# Hiroshi Nakaso: Japan's economy and monetary policy

Speech by Mr Hiroshi Nakaso, Deputy Governor of the Bank of Japan, at a meeting with business leaders, Ehime, 9 March 2015.

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*Accompanying charts can be found at the end of the speech.*

## Introduction

It is my pleasure to have the opportunity today to exchange views with administrative, financial, and business leaders in Ehime Prefecture. I would like to take this opportunity to express my sincerest gratitude for your cooperation with the activities of the Bank of Japan's Matsuyama Branch.

The Bank thinks that it is of overriding importance for Japan's economy to overcome protracted deflation and attain sustainable growth. To achieve this, the Bank introduced quantitative and qualitative monetary easing (QQE) in April 2013 and expanded it in October 2014. Under this policy, Japan's economy has been making steady progress toward achieving the price stability target of 2 percent. Nevertheless, some have expressed doubts, arguing that it will be difficult to achieve 2 percent inflation in about 2 years, or that if inflation is generated artificially, this would undermine people's standard of living. Today, I would like to talk about recent economic developments in Japan and then explain the Bank's monetary policy conduct and price developments. I hope this will also help to dispel the doubts I just mentioned.

## I. Current situation of and outlook for economic activity at home and abroad

To start with, let me talk about the current situation of Japan's economy. The decline in demand following the consumption tax hike has had somewhat prolonged effects on the economy, especially on sales of durable consumer goods such as automobiles and household electrical appliances reflecting the large extent of front-loading of purchases. However, Japan's economy has continued its recent moderate recovery trend, with a virtuous cycle from income to spending operating steadily in both the household and corporate sectors. I will discuss the current situation of and outlook for overseas economies and business operations, the household sector, and the corporate sector in order.

### *Overseas economies and Japan's exports*

First, overseas economies, led by advanced economies, have been recovering on the whole, although performance in some parts remains lackluster. With the decline in crude oil prices likely to exert a positive effect, overseas economies, led mainly by advanced economies, are expected to continue recovering moderately, and positive effects of the recovery are expected to gradually feed through to emerging economies and commodity-exporting economies. In this context, it is worth noting that in the *World Economic Outlook* (WEO) *Update* published in January, the IMF revised its outlook for the world economy downward due to the deceleration of global growth to date, but it maintains its view that global growth will increase gradually: after registering 3.3 percent in 2014, global growth is expected to reach 3.5 percent in 2015 and 3.7 percent in 2016 (Chart 1). Japan's exports – after showing some continued weakness despite the depreciation of the yen – have been picking up recently, increasing for two consecutive quarters (Chart 2). The depreciation of the yen now, with a delay, appears to be starting to have a positive effect on export volumes. Regarding the outlook, exports are expected to increase moderately against the background of the continued moderate recovery in overseas economies.

### *Employment and income situation and household spending*

Turning to the household sector and starting with the employment and income situation, labor market conditions have continued their steady improvement. The unemployment rate has declined to around 3.5 percent, which is roughly the same level as the structural unemployment rate, and the active job openings-to-applicants ratio now stands at 1.14, marking the highest level since April 1992 (Chart 3). Against the background of this tightening in labor market conditions, the year-on-year rate of increase in total cash earnings per employee has been accelerating moderately, albeit with fluctuations (Chart 4). Given these developments in employment and wages, employee income has risen moderately.

Against the background of steady improvement in the employment and income situation, private consumption as a whole has remained resilient, although recovery in some areas has been sluggish (Chart 5). Housing investment, which saw large front-loading prior to the consumption tax hike, has started to bottom out. Meanwhile, consumer confidence, which had become increasingly cautious since last summer, has recently bottomed out (Chart 6).

The employment and income situation is likely to continue to improve steadily, since wages are expected to rise in the annual wage negotiations this spring. Amid this situation, private consumption is expected to remain firm and housing investment is projected to regain its firmness.

### *Corporate profits and developments in fixed investment*

Finally, let me turn to the corporate sector. Corporate profits have continued to improve thanks partly to the depreciation of the yen to date. Looking at the *Financial Statements Statistics of Corporations by Industry*, coupled with an increase in sales, the ratio of firms' current profits to sales has recently reached around 5 percent for all industries and firms of all sizes – a high level that exceeds that prior to the global financial crisis (Chart 7). Corporate profits are expected to continue to be on an improving trend as falling crude oil prices and the yen's depreciation to date are likely to contribute to pushing up profits.

With corporate profits improving, business fixed investment has been on a moderate increasing trend (Chart 8). As for the outlook, with corporate profits continuing to be on an improving trend, business fixed investment is likely to continue following a moderate improving trend against the background that (a) the sense among firms that they have excess capital has been waning, (b) firms are expected to increase labor saving investment due to the tightening of labor market conditions, and (c) with the depreciation of the yen, Japanese firms appear to have started to increase the share of fixed investment at home. In fact, with regard to the last point, at the meeting of general managers of the Bank's branches in January there were reports of cases where firms were increasing their production and fixed investment at domestic bases against the backdrop of the yen's depreciation.

Production decreased for two consecutive quarters in the April-June quarter and the July-September quarter last year, but due in part to subsequent progress in inventory adjustments, it started to increase again in the October-December quarter and continued to increase in January this year (Chart 9). Against the backdrop of an increase in final demand, production is expected to moderately increase going forward.

Therefore, with a virtuous cycle from income to spending operating in both the household and corporate sectors, Japan's economy has continued its moderate recovery trend. Going forward, this virtuous cycle is likely to continue operating with the fall in crude oil prices to date and the government's economic stimulus working as boosting factors, and thus Japan's economy is expected to continue its moderate recovery trend. In terms of the Bank's Policy Board members' forecasts released in the January interim assessment of the October 2014 *Outlook Report for Economic Activity and Prices* (hereafter the Outlook Report), the real GDP growth rate was projected to be minus 0.5 percent in fiscal 2014, but 2.1 percent in fiscal 2015, and 1.6 percent in fiscal 2016 – in other words, it was expected to grow above the potential growth rate, which is estimated to be around 0.5 percent or lower (Chart 10).

## II. Japan's price developments and monetary policy

I will next talk about the Bank's conduct of monetary policy and the price situation in Japan.

As I mentioned at the outset, the Bank, in order to achieve the price stability target of 2 percent at the earliest possible time, with a time horizon of about 2 years, introduced QQE in April 2013 and expanded it at the end of October 2014.

### *Aim of quantitative and qualitative monetary easing*

Let me summarize the transmission mechanism of QQE. The starting point of the mechanism is converting people's deflationary mindset and thereby raising inflation expectations through the strong commitment by the Bank to achieve the 2 percent target. At the same time, the Bank has been exerting downward pressure on nominal interest rates through its massive purchases of JGBs in order to encourage a decline in real interest rates and stimulate private demand such as business fixed investment. The idea is that, together with the increase in inflation expectations, this will lead to an increase in inflation rates.

