

Takehiro Sato: Recent economic and financial developments and monetary policy in Japan

Speech by Mr Takehiro Sato, Member of the Policy Board of the Bank of Japan, at a meeting with business leaders, Kushiro, 2 June 2016.

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

Introduction

Thank you for giving me this opportunity to exchange views with people representing the political, economic, and financial communities of eastern Hokkaido, including Kushiro. I would like to take this opportunity to express my sincere gratitude for your cooperation with the activities of the Bank of Japan's Kushiro Branch and Obihiro Office.

In today's speech, I will begin by focusing on recent economic and financial developments in Japan and abroad, as well as the Bank's monetary policy. I will then touch briefly on the economy of eastern Hokkaido. Following my speech, I would like to hear your views on actual conditions in the local economy and on the Bank's conduct of monetary policy.

I. Recent economic and financial developments in Japan and abroad

A. Global financial markets and overseas economies

Global financial markets -- which had been unstable since the turn of the year, affected by an interest rate hike by the Federal Reserve in December 2015 -- have been gradually regaining stability following the Group-of-Twenty (G-20) Finance Ministers and Central Bank Governors Meeting in Shanghai (Shanghai G-20) in late February. Recently, crude oil prices have rebounded despite adverse factors such as the stalled negotiation among oil-producing countries over production cuts, while currencies and stock markets of emerging and commodity-exporting economies have generally been recovering. This situation may be described as a lull in the negative spiral of the strong dollar -- and the consequent strengthening of Chinese yuan -- and the weak crude oil prices, which had increased the uncertainty of the future prospects of the world economy. The communiqué issued at the Shanghai G-20 indicated a consensus among the authorities of various countries on the need to deal with the economic slowdown not only by implementing monetary policy measures but also by taking every possible policy measure. As expectations have also spread that the pace of U.S. interest rate hikes will be moderate, a sense of relief appears to have gradually grown in the markets.

Even so, causes for concern remain. The problem -- posed by the financial market turmoil caused by the Global Financial Crisis and the European sovereign debt crisis as well as its spillover effects on the real economy -- was an acute disease, so to speak, so it was clear what solutions should be prescribed. Meanwhile, the problem that has emerged recently can be described as a chronic disease, given that dollar-denominated debts built up by emerging economies, including China, and commodity-exporting economies during the period of monetary easing in the United States are coming to the fore again as a debt overhang issue since the start of a liftoff by the Federal Reserve. It will probably take a long time before this problem can be cured.

Looking back at developments in the world economy during the recent period, the annualized growth rate of the U.S. economy, which is the driving force of the world economy, was a low 0.8 percent in the January-March quarter because of the sluggishness in industrial production accompanying the appreciation in the U.S. dollar and the decline in commodity prices and because of unfavorable weather conditions in the winter. According to the nowcast by regional

Federal Reserve Banks and other forecasts, the growth rate appears likely to be somewhat higher in the April-June quarter. However, the U.S. employment statistics for April, the latest month for which the data is available, showed a slight slowdown in employment after a period of firm growth.

With the economic recovery phase about to enter its eighth year, the economic cycle is presumed to be gradually reaching maturity. Therefore, at the beginning of the year, there were even voices of concern over a possible economic downturn. Although such fears have proved unfounded, there is the risk that productivity growth will be sluggish as business fixed investment continues to lack momentum amid the prolonged slowdown in emerging and commodity-exporting economies. Under these circumstances, I am paying attention to the risk that a squeeze on firms' profit margins may affect employment, income, and consumption if wages increase too rapidly relative to the productivity growth because of tight labor market conditions.

Meanwhile, the Chinese economy is generally regaining stability despite a slight slowdown mainly in exports and production, as the effects of the economic stimulus measures taken by the authorities are apparently starting to appear. The exchange rate of the Chinese yuan, which became a source of the instability in the global financial markets since last year, has recently stayed stable and the stock market is also in a state of calm. The somewhat moderate decline in the yuan's effective exchange rate following the recent pause in the rise in the U.S. dollar is apparently easing concerns over the future prospects of exports and production. In addition, a sense of relief is apparently growing in the markets because the Shanghai G-20 has alleviated concerns that the kind of abrupt change in the exchange rate system that was made in the summer of 2015 may occur again.

Still, as the problem of excess production capacity in the manufacturing sector lurks in the background, the low growth in fixed asset investment and inventory adjustments are expected to continue for a while. As for prices, the disinflationary trend is likely to continue for a while, as the supply-demand conditions remain easy, mainly with respect to goods.

As for overseas economies, as I have explained until now, the slowdown in emerging economies, including China, and commodity-exporting economies is coming to a halt. However, as the recovery of the U.S. economy, which is the driving force, lacks strong momentum, the world economy is expected to remain in a state of slight deceleration for the time being. While the negative spiral of the strong dollar -- and the strong Chinese yuan -- and the weak crude oil prices is in a lull in the global financial markets, market liquidity has apparently been reduced due to various financial regulations. In addition, the influence of algorithmic trading and high-frequency trading (HFT) is apparently growing, so the possibility cannot be ruled out that the markets will become unstable again because of the effects of the U.S. economic developments and ensuing monetary policy conduct. Therefore, I continue to pay attention to the possibility that these factors will affect such aspects as market confidence.

B. *Japan's economy*

Japan's economy grew by 1.7 percent in the January-March quarter this year on an annualized quarter-on-quarter basis, after posting negative growth of 1.1 percent in the October-December quarter last year; however, if the leap-year factor is excluded, the latest growth was close to zero. Recently, private consumption has continued to be lackluster after weather-related factors that affected consumption in the winter have dissipated. In addition, production activity, which has recently been more or less flat or weaker due to the effects of the slowdown in emerging economies, including China, and commodity-exporting economies and of an accident at a steel plant, is showing some weakness, mainly in the transportation equipment sector, whose supply chains have been disrupted by the damage caused mainly in Kumamoto Prefecture by the earthquake. Production activity in the affected region has already partially shifted to the recovery production phase thanks to the strength of Japanese manufacturing industries' business continuity planning. In addition, restoration and reconstruction projects are expected to be implemented under the recent supplementary budget, and reconstruction

demand is expected to emerge. Therefore, there will be no need to change the medium-term scenario. However, diffusion indexes (DIs) of the *Economy Watchers Survey*, which is a leading indicator of the short-term economic trend, declined to the lowest level since immediately after the consumption tax hike in 2014 on a seasonally-adjusted basis because of the impact of the earthquake in Kumamoto, among other factors.

Regarding the medium-term scenario, while Japan's potential growth rate continues to slump in the range of 0.0-0.5 percent due in part to the sluggishness of capital stock accumulation, the world economy lacks momentum as I mentioned earlier. I therefore am somewhat cautious about the outlook compared with the Bank's baseline scenario in the April 2016 *Outlook for Economic Activity and Prices* (Outlook Report). In fact, real GDP growth has recently been fluctuating almost evenly between positive and negative growth. As the economic growth rate continues to be low, the potential economic growth rate is less likely to rise.

Compared with the low growth rate of real GDP, aggregate income formation as measured by real gross national income (GNI) and real gross domestic income (GDI) has so far remained relatively firm. Moreover, because of the robustness of the aggregate income formation, it has been presumed that Japan's economy is resilient to such shocks as the slowdown in overseas economies. However, income receipts from abroad converted into yen terms are expected to be eroded by the yen's appreciation since the beginning of the year, and the decline in commodity prices that has until recently contributed to the improvement in the terms of trade is generally coming to a halt. As the strong yen contributes to the improvement in the terms of trade, it offsets the effects of the halt in the decline in commodity prices. All the same, it may become difficult to emphasize the relative firmness of aggregate income formation compared with expenditure-based GDP.

Meanwhile, as is indicated by the consumption activity index, which is compiled by the Bank's Research and Statistics Department based on sales- and supply-side statistics, the actual trend of private consumption may have stayed stable compared with private consumption in terms of preliminary GDP data, which reflects demand-side statistics such as the *Family Income and Expenditure Survey*. When demand-side statistics show weaker results than the actual trend due to sample factors or for other reasons, the level of private consumption in terms of revised GDP data is likely to be revised upward compared with the preliminary data. Therefore, the perception of the recent consumption trend may also be changed when revised GDP data are announced in one and a half years.

However, as the relatively firm aggregate income formation may lack momentum somewhat due to the reason that I already mentioned, a scenario in which a virtuous economic cycle from income to spending will pick up steam does not seem to be so persuasive. While firms are earning record profits, they have until now been cautious about raising base salary or making domestic business fixed investments because of the view that such bumper profits are a temporary windfall brought by the weak yen and the improvement in the terms of trade. This cautious trend may grow depending on the results of the recent developments in the global financial markets.

