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Bank of Japan

Economic Activity and Prices in Japan, and Monetary Policy

Speech at a Meeting
with Business Leaders in Yamaguchi Prefecture
(Held in Shimonoseki)

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(English translation based on the Japanese original)

Introduction

Thank you for giving me this opportunity to exchange views with people representing Yamaguchi, who have taken time to be here despite their 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 research activities of the Bank of Japan's Shimonoseki Branch on the economy of Yamaguchi, and also with business operations of the Bank.

Three years have passed since the Bank introduced quantitative and qualitative monetary easing (QQE) in April 2013. Furthermore, in January 2016, it introduced QQE with a Negative Interest Rate. Decisions regarding the conduct of monetary policy tend to draw strong interest from the business community, but I believe it is generally the case that they do not attract as much interest from the public. However, due to the impact the term "negative interest rate" might have had, the newly introduced measure has drawn attention from a wide range of entities.

Today, I would like to offer my explanation on QQE with a Negative Interest Rate. Following my speech, I look forward to hearing your views on the actual situation for Yamaguchi's economy, and to your candid opinions on the Bank's monetary policy.

I. Thinking Behind QQE with a Negative Interest Rate

The Bank has been conducting QQE from April 2013 and expanded it in October 2014. QQE with a Negative Interest Rate is an extension of the existing policy framework of QQE.

Let me touch upon somewhat of a theoretical concept -- the natural rate of interest. This refers to an optimal interest rate that will neither depress nor overheat the economy. The objective of monetary policy is to encourage the actual interest rate to be at an appropriate level in relation to the natural rate of interest so as to allow the economy to be in an optimal condition. To be specific, it is in line with maintaining the year-on-year rate of change in the consumer price index (CPI) at around 2 percent in the long term. Under this rate of inflation, the economy could be kept in a favorable condition with a declining unemployment rate and a reasonably high growth rate.

However, as deflation and economic stagnation have lasted for a long time, interest rates have declined to close to zero. In other words, when only nominal interest rates were being considered, there was a limit to lowering interest rates further, and therefore the economy failed to be in an optimal condition. In response, the Bank introduced QQE in April 2013.[1] This was an attempt to encourage the economy to head in a better direction by increasing the monetary base, thereby raising inflation expectations and lowering real interest rates, which are defined as nominal interest rates minus inflation expectations. In October 2014, the Bank accelerated the pace of increase in the monetary base to address the slowdown in Japan's economy following the April 2014 consumption tax hike. Furthermore, along with volatile movements in global financial markets that had been observed since the start of 2016, there appeared to be a heightened risk that these would negatively affect business confidence in Japan or conversion of people's deflationary mindset. There also were indicators of deterioration in economic activity. Thus, to pre-empt manifestation of such risk, the Bank went a step further by introducing QQE with a Negative Interest Rate at the end of January 2016. By making nominal interest rates negative, this obviously would lower real interest rates as well. In this sense, this newly introduced measure is an extension of the existing policy framework of QQE, in that it lowers real interest rates so as to encourage the economy to be in a favorable condition.

Should the Natural Rate of Interest be Raised?

Here, the idea behind the conduct of monetary policy has been to somehow manage to lower interest rates to enhance economic activity. However, some may argue that the root of the problem resides in the fact that the natural rate of interest has been too low, and that the rate must be corrected. The thinking behind this argument is as follows. If Japan's economic growth rate could be raised by enhancing its economic efficiency, the natural rate of interest would also be raised, and this would create a situation in which there will no longer be a need to push down interest rates through monetary policy. In short, this argument emphasizes the importance of the growth strategy with regard to raising the natural rate of interest.

[1] The adoption of quantitative easing policy from 2001 through 2006 can be regarded as the same attempt as that of QQE, but in the former instance the Bank did not set an explicit numerical price stability target of 2 percent, nor did it have the idea of influencing inflation expectations.

This argument may sound reasonable, but discussions on its specifics -- that is, how and to what extent the growth rate of the economy could be raised -- seem to have been lacking. Japan's real GDP growth rate has been low among advanced economies. However, comparing the real GDP growth rates per capita, Japan's rate has been at about the average of those in the advanced economies. Moreover, it has been ranked high in terms of the real GDP growth rate per the working-age population of those between 15 and 64 years of age. The growth rates of highly inefficient controlled economies could easily be raised once those economies are liberalized, like in the cases of China through the 1970s and India through the 1980s. On the other hand, it is difficult to immediately raise the growth rate of a highly free market economy by liberalizing it further. I would like to make clear that I fully agree with the idea of implementation of an appropriate growth strategy that could raise the natural rate of interest. It will be even better if this can be done together with a reduction in real interest rates through monetary policy.

With respect to the idea of somehow managing to lower interest rates, some also argue that interest rates should not be lowered as the functioning of the bond market will be impaired. However, such an argument does not take heed of the fact that the bond market has become dysfunctional, in that it cannot lower interest rates to the extent that the rates can bring about favorable developments in economic activity.

Next, I will provide an outline of QQE with a Negative Interest Rate and explain the consequences of monetary easing measures and their issues.

II. Mechanism of QQE with a Negative Interest Rate

The term "negative interest rate" has evoked a large response and created the misunderstanding that a negative interest rate would be applied to bank deposits held by the public. On the contrary, a negative interest rate is only applied to part of the outstanding balance of current accounts that private financial institutions hold at the Bank. Chart 1 shows the mechanism of QQE with a Negative Interest Rate; namely, the three-tier system.

The outstanding balance of financial institutions' current accounts at the Bank is divided into three tiers: the "Basic Balance," the "Macro Add-on Balance," and the "Policy-Rate

Balance." The Basic Balance refers to the average outstanding balance of their accounts during 2015. The same interest rate as before -- a positive interest rate of 0.1 percent -- is applied to this balance after deducting required reserves held by financial institutions subject to the Reserve Requirement System. A zero interest rate is applied to the Macro Add-on Balance, which refers to the sum of the amounts outstanding of the required reserves and the Bank's provision of credit through facilities to stimulate active lending by financial institutions. Lastly, a negative interest rate of minus 0.1 percent is applied to the rest of the outstanding balance of financial institutions' current accounts at the Bank, the Policy-Rate Balance, which is the amount outstanding exceeding the Basic Balance minus required reserves and the Macro Add-on Balance. At the end of the February 2016 reserve maintenance period, the total amount of the Basic Balance minus required reserves, to which a positive interest rate of 0.1 percent is applied, was about 210 trillion yen, whereas the aggregate amount of the Macro Add-on Balance, to which a zero interest rate is applied, and of the Policy-Rate Balance, to which a negative interest rate of minus 0.1 percent is applied, each amounted to above 20 trillion yen. Thereafter, as the Bank will be conducting money market operations so that the monetary base will increase at an annual pace of about 80 trillion yen, the total outstanding balance of current accounts that financial institutions hold at the Bank will increase, and the balance to which the negative interest rate is applied will increase over time. In light of this, the Bank will raise the balance of current accounts to which a zero interest rate is applied once every three months so that the balance to which a negative interest rate is applied will not become too large.

