September 4, 2019

Bank of Japan

Economic Activity, Prices, and Monetary Policy in Japan

Speech at a Meeting with Business Leaders in Hakodate

Goushi Kataoka

Member of the Policy Board

(English translation based on the Japanese original)

I. Economic Activity and Prices

A. Overseas Economies

I would like to start my speech by looking at developments in overseas economies.

With the growth pace of the global economy slowing since the second half of 2018, differences in growth rates among countries are evident, and some risk factors have started to materialize. According to the July 2019 *World Economic Outlook* (WEO) *Update* released by the International Monetary Fund (IMF), as presented in Chart 1, the global economic growth rate is projected to decelerate to 3.2 percent in 2019, picking up to 3.5 percent in 2020. However, downward revisions from the April 2018 WEO forecasts are evident, as seen on the right-hand side of Chart 1. As for the global Purchasing Managers' Index (PMI), shown in Chart 2, the index for manufacturing has been below the neutral 50-point level for two consecutive months, marking the lowest level since October 2012, when the global economy faced the European sovereign debt crisis. The index for services is on a moderate declining trend, although it is still above the 50-point level. Given these facts, I suppose there is a growing possibility that the recovery in the global economy, which was expected to start from the second half of 2019, may be delayed, and the degree may be limited. There are three specific key factors behind my thoughts: (1) the heightening of economic policy uncertainty; (2) developments in the U.S.-China trade friction and their effects; and (3) the outlook for the world semiconductor market.

With regard to the first factor, Chart 3 presents the year-on-year rate of change in global production and the *Global Economic Policy Uncertainty Index*, which shows the GDP-weighted average of economic policy uncertainty levels for 20 major countries. The pace of increase in global production is decelerating while uncertainty over economic policy conducted by each country is heightening.

The second factor is developments in the U.S.-China trade friction, which is particularly crucial among various economic policy uncertainties. Chart 4 shows the impact of the trade friction on GDP for the United States and China, estimated by the IMF in June 2019. The left-hand bar graph represents the deviations from baseline projections of the real GDP levels for the two countries. The simulations take into account the tariff hike from 10

percent to 25 percent on 200 billion dollars' worth of U.S. imports from China as of May 8, 2019, and assume an envisaged 25 percent tariff on the remaining U.S. imports from China as well as retaliation by China. Although the impact differs between the two countries in the short run, the trade friction will equally exert downward pressure on real GDP in both countries by around 0.4 percent in the long run. The right-hand chart shows the impact of the trade friction on the global economy. The tariff hikes implemented in 2018 are exerting downward pressure on global real GDP for 2019 by more than 0.2 percent. If the 25 percent tariff is imposed on almost all items imported from China, it is estimated that the global real GDP figures for 2019 and 2020 will be pushed down by around 0.4 percent and 0.5 percent, respectively. The United States recently announced that it will impose additional tariffs on the remaining imports, worth approximately 300 billion dollars, and will raise tariffs by 5 percentage points on the U.S. imports from China that already have been taxed. As trade negotiations have not come to a conclusion, attention should continue to be paid to the fact that the global economy still faces downside risks.

The third factor is the outlook for the world semiconductor market. Deceleration in world semiconductor sales became notable from mid-2018. Various reasons have been pointed out as the background to this; for example, a halt in expansion of demand for data centers, a prolonged replacement cycle for smartphones, and a decline in business fixed investment related to machine tools -- which largely are equipped with semiconductors -- due mainly to deterioration in the U.S.-China trade friction. The left-hand side of Chart 5 compares the forecasts for the year-on-year growth rate in the semiconductor market made by the World Semiconductor Trade Statistics Inc. in autumn 2018 and spring 2019 by region. The forecasted market growth rate for 2019 has been revised sharply downward in the spring 2019 forecast, from a slight increase in the autumn 2018 forecast, especially for the U.S. market. The right-hand chart shows the year-on-year rate of change in world semiconductor shipments. As the pace of increase in shipments was fast over the past two years, recovery in the semiconductor market likely will take time.

B. Japan's Economy

Next, I would like to turn to Japan's economy, starting with recent developments.

In Chart 6, the line graph shows developments in the real GDP growth rate and the bar graph shows the contribution of each component to GDP. The growth rate for the July-September quarter of 2018 registered negative growth, due mainly to the effects of natural disasters, but subsequently has been positive for three consecutive quarters through the April-June quarter of 2019. In that quarter, the contribution of exports remained small, reflecting the slowdown in the global economy, but the contribution of domestic demand turned positive due to an increase in the contribution of private consumption, business fixed investment, and government spending, which had decreased in the previous quarter. Overall, the increase in domestic demand more than offset the decrease in external demand in the April-June quarter.

Turning to the outlook for Japan's economy, as shown in Chart 7, the medians of forecasts made by the Bank of Japan's Policy Board members for real GDP growth rates presented in the July 2019 *Outlook for Economic Activity and Prices* (Outlook Report) are 0.7 percent for fiscal 2019, 0.9 percent for fiscal 2020, and 1.1 percent for fiscal 2021. The Bank's baseline scenario is that, although external demand is likely to be somewhat weak for the time being, it gradually will increase thereafter, and with the firm domestic demand, the economy is likely to continue on an expanding trend. However, my projection for fiscal 2019-2021 is around 0.5 percent to 1.0 percent, which is slightly below the potential growth rate. I also am of the view that risks to economic activity are tilted to the downside. As background to my projection, I consider that an important factor is how the deterioration in external demand will affect domestic demand. In the following, I will explain my views on exports, business fixed investment, and private consumption.

First, real exports turned to a decline in the January-March quarter of 2019 and experienced weak recovery in the following quarter, as seen in Chart 8. The key to the outlook is developments in the U.S.-China trade friction and the degree of recovery in the semiconductor market, and I believe that real exports are highly likely to remain sluggish for the time being.

Second, business fixed investment has been on an uptrend, with insufficient capacity -- as shown in Chart 9 -- continuing to exert upward pressure on investment. However, according to the Bank's *Tankan* (Short-Term Economic Survey of Enterprises in Japan), the diffusion index (DI) for production capacity has been approaching the turning point between insufficient and excessive capacity since the turn of 2019, and my view is that the increasing trend in business fixed investment may come to a halt. Business fixed investment plans in the June 2019 *Tankan* were firm on the whole, both in manufacturing and nonmanufacturing. As shown in Chart 10, however, within manufacturing, investment plans of the processing industries, which are highly dependent on exports -- such as the general-purpose, production, and business oriented machinery, as well as the motor vehicles industries -- were below the past average. In particular, investment plans of the general-purpose, production, and business oriented machinery industries were revised downward in the June survey from the March survey. The recent growth in the plans of overall manufacturing is driven by the basic materials industry, but considering the past average of revision patterns in the *Tankan*, the investment plans of the basic materials industry also may be revised downward. Furthermore, as for nonmanufacturing, shown in Chart 11, investment plans of the construction as well as the wholesaling and retailing industries were at about the same levels as the past average, but those of the information communication industry were relatively weak. Thus, although business fixed investment plans are firm on the whole, I think that those of manufacturing are being steadily influenced by the slowdown in overseas economies.

Lastly, private consumption has been on a moderate increasing trend, driven by consumption of durable goods and services, as presented in Chart 12. This reflects the sustained favorable employment. However, there have been signs of changes in the labor market since the turn of 2019. For example, the employment-related level DI in the *Economy Watchers Survey* is at a level very close to falling below the neutral point of 50, and the number of active job openings has decreased for five consecutive months on a year-on-year basis. As Chart 13 indicates, developments in consumption have been moderate so far, although the consumption tax hike is coming up in October 2019, and I assume that consumer sentiment has deteriorated more than in the second half of fiscal 2013, half a year before the previous tax hike. It is difficult to predict how the measures to reduce

the household burden of the tax hike will affect consumption, and thus attention should be paid to future developments in consumption, including the effects of the tax hike.[1]

C. Recent Developments and Outlook for Prices

Next, I will move on to price developments.

As indicated in the left-hand side of Chart 14, the year-on-year rates of increase in the consumer price index (CPI) for July 2019 both for all items less fresh food and for all items less fresh food and energy were 0.6 percent. Looking at the right-hand side of Chart 14, which shows indicators that represent the underlying developments in consumer prices, items for which prices have risen outnumber those for which prices have declined, and the difference between the two figures has been widening slightly since the turn of 2019. However, the rises in trimmed mean and weighted median have come to a halt, and it can be said that price rises have not spread to goods that have a high share in consumption.

Next, I will take a look at developments in the output gap and medium- to long-term inflation expectations, which are indicators that influence underlying price developments. The output gap, as shown in the left-hand side of Chart 15, has remained positive, reflecting improvements in the capital stock and labor markets. Recently, however, it seems that it is no longer on an expanding trend. Inflation expectations have been somewhat weak, as

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[1] The *2019 Salaried Worker Pocket Money Survey* released by Shinsei Bank shows the results of a survey conducted of 2,700 workers, both male and female, aged 20 through 59 years. The respondents were asked "If the consumption tax is raised to 10 percent, will it be a burden on your pocket money?" For both men and women, the proportion of respondents who answered that the 10 percent tax "will be a great burden" was higher than that of those who answered that the current 8 percent tax "is a great burden." The proportion of those who answered that the 10 percent tax hike "will be a burden" (comprising the choices "will be a great burden" and "will slightly be a burden") was higher by more than 10 percentage points than that of those with the same answers for the current 8 percent tax. Furthermore, Hakuhodo Inc. revealed in its survey that 71.3 percent of respondents answered that the 10 percent tax hike "will be a heavier burden compared with the previous tax hike." The ratio was higher in particular for women aged 20 through 49 years. For details, see "Shōhi zei taisaku kenkyū purojekuto chōsa: Zōzei zen go no ishiki-kōdō," Hakuhodo Inc., June 2019.

Taking account of the difficulties in projecting developments in consumption after the tax hike and of the time lag in releasing statistics, I consider that it has become more necessary than at the time of the previous tax hike to enhance analysis of real-time data.

indicated in the right-hand side of Chart 15. I am convinced that this is attributable to the adverse effects of prolonged deflation in the past and to recent weak price developments. In addition, in my view, the credibility of achieving the Bank's 2 percent price stability target has not been sufficiently enhanced among the public, and this also is affecting inflation expectations.

Turning to the outlook for prices, the medians of the Policy Board members' forecasts for the year-on-year rate of change in the CPI (all items less fresh food) presented in the July 2019 Outlook Report are 0.8 percent for fiscal 2019, 1.2 percent for fiscal 2020, and 1.6 percent for fiscal 2021, excluding the effects of the scheduled consumption tax hike and policies concerning the provision of free education (Chart 7). The Bank's view is that the momentum toward the 2 percent price stability target will be maintained. It cannot be judged, however, that the inflation rate will accelerate toward 2 percent, and thus I dissented from the relevant description in the July Outlook Report.

There are four main reasons behind my position. First, a widening of the output gap is less likely to lead to a rise in inflation rates. Second, it takes some time for the adaptive formation mechanism to bring about an increase in inflation expectations and then lead to price rises.[2] Third, in a situation where the monetary policy is unchanged amid successive downward revisions to the Bank's outlook for prices, it is unlikely that inflation expectations will rise in a forward-looking manner through an enhancement of the credibility that the price stability target will be achieved. Fourth, while overseas central banks are strengthening their monetary easing stance, the risk that circumstances surrounding Japan's prices are becoming more adverse, mainly through foreign exchange rates, is heightening.

[2] Ichiue et al. (2019) explain the possibility that the actual mechanism of expectation formation is more complicated than what the simple model of adaptive expectation formation indicates. On this basis, they introduce three hypotheses as the reason for inflation expectations not rising in Japan: (1) inflation expectations that are dependent on the long period of individuals' experiences; (2) social norms that prices will not rise; and (3) "rational inattention." See, for details, Ichiue Hibiki et al., "Kinnen no infure dōgaku o meguru ronten: nihon no keiken," *Bank of Japan Working Paper Series*, no. 19-J-3, June 2019, https://www.boj.or.jp/research/wps_rev/wps_2019/data/wp19j03.pdf.

II. Conduct of Monetary Policy

Let me first outline the Bank's current monetary policy, based on the outlook for economic activity and prices that I have described. I would then like to express my opinion about the Bank's monetary policy conduct.

The Bank conducts monetary policy under the framework of Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control, aiming to achieve the 2 percent price stability target. This current framework consists of three major components (Chart 16).

