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Bank of Japan

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

Speech at a Meeting with Business Leaders in Gifu

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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 Nagoya 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. According to the Reference Dates of the Business Cycle released by the Cabinet Office, the economy has continued to improve for 55 months, from November 2012 -- when the economy was at the bottom of the business cycle -- until this June. In addition, in April 2017, the Bank revised its economic assessment upward, stating that the economy "has been turning toward a moderate expansion." I know that some argue that although the economy is said to be improving, they are not feeling the effects of this improvement; however, the improvement is clear even when looking at the employment situation.

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

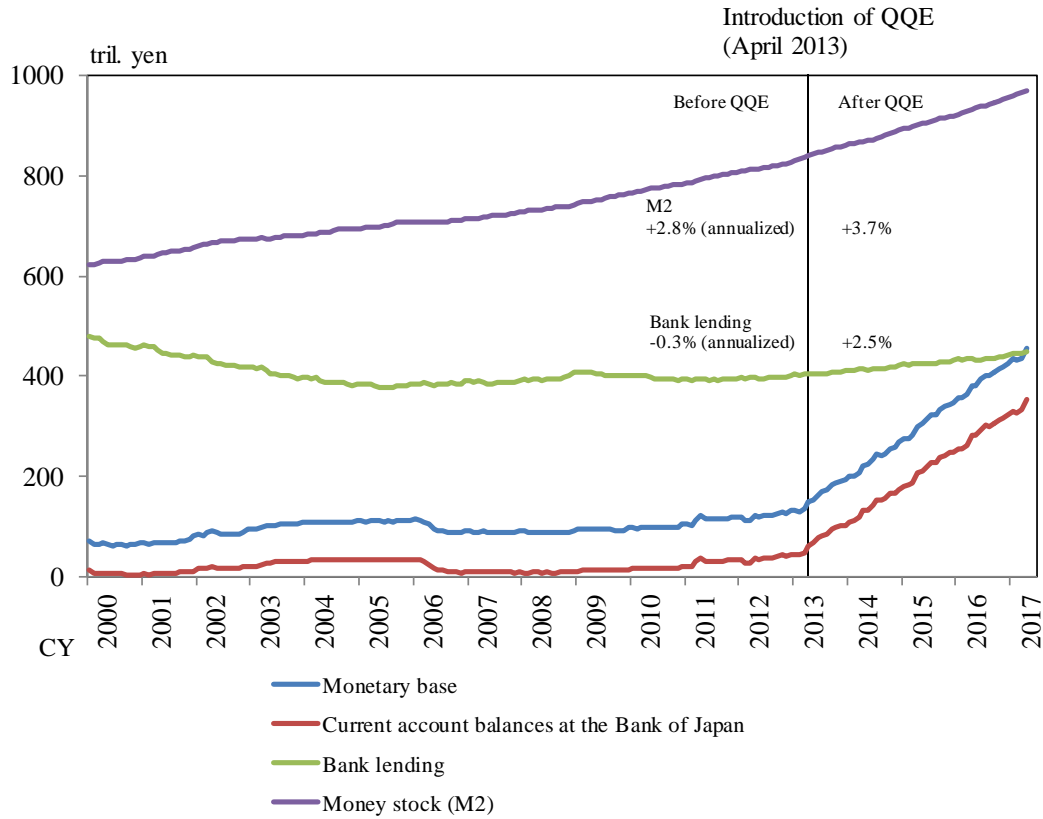
Table 1 presents an outline of the monetary policy measures conducted by the Bank since the start of 2013.

Table 1 Timeline of the Bank's Monetary Policy Measures

January 2013	Introduction of the "price stability target" of 2 percent
April 2013	<p>Introduction of QQE</p> <ul style="list-style-type: none"> - Monetary base: increase at an annual pace of about 60 to 70 trillion yen - Amount outstanding of the Bank's JGB holdings: increase at an annual pace of about 50 trillion yen
October 2014	<p>Expansion of QQE</p> <ul style="list-style-type: none"> - Monetary base: increase at an annual pace of about 80 trillion yen - Amount outstanding of the Bank's JGB holdings: increase at an annual pace of about 80 trillion yen
January 2016	<p>Introduction of "QQE with a Negative Interest Rate"</p> <ul style="list-style-type: none"> - A negative interest rate of minus 0.1 percent is applied to the Policy-Rate Balances in current accounts held by financial institutions at the Bank
July 2016	<p>"Enhancement of Monetary Easing"</p> <ul style="list-style-type: none"> - Amount outstanding of the Bank's ETF holdings: increase at an annual pace of about 6 trillion yen
September 2016	<p>Introduction of "QQE with Yield Curve Control"</p> <ul style="list-style-type: none"> - Yield curve control <ul style="list-style-type: none"> Short-term policy interest rate: a negative rate of minus 0.1 percent is applied to the Policy-Rate Balances in current accounts held by financial institutions at the Bank Long-term interest rate: the Bank will purchase JGBs so that 10-year JGB yields will remain at around zero percent; with regard to the amount of JGBs to be purchased, the Bank will conduct purchases more or less in line with the current pace -- an annual pace of increase in the amount outstanding of its JGB holdings of about 80 trillion yen - Inflation-overshooting commitment

I would like to look at developments in monetary indicators as a result of these measures by looking at two graphs. As can be seen in Chart 1, the monetary base, which is the money that the Bank can control directly, and the balances in current accounts held by financial

