
FY2017, FY2018, FY2019 Economic Outlook

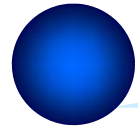
- While the global economy will continue to expand, keep a close eye upon shifts in the financial market -

February 15, 2018

Mizuho Research Institute

Key points of our forecast

- ❑ The global economy will continue to follow an expansion track in 2018 and follow a firm footing in 2019. However, the growth momentum will gradually moderate due to the slowdown of the Chinese economy and peak-out of the IT cycle.
- ❑ Even though Oct-Dec quarter growth fell among major countries, economic conditions among each of the countries generally remain sound. Among the developed market (DM) countries, capital investment – which had led to concerns regarding secular stagnation – is showing signs of recovery due in part to policy support in the US.
- ❑ In the US, reform of the tax system is stimulating consumption and investment, thereby prolonging economic expansion. The Federal Reserve Board (FRB) under its new Chair, Jerome H. Powell, will likely continue to pursue interest rate hikes during 2018. Even so, given the inflation target still has a long way to go, a policy review is likely from 2019.
- ❑ The risks factors are a sharp fluctuation of the financial markets, slower-than-expected growth of the Chinese economy, and geopolitical risks in areas such as the Middle East. In particular, it will be necessary to keep a close eye upon US long-term interest rates and stock prices which are showing signs of a shift.
- ❑ Turning to the Japanese economy in FY2018, even though exports are forecast to slow down along with the moderation of the pace of recovery of the IT sector and the Chinese economy, capital investment should continue to follow a gradual recovery, supported by investment related to the 2020 Tokyo Olympic and Paralympic Games and investment to boost productivity.
- ❑ In FY2019, even though the consumption tax hike in October will serve as a drag upon the Japanese economy, the economy should continue to record positive growth for the fifth consecutive year.
- ❑ Japan's core inflation rate (excluding energy) should remain low, around 0.5%. In the absence of prospects of achieving its inflation target, the Bank of Japan (BOJ) will likely keep monetary policy on hold for some time.



I. General Overview

Extension of the global economic expansion

(1) Overview of the global economy: an upward revision mainly with respect to the US economy

- The global economy will continue to expand in 2018, and also enjoy the support from US policy. Despite a slight fall of growth in 2019, the global economy will remain on a firm footing.

[Outlook on the global economy]

| Calendar year | (Y-o-y % change) | | | | | (Y-o-y % change) | | (% point) | |
|--------------------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------------------|------|---|------|
| | 2015 (Actual) | 2016 (Actual) | 2017 (Estimate) | 2018 (Forecast) | 2019 (Forecast) | 2017 (Forecast in Dec 2017) | 2018 | 2017 (Breadth of change from Dec 2017) | 2018 |
| Total of forecast area | 3.6 | 3.4 | 3.9 | 4.0 | 3.9 | 3.9 | 3.9 | - | 0.1 |
| Japan, US, Eurozone | 2.4 | 1.5 | 2.2 | 2.2 | 2.0 | 2.2 | 2.0 | - | 0.2 |
| US | 2.9 | 1.5 | 2.3 | 2.5 | 2.4 | 2.2 | 2.3 | 0.1 | 0.2 |
| Eurozone | 2.1 | 1.8 | 2.5 | 2.2 | 1.8 | 2.4 | 2.0 | 0.1 | 0.2 |
| Japan | 1.4 | 0.9 | 1.6 | 1.4 | 1.1 | 1.7 | 1.4 | -0.1 | - |
| Asia | 6.2 | 6.2 | 6.1 | 6.2 | 6.0 | 6.1 | 6.1 | - | 0.1 |
| China | 6.9 | 6.7 | 6.9 | 6.5 | 6.4 | 6.8 | 6.4 | 0.1 | 0.1 |
| NIEs | 2.1 | 2.2 | 3.1 | 2.8 | 2.5 | 3.1 | 2.6 | - | 0.2 |
| ASEAN5 | 4.9 | 4.9 | 5.3 | 5.3 | 5.1 | 5.3 | 5.3 | - | - |
| India | 7.5 | 7.9 | 6.3 | 7.3 | 7.3 | 6.3 | 7.3 | - | - |
| Australia | 2.5 | 2.6 | 2.3 | 2.8 | 2.7 | 2.3 | 2.8 | - | - |
| Brazil | -3.5 | -3.5 | 1.0 | 2.3 | 2.6 | 1.0 | 2.2 | - | 0.1 |
| Mexico | 3.3 | 2.9 | 2.1 | 2.1 | 2.4 | 2.0 | 2.0 | 0.1 | 0.1 |
| Russia | -2.8 | -0.2 | 1.5 | 1.7 | 1.5 | 1.5 | 1.5 | - | 0.2 |
| Japan (FY) | 1.4 | 1.2 | 1.7 | 1.3 | 0.8 | 1.8 | 1.3 | -0.1 | - |
| Crude oil price (WTI, USD/bbl) | 49 | 43 | 51 | 65 | 72 | 51 | 59 | - | 6 |

