



January 9, 2018
Bank of Japan

Germany and Japan
— A Central Banker's Perspective on their Past and
Future Relationship

*Speech at the Dinner meeting hosted by Deutsche Bundesbank
Regional Office in Berlin and Brandenburg*

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Introduction

Vielen Dank für Ihre sehr freundlichen Worte. Es ist mir eine große Freude und Ehre, hier heute im schönen Berlin und Brandenburg vor Ihnen sprechen zu dürfen! Ich würde mir wünschen, meine Ansprache weiter auf Deutsch halten zu können. Um Ihnen aber meine Gedanken besser vermitteln zu können, werde ich nun auf Englisch fortfahren. (Thank you very much for your kind words. It is my pleasure and honor to speak to you here today in the beautiful city of Berlin and Brandenburg. I wish I could go on with the speech in German. But in order to better convey my thoughts to you, I will now continue in English.)

I. Relationship between Germany and Japan

Germany and Japan have a longstanding diplomatic relationship of more than 150 years. I think the phrase that best describes this is *Ferne Gefährten* (distant companions). This is because we have many things in common, although our countries are geographically distant. The diligence of our populations has overcome limitations of natural resources, transforming our two countries into economic powers. Today, the labels "made in Germany" and "made in Japan" are a guarantee of quality and excellence. And as mature economies, we face similar challenges in the future, with societal aging being one example.

The central banks of Germany and Japan also developed a friendship over the years. The Bank of Japan established an office in Frankfurt am Main in 1956. The Bundesbank opened its Tokyo office in 1987, as the only overseas office besides New York. In 2012, the role of the Tokyo office was expanded to include foreign exchange reserve management. The history of our bilateral relationship traces back to the time of the Reichsbank and the Bank deutscher Länder. In this context, let me tell you an extraordinary story involving a former governor of the Bank of Japan.

II. Mr. Mayekawa's Extraordinary Experience

In the very early part of my career at the Bank of Japan, I worked for Mr. Haruo Mayekawa. He was a legendary central banker who served as the 24th Governor of the Bank of Japan, from 1979-84. He passed away in 1989 but is still remembered as the man who brought the Bank of Japan back into the international central banking community during the post-war era. His long international experience, which dated back to the prewar period, won the trust of his fellow central bankers. In October 1988, I had a chance to dine with Mr. Mayekawa

and his wife at a traditional German restaurant in Berlin. He was invited as a special guest to the International Monetary Fund (IMF) Annual Meeting held here in Berlin that year. Over a good wine, he became a little more eloquent than usual and started to tell us the following story.

Berlin was a special place, he began. The Bank of Japan, after its foundation in 1882, had established several overseas offices. In 1941, Mr. Mayekawa was assigned to the Bank of Japan's Rome Office. World War II had broken out. After the surrender of Italy, he moved to the Bank of Japan's Berlin Office, where he stayed until the final days of the war in Europe. He described to us what life was like in the bunkers of Berlin in those days. Then, after the fall of Berlin, he fled via the Siberian Railway to Manchuria, a part of China under Japanese control at the time. From there he took a ship back to Japan. Had he decided to remain in Manchuria, he might have been caught up in the military offensive by the Soviet Union following its declaration of war on Japan in August 1945. When Mr. Mayekawa finally returned home and stood in his doorway, Mrs. Mayekawa told us, she was so surprised that she first looked to see whether he had feet -- because in Japan it is thought that ghosts do not have feet. She had assumed he was no longer alive, because he had been reported missing. Mr. Mayekawa is probably the only governor in the history of central banking who experienced three unconditional surrenders in wartime; in Italy, Germany, and then in Japan. At the restaurant, looking at the colorful and prosperous lights of the Kurfürstendamm, he concluded his story by telling us how much he cherished peace and how much he thought sound economic development mattered.

Let me add that for me, too, personally, Germany is a very familiar place. As a young boy in the late 1960s, I was brought up in beautiful Hansestadt Hamburg. It was during this period that my father took me to West Berlin for the first time. My second visit was in 1988, when, as I mentioned, the IMF held an annual meeting in West Berlin and I attended the Japanese delegation. So, this is my third visit. But this visit is very special as it is my first one to the capital city of the united Germany.

III. Origins of Japan's Economic Ordeal

The two central banks, the Bundesbank and the Bank of Japan, have had the reputation as tough inflation fighters. However, the policy priority started to diverge in the 1990s. Our

mission became focused on ending deflation and bringing Japan's economy back on track to sustained growth. This is the topic that I now want to talk about. Let me begin with the background to the difficulties that Japan has faced.

I think the root cause of Japan's economic ordeal is the bursting of asset bubbles in the early 1990s. Slide 1 looks at the magnitude of the bursting of asset bubbles. As you see in the left panel, the cumulative capital gains during the bubble years in Japan amounted to more than 450 percent of nominal GDP. The bursting of the bubble resulted in a brutally large swing in the opposite direction, with the cumulative capital losses equivalent to almost minus 230 percent of nominal GDP. In the United States, which was the epicenter of the Global Financial Crisis, the corresponding numbers were 300 percent and minus 100 percent, respectively. In both cases, the economic impacts were destructive.

In Japan's case, the toll was almost exclusively on the banking sector, which often had been compared to the Invincible Armada during the bubble era. Slide 2 shows the cumulative credit losses experienced by Japanese banks. This figure climbed constantly until it reached almost 100 trillion yen, which corresponds to about 20 percent of Japan's nominal GDP. During the decade of Japan's financial crisis, more than 180 financial institutions, including internationally active ones, went under. The banking sector was broken. This meant the loss of the credit intermediary function, which was badly needed at the time to support economic recovery.

When Japan's economy overcame the aftermath of the homegrown financial crisis of the 1990s, it was struck by another major shock, triggered by the U.S. subprime loans problem and accentuated by the collapse of Lehman Brothers: the Global Financial Crisis. The left panel in Slide 3 shows that the parallel shift of GDP to the downside took place in Japan. This also was the case for other major economies, including the U.S. economy. Although the GDP recovered to pre-crisis levels, for reasons we do not precisely know, it has not returned to the original trends in the Japanese economy and many other advanced economies. On the contrary, the German economy, which you see in the right panel, was exceptional in that it reverted to the original trend rather quickly with higher growth rates. The difference may be an interesting topic to be further explored.

Therefore, the financial crisis was the root cause for Japan's ordeal. But the country's problem was compounded by other factors; namely, deflation and demography. Slide 4 shows Japan's potential growth rate with a solid red line and its determinants in bars of different colors. The protracted period of deflation that lasted for almost 15 years after the homegrown financial crisis in the 1990s prevented firms from investing in capital, and capital input remained sluggish because the corporate strategy under deflation was to sit on cash. Meanwhile, labor input has negatively contributed since the 1990s as a result of the shift in demographics. This has much to do with Japan's aging society, where the birth rates remained low and the baby boomers reached their retirement age.