Chart 1 Rapid Increase in the Monetary Base and Increase in M2 and Bank Lending



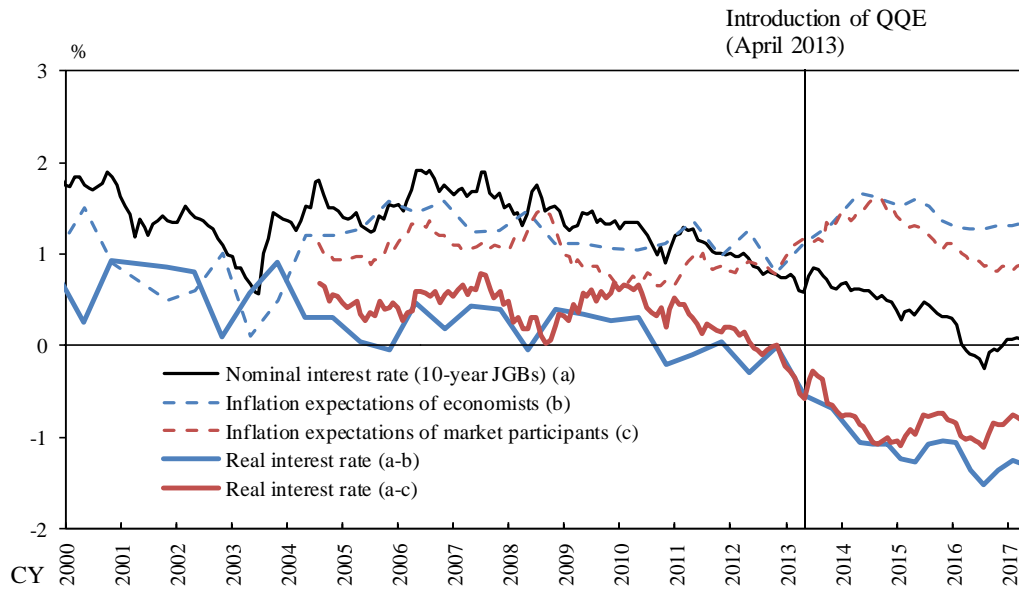
Source: Bank of Japan.

institutions at the Bank have increased rapidly since April 2013. In line with this, the money stock and lending have been growing.¹

¹ Comparing the annual rates of change in the money stock and lending in the four years before and after the introduction of QE in April 2013 (specifically, comparing March 2009-March 2013 and April 2013-April 2017) shows that these were plus 2.8 percent and minus 0.3 percent respectively before QE and plus 3.7 percent and plus 2.5 percent respectively after the introduction of QE. Shioji has shown that QE did have a quantitative effect -- albeit a small one -- on the rate of increase in the money stock and lending. See: Shioji Etsuro, "Zero kinrika ni okeru nihon no shin'you souzou," [Japan's credit creation under zero interest rates], chap. 2 in *Gendai keizaigaku no chōryū 2016* [Currents in modern economics 2016], ed. Teruyama Hiroshi et al., (Tokyo: Toyo Keizai Inc., 2016).

Moreover, as shown in Chart 2, 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 greatly declined.

Chart 2 Marked Decline in Nominal and Real Interest Rates



Note: Figures for inflation expectations of economists are the average of expectations for six to ten years ahead, taken from the *Consensus Forecasts*. Figures for inflation expectations of market participants are expectations for the next ten years, taken from the *QUICK Monthly Market Survey (Bonds)*.

Sources: Consensus Economics Inc., "Consensus Forecasts"; QUICK, "QUICK Monthly Market Survey (Bonds)"; Bloomberg.

The decline in real interest rates has stimulated investment, boosted stock prices in Japan, and led to a depreciation of the yen. Rising stock prices further raise investment and lead households to increase their consumption expenditure. In other words, economic activity has started to improve through these channels.

However, unfortunately, there are some who argue that these kinds of monetary policy measures are dangerous. That is, they argue that regardless of how much monetary easing is conducted, nothing will happen for a while, but at some point, such easing will suddenly give rise to hyperinflation, a surge in interest rates, a collapse of the yen, and so forth. Moreover, the argument goes, low interest rates depress banks' operations, actually impeding banks' financial intermediation function, thus obstructing the effects of monetary

easing; or, banks, faced with squeezed profits, will take excessive risk, threatening the stability of the financial system. However, essentially, whatever one does, there are always risks. The reason for doing something even if there are risks is that it produces some sort of result. And looking at the Bank's monetary policy, it certainly has produced results. Therefore, before considering the purported risks in more detail, let us first have a look at the achievements of monetary easing.

II. The Achievements of Bold Monetary Easing

Chart 3 shows developments in employment and the unemployment rate. Although it has been widely said that the only employment that has been growing is non-regular employment, the share of part-time employees in the total number of employees actually peaked in 2017.² Moreover, the unemployment rate has fallen substantially. The chart shows that the unemployment rate at the end of the 1990s stood at 5 percent, while Japan's structural unemployment rate in the 2000s was said to be around 3.5 percent.³ Some had argued that a structural unemployment rate of 3.5 percent implies that monetary policy measures that would reduce unemployment below this level would stir inflation and give rise to a speculative bubble and should therefore be avoided.⁴ However, the unemployment rate currently stands at 2.8 percent, and there is no inflation or a bubble. Thus, if we understand the argument that Japan's structural unemployment rate is around 3.5 percent as implying that a drop in unemployment below this rate would give rise to inflation, this was incorrect.⁵

