



July 4, 2018
Bank of Japan

**Economic Activity, Prices,
and Monetary Policy in Japan**

Speech at a Meeting with Business Leaders in Ishikawa

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(English translation based on the Japanese original)

Introduction

Thank you for giving me this opportunity to exchange views with you and for having taken the time to be here despite your busy schedules. It is indeed a great honor to be here today. Please allow me to express my gratitude for your great cooperation with the business operations of the Bank of Japan, particularly of the Kanazawa Branch.

The Bank introduced quantitative and qualitative monetary easing -- or QQE for short -- in April 2013 with the aim of achieving the inflation target of 2 percent, and since then, has strengthened the QQE framework.

As a result of the Bank's efforts, most economic indicators -- such as those of production, employment, investment, exports, and fiscal conditions -- have improved.

Today, I would like to provide my views on the achievements thus far of the Bank's monetary policy measures as well as on some critical opinions regarding QQE, and then explain recent economic and financial developments as well as the path toward achieving the price stability target of 2 percent.

I. The Achievements of Five Years of the Bank's Monetary Easing Policy

April 2018 marked five full years since the Bank introduced bold monetary easing with its policy of QQE. For this reason, monetary policy over the past five years has been the subject of a large number of articles in newspapers and magazines assessing QQE from a variety of perspectives.¹ Many of the assessments pointed out that the 2 percent price stability target had not been achieved and argued that the dangers associated with monetary easing had not been addressed.

However, as I have highlighted repeatedly, monetary easing has led to a continued improvement in employment, to an increase in both real GDP growth and nominal GDP growth, and to a rise in the year-on-year inflation rate from negative into positive territory

¹ For example, such assessments were found in Fujita Tomoya, "Daikibo kanwa gonen, fukuramu 'fukusayō'," the *Asahi Shimbun*, April 4, 2018; and the 3-day series, Sakai Takayuki et al., "Shiren no saishidō," *The Mainichi*, February 17, 18, and 20, 2018 and the series focusing on monetary policy under the same title on April 10, 11, and 12, 2018.

although the rate has not yet reached 2 percent. In my speech today, I would like to focus on how monetary easing has lifted productivity and, in a broader sense, has brought out people's potential in Japan.

Improvement in Productivity

Since the bold monetary easing policy was launched, productivity has been improving. This seems to conflict with standard textbook economic theory, which suggests that while monetary policy can influence real variables such as real GDP, production, and employment in the short run, in the long run it can only affect nominal variables such as nominal GDP, prices, and the exchange rate.²

So, why did Japan's productivity rise as a result of monetary policy even though this seems to run counter to economic theory? The reason generally given is that what economic theory actually focuses on is differences in productivity levels arising due to differences in productivity growth rates over the super long term. Looking at real purchasing power parity GDP per capita, which provides a broad indicator of differences in productivity across countries, the level between the poorest and richest countries may differ by a factor of more than 100. Of course, such a gap is not due to differences in monetary policy. Returning to the situation in Japan, however, if monetary policy had been well implemented, productivity might have grown, over a period of a decade or more, at 2 percent rather than 1 percent.

Therefore, I would say one reason, first of all, is that in the short run capacity utilization rises. In times of recession, orders fall and factories will decrease output. However, since labor cannot simply be laid off, labor productivity will decline. The opposite occurs during an economic expansion.

² For details, see Nicholas G. Mankiw, *Mankyū keizaigaku II makuro-hen*, 3rd ed., trans. Adachi Hideyuki, Ishikawa Jota, Ogawa Eiji, Jinushi Toshiki, Chuma Hiroyuki, and Yanagawa Takashi (Tokyo: Toyo Keizai Inc., 2014), 374, 397. Originally published as *Principles of Economics*, 6th ed. (Mason, Ohio: South-Western Cengage Learning, 2012), 650, 665. According to Mankiw, in the long run, changes in the amount of money have important effects on nominal variables such as price levels, but only negligible effects on real variables such as real GDP. He adds that, although monetary policy is neutral in the long run (i.e. it does not have an effect on real variables), it has profound effects on real variables in the short run.

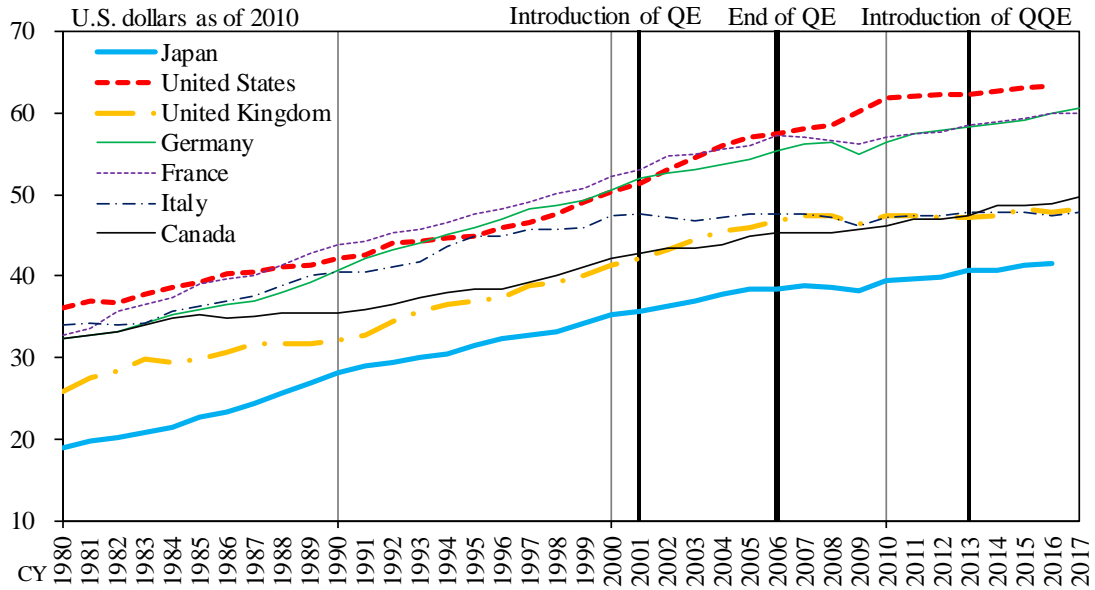
Another reason is a reduction in low-productivity work in an economic environment where monetary policy is producing its intended effects. In times of recession, sales fall, and stores will try to increase demand, even if only a little, by extending their business hours. The opposite occurs during an economic upturn. If there are labor shortages, restaurants that used to stay open until midnight, for example, will start to close early. If they open only during the busiest times during the day and in the evening, labor productivity will increase.