As the solid red line in the graph shows, the potential growth rate in Japan has been on a declining trend, coming down from around 4 percent in the late 1980s to almost 0 percent before bouncing back to 0.8 percent recently. What this chart implies is that, in order to elevate Japan's potential growth rate, we need to raise all three determinants: total factor productivity (TFP), labor input, and capital input. Another way of expressing this is that we need to raise labor productivity and labor input in order to elevate Japan's potential growth rate.

Slide 5 provides a decomposition of Japan's GDP growth rates into labor productivity growth and rate of change in the number of employed persons. It is quite obvious from the chart that the decline in labor force forecast for the next decades must be more than offset by improvement in labor productivity if the Japanese economy is to maintain positive growth. What this chart suggests is that, for a country like Japan, or any country with a shrinking population, improving labor productivity is the number one policy priority.

An interesting question in this regard is how Japan's situation compares with Germany, the economy of which is known to face similar demographic challenges sooner or later. Slide 6 compares the economic performances of Japan and Germany over the last decade, from 2006 through 2016, and the contributing factors. The average annual economic growth rate in Germany was 1.5 percent, which was more than twice as high as Japan's growth rate of 0.6 percent during the same period. The improvement in labor productivity was more or less equivalent in both economies. The major difference appears to be in terms of labor input. While labor input declined in Japan, it has shown positive growth in Germany.

Slide 7 shows why this is the case. While the hours worked by an employed person declined in both economies, falls in the unemployment rate and increases in the labor force participation rate have been more pronounced in Germany than in Japan as far as this period is concerned. But challenges lie ahead for both economies. The right panel in Slide 8 shows that Japan has already turned into what is called a "population onus society," in which the working age population declined at a faster pace than the total population. As the left panel suggests, this is forecast to be followed by Germany, albeit in a less conspicuous manner, in the coming decades.

The decline in the working age population may be partially offset by an increase in the number of foreign workers. This seems to typically have been the case with Germany, which you see in the panel of Slide 9. Even for Japan, the number of foreign workers has climbed in recent years by more than one million against the backdrop of an acute labor shortage.

Even if a decline in the working age population is inevitable, the negative impact on labor input can be mitigated by raising labor participation rates. In this regard, Japan has made tangible achievements in recent years. Slide 10 offers an international comparison of labor force participation rates. The lower left panel shows Japan's labor participation rate for women by age group over the past two decades. You see that more women in the age group of 25-34 years (typically young working mothers) work today than ever before, offsetting the overall decline in the working age population. The labor participation rate for this age group has climbed to 77 percent in 2016, and as a result, the notorious M-shaped curve largely has been corrected. An international comparison shown in the lower right panel reveals that Japan's participation rates for women in 2016 are generally higher than in the United States, although not as high as in Germany or Sweden.

Thus, of the two supply-side determinants of economic growth, labor input can be upheld by raising labor participation rates. What about the other determinant, labor productivity? Slide 11 provides us with some insight. The left panel compares the level of labor productivity in the G7 countries. If you place the U.S. productivity level as the benchmark at 100, Japan's productivity level is around 70 percent of the U.S. level. The German

productivity level stands highest in the G7 economies. Thus, for Japan to catch up to the U.S. productivity level, it has to close a gap that amounts to 30 percent. As a matter of fact, the right panel shows that Japan achieved one of the highest productivity growth rates among the G7 countries between 2000 and 2015. This suggests that there does remain room to catch up, and it is actually catching up. We know that our manufacturing companies are competitive on a global standard. So, it is mainly the services industries that need to accelerate their catch-up process, possibly through a wider use of information and communication technologies.

IV. Bank of Japan's Monetary Policy

Now let me talk about the monetary policy. The Bank of Japan did not just sit by and watch Japan's economic difficulties. In fact, as the nation's central bank, we went through an all-out struggle. Slide 12 shows that the problem with Japan was that the policy rate had reached 0 percent in the early 2000s long before other central banks in the major economies faced the same problem. This meant that there was no room for the Bank of Japan to reduce the short-term policy rate. Japan was faced with the zero-lower bound ahead of other industrialized economies.

When room for further policy rate cuts was exhausted, we introduced a number of new monetary policy measures that are described today as unconventional monetary policies. The Bank of Japan originated quantitative easing and was the first to employ forward guidance. We have literally been an inventor of various sorts of new forms of monetary policies. The latest version of such new policies is called Yield Curve Control (YCC). Slide 13 shows the outline of the policy. It intends to facilitate the formation and thus the shape of a yield curve that is considered most appropriate for maintaining the momentum toward achieving the price stability target of 2 percent.

Under YCC, the operational target is the interest rate. The novelty is that we have two target rates. The short-term policy interest rate is set at minus 0.1 percent and the target level of the 10-year Japanese government bond (JGB) yields at around 0 percent. We are buying a necessary and sufficient quantity of JGBs to maintain the rate targets. I think the policy has been quite effective. The left panel in Slide 14 shows that Japan's yield curve generally stays lower than those in the United States and Germany. A comparison with the German

yield curve reveals that, while shorter rates are lower in Germany, long-term rates are kept lower in Japan than in Germany. The right panel compares 10-year bond yields in the major economies. While the U.S. Treasury rates moved up after the presidential election in November 2016, dragging the German Bunds rates in the same direction, the JGB yields remained at lower levels under YCC.

I now turn to economic and inflation development in Japan to show that the monetary policy has worked quite effectively. Slide 15 provides the Bank of Japan's latest economic and inflation outlook. As you see in the table, Japan's economy is forecast to grow 1.9 percent in fiscal 2017 and 1.4 percent in fiscal 2018. This is well above Japan's potential growth rate, which is estimated to be around 0.8 percent. Therefore, the output gap is expected to improve further into positive territory. This is supposed to exert upward pressure on prices. However, on the inflation front, consumer price index (CPI) inflation rates remain weak and are only expected to reach 1.8 percent in fiscal 2019, still falling short of the price stability target of 2 percent.

In the meantime, the economy has never been better balanced in the recent past. As we see in the left panel of Slide 16, corporate profits have climbed to record high levels. The labor market is very tight with the unemployment rate, shown in the middle panel, all the way down to 2.7 percent, which implies full employment. Meanwhile, job opening rates, as shown in the right panel, rose to historically high levels. So, the question is why the prices are so weak when the macroeconomic fundamentals are so favorable. As a matter of fact, this may be a common question to be asked of the economies of the United States and the Euro area.

My answer to the question in Japan is that, against the backdrop of acute labor shortage, corporate firms in Japan are trying to absorb wage cost pressures without passing them on to sales prices, through such measures as labor-saving capital expenditure, and streamlining their business processes, by doing away with excessive or unnecessary services. In both cases, labor productivity improves and exerts downward pressure on inflation. As a matter of fact, as you see in the left panel of Slide 17, a macroeconomic perspective tells us that labor productivity is on a steady upward trend recently, while real wages are moving almost sideways. Thus, the gap between them, which we label the real wage gap, has declined, as

you see in the right panel. This means that real wage increases have not caught up with improvements in labor productivity.