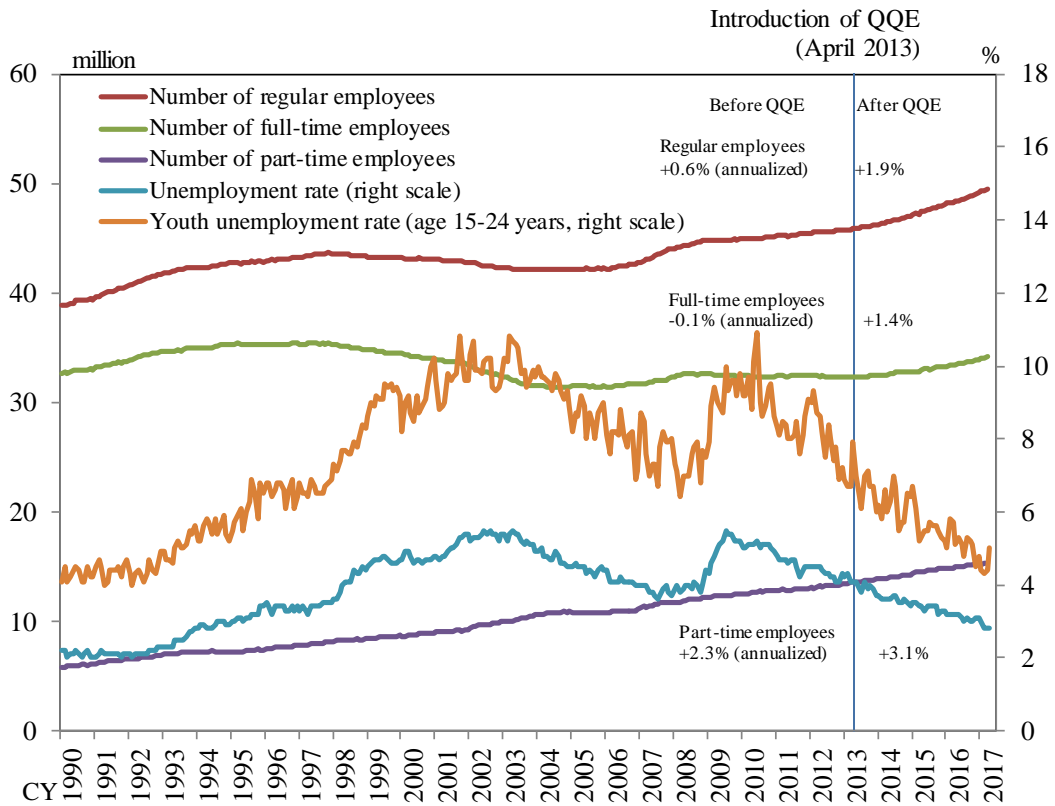
² According to the *Labour Force Survey* by the Ministry of Internal Affairs and Communications, the share of non-regular employees peaked in 2014.

³ The following publications suggested that the structural unemployment rate was in the range of about 3.0-3.5 percent using unemployment-vacancy analysis: (1) *Analysis of the Labour Economy 2015* by the Ministry of Health, Labour and Welfare; (2) *Annual Report on the Japanese Economy and Public Finance 2015 (Summary)* by the Cabinet Office; and (3) *Outlook for Economic Activity and Prices* by the Bank of Japan.

⁴ Shirai has argued that "Japan is not suffering from a shortage of demand. Looking at the unemployment rate and the capital utilization rate, there is almost no slack" (translated by the Bank of Japan). See Noguchi Asahi and Shirai Sayuri, "Herikoptā manē no shōtai: Gekitotsu taidan" [The true meaning of helicopter money: A heated debate], *Shūkan Ekonomisuto*, August 2, 2016.

⁵ For instance, Hayakawa argues that "although the rate of wage increases is still low, it has started to gradually rise since the unemployment rate reached 3.5 percent. This suggests that the relationship that the structural employment rate \cong the natural unemployment rate \cong 3.5 percent generally

Chart 3 Improvement in Labor Market Conditions



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

QQE began in April 2013, but these developments indicate that if it had started earlier, the unemployment rate in Japan without doubt would have remained at 3 percent or below throughout. Given that the unemployment rate from the mid-1990s to 2012 on average was roughly 4.5 percent, unemployment was almost 2 percent higher than it could have been. This implies that, because 2 percent lower of workers could not find a job, the GDP level was on average slightly less than 2 percent lower than it would have been. In fact, the loss in GDP may have been even greater than that. What I mean is that an increase in the unemployment rate by 1 percent may reduce GDP by more than 1 percent. The reason is that if there is a recession and output decreases, firms do not decrease employment in line with the decrease in output but instead try to maintain employment levels. In addition, when

holds" (translated by the Bank of Japan). See Hayakawa Hideo, "*Kinyū seisaku no 'gokai': 'Sōdai na jikken' no seika to genkai.*" [The 'misunderstandings' of monetary policy: Achievements and limitations of the 'great experiment'] (Tokyo: Keio University Press, 2016).

there is a recession, the desire to work decreases, the number of people seeking employment declines, the number of unemployed people falls, and the unemployment rate does not increase to the extent that employment has decreased.⁶

Moreover, the deterioration in the employment situation during the period before QQE began may have caused the subsequent long-term stagnation. As shown in Chart 3, the rise in the unemployment rate was particularly pronounced among the young. If new graduates cannot get a good job, they will not receive sufficient vocational training and their human capital will decline, which will eventually lead to lower GDP growth rates.⁷

Given this, it may be possible to correct past mistakes through accommodative monetary policy. If the labor market tightens, those who were previously unable to find a job will be able to find one, while those who involuntarily took up employment as non-regular employees can find regular employment; as a result, they will receive sufficient job training and have more job opportunities, labor quality will rise, and productivity will grow. In other words, it is possible that through a prolonged situation of labor market tightness, the labor force participation rate will rise, there will be active human capital accumulation, productivity will grow, and the real GDP growth rate will accelerate.⁸

A particular problem in Japan's case is the issue of young people who were looking for a job during the so-called "employment ice age." While there is no clear, generally accepted definition of the "employment ice age" period, some have defined it as the period from the mid-1990s to the mid-2000s, whereas others also include a few years after the global

⁶ The coefficient regarding how much the real GDP growth rate changes if the unemployment rate changes by 1 percent is called Okun's coefficient, which in Japan is about 3. See Harada Yutaka, *Nihon wo sukutta rifure-ha keizaigaku* [Reflationism: The economics that saved Japan] (Tokyo: Nikkei Publishing Inc., 2014), 117-118.