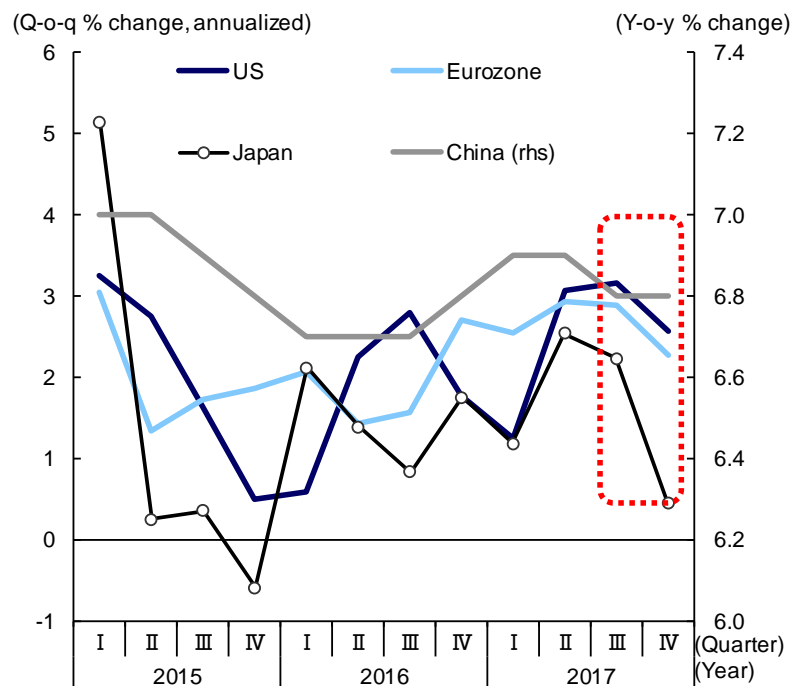
Note: The total of the forecast area is calculated upon the 2015 GDP share (PPP) by the IMF

Sources: Made by MHRI based upon releases by the International Monetary Fund (IMF) and statistics of relevant countries and regions

(2) Overall view of the global economy: the global economy is continuing to follow a recovery trend

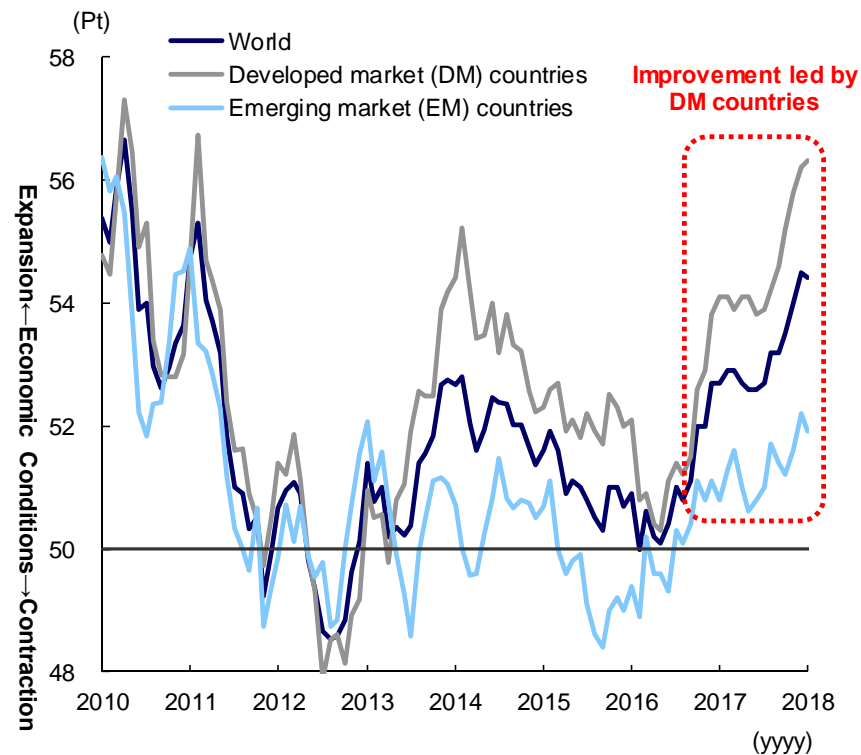
- Despite a slowdown of growth in the Oct-Dec quarter, economic conditions among the countries of the world generally remain sound.
 - Considering that the sluggish growth in Japan and the US stems from the increase in imports, domestic demand is firm. Business sentiment continues to improve, and the economies of developed market (DM) countries are doing well.
 - China has also maintained growth on a par with the previous year due to increased external demand generated by the expansion of the global economy.