This might give rise to the question why it is necessary not only to stimulate aggregate demand but also to raise inflation expectations. The reason is that the price stability that the Bank ultimately aims at is not one that is achieved temporarily but one that is achieved on a sustainable basis. If aggregate demand is stimulated, inflation may rise to temporarily reach 2 percent, but will not be sustained in a stable manner as long as people make decisions or engage in economic activity on the basis of low inflation. By contrast, if medium- to long-term inflation expectations rise to 2 percent, that is, people make decisions and engage in economic activity based on the assumption of 2 percent inflation, the inflation rate will gravitate to 2 percent even if it fluctuates due to business cycles and changes in commodity prices. That is, over the cycle, prices will hover at around 2 percent on average. To this end, in order to sustain the price stability target of 2 percent in a stable manner, it is necessary for inflation expectations to rise to 2 percent and be anchored at that level.

### *Expansion of quantitative and qualitative monetary easing*

Based on this aim, QQE has been producing its intended effects and the year-on-year rate of change in the CPI (excluding fresh food) increased from minus 0.5 percent immediately before the introduction of QQE to a range of 1.0–1.5 percent through summer last year (Chart 11). Meanwhile, people's inflation expectations also increased on the whole and there was steady progress in dispelling the deflationary mindset (Chart 12).

However, since summer last year, due mainly to the substantial decline in crude oil prices as well as somewhat weak developments in demand after the consumption tax hike, the year-on-year rate of increase in the CPI has slowed (Chart 11). If this situation had continued, there was a risk that conversion of the deflationary mindset, which has so far been progressing steadily, might be delayed. If this risk had manifested itself, this would have interfered with the transmission mechanism of QQE, which starts with the rise in inflation expectations. To preempt the manifestation of such risk and to maintain the improving momentum of expectation formation, the Bank expanded QQE in October.

Let me explain in more detail. In the short term, falling crude oil prices will lower inflation, but in the longer term, they will have a positive effect on economic activity in an oil-importing country like Japan and hence push up prices. The reason is that the fall in energy prices will lead to a rise in corporate profits and households' purchasing power; that is, Japan's terms of trade improve. Given that Japan's crude oil imports in fiscal 2013 amounted to almost 15 trillion yen, a back-of-the-envelope calculation shows that with the decline in crude oil prices from about 100 dollars per barrel up until last summer to the recent level of about 50 dollars per barrel, the oil price decline represents an increase in annual income to Japan's economy of more than 7 trillion yen. This is why, from a longer-term perspective, falling oil prices will have a positive effect on economic activity and will push up prices. Thus, other things being equal, the fall in crude oil prices will initially lead to a decline in the inflation rate but the inflation rate will then start to rise once the impact of falling oil prices on the year-on-year rate of change in prices dissipates.

Therefore, if falling oil prices lower inflation but inflation expectations remain unaffected and inflation keeps heading toward 2 percent as a trend, there is no need to respond through monetary policy. On the other hand, if falling crude oil prices do affect medium- to long-term inflation expectations and it is judged difficult to achieve 2 percent inflation in the future, a monetary policy response will be necessary. As I mentioned, the Bank did not embark on additional easing as an automatic response to falling crude oil prices; rather, with the year-on-year rate of increase in the CPI being sluggish due mainly to falling oil prices, the Bank carried out additional easing to preempt the manifestation of any risk that the conversion of the deflationary mindset might be delayed and the underlying trend in inflation be adversely affected.

### *Assessing the underlying trend in inflation*

In conducting monetary policy, it is critical to accurately assess the underlying trend in inflation. So, how should developments in the underlying trend in inflation be assessed? While inflation reflects temporary fluctuations such as those in commodity prices, the underlying trend in inflation is determined by the output gap and medium- to long-term inflation expectations. Therefore, in order to assess the underlying trend in inflation, it is critical to evaluate these two factors. Medium- to long-term inflation expectations are reflected not only in market-based indicators, such as the break-even inflation rate gauged from inflation-indexed bonds, or in data from various surveys of firms, households, and economists. Instead, since the term "inflation expectations" refers to the inflation rate expected by the general public – and hence expectations underlying people's decision-making and economic activity – inflation expectations are reflected in everyday economic activities such as firms' price-setting behavior, wage negotiations between management and labor, and households' consumption patterns. Looking at wages, base pay increased for the first time in a long time in last year's annual spring wage negotiations between management and labor based on the assumption that general prices would increase. In addition, instead of simply searching for low-priced goods, consumers have started to purchase somewhat higher-priced goods provided that the quality matches the price, and firms' price-setting stance has changed accordingly. These developments provide evidence of a rise in inflation expectations, indicating that there has been steady progress in changing the deflationary mindset.

In examining price indicators, it is necessary to monitor not a single index but various indicators to assess the underlying trend in inflation. The Bank has been examining indicators such as the headline CPI, the CPI less fresh food (the so-called core CPI), the CPI less food and energy (the so-called core-core CPI), the trimmed mean CPI, which excludes highly volatile items, and the ratio of the number of items that registered a price increase to that of items that registered a price decrease. The Bank even analyzes developments in each CPI item component as necessary. In presenting the projections for prices, the Bank uses the CPI (excluding fresh food) as an indicator that tends to represent the underlying trend in inflation adequately under normal circumstances. However, this index includes energy prices and thus will temporarily decline when, as currently the case, crude oil prices have been declining substantially, so that it becomes difficult to assess the underlying trend in inflation using only this index. Therefore, in the January interim assessment, in addition to the forecasts for the CPI (excluding fresh food), the Bank showed the estimated contribution of energy items to the index.

### *Future price developments and monetary policy*

Based on what I have explained so far, let me talk about the outlook for prices. The year-on-year rate of increase in the CPI (excluding fresh food), after 0.9 percent in fiscal 2014, in the January interim assessment of the Outlook Report is projected to be only 1.0 percent in fiscal

2015 due to the effects of the substantial decline in crude oil prices to date (Chart 10). Nevertheless, we are of the view that the underlying trend in inflation will rise steadily. Specifically, the output gap, which determines the underlying trend in inflation, is likely to continue improving as Japan's economy continues to grow above potential as a trend. In addition, inflation expectations will also likely rise steadily. In fact, at the annual spring wage negotiations between management and labor this year, labor unions have requested larger wage increases than those of last year and firms' management has generally taken a positive stance toward such an increase. Since work patterns have become more diverse, an increase in wages can take various forms such as an increase in base pay, bonuses, or various allowances, but whatever form it takes, the transformation of people's deflationary mindset is likely to make further progress if total wages actually rise. In addition, on a year-on-year basis, the effect of the decline in crude oil prices falls away after a year. Therefore, while the year-on-year rate of change in the CPI (excluding fresh food) is likely to be small in the first half of fiscal 2015 due to effects of the decline in crude oil prices to date, assuming that crude oil prices will rise moderately from their current level, it is expected to accelerate in the second half of fiscal 2015 as the effect of the fall in crude oil prices dissipates, and is expected to reach around 2 percent in or around fiscal 2015. Subsequently, for fiscal 2016 the year-on-year rate of increase in the CPI (excluding fresh food) is projected to reach 2.2 percent as the economy continues to grow above the potential growth rate and the output gap improves in positive territory. Since crude oil prices have recently been fluctuating substantially, the 2 percent inflation rate, depending on developments in crude oil prices, may be achieved somewhat sooner or later than envisaged. That said, however, let me reiterate that in our view, what matters is the underlying trend in inflation.