Furthermore, over the long term, there is the issue of hysteresis effects.³ In a recession, firms reduce their investment, including that in employment and research and development (R&D). The unemployed do not have the chance to accumulate work experience. For example, many young people of the generation that entered the labor market during the so-called "employment ice age" were unable to gain work experience. When the economy is in recession, firms also reduce investment in training and human resource development. The reduction of investment, especially in R&D, results in a decline in productivity for a prolonged period. Reversing these developments takes quite a while. In fact, it may be difficult to ever make up lost ground. Young people who were caught up in the "employment ice age" and lost out in on-the-job training opportunities, especially from the mid-1990s to the mid-2000s and following the global financial crisis in 2008, may struggle to make up ground. Moreover, many of these people receiving low incomes have been unable to pay sufficient taxes and social security contributions, possibly contributing to a deterioration in fiscal conditions both at present and in the future. This impact is long lasting. While it is difficult to estimate exactly how large the impact is, it is certain to be considerable, judging by the increase in the share of non-regular employment during this period and the wage difference between regular and non-regular employees. All of this means that as the economy expands due to monetary easing policy, the negative hysteresis effects of the past should be mitigated and productivity should rise.

³ Nakano Akihiro and Kato Ryo, "'Chōki teitai' ron o meguru saikin no giron: 'Rireki kōka' o chūshin ni," *Bank of Japan Review*, no. 17-J-2, March 2017, https://www.boj.or.jp/research/wps_rev/rev_2017/data/rev17j02.pdf.

Chart 1 and the accompanying table provide a comparison of estimates by the Organisation for Economic Co-operation and Development (OECD) for labor productivity and real purchasing power parity GDP per hour worked for the Group of Seven (G-7) countries.

Chart 1 Productivity of Major Economies



Note: Productivity is represented by real GDP per hour worked, converted by purchasing power parity exchange rates in 2010.

Source: OECD, "Level of GDP per capita and productivity."

Average Growth Rate of Productivity (%)

Period	Japan*	United States*	United Kingdom	Germany	France	Italy	Canada
2012-2017	1.0	0.4	0.5	0.9	0.8	0.2	1.2
2002-2012	0.9	1.6	0.9	0.9	0.5	0.0	0.8
1992-2012	1.5	1.7	1.6	1.5	1.2	0.7	1.3

*The data for the period 2012 through 2016 are used instead of the data for 2012 through 2017.

The chart and table show that from 2012 to 2017, Japan, together with Canada, registered average annual productivity growth of 1.0 percent, the highest among the G-7 countries and hence higher even than the United States. Moreover, from a long-term perspective, Japan's average labor productivity growth rate since 2012 is even slightly higher than the average of 0.9 percent in the preceding decade from 2002 to 2012. Thus, while some might argue that Japan's productivity growth following the introduction of QQE has been modest, it has actually been high considering how low it had been by international comparison. Therefore,

while Japan also faced the global financial crisis in 2008, which pushed down its productivity growth, I think it would be fair to say that productivity growth in Japan has been relatively high by international comparison.

However, using labor productivity for comparison may be misleading. The reason is that firms tend to hire the most productive people first. Therefore, one would expect countries with a high unemployment rate to enjoy higher productivity, and this pattern tends to be borne out in practice. Productivity in both Italy and France is higher than in Japan, but the unemployment rate in those two countries is 11.3 percent and 9.4 percent, respectively.⁴ However, when the unemployment rate is high, there are people who cannot work although they want to, which is unfortunate. Obviously, a better situation is one where the unemployment rate is low and all the people who want to work can work. Therefore, I thought it would be useful to look at real purchasing power parity GDP per working-age person. This should reduce the distortion introduced by focusing on labor productivity, since this indicator is higher when those who want to work do work, and lower when they do not work.

In this context, it is worth quoting Dr. Osamu Shimomura, who was the brains behind the period of high economic growth achieved under Prime Minister Hayato Ikeda. In 1968, exactly 50 years ago, he said: "Why are we making such effort and putting up with such hardship to pursue economic growth? More than anything, we want to derive satisfaction from life and work. And isn't the greatest satisfaction in life being able to fully demonstrate one's abilities? We should pursue a society that provides such opportunities to all citizens. If we compare society today and society a hundred years ago, isn't the fundamental difference that, today, finally, a large number of citizens are gradually being provided with the opportunity to take advantage of their talents in one way or another?"⁵ I am not saying that simply raising the employment rate is the same as the ideals expressed by Dr. Shimomura.

⁴ The figures are for 2017 and are taken from the World Economic Outlook Database April 2018, available on the website of the International Monetary Fund (IMF): <https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/index.aspx>.

⁵ Kamikubo Satoshi, *Hyōden, Nihon no keizai shisō, Shimomura Osamu, 'Nihon keizaigaku' no jissensha* (Tokyo: Nihon Keizai Hyouronsha Ltd., 2008), 227.

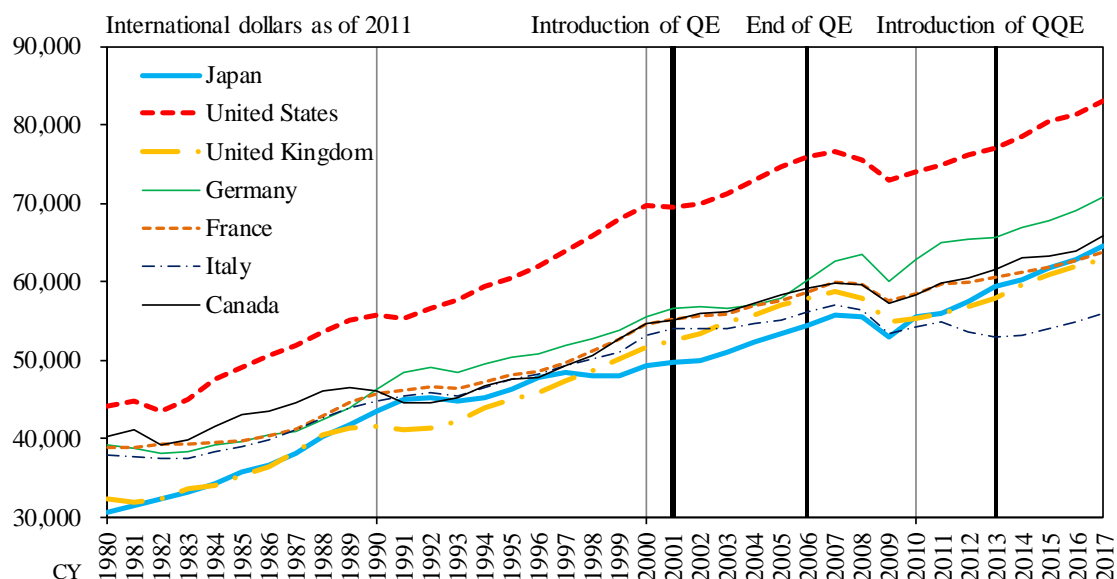
However, I believe that providing people with the opportunity to work is the starting point for people to be able to fully demonstrate their abilities.