[Quarterly GDP growth rates (Japan, US, Eurozone, China)



Source: Made by MHRI based upon statistics of relevant countries and regions

[Global manufacturing PMI]

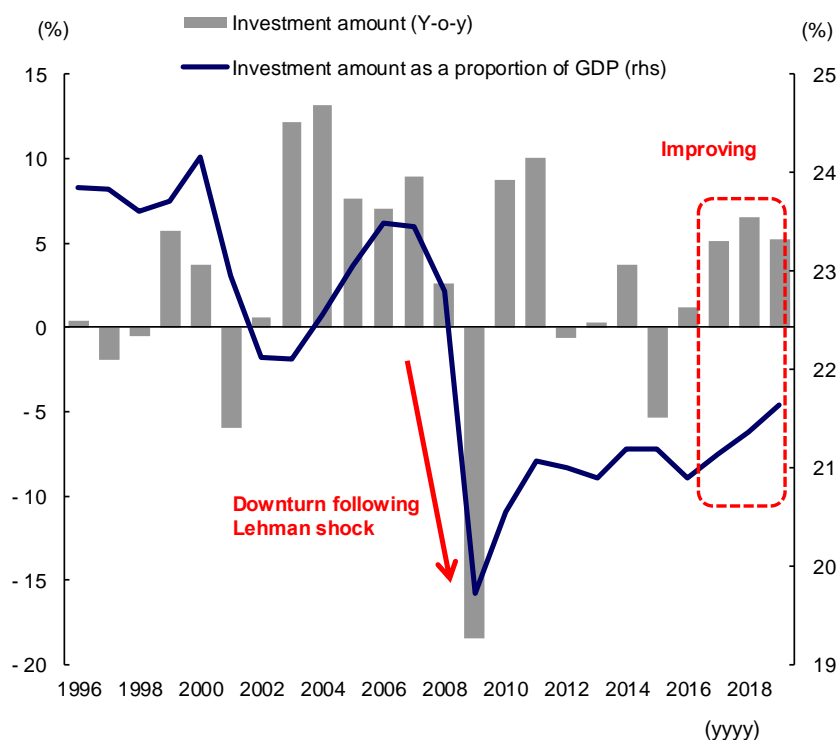


Source: Made by MHRI based upon Markit

DM capital investment is recovering and expansionary fiscal policies such as in the US also provide support

- There is a recovery trend for capital investment among DM countries, which had led to concerns regarding secular stagnation.
 - Fiscal spending would normally be tightened when economies are recovering, but prospects of expansionary policies such as the US tax system reforms underpin the rise of capital investment.

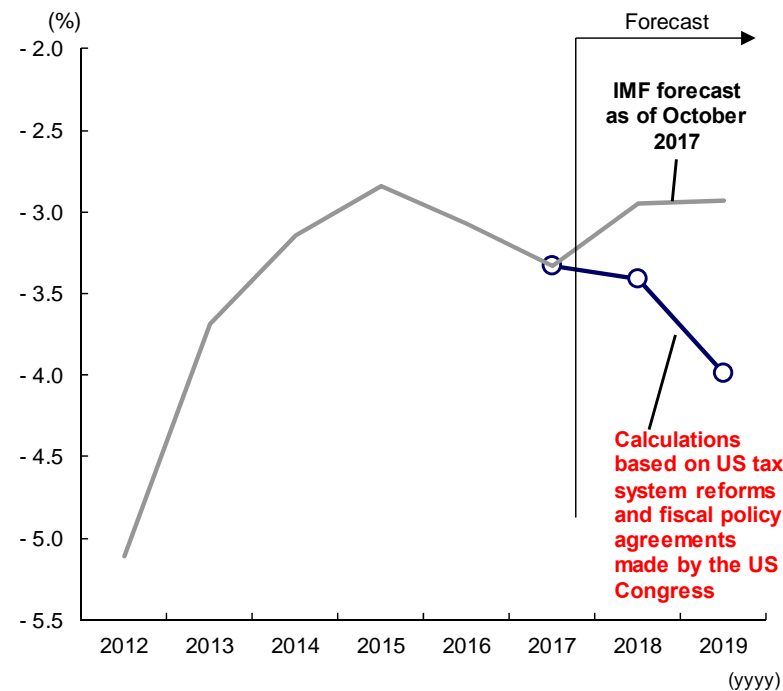
[Capital investment among DM countries]



Note: Forecast values from 2018. Japan, the US and Eurozone calculated by MHRI, with IMF forecasts used for others

Source: Made by MHRI based upon IMF and each country's statistics

[G7 structural fiscal balance]