The Bank adopted the three-tier system to minimize the direct impact on financial institutions' profits. It has been increasing the outstanding balance of current accounts that financial institutions hold at the Bank with the aim of having them use the funds to seek more beneficial investment opportunities. Specifically, the Bank encourages financial institutions to use the funds to increase lending both at home and abroad. The funds also can be used so that there will be increased investment in the economy as a whole in such risk assets as stocks and real estate. I believe that financial institutions would find it easier to seek more beneficial investment opportunities if the Bank did not apply a deposit rate on their current accounts at the Bank, not even a meager rate of 0.1 percent. However, the Bank already has been applying an interest rate of 0.1 percent to the complementary deposit

facility, and this has been a prerequisite for many financial institutions' behavior. Given this, it may cause confusion in the markets if the Bank were to only apply either a zero interest rate or a negative interest rate to the outstanding balance of current accounts that financial institutions hold at the Bank, including the Basic Balance, which I mentioned earlier. This may also adversely affect financial institutions' profits. In light of this, the Bank adopted a three-tier system that could produce large easing effects and minimize the impact on financial institutions' profits.[2]

The Policy-Rate Balance -- to which the Bank applies a negative interest rate of minus 0.1 percent -- only amounts to about 10-30 trillion yen, but it nonetheless induced an evident fall in interest rates. As can be seen from Chart 2, interest rates on Japanese government bonds (JGBs) with all maturities have declined, exerting downward pressure across the entire yield curve. The chart shows developments in interest rates before and after the introduction of QQE in April 2013 and its expansion in October 2014. It suggests that interest rates on 10-year JGBs fell by 0.3 percentage point with the introduction of QQE, by 0.2 percentage point with its expansion, and by 0.3 percentage point with the introduction of QQE with a Negative Interest Rate. In total, interest rates on 10-year JGBs fell by 0.9 percentage point from before the introduction of QQE. In this situation, even if inflation expectations were more or less unchanged, it is likely that real interest rates would be reduced, thereby leading to an upturn in the economy. According to research by the Bank, in the two years since the introduction of QQE, real interest rates declined by 0.7-0.9 percentage point and the output gap improved by 1.1-3.0 percentage points, although there was a degree of latitude in figures depending on estimation procedures.[3]

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[2] For a detailed explanation of the three-tier system from an operational perspective, see Monetary Affairs Department, "Nihonginkou Touzayokin no Mainasukinri Tekiyou ni Kansuru Jitsumumen no Q&A: Torihikisaki Kinyukikan Nado Muke (Q&As from an Operational Perspective on the Negative Interest Rate Applied to Financial Institutions' Current Accounts at the Bank: Prepared Particularly for Counterparty Financial Institutions)," March 2016 (available only in Japanese).

[3] For details, see Monetary Affairs Department, "Quantitative and Qualitative Monetary Easing: Assessment of Its Effects in the Two Years since Its Introduction," *Bank of Japan Review Series*, 2015-E-3, May 2015.

Financial Intermediary Function and Deflation

Some argue that the flattening of the yield curve has a negative impact on financial institutions' profits and in turn hinders the monetary easing effects. It is true that the profits of financial institutions increase with the steepening of the yield curve because they make long-term investment by raising short-term funds. However, if they make profits only from the differential between long- and short-term interest rates, they are not adequately performing their primary function as financial intermediaries.

Financial institutions' function as financial intermediaries is to transfer funds from the sector with excess savings to the one with insufficient savings; in other words, to collect savings from households and lend funds to firms that are judged to have profitable investment projects. However, as firms have been in financial surplus recently, they are less willing to borrow funds. This is why the government has been encouraging firms to release the surplus that they have hoarded to date.

Firms are hoarding their surplus and not making investment because the prolonged deflation has reduced their incentive to do so. When Japan's economy moves out of deflation, firms are expected to regain such incentive, and this in turn will increase the demand for borrowing funds from financial institutions. That is to say, financial institutions are expected to increase their lending and their profits will eventually increase.

Financial institutions' profits have been stable at high levels since the introduction of QQE. This is because the upturn in the economy has improved the business conditions of borrowing firms and thereby has reduced default costs and credit costs.

Experiences of Countries That Have Adopted Negative Interest Rate Policies

Since the Bank's introduction of QQE with a Negative Interest Rate in January 2016, there have been moves toward refinancing due to the decline in interest rates on housing loans. Nevertheless, an expansion of new housing loans has yet to be observed. Only two months have passed since the adoption of the negative interest rate policy, and thus it is too early to assess the effects of the policy at present.

Let me touch upon the situation in European countries that have employed negative interest rate policies. It seems that the adoption of such policies has not caused any financial turbulence. Here, financial turbulence refers to large swings in interest rates.

Chart 3 shows developments in these countries, including those in economic activity. A glance at this chart does not clarify the correlation between the adoption of negative interest rate policies and changes in exchange rates. Let me explain in detail by country. In Switzerland, the monetary authority adopted a negative interest rate policy to ease excessive appreciation pressure on its domestic currency, but the currency appreciated as the authority cut the interest rate further into negative territory. On the other hand, Sweden and countries in the euro area experienced depreciation in their currencies as a result of the adoption of negative interest rate policies. In Denmark, its currency is pegged to the euro, and the monetary authority employed the negative interest rate policy as one of the options for pegging.

All of these countries have realized high stable economic growth relative to Japan. For example, Sweden has accomplished 4 percent growth in real GDP, which is extremely high among advanced countries. However, there is a criticism that the high growth was caused by a real estate bubble, and it seems that there is an intense discussion about the future conduct of monetary policy. In sum, it can be said that the negative interest rate policies have not caused any financial turbulence and that economic activity in the countries that have employed such policies are not weak.

III. Economic Developments after the Introduction of QQE

I will summarize developments in the past three years after the Bank's major shift in monetary policy.

How Financial Institutions Have Changed

Let me first focus on indicators directly relating to financial institutions' business conditions.

Chart 4 shows changes in net profits of banks, including *shinkin* banks. This chart indicates that their profits have been at high levels since the introduction of QQE regardless of the type of bank. This is mainly because of the decline in credit costs, as I mentioned earlier. It is necessary to take into account the large impact of the recovery in Japan's economy as a whole on financial institutions' business conditions, instead of considering advantages and disadvantages of the negative interest rate policy by looking at the yield curve of interest rates at one point.

Opposition to QQE or the negative interest rate policy on the grounds that financial institutions will incur losses is roughly the same as opposing the Trans-Pacific Partnership (TPP) because some industries will incur losses. We must conduct monetary policy as well as trade policy based on a broader perspective by taking account of Japan's economy as a whole. Financial institutions can gain profits only when Japan's economy as a whole becomes more robust. Furthermore, financial institutions themselves also should become robust.

An Upturn in Japan's Economy?

Next, I will talk about developments in Japan's economy as a whole. Chart 5 shows developments in consumption, investment, exports, and production during the past three years after the introduction of QQE.

Consumption seems to have increased marginally as the negative impact of the April 2014 consumption tax hike dissipated, and continued to do so through the middle of 2015, but it has been sluggish since then. I will elaborate on this later in detail. Similar developments have been observed regarding investment (the aggregate supply of capital goods) and exports. Reflecting this, production also has been sluggish. I believe that exports and production have been adversely affected by the halt in the increase in the world trade volume.

Since the end of 2015, stock prices have been volatile or declining globally. I consider that this is attributable to the sluggish world trade. In other words, weak stock prices have reflected weak economic activity.

Steady Growth in Employment

In contrast, employment has been growing steadily. As shown in Chart 6, the numbers of both part-time and full-time employees have continued rising. The unemployment rate has been declining steadily. According to the *Labour Force Survey*, the number of employees has risen from 54.85 million in March 2013 -- that is, just before the introduction of QQE -- to 56.84 million in February 2016 (an increase of 1.99 million). By type of employment, the number of regular employees has risen from 32.55 million to 33.33 million (an increase of 0.78 million).

Improvement in employment is spreading across Japan, although we have heard voices of concern that the economic recovery has only been observed in major cities. As shown in Chart 7, the active job openings-to-applicants ratio has risen in all regions, although it had temporarily declined following the consumption tax hike. It rose to 1.01 times in February 2016 in Hokkaido, where the ratio has been the lowest in Japan. By prefecture, many of those where the ratio had never exceeded 1 in the past marked a figure above 1. Here in Yamaguchi, the ratio was 1.33 times.