In sum, I think weak inflation in Japan has to do with higher productivity, which can be regarded as a supply-side shock. Assuming that wages eventually catch up with labor productivity improvement and the wage gap reverts to zero over time, we can expect inflation rates to pick up accordingly. I think it is a matter of time before we start to witness inflationary pressures gather momentum. To the extent that good things are happening to the economy, I think we do not need to be overly frustrated about the low inflation. We can be patient and continue with the current monetary policy without any further easing.

V. Lessons from the Japanese Experience

What lessons, if any, does the Japanese experience have for the Euro area, which now faces similar challenges ranging from low inflation to demographics? I wish I could offer you a full answer, but our own mission to overcome deflation and bring the economy back on track toward sustained growth is not fully completed. So, what I'll offer here are three interim suggestions.

First, you definitely need to avoid a financial crisis. We have learned that a financial crisis inflicts lasting damage on the economy. Therefore, it is essential that the soundness of the financial system is maintained through adequate regulation and supervision. It is just as important to have an operational safety net, including a deposit insurance system and resolution framework that prevents a failure of a financial institution from developing into a systemic crisis. In this regard, the completion of the Basel III regulatory reforms that began following the onset of the global financial crisis is a significant achievement.

Second, monetary policy alone cannot achieve the ultimate goal of overcoming deflation and bringing the economy back on track to sustained growth. Monetary policy must be pursued in tandem with the growth strategy, or structural policies more broadly. Monetary easing raises potential GDP through an increase in the capital stock as well as labor input, thus affecting the supply side. Moreover, accommodative monetary conditions should mitigate any frictional costs that might otherwise accompany the necessary structural reforms. What we in Japan and the Euro area have in our hands is a golden opportunity to

upgrade our economies. We should not miss this chance to promote much needed structural reforms.

Third, the central bank needs to maintain its credentials as a deflation fighter as much as an inflation fighter by showing a clear and unequivocal commitment to battle deflation. Should this be lost, our experience suggests that the credentials would be extremely difficult to recover.

I am sure that the policy makers in the Euro area, including the Bundesbank, recognize precisely these points and therefore require no advice from me. The cumulative wisdom we have built up over the years in addressing the challenges should collectively and fully be utilized in guiding our economies in the right direction.

Closing Remarks

One summer day in the late 1960s, when I lived in Hamburg, my father drove me to the border of what was then the Deutsche Demokratische Republik (DDR). At the border in the middle of a meadow, a Bundeswehr border guard approached me and said "Look boy, also beyond here is Germany—*auch drüben ist Deutschland*." What Germany has achieved since then is a truly admirable *Wirtschaftswunder* (economic wonder). I understand it has embarked on the "Industrie 4.0" initiative to create yet another *Wirtschaftswunder*.

In the five decades since my boyhood in Germany, the social and economic environments in both countries have changed quite dramatically. Today, an average Japanese person has a life expectancy that is 15 years longer than people did in 1960. An average Japanese worker today works 50 hours less per month compared with 1960. Similarly, in Germany, life expectancy today is 13 years longer and a German worker works 70 hours less compared with 1960. This is a big change for the people in the two countries, whose common virtue used to be diligence in the 1960s. But this is not necessarily a bad thing, because people have more time to enjoy life. It also means that we have more time to get to know each other even better.

I have a father, who is now fully retired and is one of those enjoying longer life. When I visited him over the New Year holiday, he told me he still regularly exchanges updated family history with his *alten Kameraden* (old comrades) fifty years on since his days in Germany. Old friendship never dies. I now know it is the responsibility of our generation to not just inherit the friendship with Germany, but foster it and pass it on to the generations to come.

Thanks to technological innovation, we can learn a lot more easily about each other's history and culture these days. In addition, traveling has become far easier, enabling "seeing is believing" for many people. Thus, I believe the relationship between Germany and Japan is entering a new stage beyond the traditional sphere, where economic and cultural interaction has become an everyday affair, making geographical distance less meaningful. I would like to conclude my speech this evening by expressing my sincere hope that our friendship develops from *Ferne Gefährten* (distant companions) to what can be called *Enge Gefährten* (close companions). This concludes my speech this evening.

Ich danke Ihnen für Ihre Aufmerksamkeit. (I thank you for your attention.)



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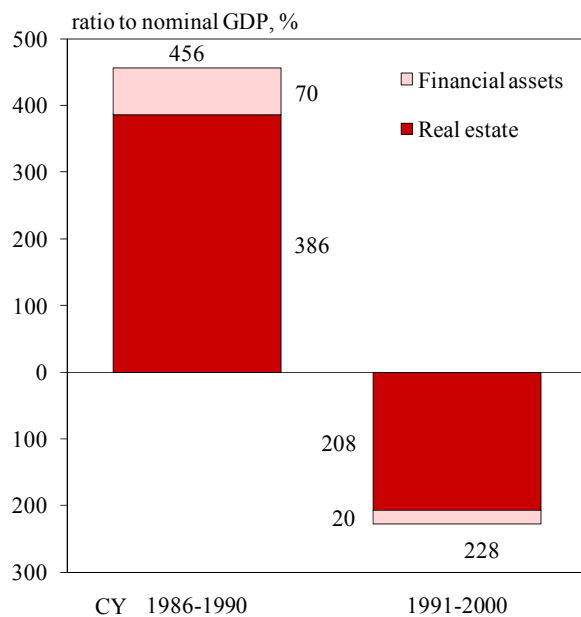
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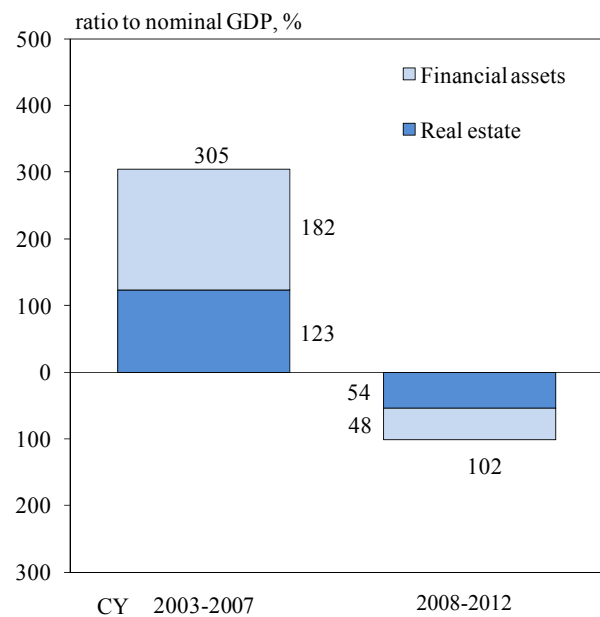
Slide 1