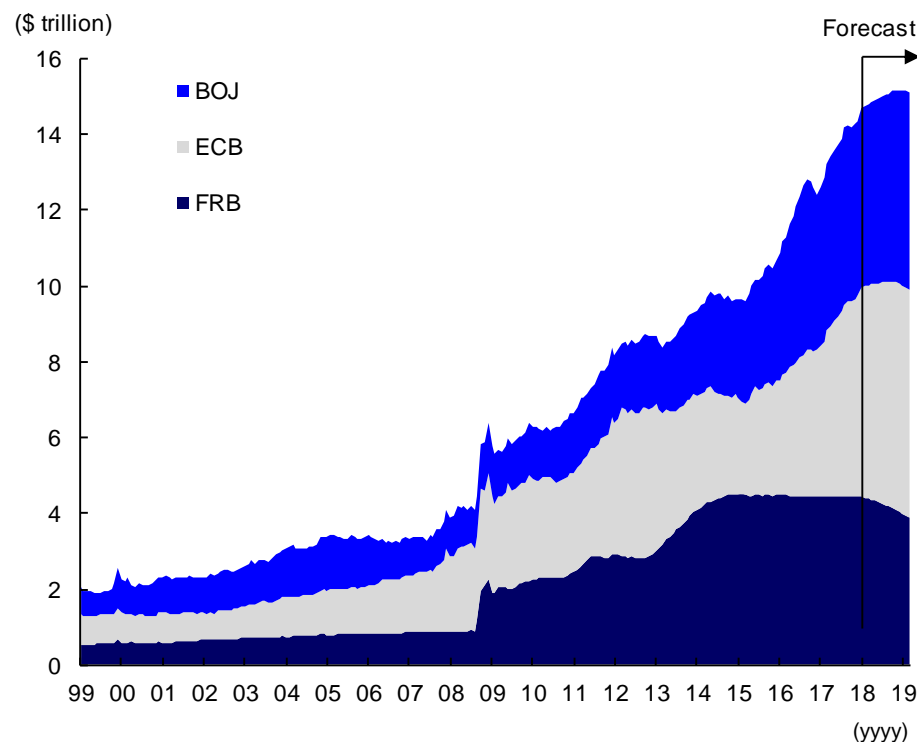
Note: Figures based on the IMF's forecast structural fiscal balances adjusted for the assumed negative impact on fiscal policy due to the cut in taxes under US tax reforms calculated by the JCT and fiscal policy agreements made by the US Congress

Source: Made by MHRI based upon IMF, the US Joint Committee on Taxation (JCT), and the US Congressional Budget Office (CBO)

Despite awareness of the exit, monetary policy is comparatively accommodative

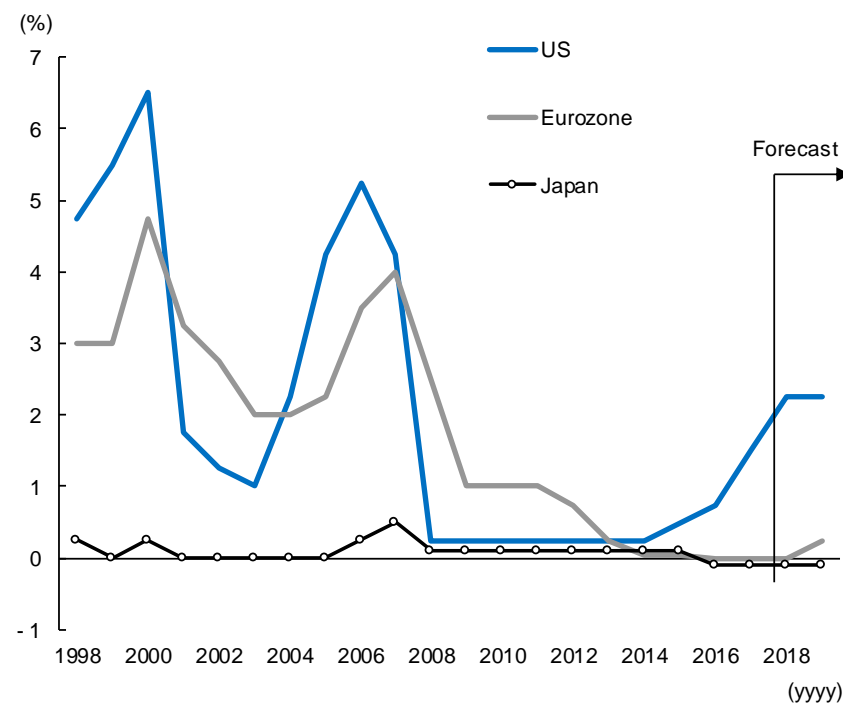
- While monetary policy among DM countries should gradually head towards the exit, the negative impact will likely be limited due to the moderate pace of the tightening and tapering process.
 - Even if the effective tapering by the ECB and the BOJ is considered addition to the contraction of the FRB's balance sheet, the aggregate balance sheet for the three central banks will remain at high levels for the foreseeable future.
 - Our main scenario forecasts that each of the central banks will be quite cautious towards interest rate hikes.