The first is yield curve control, in which the Bank sets the short-term policy interest rate at minus 0.1 percent and the operating target for long-term interest rates at around 0 percent. As for long-term interest rates, the Bank purchases Japanese government bonds (JGBs) while allowing some degree of fluctuation in long-term yields, depending mainly on developments in economic activity and prices.

The second component is the purchase of risk assets, including exchange-traded funds (ETFs). The Bank purchases ETFs so that their amount outstanding will increase at an annual pace of about 6 trillion yen. With a view to lowering risk premia of asset prices in an appropriate manner, the Bank may increase or decrease the amount of purchases depending on market conditions.

The third component is the Bank's public commitment regarding the future conduct of monetary policy. In April 2019, the Bank clarified forward guidance for policy rates, stating that it "intends to maintain the current extremely low levels of short- and long-term interest rates for an extended period of time, at least through around spring 2020, taking into account uncertainties regarding economic activity and prices including developments in overseas economies and the effects of the scheduled consumption tax hike." The Bank aims to strengthen market confidence and expectations regarding the sustainability of monetary easing by making a commitment to the levels of future policy interest rates and the duration for maintaining low interest rates, in addition to the inflation-overshooting commitment regarding the monetary base.

Of these three components, I dissented from two: yield curve control and the Bank's commitment regarding the future conduct of monetary policy. As presented in the joint statement by the Bank and the government, the Bank's mission is to achieve the price stability target at the earliest possible time. With this in mind, as for yield curve control, I judged it necessary to strengthen monetary easing in the situation where the observed inflation rate was still evidently far from the 2 percent price stability target. Based on such recognition, I pointed out that it was appropriate for the Bank to revise the forward guidance for the policy rates to relate it to the price stability target, in addition to encouraging a further widening of the output gap within positive territory through additional easing.[3] Moreover, to overcome deflation completely amid heightening uncertainties regarding economic and price developments, I considered it important to influence the expectations and forecasts of market participants as well as firms and households by implementing the appropriate means to further coordinate fiscal and monetary policy.[4]

At the July 2019 Monetary Policy Meeting, a new sentence was added at the end of the Statement on Monetary Policy: "In particular, in a situation where downside risks to economic activity and prices, mainly regarding developments in overseas economies, are significant, the Bank will not hesitate to take additional easing measures if there is a greater possibility that the momentum toward achieving the price stability target will be lost." Amid increasing downside risks to economic activity and prices, and in the aforementioned

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[3] Bearing in mind the current yield curve, which has flattened, I think that it is appropriate to conduct yield curve control so that its shape becomes more accommodative by setting a greater negative value for the short-term policy interest rate.

In the event that the price stability target cannot be achieved through around spring 2020, which is the time frame given in the current forward guidance, it may need to be extended. In my opinion, it is not favorable for the Bank to make such changes repeatedly, as there is concern that public confidence regarding monetary policy could deteriorate. I consider it appropriate for the Bank to revise the forward guidance for the policy rates to relate it to the price stability target.

[4] I would argue that the mindset of firms and households in Japan was formed under the prolonged deflationary environment after the mid-1990s, such that it has become rational to assume that economic activity is sustainable without inflation. In a situation where the anchor of inflation expectations has been lost, I believe that to achieve the 2 percent price stability target and maintain the target price level in a stable manner, it is important not only to enhance monetary easing, but also to further strengthen the coordination of fiscal and monetary policy -- that is, a "policy mix."

current situation where the observed inflation rate is still evidently far from the 2 percent price stability target, it is important to make a preemptive policy response, not after confirming changes in the inflation rate which is a lagging indicator of economic conditions. The Bank will continue to make efforts toward overcoming deflation completely.

III. Changes in Japan's Labor Market

Next, I would like to talk about Japan's labor market.

As shown in Chart 17, Japan's unemployment rate continued to rise throughout the 1990s and until 2002, when it marked 5.5 percent; it then declined to the 3 percent level but rose again following the failure of Lehman Brothers, and has dropped to the range of 2.0-2.5 percent recently.[5] Despite such improvement in labor market conditions, the growth in wages and prices has been sluggish. As the background to this, various factors have been cited; for example, low wages of the "employment ice-age" generation, possible effects of the upward wage rigidity, the increasing share of part-time employees, and subdued demands by labor unions for wage increases.[6] Some of these factors are based on the assumption that labor market conditions already have been tight. I now would like to review

[5] To explain the rise in the unemployment rate since the 1990s, researchers have conducted factor decomposition, concluded that a shortage in demand and structural changes in the labor market contributed to the rise, and then estimated the contribution. My estimation of the structural unemployment rate that measures structural changes in the labor market was in the range of 2.5-3.0 percent, as in Kataoka Goushi, "Kōzō shitsugyō ritsu suitei hōhō no ayamari," chap. 11 in *Abenomikusu wa shinkasuru: Kin'yu ganseki riron o tou*, ed. Harada Yutaka, Kataoka Goushi, and Yoshimatsu Takashi (Tokyo: Chuokeizai-sha, 2017). Recently, however, while the unemployment rate remains in the range of 2.0-2.5 percent, the pace of increase in wages has not accelerated. In estimating the structural unemployment rate, it is necessary to consider changes in demographics, the expansion in the labor force participation of seniors and women, and estimation methods and errors.

[6] See Genda Yuji, ed., *Hitode busoku na noni naze chingin ga agaranai no ka* (Tokyo: Keio University Press, 2017). Ozaki and Genda (2019) analyzed the reason why wages had not shown a sharp increase by using the latest data, and concluded that wages, particularly of women, were likely to rise rapidly if the expansion of labor supply ended and the labor market for non-regular employees reached the Lewisian Turning Point. See Ozaki Tatsuya and Genda Yuji, "Chingin jyōshō ga yokusei sareru mekanizumu," *Bank of Japan Working Paper Series*, no. 19-J-6, July 2019, https://www.boj.or.jp/research/wps_rev/wps_2019/data/wp19j06.pdf.

whether the current labor market conditions are so tight as to have reached a level that can encourage rises in wages and prices.

In addition to the unemployment rate, Chart 17 shows developments in the labor force participation rate, which is the ratio of persons who want to work (labor force) among those in the population aged 15 years and over. The rate continued to decline from around 2000, bottomed out around end-2012, and has been rising since then. In October 1992, when the unemployment rate was 2.2 percent, the same level as in July 2019, the labor force participation rate was 64.2 percent, which is about 2 percentage points higher than that of July 2019. This implies the possibility that the labor market conditions are less tight now than in 1992. Needless to say, the advance in the aging of the population and the decline in the birthrate have exerted downward pressure on the labor force participation rate from 1992 to the present, and we should exclude such effects from our observations.

Chart 18 indicates the results of the decomposition of factors that contributed to the overall change in the labor force participation rate from October 1992 to date. The demographic factor has pushed down the overall rate by a large margin with the aging of the population. On the other hand, the increase in the contributions of women (aged between 15 and 59 years) and of the elderly (men and women aged 60 years and over) gradually have pushed up the overall rate. Their positive contributions remained small until around end-2012 but have seen particular acceleration since then, substantially offsetting the negative contribution of the demographic factor. Firms' growing demand for labor, backed by the economic expansion, has encouraged those who had chosen not to work, mainly women and seniors, to join the labor force and has increased the number of workers, thereby causing the unemployment rate to decline. Nevertheless, the labor force participation rate of men (aged between 15 and 59 years) has not recovered to the level before the "lost two decades," and

this may be a reason why labor market conditions are not tight enough to push prices upward.[7]

In order to better grasp the employment situation from various aspects, the Ministry of Internal Affairs and Communications started to include items related to labor underutilization and collected data from January 2018 in the *Labour Force Survey*, in addition to the previously compiled labor force status; that is, employed persons, unemployed persons, and persons not in the labor force.[8] As shown in the right-hand side of Chart 19, labor underutilization consists of (1) "persons in time-related underemployment," which are part-time employees who wish to work longer hours or full-time, including those who currently are working short hours due to employers' circumstances, such as the need to make production adjustments, (2) "unemployed persons," which are persons who have been seeking jobs within the previous one month and are ready to work as soon as a job becomes available, and (3) "potential labor force," which is comprised of those categorized neither as employed nor unemployed in the *Labour Force Survey*, potentially able to work because they are willing to do so, but did not seek jobs. The left-hand side of Chart 19 shows the ratio of such labor underutilization to the overall labor force including the potential labor force. This chart indicates that there is still room for a further decrease in unemployed male workers, as well as a further increase in working hours of female workers accomplished through such means as changing their employment status and environment.

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[7] Nakagawa (2018) pointed out that a decline in the men's labor force participation rate pushed down the overall rate for 2017 by 0.6 percentage point compared with that for 1994, when the unemployment rate was about the same level as 2017. She then stated that about 700,000 additional workers would be needed to fill this gap. Considering the slack in labor supply of men, the unemployment rate level that can encourage rises in wages and prices was assumed to be about 2 percent. See Nakagawa Ai, "Rōdō jyukyū ga hippaku shitemo chingin to bukka ga agaranai no wa naze ka," chap. 2 in *Abenomikusu no shinka*, ed. Harada Yutaka and Masujima Minoru (Tokyo: Chuokeizai-sha, 2018).

[8] For details, see Statistics Bureau, Ministry of Internal Affairs and Communications, *Rōdō ryoku chōsa mikatsuyō rōdō shihyō no kaisetsu.* An English translation of the summary is available in *Revisions of the Labour Force Survey from January 2018*, March 2018.

In sum, labor market conditions will tighten further and wages and prices will rise if the following conditions are met: a rise in men's labor force participation rate, a decline in men's unemployment rate, and an increase in women's working hours. As I mentioned earlier, some signs of weakness have been observed in the labor market recently. Accelerating the pace of growth in aggregate demand is the key to preventing negative effects from spreading to the whole labor market.

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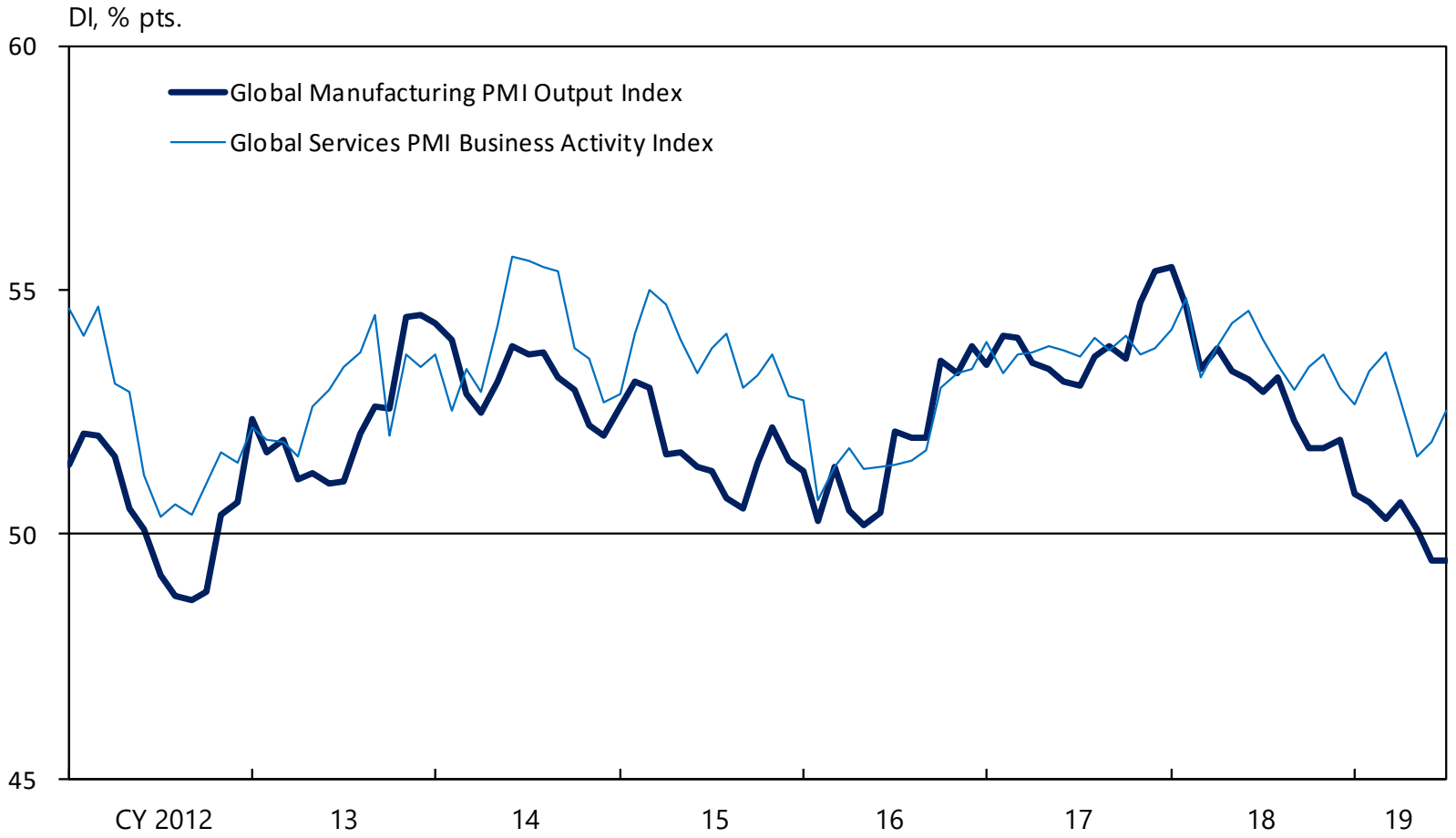
World Economic Outlook by the IMF