Needless to say, the active job openings-to-applicants ratio for "All Japan" has risen, registering 1.28 times in February 2016 -- the highest level since December 1991.

Increase in Wages

It has been said that wages have not increased despite the rise in employment. The commonly used data on wages in this argument are the monthly average of wages per employee. However, it should be noted that, during the early stage of an economic recovery, the monthly average of wages per employee does not rise as the number of part-time employees with short working hours and low wages increases. For example, suppose a wife whose husband is a regular employee begins to work as a part-time employee. The average wage of this couple will decline while their total household income will increase.

For this purpose, the focus should be on hourly wages of both full-time and part-time employees and employee income of all those who are employed. While hourly wages of full-time employees are not released, I estimate that these wages in real terms, as shown in

Chart 8, are more or less flat. Hourly wages of part-time employees are rising in real terms. Since March 2013, nominal hourly wages of full-time employees have declined marginally by 0.5 percent on an annualized basis, whereas those of part-time employees have been showing somewhat favorable results, marking an annual rate of increase of 1.4 percent.

As can be seen in Chart 9, since employment has been growing, employee income -- that is, total cash earnings multiplied by the number of employees -- has increased. Real employee income did not increase for a while following the April 2014 consumption tax hike, but there is nothing surprising about this because of the effects the hike caused. However, since April 2015 -- when the effects dissipated -- real employee income has also increased. Since March 2013, real and nominal employee incomes have been increasing at an annual rate of 0.7 percent and 1.9 percent, respectively.

Divergence between Employee Income and Consumption

At this point, I should note that something odd has been occurring. Employment has been growing steadily, and thus so has employee income. Therefore, a virtuous cycle in which an increase in income will bring about an increase in consumption, which in turn will lead to an increase in income, could have been operating more firmly. Similarly, as corporate profits have been at high levels, business fixed investment could have gained more resilience, but I will not touch upon this today. Why is it the case that consumption remains only steady despite an increase in income? One idea is that savings have been increased due to future uncertainty stemming from the aging of society. In fact, data supporting this view are available. Another factor that can explain this development is the effects of the consumption tax hike. Since paying consumption tax is a permanent duty, a 3-percent hike of the tax rate will result in a permanent reduction in real income by 3 percent, which might in turn induce a reduction in real consumption by the same percentage. The question remains, however, as to whether or not these are the only reasons for the divergence between income and consumption.

Quarterly preliminary estimates of GDP statistics integrate supply-side and demand-side data to make an estimate of private consumption. Monthly estimates of private consumption are compiled under the same method, and are released by the Cabinet Office as the

Synthetic Consumption Index (shown in Chart 5). Demand-side data, which are derived from the *Family Income and Expenditure Survey*, have been declining with significant fluctuations recently. In contrast, as indicated in Chart 10, estimates obtained from simple calculations using supply-side data[4] have been more or less flat or declining slightly on average, albeit with large fluctuations. As a matter of fact, in compiling annual revisions of the GDP data two years after every fiscal year-end, when all statistics are available for use, the GDP statistics do not employ the *Family Income and Expenditure Survey*. This suggests that, in fact, consumption statistics compiled by supply-side calculations present an actual picture of developments in consumption.

Therefore, it is likely that private consumption has been more or less flat or declining slightly, and that Japan's GDP has been exhibiting a continued slight increase. I personally think that this is true, considering the developments in employee income. There are arguments that the results obtained from the *Monthly Labour Survey* were worse than the actual situation due to changes in the sample establishments of the survey, but I will not discuss this today.[5] Of course, I am not denying that the economic recovery is still weak. That is why the Bank, after the introduction of QQE, has been enhancing its monetary easing by expanding QQE and by introducing QQE with a Negative Interest Rate.

Decline in Crude Oil Prices Has Been Weighing on Price Increases

Exports and production are sluggish at present. However, as the Bank has strengthened QQE, I presume that the economy consequently will recover, albeit at a moderate pace. In particular, employment has been improving continuously. Even so, some people may

[4] In observing actual developments in private consumption, various indicators and estimations are used. In this speech, estimates from supply-side data are presented by weighted averages of (1) the aggregate supply of consumer goods and (2) broad-ranging personal services excluding retail trade from Indices of Tertiary Industry Activity, by using the share of the System of National Accounts (SNA) statistics. Both (1) and (2) include consumption by foreign visitors to Japan (the so-called inbound consumption), which essentially should be excluded from the SNA statistics. Moreover, for estimating some items in the primary statistics of (2), demand-side data -- specifically, the *Family Income and Expenditure Survey* -- are applied. Despite these limitations, the abovementioned estimates have been made as a simple attempt.

[5] For details, please see page 4 of my speech entitled "Economic Activity and Prices in Japan and Monetary Policy," Speech at a Meeting with Business Leaders in Tochigi, November 11, 2015 (http://www.boj.or.jp/en/announcements/press/koen_2015/data/ko151111a1.pdf).

criticize the Bank for not being able to achieve the price stability target of a year-on-year rate of change in the CPI of 2 percent.

Indeed, as shown in Chart 11, prices do not appear to be rising, as the year-on-year rate of change in the CPI -- the price index that the Bank adopts as its price target for the time being -- was only 0 percent for all items less fresh food in February 2016. However, this was caused by a decline in energy prices due to the fall in crude oil prices worldwide, and prices in terms of the CPI for all items less fresh food and energy show a steady increase of 1.1 percent for February 2016. As energy prices will not continue falling forever, I am confident that the CPI including energy -- that is, CPI for all items less fresh food -- will also start to rise as the effects of the fall in energy prices dissipate.

Some argue that the Bank will not be able to achieve the price stability target as wages have not increased as much as anticipated, and thus upward pressure on prices could be weak. Certainly, it is better that wages increase, but prices have become more strongly correlated with hourly wages of part-time employees than with wages of full-time employees. This is because increases in hourly wages of part-time employees directly push up costs associated with the services and retail sectors in particular.[6]

Concluding Remarks

QQE with a Negative Interest Rate is an enhancement of the existing policy of QQE, in that it shifts the economy to a better condition by driving down real interest rates.

This policy with a negative interest rate has been exerting its intended effects, in combination with the qualitative and quantitative measures used so far under QQE. Specifically, employment has continued to recover, although the negative impact of the April 2014 consumption tax hike had been protracted, and exports and production have become somewhat sluggish recently, partly due to the effects of the volatile movements in the global economy since the start of 2016. The active job openings-to-applicants ratio has risen in all regions, although it had been said that Abenomics would not benefit local

[6] For details, see Box 3 entitled "Labor Market Conditions and Wages of Part-Time Employees" of *Outlook for Economic Activity and Prices*, January 2016.

economies. It also has been said that wages have not increased despite the rise in employment, but hourly wages have been rising. Employee income -- that is, wages multiplied by the number of employees -- also has increased in real terms. Consumption remains weak, but the figures compiled in the consumption statistics tend to turn out weaker than the actual situation due to statistical limitations. Looking ahead, Japan's economy is likely to recover steadily as the correction of the volatile movements in the global economy progresses.