After all, as Japan's economy, with its potential growth rate of nearly 0 percent, is so fragile as to be liable to post negative growth even because of trivial external factors such as weather conditions, I expect that its growth is highly likely to remain sluggish in the future while being susceptible to developments in the global financial markets and overseas economies. Even so, nonmanufacturing industries, which maintain relative firmness in terms of employment and business fixed investment, will serve as a buffer against the weakness of manufacturing industries, so I expect that recession can be avoided.

C. Prices

Regarding consumer prices, my outlook presented in the April 2016 Outlook Report continues to be lower than the median of the Policy Board members' forecasts. This is because, due to the various domestic and overseas downside factors that I mentioned earlier, it is difficult at

the moment to expect that the potential growth rate will clearly rise from the current level of nearly 0 percent, leading to an inflation that is consistent with income growth. Although the inflation rate will not reach the price stability target of 2 percent during the projection period according to my forecast, I believe that it is unnecessary to achieve the price stability target of 2 percent at all costs. People are not hoping for inflation that is not accompanied by income growth. We have learned from our experiences that if inflation rises ahead of income, consumer sentiment dampens due to a decline in real income, producing negative effects on consumption. Although the year-on-year growth rate in the SRI-Hitotsubashi Unit Value Price Index, which I cited in my previous speech, has recently slowed down steeply, it stayed at around 2 percent throughout last year. In short, this index, which is closer to people's perception of inflation because it reflects the effects of changes in the volume of products and minor product modifications, indicated a higher growth rate than consumer price statistics compiled by the Ministry of Internal Affairs and Communications.

In order to achieve the price stability target of 2 percent at the earliest possible time, with a time horizon of about two years, the Bank introduced quantitative and qualitative monetary easing (QQE) in April 2013. Because more than three years have passed since the introduction of QQE, I believe it is high time that we reviewed the significance of this commitment. In this regard, I have been having uneasy feelings about the approach of aiming to achieve a specific inflation rate within a specific time frame, given the time lag required for monetary policy effects to be produced and the uncertainty over the effects. I have some doubts as to why Japan alone should set a specific time frame amid the disinflationary trend around the world, including emerging economies, and whether the target can be achieved through monetary policy alone.

For my part, I have not changed my position that the Bank should achieve the price stability target of 2 percent as a medium- to long-term goal. I consider this as a rolling target, which means that we should constantly aim to achieve it at the earliest possible time with a time horizon of about two years. Based on this idea, I submitted a proposal to revise the description in the April 2016 Outlook Report at the Monetary Policy Meeting (MPM) in April.

The recent environment surrounding consumer prices contains various unfavorable factors, such as (1) an expected delay in the improvement in the output gap due to the slow recovery in the real economy, (2) an expected lack of momentum in the pace of year-on-year wage growth following the labor-management negotiations this spring, and (3) the possibility that the yen's appreciation since the beginning of the year will affect the underlying inflation trend that has been led by rising prices of food products and durable consumer goods. As is indicated by the SRI-Hitotsubashi Unit Value Price Index, which I mentioned earlier, the year-on-year growth in the goods price index based on the point-of-sale (POS) data collected through chain stores appears to have slowed. The price index based on the POS data covers only around 20 percent of the consumer price index (CPI) in terms of its weight, so the trend in the POS data-based index may not necessarily affect overall prices immediately. Service prices, which have a substantial weight in the CPI, may have a pent-up potential for a rise following the recent increase in hourly wages for non-regular employees. Unlike changes in food and clothing prices, changes in prices of individual services, which are provided by many small firms, are seldom featured in media reports, making it difficult to keep track of them. Therefore, looking at consumer price statistics is the only way to examine the trend of overall service prices.

As for the outlook, while the year-on-year growth rate of prices of food products and durable consumer goods are expected to peak out as indicated by the POS data, the key will be the extent to which prices of individual services, with their pent-up potential for a rise, can offset that. However, house rent and imputed rent, which have a large weight in service prices, are strongly correlated with wages, and given the results of the labor-management wage negotiations this spring, it may be difficult to expect much of a rise in rents. House rent and imputed rent are not adjusted for quality associated with the passage of time, so the presence of a downward bias in consumer price statistics has been pointed out. With respect to public service prices, which also have a large weight, there are various factors that constrain price

increases. One such factor is the norm applied to prices by those who are reluctant to tolerate a hike in fees for public services.

In consideration of all these factors, it is highly uncertain whether or not an increase in service prices will offset an expected drop in the year-on-year growth rate of goods prices, resulting in a higher growth or a similar rate of growth in overall prices.

Although people's inflation expectations over the medium to long term are relatively stable, their expectations over the short term have been affected in a backward-looking manner by the recent price trend that reflects energy price movements. This is clearly apparent in firms' inflation expectations indicated in the *Tankan* (Short-Term Economic Survey of Enterprises in Japan). Furthermore, comments made by the respondents in the *Economy Watchers Survey* suggest the possibility that people's sentiment has become cautious due to the introduction of the negative interest rate policy. I assume that this reflects people's cautious outlook on future supply-demand conditions, which I assume is also affecting people's inflation expectations.

II. Future conduct of monetary policy

A. Introduction of QQE with a negative interest rate

More than three years have passed since the introduction of QQE. My understanding was that this measure was a kind of shock therapy intended to influence the formation of people's expectations by resorting to a bold action. As was indicated by the fact that the time frame of about two years was initially assumed, I at least did not expect that this measure would be continued for a very long time. Therefore, I have had mixed feelings about the expansion of QQE in October 2014 and the introduction of a negative interest rate in January this year. I voted against both of these measures. As for the reason for my opposition to a negative interest rate in particular, I believe that the expansion of the monetary base and the introduction of a negative interest rate are essentially contradictory and their combination lacks sustainability. Moreover, I believe that the negative interest rate policy has the effect of monetary tightening, rather than an effect of easing. In addition, the negative interest rate policy could affect financial system stability.

Let me elaborate on this point a little further. Under the current policy framework, a marginal increase in the current account balance at the Bank, which accounts for most of the increase in the monetary base, is subject to a penalty in the form of a negative interest rate. However, maintaining the current pace of increase in the monetary base while imposing such a penalty is illogical. I believe that introducing a negative interest rate would be meaningful only when the monetary base target and the asset purchase target are gradually reduced, namely, when tapering is implemented, so I cited this as the reason for my vote against the introduction of a negative interest rate at the January MPM. I believe that it is desirable to maintain the system in which balances in current accounts at the Bank are divided into three-tiers -- which was adopted at the time of the introduction of a negative interest rate -- from a somewhat longer-term perspective with an eye to a future exit from QQE. I therefore submitted a proposal to that effect at the March MPM.

Next, I will explain my argument that the negative interest rate policy has the effect of monetary tightening and may affect financial system stability. Soon after the MPM in January, stock prices plunged, led by bank share prices, while the yen appreciated in the foreign exchange market. In addition, there was a series of suspensions of subscription for and pre-maturity redemption of safe investment instruments, such as money market funds (MMFs) and medium-term government bond funds. In response, people's sentiment deteriorated. This is presumably not only because of concerns over a possible erosion of deposits but also because the wrong perception has spread that Japan's economic conditions worsened so much that such an extraordinary measure as the negative interest rate policy needed to be taken.

Financial institutions are facing the risk of a negative spread for marginal assets due to the extreme flattening of the yield curve and the drop in the yield on government bonds in short-

to long-term zones into negative territory. When there is a negative spread, shrinking the balance sheet, rather than expanding it, would be a reasonable business decision. In the future, this may prompt an increasing number of financial institutions to take such actions as restraining loans to borrowers with potentially high credit costs and raising interest rates on loans to firms with poor access to finance. There is also the risk that financial institutions that have problems in terms of profitability or fiscal soundness will make loans and investment without adequate risk evaluation. From financial institutions' recent move to purchase super-long-term bonds in pursuit of tiny positive yield, I detect a vulnerability similar to that seen before the so-called VaR (Value at Risk) shock in 2003.

In the meantime, because of the decline in the function of the short-term money market, distortion due to the concentration of funds raised in the call market in banks, trust banks in particular, was seen. As a result, investment trusts and other risk-taking market participants have given up on investing in short-term financial instruments, leading to a loss of diversity among market participants. Such a weakening of the financial intermediary functioning could affect the financial system's resilience against shocks in times of stress. In addition, an excessive drop in bond yields in the super-long-term zone could also make the financial system vulnerable by increasing the risk of a buildup of financial imbalances in the system.