⁷ Nakano Akihiro and Kato Ryo, "Chōki teitai' ron wo meguru saikin no giron: 'Rireki kōka' wo chūshin ni" [The recent debate on "long-term stagnation": Focusing on the "hysteresis effect"], *Bank of Japan Review*, no. 2017-J-2, March 2017, http://www.boj.or.jp/research/wps_rev/rev_2017/data/rev17j02.pdf.

⁸ Janet L. Yellen, "Macroeconomic Research After the Crisis," (speech, "The Elusive 'Great' Recovery: Causes and Implications for Future Business Cycle Dynamics" 60th annual economic conference sponsored by the Federal Reserve Bank of Boston, Boston, MA, October 14, 2016).

financial crisis.⁹ This was a period of recession in which it was very difficult for new graduates to find employment. Many could not find regular employment and instead, out of necessity, became non-regular workers, taking on part-time jobs or temporary work.

If these people were to become regular employees, wages, productivity, and tax revenues including social insurance contributions would rise. This is desirable not only for them individually, but also for Japan as a whole.

Of course, if we set too much store by the "high-pressure economy" argument -- which suggests that labor market conditions should be kept tight through monetary easing -- monetary policy may be tightened too late despite signs of inflation, potentially leading to intolerably high inflation. While I think that the "high-pressure economy" argument is probably correct, in actual monetary policy conduct, we should prioritize the 2 percent inflation target and regard further improvements in employment and increases in the growth rate as desirable to the extent that they can be achieved.

Furthermore, the fiscal situation is also improving. Chart 4 shows the fiscal balance of the general government divided by nominal GDP. As can be seen in the chart, the government deficit relative to GDP deteriorated sharply to 8 percent in the wake of the global financial crisis in 2008. It remained at that level for a while, but has improved by 6 percentage points since 2013 and now stands at about 2 percent relative to GDP. Part of the improvement of course is due to the consumption tax hike in 2014, but the tax hike accounts for only 8 trillion yen or 1.5 percentage points of GDP; the remaining 4.5 percentage points are due to the economic growth brought about by economic measures such as QQE.¹⁰

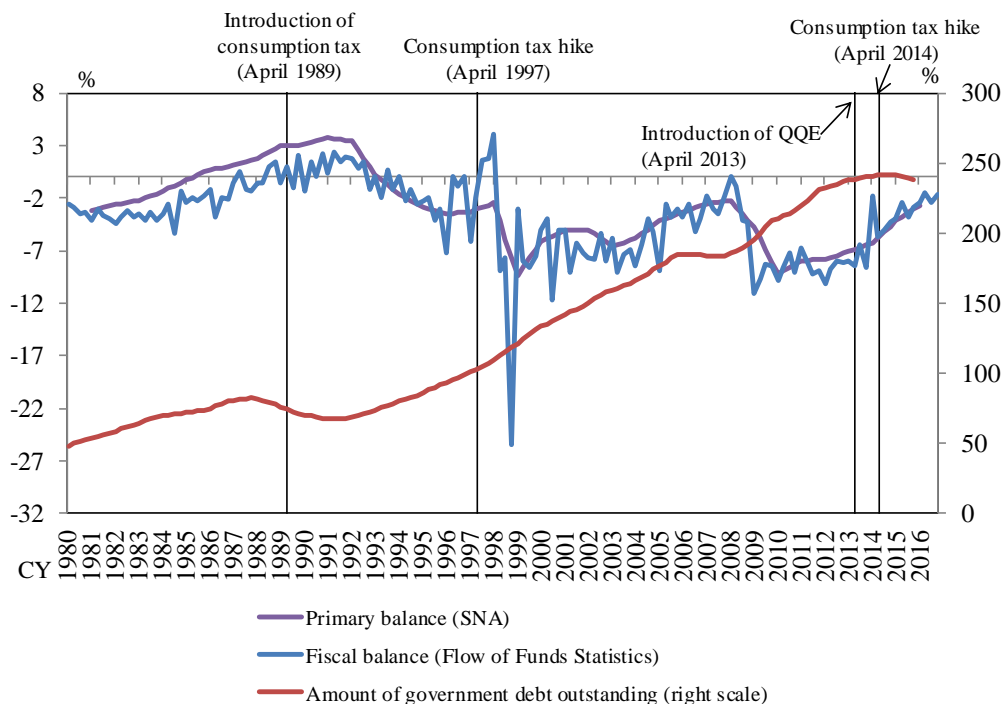
Moreover, the amount outstanding of government debt relative to nominal GDP, as shown in the chart, peaked in 2014 and has been declining since. The improvement in the fiscal

⁹ Genda Yuji et al., *Shūshoku hyōgaki sedai no keizai, shakai eno eikyō to taisaku ni kansuru kenkyū iinkai hōkokusho* [Report of the study group on the effects of the employment ice-age generation on the economy and society as well as countermeasures] (Tokyo: Japanese Trade Union Confederation Research Institute for Advancement of Living Standards, October, 2016).

¹⁰ Ministry of Finance, *Nihon no zaisei kankei shiryō* [Japan's Fiscal Condition], April 2017, 22.

situation to a considerable extent also owes to the improvement in the economic situation due to economic measures including QQE.

