



November 30, 2017
Bank of Japan

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

Speech at a Meeting with Business Leaders in Fukushima

Yutaka Harada

Member of the Policy Board

(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 Fukushima Branch.

The Bank has implemented quantitative and qualitative monetary easing -- or QQE for short -- since April 2013 and introduced various additional measures such as the negative interest rate policy and yield curve control, all with the aim of achieving the inflation target of 2 percent.

As a result of these measures, Japan's economy has been improving. Of course, I know that many people argue that, although the economy is said to be improving, they are not feeling the effects of this improvement because the real economic growth rate has been just a little over 1 percent on average recently. However, this is the first time in 16 years that the economy has registered positive growth for seven consecutive quarters, from the January-March quarter of 2016 through the July-September quarter of 2017.

Today, I would like to explain monetary policy measures conducted by the Bank and what they have achieved, and then discuss what to make of arguments circulating with respect to the purported dangers of bold monetary policy.

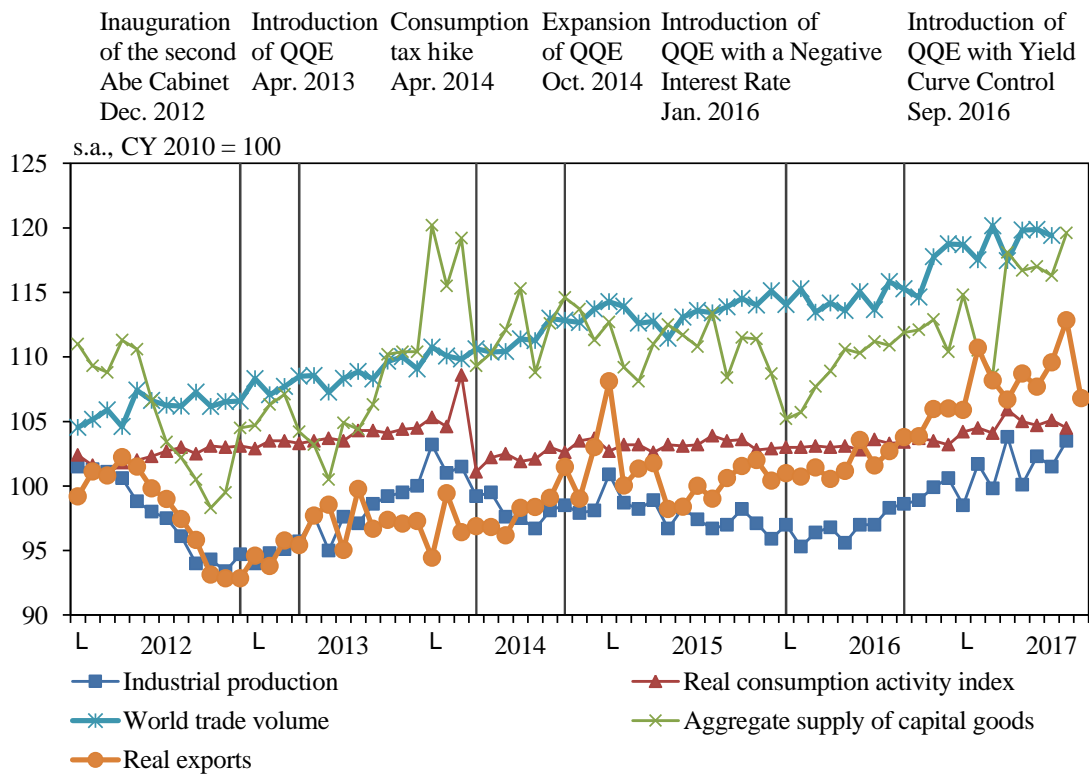
I. Monetary Easing Measures and Economic Activity

The Bank has implemented QQE since 2013, with the aim of achieving the inflation target of 2 percent. As a result, the money stock and lending have been growing at a faster pace. Moreover, due to the decline in nominal interest rates and the rise in inflation expectations, real interest rates -- nominal interest rates minus expected inflation rates -- have declined considerably.

What sorts of results has this had for economic activity? Chart 1 shows developments in major economic indicators. The chart shows that production, exports, consumption, and aggregate supply of capital goods (a proxy variable for business fixed investment) all

started to recover when QQE was introduced, or even slightly before then. However, consumption and production became sluggish following the consumption tax hike in 2014. This sluggishness appears to have become pronounced on the whole particularly since the end of 2014, when exports decreased with the slowdown in world trade. Nevertheless, economic indicators as a whole in Japan have been recovering in line with the recovery in world trade that began around mid-2016.