Scale of Asset Price Bubbles

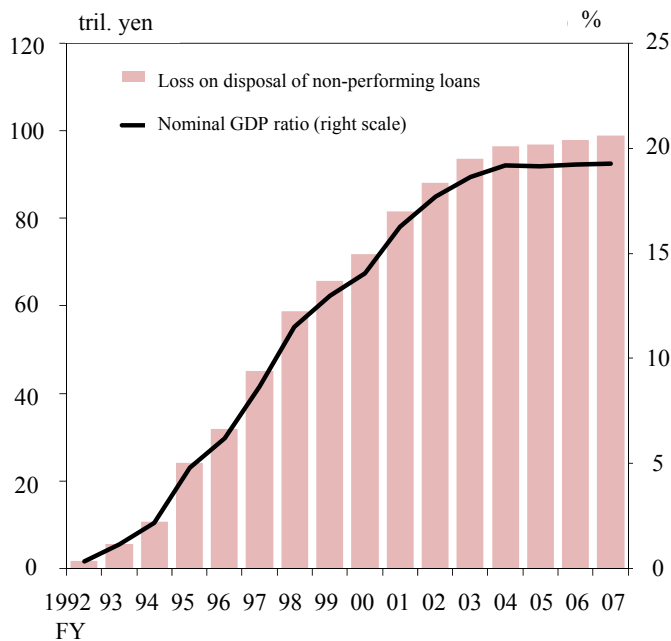
Japan



United States

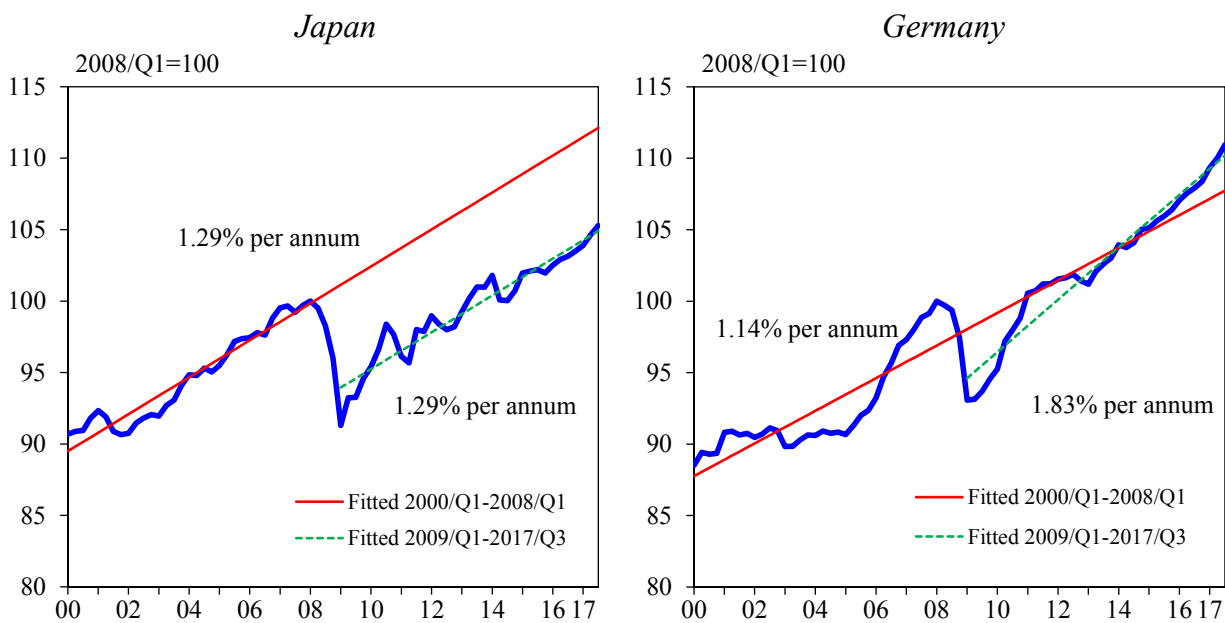


Loss on Disposal of Non-performing Loans Among Japanese Financial Institutions



2

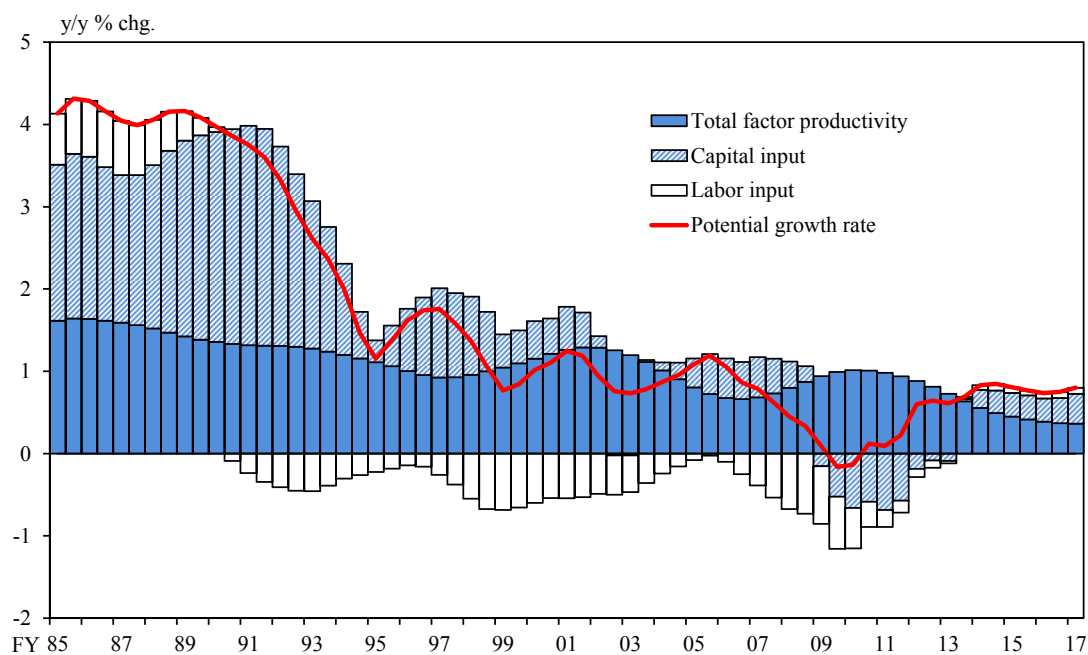
Real GDP



Note: The GDP series in the figures are seasonally-adjusted.
Source: OECD.