Chart 4 Improvements in the Fiscal Balance and Government Debt



Note: The series show ratios relative to nominal GDP. The fiscal balance is the financial surplus or deficit of the general government in the *Flow of Funds Statistics*. Figures for the amount of government debt outstanding and the primary balance are converted from annual to quarterly data through linear interpolation.
Sources: Cabinet Office; Bank of Japan.

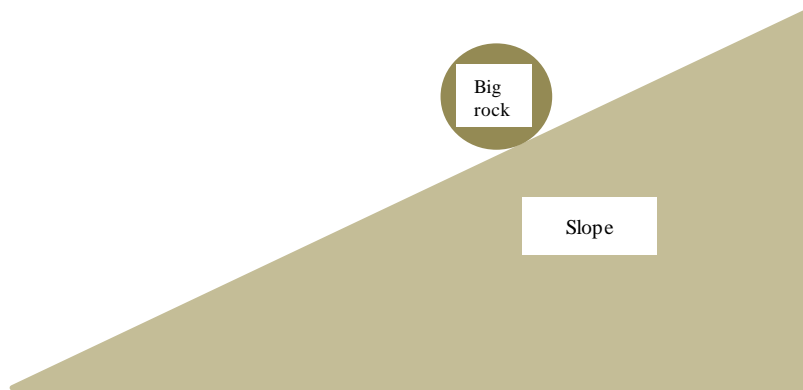
As discussed so far, the Bank's bold monetary easing has produced excellent results.

III. What Are the Dangers of QQE?

Given that QQE has clearly produced results, criticism of the Bank's monetary policy naturally has shifted to the argument that "although nothing has happened so far, there is a danger that a serious problem may arise in the future." I call this kind of argument the "big rock theory." As illustrated in Chart 5, the "big rock theory" holds that there is a big rock on the slope that blocks the way. However, if one tries to move the rock out of the way, it hardly moves at first, but once it does get rolling, it will not stop. The argument therefore maintains that it is better not to try to move the rock out of the way. Turning back to monetary policy, this implies that no matter how much monetary easing is pursued, nothing

Chart 5 Big Rock Theory

Big rock theory: a big rock on a slope hardly moves at first if one tries to move it out of the way, but once it does get rolling, it will not stop, and therefore it is better not to try to move the rock out of the way.



happens for a while, but suddenly at some point it will give rise to hyperinflation, a surge in interest rates, and a collapse of the yen. For this reason, the theory argues, monetary easing should not be pursued. In my opinion, such fears are groundless.¹¹

The criticism leveled by "big rock theory" proponents seems to have converged on the dangers associated with the exit from monetary easing. I think the reason is that hyperinflation and the collapse of the yen are unlikely to happen and the proponents of the "big rock theory" have realized that their warnings will not convince the public.

"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. Actually, if you think about it, the "big rock theory," which focuses on dangers related to the exit, assumes that, as a result of monetary easing, a situation arises in which prices increase and monetary policy must be tightened. Therefore, the proponents of the theory do not hold the view that nothing will happen no matter how much monetary easing is pursued; rather, they recognize the effectiveness of QQE. From

¹¹ See Harada Yutaka, Kataoka Goushi, and Yoshimatsu Takashi, eds., *Abenomikusu wa shinkasuru: Kin'yu ganseki riron wo tou* [Abenomics strides ahead: Questioning the financial big rock theory] (Tokyo: Chuokeizai-sha, Inc., 2017).

my perspective, this is a welcome argument, since it recognizes the effectiveness of monetary easing.

At the exit, the Bank will have to raise interest rates. There are two possible ways to do so: 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 Japanese government bonds (JGBs) held by the Bank. While the Bank at the moment has not decided anything with regard to the exit, what I would like to explain is easier to understand by focusing on an increase in the interest rate applied to excess reserves, so let me do so here. According to proponents of the "big rock theory," the Bank will make large losses when it raises the interest rate on excess reserves because of the low interest rates on JGBs purchased by the Bank in the past. It is of course possible that the Bank may register losses because it will receive low interest rates while paying high interest rates. Proponents of the "big rock theory" argue that if the Bank does indeed make losses, confidence in the currency would be undermined, there would be hyperinflation, the yen would collapse, and interest rates would surge.

However, please think about it carefully. Essentially, does anyone use money paying attention to whether the central bank makes a profit or a loss? Moreover, the central bank, in return for purchasing government bonds in the market, supplies currency, that is, the monetary base. While yields even on JGBs at present are around 0 percent, they were 3 percent until around the middle of the 1990s. The reason is that back then the real economic growth rate was high and prices were rising somewhat. 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.¹²

¹² Yoshimatsu Takashi, "Chūō ginkō no deguchi no kiken towa nanika" [What are the dangers of a central bank exit?], chap. 9 in *Abenomikusu wa shinkasuru: Kin'yu ganseki riron wo tou* [Abenomics strides ahead: Questioning the financial big rock theory] ed. Harada Yutaka et al., (Tokyo: Chuokeizai-sha, Inc., 2016).

Another criticism that has been leveled against QQE is that it has a negative impact on banks' operations. Both real and nominal interest rates have declined as a result of the bold monetary easing measures. While low interest rates support the long-term economic recovery, some argue that they also undermine the operations of banks, which impedes the effects of monetary easing. Because banks' profits are based on the difference between deposit interest rates and the loan rates they charge and it is difficult for them to impose negative deposit interest rates, it is certainly the case that as loan interest rates approach zero, banks' profit margins necessarily decrease. However, the decline in interest rates is not only due to the Bank's policy measures. To start with, the decline in real interest rates is also due to a decline in the long-term growth potential of Japan's economy as well as structural changes in the supply of and demand for funds. This structural change in the supply of and demand for funds is due to the fact that firms have become excessive savers and do not borrow money. Meanwhile, the decline in nominal interest rates is due to the decline in prices. As prices rise, nominal interest rates will eventually also rise.¹³ Therefore, in order to raise interest rates, it is necessary to continue with bold monetary easing and achieve the 2 percent price stability target.