Chart 1 Achievements of Bold Monetary Easing

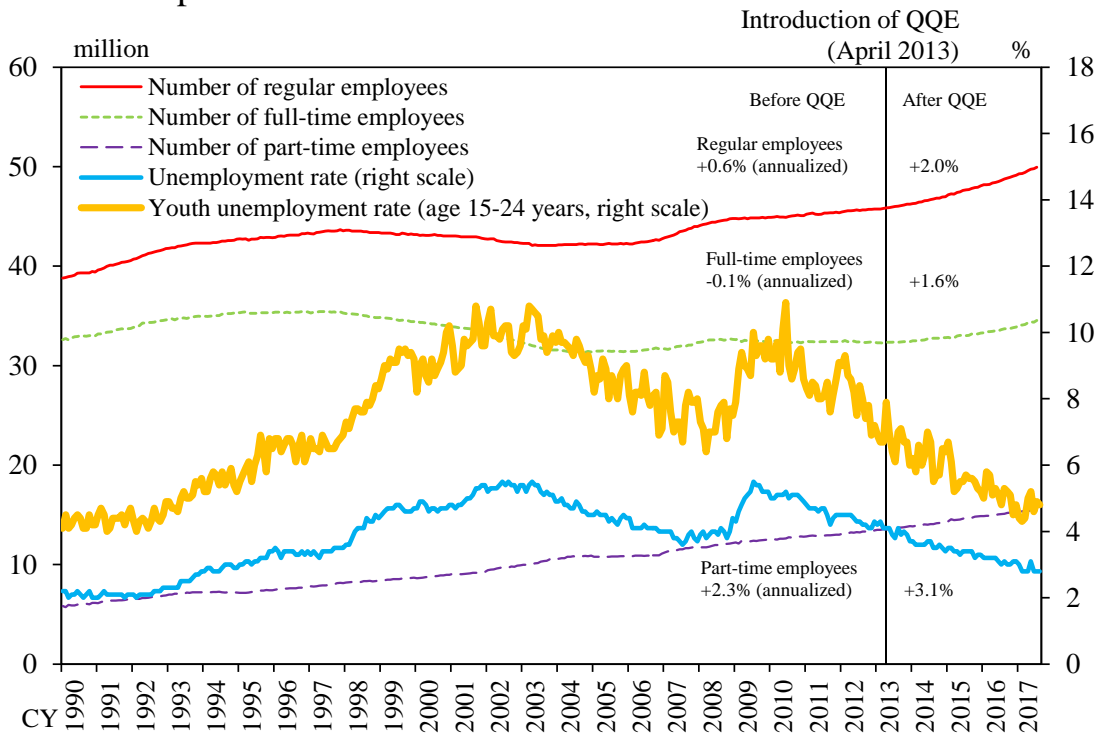


Sources: Ministry of Economy, Trade and Industry, "Indices of Industrial Production," "Indices of Industrial Domestic Shipments and Imports"; CPB Netherlands Bureau for Economic Policy Analysis, "CPB World Trade Monitor"; Bank of Japan, "Real Exports and Real Imports," "Consumption Activity Index."

These economic indicators experienced ups and downs after the introduction of QQE, but one indicator that has continued improving almost constantly is employment. Chart 2 shows developments in the number of employees and the unemployment rate. It has been said that, although the number of employees increased, this was limited to non-regular employees. However, the share of non-regular employees among all employees has leveled off.

Looking at the shares of non-regular and part-time employees among all employees in the *Labour Force Survey* released by the Ministry of Internal Affairs and Communications and the *Monthly Labour Survey* released by the Ministry of Health, Labour and Welfare, we see that both peaked out after the turn of 2017.

Chart 2 Improvement in Labor Market Conditions



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

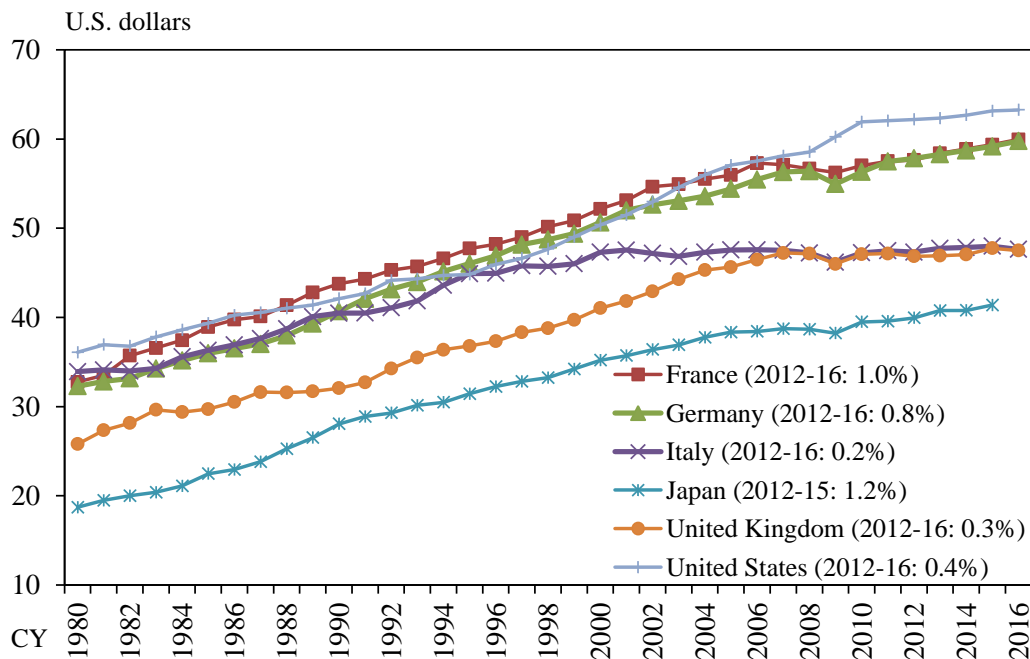
Productivity Also Has Risen

Since the introduction of QQE, there has been heated debate over the importance of growth strategy; this is because, even though employment has increased, productivity has not risen, and economic growth will not continue without a rise in productivity.¹ In fact, however, productivity has risen, as indicated in Chart 3. Productivity shown in the chart is estimated by the Organisation for Economic Co-operation and Development (OECD) and represents real purchasing power parity GDP per hour worked. QQE began in 2013, yet Japan marked

¹ Igarashi Takanobu, "Seichō senryaku de keizai wa seichō suru ka," Mitsubishi UFJ Research and Consulting Co., Ltd., July 2013, <http://www.murc.jp/thinktank/rc/column/igarashi/column/igarashi130716>.

the highest rate of increase in productivity among major countries from 2012 to 2016, with an annual rate of 1.2 percent. Japan's average for the 10 years prior to this was 0.8 percent; therefore, Japan's productivity rose even after the introduction of QQE. Moreover, the capital-labor ratio per worker has declined.² This means that productivity would have risen even further if there had been sufficient investment.

Chart 3 Change in Productivity in Major Countries



Note: Productivity is represented by real GDP per hour worked, converted by PPP exchange rates in 2010. The figures in parentheses show the annualized growth rates from 2012 to 2015 or 2016.

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

When growth accounting methodology was developed several decades ago, the growth rate of an economy's output was decomposed into capital inputs, labor inputs, and technological progress (total factor productivity). The results obtained through this methodology showed that the contribution of technological progress to the economic growth rate was 80 to 90 percent. I am reminded of the heated argument prevailing at the time that, despite such results, unless new capital investment is made, new technology cannot be adopted, and thus

² See Cabinet Office, *Annual Report on the Japanese Economy and Public Finance 2017*, July 2017, figure 16.

technological progress should include capital inputs -- namely, capital-embodied technological progress. This argument has not received much attention in recent years; however, it is true that, if demand does not grow, then new investments cannot be made, and if new investments cannot be made, then equipment featuring advanced technologies cannot be used. It is wrong to view supply and demand as being separate, and to consider that Japan's economic problems are rooted in the supply side of the economy.³