Going forward, the Bank will continue with QQE, aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner. Of course, the Bank will make adjustments as necessary to achieve the price stability target at the earliest possible time, if there are changes in the underlying trend in inflation.

### *Regional economies after the 2 percent target has been achieved*

As explained, the Bank believes that the price stability target of 2 percent can be achieved through continuing with QQE. On the other hand, some have argued that QQE may lead only to higher inflation, which would undermine people's standard of living. Therefore, let me talk about why it is necessary to aim at 2 percent.

Under deflation, the real value of cash and deposits increases simply by holding them. Therefore, hoarding cash and deposits becomes a better investment than actual investment. In Japan, as a result of protracted deflation, firms' investment in business facilities and in research and development remained restrained, which deprived the economy of potential growth and led to a loss of vitality. Such subdued business fixed investment is one reason that Japan's potential growth rate has been on a declining trend (Chart 13). However, in an economy in which prices rise steadily at a rate of 2 percent, the situation changes drastically. That is, since the real value of cash and deposits will erode over time, firms need to make effective use of their funds in hand in the form of investing in business facilities and in research and development as well as recruiting and developing human resources. Proactive behavior such as venturing into new business areas will also increase. Such developments will enhance firms' competitiveness and productivity, and consequently result in restoring the vitality of Japan's economy as well as raising the growth potential. Japan's economy as a whole will likely expand accompanied by a virtuous cycle among income, spending, and production. What the Bank is aiming at is not to reach a state in which only prices rise, but one in which the economy expands with corporate profits and wages rising, and the price stability target of 2 percent is achieved.

At present, Japan's economy is still in the process of overcoming protracted deflation. The gains from the improving economic situation differ substantially between large and small firms and between urban and regional areas rather than being evenly spread. Going forward, as the economy as a whole continues to grow with the virtuous cycle continuing to operate, corporate profits and employee income are likely to improve further and the gains of the economic recovery are expected to spread.

Of course, achieving the price stability target of 2 percent in itself will not solve the challenges regional economies face and raise their growth. Population decline and aging are progressing more rapidly in regional than in urban economies, necessitating medium- to long-term initiatives to raise growth in the regions. Economic growth is determined by the growth rate of the population and the growth rate of per capita value added. As for the population growth rate, there were only eight prefectures, among them Tokyo and Aichi, in which the population increased in the year to October 2013. In addition, regional areas relatively have a higher population share of those aged 65 or older and a lower working-age population share – those aged 15–64 – than urban areas. Wages reflect value added per worker, and there are only five prefectures – all in metropolitan areas – in which wages are above the national average: Tokyo, Kanagawa, Aichi, Kyoto, and Osaka.

It is not going to be easy to stem the population decline and achieve a population increase in regional areas while the population of Japan as a whole continues to fall. This means that it is necessary to first raise the productivity of firms located in the regions and enhance the value added that they produce. In fact, regional areas could take a number of initiatives to enhance value added in ways that differ from those of metropolitan areas, such as combining primary, secondary, and tertiary industries into "a sixth industry," product branding, and using local history, culture, and the natural environment to promote tourism. Rising productivity will enable firms to raise wages, which in turn could lead to a virtuous cycle encouraging people to stay in or move to regional areas, since regional areas in fact offer many attractions, such as allowing people to live close to their workplace and to live in an environment that facilitates raising children.

As mentioned earlier, in an economy in which the price stability target of 2 percent is sustained in a stable manner, it is advantageous to make effective use of cash and deposits for investment or human resource development rather than hoarding them. The Bank would like to reach this point as soon as possible and support firms' initiatives. In addition, the Bank decided in January to extend the Fund-Provisioning Measure to Support Strengthening the Foundations for Economic Growth and the Fund-Provisioning Measure to Stimulate Bank Lending by one year and to increase the maximum amount of funds for the former. Concurrently, the Bank decided to introduce a new framework for enabling financial institutions that do not have a current account at the Bank and thus were not eligible, such as credit cooperatives and agricultural cooperative associations, to use these fund-provisioning facilities through their central organizations. I hope that these facilities will be used extensively for the development of regional economies.

## Conclusion

In concluding, let me touch on the economy of Ehime Prefecture.

Looking at the current state of the economy of Ehime Prefecture, while private consumption has been somewhat slow to pick up, overall, a virtuous cycle from income to spending has been operating just as in Japan as a whole, with production at a high level and the employment and income situation improving steadily.

In addition, partly due to falling crude oil prices, corporate profits have generally been favorable. However, as I mentioned earlier, the gains from the economic recovery have been unevenly distributed in terms of industries and firm size. Specifically, reflecting the depreciation of the yen, there have been significant improvements in orders and profits in shipbuilding, maritime industries, and other manufacturing industries with a global presence, whereas improvements in business sentiment have remained moderate in the pulp and paper industry as well as among many nonmanufacturing small firms due mainly to the increase in input prices.

There are also various initiatives to boost Ehime's economy. There have been encouraging examples. The "Imabari towel" product branding is famous for its considerable success and the industry has made a remarkable comeback. Recently, shipbuilding firms have built new large-scale docks, and some firms in the region have enhanced their production and research and development bases in the region. In addition, firms have also been active in expanding sales channels through cooperating with administration and financial institutions. The united efforts by related parties will substantially contribute to raising the productivity of the regional economy.

In the tourism sector, there were ambitious initiatives last year incorporating cycling and the arts into existing tourism resources to enhance the profile and attractiveness of the region, such as "Setouchi Shimanowa 2014" in areas around the Shimanami Kaido bicycle path and "Dogo Onsen Art" in Dogo Onsen. In addition, Shikoku region was featured in the web version of the well-known Michelin Green Guide, boosting the region's international profile. While tourists from abroad tend to concentrate on metropolitan areas, Hokkaido, and Okinawa, promoting the region's attractions not only to domestic but also to overseas tourists has the potential to substantially boost the regional economy.