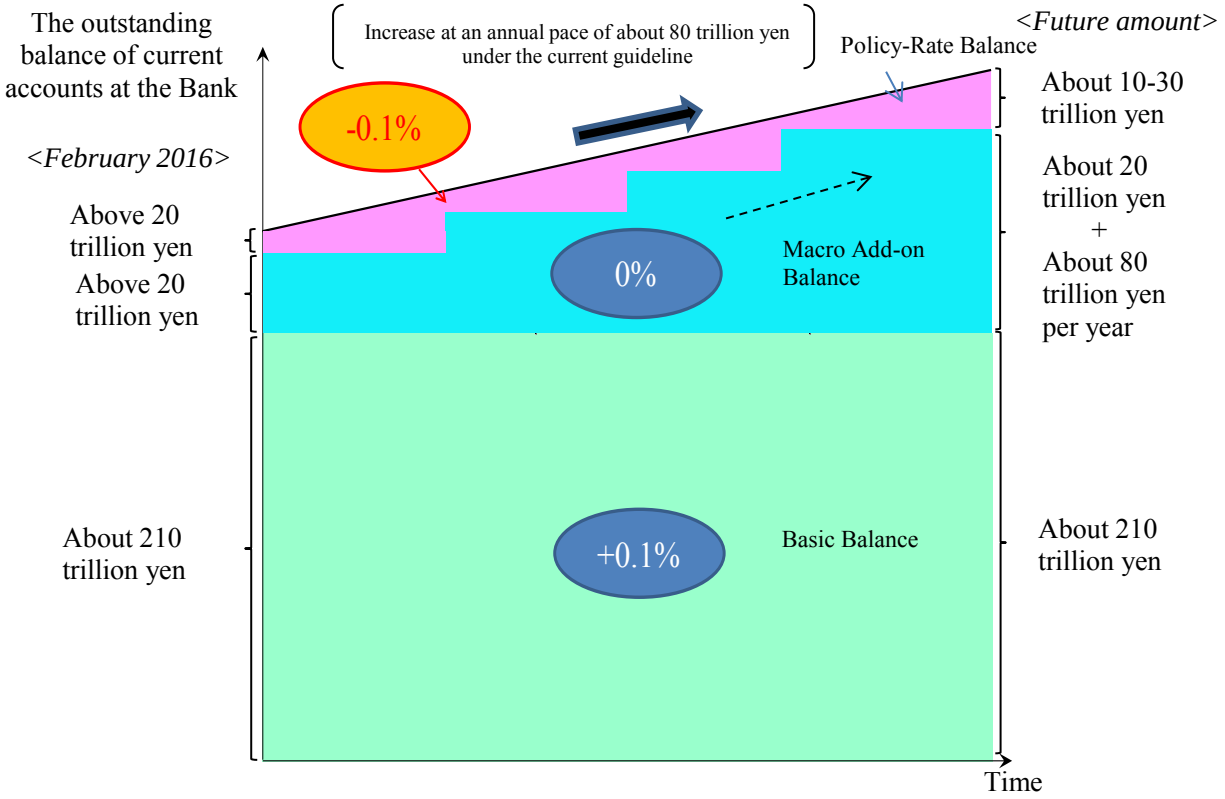
Prices have not risen as much as initially had been expected, but this is due to the fall in crude oil prices. As these prices stabilize, prices will rise. However, I think that QQE would be a serious failure if prices rose without employment growth. Prices eventually will start rising as the output gap in the overall economy tightens and the unemployment rate declines.

However, there are still risks of economic deceleration in Japan, caused by factors such as (1) a further slowdown in emerging economies, particularly China, (2) the possibility of an unexpected shock on the global financial markets stemming from developments in the U.S. economy and its monetary policy response, and (3) prospects regarding the European debt problem. This could bring a halt to the operation of the virtuous cycle of income to spending, with employment deteriorating, and consequently undermine the mechanism through which prices trend upward. If these risks materialize, I think that the Bank should implement additional monetary easing without any hesitation. Particular attention also should be paid to the fact that indicators of employment are lagging those of economic activity.

Thank you for your attention.

Three-Tier System

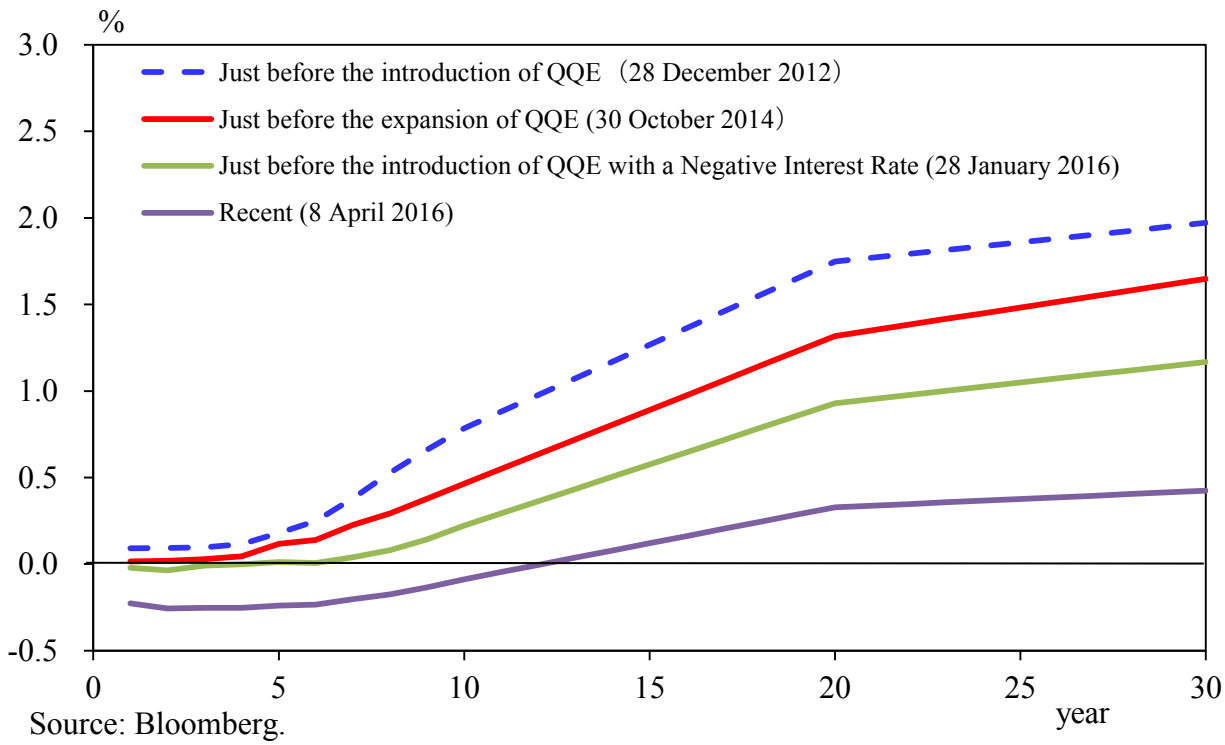
Chart 1



Note: A positive interest rate of 0.1 percent is applied to the "Basic Balance" after deducting required reserves. A zero interest rate is applied to the "Macro Add-on Balance," which refers to the sum of the amounts outstanding of the required reserves and the Bank's provision of credit through the Loan Support Program and other facilities. A negative interest rate of minus 0.1 percent is applied to the "Policy-Rate Balance."