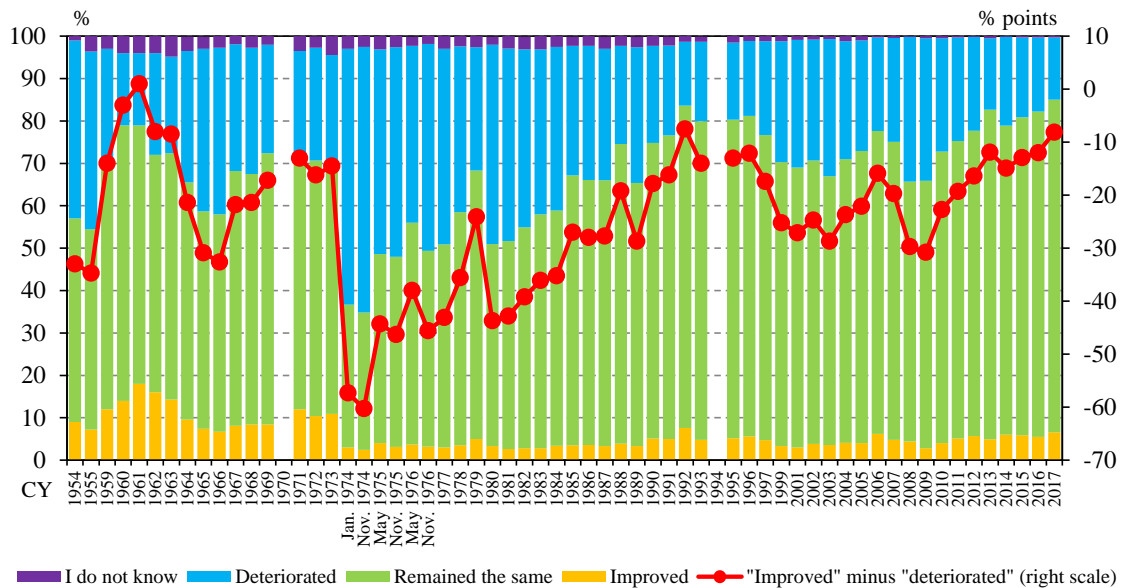
I would like to note that monetary easing measures and growth strategy are not in opposition to one another, but actually complement each other. What is more, deregulation as part of growth strategy includes measures aimed at improving the efficiency of existing industries, thereby reducing employment. On such occasions, monetary policy measures will make it easier to carry out deregulation by improving the economy and producing labor shortages.

The Economy Has Improved, despite Claims That People Are Not Actually Experiencing Such Improvement

It is often claimed that, although the government says that the economy has improved, the public is not actually experiencing this improvement in their daily lives. However, how should we measure the public's perceptions regarding their daily lives in the first place? Public opinion polls offer clues in this regard. Chart 4 shows answers to the following question in a public opinion poll: "How would you describe the lifestyle of your household compared to this time last year?"

³ For growth accounting and capital-embodied technological progress, see, for example, David N. Weil, *Keizai seichō* [Economic Growth], 2nd ed., trans. Hayami Hiroshi and Hayami Hitoshi (Tokyo: Pearson Kirihara K.K., 2010), 183-86, 216-17. It seems that recent macroeconomics textbooks do not emphasize the concept of capital-embodied technological progress.

Chart 4 Sense of Improvement in Lifestyle Compared to Last Year



Note: This graph was made by the Bank's staff based on the *Public Opinion Survey on the Life of the People* conducted by the Cabinet Office.

The surveys conducted in 1954 and 1955 asked the respondents "Have your household circumstances of late improved, deteriorated, or remained the same compared with around this time last year?," while those conducted between 1959 and 1991 asked "How would you describe your household circumstances compared to this time last year? Have they become better off, worse off, or remained the same?" The surveys conducted from 1992 ask "How would you describe the lifestyle of your household compared to this time last year? Has it improved, deteriorated, or remained the same?" English translation of these questions was prepared by the Bank's staff. The question is phrased somewhat differently depending on the survey year.

The question was asked only of the odd-numbered respondents in the 1971 survey, and of the even-numbered respondents in the January 1974 survey.

The figures for the 1972 and 1973 surveys were calculated by the Bank as the average of the results for the odd-numbered and even-numbered respondents. From the 1999 survey, the share of "I do not know" has been calculated by subtracting the shares of all the response options from the total.

Sources: Cabinet Office, *Public Opinion Survey on the Life of the People*; Bank of Japan.

The chart shows that only a very small number of respondents answered that their household circumstances or lifestyles have become better off or improved compared with one year ago. While the proportion of such respondents is currently slightly over 5 percent, even during the period of high economic growth between the mid-1950s and the early 1970s, when real GDP grew by around 10 percent every year, the only period when more than 10 percent of people replied that their circumstances or lifestyles had become better off or improved was from 1959 to 1963.⁴ The results indicate that people do not feel the effects

⁴ In the time-series data of the *Public Opinion Survey on the Life of the People* conducted by the Cabinet Office, the share of respondents answering that their household's lifestyle "improved" exceeded 30 percent during the high economic growth period. This figure, however, requires attention because of the following. The surveys conducted between 1965 and 1991 and in 1994 first asked "What aspects of your household's lifestyle have improved compared with around this time

of improvement in the economy. Nevertheless, looking at an indicator derived by deducting the share of respondents who answered that their household circumstances or lifestyles have "deteriorated" from the share of those who answered that these have "improved," it appears to be moving very closely in line with economic developments. After rising in 2013, the indicator fell due to the consumption tax hike, and since then it has been rising again together with the steady improvement in the economy.

II. Arguments against QQE

As I mentioned so far, Japan's economy has been improving due to QQE, which began in April 2013. However, there are always those who are against QQE. I consider that these opposing views can be divided into three arguments. The first states that there is no relationship between QQE and the current improvement in the economy, and that the economy would have improved even without QQE. The second argument states that QQE has produced positive effects for some people, but that it also has produced negative effects for a number of others. The third argument is that, although QQE may be bringing about positive results at the moment, it most certainly will give rise to extremely serious problems in the future.

last year? Choose from among the following" (the choices were as follows: food; clothing; durable consumer goods such as electrical appliances, furniture, and automobiles; housing; leisure; other; and nothing has improved). The survey then asked "When viewed on the whole, do you think that your household's lifestyle has improved, deteriorated, or remained the same compared to last year?" (the question is phrased somewhat differently depending on the survey year). Since the question was posed in such a specific manner, many people were likely to have answered that their household's lifestyle has "improved," recalling, for example, electrical appliances that they newly purchased or family trips taken that year as opposed to not taking any the previous year. For this reason, for surveys conducted between 1965 and 1991 and in 1994, Chart 4 shows responses to "Have your household circumstances of late improved, deteriorated, or remained the same compared with around this time last year?" -- a question that did not ask about specific aspects that improved in their lifestyle. The only difference in the questions is the phrase "lifestyle" and "household circumstances." Moreover, a possible reason why only a small number of people responded with "improved" over the years is that this question does not offer "somewhat improved" in the response options.

