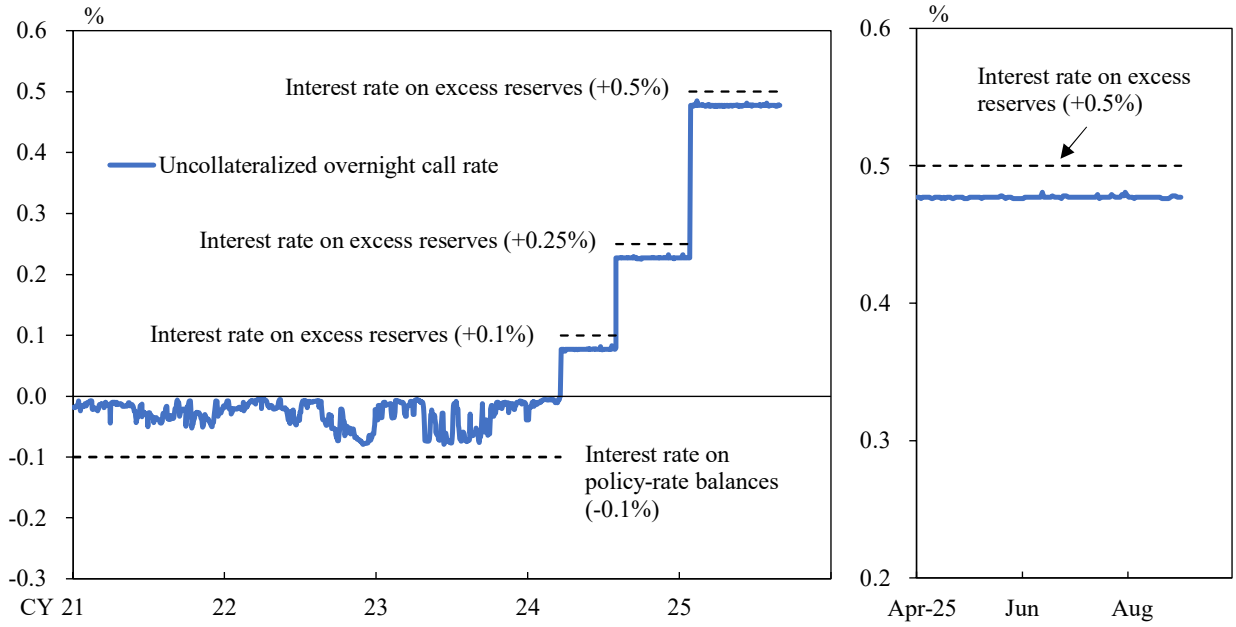
Euro Area



Sources: BOE; ECB; FRB; OECD; ONS.

Chart 16

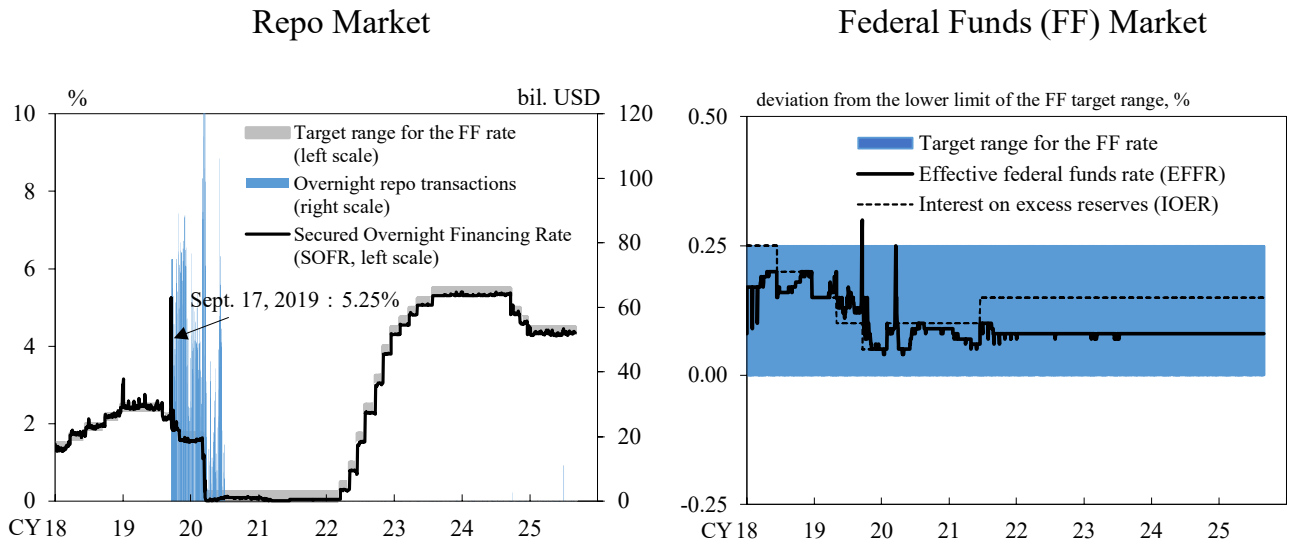
Money Market Rate in Japan



Source: Bank of Japan.