Furthermore, the regional revitalization plan of Saijo City was the only plan in Shikoku region to be designated as a model of vitalization of the local economy. Regarding the vitalization of the local economy, the government asked prefectures and municipalities to establish during fiscal 2015 their own long-term vision to overcome population decline and formulate regional versions of the government's comprehensive strategy for vitalizing local economies. Ehime Prefecture, with a population that is declining and aging faster than Japan's population as a whole, will also need to implement comprehensive policy measures to raise the value added of regional industries in order to increase the productivity of the regional economy and to attract those in their prime of life or raising children to the prefecture.

I believe that specific initiatives will be considered through further cooperation between the administration and the private sector, and the Bank's Matsuyama Branch will conduct analyses of the regional economy so as to contribute to such examination as much as possible.

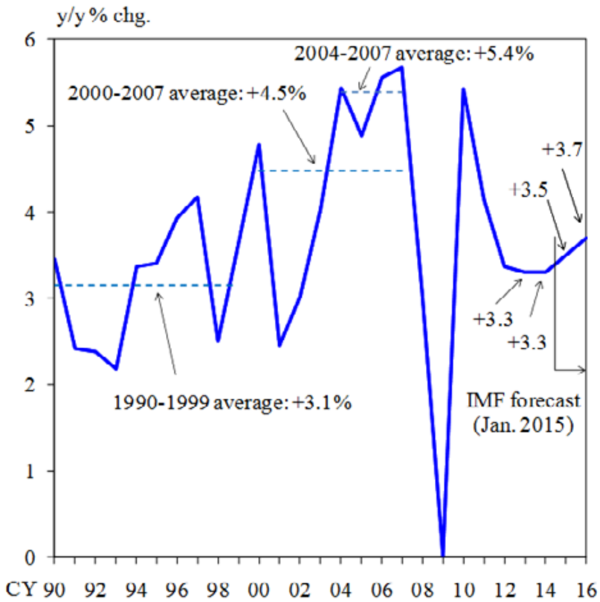
In closing, I wish all the best for the further development of the regional economy.

Thank you.

Chart 1

# World Economy

*Real GDP Growth Rate*




*Projections for Major Economies*

y/y % chg.

| | 2013 | 2014 | Projections 2015 | Projections 2016 |
|---|---|---|---|---|
| World | 3.3 | 3.3 | 3.5 (-0.3) | 3.7 (-0.3) |
| Advanced Economies | 1.3 | 1.8 | 2.4 (0.1) | 2.4 (0.0) |
| United States | 2.2 | 2.4 | 3.6 (0.5) | 3.3 (0.3) |
| Euro Area | -0.5 | 0.8 | 1.2 (-0.2) | 1.4 (-0.3) |
| Japan | 1.6 | 0.1 | 0.6 (-0.2) | 0.8 (-0.1) |
| Emerging Market and Developing Economies | 4.7 | 4.4 | 4.3 (-0.6) | 4.7 (-0.5) |
| China | 7.8 | 7.4 | 6.8 (-0.3) | 6.3 (-0.5) |

Note: Figures in parentheses are the difference from the October 2014 WEO projections.
Source: IMF

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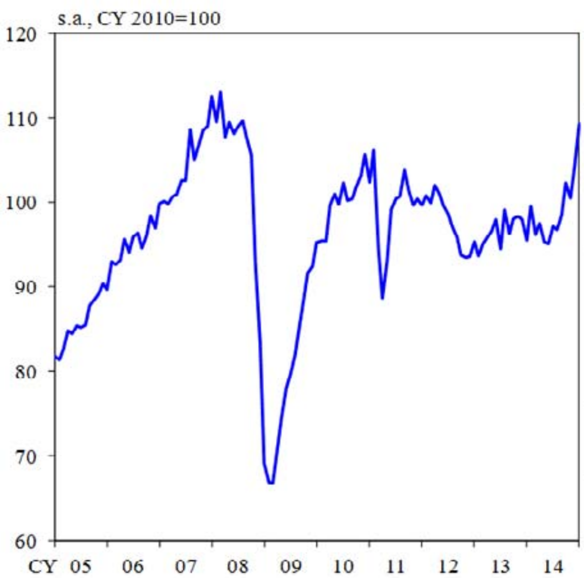
Chart 2

# Exports

*Real Exports*




*Real Exports by Region*

y/y % chg. s.a., q/q % chg.

| | 2013 | 2014 | 2013 Q4 | 2014 Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|---|---|---|
| United States <18.7> | 2.8 | 1.6 | -0.4 | 0.9 | -2.3 | -0.0 | 8.8 |
| EU <10.4> | -3.6 | 5.0 | 2.2 | 0.6 | 0.5 | -0.1 | -2.1 |
| East Asia <50.3> | -3.0 | 1.1 | 2.5 | -1.5 | -1.5 | 1.9 | 4.0 |
| China <18.3> | -1.7 | 3.5 | 5.7 | -3.9 | -0.7 | 1.2 | 3.2 |
| Others <20.7> | -5.0 | 0.9 | -2.0 | 0.2 | 1.4 | 2.4 | 1.5 |
| Real exports | -1.9 | 1.6 | 1.5 | -1.0 | -1.2 | 1.6 | 4.8 |

Note: Figures in angular brackets are shares of each region in 2014.
Sources: Ministry of Finance; Bank of Japan.

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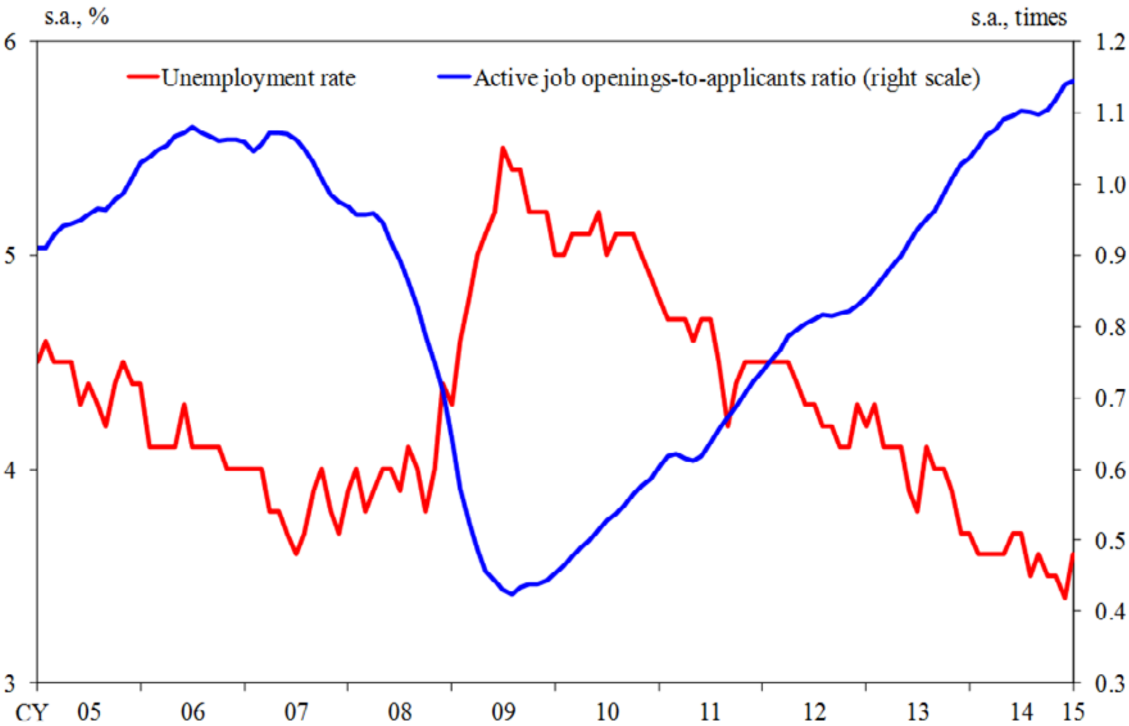
Chart 3