JGB Yield Curve

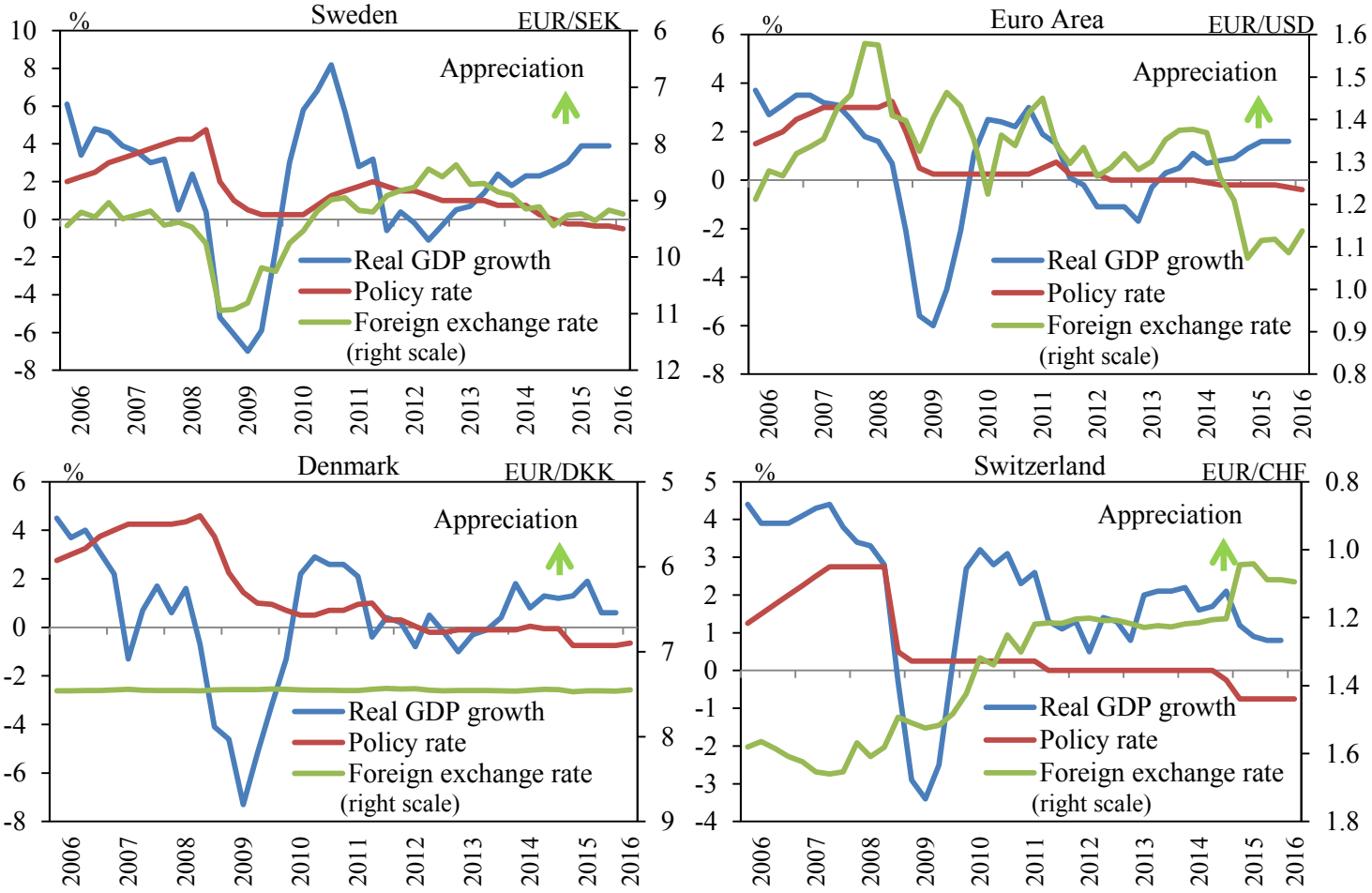
Chart 2



Source: Bloomberg.

Economic Situation in European Countries

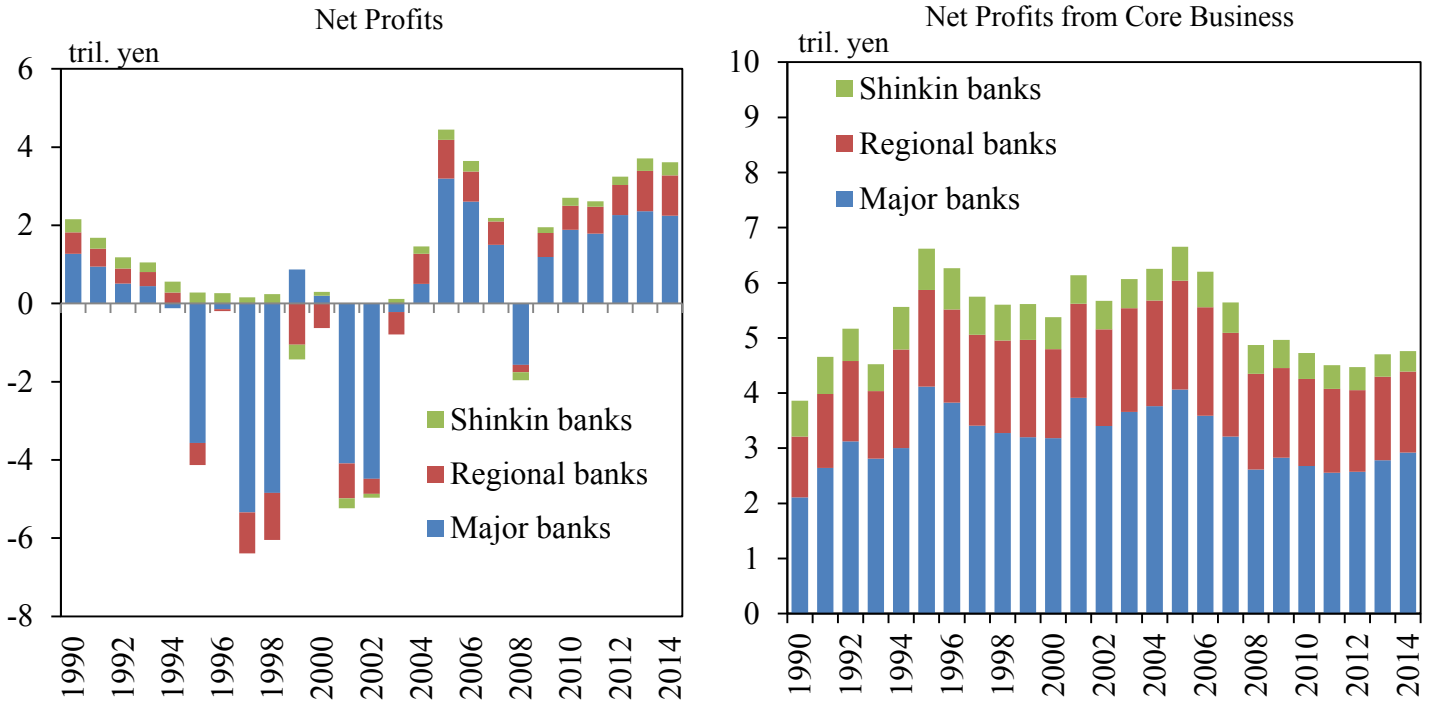
Chart 3



Note: Real GDP growth indicates year-on-year growth rate of real GDP.
Source: Bloomberg.