The Bank is responsible for maintaining both price stability and the financial system stability. Therefore, when a conflict is expected in performing these two mandates, it is necessary to consider the respective pros and cons of the two mandates and pursue a finely-balanced policy measure. However, as I already explained, the negative interest rate policy could disturb the delicate balance.

B. *Economic effects of QE with a negative interest rate*

The negative interest rate policy has been highly effective in lowering longer-term interest rates, rather than in achieving the initial goal of further pushing down the yield curve by lowering the short end of the yield curve. However, the steep drop in the yields in the long-term and super-long-term zones reflects the fact that, in pursuit of a positive yield when yields even in the long-term zone are negative, funds that have lost attractive investment destinations are flowing into further longer-term zones, where the yields remain above zero, albeit barely. Unfortunately, this is the opposite of portfolio rebalancing that was an intended purpose of the negative interest rate policy.

Opinions are divided on the economic effects of the negative interest rate policy, and this is a factor fueling worries among people over this measure. In this respect, it is a fact that as a result of the decline in market interest rates, housing loan rates and firms' borrowing rates have already dropped, so it may be possible to ease people's aversion to this policy measure if they are presented with convincing evidence that it brings positive macro-level income effects by facilitating housing loan refinancing and that it stimulates business fixed investment.

However, firms' fixed investment has long been kept within their level of cash flow and lending rates that have already declined to extremely low levels cannot be expected to drop further on the same scale as the drop in market interest rates. Therefore, I am skeptical about the idea that the negative interest rate policy will stimulate business fixed investment. Rather, if an investment project can only be profitable on the assumption of the continuation of an extremely low interest rate, that is the problem.

While the interest rate decline was prominent in the long-term and super-long-term zones, there are only a few private economic agents that are willing or able to raise funds with a maturity ranging from 20 years to 40 years. Rather, the excessive interest rate decline in the long-term and super-long-term zones could not only threaten the sustainability of the social security system as broadly defined, including corporate pensions, through a drop in the discount rate of pension liabilities, but could also undermine people's confidence by producing significant negative effects on corporate finance.

C. *Monetary base target and asset purchase target*

As I mentioned earlier, I believe that it is desirable to aim to achieve the price stability target of 2 percent as a medium-to long-term goal and I expect that the road toward this goal will be long. Therefore, I believe that the challenge from now on is reforming the policy framework, which is intended to provide solutions in the short term, so as to adapt it to a long-term initiative. The first thing the Bank should do for that purpose would be to make the asset purchase operation more flexible and also explore flexible approaches to the monetary base target.

Let me cite a specific example. Since the introduction of the negative interest rate policy, there have been some cases in which bid prices for the Bank's asset purchase offers were unusually high compared with market prices or in which the difference between the minimum successful bid rate and the average successful bid rate was very large. This situation represents the realization of the theory that if the Bank offers a higher purchase price than the market price, the offer always attracts willing sellers. Therefore, it may be said that the buildup of the monetary base is proceeding even amid the negative interest rate environment. However, if we look at the situation from another angle, it can be said that there is a reasonable chance that unless the Bank continues to purchase assets at higher prices than market prices, this will result in undersubscriptions, and the buildup of the monetary base will be impeded.

The Bank is taking such measures as eliminating abnormal bids, imposing bidding limits, and excluding issues which were purchased at abnormal prices from eligible assets. I believe that it is appropriate to give consideration to avoid distorting market price formation by flexibly conducting these market operations as necessary. As a result of such operations, the Bank may fall slightly short of its asset purchase target by asset class and the monetary base target of 80 trillion yen. However, if the Bank is to ensure the sustainability of its current policy, I believe that conducting such operations would be inevitable.

We must pay sufficient attention to the risk that the failure to achieve the targets will be mistaken as tapering, triggering an unexpected reaction. However, given that the Bank's asset purchases have proved to be so effective in lowering various interest rates, I take the view that there would be no problem if the Bank's purchases fall slightly short of the targets as a result of excluding abnormal bids that are far apart from market prices. Rather, it would be desirable if this view gradually took hold in the market. While I voted against the expansion of QQE and the introduction of a negative interest rate, it would not be desirable if concerns over the sustainability of the Bank's asset purchases grew in the market at a time when the Bank continues to purchase on such a large scale, and if the effects of the policy were undermined by an unforeseen incident. It is my sincere hope that the Bank will conduct monetary policy flexibly under the flexible price stability target while obtaining better understanding by the market.

Concluding remarks: economic activity in Eastern Hokkaido

My concluding remarks will touch on the economy of eastern Hokkaido.

This region has a vast amount of land facing the part of the Pacific Ocean where the Oyashio Current flows. Blessed with rich nature, this region has prosperous agricultural, forestry and fishery industries and is one of the main food supply bases in Japan. Other industries that have a large presence in this region include the food industry, whose main items are dairy and processed fishery products; the civil engineering and construction industry, which undertakes public works and private construction; and the transportation industry, which supports long-distance distribution. Tourism also supports the local economy, as Tokachi, Kushiro, and Nemuro have their respective tourism resources of global value.

Looking at the local economic conditions, in relation to fishery, the situation of fishing of major fish such as salmon, trout, and Pacific saury is severe. However, although public investment has been decreasing, business fixed investment as a whole has been increasing against the backdrop of strong corporate earnings. In addition, private consumption has been resilient. An

increase in agricultural income and stable fuel prices are also positive factors for this region, so the local economy has been steadily picking up.

Under these circumstances, to achieve longer-term growth, the region takes initiatives to enhance productivity and increase added value by taking advantage of its strengths and to invigorate trade and other exchanges both within and outside the region. For example, with respect to distribution, the Doto Expressway, which connects central Hokkaido with eastern Hokkaido, has been extended to the Akan area, representing the improvement of the distribution network and the integration of eastern Hokkaido. In addition, the expansion work of Kushiro Port, which has been designated as an International Strategic Bulk Port, has got into full swing. As for tourism as well, the region's efforts are bearing fruits. For example, this region has been selected as part of a broad-area sightseeing tour route and as a showcase of Japan's strength as a tourism-oriented country, and the Food Valley plan is making progress.

Furthermore, there are activities led by the private sector, including exporting agricultural and fishery products such as Chinese yams and Pacific saury, and increasing the value added to dairy and livestock products. There are also activities to enhance the region's growth potential, such as exploring for tourism resources -- including the Hokkaido Garden Path, whale and bird watching, and making use of national parks -- as well as constructing a thermal power plant using the only underground coal mine in Japan. I understand that regional financial institutions are not only providing financial support but also enhancing their own advisory function and helping to search for new customers.

I hope that while these initiatives are continued, progress will be made in fostering new leaders and strengthening broad-area cooperation, and that the economy of the eastern Hokkaido will be further invigorated.

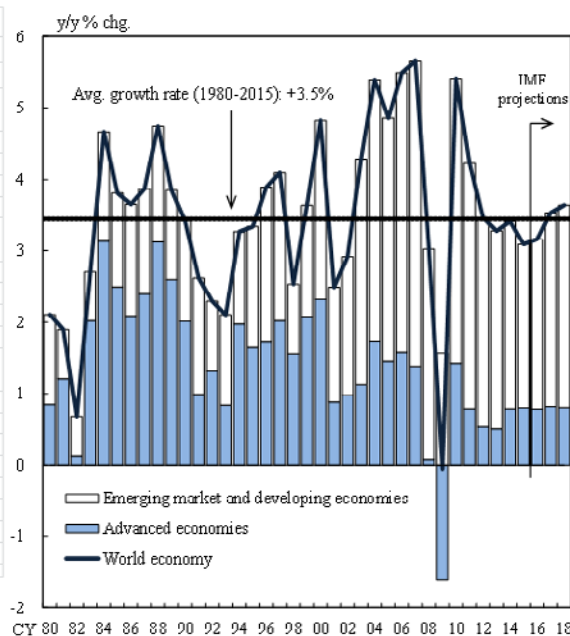
Global Economy

(1) IMF Projections (as of April 2016)

| CY | real GDP growth rate, y/y % chg. | | | |
|--|----------------------------------|-----------------|-----------------|-----------------|
| | 2015 | 2016 projection | 2017 projection | 2018 projection |
| World | 3.1 | 3.2 (-0.2) | 3.5 (-0.1) | 3.6 |
| Advanced economies | 1.9 | 1.9 (-0.2) | 2.0 (-0.1) | 2.0 |
| United States | 2.4 | 2.4 (-0.2) | 2.5 (-0.1) | 2.4 |
| Euro area | 1.6 | 1.5 (-0.2) | 1.6 (-0.1) | 1.6 |
| Japan | 0.5 | 0.5 (-0.5) | -0.1 (-0.4) | 0.4 |
| Emerging market and developing economies | 4.0 | 4.1 (-0.2) | 4.6 (-0.1) | 4.8 |
| Emerging and developing Asia | 6.6 | 6.4 (0.1) | 6.3 (0.1) | 6.3 |
| China | 6.9 | 6.5 (0.2) | 6.2 (0.2) | 6.0 |
| ASEAN | 4.7 | 4.8 (0.0) | 5.1 (0.0) | 5.2 |
| Russia | -3.7 | -1.8 (-0.8) | 0.8 (-0.2) | 1.0 |
| Latin America and the Caribbean | -0.1 | -0.5 (-0.2) | 1.5 (-0.1) | 2.1 |

Notes: 1. Figures are calculated using GDP based on purchasing power parity (PPP) shares of the world total from the International Monetary Fund.
2. Figures in parentheses are the difference from the January 2016 *World Economic Outlook* projections.
Source: International Monetary Fund.