# Labor Market Conditions




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

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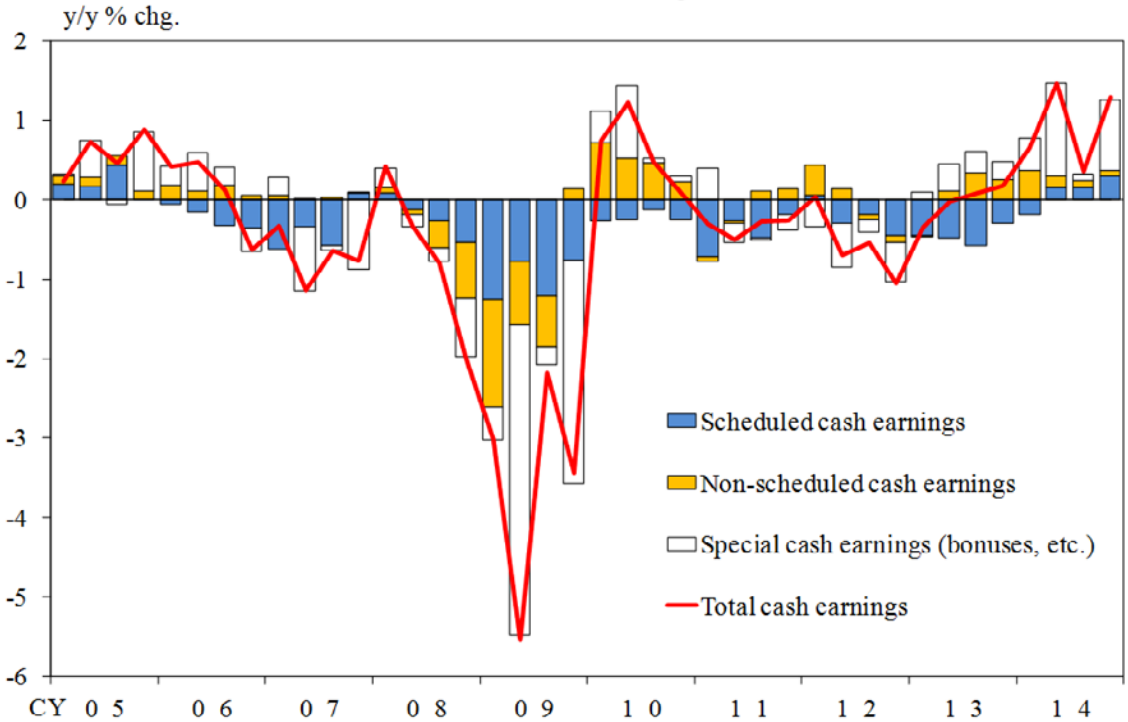
Chart 4

# Cash Earnings




Note: Q1 – March-May, Q2 – June-August, Q3 – September-November, Q4 – December-February.
Figures for 2014/Q4 are December-January averages.
Source: Ministry of Health, Labour and Welfare.

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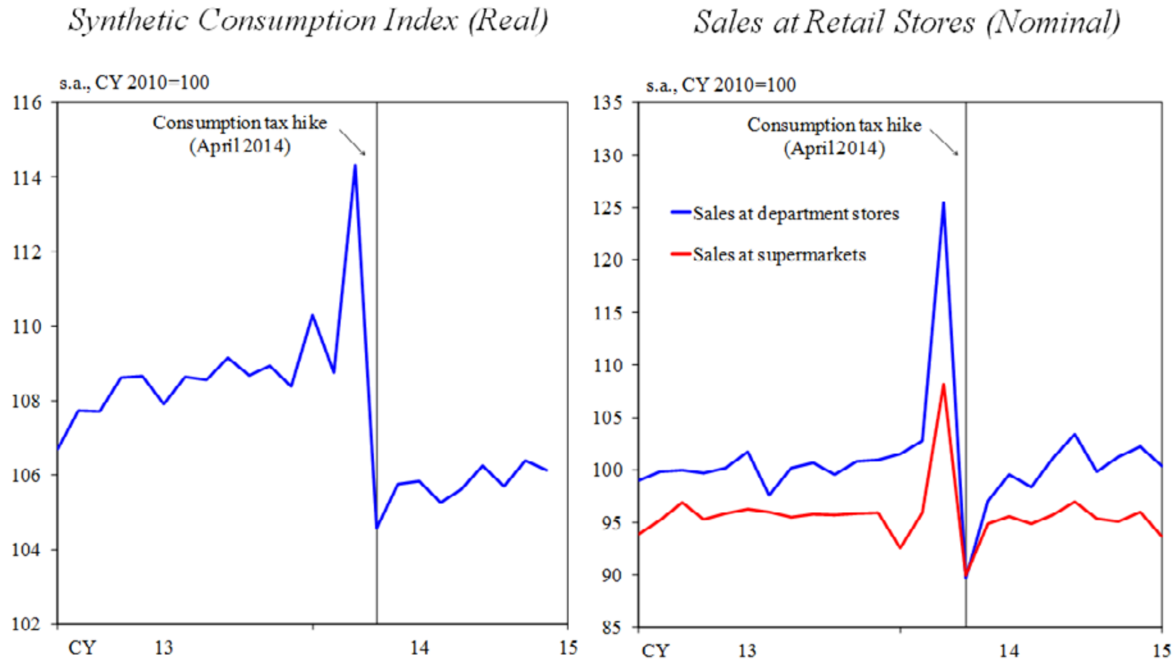
Chart 5

## Private Consumption




Note: Figures for sales at retail stores are adjusted to exclude the effects of the increase in the number of stores.
Sources: Cabinet Office; Ministry of Economy, Trade and Industry.