		July 2019 forecasts (y/y % chg.)			Difference from April 2018 forecasts (% pts.)		
		2018	2019	2020	2018	2019	2020
World		**3.6**	**3.2**	**3.5**	**-0.3**	**-0.7**	**-0.3**
Advanced Economies	**Japan**	**0.8**	**0.9**	**0.4**	**-0.4**	**0.0**	**0.1**
	United States	2.9	2.6	1.9	0.0	-0.1	0.0
	Euro Area	1.9	1.3	1.6	-0.5	-0.7	-0.1
	Germany	1.4	0.7	1.7	-1.1	-1.3	0.2
	France	1.7	1.3	1.4	-0.4	-0.7	-0.4
	United Kingdom	1.4	1.3	1.4	-0.2	-0.2	-0.1
Emerging Economies	China	6.6	6.2	6.0	0.0	-0.2	-0.3
	Brazil	1.1	0.8	2.4	-1.2	-1.7	0.2
	India	6.8	7.0	7.2	-0.6	-0.8	-0.7
	Russia	2.3	1.2	1.9	0.6	-0.3	0.4

Note: For India, figures are presented on a fiscal year basis.

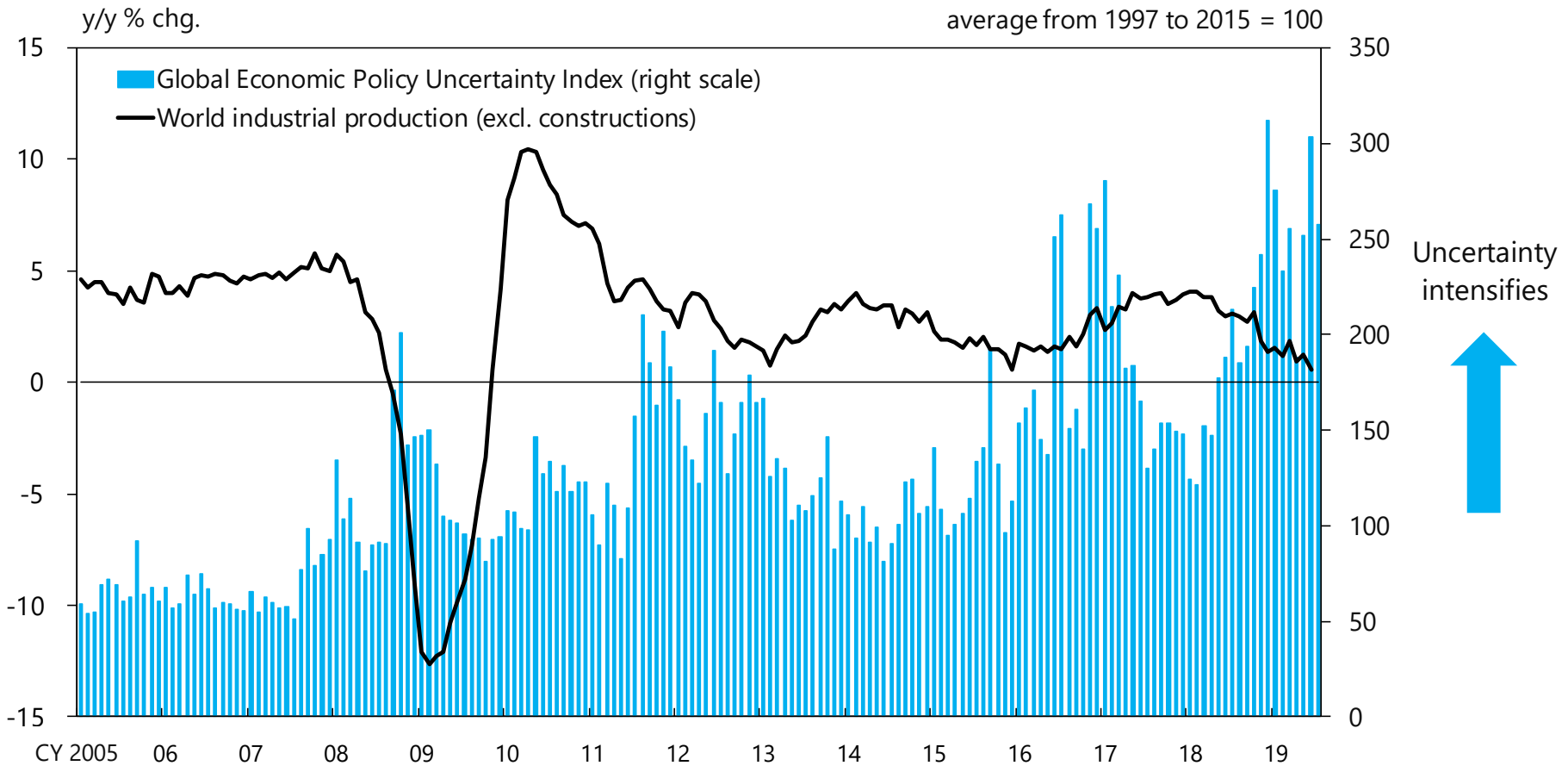
Source: IMF, "World Economic Outlook (July 2019, April 2018)."

Global PMI



Note: Figures are from the J.P. Morgan Global PMI. Figures above 50 indicate improvement and below 50 show deterioration on a month-on-month basis.

Global Production and Economic Policy Uncertainty

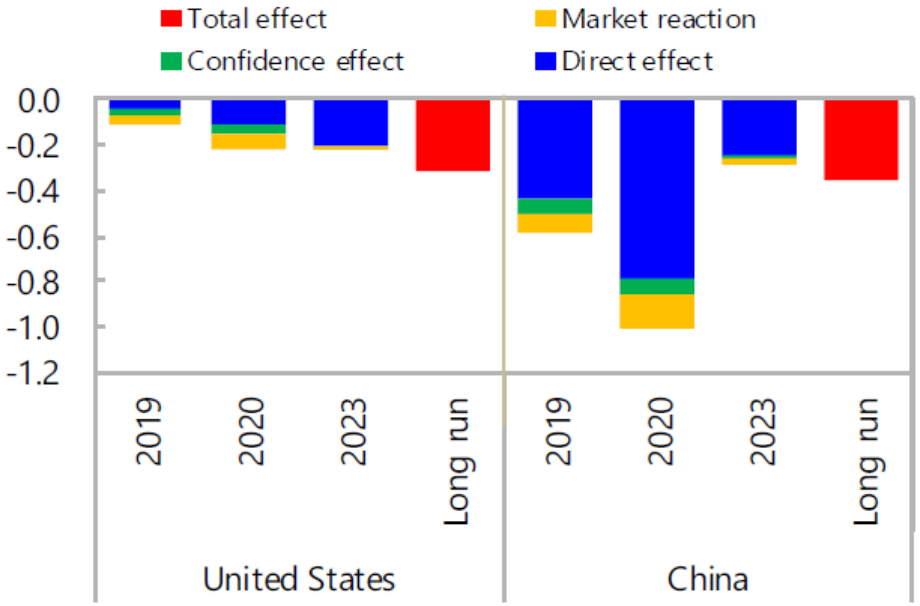


Notes: 1. World industrial production is a weighted average of industrial production volume for each country. The latest figure is as of June 2019.
2. *Global Economic Policy Uncertainty Index* is a GDP-weighted average for 20 major countries including the United States, China, Japan, and European countries. The latest figure is as of July 2019.

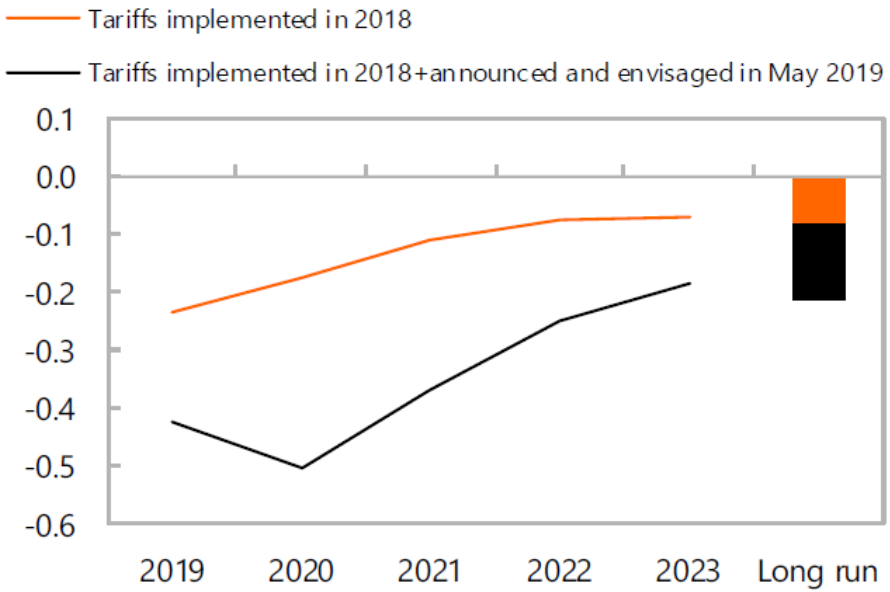
Sources: Economic Policy Uncertainty, "Global Economic Policy Uncertainty Index"; CPB Netherlands Bureau for Economic Policy Analysis, "Industrial Production Volume, CPB World Trade Monitor."

Effects of the U.S.-China Trade Friction (Estimates by the IMF)

Impact on Real GDP of the U.S. and China



Impact on Global Real GDP



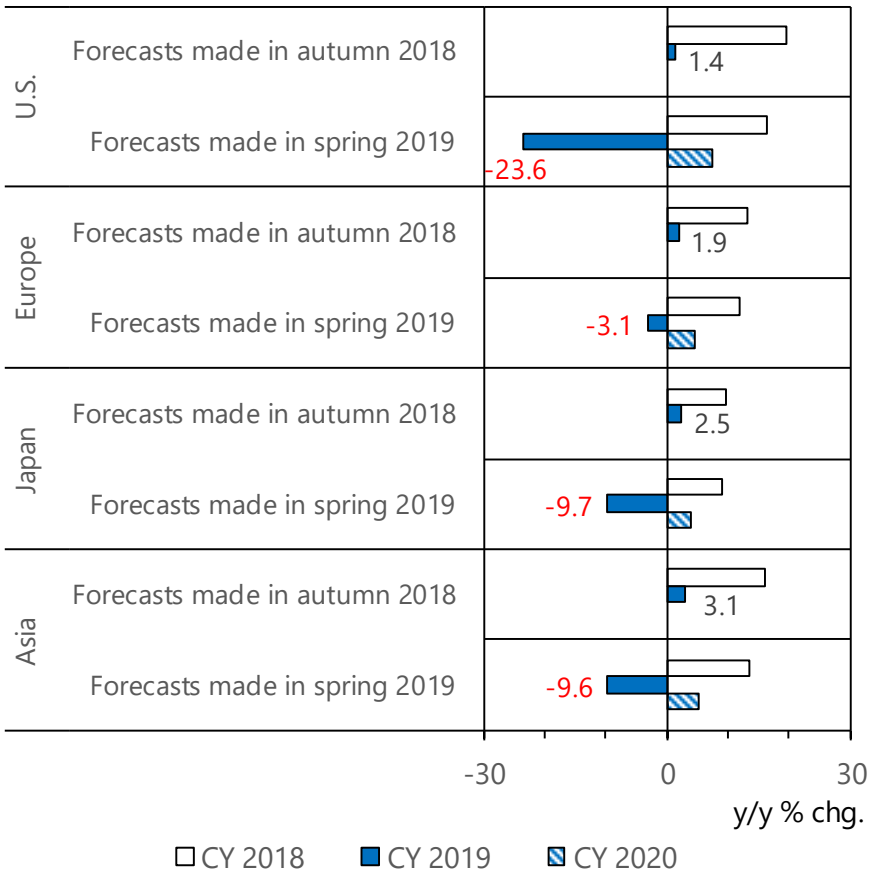
Notes: 1. The left-hand graph indicates the marginal (i.e. additional) impact on the level of GDP from the announced and envisaged tariffs between the United States and China. The figures are the deviations from baseline projections in percentage terms. Announced tariffs correspond to an increase in tariffs from 10 percent to 25 percent on USD 200 billion of U.S. imports from China as of May 2019. Envisaged tariffs are the possible 25 percent tariff on the roughly USD 267 billion of U.S. imports from China. The simulations assume retaliation by China.