The First Argument: There Is No Relationship between QQE and Economic Improvement

Let me start with the first argument. As I have explained so far, improvements have been seen in a number of indicators since the introduction of QQE; thus, I can hardly believe the claim that Japan's economy would have improved even without QQE. Nevertheless, it is difficult to technically prove my view that QQE has brought about improvements in Japan's economy, because it is impossible to compare the situation of the economy from 2013 up to the present between cases where QQE has been implemented and where QQE has not been implemented. What I can compare is merely the situation before the implementation of QQE -- that is, until 2012 -- and after the implementation -- from 2013. Because the economic situation differs between these periods, the effects of QQE cannot be technically proven by this comparison.

Given this, it is necessary to terminate QQE now in order to make my argument more convincing. If QQE is terminated and the economy deteriorates, many people would believe that the economic upturn had been driven by QQE. Nevertheless, this experiment will not be persuasive enough because of the differing economic situations between the period through 2012 and from 2013.

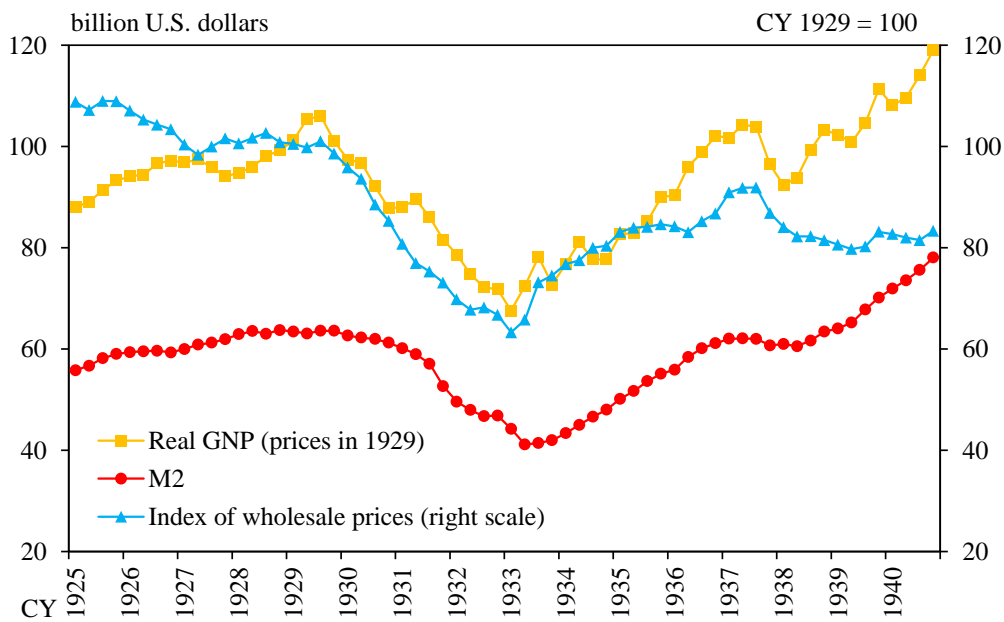
Should this experiment be carried out, interest rates will soar, the yen will jump, stock prices will crash, and the economy will plunge into recession. Such a dangerous test must not be carried out. In addition, it is possible without such a reckless experiment to make an assessment that compares Japan's economy through 2012 and from 2013 up to the present by adjusting the situation of the economy in each period to be as similar as possible. The results obtained from this assessment show that QQE has exerted its intended effects. For example, Professor Ryuzo Miyao at the University of Tokyo -- a former Policy Board member of the Bank -- presented an analysis based on a vector autoregression (VAR) model that the impact of an expansion of the monetary base raised production and the inflation rate.⁵

⁵ Miyao Ryuzo, "Hi dentōteki kin'yū seisaku no kōka wa aru no ka 2," chap. 3 in *Hi dentōteki kin'yū seisaku* [Unconventional Monetary Policies] (Tokyo: Yuhikaku Publishing Co., Ltd., 2016).

Moreover, making comparisons of the economic situation in Japan with those in various other countries that adopted monetary easing during different phases will support my argument. For example, during the Great Depression, the U.S. economy recovered steadily when it abolished the gold standard and shifted to monetary easing in April 1933, but it fell back into recession when the level of monetary easing was reduced from 1936 to 1937.⁶

Chart 5 shows developments in real GNP, the money stock (M2), and prices in the United States during the Great Depression in the 1930s. It is evident that real GNP and prices dropped significantly in line with the decline in M2, and recovered steadily with the increase in M2. Then, in 1937, real GNP and prices declined again as M2 decreased, showing that it was a failure to exit from monetary easing too early. However, as monetary easing was resumed, real GNP started to recover from 1938 with the increase in M2.

Chart 5 Real GNP, Prices, and Money Stock in the United States during the Great Depression



Source: Robert J. Gordon, *The American Business Cycle*, The University of Chicago Press, 1986.

⁶ Adachi Seiji, "Ryōteki kanwa no deguchi wa nihon keizai ni totte kiken ka," chap. 8 in *Abenomikusu wa shinkasuru: Kin'yu ganseki riron o tou*, ed. Harada Yutaka, Kataoka Goushi, and Yoshimatsu Takashi (Tokyo: Chuokeizai-sha, 2017).

As I mentioned earlier, it is actually difficult to totally refute the argument that Japan's economy would have become better even without QQE. However, by referring to a number of cases in the past, I believe that it is now understood that it was monetary easing that brought about the recovery in Japan's economy.

The Second Argument: The Effects of QQE Have Not Become Widespread

The second argument is that QQE has produced positive effects for some people but also has produced negative effects for a number of others. For example, labor shortage is certainly a favorable condition for job seekers, but it is a potential disadvantage from the standpoint of employers. Nevertheless, I feel that it is better to suffer from a lack of people who engage in selling, manufacturing, and transportation for a marketable product than from the problem of a product that is not selling. If a product that is not selling comes to pose a management crisis, it will become necessary to cut employment, which is a hard task for managers. After the 2008 financial crisis, I heard from numerous corporate managers that they were forced to cut their workforce and had never before had such a painful experience. I cannot imagine that there are any managers in Japan who would find it easy to cut their workforce. This is why I feel that it is much better to have too few people than too many.

Some argue that only a limited number of people receive the benefits from the economic recovery and that benefits do not reach them. This argument goes that, although income has risen on the whole, many people do not experience much increase in income and income disparities have expanded. Let us take a look at how income distribution changed after the introduction of QQE.