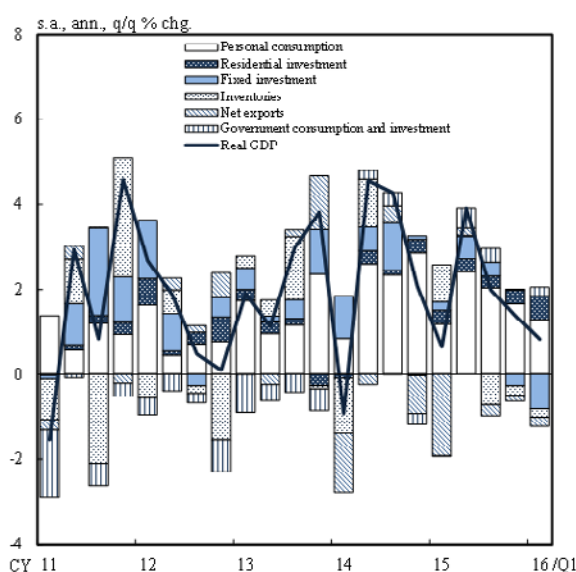
(2) Real GDP Growth Rate of the World Economy



Source: International Monetary Fund.

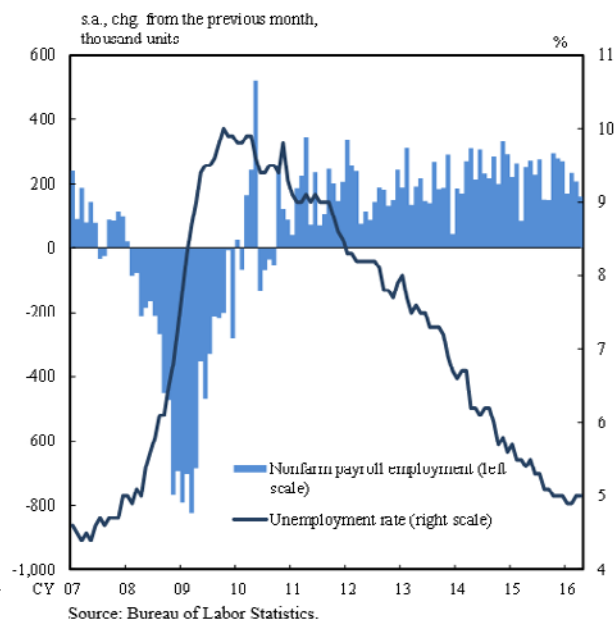
U.S. Economy

(1) Real GDP



Source: Bureau of Economic Analysis

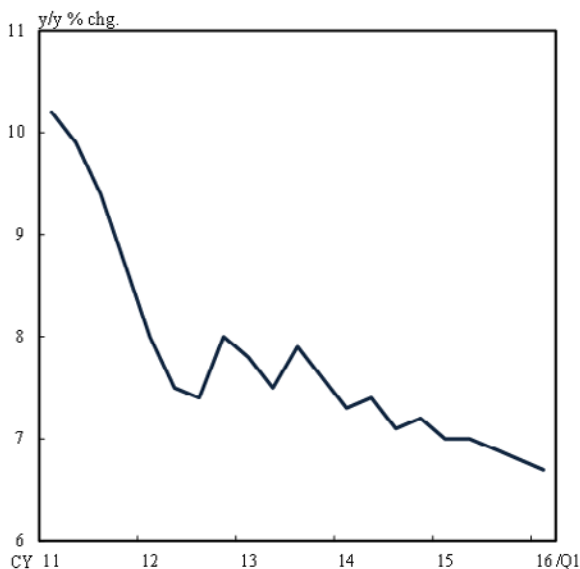
(2) Employment



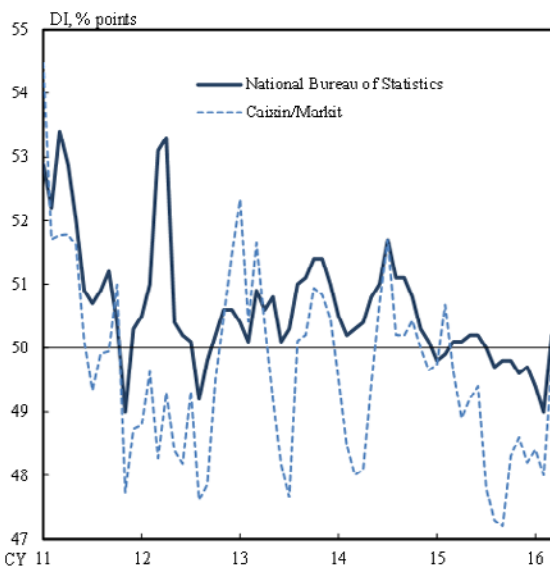
Source: Bureau of Labor Statistics.

Chinese Economy

(1) Real GDP



(2) Manufacturing PMI



Note: Figures for the Caixin/Markit is based on Caixin China General Manufacturing PMI.
Sources: CEIC Data; Markit (© and database right Markit Economics Ltd 2016. All rights reserved).

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Chart 4

"Outlook for Economic Activity and Prices" (April 2016)

Forecasts of the Majority of Policy Board Members

| | y/y % chg. | | |
|--------------------------------|------------------------|---------------------------------|--|
| | Real GDP | CPI (all items less fresh food) | Excluding the effects of the consumption tax hikes |
| Fiscal 2015 | +0.7 to +0.7 [+0.7] | 0.0 | |
| Forecasts made in January 2016 | +1.0 to +1.3 [+1.1] | 0.0 to +0.2 [+0.1] | |
| Fiscal 2016 | +0.8 to +1.4 [+1.2] | 0.0 to +0.8 [+0.5] | |
| Forecasts made in January 2016 | +1.0 to +1.7 [+1.5] | +0.2 to +1.2 [+0.8] | |
| Fiscal 2017 | 0.0 to +0.3 [+0.1] | +1.8 to +3.0 [+2.7] | +0.8 to +2.0 [+1.7] |
| Forecasts made in January 2016 | +0.1 to +0.5 [+0.3] | +2.0 to +3.1 [+2.8] | +1.0 to +2.1 [+1.8] |
| Fiscal 2018 | +0.6 to +1.2 [+1.0] | +1.0 to +2.1 [+1.9] | |

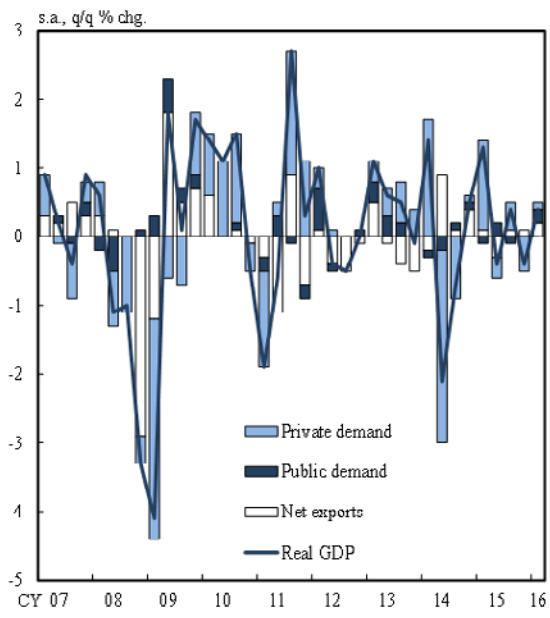
Notes: 1. Figures in brackets indicate the median of the Policy Board members' forecasts (point estimates).