2. The right-hand graph shows the marginal effect on global GDP of the tariffs that were implemented in 2018 as well as the tariffs that were announced and envisaged in May 2019. The figures are the deviations from baseline projections in percentage terms.

Source: IMF, "G20 Surveillance Note (June 8-9, 2019)."

World Semiconductor Market Forecasts

World Semiconductor Market Forecasts by Country/Region



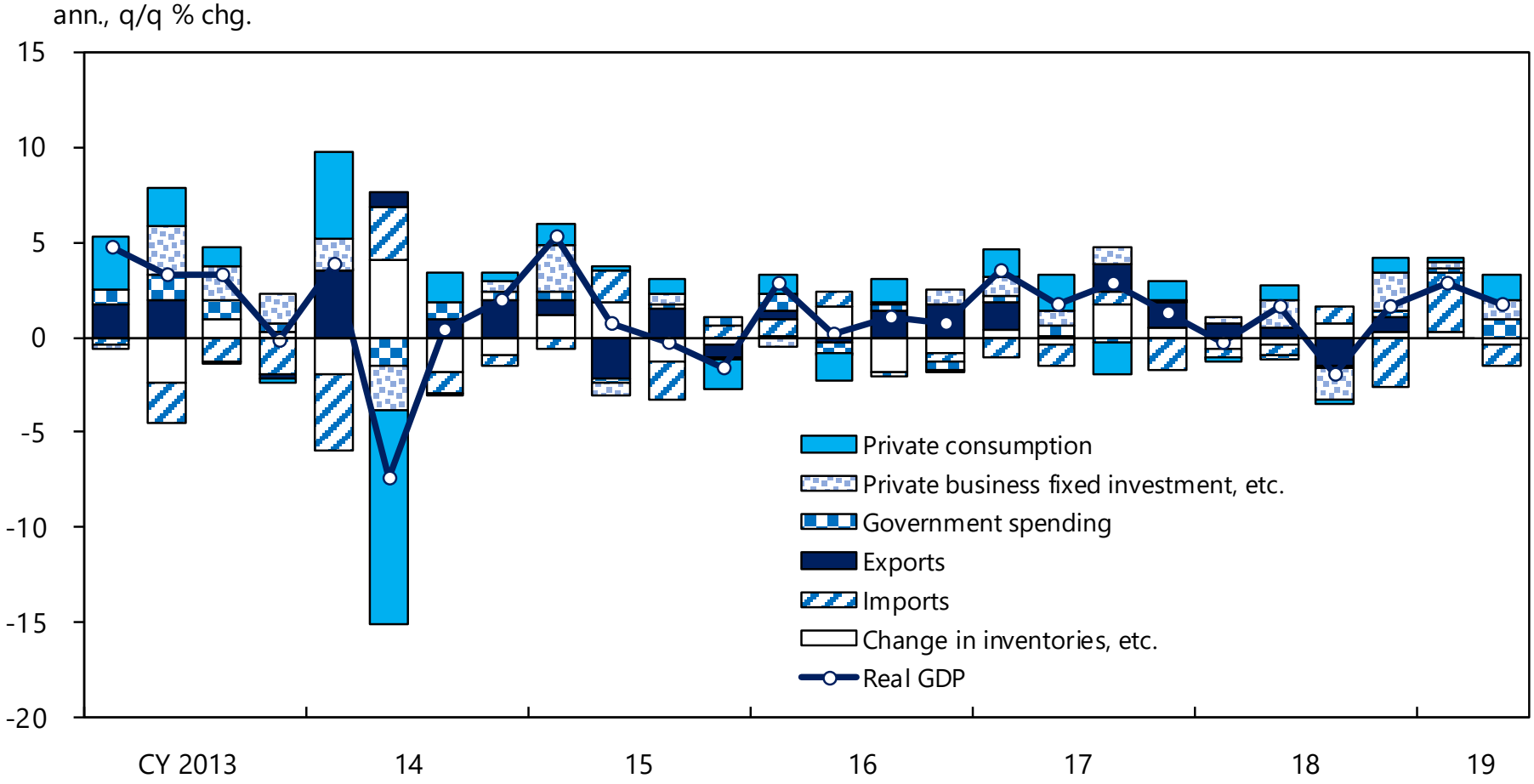
World Semiconductor Shipments

Notes: 1. Figures are on a U.S. dollar denominated basis.
2. In the left-hand graph, figures for CY 2018 in the forecasts made in spring 2019 are actual figures. Others are forecasts.

Source: WSTS Inc.

Chart 6

Real GDP Growth and Breakdown by Component



Source: Cabinet Office, "Quarterly Estimates of GDP for April-June 2019 (First Preliminary Estimates)."

Outlook for Economic Activity and Prices
(July 2019 Outlook Report)

medians of Policy Board members' forecasts, y/y % chg.

	Real GDP	CPI (all items less fresh food)	(Reference) Excluding the effects of the consumption tax hike and policies concerning the provision of free education
Fiscal 2019	+0.7	+1.0	+0.8
Forecasts made in April 2019	+0.8	+1.1	+0.9
Fiscal 2020	+0.9	+1.3	+1.2
Forecasts made in April 2019	+0.9	+1.4	+1.3
Fiscal 2021	+1.1	+1.6	
Forecasts made in April 2019	+1.2	+1.6	

Note: The direct effect of the consumption tax hike on the CPI for fiscal 2019 and fiscal 2020 is estimated to be 0.5 percentage point for each year. The direct effects of policies concerning the provision of free education on the CPI for fiscal 2019 and fiscal 2020 are estimated to be minus 0.3 percentage point and minus 0.4 percentage point, respectively.

Source: Bank of Japan, "Outlook for Economic Activity and Prices (July 2019)."

Real Exports

Breakdown by Region

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

	CY		2018	2019				2019		
	2017	2018	Q3	Q4	Q1	Q2	Q3	May	June	July
United States	3.4	2.3	-0.2	4.1	0.3	4.7	-2.0	-5.3	2.8	-1.9
EU	4.6	6.1	-3.6	2.9	2.0	-3.4	6.7	-10.1	8.8	4.7
Asia	9.0	3.2	-0.1	-0.6	-3.2	0.5	-1.0	-6.3	7.4	-3.5
China	14.1	5.9	-0.4	-0.5	-5.4	1.6	-2.7	-0.4	2.4	-4.1
NIEs, ASEAN, etc.	6.4	1.8	0.1	-0.8	-1.9	-0.2	-0.3	-9.3	10.3	-3.4
Others	3.1	3.5	-6.9	2.7	-3.0	-2.5	14.2	8.1	-7.2	17.0
Real exports	6.4	2.2	-1.6	0.5	-1.7	0.1	2.1	-4.5	4.1	0.9

Breakdown by Goods

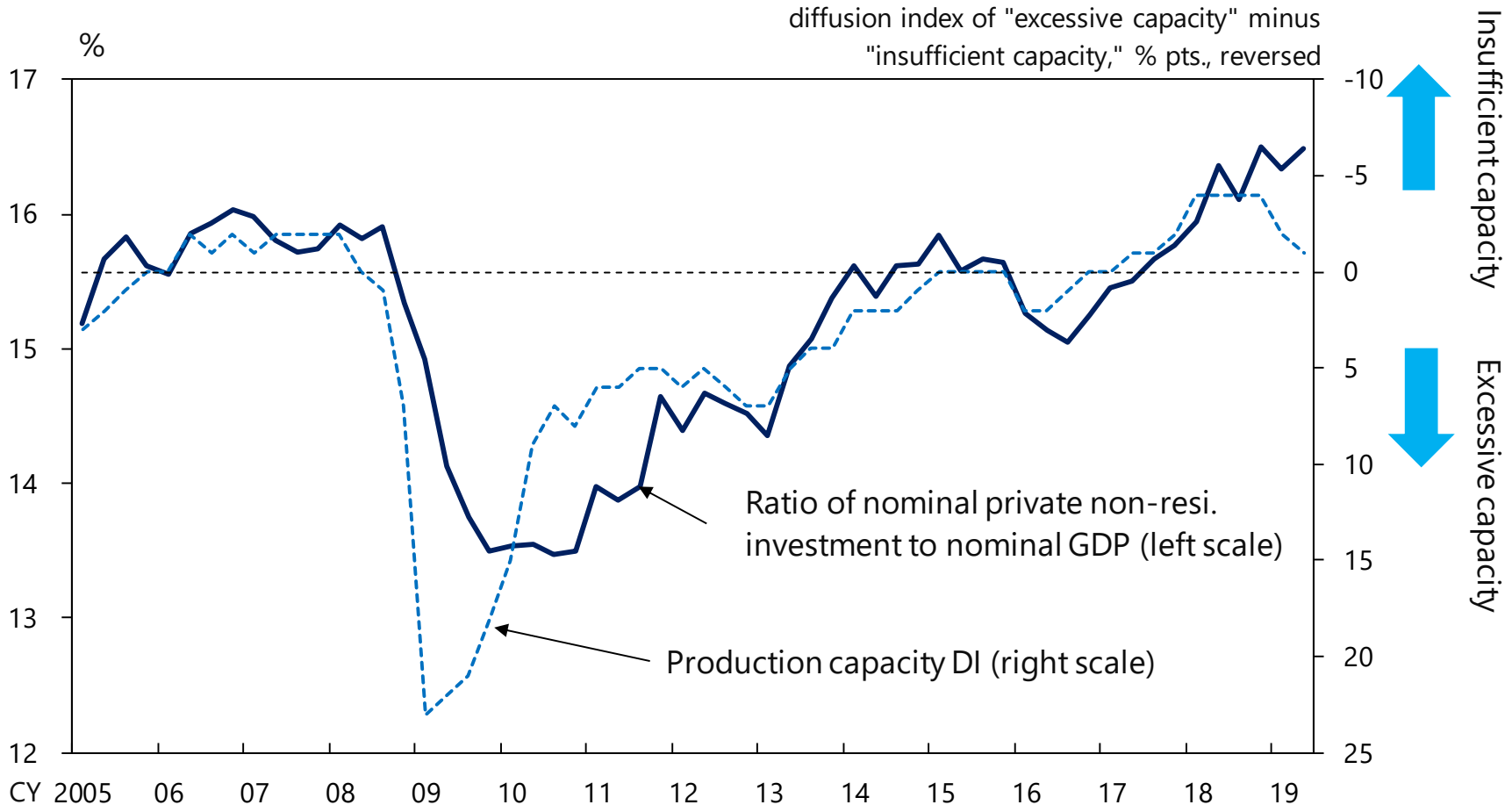
y/y % chg. | s.a., q/q % chg. | s.a., m/m % chg.

	CY		2018	2019				2019		
	2017	2018	Q3	Q4	Q1	Q2	Q3	May	June	July
Intermediate goods	1.4	2.5	0.4	3.0	-2.6	3.2	0.4	-6.5	9.2	-3.1
Motor vehicles and related goods	5.2	5.6	-2.9	1.9	0.2	-0.1	-1.1	-3.0	-2.3	1.5
IT-related goods	8.0	4.1	0.4	-1.1	-3.6	2.2	0.8	-5.1	5.0	-0.7
Capital goods	12.3	5.3	-2.3	-0.2	-3.6	-1.5	1.2	-9.1	4.1	1.7
Real exports	6.4	2.2	-1.6	0.5	-1.7	0.1	2.1	-4.5	4.1	0.9

Notes: 1. NIEs, ASEAN, etc. includes other Asian countries such as India and Bangladesh.
2. Motor vehicles and related goods includes motor vehicles, parts of motor vehicles, and power generating machine. IT-related goods includes computers and units, telecommunication machinery, semiconductors, audio and visual apparatus, and medical and optical instruments. Capital goods includes metalworking machinery, construction machines, electrical power machinery, semiconductor production equipment, and ships.
3. Figures for 2019/Q3 are those of July.