According to the *Comprehensive Survey of Living Conditions 2016* released by the Ministry of Health, Labour and Welfare, the child poverty rate (the share of children aged 17 or under living in households with equivalent disposable income at or below 50 percent of the

median) fell from 16.3 percent in 2012 to 13.9 percent in 2015.⁷ In this same survey, the overall poverty rate fell from 16.1 percent to 15.6 percent over this period.

There is another argument that QQE has put the banking industry in a difficult situation, saying that low interest rates are squeezing bank profits. But one of the major reasons for such a situation is that banks are suffering from a lack of borrowers. In Japan, private nonfinancial corporations as a whole have been experiencing excess net savings, and their currency and deposits accumulated to as much as 254 trillion yen as of end-June 2017.⁸ Of course, it is natural that bank profits are squeezed if long-term interest rates decline, because banks generally raise short-term funds and invest them in long-term assets. However, if we simply compare long-term interest rates and bank profits, it does not seem appropriate to say that low interest rates always reduce bank profits.

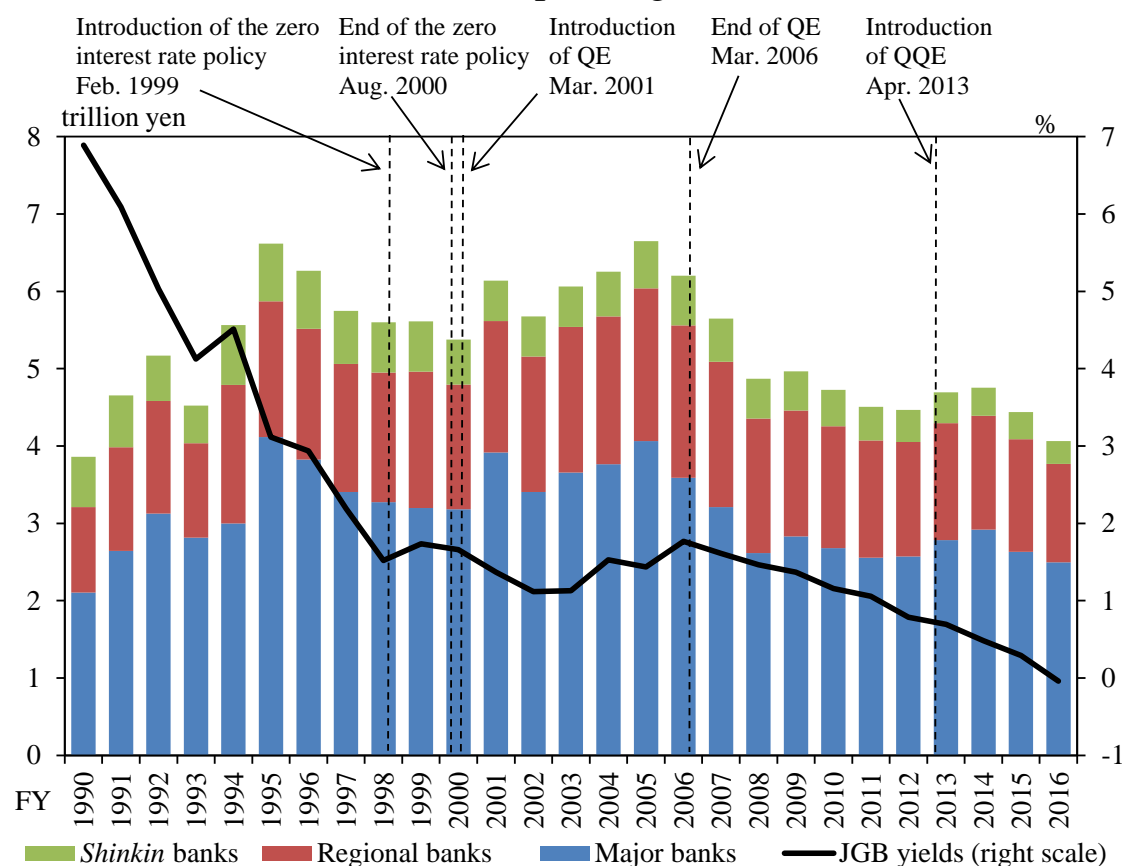
Chart 6 shows developments in banks' operating profits from core business and long-term interest rates (10-year Japanese government bond [JGB] yields). Operating profits from core business represent stable earnings of banks, such as profits earned from fund management in the form of lending and securities investment, for example. Interest rates have fallen in a mostly consistent manner since 1990, yet I do not believe that this is correlated with banks' operating profits from core business. For example, even though interest rates fell in the first half of the 1990s, operating profits recovered. In 1999, when the zero interest rate policy was introduced, operating profits rose along with interest rates. In 2001, the quantitative easing policy was introduced, yet operating profits rose thereafter. Both operating profits and interest rates fell following the termination of quantitative easing, but this is largely due to the 2008 financial crisis. After the introduction of QQE in 2013, due to the improvements in the economy, the financial situation of borrowing firms

⁷ Equivalent disposable income is calculated by dividing household disposable income by the square root of the number of people in the household. It is believed to represent the standard of living per member of the family. The reason for using the square root instead of the number of people itself in the calculation is that there are costs of living shared among the members of the household, which tend to become lower per person as the number of people in the household grows larger. Equivalent disposable income is thought to make it possible to compare per capita disposable income between households with different numbers of people in the household.

⁸ Bank of Japan, *Flow of Funds Accounts (2nd Quarter 2017; Preliminary)*, September 2017.

improved, credit costs decreased, and banks' net income increased.⁹ In other words, bank profits are affected by the situation of the economy as a whole, in addition to developments in interest rates. Although operating profits from core business fell in fiscal 2015 and 2016, I think that this is partly due to the sluggishness of the economy that followed the consumption tax hike. It is true that banks' net profits have been declining since fiscal 2016, but I would like to emphasize that they had been improving prior to that.

Chart 6 Financial Institutions' Operating Profits from Core Business



Note: Non-consolidated base. Operating profits from core business are calculated by subtracting general and administrative expenses from the sum of net interest income and net non-interest income. Figures for "JGB yields" represent 10-year JGB yields.

Source: Bank of Japan.

⁹ Net income is calculated by deducting credit costs, such as loan-loss provisions, from the sum of operating profits from core business and the profits and losses on sales of securities. Other items such as extraordinary gains/losses are also added/deducted.

Furthermore, if bank profits depend on a rise in nominal interest rates, QQE is a policy that will lead to an increase in interest rates in the end. This is because interest rates also rise when prices rise. If interest rates are raised even though prices are not rising, then the economy will deteriorate, prices will fall, and interest rates will have to be reduced further. I believe that such policy measures continued from the 1990s until the introduction of QQE.¹⁰ Looking ahead, I believe that prices will rise, and that we can expect to see interest rates rise along with them.