Financial Institutions' Profits

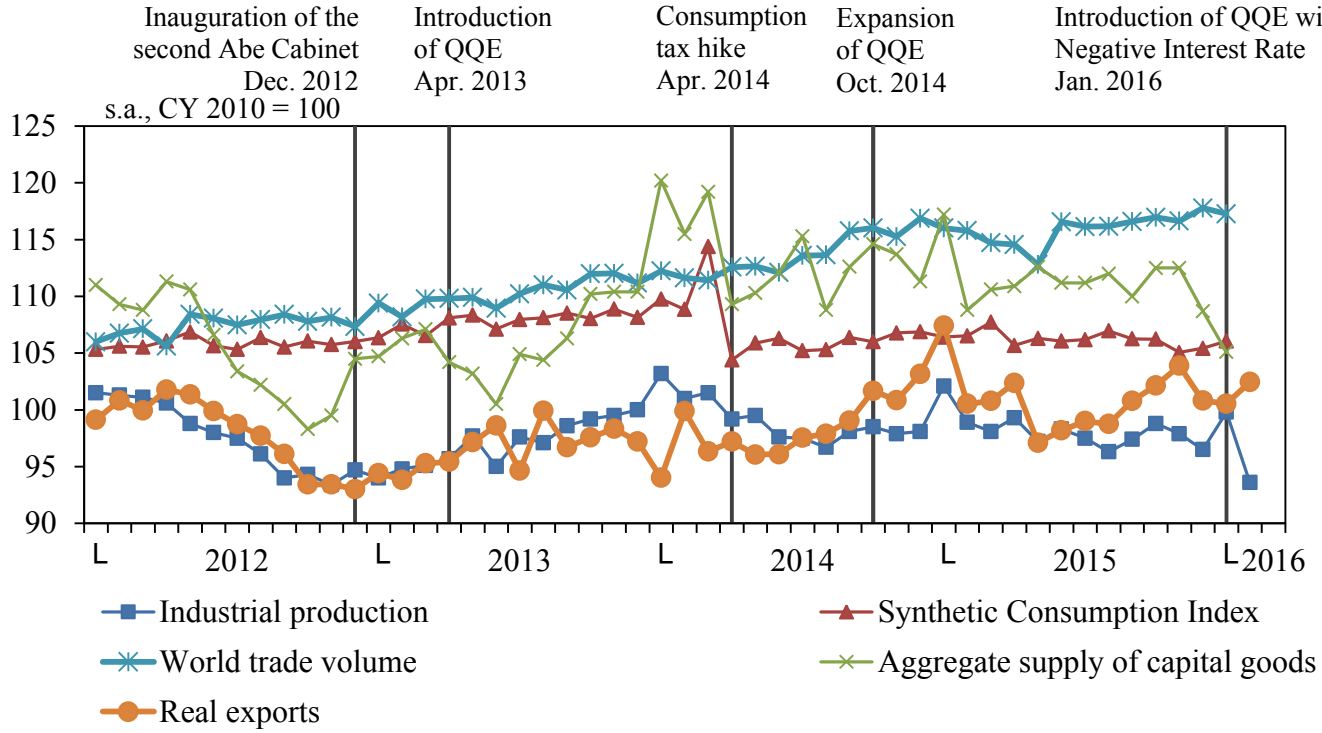
Chart 4



Source: Bank of Japan.

