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# *Outlook for Economic Activity and Prices*

*July 2017*



(English translation prepared by the Bank's staff based on the Japanese original)

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# Outlook for Economic Activity and Prices (July 2017)

## The Bank's View<sup>1</sup>

### Summary

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- Japan's economy is likely to continue expanding on the back of highly accommodative financial conditions and the effects of the government's large-scale stimulus measures, with the growth rates of overseas economies increasing moderately, and maintain growth at a pace above its potential mainly through fiscal 2018. In fiscal 2019, the economy is expected to continue expanding, although the growth pace is projected to decelerate due to a cyclical slowdown in business fixed investment and the effects of the scheduled consumption tax hike.<sup>2</sup>
  - The recent developments in the consumer price index (CPI, all items less fresh food) have been relatively weak, excluding the effects of a rise in energy prices, mainly against the background that firms' wage- and price-setting stance has remained cautious. Reflecting such developments, a rise in medium- to long-term inflation expectations has been lagging behind somewhat. Nonetheless, medium- to long-term inflation expectations are projected to rise as firms' stance gradually shifts toward raising wages and prices with an improvement in the output gap continuing. As a consequence, the year-on-year rate of change in the CPI is likely to continue on an uptrend and increase toward 2 percent.
  - Comparing the current projections with the previous ones, the projected growth rates are somewhat higher. The projected rates of increase in the CPI are lower, mainly for the first half of the projection period.
  - With regard to the risk balance, risks to both economic activity and prices are skewed to the downside. On the price front, the momentum toward achieving the price stability target of 2 percent is maintained as the output gap is expected to continue improving and medium- to long-term inflation expectations are projected to rise gradually; however, the momentum is not yet sufficiently firm, and thus developments in prices continue to warrant careful attention.
  - As for the conduct of monetary policy, the Bank will continue with "Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control," aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner. It will continue expanding the monetary base until the year-on-year rate of increase in the observed CPI (all items less fresh food) exceeds 2 percent and stays above the target in a stable manner. The Bank will make policy adjustments as appropriate, taking account of developments in economic activity and prices as well as financial conditions, with a view to maintaining the momentum toward achieving the price stability target.
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<sup>1</sup> The text of "The Bank's View" was decided by the Policy Board at the Monetary Policy Meeting held on July 19 and 20, 2017.

<sup>2</sup> The July 2017 *Outlook for Economic Activity and Prices* (Outlook Report) assumes that the consumption tax will be raised to 10 percent in October 2019 and that a reduced tax rate will be applied to food and beverages -- excluding alcohol and dining-out -- and newspapers.

## **I. The Current Situation of Economic Activity and Prices in Japan**

Japan's economy is expanding moderately, with a virtuous cycle from income to spending operating. Overseas economies have continued to grow at a moderate pace on the whole. In this situation, exports have been on an increasing trend. On the domestic demand side, business fixed investment has been on a moderate increasing trend, with corporate profits and business sentiment improving and across a wider range of industries. Private consumption has increased its resilience against the background of steady improvement in the employment and income situation. Meanwhile, public investment has been turning toward an increase and housing investment has been more or less flat. Reflecting these increases in demand both at home and abroad, industrial production has been on an increasing trend, and labor market conditions have continued to tighten steadily. Financial conditions are highly accommodative. On the price front, the year-on-year rate of change in the CPI (all items less fresh food, and the same hereafter) is in the range of 0.0-0.5 percent. Inflation expectations have remained in a weakening phase.

## **II. Baseline Scenario of the Outlook for Economic Activity and Prices in Japan**

### **A. Baseline Scenario of the Outlook for Economic Activity**

With regard to the outlook, Japan's economy is likely to continue its moderate expansion. Through fiscal 2018, domestic demand is likely to follow an uptrend, with a virtuous cycle from income to spending being maintained in both the corporate and household sectors, on the back of highly accommodative financial conditions and fiscal spending through the government's large-scale stimulus measures. Business fixed investment is likely to continue increasing moderately, supported by accommodative financial conditions, heightened growth expectations, and increases in Olympic Games-related investment, as well as in labor-saving investment to address the labor shortage. Private consumption is also expected to follow a moderate increasing trend as the employment and income situation continues to improve. Public investment is projected to increase through fiscal 2017, due mainly to the positive effects resulting from a set of stimulus measures, and thereafter remain at a relatively high level with Olympic Games-related demand. Meanwhile, the growth rates of overseas economies are expected to increase moderately as advanced economies continue growing steadily and a recovery in emerging economies takes hold on the back of the steady growth in advanced economies and the effects of policy measures taken by emerging economies. Exports are expected to continue their moderate increasing trend on the back of such an improvement in overseas economies.

In fiscal 2019, Japan's economy is expected to continue expanding, supported by external demand, although the growth pace is projected to decelerate due to a slowdown in domestic demand. Specifically, business fixed investment is likely to decelerate, mainly

reflecting cyclical adjustments in capital stock after the prolonged economic expansion, as well as Olympic Games-related demand peaking out; household spending is likely to turn to a decline in the second half of the fiscal year due to the effects of the scheduled consumption tax hike.<sup>3</sup> Nevertheless, the increase in exports on the back of the growth in overseas economies is expected to underpin the economy.

Reflecting this outlook, Japan's economy is likely to continue growing at a pace above its potential, mainly through fiscal 2018.<sup>4</sup> Comparing the current projections with the previous ones, the projected growth rates are somewhat higher.

Looking at the financial conditions assumed in the above outlook, short- and long-term real interest rates are expected to be in negative territory throughout the projection period as the Bank pursues "QQE with Yield Curve Control."<sup>5</sup> Financial institutions' proactive lending attitudes as well as favorable conditions for corporate bonds and CP issuance are both likely to be maintained and support firms' and households' activities from the financial side. Thus, financial conditions are likely to remain highly accommodative.

The potential growth rate is expected to follow a moderate uptrend throughout the projection period against the backdrop of the following: progress in implementation of the government's growth strategy, including regulatory and institutional reforms; an increase in labor participation by women and the elderly under such strategy; and firms' continued efforts toward improving productivity. Along with this, the natural rate of interest is projected to rise, thereby enhancing monetary easing effects.

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<sup>3</sup> The consumption tax hike scheduled to take place in October 2019 will affect the GDP growth rates through the following two channels: (1) the front-loaded increase and subsequent decline in demand prior to and after the consumption tax hike and (2) the effects of a decline in real income. The negative impact on the projected growth rate for fiscal 2019 is expected to be smaller than that on the rate for fiscal 2014, when the last consumption tax hike took place. However, it should be noted that the impact of the consumption tax hike is highly uncertain and varies depending, for example, on the income situation and price developments.

<sup>4</sup> Under a specific methodology, Japan's potential growth rate is estimated to be in the range of 0.5-1.0 percent. However, the estimate of the potential growth rate varies depending on the methodologies employed and could be revised as the sample period becomes longer over time. Thus, it should be regarded as being subject to a considerable margin of error.

<sup>5</sup> Individual Policy Board members make their forecasts taking into account the effects of past policy decisions and with reference to views incorporated in financial markets regarding future policy. Specifically, each Policy Board member makes an assumption about the future path of short- and long-term interest rates based on their market rates, bearing in mind the difference in the outlook for prices between that presented in the Outlook Report and that of market participants.

## B. Baseline Scenario of the Outlook for Prices

Since the previous Outlook Report, the year-on-year rate of increase in the CPI has been accelerating, pushed up by energy prices. However, excluding the effects of energy prices, the recent developments in the CPI have been relatively weak, as evidenced by limited price rises at the start of the new fiscal year.

This is partly attributable to the fact that the mindset and behavior based on the assumption that wages and prices will not increase easily have been deeply entrenched among firms and households, as well as to temporary factors such as reductions in prices of and charges for mobile phones. Firms have been making efforts to absorb a rise in labor costs by increasing labor-saving investment and streamlining their business process, while limiting wage increases -- which correspond to the labor shortage -- mainly to wages of part-time employees. As suggested by these developments, firms' wage- and price-setting stance has remained cautious despite the steady tightening of labor market conditions and the high levels of corporate profits. A rise in medium- to long-term inflation expectations has been lagging behind somewhat, as such expectations are largely affected by the observed inflation rate.

Nevertheless, with regard to the outlook, the year-on-year rate of change in the CPI is likely to continue on an uptrend and increase toward 2 percent, mainly on the back of the improvement in the output gap and the rise in medium- to long-term inflation expectations. Comparing the current projections with the previous ones, although the projected rates of increase in the CPI are lower mainly for the first half of the projection period, a virtuous cycle between a moderate rise in the inflation rate and wage increases is likely to start operating gradually toward the end of the projection period -- that is, toward fiscal 2019. The timing of the year-on-year rate of change in the CPI reaching around 2 percent will likely be around fiscal 2019.<sup>6</sup>

The mechanism through which the virtuous cycle operates can be explained by the following three factors that determine inflation rates. First, the output gap -- which shows the utilization of labor and capital -- has improved steadily. In particular, the tightening of labor market conditions is becoming even more evident, as evidenced by the active job openings-to-applicants ratio exceeding the peak level observed during the bubble period, and by the unemployment rate having declined to around 3 percent. Going forward, as the economy continues its moderate expansion, the output gap is expected to widen further within positive territory through fiscal 2018 and remain substantially positive in fiscal 2019.

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<sup>6</sup> By assuming that the rise in the consumption tax will be fully passed on to taxable items excluding those to which a reduced tax rate will be applied, the effects of the October 2019 consumption tax hike on the year-on-year rate of change in the CPI (all items less fresh food) for October 2019 onward is estimated to be 1.0 percentage point; the effect for fiscal 2019 is thus estimated to be half that, at 0.5 percentage point.

Second, medium- to long-term inflation expectations have remained in a weakening phase, reflecting the year-on-year rate of change in the observed CPI having been at around 0 percent or in slightly negative territory since spring 2015; however, some indicators show a rise in such expectations recently. As for the outlook, medium- to long-term inflation expectations are likely to follow an increasing trend and gradually converge to around 2 percent on the back of the following: (1) in terms of the adaptive component, developments mainly in import prices are expected to push up the observed inflation rate for the time being, and firms' stance is likely to gradually shift toward raising wages and prices thereafter with the improvement in the output gap, and (2) in terms of the forward-looking component, the Bank will pursue monetary easing through its strong commitment to achieving the price stability target.<sup>7</sup>

Third, regarding import prices, a pick-up in international commodity prices, including crude oil prices, observed from last spring through early this year is expected to push up the year-on-year rate of change in energy prices in the CPI for fiscal 2017. As for the impact of foreign exchange rates on consumer prices through import prices, the past yen depreciation is likely to increase upward pressure on prices, mainly in fiscal 2017.

### **III. Upside and Downside Risks to Economic Activity and Prices**

#### **A. Upside and Downside Risks to Economic Activity**

The following are upside and downside risks to the Bank's baseline scenario regarding the economy. First, there is uncertainty regarding developments in overseas economies. Specifically, the following are considered as risks: the U.S. economic policies and their impact on global financial markets; developments in emerging and commodity-exporting economies; negotiations on the United Kingdom's exit from the European Union (EU) and their effects; prospects regarding the European debt problem, including the financial sector; and geopolitical risks. If these risks were to materialize, they could exert downward pressure on economic activity. On the other hand, as market participants and economic entities factor them in to a certain extent, the economy could deviate upward from the baseline scenario depending on how they play out.

Second, firms' and households' medium- to long-term growth expectations may be either raised or lowered depending on the following: efforts to address medium- to long-term issues such as the aging population; developments in regulatory and institutional reforms,

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<sup>7</sup> Medium- to long-term inflation expectations can be regarded as consisting of two components: a forward-looking component, in which inflation expectations converge to the price stability target set by the central bank, and a backward-looking, or adaptive, component that reflects the observed inflation rate. For details, see the Bank's *Comprehensive Assessment: Developments in Economic Activity and Prices as well as Policy Effects since the Introduction of Quantitative and Qualitative Monetary Easing (QQE)* released in September 2016.

particularly in the labor market; innovation in the corporate sector; and the employment and income situation.

Third, in the event that confidence in fiscal sustainability in the medium to long term declines, the economy may deviate downward from the baseline scenario through increasing concerns regarding the future and the rises in long-term interest rates associated with them. On the other hand, there is also a possibility that the economy will deviate upward from the baseline scenario if confidence in the path toward fiscal consolidation strengthens and concerns regarding the future are alleviated.

## **B. Upside and Downside Risks to Prices**

Other than risks to economic activity, the specific factors that could exert upside and downside risks to prices are as follows. The first factor is developments in firms' and households' medium- to long-term inflation expectations. Although inflation expectations are likely to follow an increasing trend, there is a risk that a rise in inflation expectations will lag further behind if it takes time for firms' stance to shift toward raising wages and prices and inflation consequently remains relatively sluggish.

The second factor is the fact that there are items for which prices are not particularly responsive to the output gap. There is a particular concern about the continued dull responses of administered prices, some services prices, and housing rent, which might continue to constrain the acceleration of CPI inflation.

Third, developments in foreign exchange rates and international commodity prices going forward, as well as the extent to which such developments will spread to import prices and domestic prices, may lead prices to deviate either upward or downward from the baseline scenario.

## **IV. Conduct of Monetary Policy**

In the context of the price stability target, the Bank assesses the aforementioned economic and price situation from two perspectives and then outlines its thinking on the future conduct of monetary policy.<sup>8</sup>

The first perspective concerns an examination of the baseline scenario for the outlook. The year-on-year rate of change in the CPI is likely to increase toward 2 percent. Although it is necessary to carefully examine the fact that firms' wage- and price-setting stance has remained cautious, the momentum toward achieving the price stability target of 2 percent

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<sup>8</sup> As for the examination from two perspectives in the context of the price stability target, see the Bank's statement released on January 22, 2013, entitled "The 'Price Stability Target' under the Framework for the Conduct of Monetary Policy."



appears to be maintained. This is because (1) firms' stance is likely to gradually shift toward raising wages and prices with the steady improvement in the output gap, and (2) while indicators of medium- to long-term inflation expectations have stopped declining and some of them are showing a rise, such expectations are projected to rise steadily as further price rises come to be observed widely.

The second perspective involves an examination of the risks considered most relevant to the conduct of monetary policy. With regard to the outlook for economic activity, risks are skewed to the downside, particularly regarding developments in overseas economies. With regard to the outlook for prices, risks are skewed to the downside, especially concerning developments in medium- to long-term inflation expectations. Examining financial imbalances from a longer-term perspective, there is no sign so far of excessively bullish expectations in asset markets or in the activities of financial institutions. Furthermore, prolonged downward pressure on financial institutions' profits under the continued low interest rate environment could create risks of a gradual pullback in financial intermediation and of destabilizing the financial system. However, at this point, these risks are judged as not significant, mainly because financial institutions have sufficient capital bases.

As for the conduct of monetary policy, the Bank will continue with "QQE with Yield Curve Control," aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner. It will continue expanding the monetary base until the year-on-year rate of increase in the observed CPI (all items less fresh food) exceeds 2 percent and stays above the target in a stable manner. The Bank will make policy adjustments as appropriate, taking account of developments in economic activity and prices as well as financial conditions, with a view to maintaining the momentum toward achieving the price stability target.

### Forecasts of the Majority of Policy Board Members

y/y % chg.

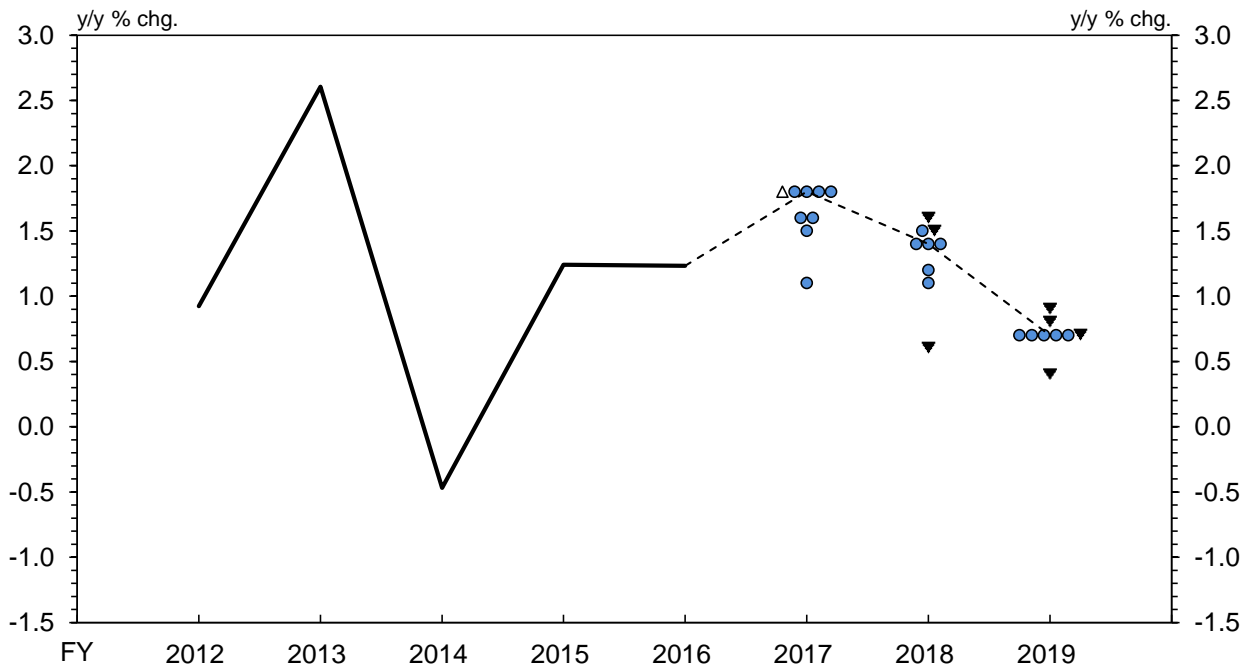
	Real GDP	CPI (all items less fresh food)	Excluding the effects of the consumption tax hike
Fiscal 2017	+1.5 to +1.8 [+1.8]	+0.5 to +1.3 [+1.1]	
Forecasts made in April 2017	+1.4 to +1.6 [+1.6]	+0.6 to +1.6 [+1.4]	
Fiscal 2018	+1.1 to +1.5 [+1.4]	+0.8 to +1.6 [+1.5]	
Forecasts made in April 2017	+1.1 to +1.3 [+1.3]	+0.8 to +1.9 [+1.7]	
Fiscal 2019	+0.7 to +0.8 [+0.7]	+1.4 to +2.5 [+2.3]	+0.9 to +2.0 [+1.8]
Forecasts made in April 2017	+0.6 to +0.7 [+0.7]	+1.4 to +2.5 [+2.4]	+0.9 to +2.0 [+1.9]