Source: Bank of Japan, "Developments in Real Exports and Real Imports."

Business Fixed Investment (Ratio to Nominal GDP)

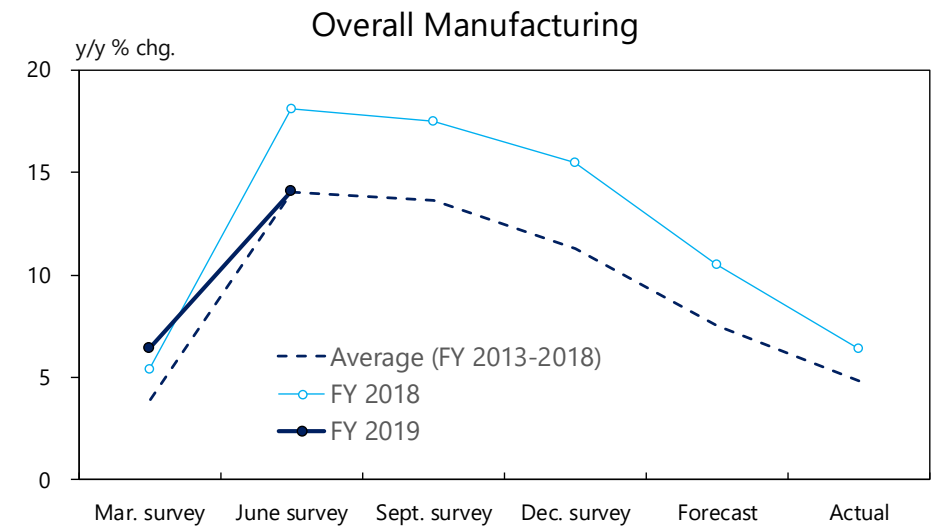


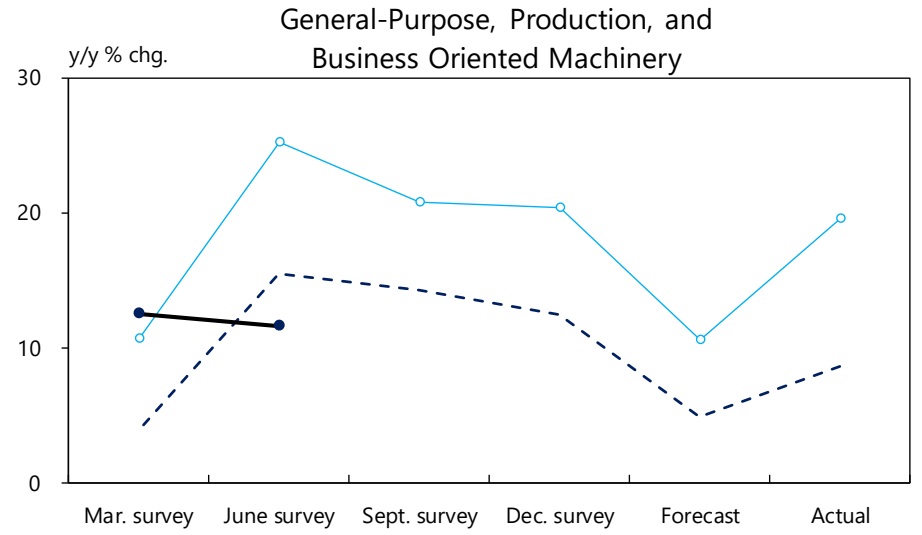
Note: Production capacity DI shows figures for large enterprises of all industries.

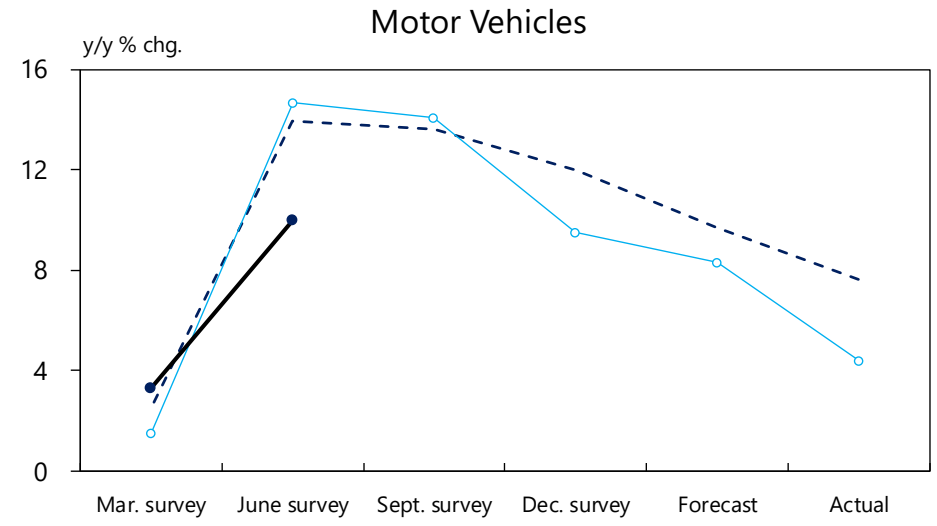
Sources: Cabinet Office, "National Accounts"; Bank of Japan, "Tankan (Short-Term Economic Survey of Enterprises in Japan)."

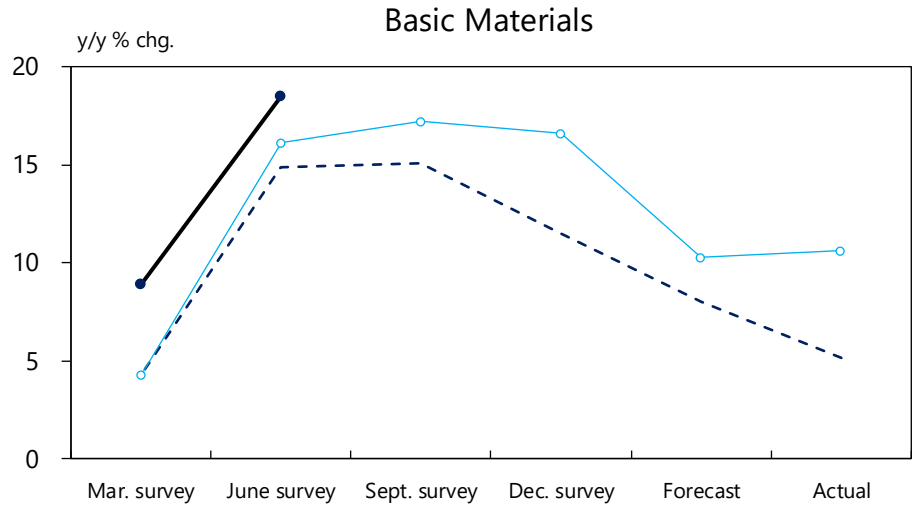
Developments in Business Fixed Investment Plans (Large Manufacturing Firms)

Chart 10







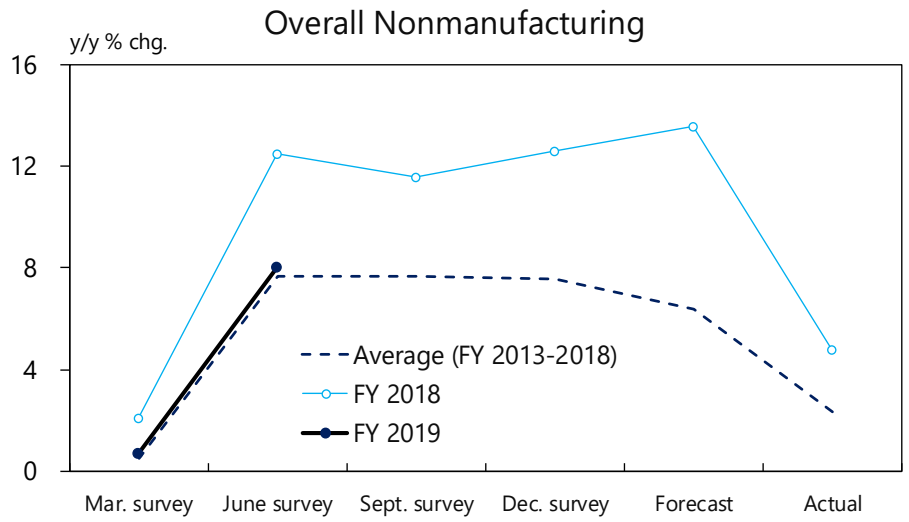


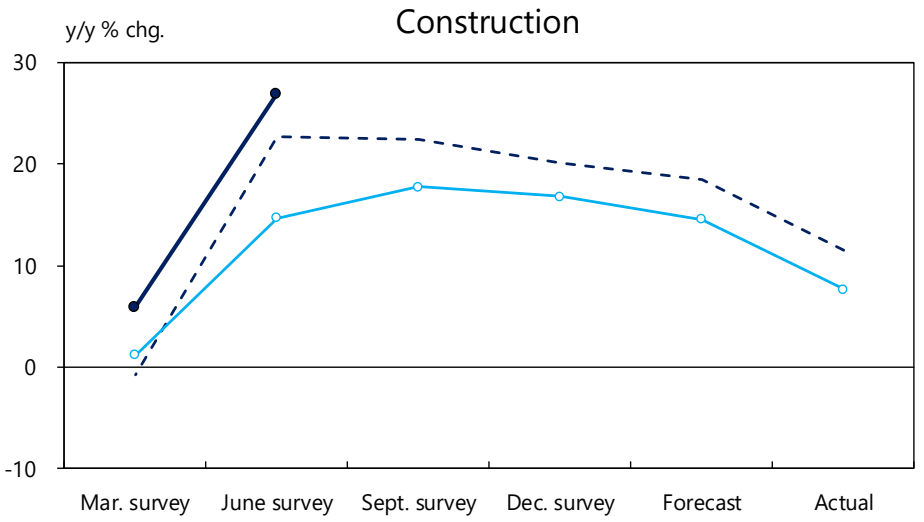
Note: Figures include software investment and exclude land purchasing expenses.

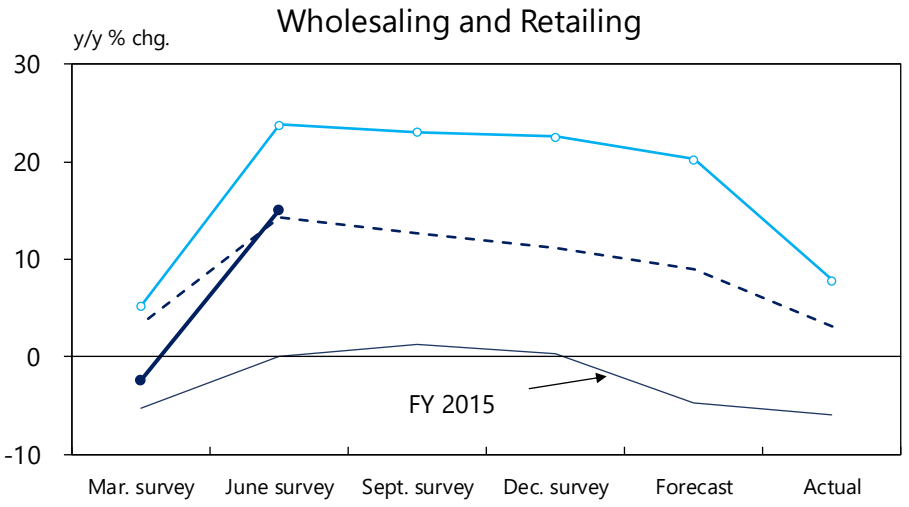
Source: Bank of Japan, "Tankan."