Chart 17

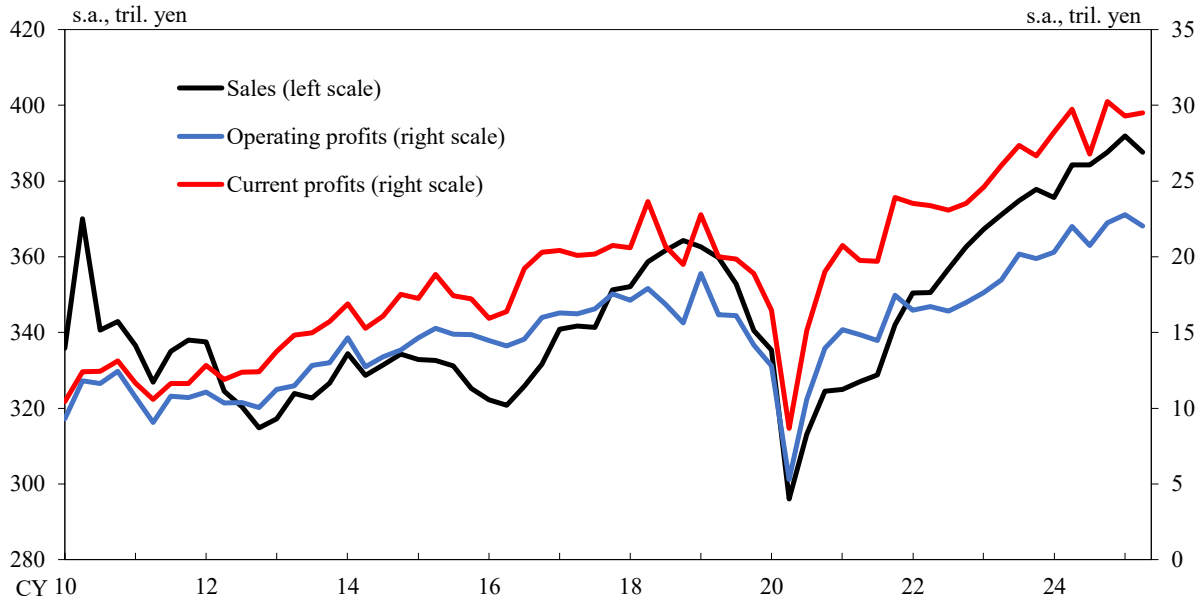
Money Market Rates in the United States



Note: In the right panel, figures for IOER from July 29, 2021, onward are the figures for interest on reserve balances (IORB).
Source: Federal Reserve Economic Data (FRED).

Chart 18

Corporate Profits in Japan

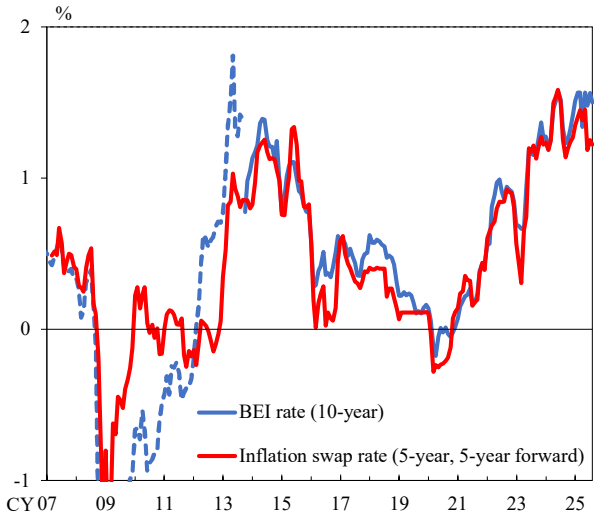


Note: Figures exclude the finance and insurance industries.
Source: Ministry of Finance.

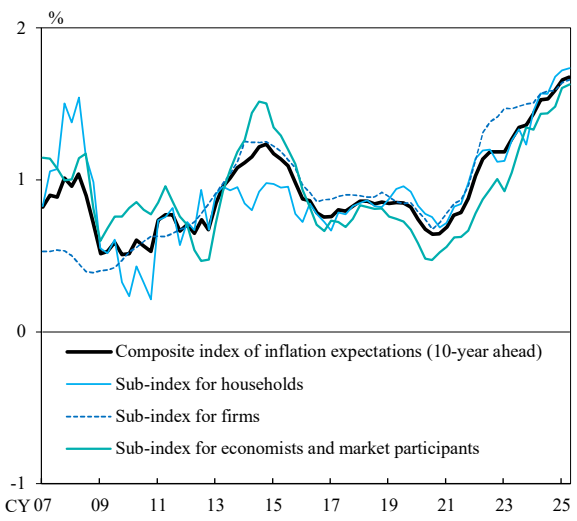
Chart 19

Inflation Expectations in Japan

Indicated by Markets



Estimated by BOJ, by Type of Economic Agent



Note: In the left panel, the BEI (break-even inflation) rate is the yield spread between fixed-rate coupon-bearing JGBs and inflation-indexed JGBs. The dotted line represents the rate calculated based on inflation-indexed JGBs issued before October 2013.
Sources: Bloomberg; Consensus Economics Inc., *Consensus Forecasts*; QUICK, *QUICK Monthly Market Survey <Bonds>*; Bank of Japan.