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

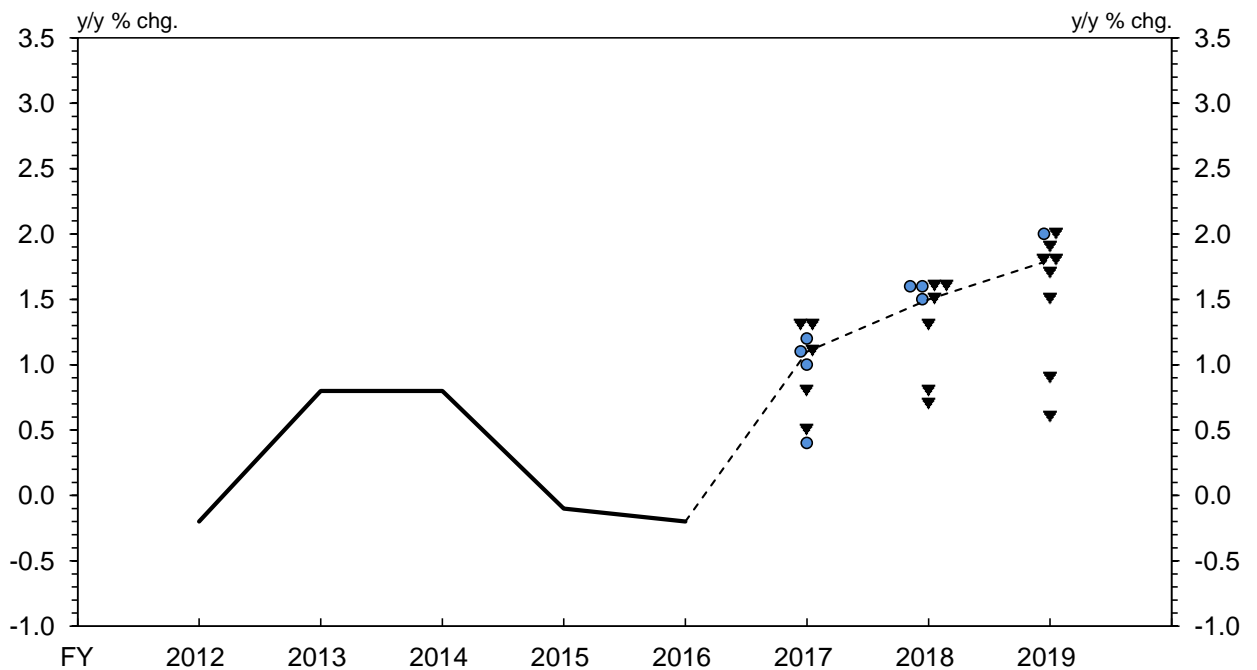
2. The forecasts of the majority of the Policy Board members are constructed as follows: each Policy Board member's forecast takes the form of a point estimate -- namely, the figure to which he or she attaches the highest probability of realization. These forecasts are then shown as a range, with the highest figure and the lowest figure excluded. The range does not indicate the forecast errors.
3. Individual Policy Board members make their forecasts taking into account the effects of past policy decisions and with reference to views incorporated in financial markets regarding future policy. Specifically, each Policy Board member makes an assumption about the future path of short- and long-term interest rates based on their market rates, bearing in mind the difference in the outlook for prices between that presented in the Outlook Report and that of market participants.
4. The consumption tax hike scheduled to take place in October 2019 -- to 10 percent -- and the reduced tax rate to be applied to food and beverages -- excluding alcohol and dining-out -- and newspapers are incorporated in the forecasts, but individual Policy Board members make their forecasts of the CPI based on figures excluding the direct effects of the consumption tax hike. The forecasts for the CPI for fiscal 2019 that incorporate the direct effects of the consumption tax hike are constructed as follows. First, the contribution to prices from the tax hike is mechanically computed on the assumption that the tax increase will be fully passed on for taxable items. The CPI will be pushed up by 0.5 percentage point. Second, this figure is added to the forecasts made by the Policy Board members.

## Policy Board Members' Forecasts and Risk Assessments

### (1) Real GDP



### (2) CPI (All Items Less Fresh Food)



Notes: 1. Solid lines show actual figures, while dotted lines show the medians of the Policy Board members' forecasts (point estimates).

2. The locations of ●, ▲, and ▼ in the charts indicate the figures for each Policy Board member's forecasts to which he or she attaches the highest probability. The risk balance assessed by each Policy Board member is shown by the following shapes: ● indicates that a member assesses "upside and downside risks as being generally balanced," ▲ indicates that a member assesses "risks are skewed to the upside," and ▼ indicates that a member assesses "risks are skewed to the downside."

3. Figures for the CPI exclude the direct effects of the consumption tax hikes.

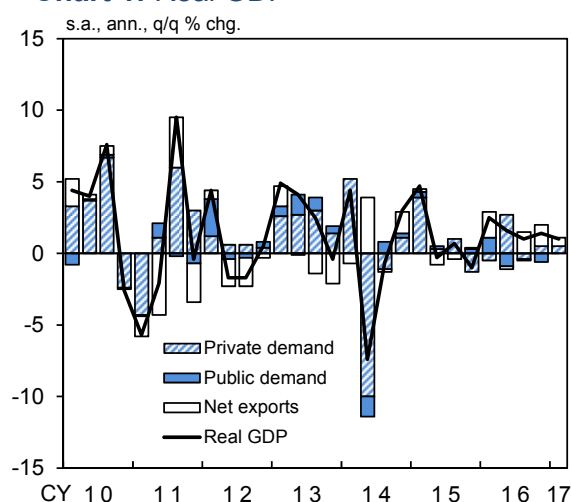
## The Background<sup>9</sup>

### I. The Current Situation of Economic Activity and Its Outlook

#### A. Economic Developments

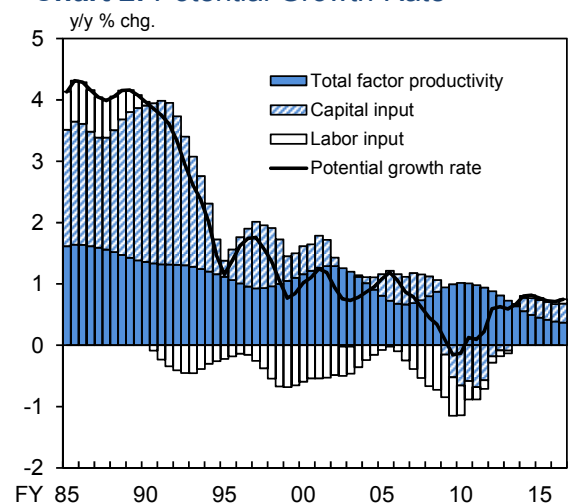
Looking back at Japan's economy since the April 2017 Outlook Report, the real GDP growth rate for the January-March quarter was 0.3 percent on a quarter-on-quarter basis and its annualized rate was 1.0 percent, representing positive growth for five consecutive quarters (Chart 1). External demand increased firmly, led by exports of IT-related goods and capital goods to Asia. With regard to domestic demand, private consumption and business fixed investment also increased, and thus the real GDP growth rate as a whole was somewhat above the potential growth rate, which is estimated to be in the range of 0.5-1.0 percent (Chart 2). Reflecting these increases in demand both at home and abroad, labor market conditions have continued to tighten steadily (Chart 3). The output gap -- which captures the utilization of labor and capital -- has improved steadily of late and was in the range of 0.5-1.0 percent for the January-March quarter (Chart 4).<sup>10</sup> Monthly indicators since April suggest that a positive output gap has taken hold, due mainly to private consumption increasing its resilience against the background of steady improvement in the employment and income situation. Therefore, Japan's economy is expanding moderately, with a

Chart 1: Real GDP



Source: Cabinet Office.

Chart 2: Potential Growth Rate



Source: Bank of Japan.  
Note: Based on staff estimations.

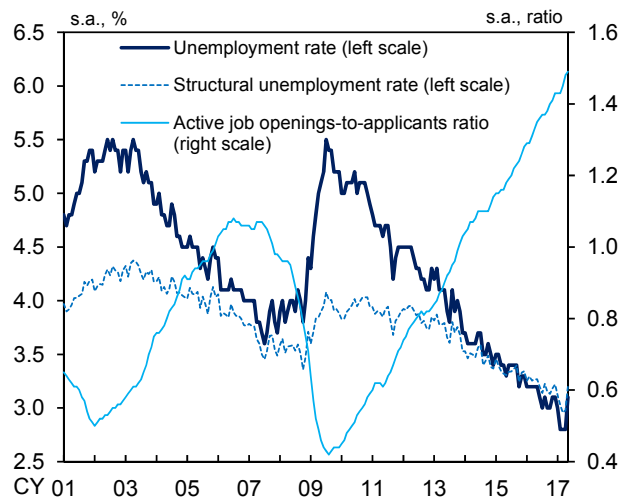
<sup>9</sup> "The Background" provides explanations of "The Bank's View" decided by the Policy Board of the Bank of Japan at the Monetary Policy Meeting held on July 19 and 20, 2017.

<sup>10</sup> The Research and Statistics Department of the Bank of Japan revised the estimation method of Japan's output gap and potential growth rate in April 2017. For details including the technical aspects, see the Bank's research paper "Methodology for Estimating Output Gap and Potential Growth Rate: An Update" released in May 2017.

virtuous cycle from income to spending operating.

Going forward, the underlying scenario of the outlook for Japan's economy from fiscal 2017 through fiscal 2018 is unchanged, in that the real GDP growth rate is projected to continue to clearly exceed the potential on the back of stimulus effects of fiscal and monetary policies, as well as a rise in the growth rates of overseas economies. In fiscal 2019, albeit with considerable uncertainties, the economy is expected to continue expanding led by external demand, although the growth rate is projected to decelerate from the previous fiscal year. This is likely to be attributable to (1) the decline in household spending due to the effects of the scheduled consumption tax hike, combined with (2) the deceleration in business fixed investment reflecting cyclical adjustments in capital stock as well as Olympic Games-related investment

**Chart 3: Labor Market Conditions**

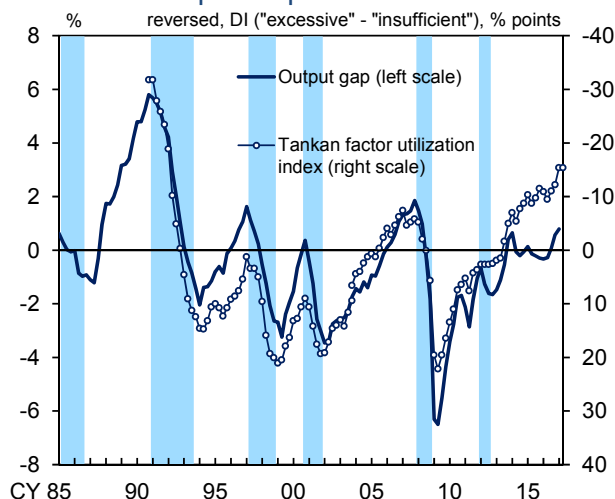


Sources: Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare.  
 Note: The structural unemployment rate is based on staff estimations.

peaking out.<sup>11</sup> Comparing the current projections with those presented in the previous Outlook Report, the projected growth rates are somewhat higher.

Details of the outlook for each fiscal year are as follows. In fiscal 2017, the economy is expected to continue expanding firmly -- driven by an increase in demand at home and abroad -- against the background of the rise in the growth rates of overseas economies and the effects resulting from the government's large-scale stimulus measures. Looking at this in detail, exports are likely to continue their moderate increasing trend, mainly led by IT-related goods and capital goods, with global production and trade activity of the manufacturing sector remaining at a favorable level. Under such circumstances, business fixed investment will likely continue increasing moderately -- including

**Chart 4: Output Gap**



Source: Bank of Japan.  
 Notes: 1. The output gap is based on staff estimations.  
 2. The Tankan factor utilization index is calculated as the weighted average of the production capacity DI and the employment conditions DI for all enterprises. The capital and labor shares are used as weights. There is a discontinuity in the data in December 2003 due to a change in the survey framework.  
 3. Shaded areas indicate recession periods.

<sup>11</sup> The consumption tax hike scheduled to take place in October 2019 will have some impact on the GDP growth rates, mainly due to changes in household spending, through the following two channels: (1) the front-loaded increase and subsequent decline in demand prior to and after the consumption tax hike and (2) the effects of the decline in real income. At present, the negative impact of the consumption tax hike on the projected growth rate for fiscal 2019 is expected to be smaller than that on the rate for fiscal 2014, when the last consumption tax hike took place. This is mainly due to the following: (1) there are technical factors that, as the consumption tax hike is scheduled to take place in the middle of the fiscal year, the front-loaded increase and subsequent decline in demand prior to and after the hike will offset each other during the fiscal year, and the effects of the decline in real income will only emerge in the second half of the fiscal year; (2) the increase in the consumption tax rate is smaller than that of the previous tax hike and a reduced tax rate will be applied to some items; and (3) before the previous tax hike, there likely was a front-loaded increase in demand in anticipation of the second round of the tax hike. It should be noted, however, that the impact of the consumption tax hike is highly uncertain and varies depending, for example, on developments in consumer sentiment.

in manufacturing, in which sluggishness had remained -- underpinned by monetary easing effects, as well as increases in construction investment related to the Olympic Games and urban redevelopment projects and in labor-saving investment to address the labor shortage. Meanwhile, public investment is likely to rise, as the effects resulting from the set of stimulus measures become evident. Private consumption is expected to follow a moderate increasing trend due to a rise in disposable income that is supported in part by the set of stimulus measures, the wealth effects resulting from the rise in stock prices, as well as an increase in replacement demand for durable goods. As a result of these economic developments, in fiscal 2017, the real GDP growth rate is projected to clearly exceed the potential and the output gap is likely to widen further within positive territory.

In fiscal 2018, the economy is likely to maintain a moderate expansion with domestic and foreign demand increasing in a well-balanced manner. Exports are projected to continue increasing moderately, reflecting the improvement in overseas economies. Business fixed investment is also expected to continue to see a steady increase, on the back of accommodative financial conditions and increases in Olympic Games-related demand and in needs for labor-saving equipment stemming from the labor shortage. Private consumption will likely maintain its growth momentum, supported by the rise in disposable income resulting from an increase in a base pay rise. Meanwhile, public investment is likely to start declining because the positive effects resulting from the set of stimulus measures will diminish, but is projected to

maintain its high level underpinned by Olympic Games-related demand. On this basis, the real GDP growth rate for fiscal 2018 is projected to continue exceeding the potential, although decelerate compared to the previous fiscal year, and the output gap is likely to continue improving.

In fiscal 2019, the growth pace is projected to decelerate, mainly due to a slowdown in domestic demand. Private consumption is expected to accelerate its pace of increase in the first half of the fiscal year, reflecting the front-loaded increase in demand prior to the scheduled consumption tax hike, and then start declining in the second half of the fiscal year, pushed down by the subsequent decline in demand following the tax hike and the effects of the decline in real income. Business fixed investment will likely decelerate under cyclical downward pressure resulting from capital stock adjustments, combined with the effects of Olympic Games-related investment peaking out. However, exports are projected to maintain their increasing trend on the back of steady growth in overseas economies, and thereby underpin the economy. As a result of these developments, the economy is expected to continue expanding, although the growth rate is projected to decelerate from the previous fiscal year.



## B. Developments in Major Expenditure Items and Their Background

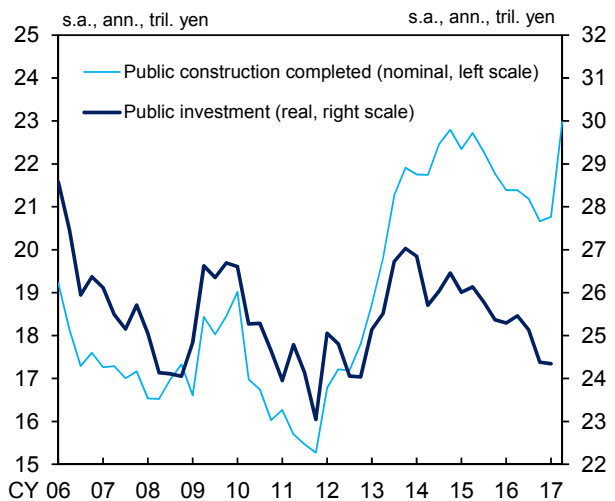
### Government Spending

Public investment has been turning toward an increase (Chart 5). In fiscal 2017, it is likely to increase -- led by investment in measures for restoration and rebuilding following the Kumamoto Earthquake and a variety of infrastructure enhancements -- as the effects resulting from the set of stimulus measures gradually take hold. From fiscal 2018 onward, it is expected to start declining as the positive effects resulting from the set of stimulus measures diminish, and then remain more or less flat at a high level underpinned by Olympic Games-related construction.

### Overseas Economies

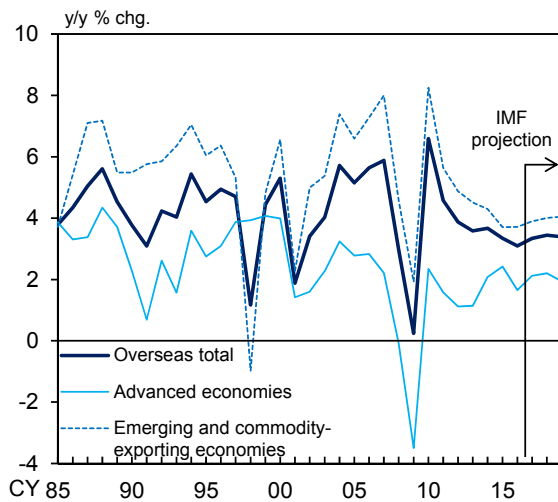
Overseas economies have continued to grow at a moderate pace on the whole (Chart 6). Business sentiment of manufacturing firms has been on an improving trend on a global basis, and the world trade volume has been recovering (Charts 7 and 12). Looking at developments by major region, the U.S. economy has continued to recover firmly, mainly in household spending, owing to a steady improvement in the employment and income situation. The European economy also has continued to recover steadily, albeit at a moderate pace, mainly in the household sector. The Chinese economy has continued to see stable growth on the whole, partly due to the effects of authorities' measures to support economic activity. Other emerging economies and commodity-exporting economies have picked up on the whole, particularly reflecting a pick-up in exports, a bottoming out of commodity prices, and

**Chart 5: Public Investment**



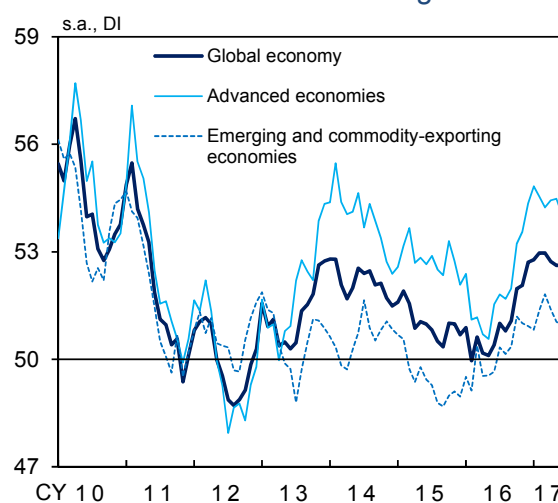
Sources: Cabinet Office; Ministry of Land, Infrastructure, Transport and Tourism.  
Note: The figure for 2017/Q2 is the April-May average.

**Chart 6: Overseas Economies**



Sources: IMF; Ministry of Finance.  
Note: Figures are the weighted averages of real GDP growth rates using countries' share in Japan's exports as weights. Annual GDP growth rates are from the "World Economic Outlook (WEO)" as of April 2017. Advanced economies consist of the United States, the euro area, and the United Kingdom. Emerging and commodity-exporting economies consist of the rest of the world economy.