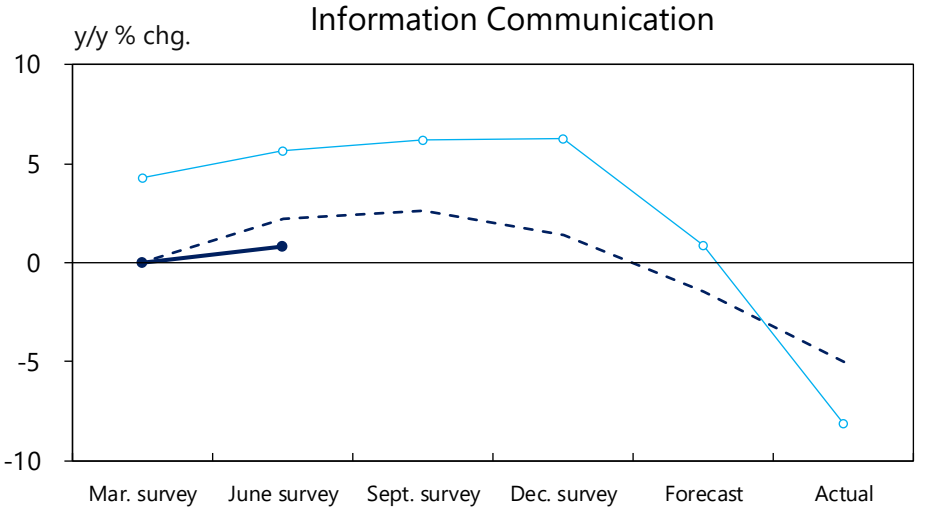
Developments in Business Fixed Investment Plans (Large Nonmanufacturing Firms)

Chart 11







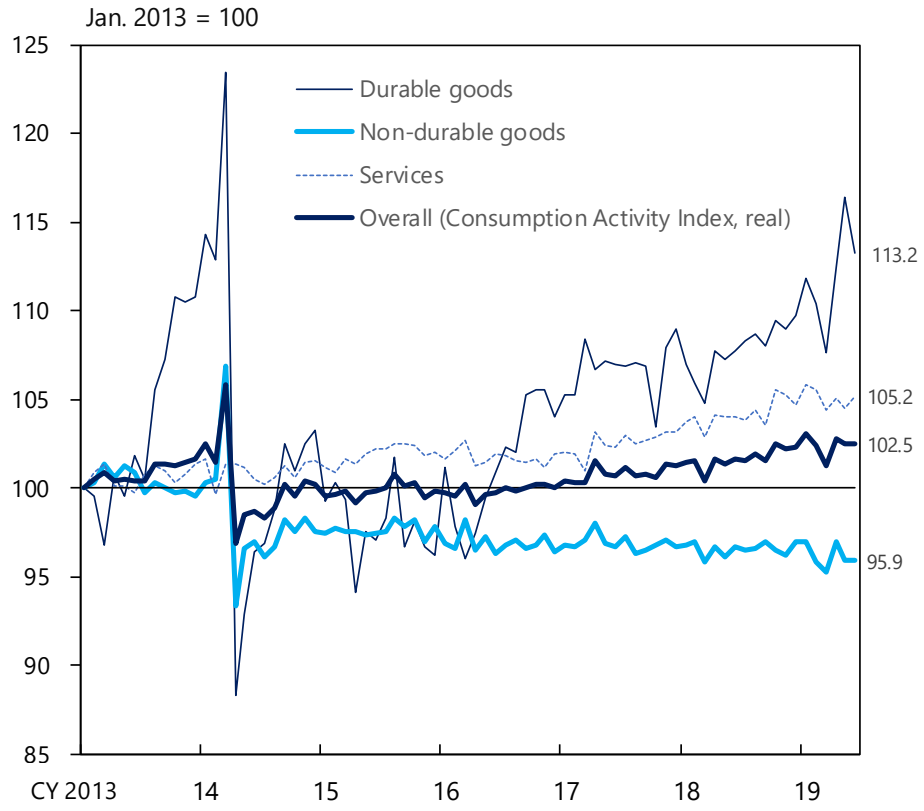


Note: Figures include software investment and exclude land purchasing expenses.

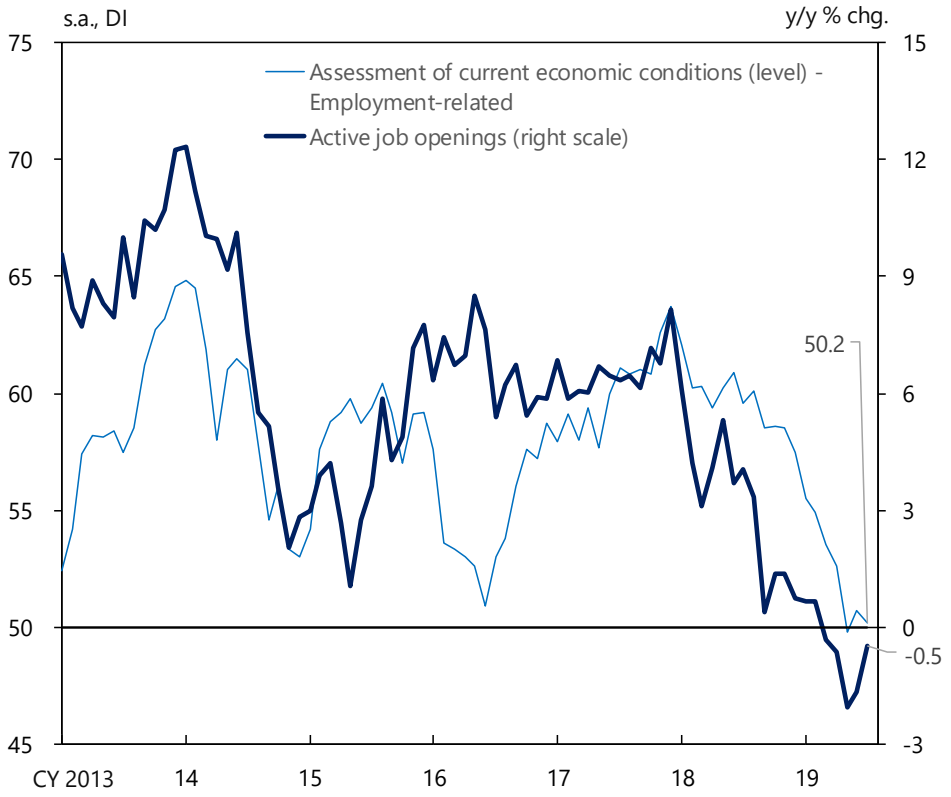
Source: Bank of Japan, "Tankan."

Household Consumption (1)

Real Consumption



Employment-Related Indicators

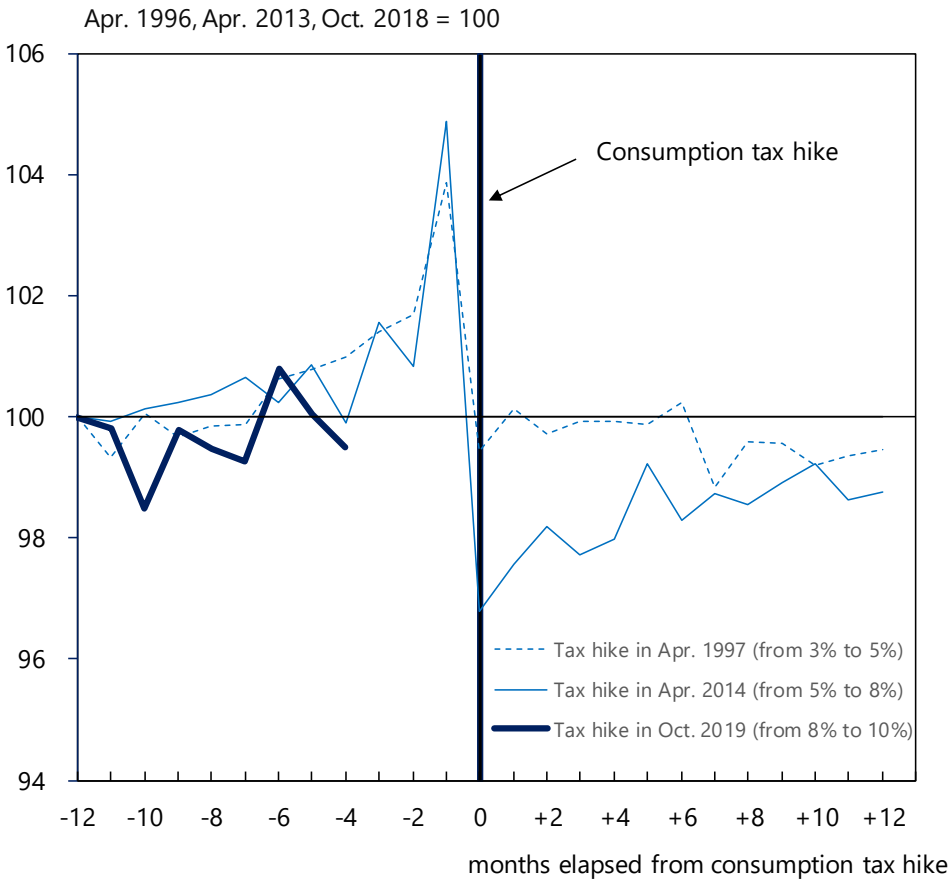


Note: The latest figures are as of June 2019 for the real consumption and July 2019 for others.

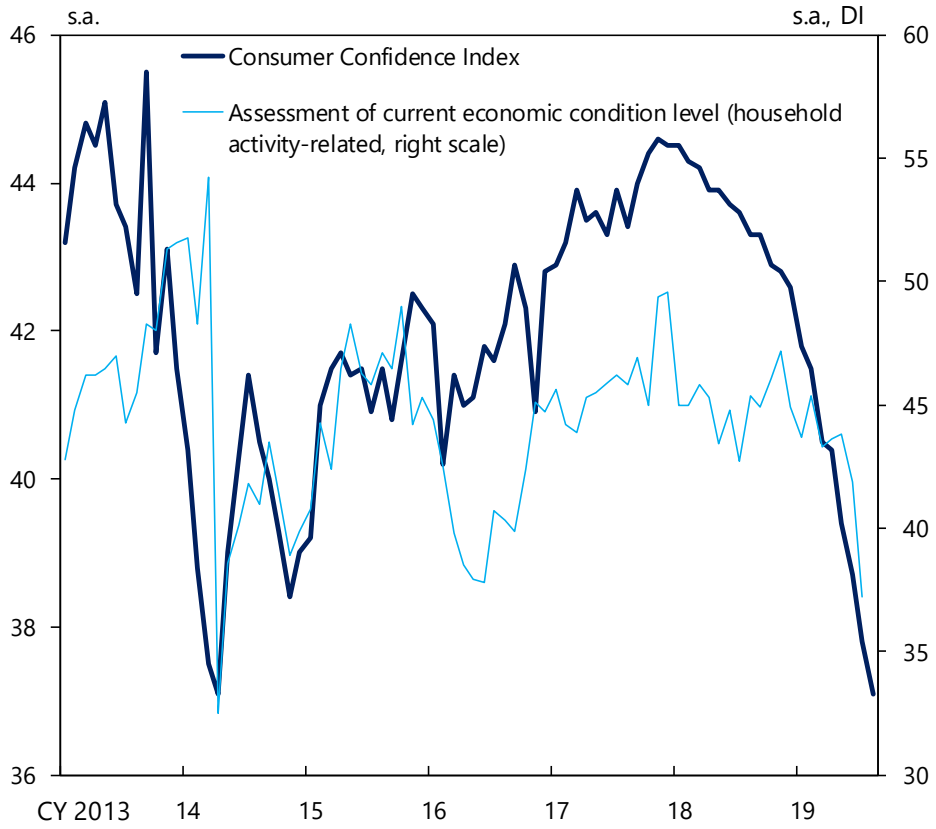
Sources: Bank of Japan, "Consumption Activity Index"; Cabinet Office, "Economy Watchers Survey"; Ministry of Health, Labour, and Welfare, "Employment Referrals for General Workers."