The Third Argument: QQE Will Cause Serious Problems in the Future

Lastly, let me turn to the argument that QQE may be bringing about positive effects at the moment, but most certainly will give rise to extremely serious problems in the future. The argument goes that, at some point, monetary easing will suddenly give rise to hyperinflation, a collapse of the yen, a surge in interest rates, a plunge in bond prices, and so forth.¹¹ However, such fears are not at all likely to happen. Given this, the argument seems to have converged on the discussion that the Bank will face significant problems of making large losses for a protracted period when it heads toward an exit from monetary easing -- that is, when it reduces the level of monetary easing. Regarding this argument, it is of course possible that the Bank may register losses.

Those who support this argument claim that, when the public merely acknowledges the possibility that the Bank may register losses -- even if such a thing does not actually happen -- the yen will collapse and Japan's economy will experience hyperinflation.¹² However, if this argument is valid, why is the collapse of the yen or hyperinflation not happening now? I often ask this question, but have never received an answer.

¹⁰ For the relationship among nominal interest rates, financial institutions' profits, and monetary policy, see Harada Yutaka, "Naze nihon no kin'ri wa hikui no ka," *Keiki to saikuru*, no. 62, Japan Association of Business Cycle Studies, November 2016.

¹¹ In Harada, Kataoka, and Yoshimatsu, *Abenomikusu wa shinkasuru*, this sort of theory is criticized by referring to it as the "big rock theory."

¹² In "The Role of Capital for Central Banks" (the outline of a speech given at the Fall Meeting of the Japan Society of Monetary Economics on October 25, 2003), Kazuo Ueda provided the general opinion that, when a central bank falls into capital deficiency, a loss of credibility in the central bank causes a depreciation of the currency, a high rate of inflation, a functional decline in payment systems, and other problems (note that Mr. Ueda is not necessarily stating this as his own opinion).

I consider that the Bank may register losses on its statement of income at the exit from monetary easing, but believe that nothing negative will happen to the economy. I will explain the reason behind my view.

Let us first look back in history. Since 1980, as far as I can confirm, there have been about 20 cases in which central banks recorded losses or fell into capital deficiency.¹³ Although details are not available for all cases, countries that suffered from economic turmoil such as inflation were Jamaica, the Philippines, and Venezuela in the 1980s and 1990s. On the other hand, inflation rates did not rise in West Germany in the 1970s, the Czech Republic in the 1990s-2010s, Chile from the 1990s up to the present, or in Switzerland in the 2000s and 2010s. The reason why economic turmoil did not happen in these countries is clear. Most of the assets of central banks in these countries are foreign assets. If inflation occurs, the value of their countries' currencies depreciates, whereas the value of foreign assets denominated in their home currencies appreciates. In other words, there is a mechanism in which, if impairment of central banks' assets brings inflation, inflation itself recovers the value of these assets. Therefore, it is impossible that serious problems will occur because of central bank losses.

Why, then, could sharp inflation not be restrained in Jamaica and other countries? In these countries, central banks increased money to assume government debt and issued high-interest-bearing bonds to absorb the increased money. As a result, these central banks made losses due to increased interest payment.¹⁴ It is a matter of course that, if central banks issue banknotes to assume government debt, they inevitably will suffer from inflation regardless of their financial situation. In the case of Japan, however, as I have explained on

¹³ Reza Vaez-Zadeh, "Implications and Remedies of Central Bank Losses," in *The Evolving Role of Central Banks*, ed. Patrick Downes and Reza Vaez-Zadeh (Washington: International Monetary Fund, 1991). Peter Stella, "Central Bank Financial Strength, Policy Constraints and Inflation," IMF Working Paper, WP/08/49, International Monetary Fund, February 2008.

¹⁴ Stella, "Central Bank Financial Strength." Mario B. Lamberte, "Central Banking in the Philippines: Then, Now and the Future," Discussion Paper Series No. 2002-10, Philippine Institute for Development Studies, September 2002.

various occasions, the fiscal deficit has been decreasing after the introduction of QQE.¹⁵ The ratio of the general government deficit to GDP has declined significantly from 8 percent in 2012 -- the level before the introduction of QQE -- to 2 percent in 2016. Of the 6 percentage point decrease, 1.5 percentage points, or 8 trillion yen, is due to the consumption tax hike in 2014, and the remaining 4.5 percentage points is due to the economic recovery brought about by economic stimulus measures such as QQE.¹⁶

In addition, the Bank of Japan employs a price stability target of 2 percent. This means that, when the timing of achieving the 2 percent price stability target is in sight, the Bank will taper monetary easing or tighten monetary policy. This situation totally differs from that in Jamaica or other countries that experienced sharp inflation.

Why Does the Exit Pose a Problem?

As I explained earlier, in the 1980s and 1990s, the situations in Jamaica, the Philippines, and Venezuela were completely different from that in Japan, and as for countries such as Switzerland, central bank assets consist of foreign assets. Given this, I believe that there are doubts over what will happen in countries where the majority of assets consist of government bonds denominated in their own currencies, such as Japan.

"Exit" here refers to the Bank's termination of monetary easing followed by an increase in interest rates and a reduction of the monetary base because achieving 2 percent inflation is in sight as a result of monetary easing. At the exit, the Bank will have to raise interest rates. By way of example, possible ways to do so are as follows: by abandoning the negative interest rate policy currently carried out by the Bank and raising the interest rate applied to excess reserves, or by selling JGBs held by the Bank.

At this point in time, the Bank has not reached any decisions on an exit policy. It is easier to understand the topic by thinking in terms of hiking the interest rate applied to excess reserves, and so I would like to explain it in this way. Those who contend that the exit will

¹⁵ See, for example, Harada Yutaka, "Economic Activity, Prices, and Monetary Policy in Japan: Speech at a Meeting with Business Leaders in Gifu," Bank of Japan, June 2017. A reduction in fiscal deficit decreases the possibility that the Bank of Japan will have to assume such deficit.

¹⁶ Ministry of Finance, *Japanese Public Finance Fact Sheet 2017*, April 2017, 24.

be dangerous make the claim that, even if the Bank raises the interest rate on excess reserves, the interest rates on JGBs that it purchased in the past will remain low, and therefore the Bank will suffer enormous losses. It is certainly possible that the Bank could suffer losses because it will receive a low yield despite paying out a high yield. Such proponents explain that, if the Bank suffered losses, then confidence in the currency would be undermined, and this would lead to hyperinflation, the collapse of the yen, and a surge in interest rates.