**Chart 7: Global Manufacturing PMI**



Sources: IHS Markit (© and database right IHS Markit Ltd 2017. All rights reserved.); IMF, etc.  
Note: Figures for the global economy are the "J.P. Morgan Global Manufacturing PMI."  
Figures for advanced economies as well as emerging and commodity-exporting economies are calculated as the weighted averages of the Manufacturing PMI using PPP-adjusted GDP shares of world total GDP from the IMF as weights. Advanced economies consist of the United States, the euro area, the United Kingdom, and Japan. Emerging and commodity-exporting economies consist of 17 countries and regions, such as China, South Korea, Taiwan, Russia, and Brazil.

the effects of those economies' economic stimulus measures.

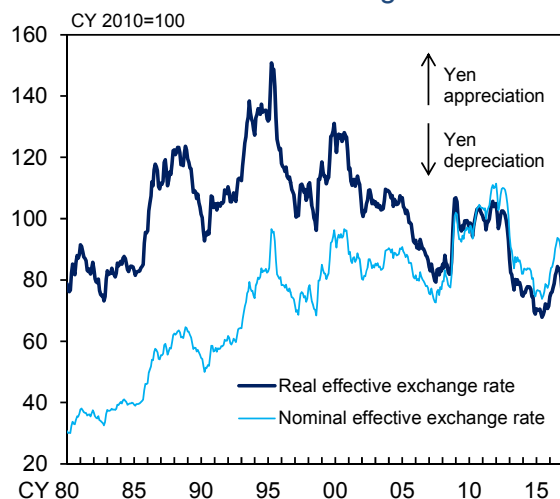
In terms of the outlook, the growth rates of overseas economies are expected to increase moderately as advanced economies continue growing steadily and a recovery in emerging economies takes hold on the back of the steady growth in advanced economies and the effects of policy measures taken by emerging economies.

By major region, the U.S. economy is expected to continue to see firm growth driven by domestic private demand. The European economy will likely follow a moderate recovery trend, while uncertainty -- associated with political issues such as those regarding negotiations on the United Kingdom's exit from the EU and with the European debt problem, including the financial sector -- is likely to be a burden on economic activity. The Chinese economy is likely to broadly follow a stable growth path as authorities conduct fiscal and monetary policy in a timely manner. The growth rates of other emerging economies and commodity-exporting economies are likely to increase gradually, due mainly to the effects of the economic stimulus measures and the spread of the effects of steady growth in advanced economies.

## Exports and Imports

Exports have been on an increasing trend on the back of a pick-up in emerging economies (Chart 9). By region, exports to advanced economies have continued on their increasing trend; those to emerging economies have picked up, led mainly

**Chart 8: Effective Exchange Rates**



Sources: BIS; Bank of Japan.

Notes: 1. Figures are based on the broad index of the BIS effective exchange rate. Those prior to 1994 are calculated using the narrow index.

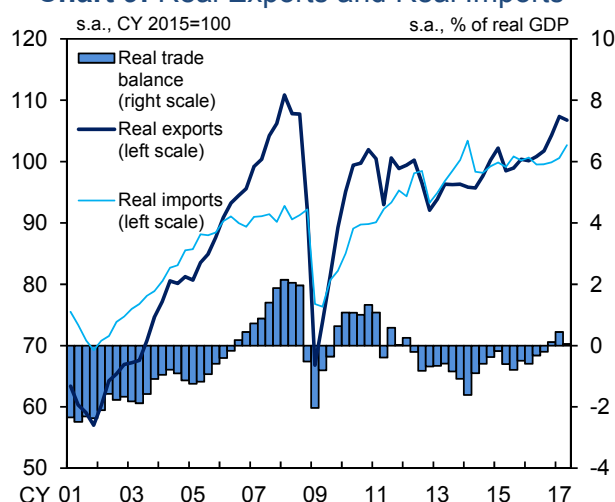
2. Figures for June and July 2017 have been calculated using the daily nominal effective exchange rate (the Yen Index) compiled by the Bank of Japan.

by electronic parts and capital goods to Asia (Chart 10). By goods, automobile-related exports have continued to increase, due in part to the rising value-added of automobiles exported from Japan (Chart 11). IT-related exports have remained at high levels, as demand for parts for data centers and on-board equipment for motor vehicles has been firm, although the pace of increase in parts for smartphones -- which had been increasing at a rapid pace -- has come to a pause. A pick-up in exports of capital goods has become evident, reflecting the global recovery trend in business fixed investment.

Exports will likely continue their increasing trend for the time being, as those of capital goods and IT-related goods -- in which Japan has a comparative advantage -- are likely to be firm with global production and trade activity of the manufacturing sector remaining at a favorable level. Thereafter, Japan's exports are expected to continue their moderate increasing trend, albeit with fluctuations resulting from the subsequent decline in IT-related demand, as (1) the world trade volume is likely to continue its moderate increase with the growth in overseas economies and (2) Japan's share of exports is expected to follow a very moderate increasing trend, reflecting improvement in Japan's export competitiveness (Charts 12 and 13).<sup>12</sup>

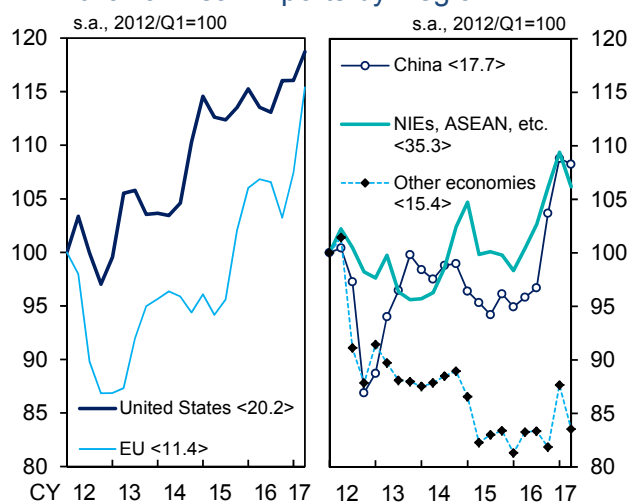
Looking at this in detail, the world trade volume had tended to grow at a slower pace than world economic growth -- the so-called slow trade -- since 2011, but has accelerated its growth pace

**Chart 9: Real Exports and Real Imports**



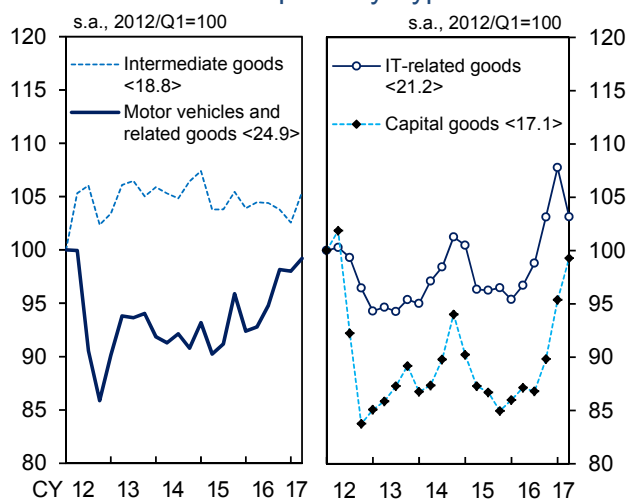
Sources: Bank of Japan; Ministry of Finance; Cabinet Office.  
Note: Based on staff calculations. Figures for 2017/Q2 are April-May averages.

**Chart 10: Real Exports by Region**



Sources: Bank of Japan; Ministry of Finance.  
Note: Based on staff calculations. Figures in angular brackets show the share of each country or region in Japan's total exports in 2016. Figures for 2017/Q2 are April-May averages.

**Chart 11: Real Exports by Type of Goods**



Sources: Bank of Japan; Ministry of Finance.  
Note: Based on staff calculations. Figures in angular brackets show the share of each type of goods in Japan's total exports in 2016. Figures for 2017/Q2 are April-May averages.

<sup>12</sup> The world trade volume is calculated by adding up real imports in each country.

recently, mainly for Asia and the United States. Going forward, the pace of increase in the world trade volume is expected to be closer to that in world economic growth -- that is, a declining trend in the world trade volume to GDP ratio is likely to come to a halt -- albeit with fluctuations that mainly reflect the cycle of global demand for IT-related goods, as a global recovery in production and trade activity of the manufacturing sector is likely to continue, with the recovery in emerging economies taking hold.

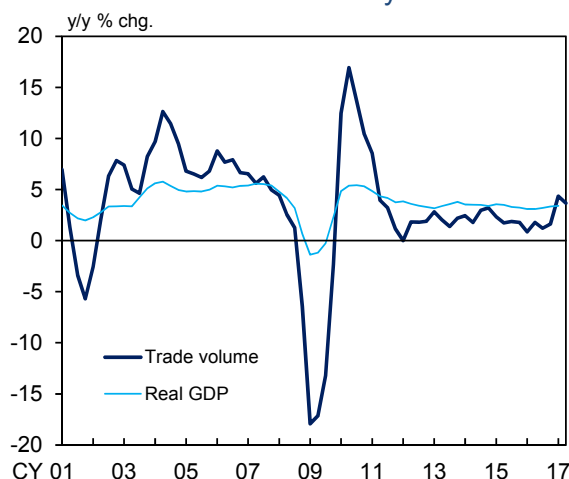
Japan's share of exports in world trade has been on a rising trend recently, due in part to an increase in demand for IT-related goods and capital goods, in which Japan has a comparative advantage. It is expected to follow a very moderate rising trend, as an uptrend in exports of capital goods is likely to continue, supported by the recovery in emerging economies.

Imports have been picking up, mainly on the back of an increase in those of consumer goods, reflecting developments in private consumption (Chart 9). Going forward, they are expected to follow a moderate uptrend, reflecting an increase in domestic demand; however, the pace is projected to remain only moderate due to a downtrend in imports of raw materials, reflecting an improvement in energy efficiency.

## External Balance

The nominal current account surplus has been at a high level, mainly backed by the primary income balance (Chart 14). It will likely increase moderately on the back of an improving trend in

**Chart 12: World Trade Volume and Real GDP of the World Economy**



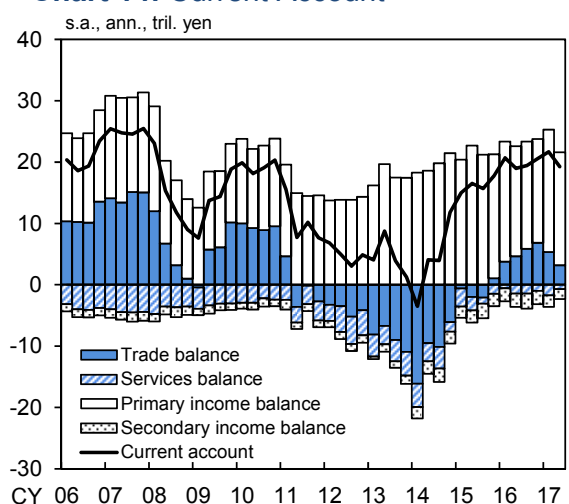
Sources: CPB Netherlands Bureau for Economic Policy Analysis; IMF, etc.  
Notes: 1. Figures for the trade volume are those for real imports.  
The figure for 2017/Q2 is that for April.  
2. Real GDP of the world economy is based on staff calculations using PPP-adjusted GDP shares of world total GDP from the IMF as weights.

**Chart 13: Japan's Share of Exports in World Trade**



Source: CPB Netherlands Bureau for Economic Policy Analysis.  
Note: Japan's share of exports in world trade is obtained by dividing Japan's real exports by world real imports (2010 prices). The figure for 2017/Q2 is that for April.

**Chart 14: Current Account**



Source: Ministry of Finance and Bank of Japan.  
Note: Figures for 2017/Q2 are April-May averages.

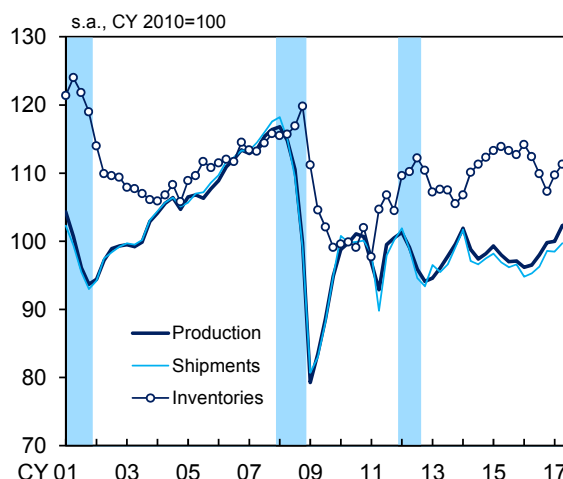
the trade balance that reflects the aforementioned outlook for exports and imports, as well as of an improvement in the income balance brought about by the growth in overseas economies.

## Industrial Production

Industrial production has been on an increasing trend on the back of the increase in demand at home and abroad (Chart 15). Transport equipment production has continued to increase firmly since the second half of 2016, albeit with fluctuations, mainly against the background of a shift of production sites from overseas back to Japan. The production of electronic parts and devices has continued to increase, mainly driven by those for smartphones, data centers, and on-board equipment for motor vehicles. The production of machinery (i.e., "general-purpose, production and business oriented machinery" in the *Indices of Industrial Production*) has increased, and across a wider range of items, as seen in the fact that production of construction machinery has started to pick up recently, while that of semiconductor production equipment has remained at a high level, although its pace of increase seems to have come to a pause. Meanwhile, the shipments-inventories balance (i.e., the year-on-year rate of change in shipments minus that in inventories) has been at an improved level (Chart 16).

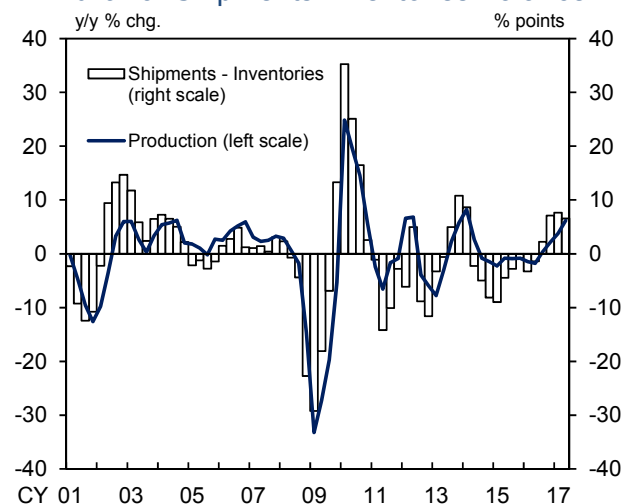
Industrial production will likely continue to increase firmly for the time being, on the back of the increase in demand at home and abroad. Thereafter, it is projected to continue on a moderate increasing trend -- albeit with fluctuations that mainly reflect the effects of the

**Chart 15: Production, Shipments, and Inventories**



Source: Ministry of Economy, Trade and Industry (METI).  
 Notes: 1. Shaded areas indicate recession periods.  
 2. The production figures for 2017/Q2 and 2017/Q3 are calculated based on METI projections for June and July 2017. The shipments figure for 2017/Q2 is the April-May average. The inventories figure for 2017/Q2 is that for May.

**Chart 16: Shipments-Inventories Balance**



Source: Ministry of Economy, Trade and Industry.  
 Note: The production figure and the shipments figure for 2017/Q2 are April-May averages. The inventories figure for 2017/Q2 is that for May.

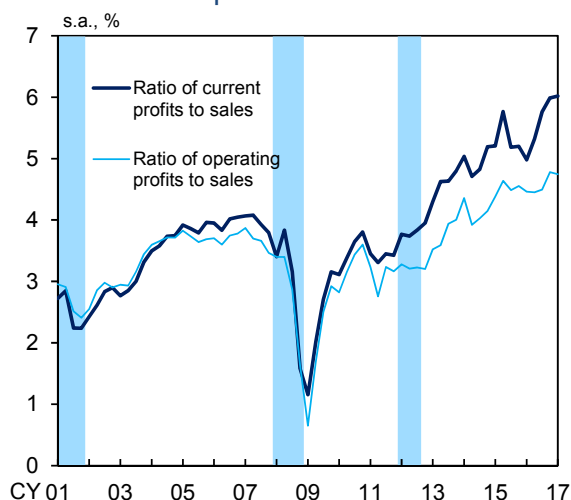
cycle of global demand for IT-related goods -- as the recovery in emerging economies takes hold and the effects resulting from the set of stimulus measures materialize.

## Corporate Profits

Corporate profits have been improving. According to the *Financial Statements Statistics of Corporations by Industry, Quarterly* (FSSC), the ratio of current profits to sales for all industries and enterprises has clearly improved recently, supported by the pick-up in emerging economies and the past yen depreciation, and it marked a record high level for two consecutive quarters, in the October-December quarter of 2016 and the January-March quarter of 2017 (Chart 17). Under such circumstances, business sentiment has improved, and across a wider range of industries (Chart 18). The diffusion index (DI) for business conditions for all industries and enterprises in the June 2017 *Tankan* (Short-Term Economic Survey of Enterprises in Japan) suggests that business conditions have improved for four consecutive quarters, being at a favorable level last seen in March 2014 just prior to the latest consumption tax hike.

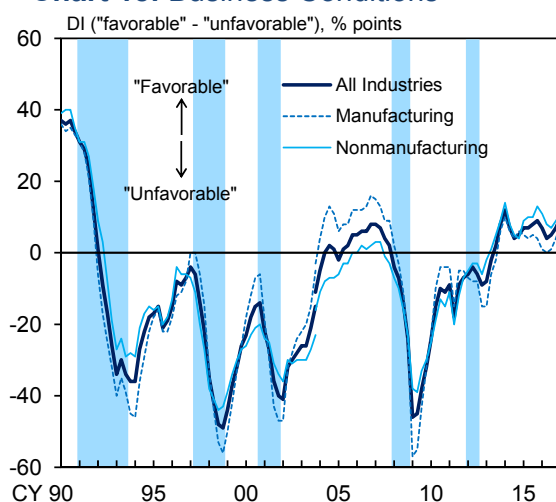
Corporate profits are projected to follow a steady increasing trend, supported by the increase in demand at home and abroad on the back of the growth in overseas economies and the effects resulting from the set of stimulus measures. Nevertheless, through the end of the projection period, the rate of increase in corporate profits is likely to decelerate as the allocation to households increases further, such as in the form of a rise in labor costs, with Japan's economy

**Chart 17: Corporate Profits**



Source: Ministry of Finance.  
Notes: 1. Based on the "Financial Statements Statistics of Corporations by Industry, Quarterly." Excluding "finance and insurance."  
2. Shaded areas indicate recession periods.

**Chart 18: Business Conditions**



Source: Bank of Japan.  
Notes: 1. Based on the *Tankan*. There is a discontinuity in the data in December 2003 due to a change in the survey framework.  
2. Shaded areas indicate recession periods.

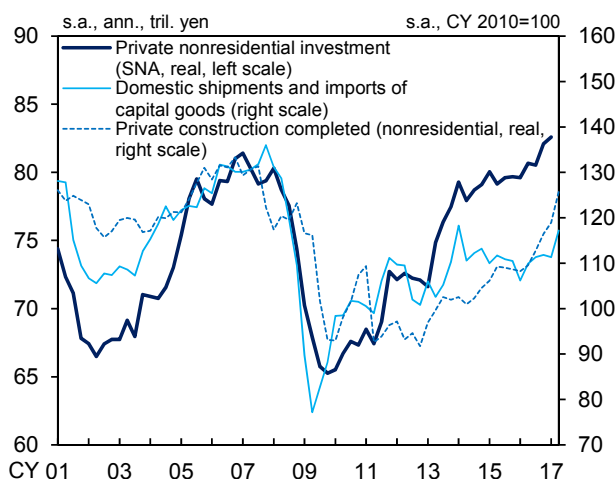
shifting toward a decelerating trend due in part to the effects of the scheduled consumption tax hike.