Household Consumption (2)

Consumption Before and After Tax Hikes



Consumer Sentiment

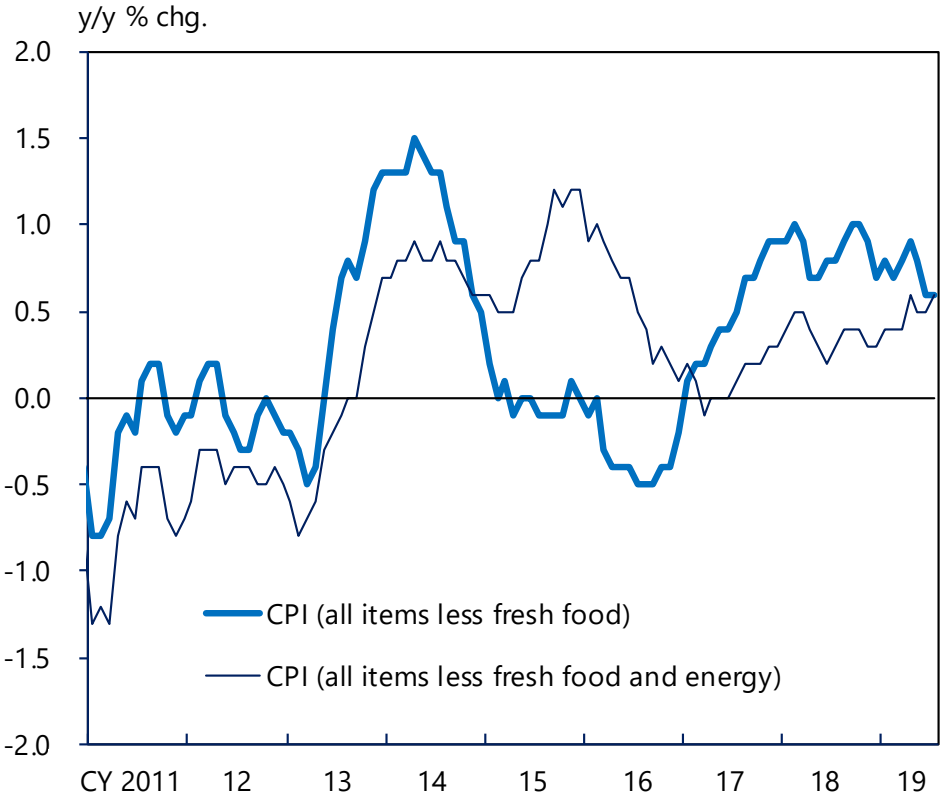


Note: Households with two or more persons are counted in Consumer Confidence Index (seasonal adjusted figures).

Sources: Cabinet Office, "Synthetic Consumption Index," "Consumer Confidence Survey," "Economy Watchers Survey."

Consumer Prices

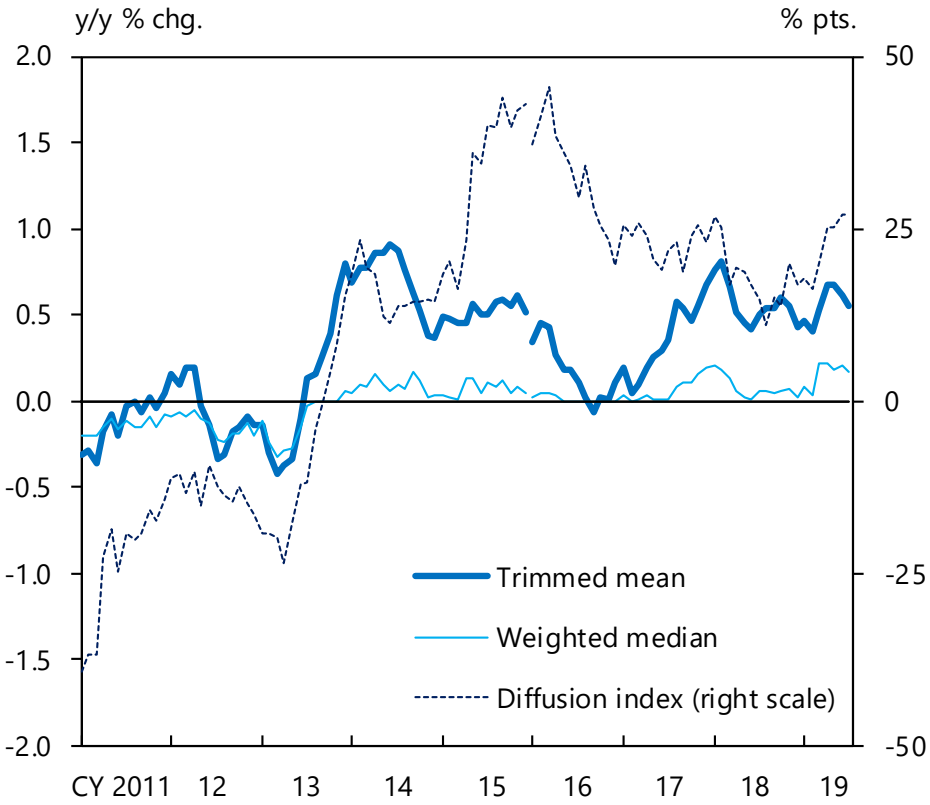
Consumer Price Index



Note: Figures are adjusted for changes in the consumption tax rate.

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

Measures of Underlying Inflation



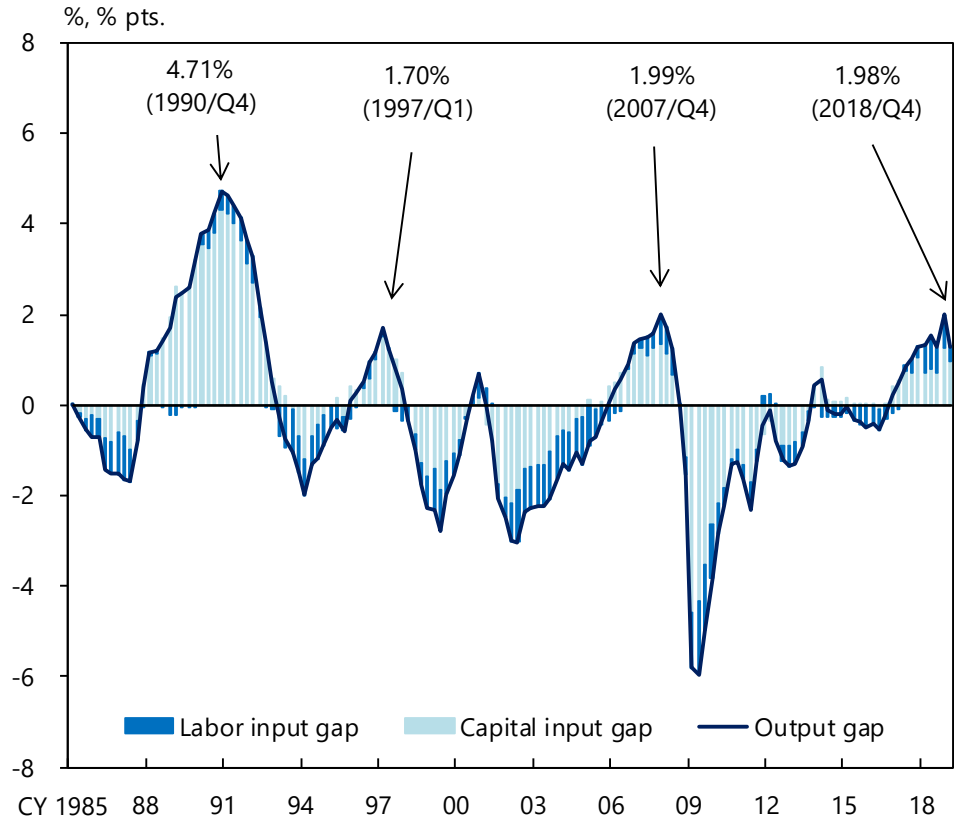
Note: The diffusion index is defined as the share of increasing items minus that of decreasing items. The share of increasing/decreasing items is the share of items in the CPI (less fresh food, consumption tax adjusted), for which the price increased/decreased from a year earlier.

Sources: Bank of Japan, "Measures of Underlying Inflation"; Ministry of Internal Affairs and Communications.

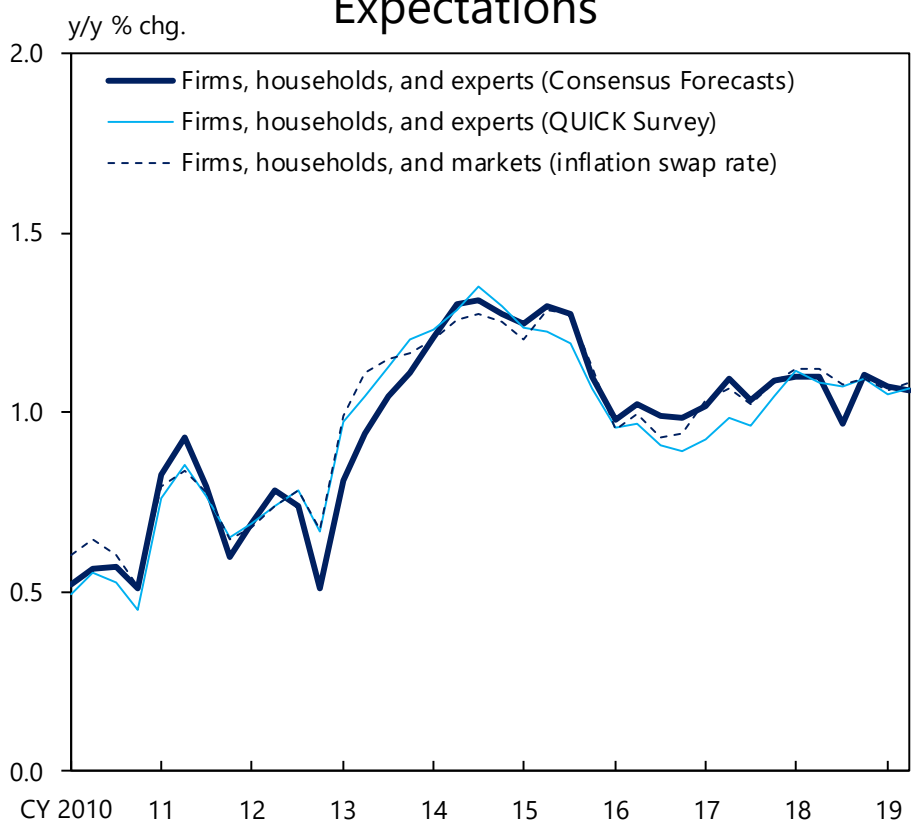
Chart 15

Output Gap and Inflation Expectations

Output Gap



Synthetic Indicators of Inflation Expectations



Notes: 1. The data for the output gap in the left-hand graph are the estimates by the Bank's staff as of July 3, 2019.

2. In the right-hand graph, semiannual data from the *Consensus Forecasts* up through 2014/Q2 are linearly interpolated. Figures for the Bank's *Opinion Survey on the General Public's Views and Behavior* (Opinion Survey) exclude inflation expectations by respondents whose annual inflation expectations were ±5% or greater. The output prices DI in the *Tankan* represents the difference between the share of firms that raised prices in the preceding three months and the share of firms that lowered prices.

3. In the right-hand graph, inflation expectations of firms are taken from the *Tankan* and those of households are taken from the Bank's Opinion Survey. For experts' and markets' inflation expectations, data from the *Consensus Forecasts*, the QUICK Survey, and inflation swap rates are used as indicated by their respective lines.

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

Outline of the Bank's Monetary Policy

(1) Yield Curve Control

Short-term rate: The Bank will apply minus 0.1 percent to the Policy-Rate Balances.

Long-term rate: The Bank will purchase JGBs so that 10-year JGB yields will remain at around zero percent. While doing so, the yields may move upward or downward to some extent mainly depending on developments in economic activity and prices.

(2) Asset Purchases

The Bank will purchase ETFs and J-REITs so that their amounts outstanding will increase at annual paces of about 6 trillion yen and about 90 billion yen, respectively. With a view to lowering risk premia of asset prices in an appropriate manner, the Bank may increase or decrease the amount of purchases depending on market conditions.