2. Dubai crude oil prices are expected to rise moderately from the recent 35 U.S. dollars per barrel to the range of 45-50 dollars per barrel toward the end of the projection period; that is, fiscal 2018. Under this assumption, the contribution of energy items to the year-on-year rate of change in the CPI (all items less fresh food) is estimated to be around minus 0.8 percentage point for fiscal 2016. More specifically, the contribution is expected to start to lessen in the second half of fiscal 2016 and reach around 0 percentage point around the middle of 2017.

Source: Bank of Japan.

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Japan's Economy: Real GDP



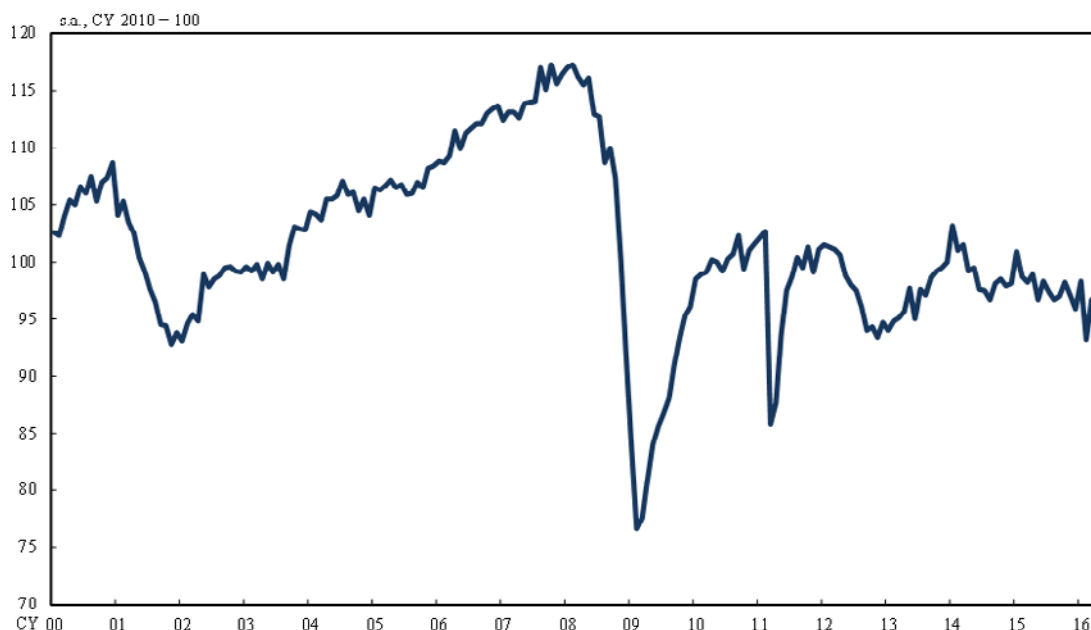
Source: Cabinet Office.

| | | 2014 | | | 2015 | | | 2016 |
|--------------------------------------|---------------|------|------|------|------|------|------|------|
| | | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Real GDP | a | -2.1 | -0.7 | 0.5 | 1.3 | -0.4 | 0.4 | -0.4 |
| Inventories | b | 1.3 | -0.6 | -0.2 | 0.6 | 0.3 | -0.1 | -0.1 |
| Imports | c | 0.9 | -0.2 | -0.2 | -0.3 | 0.5 | -0.3 | 0.2 |
| Final demand | d = a - b - c | -4.3 | 0.1 | 0.9 | 1.0 | -1.2 | 0.8 | -0.5 |
| Real GDP | e | -2.1 | -0.7 | 0.5 | 1.3 | -0.4 | 0.4 | -0.4 |
| Trading gains/losses | f | 0.4 | -0.1 | 0.2 | 0.7 | 0.4 | 0.2 | 0.2 |
| Real GDI | g = e + f | -1.7 | -0.8 | 0.8 | 2.1 | -0.1 | 0.6 | -0.2 |
| Income from/to the rest of the world | h | 0.1 | 0.5 | 0.8 | -0.6 | 0.4 | -0.1 | 0.3 |
| Real GNI | i = g + h | -1.6 | -0.2 | 1.6 | 1.4 | 0.3 | 0.4 | 0.1 |

| | | y/y % chg. | | | | | | |
|----------|--|------------|------|------|------|-----|-----|-----|
| Real GDP | | -0.3 | -1.5 | -1.0 | -1.0 | 0.7 | 1.8 | 0.7 |
| Real GDI | | -0.8 | -2.1 | -1.1 | 0.3 | 2.0 | 3.4 | 2.2 |
| Real GNI | | -1.3 | -1.5 | 0.0 | 1.2 | 3.0 | 3.8 | 2.0 |

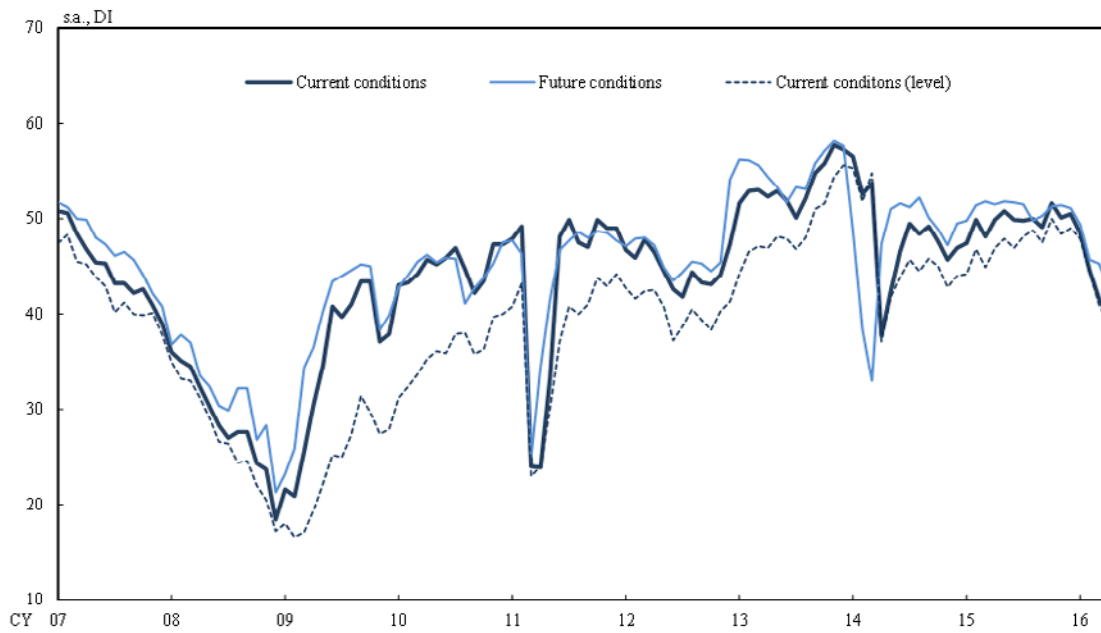
Chart 6

Industrial Production



Source: Ministry of Economy, Trade and Industry.

Economy Watchers Survey

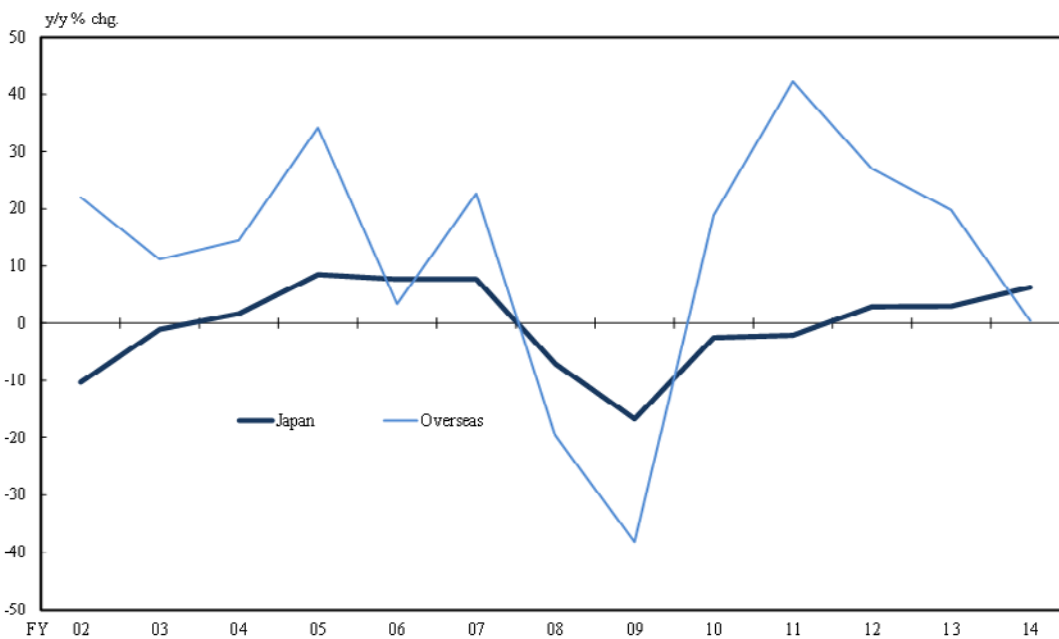


Source: Cabinet Office.