## Business Fixed Investment

Business fixed investment has been on a moderate increasing trend as corporate profits have improved (Chart 19). The aggregate supply of capital goods and private construction completed (nonresidential) -- coincident indicators of machinery investment and construction investment, respectively -- have continued to increase steadily. According to the June *Tankan*, business fixed investment plans for fiscal 2017, especially those of large enterprises, show firms' solid stance. For example, business investment (on the basis close to GDP definition; business investment -- including software as well as research and development investment, but excluding land purchasing expenses -- in all industries including the financial industry) increased by 0.4 percent in fiscal 2016, and such investment plans for fiscal 2017 saw an increase of 5.9 percent (Chart 20). Reflecting firms' positive fixed investment stance, machinery orders and construction starts (in terms of planned expenses for private and nonresidential construction), as leading indicators, have continued on an increasing trend, albeit with large monthly fluctuations (Chart 21).

With regard to the outlook, business fixed investment is likely to continue increasing moderately on the back of (1) an improvement in corporate profits, (2) extremely stimulative financial conditions, such as low interest rates and accommodative lending attitudes, (3) the effects of fiscal measures including projects

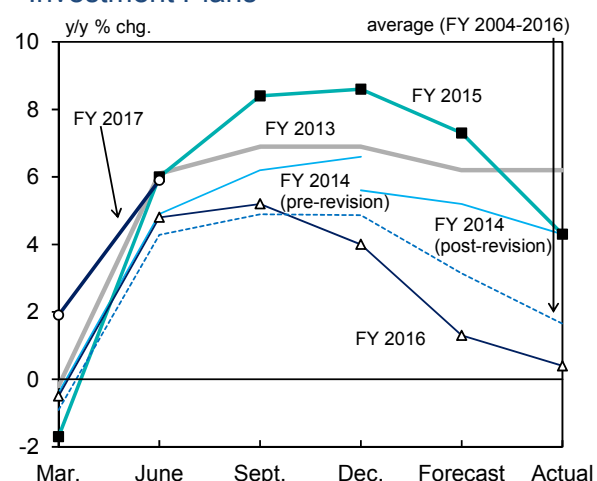
**Chart 19: Coincident Indicators of Business Fixed Investment**



Sources: Cabinet Office; Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport and Tourism.

- Notes: 1. Figures for 2017/Q2 are April-May averages.
- 2. Real private construction completed is based on staff calculations using price indices in the "Construction Cost Deflators."

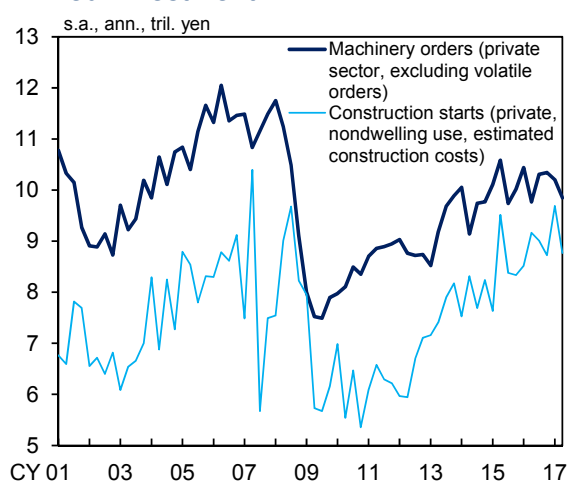
**Chart 20: Developments in Business Fixed Investment Plans**



Source: Bank of Japan.

- Notes: 1. Based on the *Tankan*. All Industries including financial institutions.
- 2. Including software and R&D investment and excluding land purchasing expenses (R&D investment is not included until the December 2016 survey).
- 3. There is a discontinuity in the data in December 2014 due to a change in the survey sample.

**Chart 21: Leading Indicators of Business Fixed Investment**



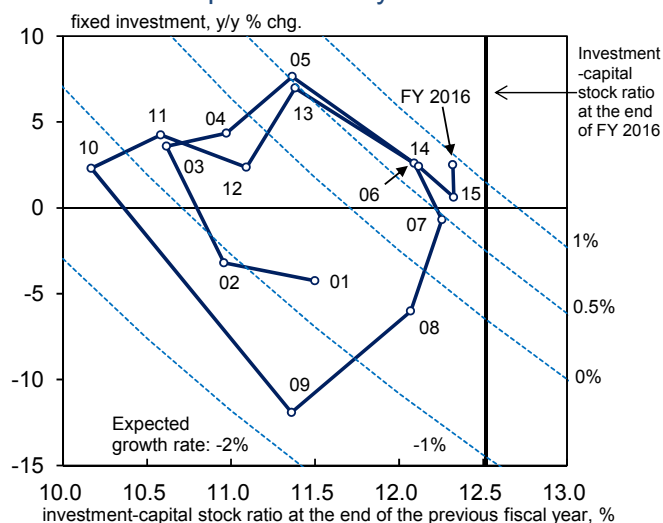
Sources: Cabinet Office; Ministry of Land, Infrastructure, Transport and Tourism.

- Notes: 1. Volatile orders: orders for ships and orders from electric power companies.
- 2. Figures for 2017/Q2 are April-May averages.

conducted under the Fiscal Investment and Loan Program and tax reductions for capital investment, and (4) moderate improvement in growth expectations.<sup>13</sup> Specifically, an increase is likely to be seen in investment, particularly (1) that related to the Olympic Games and urban redevelopment projects, (2) in efficiency-improving and labor-saving machinery and equipment in order to deal with the labor shortage, and (3) in research and development for growth areas.<sup>14</sup>

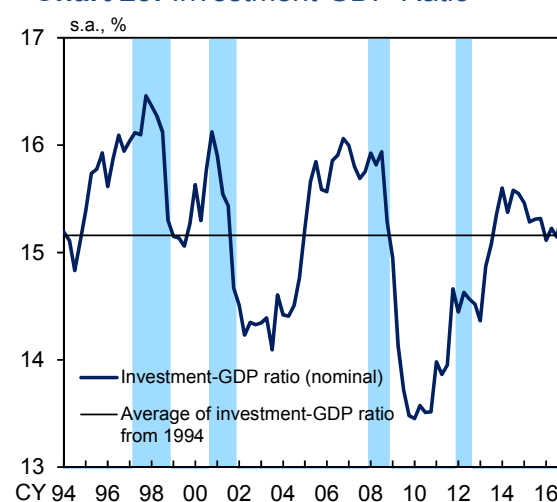
From the viewpoint of the capital stock cycle, which is based on the assumption that investment will be undertaken in order to realize the level of capital stock necessary for production activity under the specific rate of expected growth, it is deemed that capital stock increased moderately in fiscal 2016 at a pace consistent with the expected growth rate, which is about the same as the recent potential growth rate, estimated to be in the range of 0.5-1.0 percent (Chart 22). From fiscal 2017 onward, the pace of its accumulation is likely to be consistent with the expected growth rate that somewhat exceeds the growth potential, and this reflects the continued highly accommodative financial conditions under "QQE

**Chart 22: Capital Stock Cycles**



Source: Cabinet Office.  
Note: Each broken line represents the combination of the rate of change in fixed investment and the investment-capital stock ratio at a certain expected growth rate.

**Chart 23: Investment-GDP Ratio**



Source: Cabinet Office.  
Note: Shaded areas indicate recession periods.

<sup>13</sup> The recent improvement in corporate profits is mainly attributable to an increase in sales volume -- that is, the increase in exports and production. Therefore, the upward pressure on business fixed investment would be stronger, compared with that driven by an improvement in corporate profits brought about by an improvement in the terms of trade. For details, see "Corporate Profits and Business Fixed Investment: Why are Firms So Cautious about Investment?," Bank of Japan Review Series (2016-E-2).

<sup>14</sup> According to the June *Tankan*, research and development investment for all industries and enterprises is planned to increase by 2.7 percent on a year-on-year basis for fiscal 2017, accelerating from 1.3 percent for fiscal 2016.

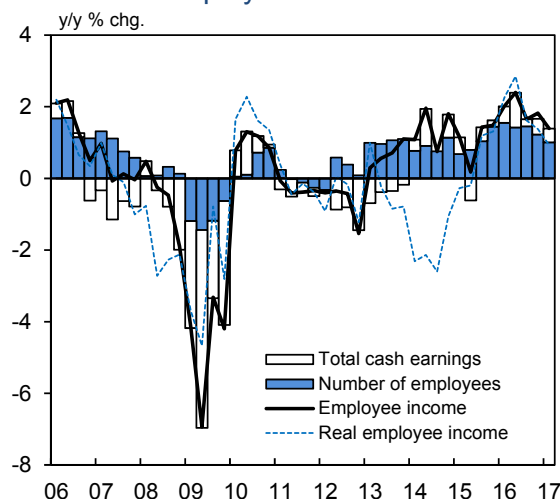


with Yield Curve Control" and an increase in Olympic Games-related demand.<sup>15</sup> Nonetheless, with cyclical adjustments in capital stock becoming evident and Olympic Games-related investment peaking out, downward pressure on business fixed investment is expected to intensify at the end of the projection period, unless the expected growth rate rises significantly.<sup>16</sup>

## The Employment and Income Situation

Supply-demand conditions in the labor market have continued to tighten steadily and employee income has increased moderately. The rate of increase in the *Labour Force Survey*-based number of employees has remained at around 1 percent (Chart 24). Against this backdrop, the active job openings-to-applicants ratio has followed a steady uptrend, and a perception of labor shortage suggested by the employment conditions DI in the June *Tankan* has heightened (Chart 3).<sup>17</sup> The unemployment rate has continued on a moderate declining trend, albeit with some fluctuations, and has been around 3 percent recently, which is almost the same level

**Chart 24: Employee Income**



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

Notes: 1. Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February.

2. Employee income = total cash earnings ("Monthly Labour Survey") × number of employees ("Labour Force Survey")

3. Real employee income is based on staff calculations using the CPI (less imputed rent).

<sup>15</sup> The investment-GDP ratio of late seems to be less overheated than the level in the past economic expansion phase, suggesting that there is still room to some extent for a further increase (Chart 23).

<sup>16</sup> In light of past Olympic Games host countries' experiences, Olympic Games-related construction investment is projected to increase during fiscal 2017 and fiscal 2018, and then peak out toward fiscal 2020. For details, see the Bank's research paper "Economic Impact of the Tokyo 2020 Olympic Games" released in January 2016.

<sup>17</sup> The active job openings-to-applicants ratio for May 2017 stands at 1.49 times, exceeding the highest figure during the bubble period of 1.46 times registered in July 1990.

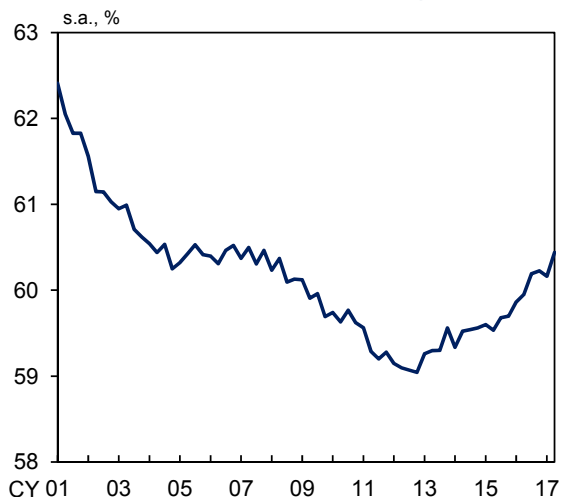
as the structural unemployment rate.<sup>18</sup> Meanwhile, labor force participation rates -- especially those for women and the elderly -- have remained on an uptrend, albeit with fluctuations, after bottoming out around the end of 2012 (Chart 25). As Japan's economy is likely to continue on a growing trend at a pace above its potential, it is expected that the number of employees will keep increasing and that the supply-demand conditions in the labor market will further tighten.

On the wage side, total cash earnings per employee have risen moderately, albeit with some fluctuations (Chart 26).<sup>19</sup> Specifically, scheduled cash earnings have maintained their moderate increase, due in part to dissipation of downward pressure stemming from an increase in the ratio of part-time employees amid a rise in wages of full-time employees (Chart 27). The rise in hourly cash earnings has generally accelerated, albeit with fluctuations; the year-on-year rate of increase in hourly scheduled cash earnings of part-time employees, which are responsive to labor market conditions, recently registered relatively high growth in the range of 2.0-2.5 percent (Chart 28). Meanwhile, although the

<sup>18</sup> The structural unemployment rate can be described in a variety of ways, but in Chart 3, it is defined, based on the idea of the so-called Beveridge Curve, as one where the unemployment rate and the vacancy rate are equal to each other (i.e., when the aggregate supply-demand conditions in the labor market -- excluding unemployment arising from the mismatch between job openings and job applicants -- are judged as being in equilibrium). Therefore, the structural unemployment rate defined here differs from the concept of the Non-Accelerating Inflation Rate of Unemployment (NAIRU), and does not show a direct relationship with prices or wages.

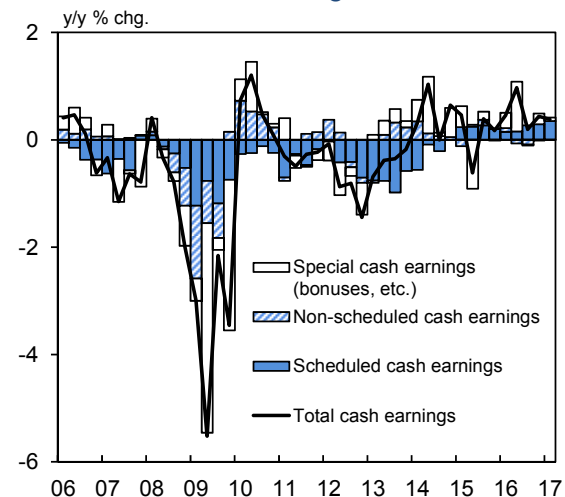
<sup>19</sup> Box 1 examines the relationship between labor market conditions and wages in recent times, by making a comparison with that observed during the bubble period.

**Chart 25: Labor Force Participation Rate**



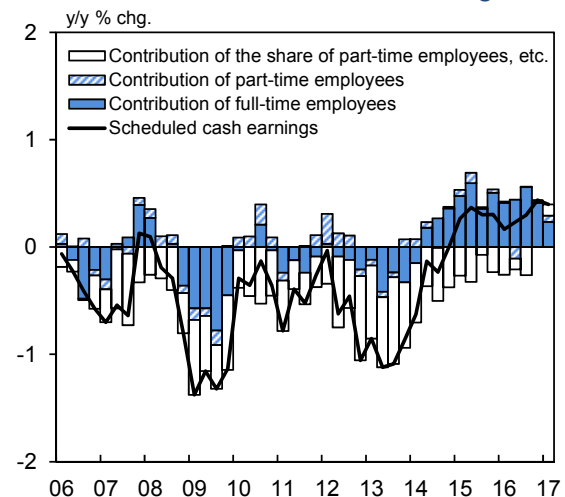
Source: Ministry of Internal Affairs and Communications.  
Note: The figure for 2017/Q2 is the April-May average.

**Chart 26: Nominal Wages**



Source: Ministry of Health, Labour and Welfare.  
Note: Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February.

**Chart 27: Scheduled Cash Earnings**



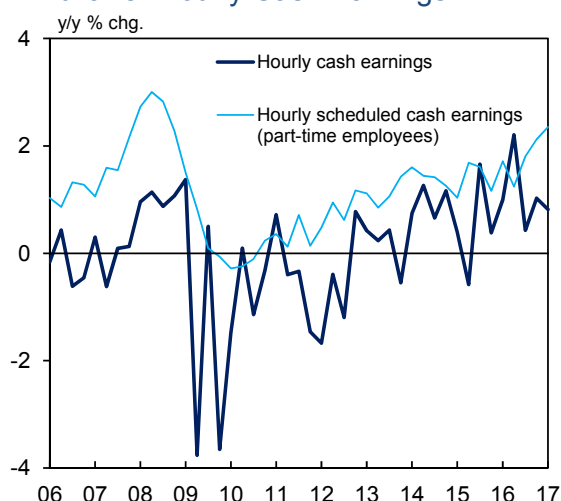
Source: Ministry of Health, Labour and Welfare.  
Note: Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February.

year-on-year rate of change in real wages has been adversely affected recently by a rise in energy prices, it has remained on an uptrend with fluctuations smoothed out.

With regard to the outlook for wages, the pace of increase in scheduled cash earnings of full-time employees is expected to accelerate moderately, with that in base pay accelerating as the rise in inflation expectations becomes more evident. The rate of increase in hourly scheduled cash earnings of part-time employees is also likely to accelerate steadily in response to further tightening of labor market conditions and an increase in minimum wages.<sup>20</sup> Under this situation, overall employees' hourly cash earnings are projected to increase moderately at almost the same pace as labor productivity growth in nominal terms, and their rate of increase is expected to accelerate in the second half of the projection period.

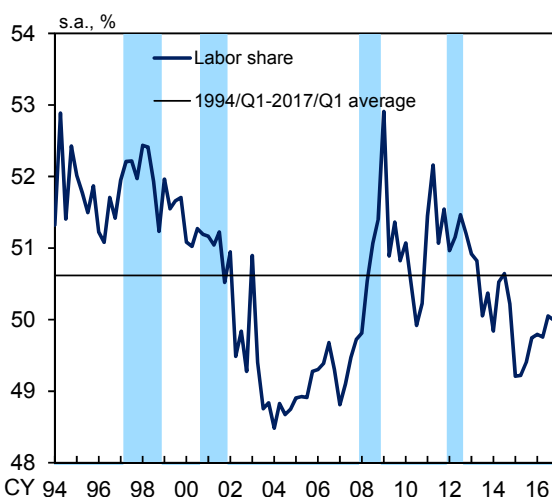
In light of the aforementioned employment and wage conditions, employee income has increased moderately, albeit with fluctuations (Chart 24). Going forward, it is likely to increase at a moderate pace, and its pace of increase is expected to be slightly above the nominal GDP growth rate in the second half of the projection period. The labor share is likely to rise, after remaining more or less unchanged at a level clearly below the long-term average (Chart 29).

**Chart 28: Hourly Cash Earnings**



Source: Ministry of Health, Labour and Welfare.  
 Note: Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February.

**Chart 29: Labor Share**



Source: Cabinet Office.  
 Notes: 1. Labor share = compensation of employees / nominal GDP × 100  
 2. Shaded areas indicate recession periods.