This can also be said, for example, with regard to women's entry into the labor market. According to statistics released by the OECD, the labor force participation rate of women aged between 25 and 54 in Japan was 75.3 percent in 2017; this figure is higher than that for the United States -- which is 72.1 percent -- and the average of the G-7 countries -- which is 73.5 percent, with France at 75.2 percent, Germany at 80.0 percent, and the United Kingdom at 78.1 percent.

Currently, the issue surrounding working women in Japan is not the labor force participation rate itself, but the scarcity of opportunities for women to develop their career at work, given that many women work as part-timers or non-regular employees. However, without entry into the labor market in the first place, women cannot create career plans. I believe that, as the number of working women increases, more women will become regular employees, enabling them to develop their career; in fact, in 2016, the ratio of women in managerial positions in establishments with 30 employees or more in Japan increased, according to the fiscal 2016 *Basic Survey of Gender Equality in Employment Management* (available only in Japanese) released on July 28, 2017 by the Ministry of Health, Labour and Welfare.

Chart 2 shows real purchasing power parity GDP per working-age person. As can be seen in the chart and the accompanying table, since the introduction of QQE, Japan's growth rate has been the highest among the G-7 countries, and has also been notably higher than during the preceding decade from 2002 to 2012. This means that those who want to work are increasingly able to work.

Chart 2 Real PPP GDP per Working-Age Person of Major Economies



Note: Annual figures for working-age person are obtained by linear interpolation of data for every five years. Figures for Germany through 1990 are those for West Germany. Real GDP is converted by purchasing power parity (international dollars as of 2011).

Sources: IMF, "World Economic Outlook Database";
United Nations, "World Population Prospects: 2017 Revision."

Average Growth Rate of the Real PPP GDP per Working-Age Person (%)

Period	Japan	United States	United Kingdom	Germany	France	Italy	Canada
2012-2017	2.3	1.7	2.1	1.6	1.2	0.9	1.7
2002-2012	1.4	0.8	0.6	1.4	0.8	-0.1	0.8
1992-2012	1.2	1.5	1.6	1.4	1.3	0.8	1.5

Of course, there are people who say this level of productivity growth in Japan is not ideal and that productivity should be raised further by pushing ahead with the growth strategy and structural reforms. However, people saying this do not seem to clearly explain what kind of policy measures will produce how much productivity growth. To avoid any misunderstandings, let me state that I strongly agree with structural reforms. All I am saying is that it is good to conduct both monetary easing policy and structural reforms.

In addition to productivity, improvements can also be seen in many other indicators such as production, employment, the unemployment rate, investment, exports, and the fiscal

situation; moreover, perceptions that the economy is recovering, the income distribution, and women's entry into the labor market provide further indications of improvement.⁶

II. Some Counterarguments to Critical Opinions on the Bank's Monetary Policy

As mentioned above, monetary policy has been clearly having an effect, but for some reason, objections to the Bank's current policy persist.

Among the critics are some who argue that QQE is like the Battle of Imphal during the Second World War and we should withdraw immediately.⁷ The Battle of Imphal took place from March 1944 to early July and involved the Japanese army advancing from Burma with the aim of capturing the city of Imphal in northeast India. The battle was an abject failure entailing enormous sacrifice and is often cited as synonymous with a reckless strategy. There was no food along the way, resulting in many deaths from starvation, there were attacks by enemy fighter aircraft, and many soldiers contracted malaria, so that of the 100,000 Japanese troops, 30,000 died in battle, while 20,000 were sent back due to injury or disease. Of the remaining 50,000 troops, more than half fell ill, and the Japanese army suffered a devastating defeat.⁸ In contrast with such disastrous consequences, QQE is clearly having a positive impact, with most economic indicators improving. Therefore, I think this analogy between QQE and the Japanese army's Battle of Imphal is simply inaccurate.

What is Dialogue with the Market?

In this context, it is often said that dialogue with the market is important for the conduct of monetary policy. We must also engage with people who are critical of QQE. I suppose dialogue normally helps to seek out the truth or discover what the vital interests of the other

⁶ Regarding improvements in these indicators, also see Yutaka Harada, "Economic Activity, Prices, and Monetary Policy in Japan: Speech at a Meeting with Business Leaders in Fukushima," Bank of Japan, November 2017.

⁷ See, for example, Kato Izuru, "Sensō makki to kasanaru Nichigin tettei kōsen, Kuroda sōsai ga nerau wa 'ichigeki kōwa' ka," Diamond online, March 4, 2016, <https://diamond.jp/articles/-/87079>. Kumano Hideo, "Deguchi no meiro, kin'yū seisaku o tou 6, Inpāru sakusen kara hayaku tettai o," *Shūkan Ekonomisuto*, November 14, 2017, <https://www.weekly-economist.com/20171114bojexit6>.

⁸ Tobe Ryoichi et al., *Shippai no honshitsu, Nihongun no soshikiron-teki kenkyū* (Tokyo: Chuokoron-shinsha, 1991), 141-177.

party are and to what extent one is able to make compromises oneself. However, dialogue with the market is different from regular dialogue.

There is no such thing as an abstract market; rather, the market consists of a collection of different stakeholders, who, moreover, do not necessarily seek the truth. In addition, because the market comprises a variety of stakeholders with different interests, it would be misleading to say that something is or is not in the interest of the market as a whole. If the Bank were to implement policy measures without listening to the views of stakeholders, it could become complacent and create unnecessary confusion; at the same time, this does not mean that the Bank will or should do everything stakeholders say.