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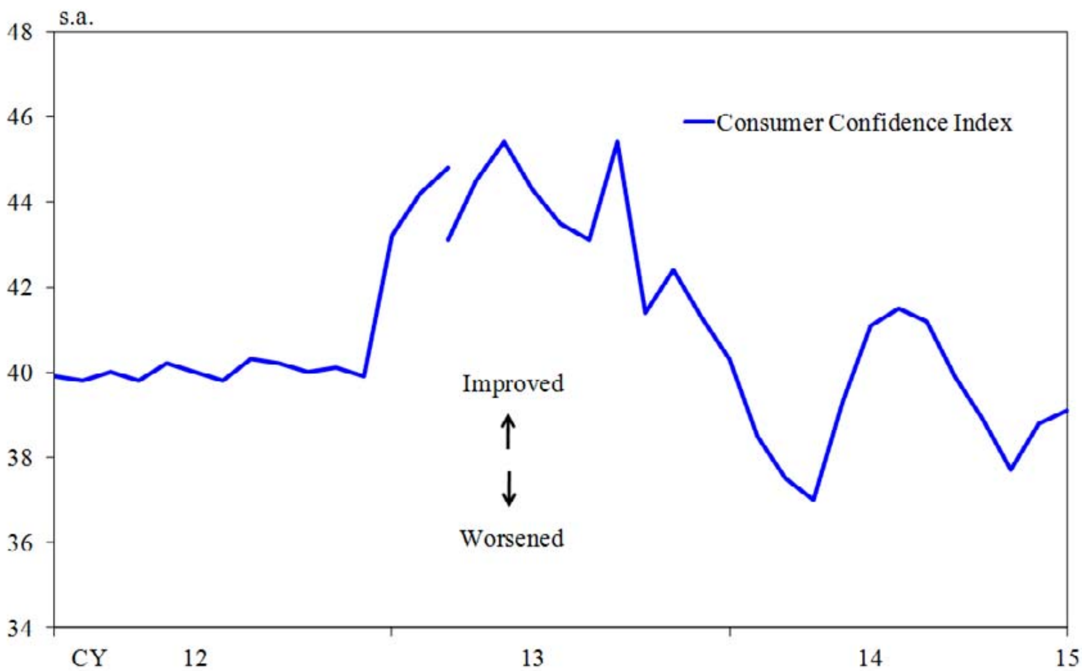
Chart 6

## Consumer Confidence




Source: Cabinet Office.

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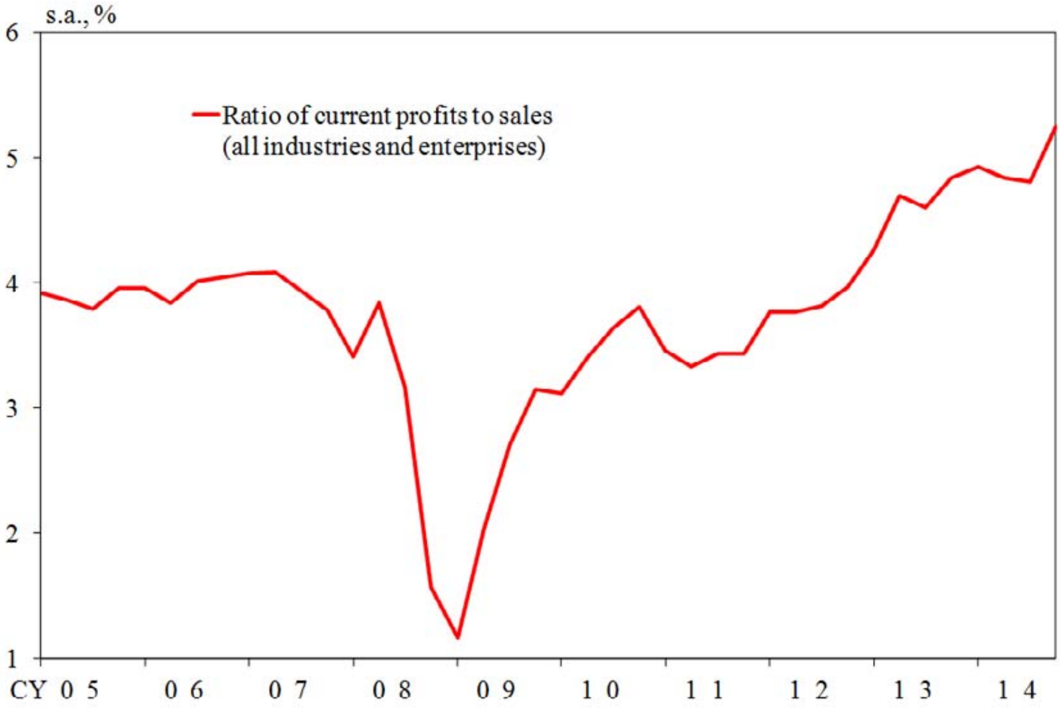
Chart 7

## Corporate Profits




Source: Ministry of Finance.

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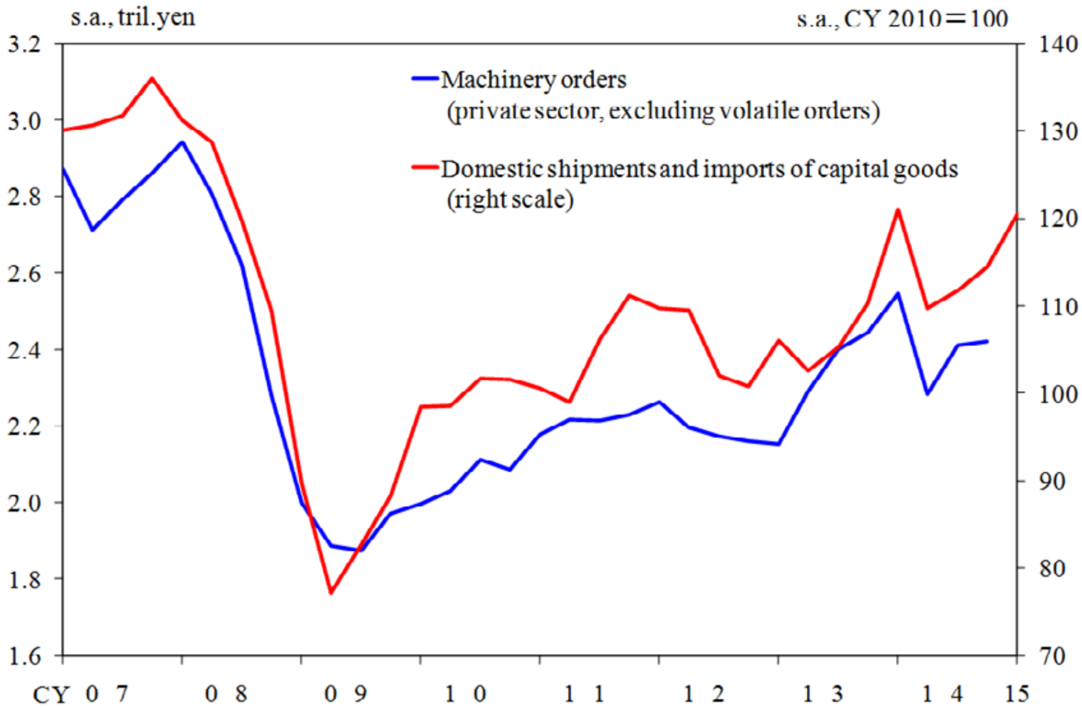
Chart 8