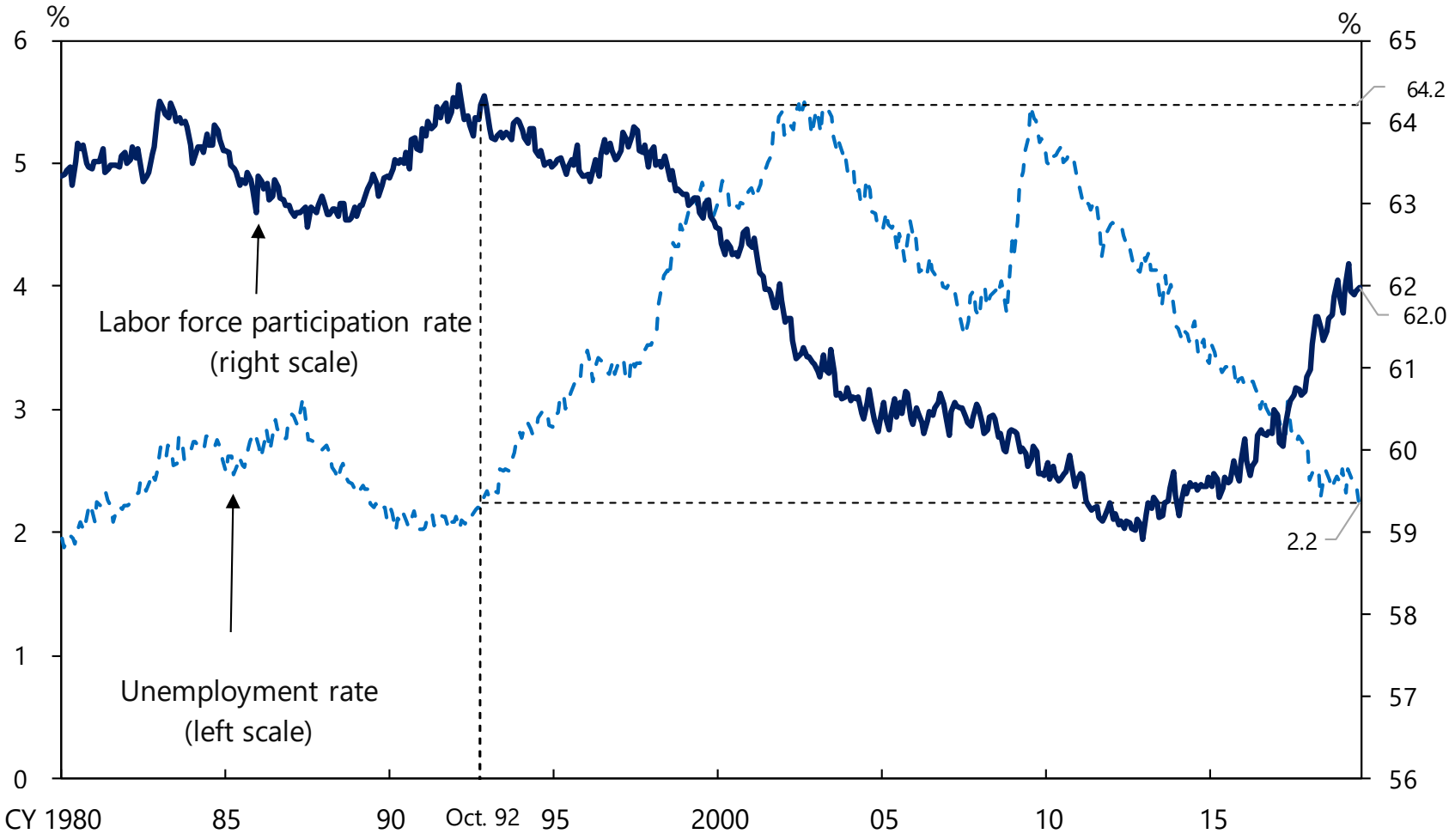
(3) Commitment

Overshooting commitment: The Bank 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.

Forward guidance for policy rates: The Bank intends to maintain the current extremely low levels of short- and long-term interest rates for an extended period of time, at least through around spring 2020, taking into account uncertainties regarding economic activity and prices including developments in overseas economies and the effects of the scheduled consumption tax hike.

Chart 17

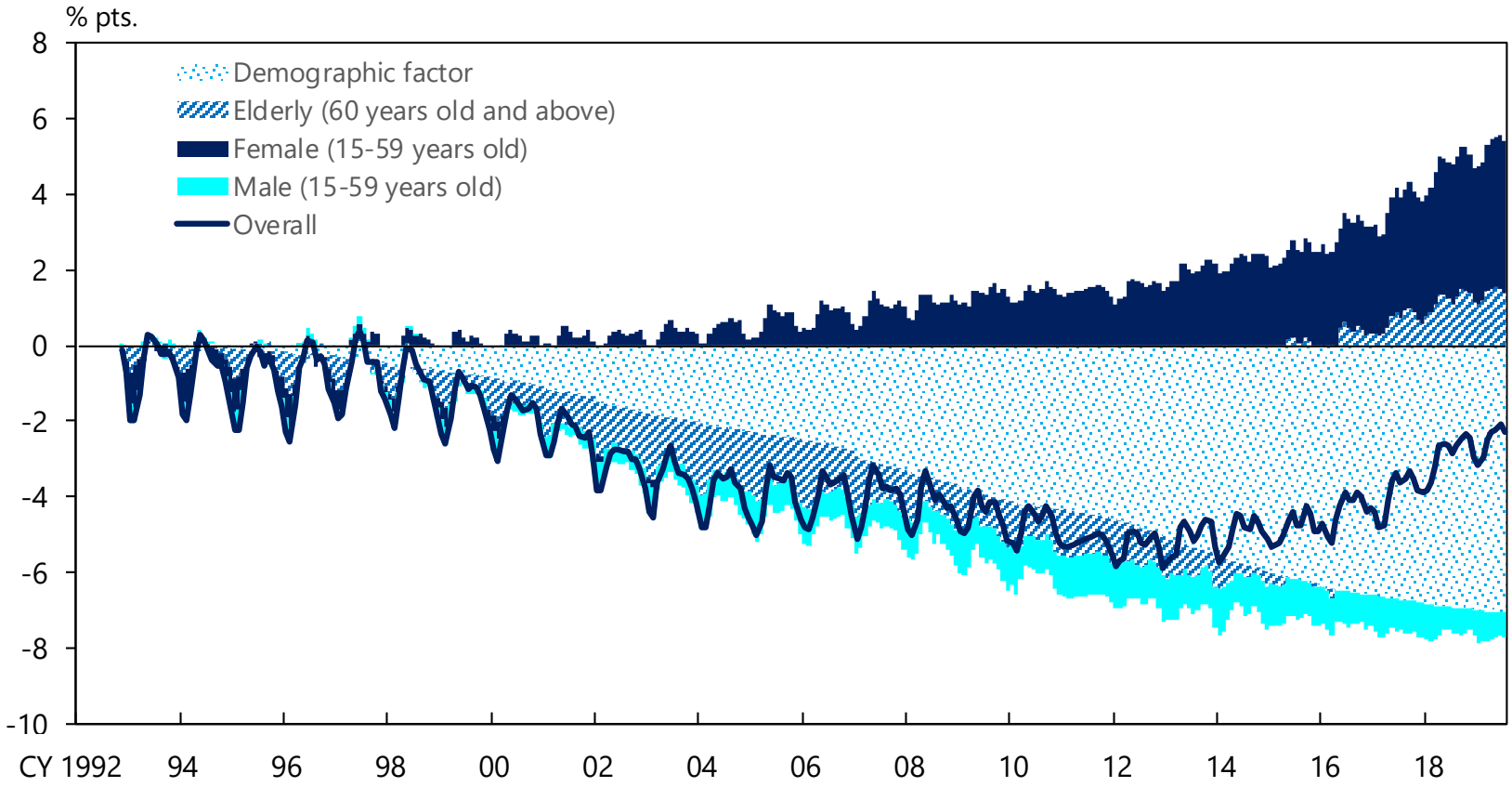
Unemployment Rate and Labor Force Participation Rate



Note: Seasonally adjusted figures.

Source: Ministry of Internal Affairs and Communications, "Labour Force Survey."

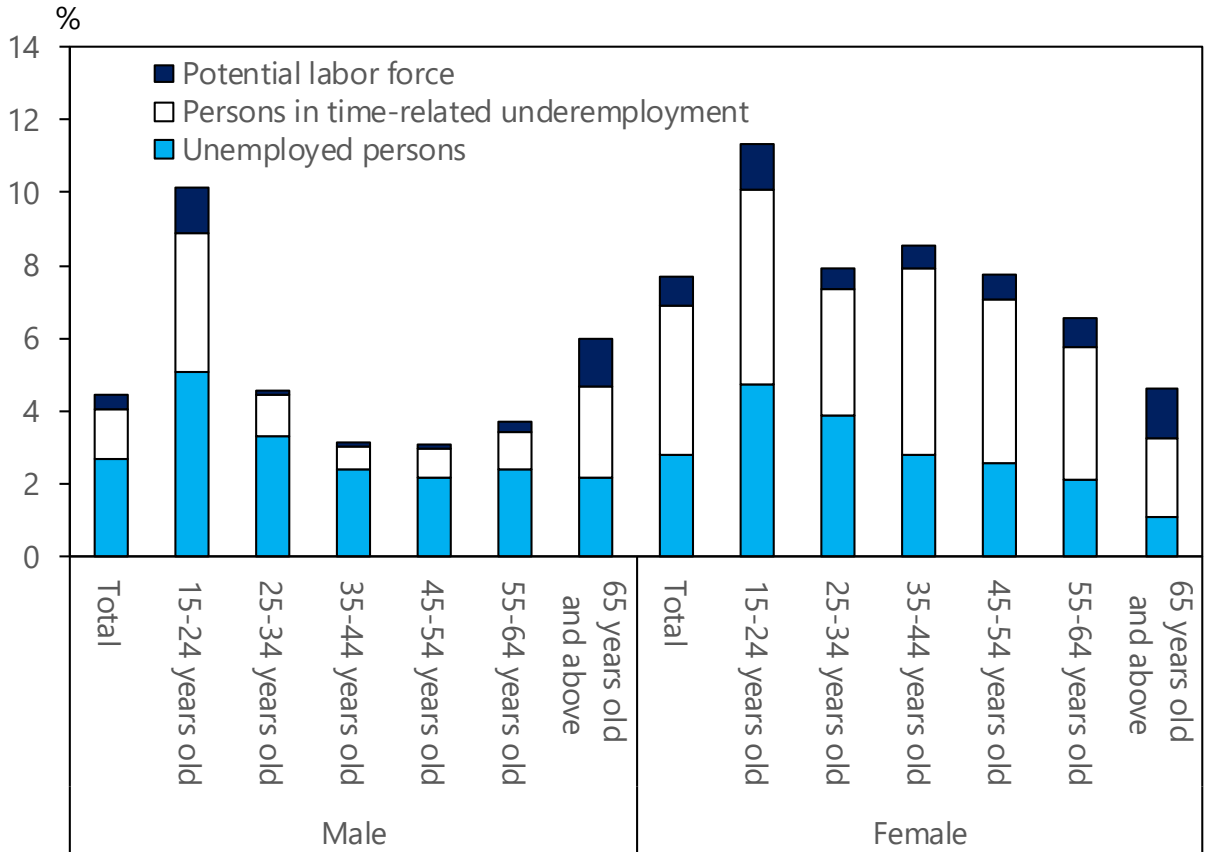
Factors that Contributed to the Change in the Labor Force Participation Rate

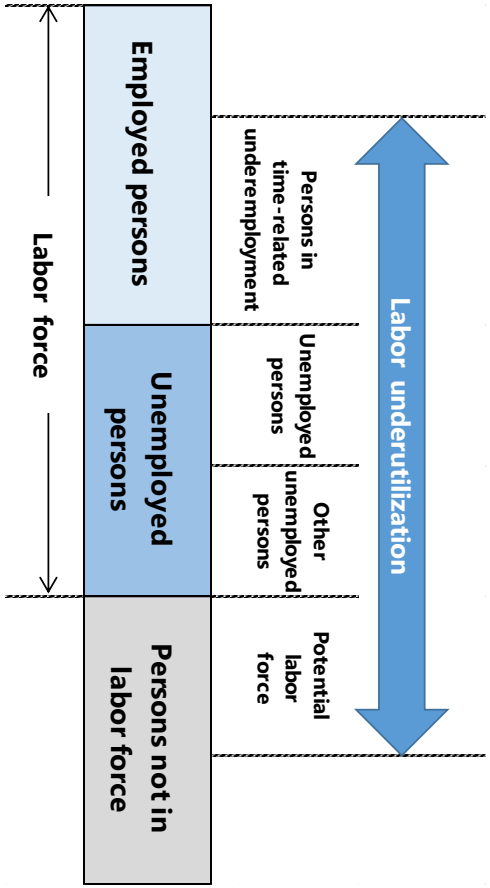


Notes: 1. Given that the labor force participation rate is the population-weighted average of all age groups, the change in the labor force participation rate from October 1992 to July 2019 is decomposed into a demographic factor (the effect of changes in the demographic pyramid) and changes in the labor force participation rate of age groups. The labor force participation rate of each age group is calculated from the original series.
2. Figures are cumulative from October 1992.
3. Original series are linearly interpolated from March to August 2011 when data were not released.

Source: Ministry of Internal Affairs and Communications, "Labour Force Survey."

Labor Underutilization Indicator 4 (LU4) by Gender and Age Group (Average of the Apr.-June Quarter of 2019)





Notes: 1. Ratios to the sum of labor force and potential labor force.
2. Labor Underutilization Indicator 4 (LU4) is the sum of unemployed persons, persons in time-related underemployment, and the potential labor force.

Source: Ministry of Internal Affairs and Communications, "Labour Force Survey (Detailed Tabulation)."