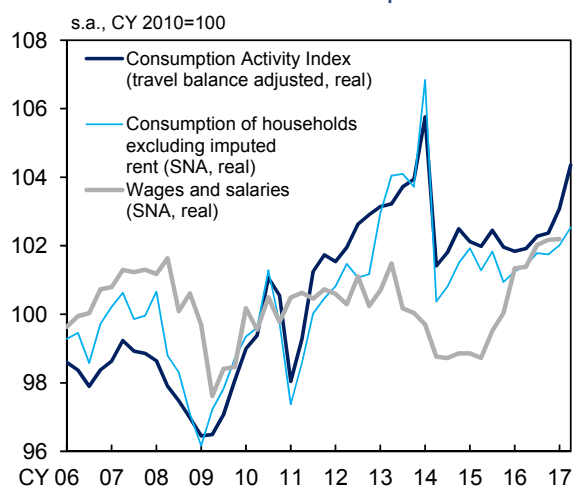
<sup>20</sup> Japan's labor market can be characterized as having different wage-setting mechanisms for regular (full-time) and non-regular (part-time) employees. For details, see Box 2.

## Household Spending

Private consumption has increased its resilience against the background of steady improvement in the employment and income situation. From the viewpoint of gauging consumption activity in a comprehensive manner, the Consumption Activity Index (CAI, travel balance adjusted) -- which is calculated by combining various sales and supply-side statistics -- has continued to increase (Chart 30).<sup>21</sup> Looking at private consumption by type, durable goods have been on a moderate uptrend, mainly due to replacement demand for automobiles and household electrical appliances; nondurable goods had seen somewhat weak developments for a prolonged period, particularly in clothes, but have started to pick up, due in part to a recent increase in sales of clothes reflecting an improvement in weather conditions. Meanwhile, services consumption has continued to increase moderately, albeit with fluctuations, reflecting a trend rise in communications charges as well as medical, health care, and welfare fees.

Turning to individual indicators, the aggregate supply of consumer goods -- that is, the supply-side statistics -- has increased, mainly for durable goods (Chart 31). According to various sales statistics, retail sales value in real terms has increased its resilience. Sales at department stores have picked up, mainly reflecting a pick-up in sales to the wealthy brought about by the rise in stock prices, a recovery in demand from foreign visitors to Japan, and the increase in sales of

### Chart 30: Private Consumption



Sources: Bank of Japan; Cabinet Office, etc.

- Notes: 1. The Consumption Activity Index is based on staff calculations (as of July 13). Figures for the Consumption Activity Index (travel balance adjusted) exclude inbound tourism consumption and include outbound tourism consumption. The figure for 2017/Q2 is the April-May average.  
 2. The figure for consumption of households excluding imputed rent for 2017/Q2 is based on staff calculations using the "Synthetic Consumption Index (as of May)."  
 3. Figures for wages and salaries after 2016/Q2 are based on staff calculations using employee income (= total cash earnings × number of employees).

### Chart 31: Consumption Indicators (Sales and Supply-side Statistics)

	s.a., q/q % chg.			
	16/Q3	16/Q4	17/Q1	17/Q2
<b>Consumption Activity Index</b>				
Real, travel balance adjusted	0.3	0.1	0.7	1.2
Real	0.5	0.0	0.7	1.2
<b>Sales at retail stores</b>				
Nominal	0.5	1.5	-0.2	0.9
Real	0.4	0.0	0.3	1.1
Sales at department stores	-0.4	-0.4	1.4	0.1
Sales at supermarkets	-0.6	0.4	-0.3	0.8
Sales at convenience stores	1.0	1.3	0.6	0.5
Total supply of consumer goods	0.6	0.8	0.1	4.4

Sources: Bank of Japan; Ministry of Economy, Trade and Industry; Ministry of Internal Affairs and Communications.

- Notes: 1. The Consumption Activity Index is based on staff calculations (as of July 13).  
 2. Real sales at retail stores are based on staff calculations using the CPI.  
 3. Figures for sales at department stores and sales at supermarkets are adjusted for the number of stores.  
 4. Figures for 2017/Q2 are April-May averages.

<sup>21</sup> For details of the CAI, see the Bank's research papers "The Consumption Activity Index" released in May 2016 and "The Consumption Activity Index: Improvements of Release Contents and Revisions of Compilation Methodology" released in October 2016.

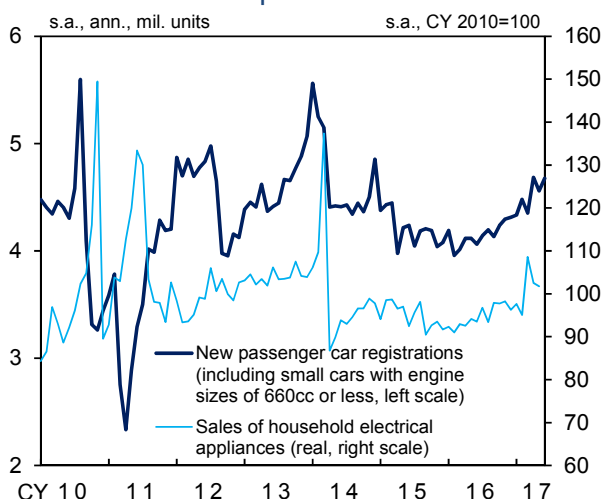
clothes reflecting the improvement in weather conditions. Sales at supermarkets have turned to an increase recently, and those at convenience stores have continued on a rising trend.

As for durable goods, sales of automobiles have followed a steady uptrend, as replacement demand for environmentally friendly cars -- of which purchases had been encouraged by subsidies and a tax reduction measure after the global financial crisis -- has been stimulated by the effects of the introduction of new models (Chart 32). Sales of household electrical appliances also have been on an increasing trend, backed by white goods having been resilient and replacement demand for such items as televisions and personal computers.

With regard to services consumption, travel -- which had been somewhat weak due to terrorist attacks overseas and the effects of the Kumamoto Earthquake -- has picked up recently, mainly for overseas travel; dining-out has increased (Chart 33).

Looking at confidence indicators related to private consumption, the Consumer Confidence Index has picked up only moderately, albeit with fluctuations, due to the rise in stock prices and favorable employment situation (Chart 34). The *Economy Watchers Survey* suggests that consumer confidence has been picking up recently, due in part to weather conditions -- specifically, relatively low rainfall since the start of the rainy season.

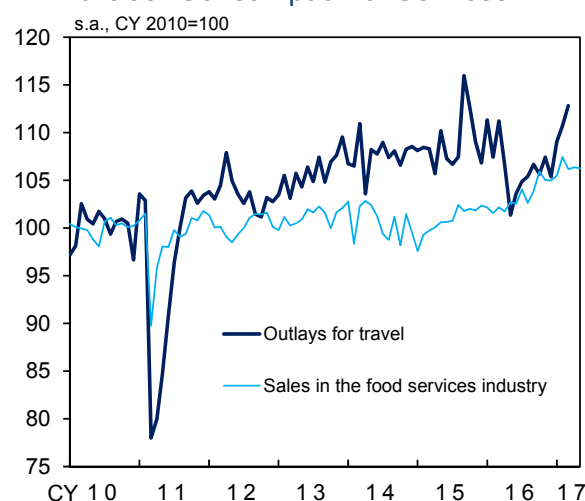
**Chart 32: Consumption of Durable Goods**



Sources: Japan Automobile Dealers Association; Japan Light Motor Vehicle and Motorcycle Association; Ministry of Economy, Trade and Industry; Ministry of Internal Affairs and Communications.

Note: Figures for real sales of household electrical appliances are based on staff calculations using the retail sales index of machinery and equipment in the "Current Survey of Commerce" and the price index of related items in the CPI.

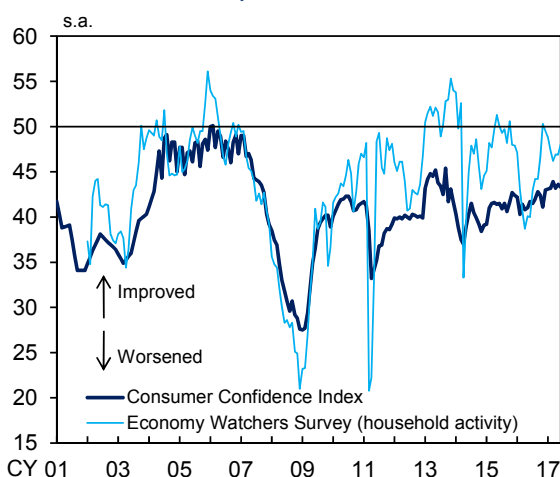
**Chart 33: Consumption of Services**



Sources: Japan Tourism Agency; Japan Food Service Association, "Market Trend Survey of the Food Services Industry."

Note: Figures for the outlays for travel exclude those by foreign travelers.

**Chart 34: Confidence Indicators Related to Private Consumption**

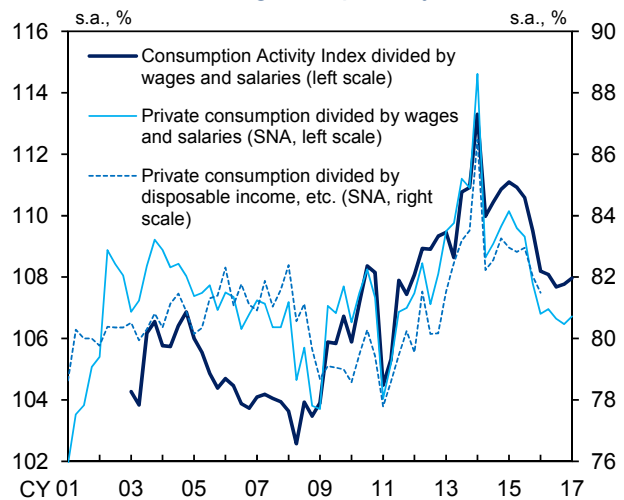


Source: Cabinet Office.

Note: Figures for the "Economy Watchers Survey" are those for the current economic conditions DI.

In the outlook, private consumption is expected to follow a moderate increasing trend, supported by an increase in employee income and the wealth effects stemming from the rise in stock prices, as well as replacement demand for durable goods, albeit with fluctuations in the second half of the projection period due to the scheduled consumption tax hike. The propensity to consume, which is calculated based on disposable income, had declined somewhat considerably after the latest consumption tax hike, but is expected to bottom out and then pick up very moderately, mainly reflecting a manifestation of the wealth effects and an increase in replacement demand for durable goods (Chart 35).

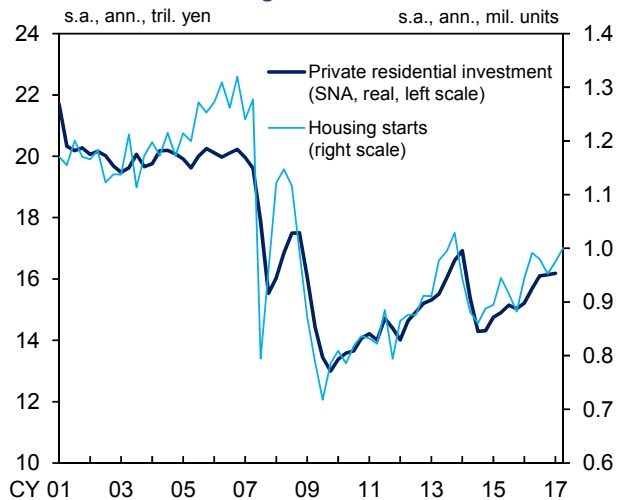
**Chart 35: Average Propensity to Consume**



Sources: Bank of Japan; Cabinet Office, etc.  
 Notes: 1. The Consumption Activity Index is based on staff calculations.  
 2. Figures for wages and salaries after 2016/Q2 are based on staff calculations using employee income (= total cash earnings × number of employees).  
 3. Private consumption is consumption of households excluding imputed rent.  
 4. "Disposal income, etc." consists of disposable income and "adjustment for the change in pension entitlements."

Housing investment has been more or less flat (Chart 36). Although an improvement in the employment and income situation and low housing loan rates are likely to underpin housing investment, it is expected to remain more or less flat when fluctuations due to the scheduled consumption tax hike are smoothed out, partly against the background of a peaking-out in demand for housing for rent that was motivated by inheritance tax savings.

**Chart 36: Housing Investment**



Sources: Cabinet Office; Ministry of Land, Infrastructure, Transport and Tourism.  
 Note: The figure for 2017/Q2 is the April-May average.

## II. The Current Situation of Prices and Their Outlook

### Developments in Prices

The rate of increase in the producer price index (PPI, adjusted for the effects of seasonal changes in electricity rates) has decelerated on a quarter-on-quarter basis, reflecting developments in international commodity prices and foreign exchange rates (Chart 37). The year-on-year rate of increase in the services producer price index (SPPI, excluding international transportation) has been in the range of 0.5-1.0 percent, with an acceleration in the rate of increase in prices of items related to domestic transportation and fixed investment (Chart 37).

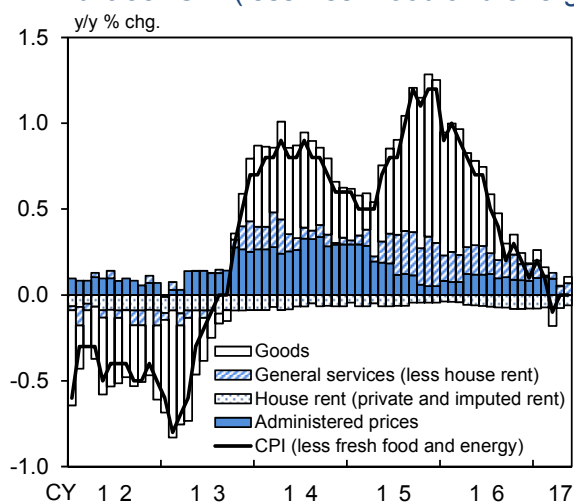
The year-on-year rate of change in the CPI (all items less fresh food and energy) has been relatively weak, at around 0 percent recently, as evidenced by limited price rises at the start of the new fiscal year (Chart 38). Looking at this in detail, the following developments have been observed in goods prices: (1) a reduction in sales prices of mobile phones has continued to exert considerable downward pressure, although its effects are waning, and (2) moves to pass through the yen's depreciation since end-2016 to prices of food products and goods related to daily necessities have been relatively weak, against the background of retailers' cautious price setting. With regard to general services, moves to pass on the increases in the hourly cash earnings of part-time employees and in wages at small and medium-sized firms to prices of dining-out and housework-related services have been limited thus far, while housing rent has continued to decrease moderately, and a decline in charges for

**Chart 37: Inflation Indicators**

	y/y % chg.			
	16/Q3	16/Q4	17/Q1	17/Q2
Consumer Price Index (CPI)				
Less fresh food	-0.5	-0.3	0.2	0.4
Less fresh food and energy	0.4	0.2	0.1	0.0
Producer Price Index (q/q % chg.)	-0.5	0.6	1.6	0.4
Services Producer Price Index	0.4	0.5	0.7	0.8
GDP deflator	-0.1	-0.0	-0.8	
Domestic demand deflator	-0.8	-0.3	0.0	

Sources: Ministry of Internal Affairs and Communications; Bank of Japan; Cabinet Office.  
 Notes: 1. Figures for the Producer Price Index are adjusted to exclude the hike in electric power charges during the summer season.  
 2. Figures for the Services Producer Price Index exclude international transportation.  
 3. Figures for the CPI and the Services Producer Price Index for 2017/Q2 are April-May averages.

**Chart 38: CPI (less fresh food and energy)**

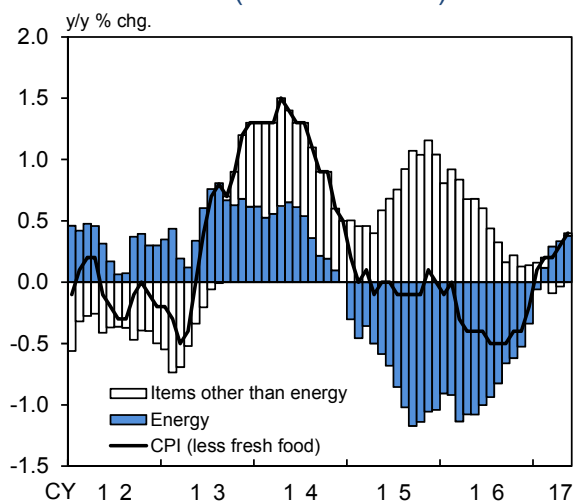


Source: Ministry of Internal Affairs and Communications.  
 Notes: 1. Administered prices (less energy) consist of "public services" and "water charges."  
 2. The CPI figures are adjusted for changes in the consumption tax rate.

mobile phones has continued, albeit with a deceleration in its rate.<sup>22,23</sup> Such recent weakness is partly attributable to the fact that the mindset and behavior based on the assumption that wages and prices will not increase easily have been deeply entrenched among firms and households. Firms have been making efforts to absorb a rise in labor costs by increasing labor-saving investment and streamlining their business process, while limiting wage increases -- which correspond to the labor shortage -- mainly to wages of part-time employees.<sup>24</sup> As suggested by these developments, firms' wage- and price-setting stance has remained cautious despite the steady tightening of labor market conditions and the high levels of corporate profits.

The year-on-year rate of change in the CPI (all items less fresh food) is in the range of 0.0-0.5 percent (Chart 39). The rate of change in the CPI as a whole also is in the range of 0.0-0.5 percent, reflecting a rise in energy prices amid the rate of change in the CPI excluding fresh food and energy being at around 0 percent.

**Chart 39: CPI (less fresh food)**



Source: Ministry of Internal Affairs and Communications.  
 Notes: 1. Energy consists of petroleum products, electricity, and gas, manufactured & piped.  
 2. The CPI figures are adjusted for changes in the consumption tax rate.

<sup>22</sup> With regard to the sectoral shock that is unique to the mobile phone market, including declines in prices of and charges for mobile phones, see Box 4 in the April 2017 Outlook Report.

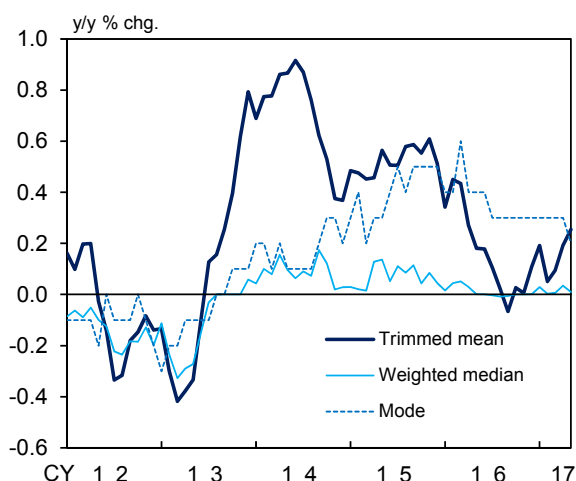
<sup>23</sup> For wage developments by firm size, see Box 3 in the April 2017 Outlook Report.

<sup>24</sup> Regarding firms' measures to address upward pressure on wages and their relationship with prices, see Box 3.



The recent developments in the indicators for capturing the underlying trend in the CPI are as follows (Chart 40).<sup>25</sup> The rate of change in the trimmed mean has been in the range of 0.0-0.5 percent.<sup>26</sup> The mode has been in the range of 0.0-0.5 percent of late, and the weighted median has been at around 0 percent.<sup>27</sup> Looking at annual price changes across all items (less fresh food), the share of price-increasing items minus the share of price-decreasing items has been around 20 percentage points (Chart 41).