Production, Consumption, and Investment

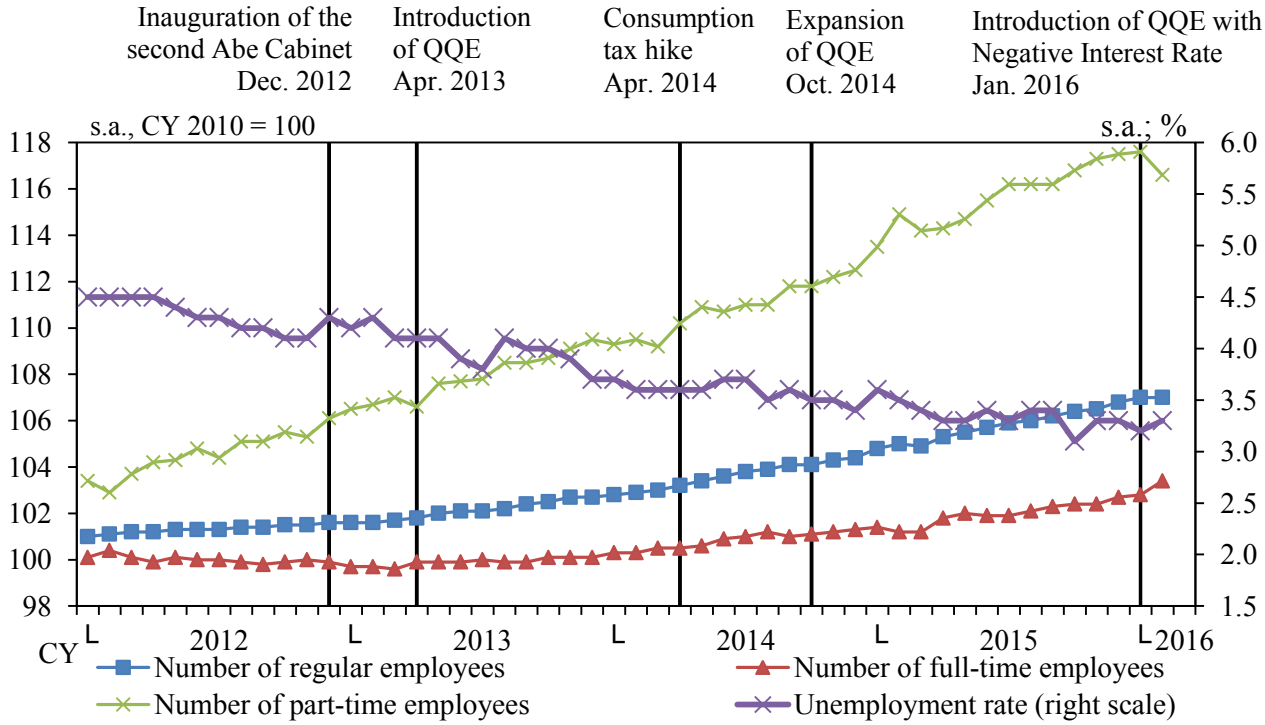
Chart 5



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

Number of Employees and the Unemployment Rate

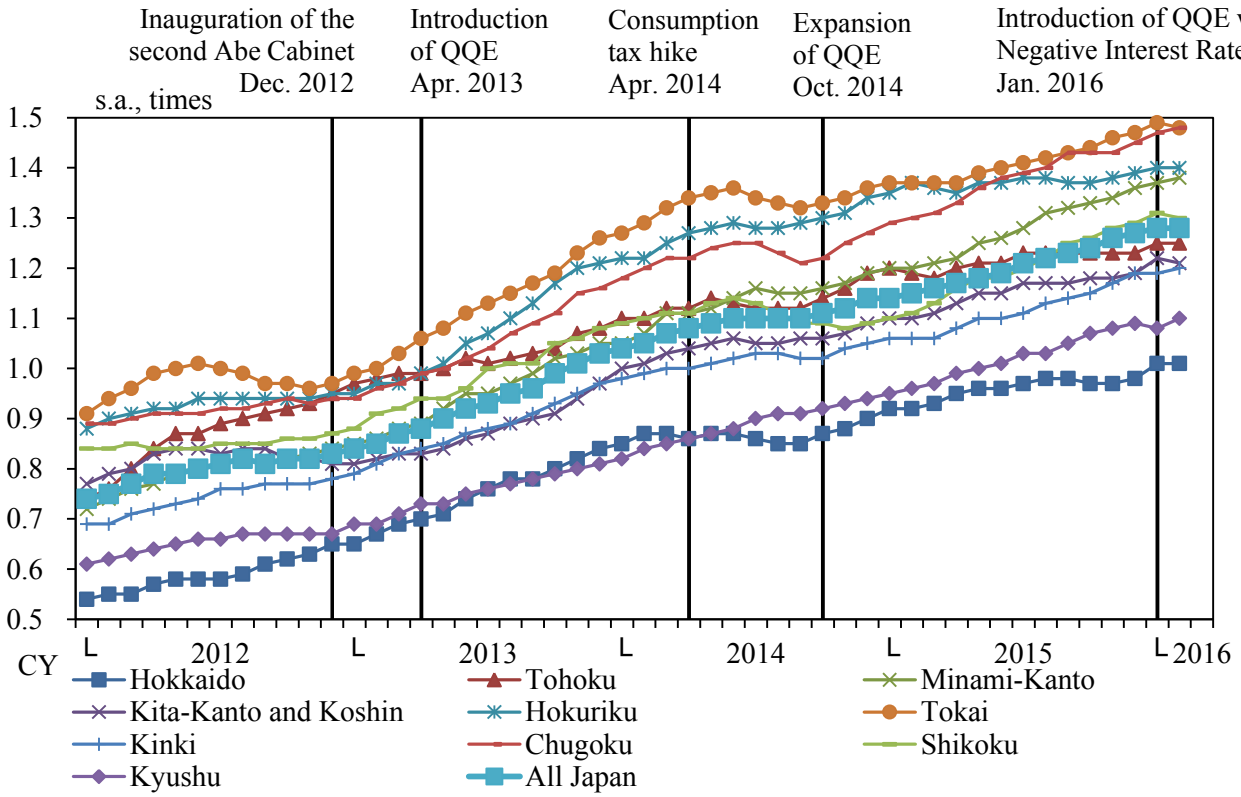
Chart 6



Sources: Ministry of Health, Labour and Welfare, "Monthly Labour Survey"; Ministry of Internal Affairs and Communications, "Labour Force Survey."

Chart 7

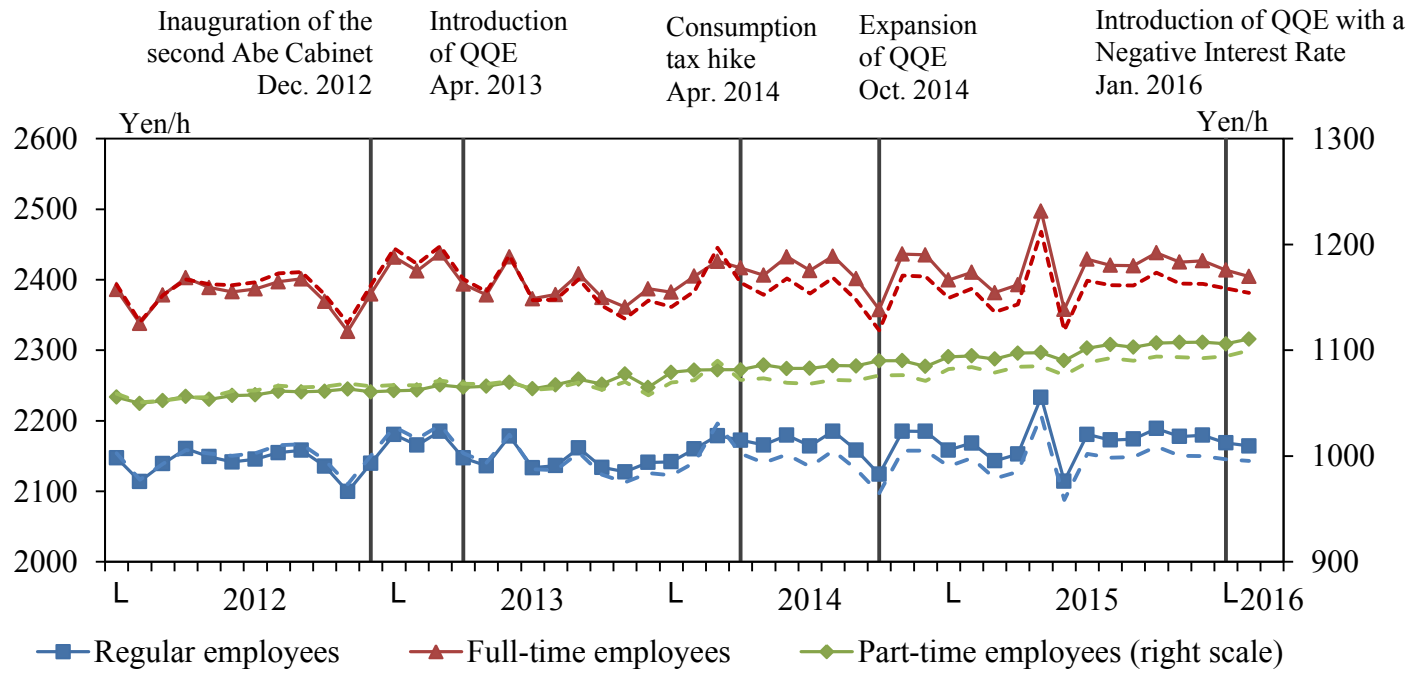
Regional Active Job Openings-to-Applicants Ratio



Source: Ministry of Health, Labour and Welfare, "Employment Referrals for General Workers."

Chart 8

Hourly Wages

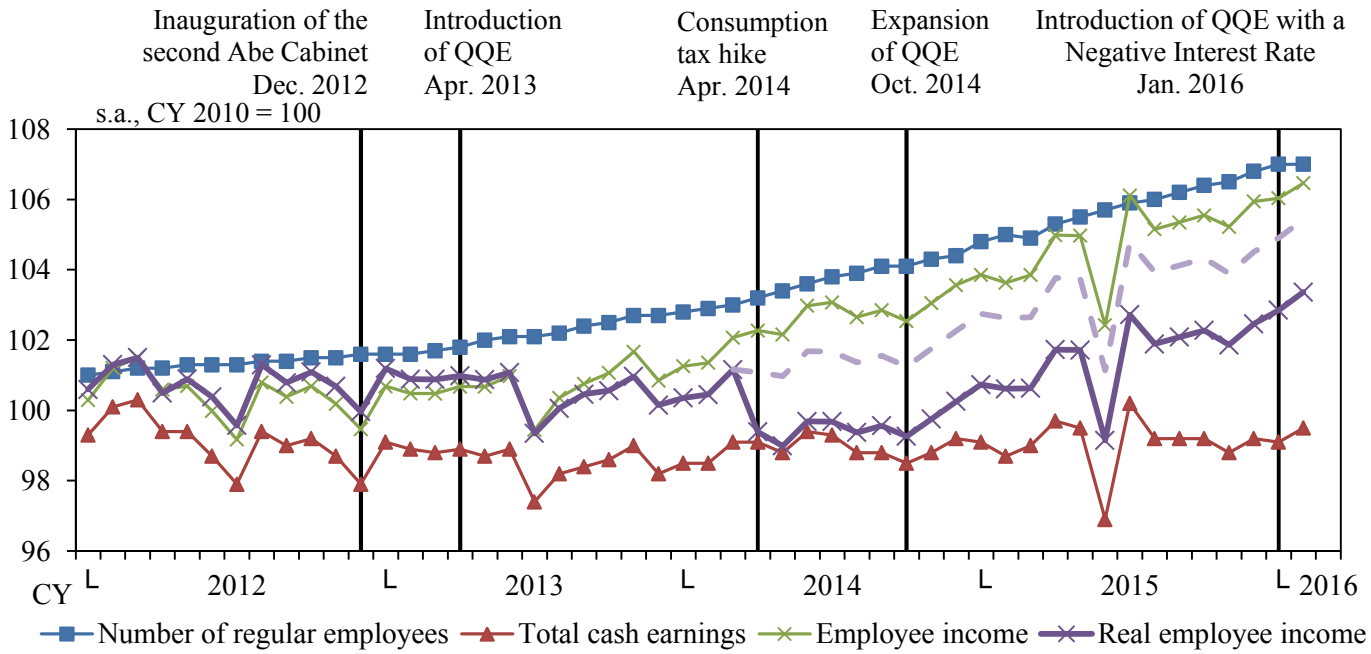


Note: The solid lines and dashed lines denote nominal hourly wages and real hourly wages, respectively. Calculated as the total cash earnings per employee divided by the total hours worked. Excluding the effects of the consumption tax hike. Seasonally adjusted by X-11.