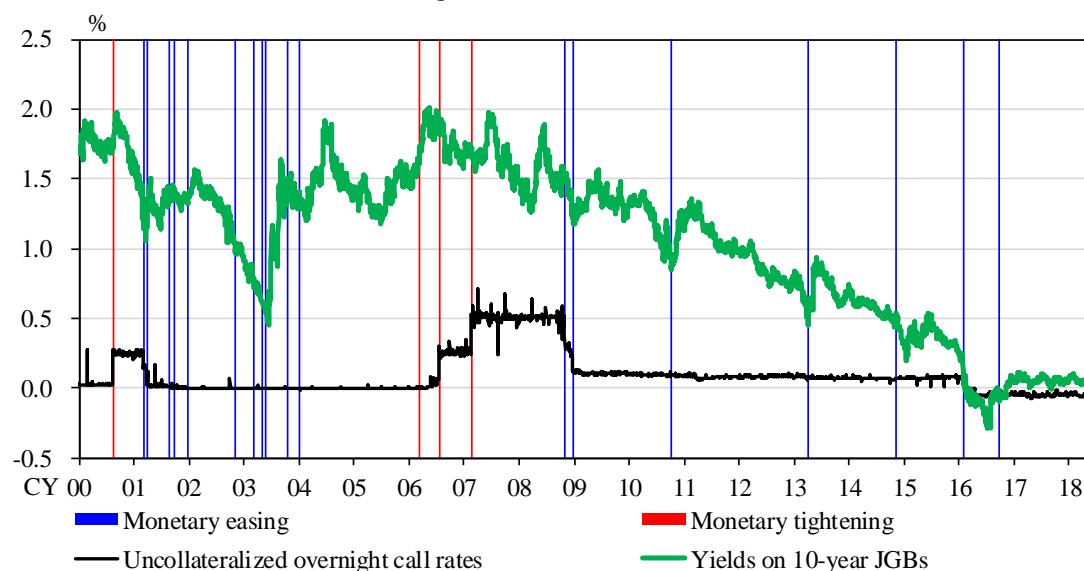
For instance, sometimes it is said that the market is calling for an early rise in interest rates. However, if the Bank were to indeed raise interest rates, bond and stock prices would decline and the yen would appreciate, leading to a deterioration in firms' profits, credit costs would increase, and financial institutions would suffer substantial damage. Moreover, even if short-term interest rates were raised, long-term interest rates would not necessarily rise, so that the spread between short-term and long-term interest rates might actually decline. This is currently happening in the United States and has happened in Japan since 2006.⁹

The reason many market participants think that the yield curve will steepen and hence the term spread will increase when the Bank raises interest rates is probably that they expect the opposite to happen of the flattening of the yield curve seen at the time the Bank introduced the negative interest rate policy on January 29, 2016. However, looking at the facts, we find that the yield curve often tends to flatten when monetary policy is tightened. Chart 3 shows the uncollateralized overnight call rate and long-term interest rates -- represented by 10-year Japanese government bond yields -- from 2000 to the present. The chart shows that when policy was tightened on August 11, 2000 (termination of the zero interest rate policy;

⁹ For instance, Reuters reported that the Federal Reserve Bank of St. Louis President James Bullard said: "We are at some risk of a yield curve inversion, later this year, early 2019." See Gertrude Chavez-Dreyfuss, "Fed's Bullard says U.S. yield curve might invert by early 2019," *Reuters*, May 15, 2018, <https://www.reuters.com/article/usa-fed-bullard-yieldcurve/update-1-feds-bullard-says-us-yield-curve-might-invert-by-early-2019-idUSL2N1SL10U>. This, naturally, is not certain to happen, but has happened before.

overnight call rate of around 0.25 percent set as the guideline for money market operations), on July 14, 2006 (termination of zero interest rates; policy rate hike from 0 percent to around 0.25 percent), and on February 21, 2007 (policy rate hike from around 0.25 percent to around 0.5 percent), the yield curve flattened, that is, the term spread declined. The exception is the period around the time when the Bank reverted from its policy of quantitative easing to conventional interest rate policy on March 9, 2006, shifting its operating target of money market operations from the outstanding balance of current accounts at the Bank at around 30-35 trillion yen to the uncollateralized overnight call rate to remain at effectively 0 percent; following the policy change, the term spread increased.

Chart 3 Short-Term and Long-Term Interest Rates



Source: Bloomberg.

On the other hand, when monetary policy was eased, the yield curve sometimes flattened and sometimes steepened; specifically, when the main operating target for money market operations was changed on March 19, 2001 from an uncollateralized overnight call rate of around 0.15 percent to the outstanding balance of the current accounts at the Bank at around 5 trillion yen; when the outstanding balance of the current accounts at the Bank was raised on December 19, 2001 from above 6 trillion yen to around 10-15 trillion yen; when the upper limit of the target balance of the Bank's current accounts was raised on October 10, 2003 so that the target balance would change from around 27-30 trillion yen to around 27-32 trillion yen; when the Bank's target for the uncollateralized overnight call rate was

lowered on October 31, 2008 from around 0.5 percent to around 0.3 percent; and when the Bank's target for the uncollateralized overnight call rate was lowered on October 5, 2010 from around 0.1 percent to around 0-0.1 percent. In particular, when QQE was introduced on April 4, 2013 -- when the Bank's main operating target for money market operations changed from the uncollateralized overnight call rate of around 0-0.1 percent to the monetary base so that the monetary base would increase at an annual pace of about 60-70 trillion yen -- the yield curve steepened as a result of monetary easing. The reason probably is that monetary easing was recognized as having a positive effect on inflation expectations and economic activity. Thus, whether the yield curve flattens or steepens when short-term interest rates are raised depends on the economic situation as well as the market's view of monetary policy at the time. It is therefore wrong to think that if short-term interest rates are raised, the yield curve will steepen.

I think that what market participants would like from dialogue with the central bank is for the central bank to provide a clear outlook for the future course of monetary policy. However, since the central bank conducts policy referring to price and economic indicators, that is, based on data, it is generally not possible to chart the future course of monetary policy by announcing in advance that it will raise interest rates at certain points in time in steps of, say, 25 basis points regardless of economic conditions.¹⁰ That said, if future economic indicators could be predicted with some certainty, it might be possible to outline future policy accordingly. I think the Federal Reserve believes that the U.S. economy is in such a situation. In the United States, where inflation expectations are anchored at 2 percent, it is possible to predict future price developments more reliably, so that the Federal Reserve can chart the course of future policy. Yet, even in the United States, there has been criticism that the projections of monetary policy presented in so-called "dot plots" often turn out to be

¹⁰ In "Central Banking and the Global Economy" (a speech given at an international symposium entitled "Central Banking & Monetary Policy: The Global Economy & Japan" hosted by the Hitotsubashi Graduate School of Commerce and Management at Hitotsubashi Hall on May 12, 2017), the former governor of the Bank of Israel, Mr. Jacob Frenkel, emphasized that central bank operations must be conducted based on data, not on a certain timeframe.

inaccurate, causing unnecessary confusion.¹¹ In Japan's current situation, where inflation expectations are not anchored at 2 percent, it would likely be even more difficult to chart future policy in advance.

In sum, while the central bank should communicate with the market, its focus should be on conducting policies aimed at maintaining price stability, the sound development of the national economy, and the stability of the financial system.

The Bank's Monetary Easing Policy and the Profitability of Private Banks

One subgroup of market participants is bank managers, and many of them have argued that the low interest rates brought about by QQE have depressed banks' profits, and that this is a side effect of QQE. They say that QQE undermines their business model, which is based on the premise that interest rates are positive and consists of profiting from the difference between high long-term interest rates and low short-term interest rates. This is equivalent to saying that unless purchasing and selling prices are somehow preordained, you cannot conduct business. However, every business derives its profits from the difference between ever-changing costs and sales proceeds.