## Business Fixed Investment




Note: The figure for domestic shipments and imports of capital goods for 2015/Q1 is that of January. Volatile orders are orders for ships and those from electric power companies.

Sources: Cabinet Office; Ministry of Economy, Trade and Industry.

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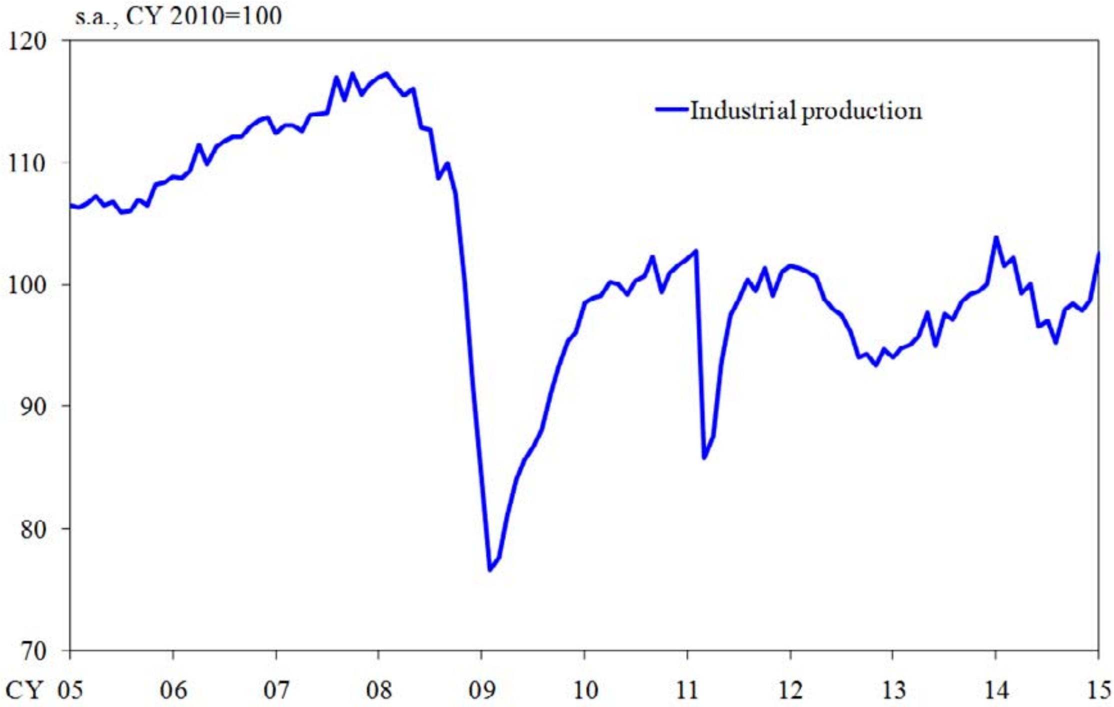
Chart 9

## Production




Source: Ministry of Economy, Trade and Industry.

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Chart 10

## Outlook for Economic Activity and Prices (as of January 2015)

y/y % chg.

| | Real GDP | CPI (all items less fresh food) | Excluding the effects of the consumption tax hikes |
|---|---|---|---|
| Fiscal 2014 | -0.5 | +2.9 | +0.9 |
| Forecasts made in October 2014 | +0.5 | +3.2 | +1.2 |
| Fiscal 2015 | +2.1 | +1.0 | |
| Forecasts made in October 2014 | +1.5 | +2.4 | +1.7 |
| Fiscal 2016 | +1.6 | +2.2 | |
| Forecasts made in October 2014 | +1.2 | +2.8 | +2.1 |

Note: Figures indicate the median of the Policy Board members' forecasts (point estimates).
Source: Bank of Japan.

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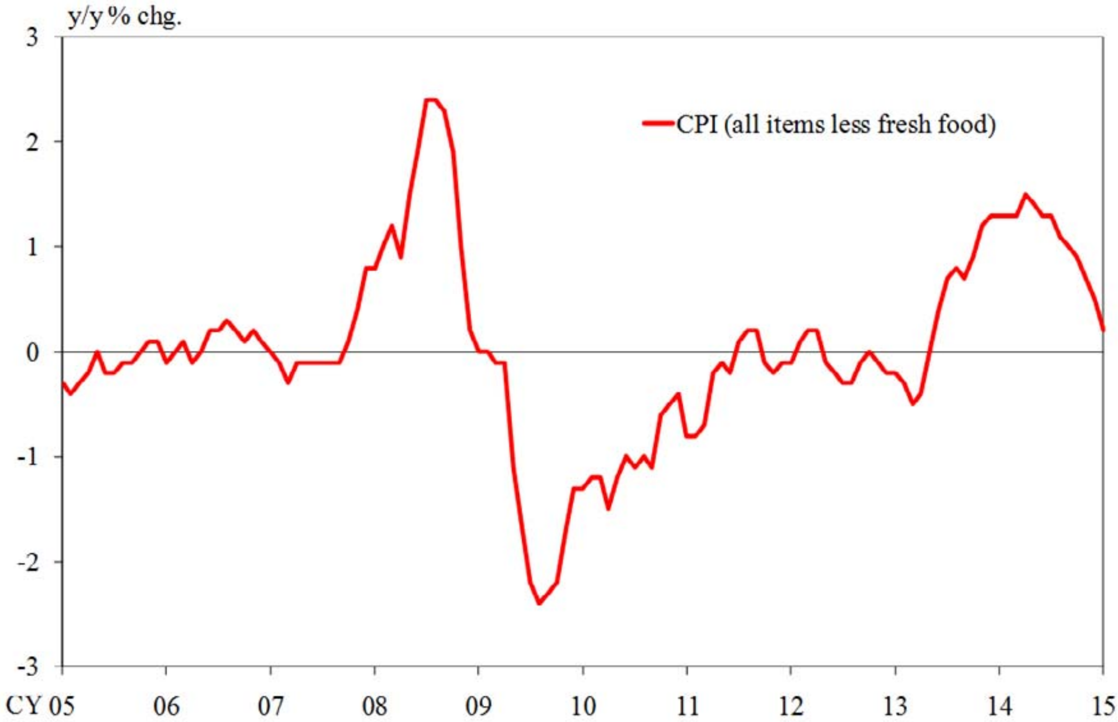
Chart 11

## Consumer Prices




Note: Figures from April 2014 onward are calculated to adjust the direct effects of the consumption tax hike.
Source: Ministry of Internal Affairs and Communications.