[Central bank balance sheets for Japan, the US and Eurozone]



Note: Figures from 2018 estimated by MHRI
 Source: Made by MHRI based upon BOJ, FRB and ECB

[Policy interest rates in Japan, the US and the Eurozone]

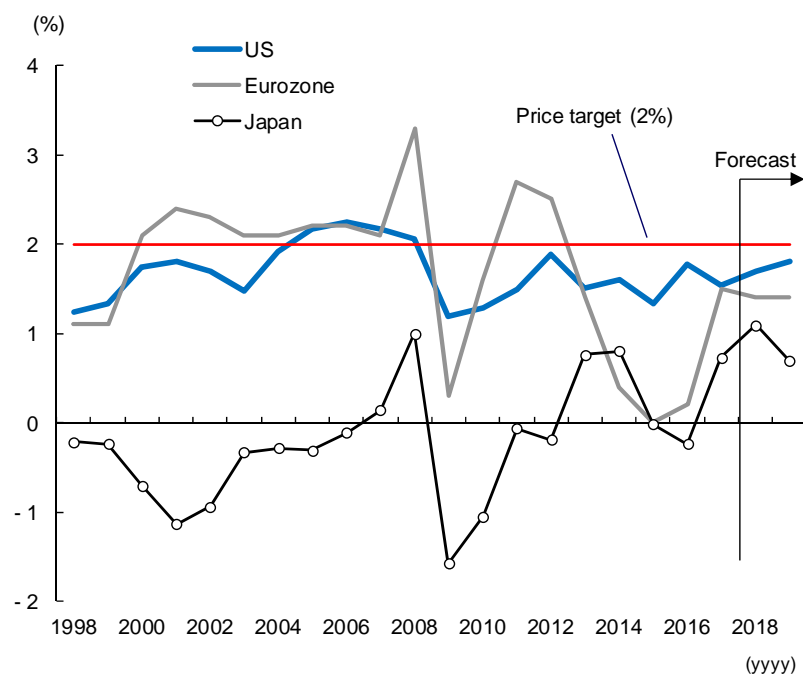


Note: Forecasts by MHRI
 Source: Made by MHRI based upon BOJ, FRB and ECB

Low inflation is behind the accommodative monetary policy, and there is also the risk of higher inflation

- Continued low inflation is behind the ongoing accommodative stance or cautious exit strategies at each central bank.
 - Under our main scenario, we forecast Japan, the US and the Eurozone will be unable to achieve the 2% price target, and that they will remain cautious towards monetary tightening.
 - However, the output gap of developed countries, which had remained negative following the financial crisis, is improving. The inflation rate could also rise in future.

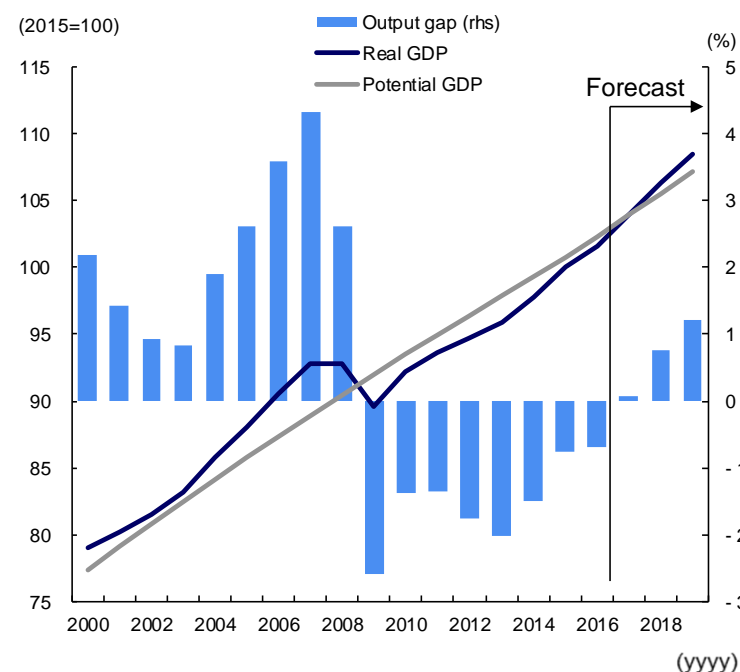
[Rate of price increases in Japan, the US and Eurozone]



Note Price indices focused on by each central bank. Japan: CPI y-o-y (general index, excluding fess food, excluding impact of consumption tax increase); US: PCE Deflator y-o-y (general index excluding energy and food); Eurozone: CPI y-o-y (general index). Forecasts by MHRI