Source: Ministry of Health, Labour and Welfare, "Monthly Labour Survey."

Wages, Employment, and Income

Chart 9

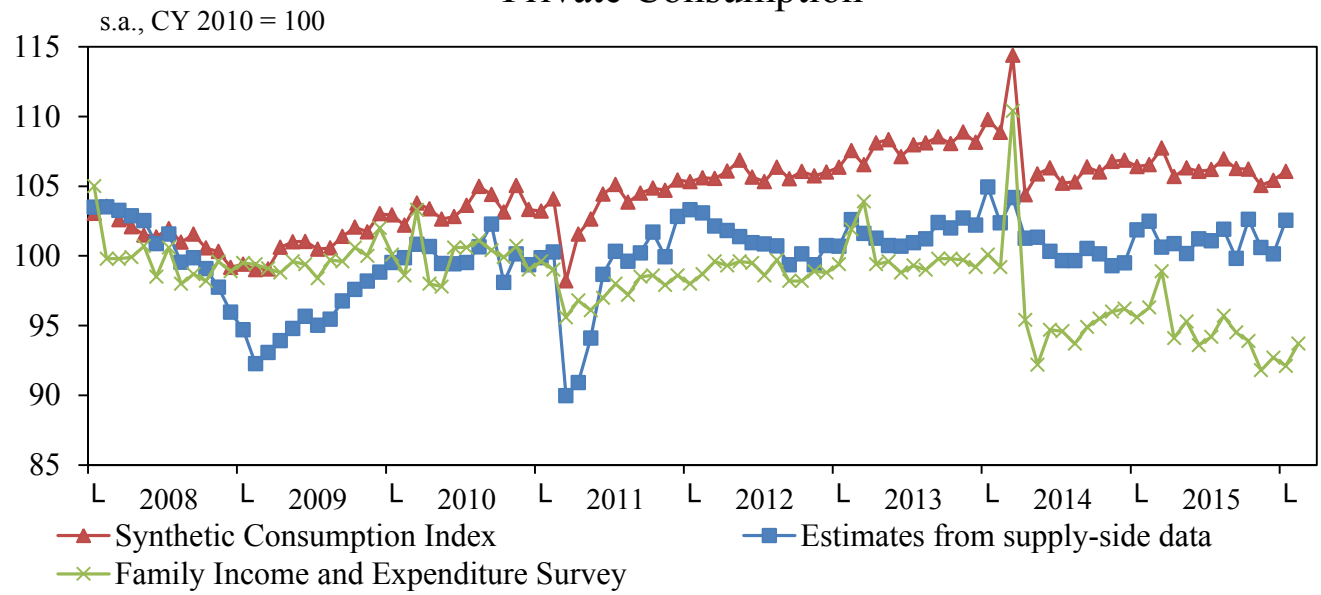


Note: Employee income is calculated as the number of regular employees multipled by total cash earnings. Real employee income is deflated by the CPI (all items less fresh food). Dashed line denotes real employee income excluding the effects of the consumption tax hike.

Sources: Ministry of Health, Labour and Welfare, "Monthly Labour Survey"; Ministry of Internal Affairs and Communications, "Consumer Price Index," "Family Income and Expenditure Survey."

Private Consumption

Chart 10

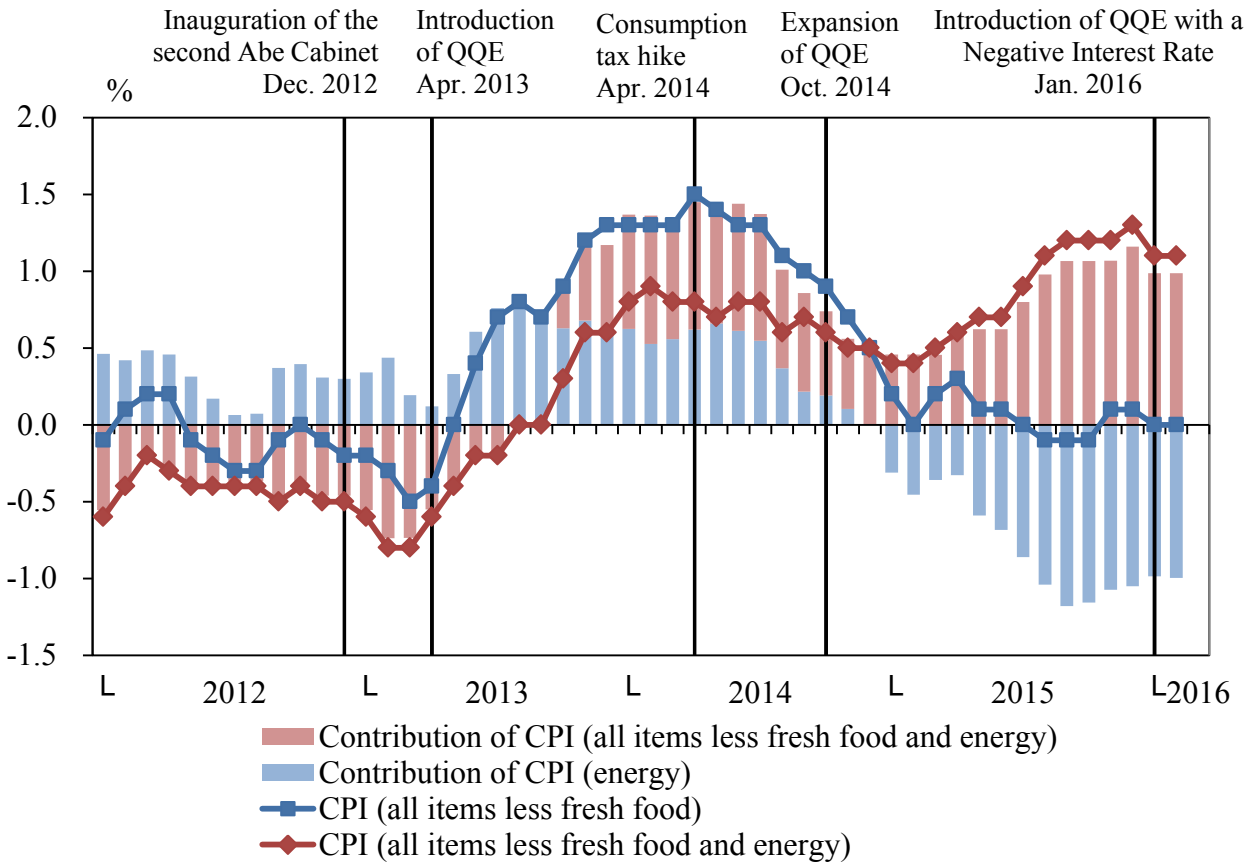


Note: Estimates from supply-side data are weighted averages of the aggregate supply of consumer goods and broad-ranging personal services excluding retail trade from Indices of Tertiary Industry Activity, by using the share of SNA statistics.

Sources: Ministry of Economy, Trade and Industry, "Indices of Industrial Domestic Shipments and Imports," "Indices of Tertiary Industry Activity"; Cabinet Office, "Synthetic Consumption Index"; Ministry of Internal Affairs and Communications, "Family Income and Expenditure Survey."

Breakdown of the CPI (All Items Less Fresh Food)

Chart 11



Source: Ministry of Internal Affairs and Communications, "Consumer Price Index."