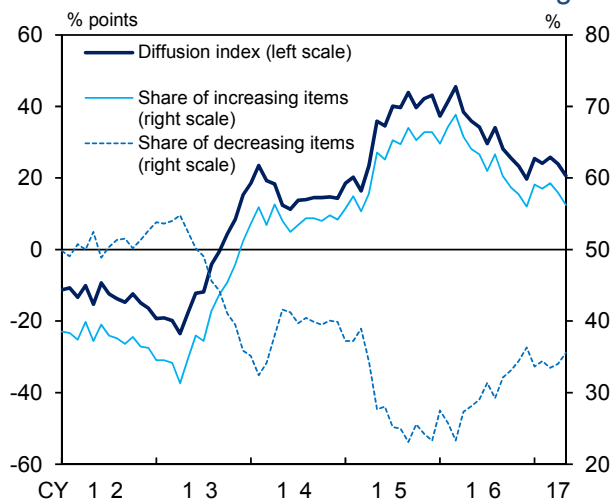
**Chart 40: Various Measures of Core Inflation**



Sources: Bank of Japan; Ministry of Internal Affairs and Communications.  
Note: Based on staff calculations using the CPI (consumption tax adjusted).

The year-on-year rate of change in the GDP deflator has been in the range of minus 0.5 to minus 1.0 percent, mainly due to a rise in the import deflator that reflects the past pick-up in international commodity prices (Chart 37). The year-on-year rate of change in the domestic demand deflator was negative in 2016 but has been around 0 percent recently.

**Chart 41: Diffusion Index of Price Changes**



Sources: Bank of Japan; Ministry of Internal Affairs and Communications.  
Note: The diffusion index is defined as the share of increasing items minus the share of decreasing items. The share of increasing/decreasing items is the share of items in the CPI (less fresh food, consumption tax adjusted) whose price indices increased/decreased from a year earlier. Based on staff calculations.

## The Environment surrounding Prices

In the outlook for prices, the main factors that determine inflation rates are assessed as follows. First, the output gap has improved steadily; it was in the range of 0.5-1.0 percent in the

<sup>25</sup> For more details on the core price indicators, see "Core Inflation and the Business Cycle," Bank of Japan Review Series (2015-E-6), and "Performance of Core Indicators of Japan's Consumer Price Index," Bank of Japan Review Series (2015-E-7).

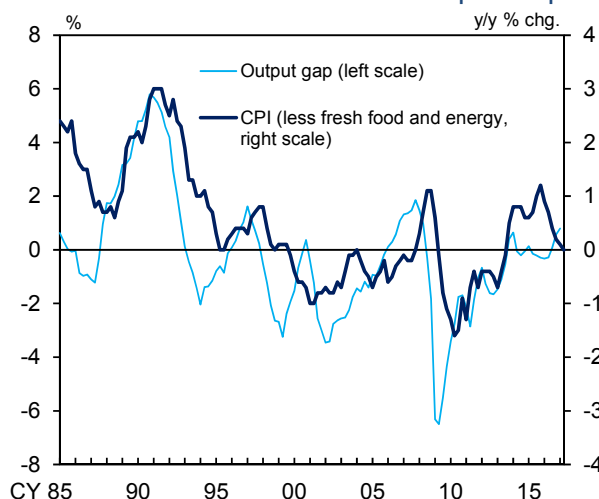
<sup>26</sup> The effects of large relative price fluctuations are eliminated by simply excluding items that belong to a certain percentage of the upper and lower tails of the price fluctuation distribution (10 percent of each tail in this report).

<sup>27</sup> The mode is the inflation rate with the highest density in the distribution. The weighted median is the weighted average of the inflation rates of the items at around the 50 percentile point of the distribution.

January-March quarter, and as suggested by an improvement in the *Tankan* factor utilization index and various monthly indexes that indicate the utilization of labor and capital, it likely will have expanded somewhat within positive territory in the April-June quarter (Charts 4 and 42). With regard to the outlook, the output gap is projected to widen further within positive territory in fiscal 2017, on the back of (1) an improvement in capital utilization rates brought about by the increase in exports and production becoming quite apparent, and (2) a further tightening of labor market conditions, due to the effects resulting from the set of stimulus measures becoming evident. Thereafter, the output gap is projected to continue expanding moderately within positive territory both on the capital and labor sides, reflecting the increase in demand at home and abroad. In the second half of fiscal 2019, although such expansion is likely to pause due to the effects of the scheduled consumption tax hike, the output gap is expected to remain substantially positive.

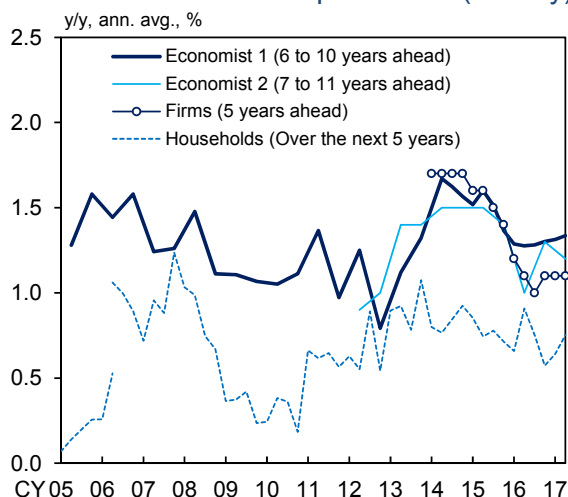
Second, medium- to long-term inflation expectations have remained in a weakening phase, reflecting the year-on-year rate of change in the observed CPI having been at around 0 percent or in slightly negative territory since spring 2015; however, some indicators show a rise in such expectations recently (Charts 43 and 44). As for the outlook, medium- to long-term inflation expectations are likely to follow an increasing trend and gradually converge to around 2 percent on the back of the following: (1) in terms of the adaptive component, developments mainly in import prices are expected to push up the observed inflation rate for the time being, and firms' stance is likely to

**Chart 42: Inflation Rate and Output Gap**



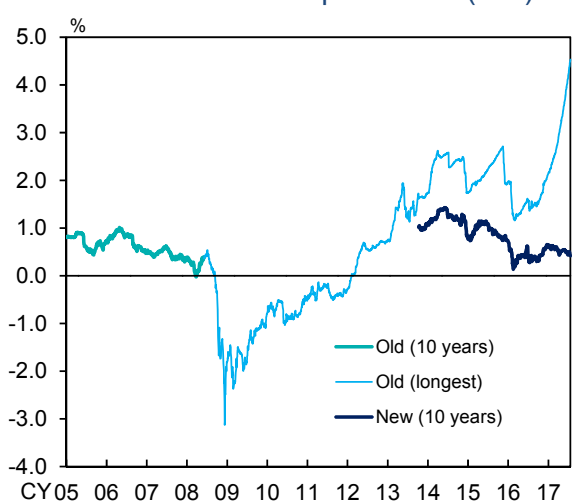
Sources: Ministry of Internal Affairs and Communications; Bank of Japan.  
Notes: 1. The CPI figures are adjusted for changes in the consumption tax rate. The figure for 2017/Q2 is the April-May average.  
2. The output gap is based on staff estimations.

**Chart 43: Inflation Expectations (Survey)**



Sources: Bank of Japan; Consensus Economics Inc., "Consensus Forecasts"; JCIER, "ESP Forecast."  
Notes: 1. Figures for the economist 1 are from the "Consensus Forecasts." Figures for the economist 2 are from the "ESP Forecast."  
2. Figures for households are from the "Opinion Survey on the General Public's Views and Behavior," estimated using the modified Carlson-Parkin method.  
3. Figures for firms are "Outlook for General Prices (*Tankan*, all industries and enterprises, average)."

**Chart 44: Inflation Expectations (BEI)**

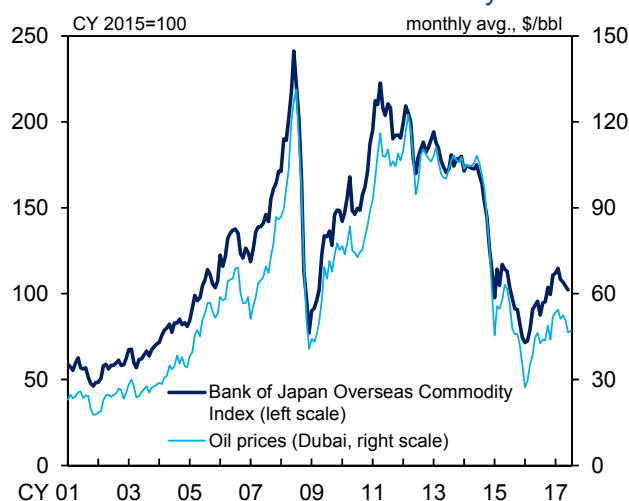


Source: Bloomberg.  
Note: BEI (break-even inflation) rates are yield spreads between fixed-rate coupon-bearing JGBs and inflation-indexed JGBs. Inflation-indexed JGBs issued since October 2013 are designated as "new," while the rest are designated as "old." Figures for "old (longest)" are calculated using yield data for issue No. 16 of inflation-indexed JGBs, which matures in June 2018.

gradually shift toward raising wages and prices thereafter with the improvement in the output gap, and (2) in terms of the forward-looking component, the Bank will pursue monetary easing through its strong commitment to achieving the price stability target.

The third factor is developments in import prices (Chart 45). The pick-up in crude oil prices observed from last spring through early this year is expected to push up the year-on-year rate of change in energy (petroleum products, electricity, and manufactured & piped gas) prices in the CPI for fiscal 2017, but this effect is likely to wane gradually. As for the impact of foreign exchange rates on consumer prices, the past yen depreciation will likely increase upward pressure on prices for the time being, mainly on prices of items that are responsive to exchange rates, specifically durable goods.

**Chart 45: International Commodity Prices**



Sources: Nikkei Inc.; Bank of Japan.

### The Outlook for Prices

With regard to the outlook for prices, the year-on-year rate of increase in the CPI (all items less fresh food and energy) is likely to start picking up at a gradual pace, on the back of the following developments in the short run: (1) the rate of increase in prices of goods that are responsive to economic activity and exchange rates, including food products and goods related to daily necessities, is expected to accelerate gradually with a moderate increase in private consumption; (2) the rate of decline in durable goods prices is expected to follow a decelerating trend, reflecting the past yen depreciation; and (3) moves to pass on the increase in labor costs to prices of general services, including dining-out

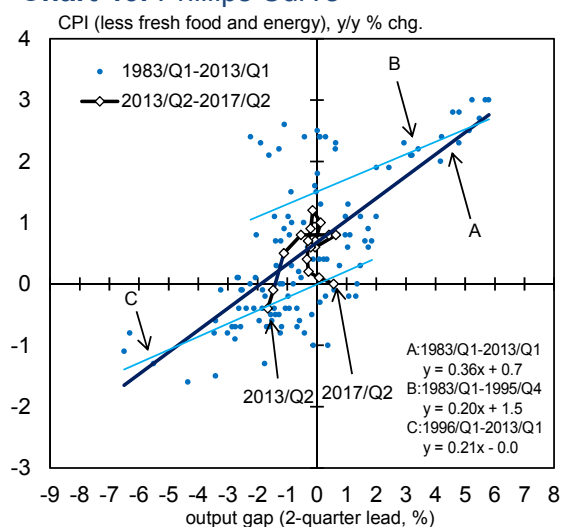
and housework-related services, are likely to prevail. Thereafter, the year-on-year rate of change in the CPI is likely to increase toward around 2 percent, as firms' stance gradually shifts toward raising wages and prices with the improvement in the output gap and as inflation expectations gradually rise.<sup>28</sup>

The year-on-year rate of change in the CPI (all items less fresh food) will likely reach around 2 percent in around fiscal 2019. This is because, although upward pressure of energy prices is likely to wane gradually, the CPI inflation excluding fresh food and energy is expected to accelerate.

Such projections are made based on the same underlying scenario as before that the inflation rate will respond fairly clearly to the improvement in the output gap compared to the past and that the Phillips curve will gradually shift upward as inflation expectations rise through both the forward-looking and adaptive expectation formation mechanisms (Chart 46).

However, compared to the time when the April 2017 Outlook Report was published, the projected rates of increase in the CPI (all items less fresh food) are lower, mainly for the first half of the projection period. This is mainly against the

**Chart 46: Phillips Curve**



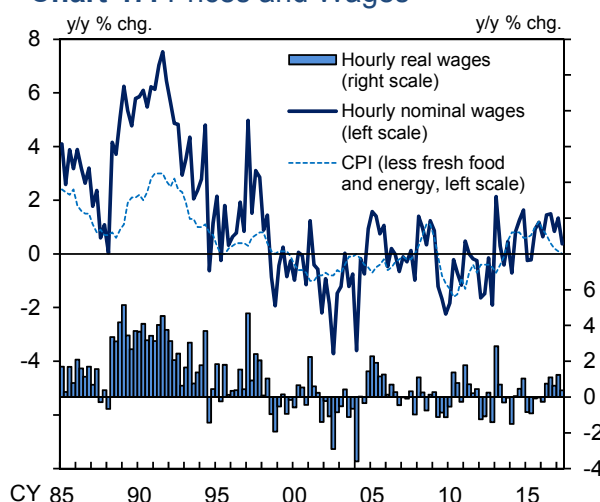
Sources: Ministry of Internal Affairs and Communications; Bank of Japan.  
Notes: 1. The CPI figures are adjusted for changes in the consumption tax rate. The figure for 2017/Q2 is the April-May average.  
2. The output gap is based on staff estimations.

<sup>28</sup> Housing rent and administered prices, both of which have a certain weight in the CPI, will likely continue showing relatively weak developments for some time, and this is likely to constrain the acceleration of the CPI inflation for all items less fresh food and energy as a whole (Chart 38). For further details, see Box 4 in the July 2016 Outlook Report.

background that (1) the recent developments in the CPI have been relatively weak, excluding the effects of the rise in energy prices, and (2) reflecting such developments, adaptive inflation expectations have been lower than projected.

With regard to the relationship between prices and nominal wages, the CPI and hourly nominal wages move almost in parallel in the long run and the relationship is stable (Chart 47). Specifically, there are interactive effects between rises in nominal wages and prices: firms try to pass on cost increases due to nominal wage increases by raising sales prices and households try to keep real income unchanged by demanding wage increases in line with price increases. Under this baseline scenario, hourly cash earnings -- especially scheduled cash earnings -- are expected to rise moderately, reflecting the tightening of labor market conditions and the rise in inflation expectations. The underlying rate of increase in the CPI is projected to accelerate gradually in a consistent manner with such wage developments.

**Chart 47: Prices and Wages**



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

- Notes: 1. The CPI figures are adjusted for changes in the consumption tax rate.  
 2. Figures for hourly nominal wages up through 1990 are for establishments with 30 or more employees.  
 3. Figures for 2017/Q2 are April-May averages.

### III. Financial Developments in Japan

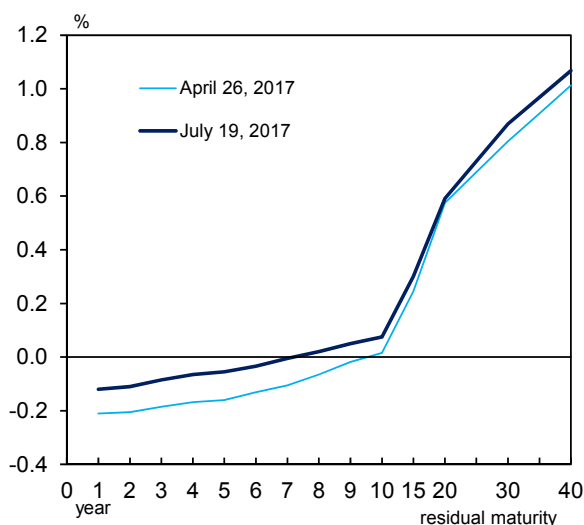
#### Financial Conditions

Financial conditions are highly accommodative.

Under "QQE with Yield Curve Control," the yield curve for Japanese government bonds (JGBs) has been in line with the current guideline for market operations, in which the short-term policy interest rate is set at minus 0.1 percent and the target level of 10-year JGB yields is around zero percent (Chart 48). That is, the yields for relatively short maturities have been stable in slightly negative territory; the 10-year JGB yields have generally been stable at around 0 percent in positive territory. Meanwhile, the 20-year JGB yields also have generally been stable in the range of 0.5-1.0 percent. The monetary base has been increasing at a high year-on-year growth rate of around 20 percent, and its amount outstanding as of end-June was 468 trillion yen, of which the ratio to nominal GDP was 87 percent.<sup>29</sup>

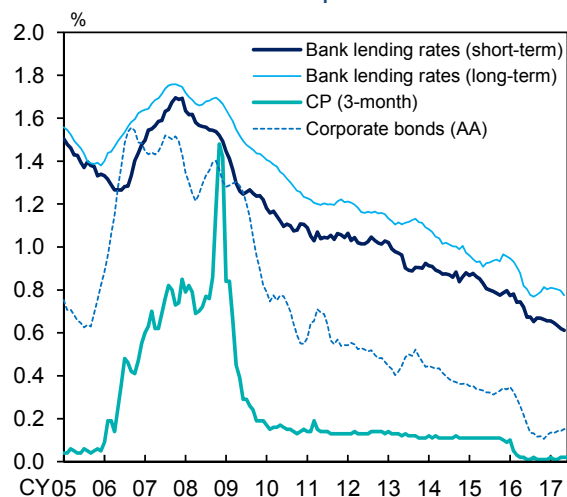
With such long- and short-term JGB yields, firms' funding costs have been hovering at extremely low levels (Chart 49). Issuance rates for CP have remained at extremely low levels. Conditions for CP issuance have been favorable, as suggested by the DI in the June *Tankan* having been at around the highest level since 2008, which is when it was introduced in the *Tankan*. Issuance rates for corporate bonds also have remained at extremely low levels. Meanwhile, lending rates (the average interest rates on new loans and

Chart 48: Yield Curves



Source: Bloomberg.

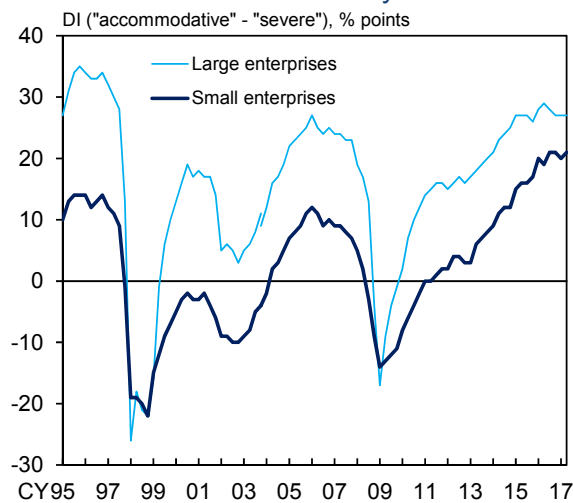
Chart 49: Bank Lending Rates and Issuance Yields for CP and Corporate Bonds



Sources: Bank of Japan; Japan Securities Depository Center; Capital Eye; I-N Information Systems; Bloomberg.

- Notes: 1. Figures for issuance yields for CP up to September 2009 are the averages for CP (3-month, rated a-1 or higher). Those from October 2009 are the averages for CP (3-month, rated a-1).
- 2. Figures for issuance yields for corporate bonds are the averages for domestically issued bonds launched on a particular date. Bonds issued by banks and securities companies, etc., are excluded.
- 3. Figures for bank lending rates and issuance yields for corporate bonds show 6-month backward moving averages.