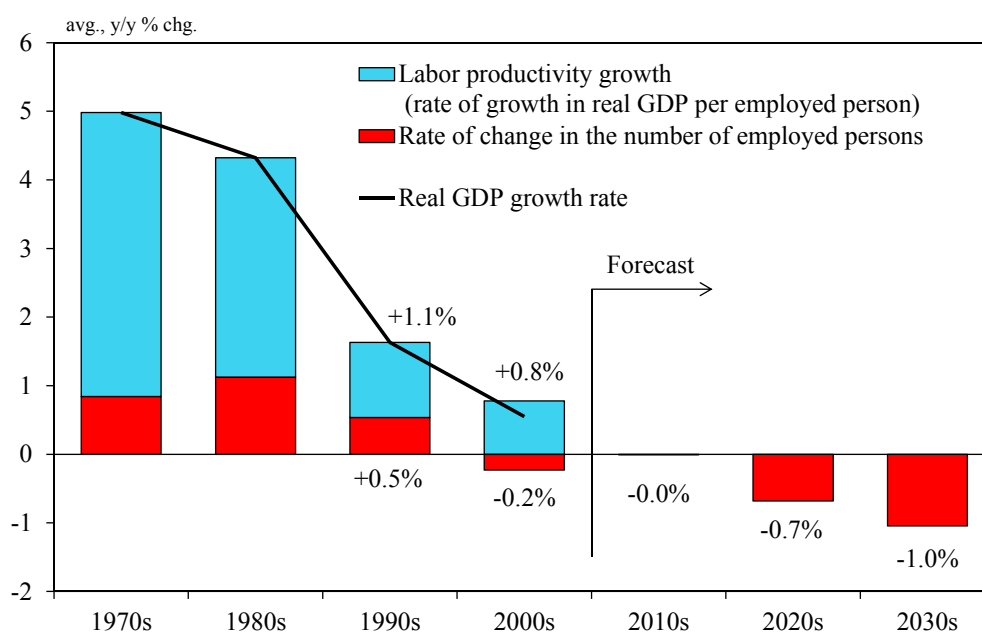
3

Potential Growth Rate



Note: Based on staff estimations. Figures for the first half of fiscal 2017 are those for 2017/Q2.
Source: Bank of Japan.

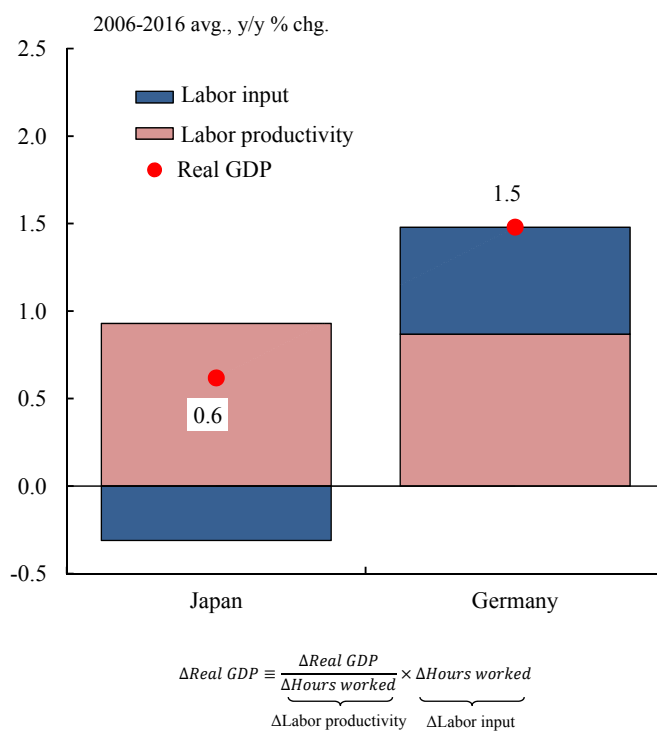
Japan's Real GDP Growth



Note: Fiscal-year basis. The rates of change in the number of employed persons from 2017 onward are calculated using the population outlook (medium variant) and projected labor force participation rates (assuming the labor force participation rate for each age/sex group remains the same as in 2016).

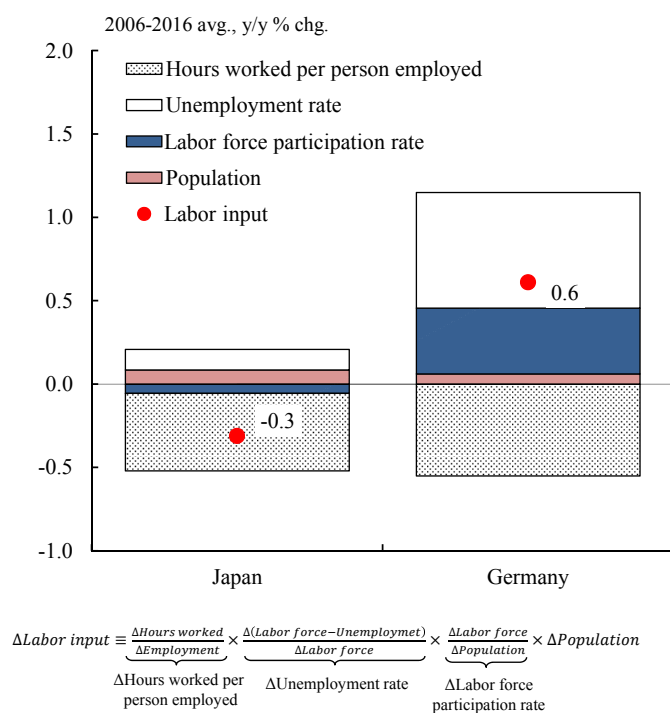
Sources: Cabinet Office; Ministry of Internal Affairs and Communications; National Institute of Population and Social Security Research.

Real GDP



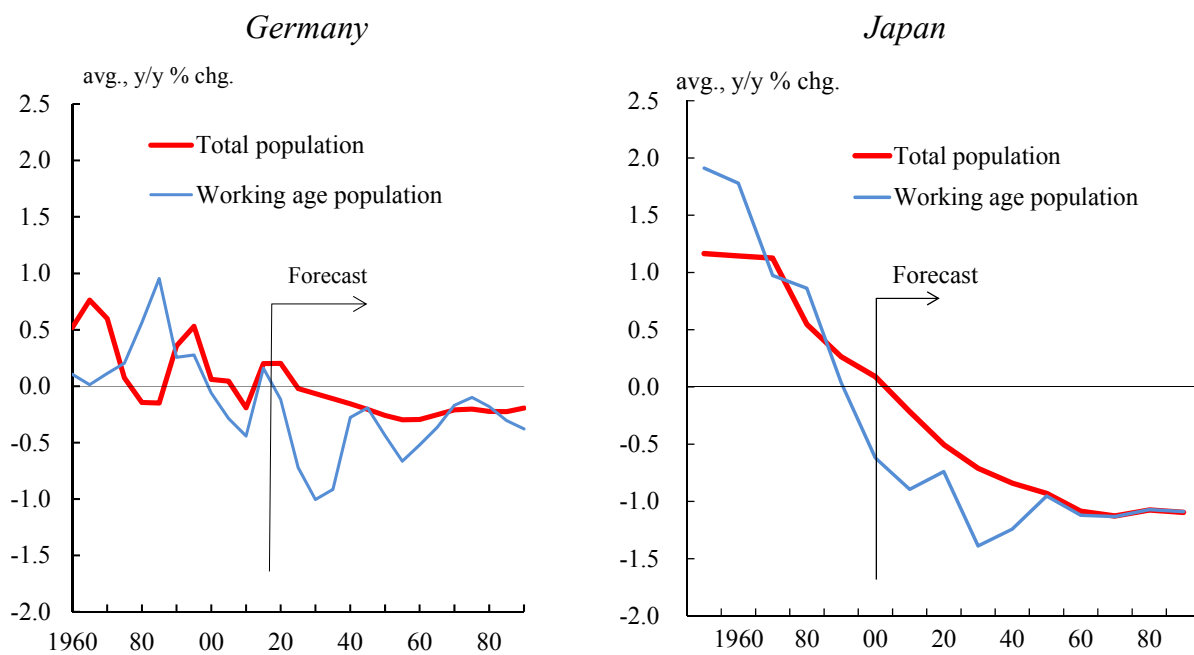
Sources: HAVER; Cabinet Office; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare.