Source: Made by MHRI based upon Ministry of Internal Affairs and Communications, US Department of Commerce and Eurostat

[Output gap among DM countries]



Note DM countries refer to the US, Eurozone, Japan, the UK, South Korea, Canada, Australia, Taiwan. Real GDP indexed to the 2015 standard, synthesized with the 2015 share of PPP base GDP

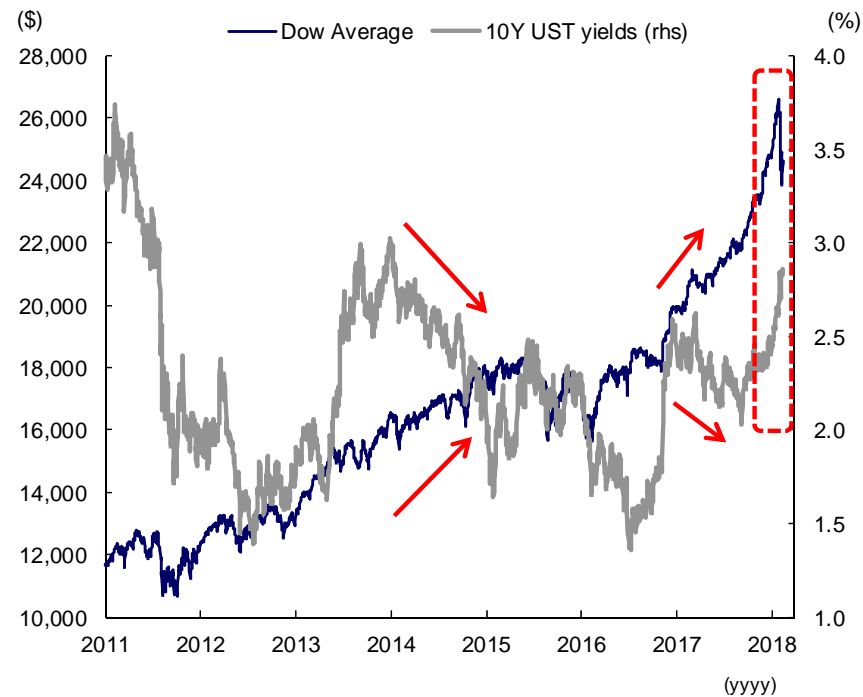
From 2017, the figures for the US, Eurozone, Japan, South Korea, Australia and Taiwan are forecast by MHRI. IMF forecasts used for others. Potential GDP calculated with HP filter.

Source: Made by MHRI based upon IMF and each country's statistics

(3) Risk factors: need to watch out for wild fluctuations in the financial market

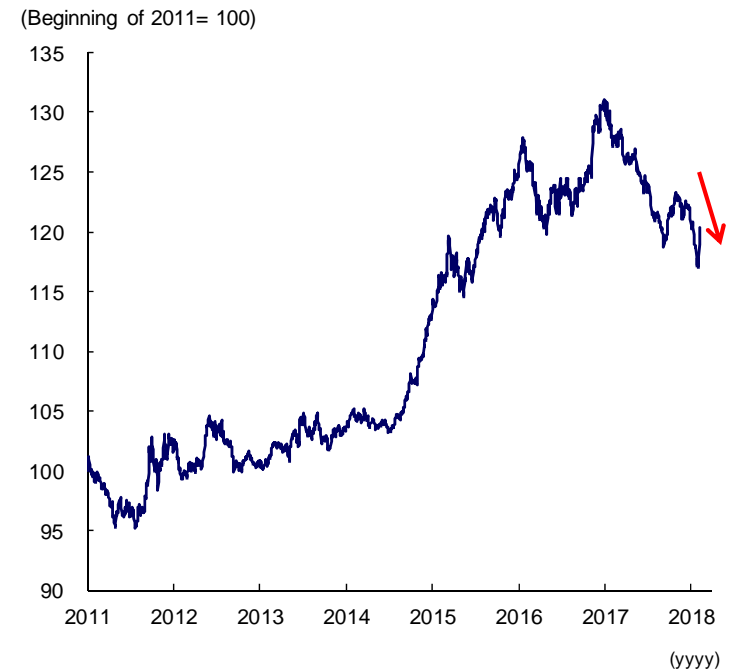
- In the financial markets at the beginning of 2018, stocks rose, interest rates rose and the dollar fell. However, stocks plummeted in February on the back of concerns about the rapid rise in long-term yields.
 - There was a shift from the Goldilocks situation of strong stocks and higher bonds to strong stocks and lower bonds and more recently weak stocks and lower bonds caused by the rise in yields.
 - On the other hand, regardless of the widening interest rate differential caused by higher US yields, the dollar weakened due to concerns about the US administration's protectionist stance and speculation of a shift in Japanese and European monetary policy. These are serving as factors pushing crude oil prices and expected inflation rate higher, leading to the rise of US interest rates.