Chart 50: Lending Attitude of Financial Institutions as Perceived by Firms



Source: Bank of Japan.  
Note: Based on the *Tankan*. All industries. There is a discontinuity in the data in December 2003 due to a change in the survey framework.

<sup>29</sup> It is assumed that the figure for nominal GDP is unchanged from the January-March quarter of 2017.

discounts) have been around historical low levels.

With regard to the availability of funds for firms, the DI in the *Tankan* for financial institutions' lending attitudes as perceived by firms suggests that their lending attitudes have been highly accommodative; the DI for large firms has been at a high level of around the peak in the mid-2000s, and that for small firms has been at a high level last seen at the end of the 1980s (Chart 50). Firms' financial positions have been favorable, as suggested by the DIs for both large and small firms in the *Tankan* having been at high levels that are almost the same as those seen around 1990 (Chart 51).

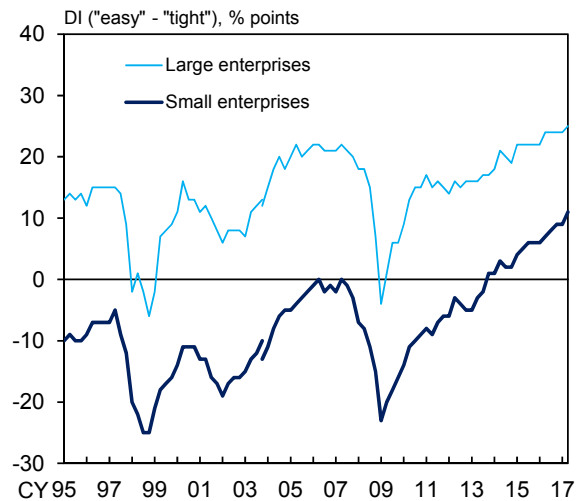
Demand for funds such as those related to mergers and acquisitions of firms, as well as those for business fixed investment, including for real estate, has continued to increase. In these circumstances, the year-on-year rate of increase in the amount outstanding of bank lending has accelerated at a moderate pace to the range of 3.0-3.5 percent (Chart 52). That in the aggregate amount outstanding of CP and corporate bonds also has accelerated recently.

The year-on-year rate of change in the money stock (M2) has been at around 4 percent, as bank lending has increased (Chart 53).

## Developments in Financial Markets

With regard to developments in global financial markets, long-term interest rates declined somewhat through mid-June, mainly reflecting

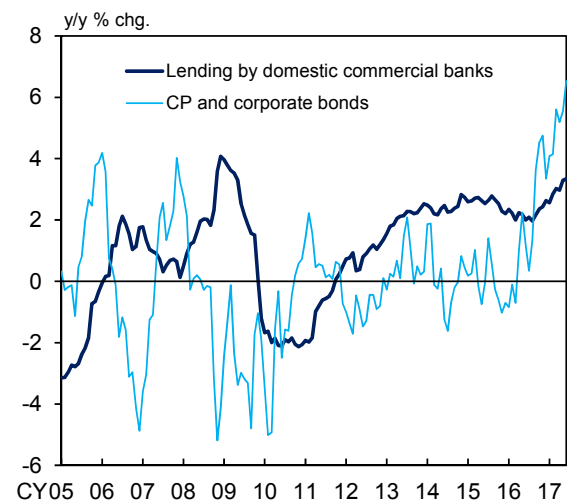
**Chart 51: Financial Position**



Source: Bank of Japan.

Note: Based on the *Tankan*. All industries. There is a discontinuity in the data in December 2003 due to a change in the survey framework.

**Chart 52: Amount Outstanding of Bank Lending, CP, and Corporate Bonds**



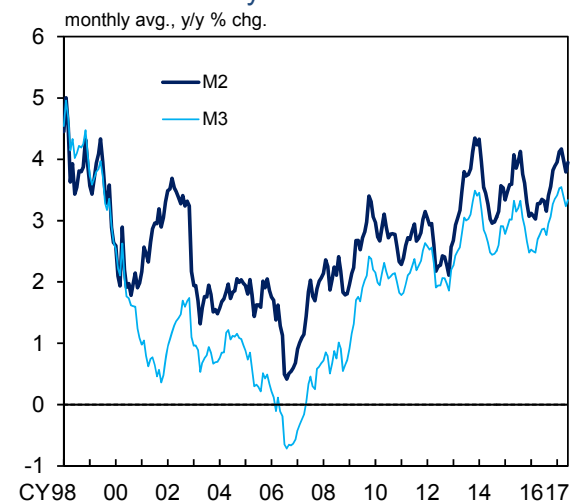
Sources: Bank of Japan; Japan Securities Depository Center;

Japan Securities Dealers Association; I-N Information Systems.

Note: Figures for lending by domestic commercial banks are monthly averages.

Figures for CP and corporate bonds are those at the end of period.

**Chart 53: Money Stock**



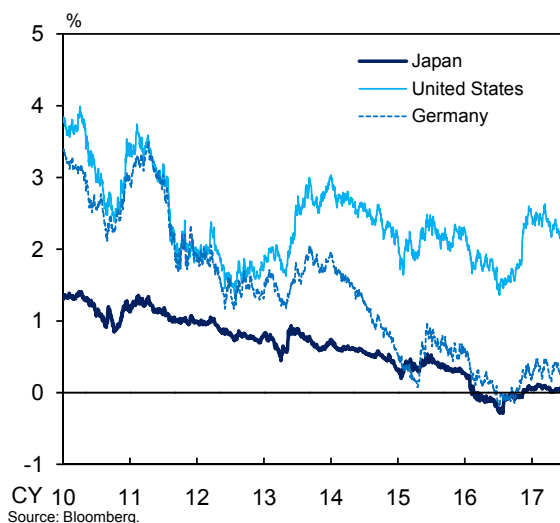
Source: Bank of Japan.

relatively weak price indicators in the United States. Thereafter, upward pressure has been exerted on long-term interest rates mainly in Europe, stemming from speculation about a reduction in monetary accommodation by the European Central Bank (ECB). Meanwhile, stock prices have been firm, mainly against the background of solid corporate profits and somewhat of a waning in investors' risk aversion concerning political situations in Europe.

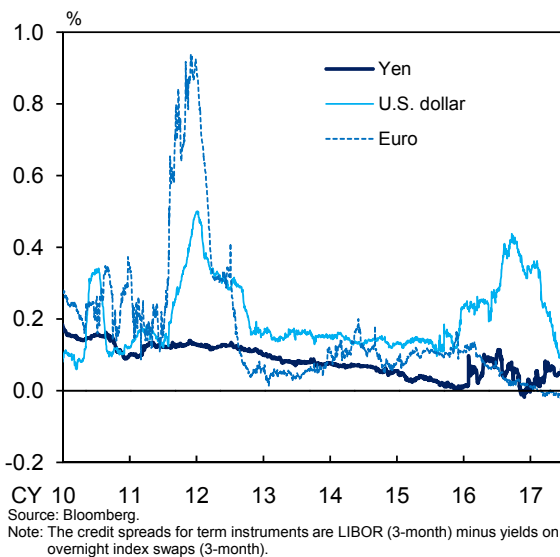
Yields on 10-year government bonds in the United States declined somewhat through mid-June despite the policy rate hike by the Federal Reserve, due mainly to relatively weak price indicators, in a situation where expectations for the U.S. administration's fiscal expansion have lowered (Chart 54). Nonetheless, the yields rose somewhat thereafter, following those in Europe. Yields on 10-year government bonds in Germany declined somewhat, following those in the United States, and have increased since late-June due to speculation about a reduction in monetary accommodation by the ECB.

With regard to credit spreads on interbank transactions, the LIBOR-OIS spreads for major currencies show the following developments: those for the U.S. dollar have continued to decline moderately since the implementation of money market fund (MMF) reform in the United States, while those for the euro and the yen have remained at low levels (Chart 55). Premiums for U.S. dollar funding through the dollar/yen foreign exchange swap market have declined since early this year, to the level marked around mid-2015 (Chart 56). Under the circumstances, Japanese

**Chart 54: 10-Year Government Bond Yields in Selected Advanced Economies**



**Chart 55: Credit Spreads for Term Instruments**



**Chart 56: Dollar Funding Premiums through Foreign Exchange Swaps**



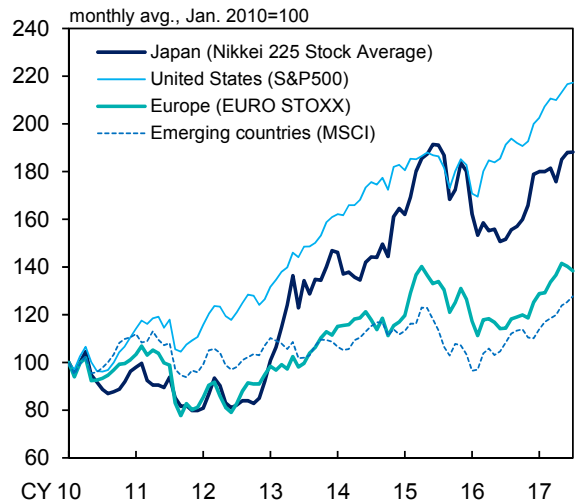


banks do not face quantitative constraints on foreign currency funding at this moment.

Stock prices in the United States have increased moderately, being at historical high levels, mainly due to solid corporate profits and to uncertainties regarding political situations in Europe abating somewhat, mainly reflecting the outcome of the presidential election in France; those in Europe have been at the high levels seen around spring 2015 (Chart 57). Japanese stock prices have increased moderately, mainly reflecting solid corporate profits, amid a moderate increase in the U.S. stock prices. In the Japan real estate investment trust (J-REIT) market, prices have declined (Chart 58).

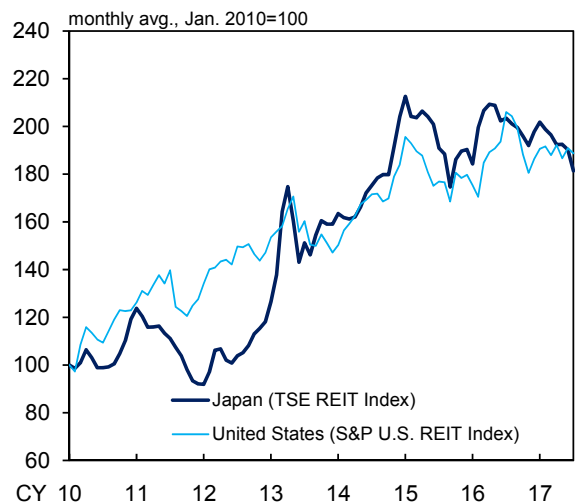
In foreign exchange markets, although the yen had appreciated against the U.S. dollar, due mainly to the decline in 10-year government bond yields in the United States, it has been more or less flat, with fluctuations smoothed out (Chart 59). The yen has depreciated against the euro, reflecting the abatement of uncertainties regarding political situations in Europe and speculation about a reduction in monetary accommodation by the ECB.

**Chart 57: Selected Stock Prices**



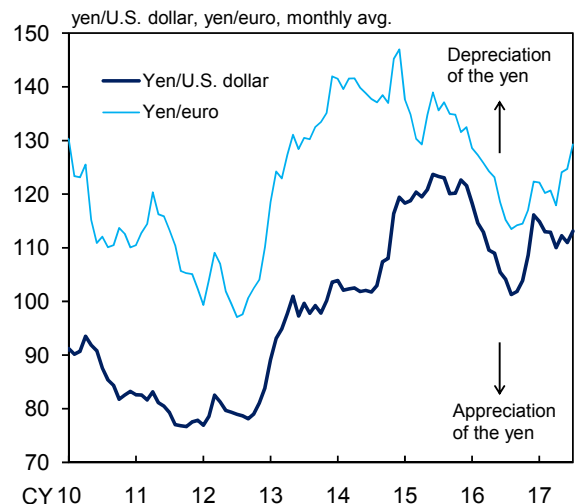
Source: Bloomberg.  
Note: Figures for emerging countries are based on the MSCI Emerging Markets Index calculated in the local currencies.

**Chart 58: Selected REIT Indexes**



Source: Bloomberg.

**Chart 59: Yen/U.S. Dollar and Yen/Euro**



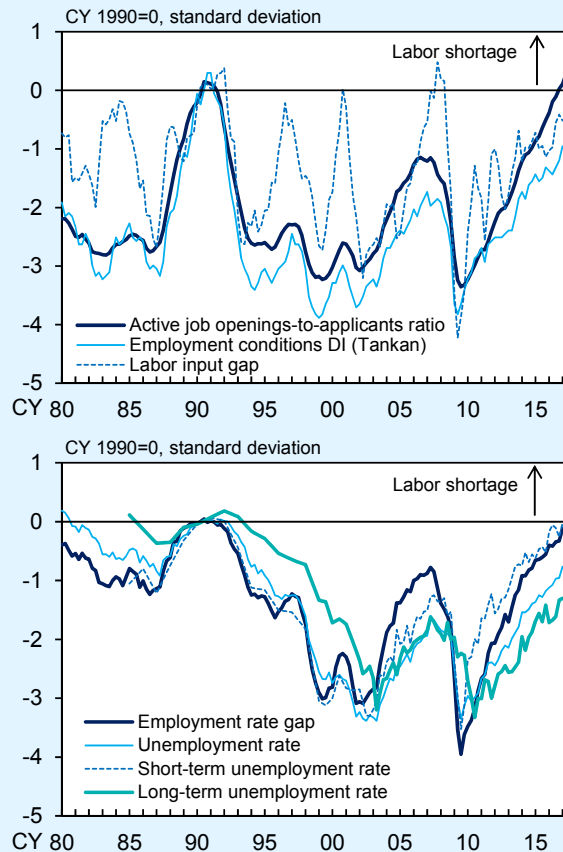
Source: Bloomberg.

## (Box 1) The Relationship between Labor Market Conditions and Wages in Recent Times

A question often heard lately is why wages are not increasing despite the labor shortage.<sup>30</sup> While Box 2 examines why wages are not increasing, Box 1 examines the facts regarding the relationship between labor market conditions and wages in recent times.

The recent degree of labor market tightness has been at around or slightly below the peak level during the bubble period ("the bubble peak level"). Chart B1-1 shows developments in a number of measures of labor slack. To allow for comparison, series in the chart are normalized using the standard deviation. The chart indicates the following: (1) the active job openings-to-applicants ratio, the short-term unemployment rate, and the employment rate gap have tightened to such an extent that they have now reached the bubble peak levels, while (2) the employment conditions DI in the *Tankan*, the unemployment rate, the long-term unemployment rate, and the labor input gap have remained slightly slack relative to the bubble peak levels.<sup>31,32</sup>

**Chart B1-1: Various Measures of Labor Slack**



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

- Notes: 1. Figures for each labor slack measure are normalized by the standard deviation after 1990.  
 2. Figures for active job openings-to-applicants ratio and unemployment rate for 2017/Q2 are April-May averages.  
 3. The labor input gap and employment rate gap are based on staff estimations.  
 4. Figures for the short- and long-term unemployment rates up through 2001 are not seasonally adjusted, since they are on a semiannual or annual basis.

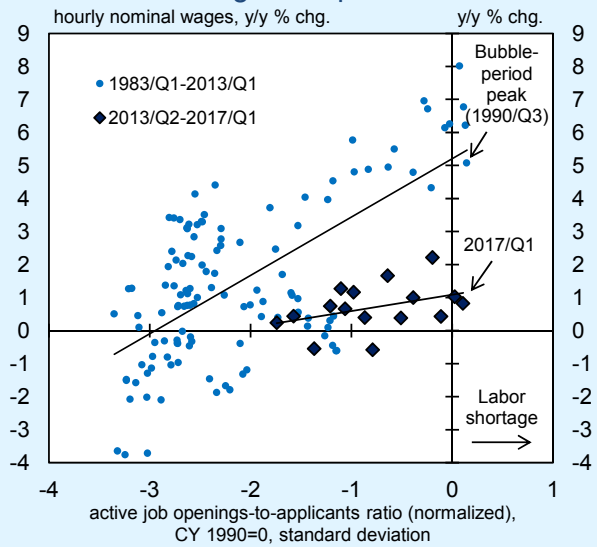
<sup>30</sup> See, for example, Yuji Genda ed., *Hitode Busoku nanoni Naze Chingin ga Agaranainoka (Why Wages Are Not Increasing despite the Labor Shortage)*, Keio University Press Inc., 2017 (available only in Japanese).

<sup>31</sup> The employment rate gap indicates a gap between the unemployment rate and the structural unemployment rate, which is calculated based on the idea of the so-called Beveridge Curve. The labor input gap is defined as a gap between labor input and potential labor input, and calculated by adding up (1) the employment rate gap, (2) the labor force input gap (i.e., deviation from the trend of the labor force participation rate), and (3) the hours worked gap (i.e., deviation from the trend of working hours per

Although, as indicated by these various measures, the labor market has been as tight as during the bubble period, wages have been increasing at a slower pace than during that period. Chart B1-2, using the active job openings-to-applicants ratio as the measure of labor market conditions, shows that there is a positive correlation between nominal wage increases and the degree of labor market tightness ("wage Phillips curve"). However, when looking only at data from 2013 onward, the curve appears to have shifted downward and flattened. As a result, while nominal wages around 1990 rose at a rate of 5-6 percent, which is the bubble peak level, they have been rising only at a rate of around 1 percent recently.

Therefore, it is not the case that wages are not increasing at all despite the labor shortage; rather, the increase has not been sufficiently noticeable despite the tight labor market conditions.

**Chart B1-2: Wage Phillips Curve**



Source: Ministry of Health, Labour and Welfare.  
 Notes: 1. For hourly nominal wages: Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February.  
 2. Figures for hourly nominal wages up through 1990 are for establishments with 30 or more employees.  
 3. The solid lines show the fitted regression lines for each period.

worker). For details, see the Bank's research paper "Methodology for Estimating Output Gap and Potential Growth Rate: An Update" released in May 2017.

<sup>32</sup> The degree of labor market tightness differs for each measure. Such difference mainly depends on the following: (1) to what extent the long-term unemployment rate is regarded as structural (i.e., to what extent the long-term unemployment rate, which is the result of hysteresis of prolonged stagnation in the past, could possibly decline amid the continued economic expansion); (2) a margin of working hours, which is taken into account only by the labor input gap; and (3) the size and industry of sample firms -- that is, the *Tankan* survey limits its sample firms to those in the private sector capitalized at more than or equal to 20 million yen and excludes those in the quasi-public sector, such as health and medical care, as well as welfare, which face acute labor shortage.

## (Box 2) Features of Japan's Labor Market and Macro-Level Wages

Box 1 has shown that, although the labor market has been as tight as during the bubble period, wages have been increasing at a slower pace than during that period. Box 2 examines the relationship between labor market conditions and wages separately for regular (full-time) and non-regular (part-time) employees, taking into account that the wage-setting mechanism for regular and non-regular employees differs in Japan's labor market.

Wages of part-time employees already have risen considerably in response to the tightening of labor market conditions. Estimating wage functions using hourly wages of part-time employees (hourly scheduled cash earnings) as the dependent variable and the various measures of labor slack shown in Chart B1-1 as explanatory variables, the results show that all measures of labor slack are statistically significant, indicating that part-time hourly wages are sensitive to labor slack (Chart B2-1 [a]). In addition, recent increases in wages of part-time employees are within the bands predicted by the estimated wage functions (Chart B2-1 [b]). These observations indicate that wages of part-time employees are rising in response to the tightening of labor market conditions and, moreover, that the pace of increase is in line with the relationship between wages of part-time employees and labor market conditions observed in the past.