Labor Input



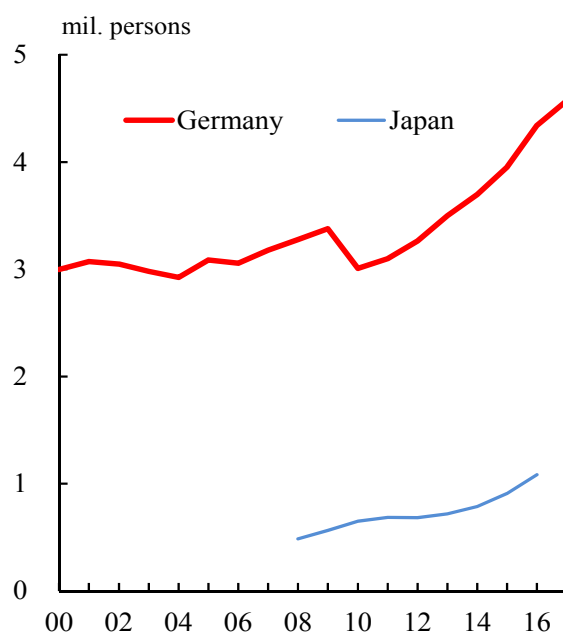
Sources: HAVER; Cabinet Office; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare.

Total Population and Working Age Population



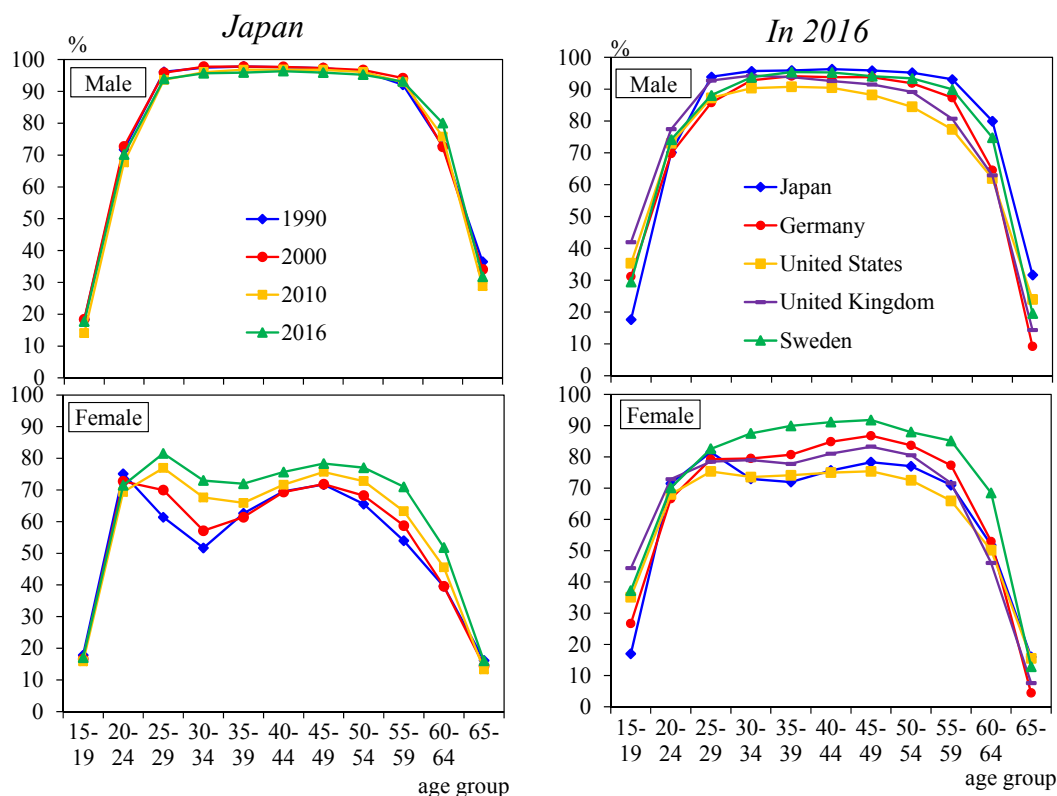
Sources: Eurostat; United Nations; Ministry of Health, Labour and Welfare.

Foreign Workers



Sources: Eurostat; United Nations; Ministry of Health, Labour and Welfare.

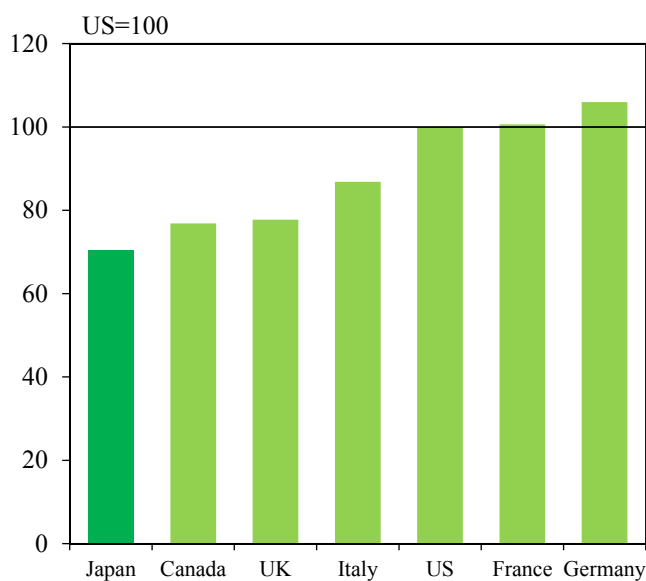
Labor Force Participation Rates



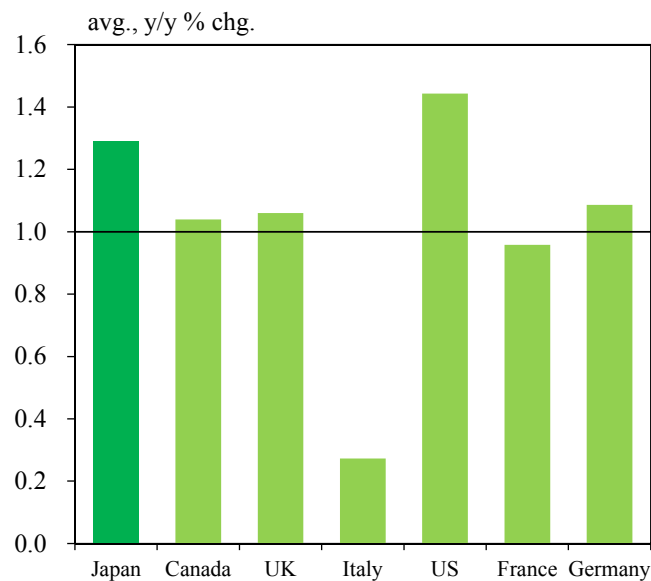
Sources: Ministry of Internal Affairs and Communications; OECD.