However, while yields on even JGBs at present are around 0 percent, they were 3 percent until about the middle of the 1990s. The reason is that, at that time, the real economic growth rate was high and prices were rising. If prices rise, interest rates will also rise eventually. This means that it will be possible to purchase higher yielding JGBs. Of course, until that time, the Bank will have to hold low yielding JGBs while paying high yields to banks in order to prevent an overheating of the economy. However, in the end, the central bank will always make a profit in the long run, since it buys high yielding JGBs using cash and current account deposits that carry almost no costs. Thus, the Bank will not make a loss in the long run that could pose a danger.

In the first place, over the course of monetary easing in Japan, the economy improved and the fiscal deficit to GDP ratio also improved, backed by an increase in tax revenues; thus, focusing on the Bank's deficits that will temporarily occur at the time of the exit is an argument that fails to see the forest for the trees.

Some are of the opinion that, because central banks in the United States and Europe are heading for the exit, Japan should follow suit. However, it makes perfect sense to me that Japan's exit should come later than theirs. To begin with, although inflation rates in the United States and Europe are below 2 percent, they are hovering at around 1.5 percent. This differs from the situation in Japan, where the rates do not reach even 1 percent. Furthermore, Japan introduced the quantitative easing policy -- which was large in terms of scale -- in 2013, whereas the United States and Europe started theirs in 2008. Because of the difference in the timing of starting such policy, it is no surprise that the timing of the exit differs as well.

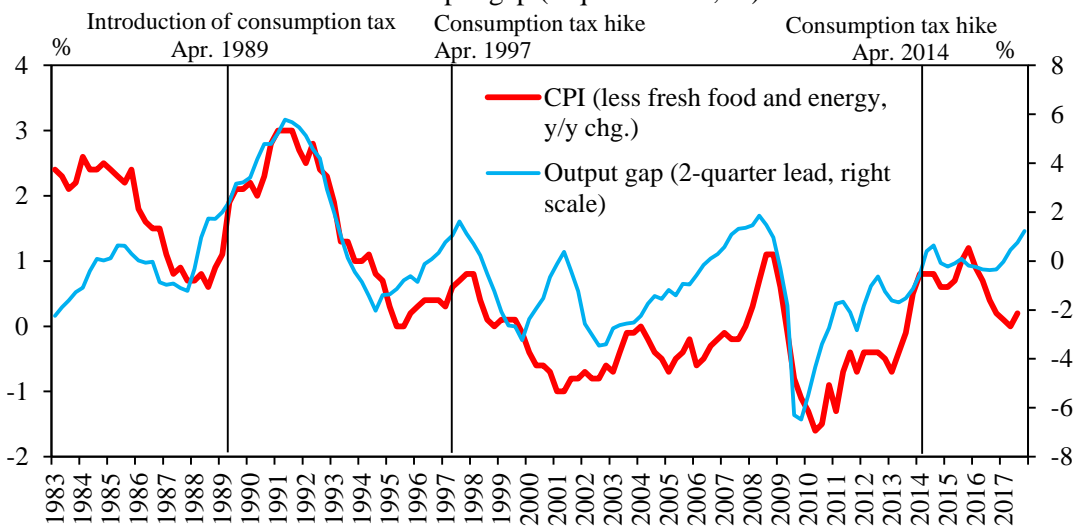
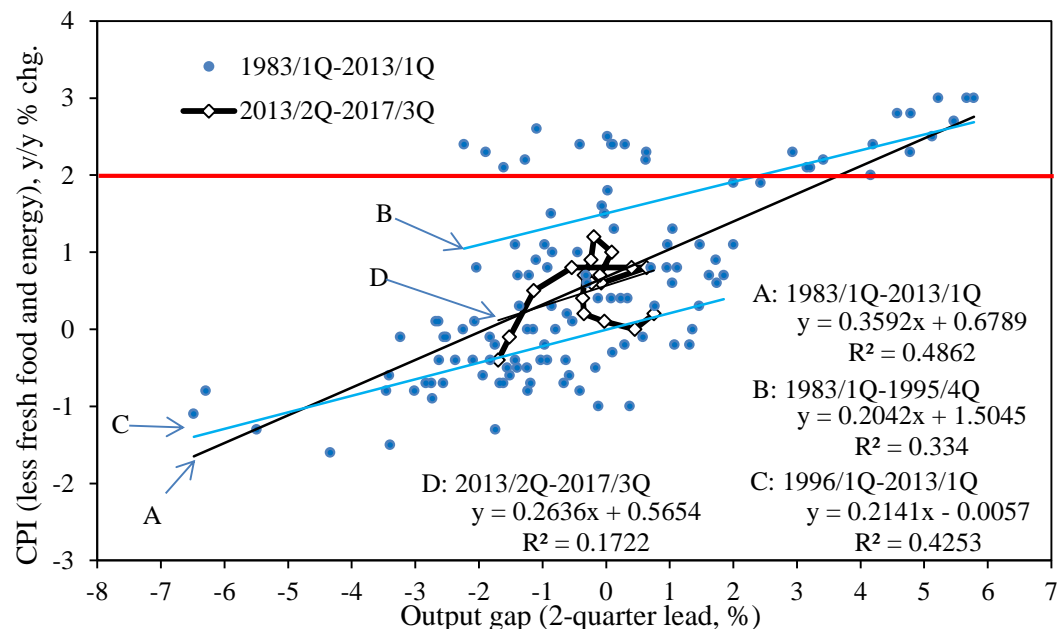
III. Path toward Achieving the 2 Percent Price Stability Target

As I mentioned earlier, QQE has produced significant effects so far. There is no basis to the claims regarding the dangers or side effects of QQE. The only problem is that prices have not risen. In relation to this, it is often questioned why wages and prices have not risen despite labor shortages.¹⁷ My answer is simply that labor shortages have been insufficient. When wages increase, so do prices. This is because, although a rise in wages increases costs, these costs are easily passed on to prices due to increased demand caused by a rise in income. Since my time here is limited, I would like to focus on prices.

Chart 7 shows the Phillips curve representing the relationship between the inflation rate and the output gap in Japan. The regression lines shown here indicate this relationship for each of the following periods: from the January-March quarter of 1983 to the January-March quarter of 2013, from the January-March quarter of 1983 to the October-December quarter of 1995, from the January-March quarter of 1996 to the January-March quarter of 2013, and from the April-June quarter of 2013 to the July-September quarter of 2017. All of these regression lines show that, unless the output gap exceeds about 2.5 percent, the inflation rate does not reach 2 percent. Looking at the regression line for the period from the January-March quarter of 1983 to the October-December quarter of 1995, it is evident that the output gap necessary to achieve 2 percent inflation is about 2.5 percent, and the observed inflation rate at the time was 1.5 percent. It can be concluded that, if inflation rates continue to rise at about 1.5 percent and the output gap rises to about 2.5 percent, then 2 percent inflation will be achieved. Since the current output gap is in the range of 1.0-1.5 percent, in order to achieve 2 percent inflation, the positive output gap needs to further widen to about 2.5 percent, and at the same time, the inflation rate must continue to rise at about 1.5 percent.