The reason why conditions for private banks are difficult is that there are few borrowers. From a macroeconomic perspective, Japanese firms have sufficient cash and deposits at private banks, so they do not need to borrow funds from them. According to the Bank's *Flow of Funds Accounts*, as of end-March 2018, firms in Japan had cash and deposits of 261 trillion yen. Relative to the demand for funds, there is a glut of supply.

¹¹ Bloomberg reported that Federal Reserve Bank of St. Louis President James Bullard in relation to the dot plots observed that "[t]he whole idea that you're naming the number of rate hikes way out into the future when you don't know what the data are going to be is something we should get out of the business of doing." See Christopher Condon and Brendan Murray, "Bullard Laments Fed Dot Plot, Yearns for Greenspan's Opacity," *Bloomberg*, May 17, 2018, <https://www.bloomberg.com/news/articles/2018-05-16/bullard-laments-fed-dot-plot-and-yearns-for-greenspan-s-opacity>. Then Federal Reserve Bank of San Francisco President, now Federal Reserve Bank of New York President John Williams, commented that "the time is approaching to phase out" forward guidance, which communicates the intended future path of the federal funds rate. See Jeanna Smialek, "Williams Says Fed's Era of Market Hand-Holding Is Nearing an End," *Bloomberg*, May 17, 2018, https://www.bloomberg.com/news/articles/2018-05-16/williams-says-fed-s-era-of-market-hand-holding-nearing-an-end?in_source=video_page.

In addition, as mentioned earlier, if the Bank were to indeed raise interest rates, bond and stock prices would decline and the yen would appreciate, leading to a deterioration in firms' profits, and credit costs would increase, so that private banks would suffer substantial damage. Also, we do not know whether the yield curve would steepen if short-term interest rates were raised.

Meanwhile, another argument is that if monetary easing continues, not only the financial situation of private banks but also that of the Bank of Japan would deteriorate, leading to serious problems. However, this is not the case. Because I have already talked about this on another occasion, I will not discuss it here today.¹²

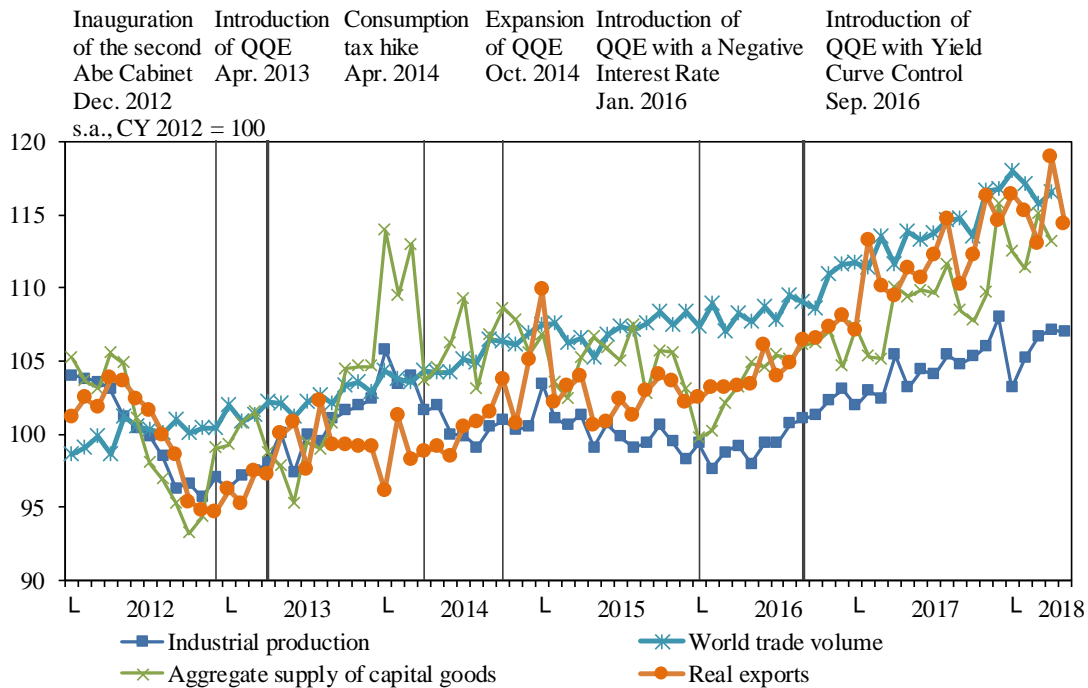
¹² Yutaka Harada, "Economic Activity, Prices, and Monetary Policy in Japan: Speech at a Meeting with Business Leaders in Fukushima," Bank of Japan, November 2017.

III. Recent Economic Developments and Outlook for Prices

So far, I have talked about the long-term economic situation. I would now like to turn to the more short-term situation.

Charts 4 and 5 present key economic indicators. Almost all the indicators -- production, investment, exports, employment, wages, and employee income, which is obtained by multiplying wages by employment -- have improved over the years. Some of the indicators were sluggish following the consumption tax hike in April 2014 and thereafter, particularly the period from the second half of 2014 to the first half of 2016, when global trade volume was sluggish. Some of the indicators temporarily contracted at the turn of this year, but the overall upward trend has continued.

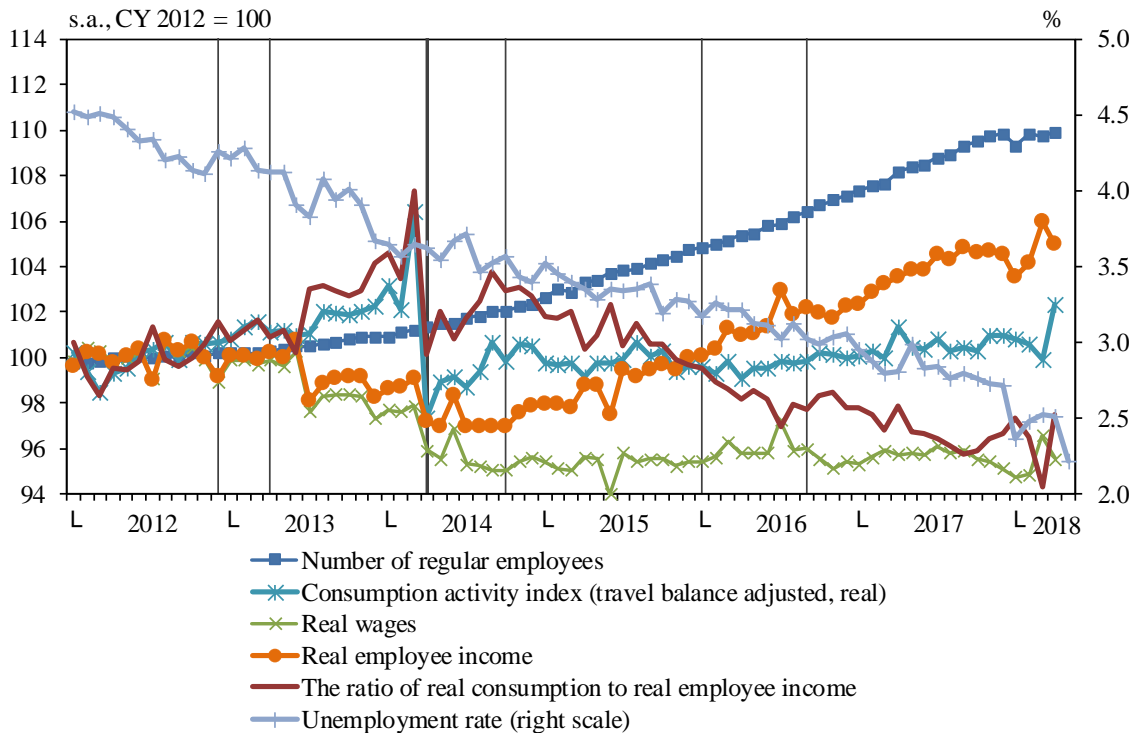
Chart 4 Production, Investment, Exports, and World Trade