International Comparisons of Labor Productivity

Productivity Level



Productivity Growth Rate

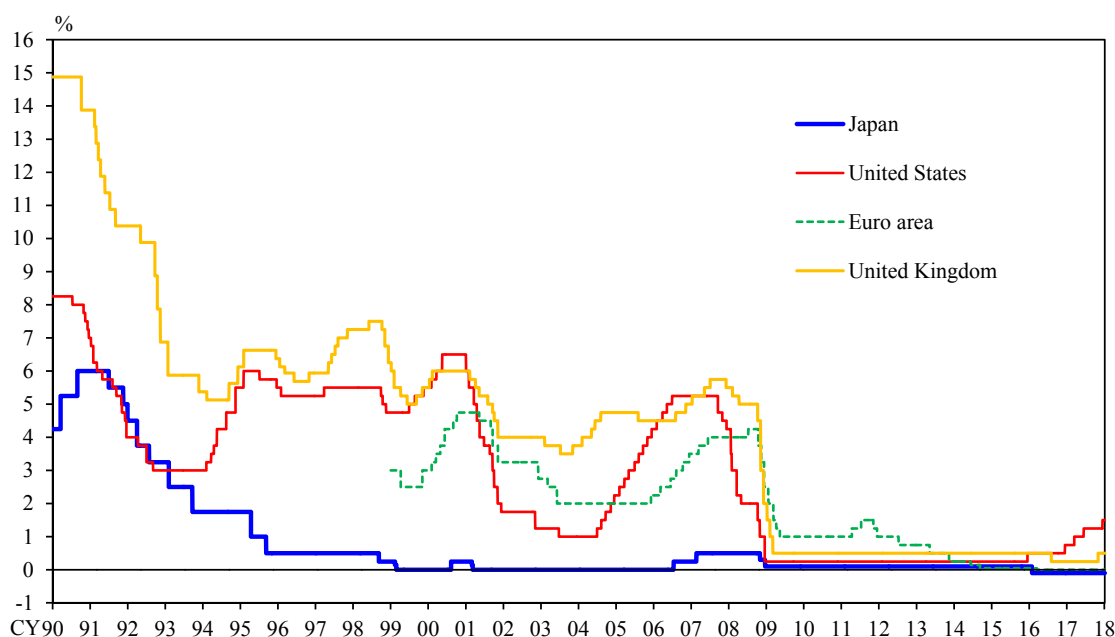


Notes: 1.The left panel shows the nominal GDP per hour worked as of 2015.

2.The right panel shows the average year-on-year rates of change in the real GDP per hour worked from 2000 to 2015.

Source: UK Office for National Statistics.

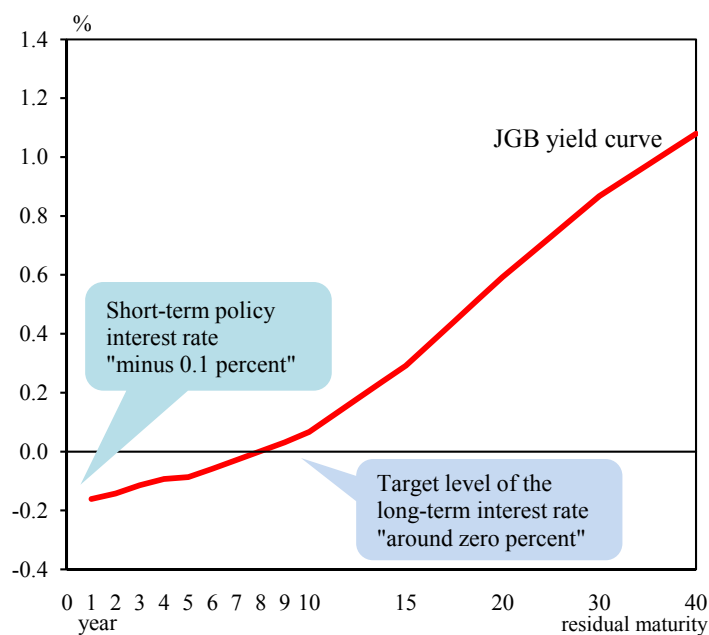
Policy Interest Rates in Major Economies



Note: For Japan, for the period when no target interest rate was adopted, figures for the policy rate are the interest rate applied on excess reserves.
Sources: Bank of Japan; Federal Reserve; European Central Bank; Bank of England; Bloomberg; Haver.

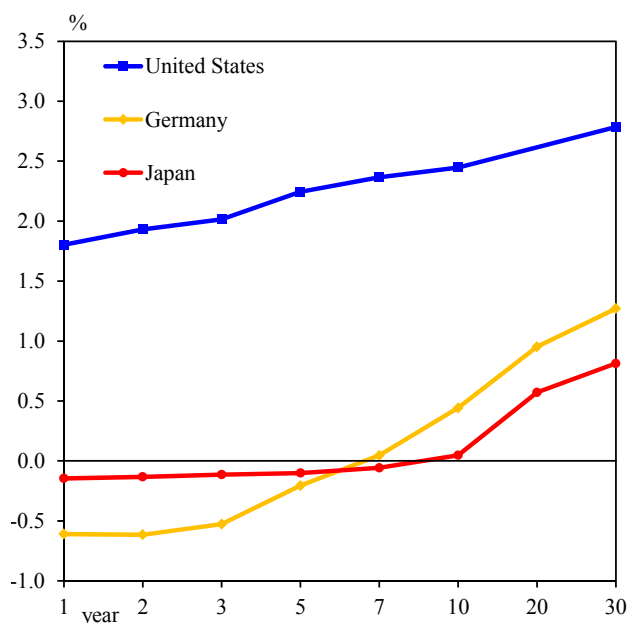
QQE with Yield Curve Control

BOJ facilitates the formation of a yield curve that is considered most appropriate for maintaining the momentum toward achieving the price stability target of 2 percent, taking account of developments in economic activity and prices as well as financial conditions.

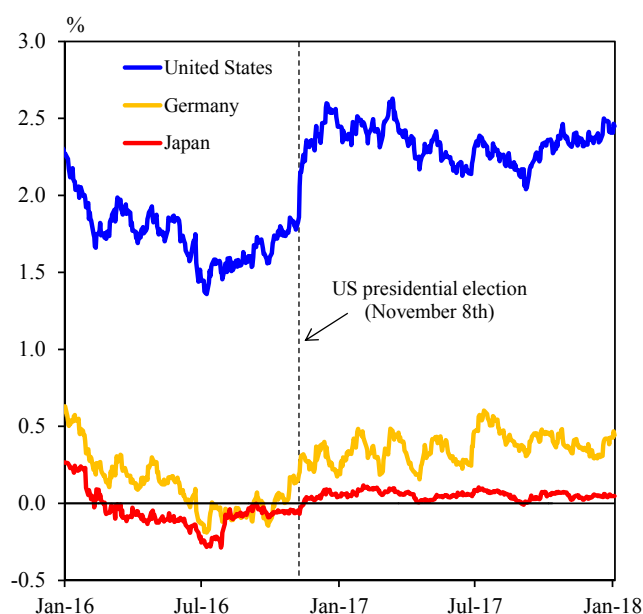


Conduct of Yield Curve Control

Yield Curves in Major Economies



10-year Government Bond Yields in Major Economies



Source: Bloomberg.