Moreover, as the economy improves, the number of people unable to repay loans will decrease, the number of people who want to borrow money will increase, and banks will be able to raise lending rates again.

IV. Why Has the Price Stability Target Not Yet Been Achieved?

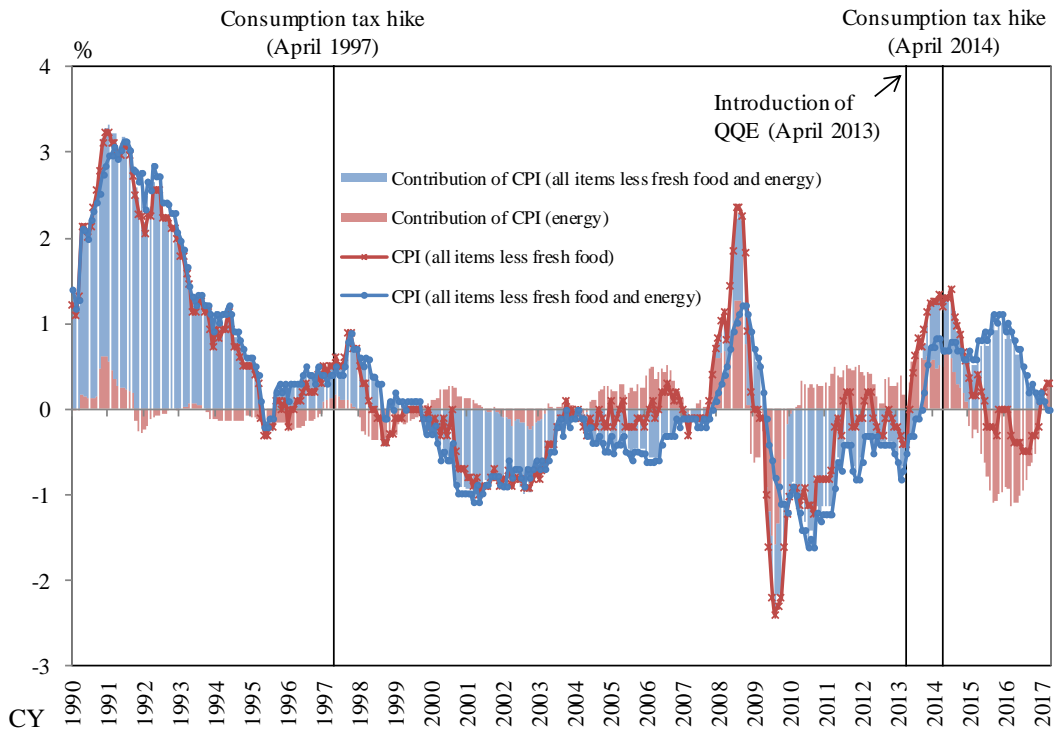
As mentioned earlier, the monetary easing measures have been effective and warnings of the dangers of these measures make little sense. The only thing that the measures have not achieved is an increase in prices.

Let me start by looking at developments in prices and then consider why the price stability target of 2 percent has not yet been achieved.

¹³ On the link between monetary policy, structural changes in the financial environment, and interest rates, see Harada Yutaka, "Naze nihon no kin'ri wa hikuinoka" [Why are Japan's interest rates low?], Keiki to saikuru, no. 62, November 2016.

Chart 6 shows the year-on-year rate of change in the consumer price index (CPI) on a quarterly basis. The chart may give the impression that achieving the price stability target of 2 percent is a long way off. However, in order to grasp the underlying trend in consumer prices, it is necessary to look at the rate of change in the CPI excluding fresh food and energy, since the CPI excluding fresh food but including energy is affected by temporary fluctuations in oil prices. The important thing to note when looking at these indexes is that their underlying trend was negative from the mid-1990s onward, but following the introduction of QQE the rate of change in the CPI excluding fresh food and energy turned positive and since then has continued to be on an uptrend.¹⁴

Chart 6 Breakdown of the CPI



Note: The CPI is adjusted for the effects of the changes in the consumption tax by deducting 2.0 percentage points at the time of the introduction of the tax in 1989, 1.5 percentage points at the time of the first hike in 1997, and 2.0 percentage points at the time of the second hike in 2014.

Source: Ministry of Internal Affairs and Communications.

¹⁴ While the average annual rate of change in the CPI excluding fresh food and energy between April 1999, when it first turned negative, and April 2013 was minus 0.5 percent, it has been plus 0.6 percent between the start of QQE in April 2013 and April 2017 (excluding the 2 percent increase in the CPI as a result of the consumption tax hike).

Next, let us have a more detailed look at developments in prices. Immediately after the introduction of QQE in April 2013, the rate of change in the CPI excluding fresh food and energy increased from around minus 0.5 percent to around plus 1 percent. After losing momentum in the wake of the consumption tax hike in April 2014, the rate of change turned upward again with the expansion of QQE, but then started to decline once again in 2016. However, as I will explain later, I believe that the rate of change will likely turn upward once more due to the expected decline in the unemployment rate and other factors.