Sources: Ministry of Economy, Trade and Industry, "Indices of Industrial Production," "Indices of Industrial Domestic Shipments and Imports"; CPB Netherlands Bureau for Economic Policy Analysis, "CPB World Trade Monitor"; Bank of Japan, "Developments in Real Exports and Real Imports."

Chart 5 Employment, Income, and Consumption

Inauguration of the second Abe Cabinet Dec. 2012 Introduction of QQE Apr. 2013 Consumption tax hike Apr. 2014 Expansion of QQE Oct. 2014 Introduction of QQE with a Negative Interest Rate Jan. 2016 Introduction of QQE with Yield Curve Control Sep. 2016



Note: Real employee income is calculated as the number of regular employees multiplied by real wages which is the total cash earnings deflated by the CPI (all items less imputed rent). The ratio of real consumption to real employee income is calculated as the consumption activity index (travel balance adjusted, real) divided by real employee income.

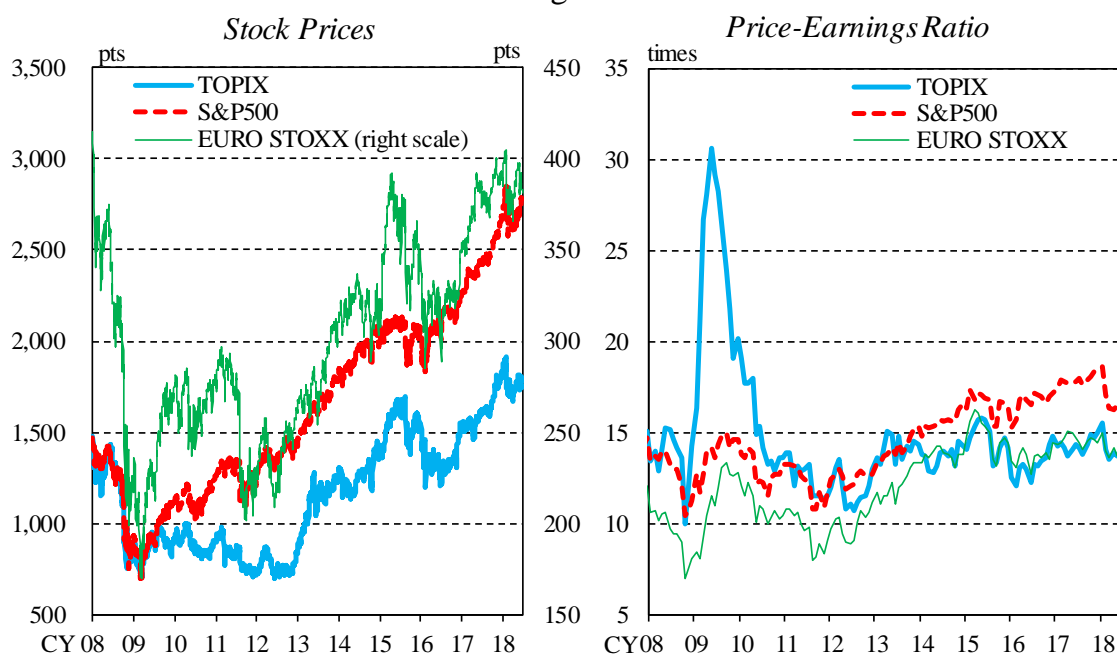
Sources: Ministry of Health, Labour and Welfare, "Monthly Labour Survey"; Ministry of Internal Affairs and Communications, "Consumption Price Index," "Labour Force Survey"; Bank of Japan, "Consumption Activity Index."

Further, Chart 5 looks at employment, wages, employee income, and consumption. The reason why real wages has not increased is that the number of non-regular workers working short hours has increased. In terms of employment and real employee income, the consumption tax hike only had an impact in fiscal 2014. Apart from that, these indicators have grown more or less steadily except for the temporary slowdown seen at the turn of 2018. The unemployment rate has also steadily declined. Among these indicators, the one showing the weakest improvement is real consumption. Consumption as measured by the consumption activity index has not yet returned to the peak registered before the spike in demand due to the frontloading of purchases prior to the consumption tax hike. The average

of the most recent three months, the February-April period of 2018, is still below the average of the October-December quarter of 2013, the quarter before the demand spike prior to the consumption tax hike. This is a bit strange given that real employee income, on which consumption expenditure rests, has steadily increased, except for the fall at the start of 2018. Although the ratio of real consumption to real employee income has been on a declining trend, it is difficult to imagine that this ratio will continue to decline, so that consumption can be expected to recover in the future.

Another debate has focused on concerns about financial imbalances. Certainly, as seen in Chart 6, asset prices have been rising, albeit with some fluctuations, amid economic growth. While people who are worried about the side effects of monetary easing seem to regard this as an indication of financial imbalances, I think these increases in asset prices can hardly be called a bubble.

Chart 6 Stock Prices and Price -Earnings Ratio



Sources: Bloomberg; Thomson Reuters.

The chart shows both stock prices and price-earnings ratios in Japan, the United States, and the euro area. The rise in stock prices in Japan is nowhere near as pronounced as in the United States, and the price-earnings ratio has not increased much, hovering at about 14.