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Chart 8

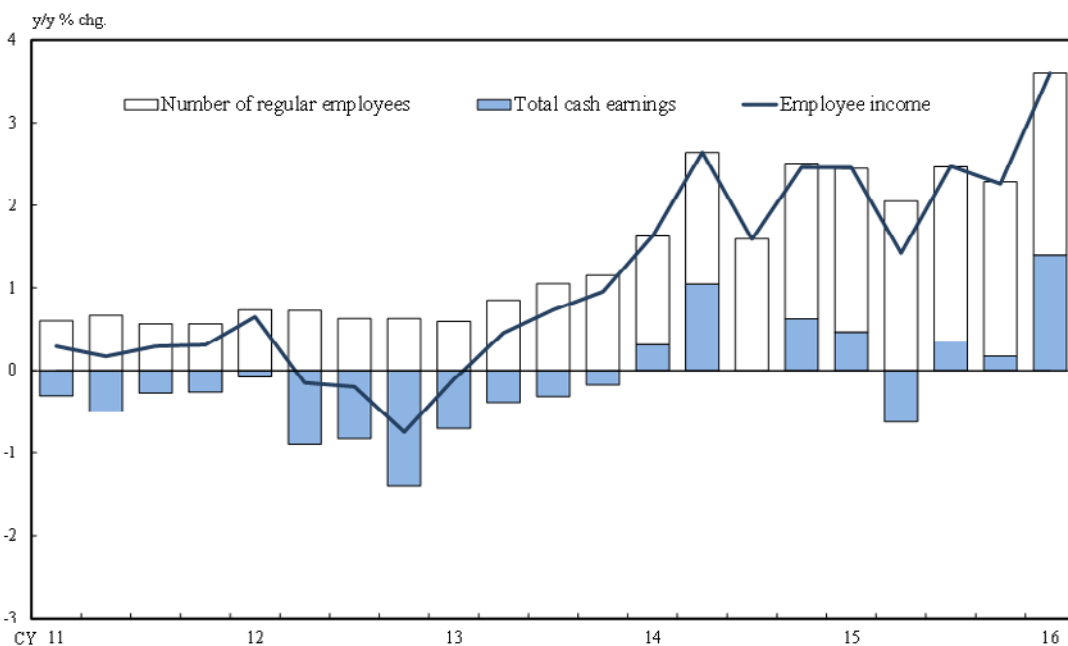
Business Fixed Investment in Japan and Overseas



Source: Development Bank of Japan.

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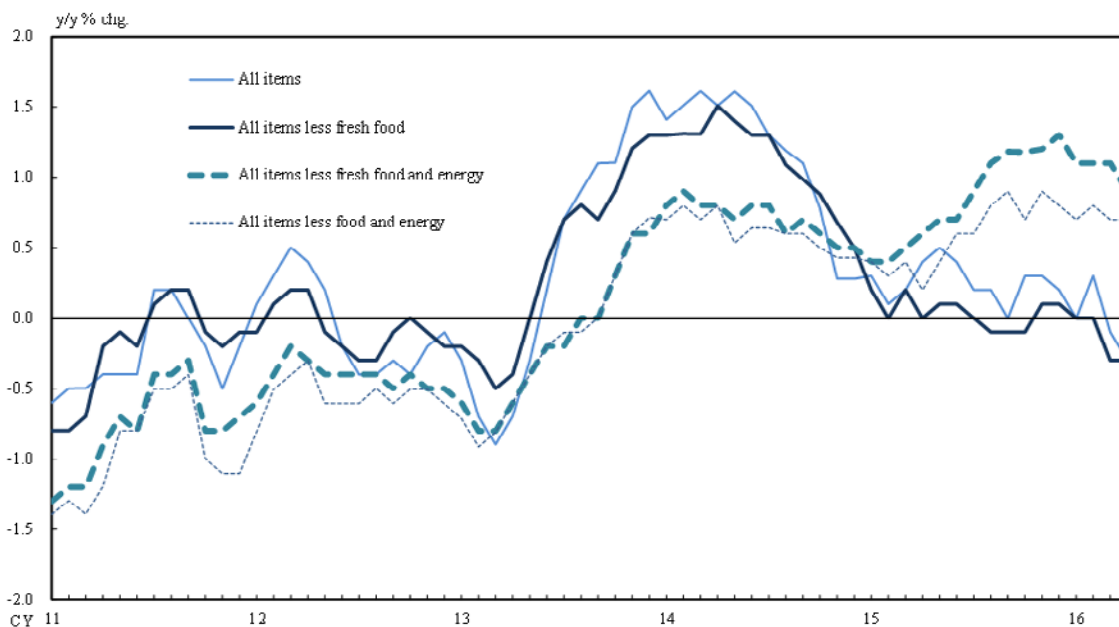
Employee Income



Notes: 1. Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February.
 2. Employee income is calculated as the "number of regular employees" times "total cash earnings". Figures are those for establishments with at least five employees.
 Source: Ministry of Health, Labour and Welfare.

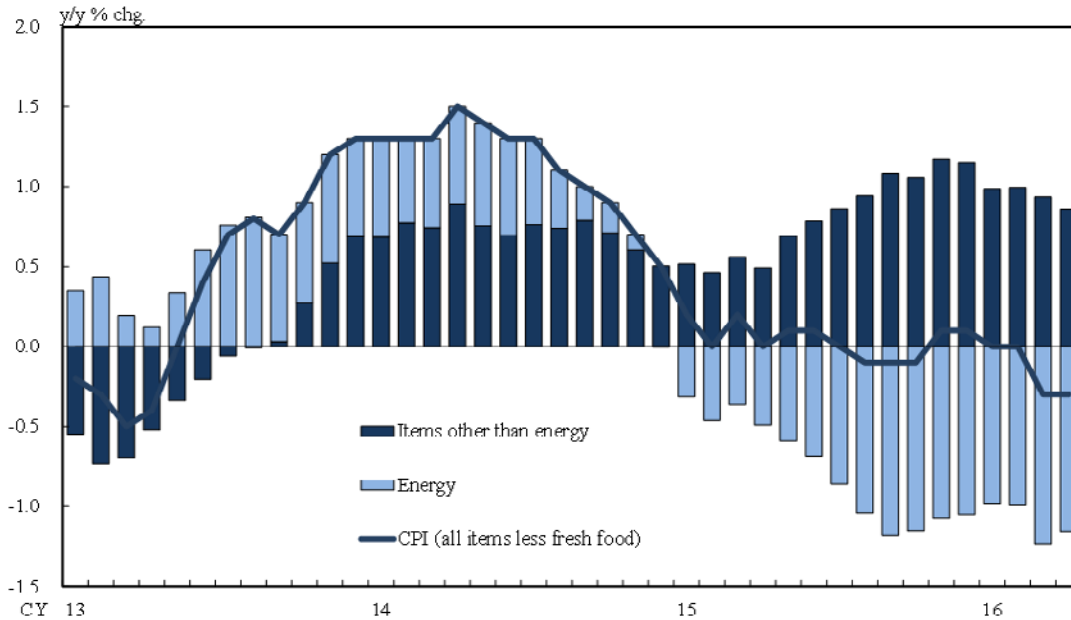
Chart 10 -1

Consumer Prices



Note: Figures from April 2014 onward are estimated by adjusting the direct effects of the consumption tax hike.
 Source: Ministry of Internal Affairs and Communications.

Consumer Prices (Continued)



Note: Figures from April 2014 onward are estimated by adjusting the direct effects of the consumption tax hike.
Source: Ministry of Internal Affairs and Communications.