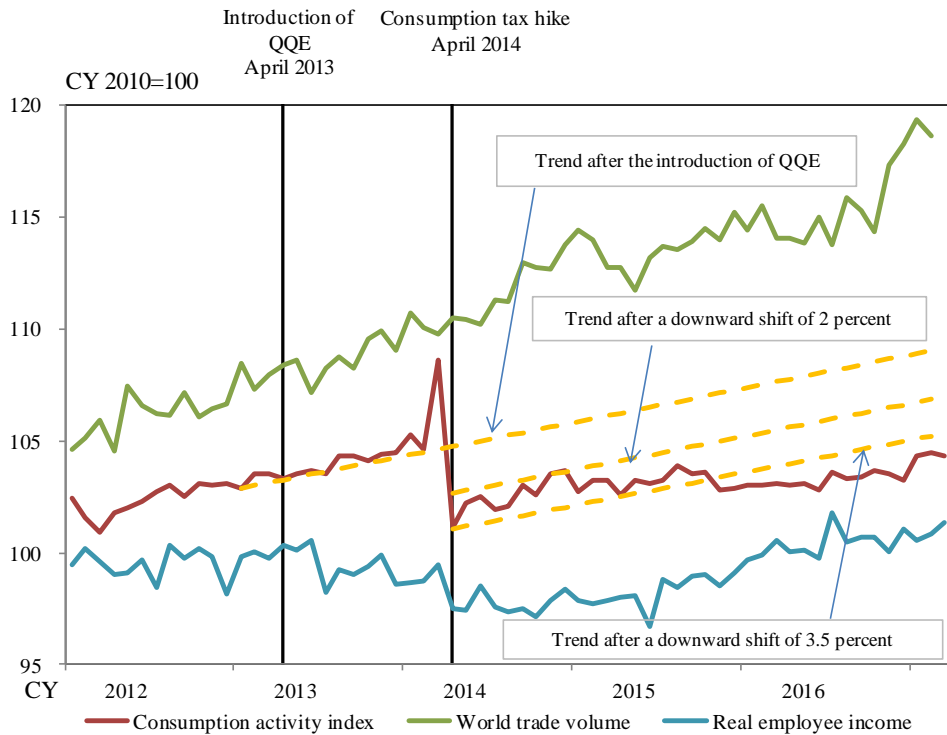
Certainly, the 2 percent price stability target has not yet been achieved. Moreover, many argue that even though the economy is said to have improved, increases in incomes are minimal, and thus they do not feel much improvement. The Bank of course also does not want prices to rise just for the sake of it but because the economy is improving. That is, the Bank conducts monetary policy based on the premise that deflation is detrimental because it leads to economic stagnation and that if we escape from deflation and achieve the 2 percent price stability target, the economy will also improve.

So, why has the economy not recovered that much? Let me consider why the 2 percent price stability target has not been achieved. Analyses by the Bank suggest that a major reason for this is the decline in inflation expectations, and that the following two factors have played a major role in the decline in inflation expectations. First, (1) the decline in crude oil prices, (2) the weakness in demand following the consumption tax hike in April 2014, and (3) the slowdown in emerging economies and volatile global financial markets, have lowered the observed inflation rate. And second, amid this decline in the observed inflation rate, inflation expectations -- after having been largely flat -- weakened, reflecting the fact that expectations formation in Japan is largely adaptive, that is, backward-looking.¹⁵ Among these factors, let me focus on the consumption tax hike and the sluggishness in the global economy.

¹⁵ Bank of Japan, "Comprehensive Assessment: Developments in Economic Activity and Prices as well as Policy Effects since the Introduction of Quantitative and Qualitative Monetary Easing (QQE)," September 2016, [http://www.boj.or.jp/en/announcements /release_2016/k160921b.pdf](http://www.boj.or.jp/en/announcements/release_2016/k160921b.pdf).

Chart 7 shows developments in real consumption before and after the consumption tax hike. The chart indicates that following the consumption tax hike, consumption, as measured by the consumption activity index compiled by the Bank, has remained weak for more than two years, although it is now finally showing signs of recovery. The consumption tax hike from 5 percent to 8 percent had the effect of raising consumer prices by 2 percent. Thus, if we exclude the increase in consumption due to frontloading and the subsequent decline in response, real consumption should have fallen by 2 percent and then continued along the trend observed before the tax hike. While the chart depicts such a trend, actual growth in consumption has declined considerably and has fallen drastically below this trend particularly since the end of 2015. Moreover, although wages have not grown very much, if we exclude the effects of the consumption tax hike, real employee income -- i.e., wages multiplied by the number of employees -- has consistently grown, since employment has been consistently improving during this period. Thus, even though real income is increasing, the situation continues that consumption is not increasing.

Chart 7 Stagnation in Real Consumption



Note: Real employee income is obtained by multiplying nominal wages by the number of employees (*Labour Force Survey*) and adjusting inflation by the CPI for all items.

Sources: Bank of Japan; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare; CPB Netherlands Bureau for Economic Policy Analysis.

Why is consumption not increasing? One potential explanation is that, given that there had been plans to further raise the consumption tax to 10 percent after the hike to 8 percent, people already responded in their consumption behavior as though the tax rate was raised by 5 percentage points to 10 percent.¹⁶ In that case, it would be no surprise that real consumption expenditure declined by 3.5 percent. However, even if we draw the trend based on this assumption, consumption has fallen further behind the trend since the end of 2015. Moreover, if the explanation that people already responded to an expected 10 percent consumption tax hike is correct, the next consumption tax hike to 10 percent should have little effect on consumption, which I find hard to believe.