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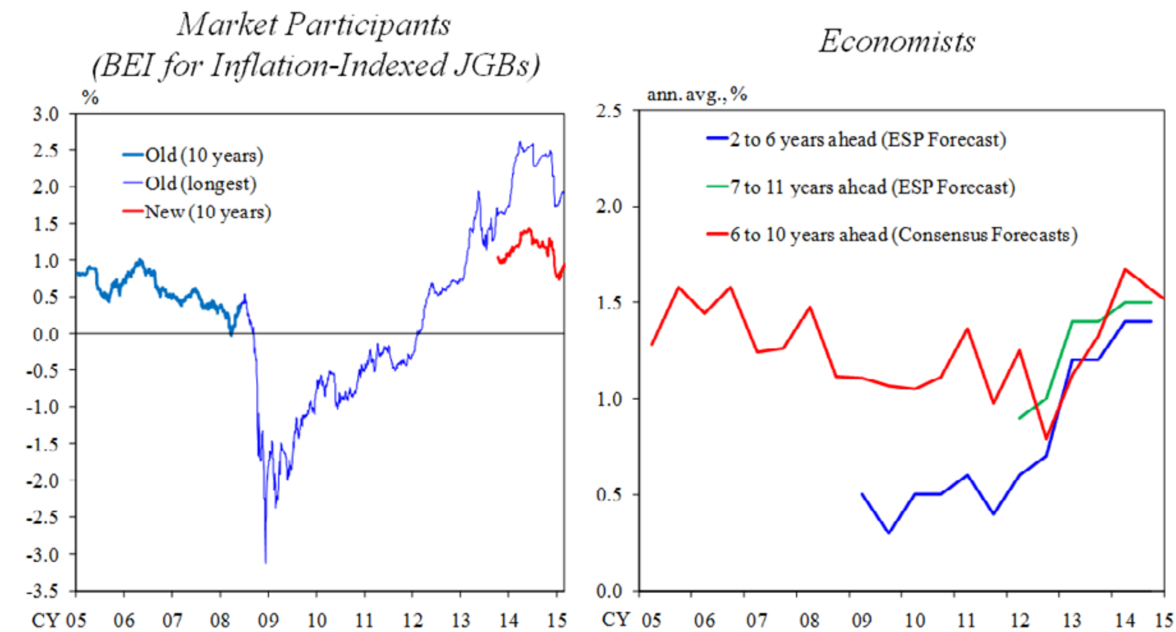
Chart 12

## Inflation Expectations




Notes: 1. BEI (break-even inflation) rates are yield spreads between fixed-rate coupon-bearing JGBs and inflation-indexed JGBs. Inflation-indexed JGBs issued since October 2013 are designated as "new," while the rest are designated as "old." Figures for "old (longest)" are calculated using yield data for issue No.16 of the inflation-indexed JGBs, which matures in June 2018.
2. Figures for the Consensus Forecasts are compiled every January, April, July, and October. Those up through April 2014 are compiled every April and October.
3. Figures for the ESP Forecast are compiled every June and December, and exclude the effects of the consumption tax hikes.
Sources: Bloomberg; Consensus Economics Inc.; JCER.

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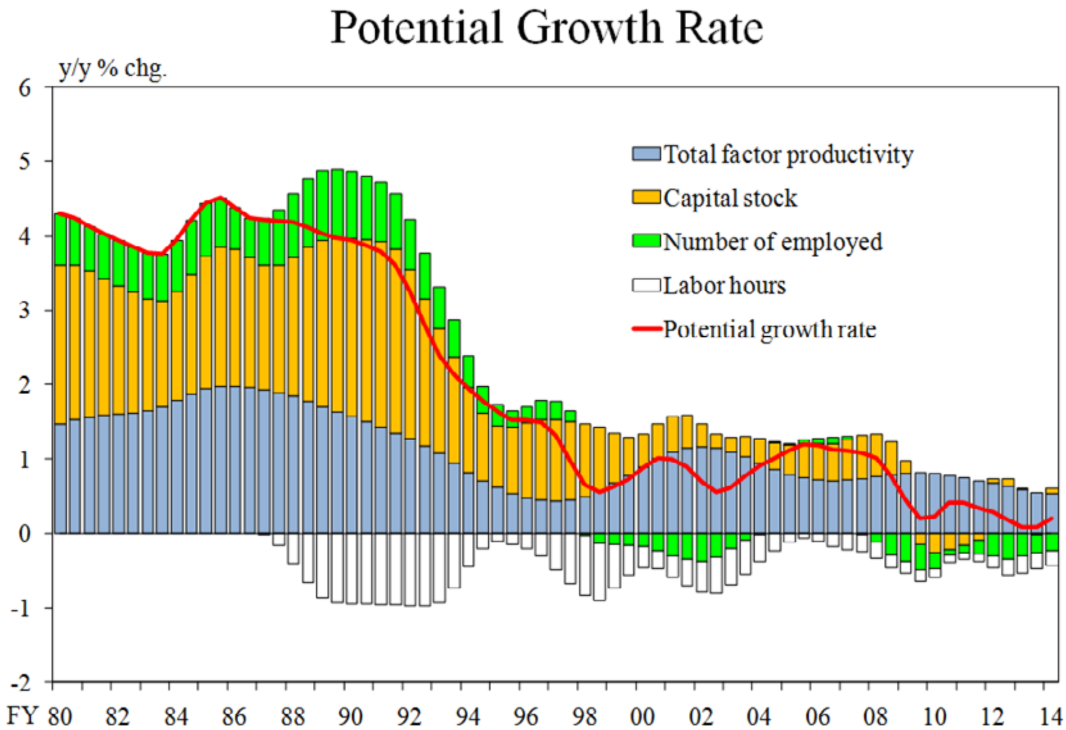
Chart 13




Note: The potential growth rate is estimated by the Research and Statistics Department, Bank of Japan. For the estimation procedures, see "The New Estimates of Output Gap and Potential Growth Rate," Bank of Japan Review Series, 2006-E-3. Figures for the first half of fiscal 2014 are those of 2014/Q2.

Sources: Cabinet Office; Bank of Japan; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare; Ministry of Economy, Trade and Industry, etc.

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