Moreover, taking into account the Bank's April 2018 *Financial System Report*, it can be judged that no major imbalances have built up in asset markets as a whole, although some indicators such as stock prices, the real estate loans to GDP ratio, and the diffusion index of lending attitudes of financial institutions have recently been close to the upper threshold of their trend ranges reflecting the rapid pace of increase in these indicators.¹³ Needless to say, it is essential that the Bank continues to constantly monitor for signs of financial imbalances.

Path toward Achieving the Price Stability Target of 2 Percent

I mentioned earlier that consumption has been weak, and I would now like to turn to prices, which have also been weak. However, if the economic recovery continues and employment tightens, prices should rise eventually.

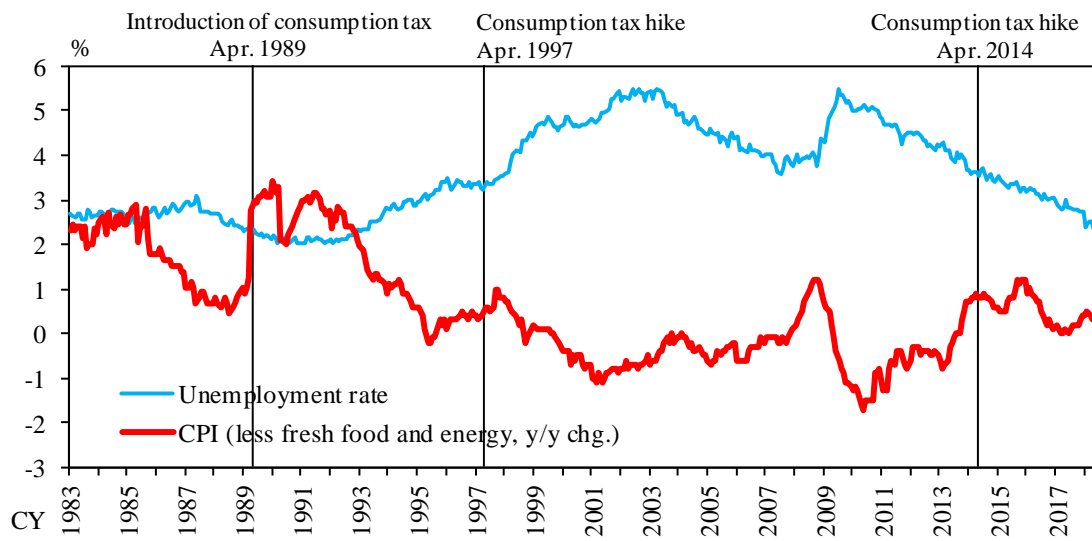
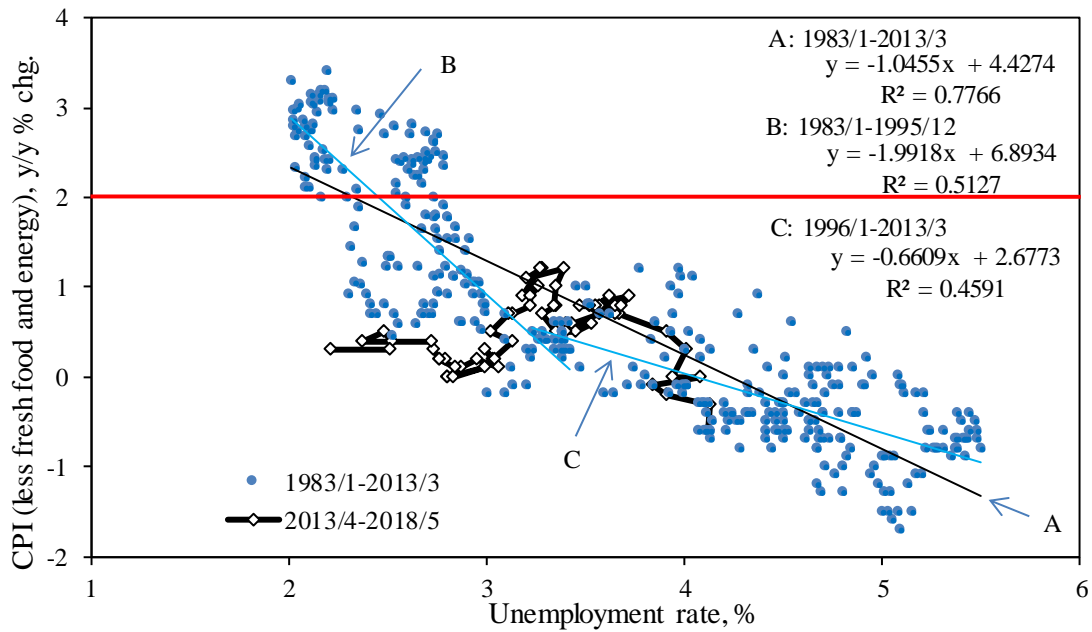
In this context, one often hears the question why prices are not rising even though the unemployment rate has fallen to around 2.5 percent, well below 3.5 percent, which until recently was widely regarded as the structural unemployment rate. My answer to this question is simple: the decline in the unemployment rate is insufficient. Moreover, it would be completely wrong to think that the structural unemployment rate is still the previously estimated 3.5 percent.¹⁴

Chart 7 shows the Phillips curve for Japan, which depicts the relationship between the inflation rate and the unemployment rate. The regression lines represent this relationship for each of the following periods: from January 1983 through March 2013, from January 1983 through December 1995, and from January 1996 through March 2013. All of these regression lines show that, unless the unemployment rate falls below 2.5 percent or so, the

¹³ Bank of Japan, *Financial System Report*, April 2018: 30-32, <https://www.boj.or.jp/en/research/brp/fsr/data/fsr180419a.pdf>.

¹⁴ See footnote 19 in Yutaka Harada, "Economic Activity, Prices, and Monetary Policy in Japan: Speech at a Meeting with Business Leaders in Fukushima," Bank of Japan, November 2017. Another issue is output gap estimates. While estimates by the Bank's Research and Statistics Department and the Cabinet Office each suggest that Japan's output gap is positive, the IMF's estimates for Japan are negative, even for 2017, according to the World Economic Outlook Database April 2018, available on the IMF website: <https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/index.aspx>.

Chart 7 Phillips Curve



Note: The CPI figures are adjusted for changes in the consumption tax rate.

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

	Formula	Estimate of the unemployment rate corresponding to 2% (%)	Avg. growth rate of the observed CPI (annualized, %)
A	$CPI = -1.05 \times \text{unemployment rate} + 4.43$	2.3	0.5
B	$CPI = -1.99 \times \text{unemployment rate} + 6.89$	2.5	1.6
C	$CPI = -0.66 \times \text{unemployment rate} + 2.68$	1.0	-0.3

inflation rate will not reach 2 percent. For instance, looking at the period from January 1983 through December 1995, the inflation rate in terms of the consumer price index (CPI) during that period was 1.6 percent, and the regression line for that period indicates that for

inflation to rise to 2 percent, the unemployment rate would need to fall to around 2.5 percent. Thus, as the regression line B in chart 7 suggests, if inflation rates rise continuously at about 1.5 percent and the unemployment rate is at 2.5 percent, then 2 percent inflation will be achieved. In order to achieve 2 percent inflation, the inflation rate, which was 0.3 percent for May 2018, would have to rise to around 1.6 percent, while the unemployment rate, which was 2.2 percent for May 2018, would have to be maintained at around 2.5 percent.