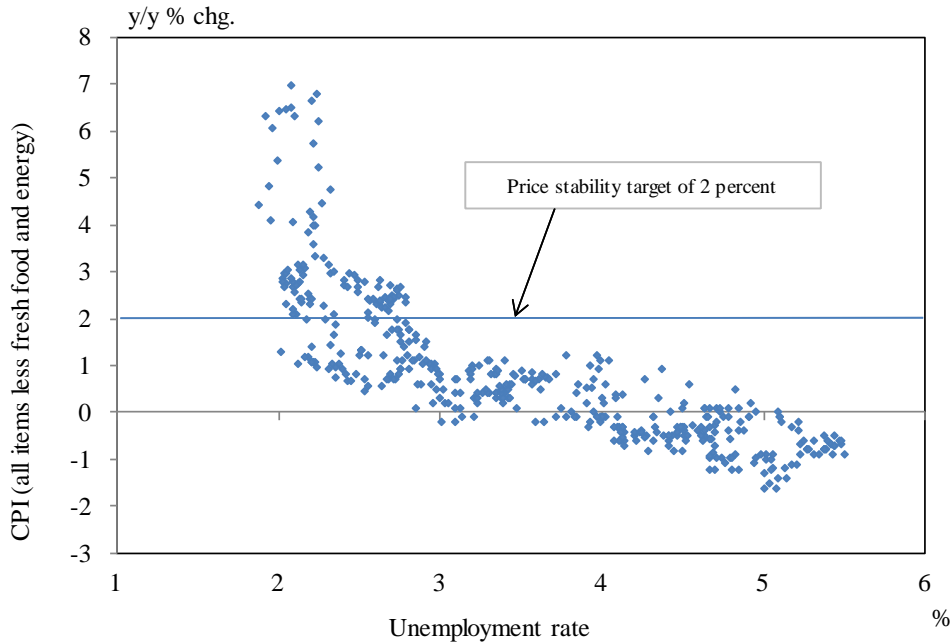
In any case, if real consumption decreases, demand will decline and prices will be subject to downward pressure. While it is difficult to know exactly how large this downward pressure is, it is certain that such pressure will exist.

Another factor that should be mentioned is trends in the global economy. As shown in Chart 7, it is clear that the stagnation in global trade since 2015 has cooled consumer sentiment through a decline in exports and stock prices, and has delayed the recovery of Japan's economy.

However, the tightening of the labor market seen in the decline in the unemployment rate shown in Chart 3 should lead to a rise in wages and eventually in prices. There are already signs of this happening. In this context, it is useful to look at the Phillips curve, which shows the link between the unemployment rate and the inflation rate. Chart 8 shows the Phillips curve for Japan. In the chart, the inflation rate is shown on the vertical axis, the unemployment rate on the horizontal axis, and the Phillips curve is given by the downward-sloping curve. As can be seen, prices only rise gradually as the unemployment rate falls, but once the unemployment rate approaches 2 percent, prices rise quickly. The unemployment rate has already fallen to 2.8 percent. Therefore, there is no doubt that prices will eventually rise as the unemployment rate continues to fall.

¹⁶ Unayama Takashi, "Keizai kyoshitsu 2014-nen shouhizouzei no kyōkun" [Economics class: What the 2014 consumption tax hike taught us], *Nikkei*, May 23, 2016.

Chart 8 Phillips Curve and Tightening of the Labor Market



Source: Ministry of Internal Affairs and Communications.

Concluding Remarks

As stated so far, the Bank's monetary policy measures have produced excellent results so far and with regard to prices, at least a situation in which there is no longer deflation has been achieved.

Finally, I would like to say that the argument that economic growth is inhibited by a shortage of labor is incorrect. The argument essentially states that what impedes economic growth is the shortage of labor brought about by monetary easing measures. The argument therefore implies that monetary easing should not be carried out.¹⁷ However, because monetary easing measures have increased employment, they have boosted economic growth. Moreover, as a result of the shortage of labor, wages will rise. It is highly productive firms

¹⁷ For instance, in the *Mainichi Shimbun* (April 4, 2017, morning edition), referring to the improvement in the diffusion index for employment conditions in the *Tankan* (Short-Term Economic Survey of Enterprises in Japan), it was stated that labor shortages were becoming more severe, giving rise to concerns that such shortages might impede the recovery.

that can pay high wages, while firms with low productivity can only pay low wages. Therefore, if wages increase, highly productive firms will survive, and labor productivity in the economy overall will increase as well. In other words, rising wages due to a shortage of labor will promote productivity growth.

On the other hand, some argue that low interest rates impede the economic metabolism.¹⁸ They argue that, as a result of the decline in interest rates, firms' interest burden decreases, firms that should exit the market do not do so, and the productivity of the economy as a whole declines. However, what happens if firms exit and unemployment surges? Productivity per person employed may increase, but output overall will decrease. Although it might be an exaggeration to say that this would result in a surge in unemployment and social instability, it would inevitably lead to problems. On the other hand, firm turnover caused by labor shortages does not cause such problems.

I think that there is no one now who would answer yes when asked "Are you a deflationist, thinking that it is better for prices to fall?" In that sense, we are all reflationists now, hoping that prices will rise and the economy will improve.¹⁹ That is why the Bank continues to pursue its monetary easing policy.

Thank you for your attention.

¹⁸ For example, Shirakawa stated that "we may have to take into account the risk that a continuation of low interest rates will affect the productivity of the overall economy and lower the potential growth rate endogenously." See Shirakawa Masaaki, "Central Banking: Before, During, and After the Crisis," (remarks, Conference Sponsored by the Federal Reserve Board and the International Journal of Central Banking, Washington, D.C., March 24, 2012), http://www.boj.or.jp/en/announcements/press/koen_2012/ko120326a.htm/.

¹⁹ Harada Yutaka, "Wareware wa mina rifure-ha dearu" [We are all reflationists], *Shūkan Ekonomisuto*, January 24, 2017.