Meanwhile, wages of full-time employees are not sensitive to fluctuations in labor market conditions.

**Chart B2-1: Wage Function for Part-Time Employees' Hourly Wages**

**(a) Estimation Model and Results**

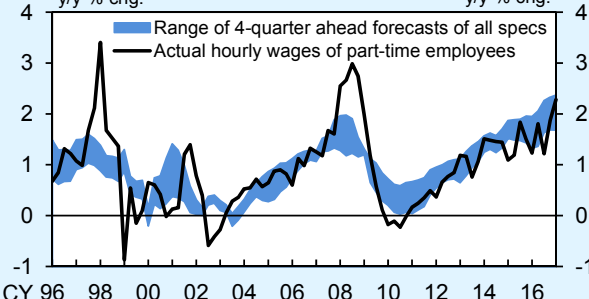
Hourly scheduled cash earnings of part-time employees (y/y % chg.)  
 = Constant +  $\rho$  × Lagged dependent variable  
 +  $\beta$  × Labor slack measure (%) +  $\gamma$  × Minimum wage increase (%)

	Active job openings-to-applicants ratio	Employment rate gap	Labor input gap	Employment conditions DI	Unemployment rate	Short-term unemployment rate
Constant	0.64***	0.65***	0.53***	0.88***	1.03***	0.72***
$\rho$	0.68***	0.67***	0.72***	0.70***	0.70***	0.71***
$\beta$	0.21***	0.23***	0.21***	0.26***	0.30***	0.22***
<s.e.>	<0.07>	<0.05>	<0.05>	<0.08>	<0.10>	<0.07>
$\gamma$	0.08	0.06	0.04	0.06	-0.07	-0.03
S.E. of regression	0.47	0.46	0.47	0.47	0.47	0.47

Estimation period: 1995/Q1-2016/Q4.

\*\*\*, \*\*, \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**(b) Four-quarter Ahead Forecasts of Each Spec**



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

Notes: 1. The 4-quarter ahead forecasts are calculated based on 4-quarter lags of actual wages assuming perfect foresight with regard to labor slack measures and minimum wages.  
 2. Figures for the labor slack measures are normalized.

This is likely due to the fact that labor unions, which are composed of full-time employees, tend to prioritize stable long-term employment and, as a result, do not demand high wage increases even if the labor market tightens. Meanwhile, firms implicitly promise employees wage increases with seniority: relative to their labor productivity, wages paid to employees are low when they are young but then rise above what their labor productivity would warrant as they get older. As a result, employees have little incentive to change jobs when the labor market tightens temporarily.

However, wages of full-time employees tend to respond to changes in inflation expectations through labor-management wage negotiations. The reason for this is that if inflation expectations rise, households will seek wage increases (base pay increases) to the extent necessary to maintain real purchasing power, and firms are likely to respond to such demands if they expect to be able to pass on nominal wage increases to sales prices.

This point can be confirmed by estimating wage functions using the scheduled cash earnings of full-time employees as the dependent variable and the various labor slack measures as well as base pay increases as explanatory variables. The results indicate that most of the labor slack measures are insignificant, while base pay increases are significant (Chart B2-2). Furthermore, estimating a base pay function using base pay increases as the dependent variable and inflation expectations and the year-on-year rate of change in labor productivity as explanatory variables shows the following: (1) recent

## Chart B2-2: Wage Function for Full-Time Employees' Monthly Wages

### (a) Estimation Model and Results

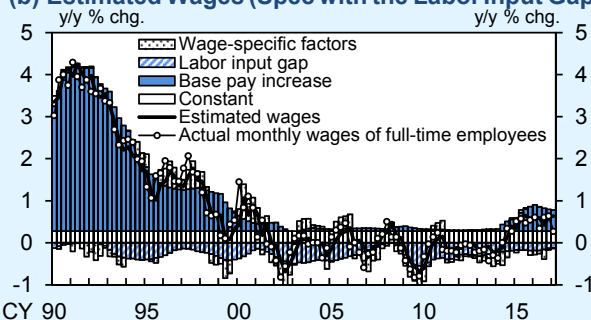
Monthly scheduled cash earnings of full-time employees (y/y % chg.)  
 = Constant +  $\rho$  × Lagged dependent variable  
 +  $\beta$  × Labor slack measure (%) +  $\gamma$  × Base pay increase (%)

	Active job openings-to-applicants ratio	Employment rate gap	Labor input gap	Employment conditions DI	Unemployment rate	Short-term unemployment rate
Constant	-0.01	0.05	0.08 <sup>*</sup>	0.02	0.16 <sup>**</sup>	0.01
$\rho$	0.71 <sup>***</sup>	0.70 <sup>***</sup>	0.70 <sup>***</sup>	0.71 <sup>***</sup>	0.68 <sup>***</sup>	0.71 <sup>***</sup>
$\beta$	0.00	0.03	0.06 <sup>*</sup>	0.01	0.07	0.01
<s.e.>	<0.03>	<0.04>	<0.03>	<0.04>	<0.05>	<0.04>
$\gamma$	0.32 <sup>***</sup>	0.31 <sup>***</sup>	0.32 <sup>***</sup>	0.31 <sup>***</sup>	0.30 <sup>***</sup>	0.32 <sup>***</sup>
S.E. of regression	0.27	0.27	0.26	0.27	0.27	0.27

Estimation period: 1988/Q1-2016/Q4

\*\*\*, \*\*, \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

### (b) Estimated Wages (Spec with the Labor Input Gap)



Sources: Ministry of Health, Labour and Welfare; Bank of Japan; Ministry of Internal Affairs and Communications; Central Labour Relations Commission; Japanese Trade Union Confederation (*Rengo*), etc.

Notes: 1. Chart (b) shows a historical decomposition of actual wages, where the contribution of each factor is recursively calculated as the cumulative effects from the past.  
 2. Figures for the labor slack measures are normalized. Figures for scheduled cash earnings up through 1993 are for establishments with 30 or more employees.

developments in base pay can mostly be explained by developments in inflation expectations and labor productivity, and (2) the high increases in base pay observed during the bubble period were due to high inflation expectations and high labor productivity growth at the time (Chart B2-3).<sup>33</sup>

These results indicate that, although (1) wages of part-time employees are clearly rising, reflecting the tightening of labor market conditions, (2) increases in scheduled cash earnings of full-time employees, which are not sensitive to labor slack, continue to be sluggish, reflecting low inflation expectations and productivity growth. Given that scheduled cash earnings of full-time employees make up almost 70 percent of total employee income overall, the sluggishness in such earnings explains why hourly wages at the macro-level have been increasing at a slower pace compared to the bubble period (Chart B2-4).

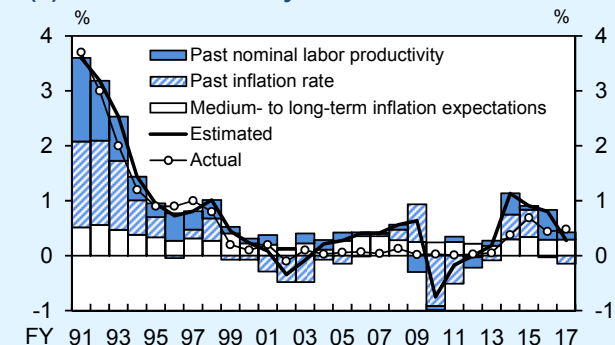
### Chart B2-3: Base Pay Function

#### (a) Estimation Model and Results

$$\begin{aligned} \text{Base pay increase (\%)} &= (1-0.58-0.19)^{***} \times \text{Medium- to long-term inflation expectations (\%)} \\ &+ 0.58^{***} \times \text{Past inflation rate (4-quarter average, \%)} \\ &+ 0.19^{***} \times \text{Past nominal labor productivity} \\ &\quad \text{(4-quarter average of y/y \% chg.)} \end{aligned}$$

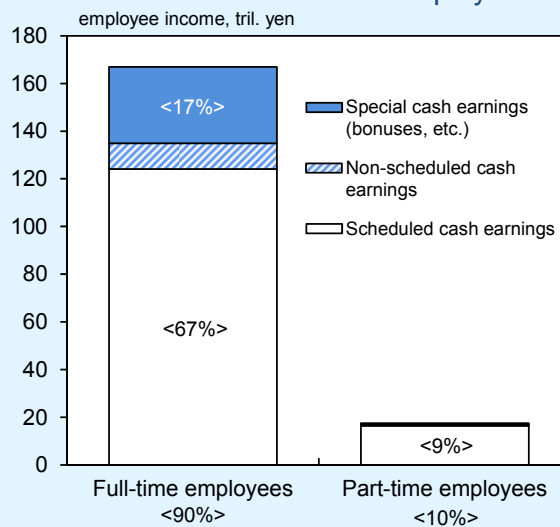
Estimation period: FY 1991-2017.  
 \*\*\* denotes statistical significance at the 1% level.

#### (b) Estimated Base Pay Increases



Sources: Central Labour Relations Commission; Japanese Trade Union Confederation (Rengo); Consensus Economics Inc., "Consensus Forecasts;" Ministry of Internal Affairs and Communications; Cabinet Office, etc.  
 Notes: 1. Figures for medium- to long-term inflation expectations are the expectations for the CPI 6 to 10 years ahead and are based on the "Consensus Forecasts."  
 2. Nominal labor productivity = nominal GDP / (number of employees × hours worked)

### Chart B2-4: Breakdown of Employee Income



Source: Ministry of Health, Labour and Welfare.  
 Notes: 1. Figures are those for 2016 and are calculated by multiplying total cash earnings by the number of regular employees based on the "Monthly Labour Survey."  
 2. Figures in angular brackets show the shares in total employee income.

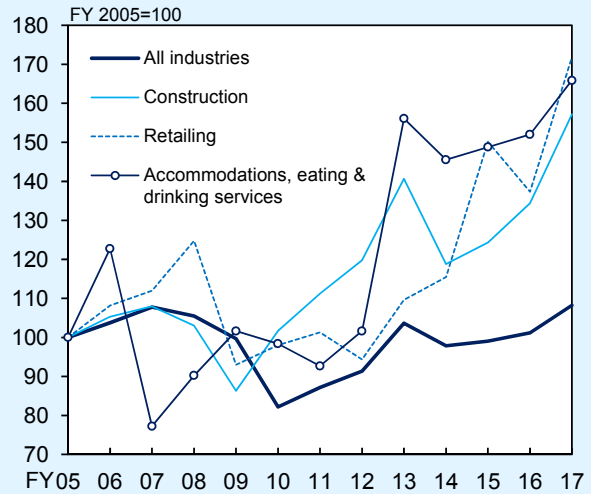
<sup>33</sup> Here, inflation expectations indicate both medium- to long-term inflation expectations (i.e., forward-looking inflation expectations) and the past inflation rate (i.e., adaptive inflation expectations) in the estimation model.

### (Box 3) Firms' Measures to Address the Labor Shortage and Their Relationship with Prices

In order to address the acute labor shortage comparable to the bubble period, it seems that firms have taken the following various measures to absorb the upward pressures on prices stemming from wage increases.<sup>34</sup>

First, mainly in labor-intensive sectors -- such as "retailing," "accommodations, eating and drinking services," and "construction" -- firms have been increasing labor-saving and efficiency-improving investment in recent years that makes use of information technology, in order to avoid situations where a labor shortage will be a constraint on business expansion or a rise in wages will lead directly to an increase in costs (Chart B3-1). So far, firms in Japan have taken advantage of hiring highly-educated and diligent workers, mainly among the elderly and women, at relatively cheap wages as part-time employees compared to those in the United States and Europe. However, going forward, as the labor shortage becomes more acute and wages of part-time employees continue to increase clearly, it is expected that it will become more difficult to hire part-time employees at cheap wages, which increasingly will tend to induce the substitution of capital for labor shortage through labor-saving investment, taking advantage of information technology.

Chart B3-1: Software Investment (*Tankan*)



Source: Bank of Japan.  
Note: Figures up through fiscal 2016 are actual results. Figures for fiscal 2017 are forecasts from the June 2017 survey.

<sup>34</sup> For firms' recent measures to address the labor shortage, see the annex paper to the *Regional Economic Report*, "Kaku Chiiki ni okeru Jyosei no Katsuyaku Suishin ni muketa Kigyō tou no Torikumi (Firms' Initiatives toward Promoting Women's Empowerment in Each Region)" released in June 2017 (available only in Japanese).

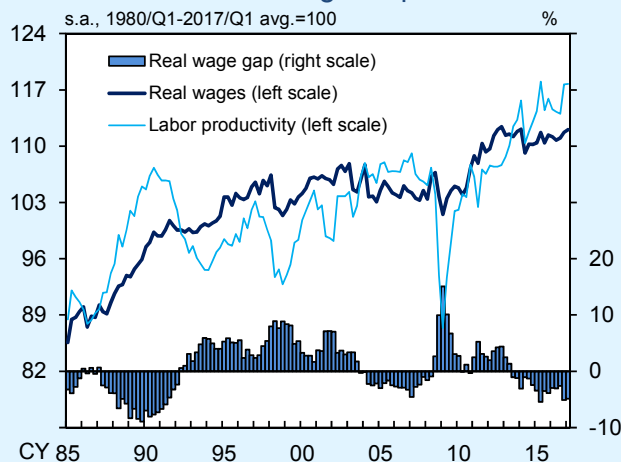
Second, along with the substitution of IT capital for wages of part-time employees, firms have been streamlining the existing business process. This includes reviewing whether labor costs are squared with the profitability of certain services that had been taken for granted, such as conducting business late at night and early in the morning, and considering whether to continue with providing those services. Some cases already have been spotted where such streamlining leads to improvement in labor productivity, as seen in sales having dropped by less than the decrease in labor input. This is equivalent to proceeding with labor-saving technological progress on a macro basis.

The rise in real wages has been restrained in comparison with the supply-demand conditions in the labor market, as discussed in Boxes 1 and 2, while labor productivity has improved. Therefore, the real wage gap, defined as the gap between real wages and labor productivity, has been declining recently (Chart B3-2). This is considered to be contributing to the downward pressure on prices.

In order to quantitatively gauge this point, a Phillips curve has been estimated by explicitly incorporating the real wage gap (Chart B3-3).<sup>35</sup> The estimation results show that the real wage gap has been pushing down the inflation rate by about 0.2 percentage point recently, although its

<sup>35</sup> In this estimation, the hybrid-type Phillips curve, taking into account both the forward-looking and adaptive inflation expectation formation, is used as a benchmark.

**Chart B3-2: Real Wage Gap**



Sources: Ministry of Finance; Cabinet Office.  
 Notes: 1. The real wage gap is defined as the deviation of real wages from labor productivity.  
 2. Real wages = personnel expenses / number of employees / GDP deflator  
 3. Labor productivity = (operating profits + personnel expenses + depreciation expenses) / number of employees / GDP deflator  
 4. Variables such as personnel expenses are based on the "Financial Statements Statistics of Corporations by Industry, Quarterly" and exclude "finance and insurance."

**Chart B3-3: Phillips Curve Specifications**

**(a) Specifications**

<Model 1: Not including real wage gap>  

$$\pi_t = \beta_0 + \beta_1 \times \pi_t^e + (1 - \beta_1) \times (\pi_{t-1} + \pi_{t-2})/2 + \beta_2 \times ygap_t + \Omega \times (\text{dummy variables for one-off factors})$$

<Model 2: Including real wage gap>  

$$\pi_t = \beta_0 + \beta_1 \times \pi_t^e + (1 - \beta_1) \times (\pi_{t-1} + \pi_{t-2})/2 + \beta_2 \times ygap_t + \beta_3 \times (wgap_{t,2} + wgap_{t,3})/2 + \Omega \times (\text{dummy variables for one-off factors})$$

$\pi_t$ : CPI less fresh food, energy, and house rent (seasonally adjusted q/q % changes, annualized).  
 $\pi_t^e$ : medium- to long-term inflation expectations (%).  
 $ygap_t$ : output gap (%).  $wgap_t$ : real wage gap (%).

**(b) Estimation Results**

	Model 1	Model 2
$\beta_0$	-0.35 **	-0.30 **
$\beta_1$	0.34 ***	0.30 ***
$\beta_2$	0.12 ***	0.19 ***
$\beta_3$	—	0.05 *
Adj. R <sup>2</sup>	0.60	0.62
S.E.	0.36	0.36

\*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. S.E. represents the standard errors for the estimated y/y % changes. Estimation period: 1997/Q1-2017/Q1.

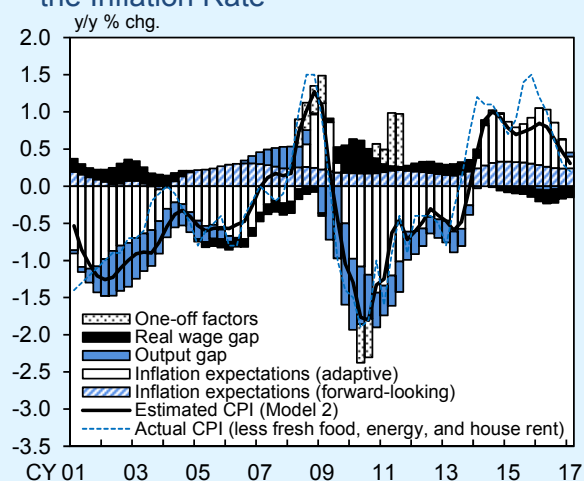
Sources: Ministry of Internal Affairs and Communications; Ministry of Finance; Consensus Economics Inc., "Consensus Forecasts," etc.  
 Notes: 1. Figures for medium- to long-term inflation expectations are the expectations for the CPI 6 to 10 years ahead and are based on the "Consensus Forecasts."  
 2. In the estimations, dummy variables are included in order to control for the estimated effects of one-off factors such as the introduction of a subsidy for high school tuition.  
 3. The output gap is based on staff estimations.  
 4. The CPI figures are adjusted for changes in the consumption tax rate.



statistical significance is not as high as that of the output gap and inflation expectations (Chart B3-4).

However, such downward pressure on prices resulting from the decline in the real wage gap is considered to be only transitory. In the long run, real wages are determined to be consistent with labor productivity, and thus the real wage gap is assumed to converge toward zero. The base pay function, shown in Chart B2-3, also demonstrated that labor productivity works positively on base pay increases in a statistically significant manner. It is therefore expected that, in the long run, the impact of the improvement in labor productivity pushing down prices will be limited.<sup>36</sup>

**Chart B3-4: Effects of Real Wage Gap on the Inflation Rate**



Sources: Ministry of Internal Affairs and Communications; Ministry of Finance; Consensus Economics Inc., "Consensus Forecasts," etc.  
 Notes: 1. The estimated inflation rate is based on Model 2 shown in Chart B3-3.  
 2. The effects of the constant term are evenly allocated to the contributions of inflation expectations (forward-looking and adaptive).  
 3. Figures for the CPI are adjusted for changes in the consumption tax rate.

<sup>36</sup> The improvement in labor productivity can contribute to pushing up prices. If the growth rates are raised in the long run along with the improvement in labor productivity, the output gap will improve as business fixed investment and private consumption increase through the rise in expected profits and permanent income. If the natural rate of interest also goes up at the same time, the monetary easing effects are expected to increase even if the current policy rate is unchanged.