[US stock prices and long-term yields]



Source: Made by MHRI based upon Bloomberg

[Nominal effective exchange rate of the US dollar]



Source: Made by MHRI based upon the Fed

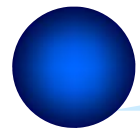
While we forecast a moderate slowdown of the Chinese economy, there are downside risks due to excessive reforms

- ❑ Despite the progress of reforms since 2018, we need to watch out for the potential overkill from excessive reforms.
 - The Central Economic Work Conference set “eliminating significant risks” being mindful of financial risk as the key policy for the next three years. This is also linked to controls on the real estate market and curbs on risks of regional government debt. The complexities of the initiatives are not insignificant.
 - Apart from the foregoing, there are risks accompanying structural adjustments due to delay of reforms and the destabilization of the economy and the financial system due to overseas factors.

[Potential China risks]

| | Main origins and impact on the economy |
|---|---|
| Domestic factors (in the case of excessive reforms) | <ul style="list-style-type: none"> • Deterioration of investment in real estate developments due to finance restrictions on real estate developers • Investment in infrastructure stalls due to measures to curb regional government debt such as standardization of PPP • Increase in default risks caused by the above measures and the rise of financial systemic risk triggered by measures to prevent financial risk such as shadow banking countermeasures |
| Domestic factors (in the case of insufficient reforms) | <ul style="list-style-type: none"> • Rise of risks due to resurgence of real estate speculation and the expansion of shadow banking and the rise of financial systemic risk and economic downturn in the course of such adjustments |
| External factors | <ul style="list-style-type: none"> • Rise capital outflow pressures triggered by the normalization of monetary policy in the US and Europe • Deterioration of exports reflecting stronger protectionist policies by the Trump administration |

Source: Made by MHRl



II. The Japanese Economy

**The Japanese economy will continue to follow a gradual
recovery track**

The Japanese economy: economic recovery driven by overseas economic expansion and strong domestic demand

- ❑ The *First Preliminary Quarterly Estimates of GDP* (“1st QE”) for the Oct-Dec quarter of 2017 revealed that the Japanese economy grew +0.5% q-o-q (annualized), recording growth in positive territory for the eight consecutive quarter. Even though the pace of economic growth itself moderated due to the sharp rise of imports, our view is that the economy is continuing to follow a firm recovery. Growth in FY2017 is forecast to reach a strong +1.7 %.
- ❑ In FY2018, while export growth should slow down along with the moderation of the pace of recovery in the IT sector and the Chinese economy, capital investment will continue to pick up, supported by investment related to the 2020 Tokyo Olympic and Paralympic Games and productivity improvement. Even though higher energy prices will weigh down real wages, wage hikes primarily among small and medium-sized enterprises should keep personal consumption on solid footing. The pace of economic growth in FY2018 is forecast to stand at +1.3%.
- ❑ In FY2019, the consumption tax hike in October will serve as a drag upon growth, leading to a contraction of growth to +0.8%. Even so, the Japanese economy will maintain growth in positive territory for the fifth consecutive year.
- ❑ It will be necessary to keep a close eye upon the rise of uncertainties accompanying fluctuations in the financial market, the slower-than-expected growth of the Chinese economy due to structural reforms, and geopolitical risks mainly with respect to conditions surrounding North Korea.
- ❑ Even though the core inflation rate will temporarily rise to the 1%-level due to upward pressures stemming from the rise of energy prices, the underlying trend in inflation excluding the impact of energy prices is forecast to remain around 0.5%.

Japan: forecast on growth for FY2017 (+1.7%), FY2018 (+1.3%) and FY2019 (+0.8%)

- Even though the Japanese economy will slow down in FY2018 and FY2019, it will continue to follow a gradual recovery track.
 - FY2018: export growth should slow in FY2018 along with the moderation of the pace of recovery in the IT sector and the Chinese economy. Consumption will gradually slow down, reflecting the rise of prices.
 - FY2019: the consumption tax hike in FY2019 (October 2019) will serve as a slight drag upon economic growth. In addition to the cyclical slowdown of capital investment, growth is forecast to slow down to +0.8%.