¹⁷ Genda Yuji, ed., *Hitode busoku na noni naze chingin ga agaranai no ka* (Tokyo: Keio University Press, 2017).

Chart 7 Phillips Curve



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

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

	Formula	Estimate of the output gap corresponding to 2%	Avg. growth rate of the observed CPI (annualized)
A	$CPI = 0.36 \times \text{output gap} + 0.68$	3.7%	0.5%
B	$CPI = 0.20 \times \text{output gap} + 1.50$	2.4%	1.5%
C	$CPI = 0.21 \times \text{output gap} - 0.01$	9.4%	-0.3%
D	$CPI = 0.26 \times \text{output gap} + 0.57$	5.8%	0.5%

Why Is 2 Percent Inflation Necessary?

I would like to explain why 2 percent inflation is necessary by referring to the Bank's official view and adding my personal views.

My interpretation of the Bank's official view on this matter can be summarized as follows. First, aiming at achieving 0 percent inflation entails the risk of actually aiming for deflation, given the upward bias of the consumer price index (CPI). Second, the equilibrium interest rates -- which are achieved in the long run -- tend to be lower on a nominal basis when the aim is 0 percent inflation. That being the case, there will be virtually no room for lowering interest rates should the economy fall into recession. In order to avoid this, it is necessary to provide a so-called buffer for nominal interest rates by raising the inflation rate. What is more, inflation can be dealt with by raising interest rates, and thus inflation can be considered to be easier to deal with than deflation. Third is the global standard. Given that other major countries aim at achieving 2 percent inflation, if Japan were the only country with a lower target, this would result in an appreciation of the yen, which would create turmoil in firms' investment plans. If Japan maintains the same inflation rate as other countries, I feel that this will serve to stabilize foreign exchange over the long term.

Of these theories, I would like to add explanations for why I support the second and third points. The buffer theory of interest rates in the second point is completely different from the one advocated by the Bank in the past. The previous theory aimed at raising interest rates preemptively even when the economic recovery was insufficient, because if interest rates were too low, it would be difficult to implement stimulus measures during recessions. Such monetary policy resulted in a complete failure.¹⁸

¹⁸ The transcript of the February 2007 Monetary Policy Meeting, at which an interest rate hike was decided, was released on July 31, 2017. In relation to this, in an interview by Jiji Press, Kazumasa Iwata -- who was deputy governor in 2007 -- said that it was a failure to raise interest rates. In the same interview, Atsushi Mizuno -- who was a Policy Board member in 2007-- said that he thought it was better to raise interest rates by a certain degree in order to secure a buffer for monetary easing when the economy deteriorated (reported by Jiji Press at 8:52 a.m. on July 31, 2017). Mizuno's view explains the Bank's past thinking on the buffer.

The correct theory regarding the buffer should be raising interest rates after confirming that price increases have gained enough momentum. I would like to emphasize that the Bank's current thinking on the buffer theory is totally different from the previous incorrect one.

As for the third point, I believe that the stability in foreign exchange rates led by the global standard theory holds true to a certain degree. The yen's exchange rate against the U.S. dollar since the introduction of QQE with the 2 percent inflation target has moved in the range of 100-120 yen, and appears to be roughly stable at around 110 yen. I think that this situation can be described as stable, taking into account that the yen rose from 120 yen to 80 yen against the dollar around the time of the 2008 financial crisis.

Moreover, there is another reason for the Bank's committing to the 2 percent inflation target; namely, we cannot fully grasp the actual degree of the current economic recovery. Specifically, we do not actually know the exact structural unemployment rate, the bottom line that will lead to inflation if lowered any further. If the Bank had terminated monetary easing based on estimates that the structural unemployment rate was about 3.5 percent, the current unemployment rate of 2.8 percent would not have been achieved.¹⁹ I think that we probably will be able to achieve an even lower unemployment rate. The reason why the lower unemployment rate was achieved and a bubble has not occurred is because the inflation rate is set as the direct target for monetary policy. Moreover, given the rise in

¹⁹ The following publications showed that the structural unemployment rate was in the range of about 3.0-3.5 percent using unemployment-vacancy analysis. Ministry of Health, Labour and Welfare, *Analysis of the Labour Economy 2015*, September 2015. Cabinet Office, *Annual Report on the Japanese Economy and Public Finance 2015*, August 2015. Bank of Japan, "The Bank's View" in the *Outlook for Economic Activity and Prices*, October 2014. The Bank, from the April 2015 report, deleted the description regarding the structural unemployment rate from the main text of "The Bank's View" and added the following in a footnote to "The Bank's View": "This rate [the structural unemployment rate] is calculated to be around 3.5 percent or lower recently under a specific methodology." Then, from the April 2016 report, this description was deleted from that footnote and instead moved to a footnote to "The Background." From the July 2016 report, the actual level of the structural unemployment rate referred to in that footnote was replaced by the following expression: "the structural unemployment rate defined here differs from the concept of Non-Accelerating Inflation Rate of Unemployment (NAIRU), and does not show a direct relationship with prices or wages." On the other hand, developments in the structural unemployment rate have been provided in a chart in the report that shows that the rate is currently approximately 3 percent.

wages, nonmanufacturing firms are making efforts toward streamlining business processes and making labor-saving investment.

Concluding Remarks

Now, let me wrap up my remarks. The Bank's QQE has resulted in expanding the money stock, lending, and so forth. Both nominal and real interest rates have fallen. This in turn has resulted in increases in production, exports, consumption, and business fixed investment.

There are always those who argue against QQE, but as I have already explained, there is no basis to any of these arguments.

The only problem is that prices have not risen. In relation to this, it is often questioned why wages and prices have not risen despite labor shortages. My answer is simply that labor shortages have been insufficient. If the current monetary policy is maintained, labor shortages will intensify further as the economy improves, and there will be a phase in which both wages and prices increase. If their momentum is strong enough, the Bank will start reducing the level of monetary easing.

Some argue that there will be dangers associated with an exit from monetary easing as the Bank heads toward reducing the level of monetary easing, but as I have explained, there are no such dangers.

Thank you for your attention.