Outlook for Economic Activity and Prices (October 2017)

y/y % chg.

	Real GDP	CPI (all items less fresh food)
Fiscal 2017	+ 1.9	+ 0.8
Forecasts made in July 2017	+ 1.8	+ 1.1
Fiscal 2018	+ 1.4	+ 1.4
Forecasts made in July 2017	+ 1.4	+ 1.5
Fiscal 2019	+ 0.7	+ 1.8
Forecasts made in July 2017	+ 0.7	+ 1.8

Note: Figures indicate the median of the Policy Board members' forecasts (point estimates). Figures for the CPI (all items less fresh food) exclude the effects of the consumption tax hikes.

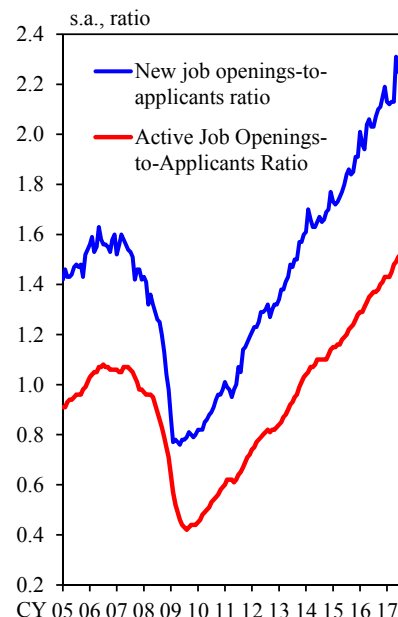
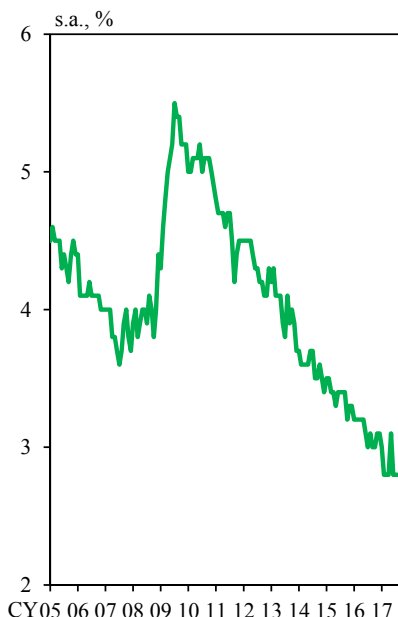
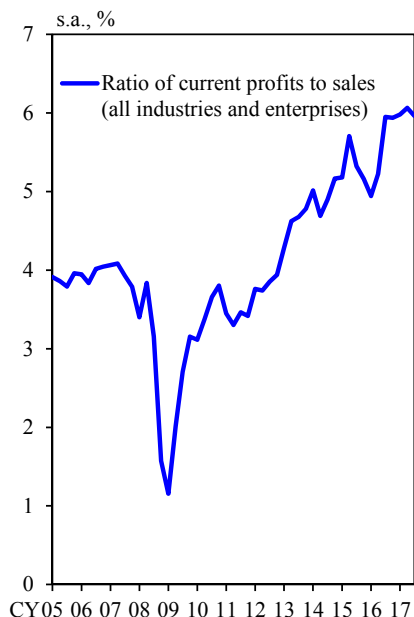
Source: Bank of Japan.

Corporate Profits and Labor Market Conditions

Corporate Profits

Unemployment Rate

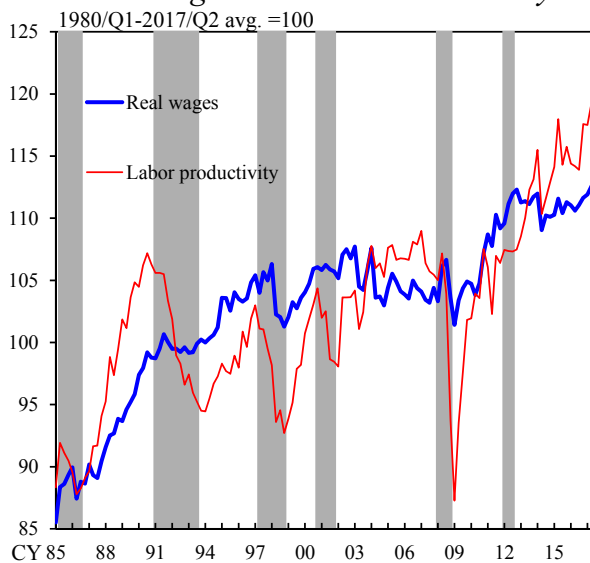
Job Openings-to-applicants Ratio



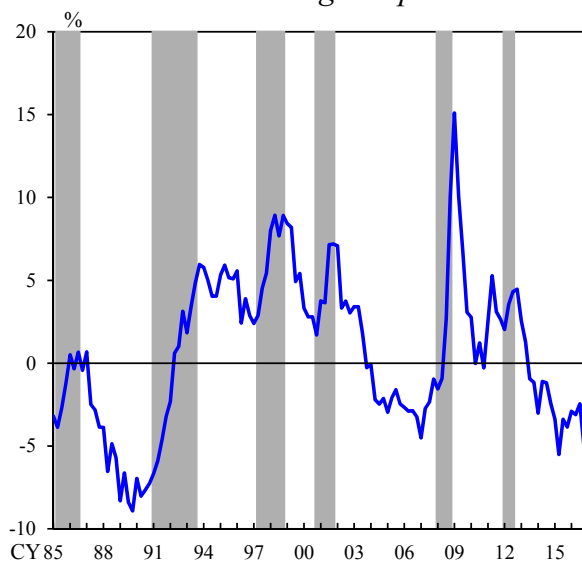
Note: Figures for corporate profits are based on the *Financial Statements Statistics of Corporations by Industry, Quarterly*. Excluding "finance and insurance."
Sources: Ministry of Finance; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare.

Real Wage Gap

Real Wages and Labor Productivity



Real Wage Gap



Notes: 1. Real wages = personnel expenses / number of employees / GDP deflator.
2. Labor productivity = (operating profits + personnel expenses + depreciation expenses) / number of employees / GDP deflator.
The data used to compute labor productivity except for the GDP deflator series are based on the "Financial Statements Statistics of Corporations by Industry, Quarterly," and do not cover the finance and insurance industry.
3. The real wage gap is defined as the deviation of real wages from labor productivity.
4. Shaded areas indicate recession periods.
5. Data for real wages and labor productivity are seasonally adjusted.
Sources: Cabinet Office; Ministry of Finance.