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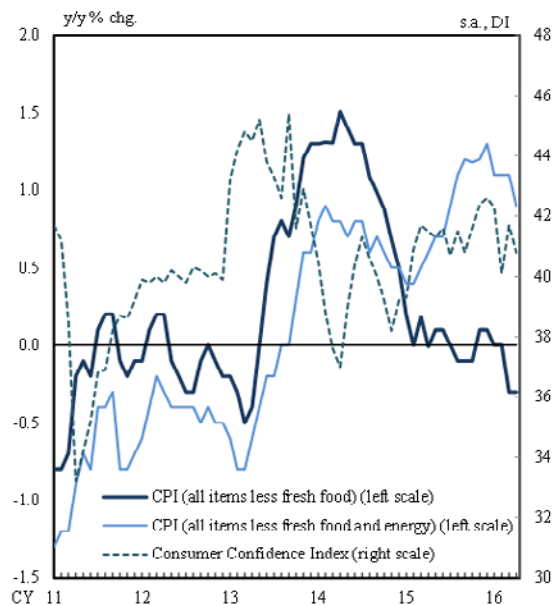
Consumer Confidence in Relation to Private Consumption and Prices

(1) Consumer Confidence and Private Consumption



Sources: Ministry of Internal Affairs and Communications; Cabinet Office.

(2) Consumer Confidence and Prices

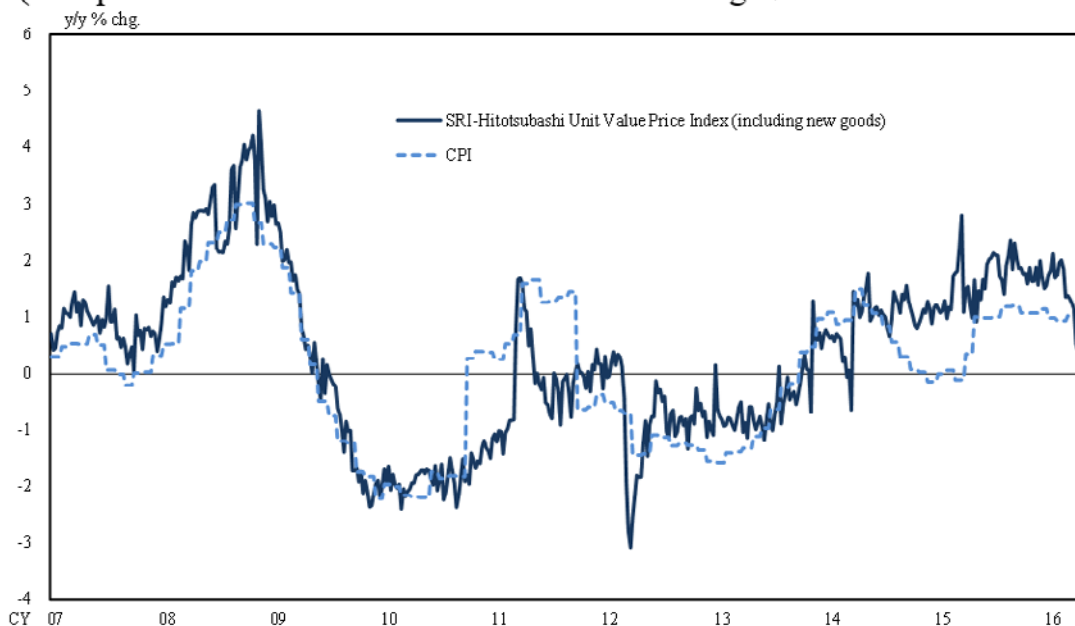


Note: Figures from April 2014 onward are estimated by adjusting the direct effects of the consumption tax hike.

Sources: Ministry of Internal Affairs and Communications; Cabinet Office.

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SRI-Hitotsubashi Unit Value Price Index (Comparison of the Unit Value Price Index Including New Goods and the CPI)



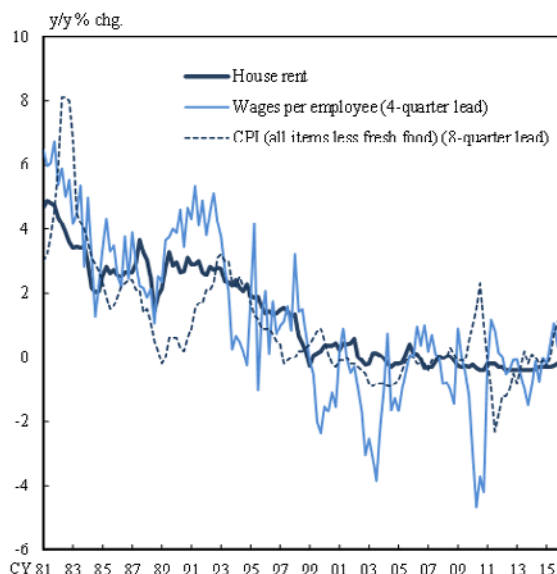
Note: The CPI is calculated based on the same items covered by the SRI-Hitotsubashi Unit Value Price Index. For details, see Naohito Abe, "Saikin no Kakaku Shisuu no Doukou to Shin Shohin no Eikyo ni Tsuite (Recent Developments in Price Indexes and Effects of New Goods)," Newsletter No. 3, the Research Center for Economic and Social Risks (RCESR), Institute of Economic Research, Hitotsubashi University, March 2015 (available only in Japanese), and Naohito Abe et al., "Effects of New Goods and Product Turnover on Price Indexes," RCESR Discussion Paper Series No. DP15-2, March 2015.

Sources: Hitotsubashi University; New Supermarket Association of Japan; Intage Inc.

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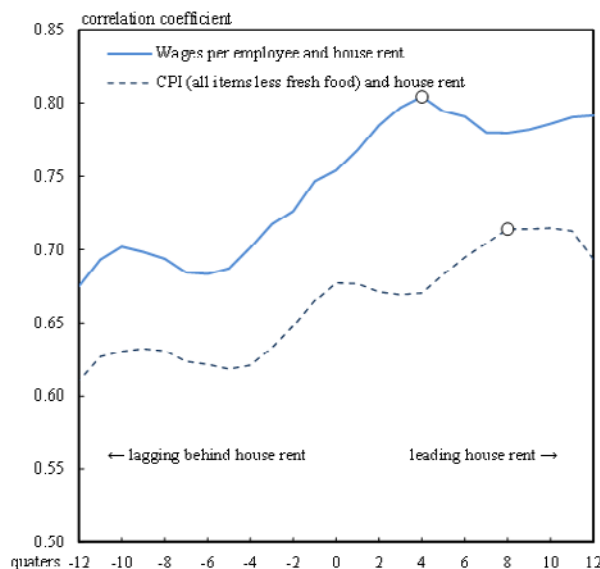
Correlation between Wages and House Rent

(1) Wages per Employee and House Rent



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

(2) Time-Lag Correlation

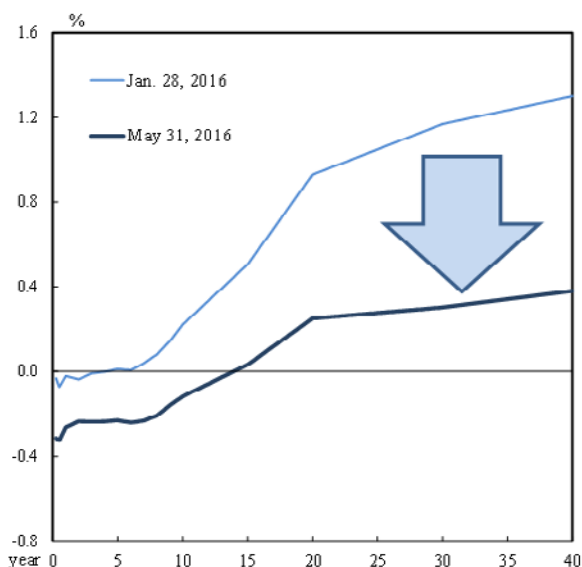


Note: Figures are calculated using data between 1981/1Q to 2016/1Q. Sources: Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare.