Another issue is that the unemployment rate necessary to push up inflation has become even lower, since there is room for a further increase in the employment rate. According to the May 2018 *Labour Force Survey* released by the Ministry of Internal Affairs and Communications, the number of employees increased by as many as 1.51 million from a year earlier, although the number of the unemployed was only 1.58 million. Moreover, I hear that, due to continued labor shortages, labor in low-productivity sectors and excess labor at firms seems to be shifting to other industries or firms. This shift pushes up labor supply in real terms. Thus, if productivity rises, an increase in inflation is delayed.¹⁵

Disregarding these factors and assuming that there is no labor slack by simply using the employment rate and the labor force participation rate of men aged between 25 and 54 in 1992 -- when the employment rate among this group was at a historical high -- the unemployment rate for 2017 is estimated to be 2.3 percent.

The unemployment rate in 1992 stood at 2.2 percent, but the proportion of young people was higher at that time. Given that the unemployment rate among the young is usually higher, and that among the middle-aged is usually lower, the estimated unemployment rate for 1992 is 1.9 percent if it is adjusted based on the demographic structure in 2017.

The calculations imply that in order to achieve the level of inflation seen in 1992, which was 2.2 percent in terms of the CPI for all items less fresh food and energy, the

¹⁵ The same idea is also provided in "II. Price Developments and their Outlook," Section II in Hiroshi Nakaso, "Japan's Economy and Monetary Policy: Speech at a Meeting with Business Leaders in Hiroshima," Bank of Japan, July 2017.

unemployment rate has to remain at its May 2018 level of 2.2 percent. While I am not saying that I believe that these estimates are fully accurate, I do think that the current unemployment rate needs to fall further in order to achieve the price stability target of 2 percent.

Just to be sure, I would like to add that I am not saying that monetary easing should continue until the unemployment rate has fallen to 2 percent. In conducting monetary policy, the Bank should pay close attention to price developments, and past observations on the link between prices and the unemployment rate should be regarded merely as supplementary information to help with making appropriate monetary policy decisions.

Since there is room for further increases in employment and production, the Bank needs to continue with the current monetary policy measures in order to achieve the price stability target of 2 percent. Needless to say, it is essential that the Bank continues to constantly monitor for signs of financial imbalances, but for now, the likelihood of such imbalances is small.

Now, I would like to briefly talk about the deletion of the description regarding when 2 percent inflation would be achieved in the Bank's April 2018 *Outlook for Economic Developments and Prices* (Outlook Report), since the deletion became the subject of debate among market participants. Specifically, the deleted description was that the timing "will likely be around fiscal 2019." However, the timing mentioned in the Outlook Report was merely a projection, and any changes in the projected timing were not automatically linked to any changes in policy, nor was its deletion. In my view, prices are influenced by a variety of factors; what is important is that the mechanism through which prices rise works well, and policy decisions should be made in line with developments in this mechanism. In other words, additional monetary easing might be necessary if inflation loses momentum, but otherwise the current policy should be maintained.

Cognitive Dissonance with Respect to QQE

I sometimes feel that the attitude of those who are opposed to QQE shows signs of what can be called "cognitive dissonance." Cognitive dissonance is, of course, a term from

psychology that is also used in marketing and refers to the mental discomfort experienced by a person when new information contradicts their personal beliefs. In that case, many people attempt to reduce the discomfort by denying the new information.

When confronted with information that the economy is actually improving despite their strong belief that QQE will not help the economy grow, these critics will try to reduce such dissonance by denying this information or by arguing that even though economic developments are favorable at the moment, they will definitely deteriorate in the future. For example, the argument that any future exit from monetary easing will cause major problems also tries to reduce discomfort by referring to future possibilities. Since such arguments focus not on the present but on the future, they allow these opponents of QQE to avoid facing such dissonance for the time being.

Another confused psychological mindset is to cast doubt on the monetary easing measures themselves. In this mindset, bold monetary easing is risky, and such measures should not be taken. However, it seems to me that human beings may have had this kind of risk-averse mindset since ancient times. Mythological stories around the world, from every culture, describe the tragedy that befalls anyone who has the hubris to challenge the gods. You see this for example in the stories of the Tower of Babel, of Daedalus and Icarus, and of golems. Perhaps those critics who are most vocal in their critical opinions on QQE are afraid that the economic gods will vent their anger over QQE.

And if it is not against the laws of the gods, perhaps opponents of QQE believe it is somehow going against the laws of nature. This reminds me of a famous play in *kabuki* -- traditional Japanese theatre -- called *Narukami Fudō Kitayama Zakura*. One of the themes of this story is that the laws of nature should not be broken. In order to prevent evil Prince Hayakumo from succeeding to the throne, the Imperial Court in ancient Japan asked Saint Narukami to perform an occult rite so that the girl that the empress was pregnant with would be born as a boy. In exchange for his services, the court initially promised to build Narukami a temple, but the promise was suddenly withdrawn because of his violation of the laws of nature. However, is QQE a policy that violates the laws of nature?

Perhaps the unshakeable critics of QQE believe that monetary policy does not belong within the human realm, but under the purview of a single omnipotent force. Asked whether it is right to pay the imperial tax to Caesar, Jesus once asked for confirmation that the coin used for paying the tax bore the image of Caesar and said: "So give back to Caesar what is Caesar's, and to God what is God's." Monetary policy without doubt falls within the human realm. And if it falls within the realm of humans, it should be discussed based on theory, facts, and evidence.

Concluding Remarks

As stated so far, the Bank's bold monetary easing measures have been producing their intended effects, leading to an improvement in production, employment, productivity, the unemployment rate, investment, exports, and fiscal conditions. Further indicators are perceptions that the economy is recovering, improvements in income distribution, and women's entry into the labor market.

Although some people are critical of the Bank's monetary easing measures, their arguments are not supported by empirical evidence. If the Bank were to conduct monetary policy in the way they say it should, economic activity would deteriorate and markets would fall into turmoil. In its assessment of recent economic developments and monetary policy, the Bank concluded that it should continue with the current monetary easing with a view to achieving the price stability target of 2 percent, given that, for now, there is still room for an expansion in employment and that there are few signs of financial imbalances.

Thank you for your attention.