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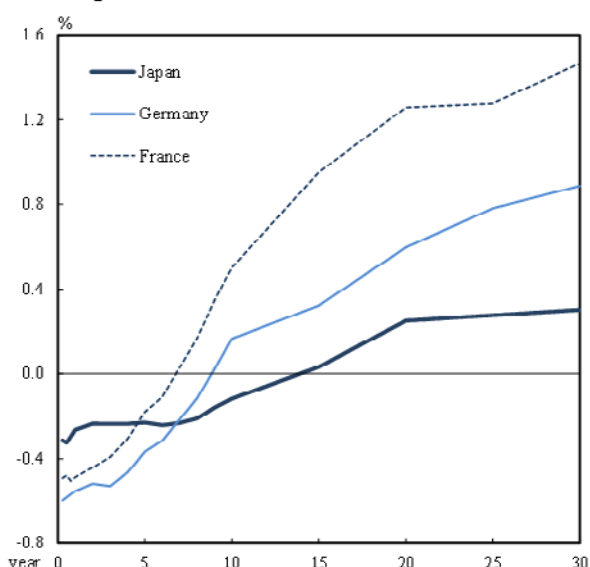
Government Bond Yield Curves

(1) JGB Yield Curve



Source: Bloomberg.

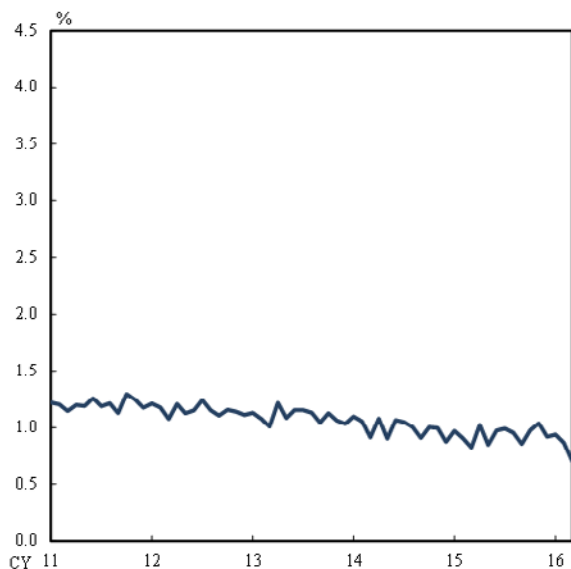
(2) Government Bond Yield Curves in Japan and Euro Area



Note: Figures are as of May 31, 2016.
Source: Bloomberg.

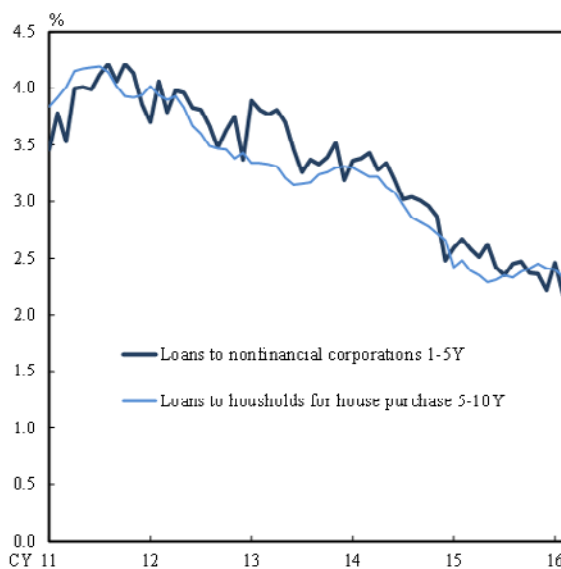
Bank Lending Rates

(1) Japan



Note: Figures are domestically licensed banks' average contract interest rates on new loans and discounts (long-term).
Source: Bank of Japan.

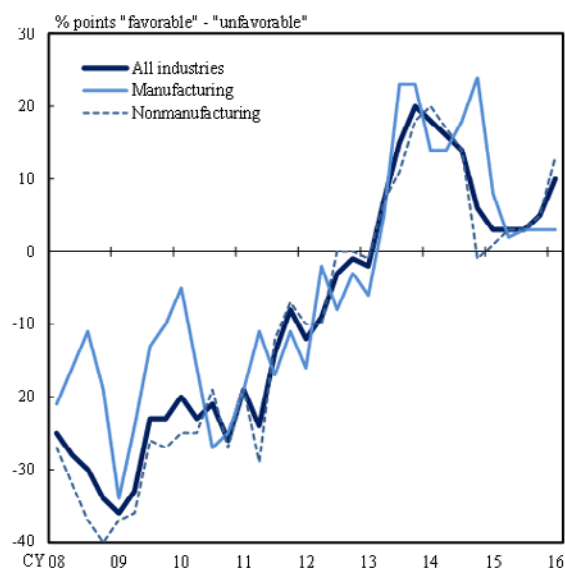
(2) Euro Area



Note: Figures are interest rates on new loans.
Sources: IIAVER; ECB.

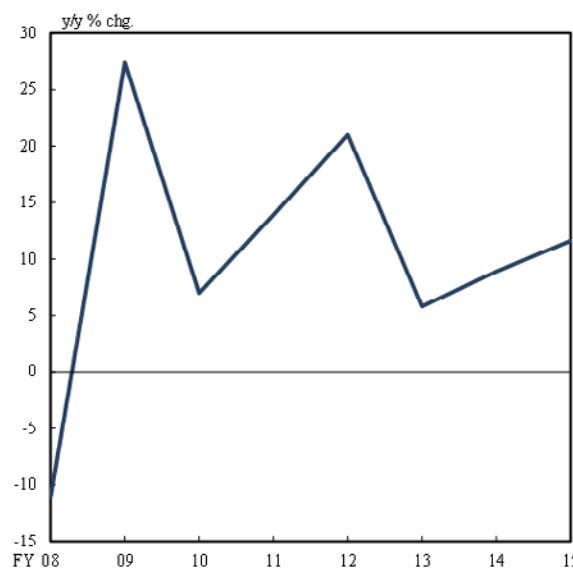
Economic Activity in Eastern Hokkaido

(1) Business Conditions DI (*Tankan*)



Note: Figures are those for enterprises of all business sizes within the region covered by the Bank of Japan Kushiro Branch.
Source: Bank of Japan

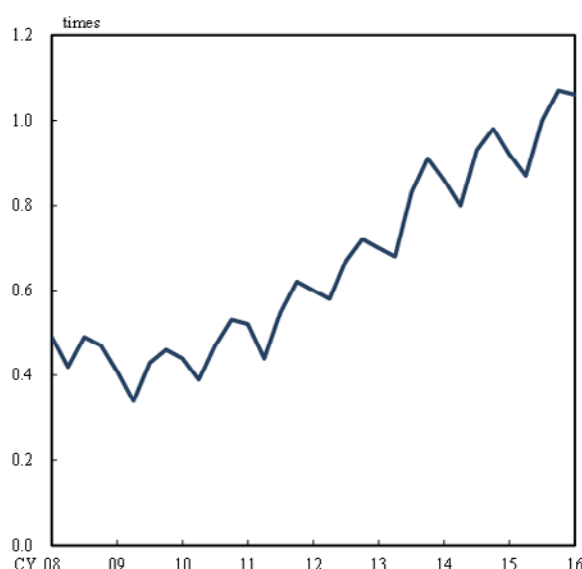
(2) Current Profits (*Tankan*)



Note: Figures are those for enterprises of all business sizes and industries within the region covered by the Bank of Japan Kushiro Branch.
Source: Bank of Japan

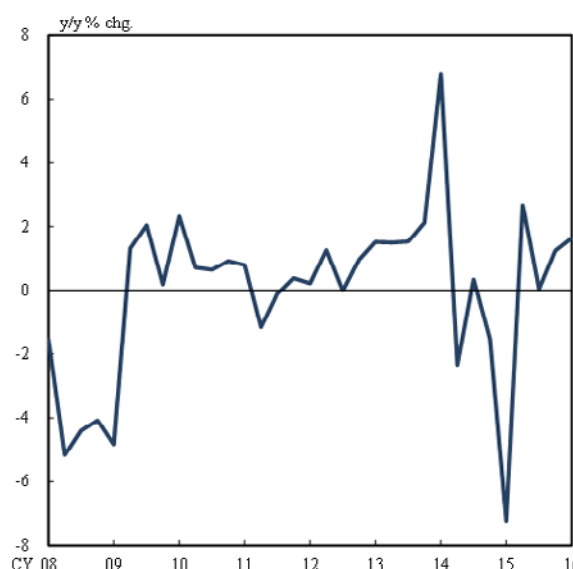
Economic Activity in Eastern Hokkaido (Continued)

(3) Active Job Openings-to-Applicants Ratio



Sources: Public Employment Security Offices in Kushiro, Nemuro, and Obihiro.

(4) Sales at Major Retail Stores



Note: Figures are those for retail stores of 17 firms within the region covered by the Bank of Japan Kushiro Branch.
Source: Bank of Japan.