[Outlook on the Japanese economy]

| | | 2016 | 2017 | 2018 | 2019 | 2017 | | | | 2018 | | | | 2019 | | | | 2020 |
|--------------------------|--------------------------|--------|--------|-------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | FY | | | | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec | Jan-Mar |
| GDP (real) | Q-o-q % ch | 1.2 | 1.7 | 1.3 | 0.8 | 0.3 | 0.6 | 0.6 | 0.1 | 0.4 | 0.4 | 0.3 | 0.1 | 0.4 | 0.4 | 0.4 | -0.5 | 0.2 |
| | Q-o-q % ch p.a. | — | — | — | — | 1.2 | 2.5 | 2.2 | 0.5 | 1.6 | 1.5 | 1.3 | 0.6 | 1.5 | 1.5 | 1.6 | -2.1 | 0.8 |
| Domestic demand | Q-o-q % ch | 0.4 | 1.3 | 1.1 | 0.9 | 0.2 | 0.9 | 0.0 | 0.1 | 0.2 | 0.4 | 0.3 | 0.2 | 0.4 | 0.5 | 0.7 | -1.0 | 0.1 |
| Private sector demand | Q-o-q % ch | 0.3 | 1.5 | 1.3 | 0.9 | 0.3 | 0.9 | 0.2 | 0.3 | 0.2 | 0.4 | 0.3 | 0.3 | 0.4 | 0.5 | 0.7 | -1.4 | 0.1 |
| Personal consumption | Q-o-q % ch | 0.3 | 1.1 | 0.8 | 0.6 | 0.3 | 0.9 | -0.6 | 0.5 | 0.1 | 0.3 | 0.2 | 0.2 | 0.2 | 0.4 | 1.4 | -2.6 | 0.5 |
| Housing investment | Q-o-q % ch | 6.2 | 0.5 | -1.5 | 0.3 | 1.2 | 0.9 | -1.5 | -2.7 | 0.5 | -0.4 | -0.5 | 0.5 | 1.5 | 1.9 | 1.1 | -5.0 | -4.5 |
| Capital investment | Q-o-q % ch | 1.2 | 3.3 | 2.6 | 2.5 | 0.1 | 1.2 | 1.0 | 0.7 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 | 0.6 | 1.1 | 0.2 | 0.3 |
| Inventory investment | Q-o-q contribution, % pt | (-0.3) | (-0.0) | (0.1) | (-0.1) | (-0.0) | (-0.1) | (0.4) | (-0.1) | (0.0) | (0.1) | (0.0) | (0.0) | (0.1) | (0.0) | (-0.5) | (0.5) | (-0.1) |
| Public sector demand | Q-o-q % ch | 0.5 | 0.6 | 0.6 | 1.0 | 0.1 | 1.2 | -0.5 | -0.2 | 0.3 | 0.2 | 0.5 | -0.0 | 0.2 | 0.2 | 0.4 | 0.3 | -0.0 |
| Government consumption | Q-o-q % ch | 0.5 | 0.4 | 0.9 | 0.9 | 0.1 | 0.2 | 0.0 | -0.1 | 0.4 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | -0.1 | 0.2 |
| Public investment | Q-o-q % ch | 0.9 | 1.3 | -0.5 | 1.3 | -0.2 | 4.7 | -2.6 | -0.5 | -0.4 | 0.1 | 1.6 | -1.3 | -0.2 | 0.1 | 1.2 | 1.6 | -1.0 |
| External demand | Q-o-q contribution, % pt | (0.8) | (0.4) | (0.2) | (-0.1) | (0.1) | (-0.3) | (0.5) | (-0.0) | (0.1) | (0.0) | (-0.0) | (-0.0) | (0.0) | (-0.1) | (-0.3) | (0.5) | (0.1) |
| Exports | Q-o-q % ch | 3.4 | 6.3 | 3.6 | 2.4 | 2.0 | 0.0 | 2.1 | 2.4 | 0.4 | 0.7 | 0.6 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Imports | Q-o-q % ch | -1.0 | 4.0 | 2.5 | 2.7 | 1.7 | 1.9 | -1.2 | 2.9 | -0.4 | 0.7 | 0.7 | 0.8 | 0.5 | 1.1 | 2.0 | -1.8 | 0.0 |
| GDP (nominal) | Q-o-q % ch | 1.0 | 1.6 | 0.6 | 1.2 | 0.1 | 0.9 | 0.6 | -0.0 | -0.2 | 0.5 | 0.0 | -0.1 | 0.2 | 0.5 | 0.2 | 0.5 | 0.3 |
| GDP deflator | Y-o-y % ch | -0.2 | -0.1 | -0.7 | 0.3 | -0.8 | -0.3 | 0.2 | 0.0 | -0.5 | -0.6 | -0.8 | -1.0 | -0.4 | -0.4 | -0.4 | 1.0 | 1.2 |
| Domestic demand deflator | Y-o-y % ch | -0.5 | 0.6 | 0.7 | 0.7 | 0.0 | 0.4 | 0.5 | 0.5 | 0.9 | 0.8 | 0.8 | 0.7 | 0.5 | 0.5 | 0.4 | 1.1 | 1.0 |

Notes: Figures in the shaded areas are forecasts.

Source: Made by MHRI based upon Cabinet Office, *Preliminary Quarterly Estimates of GDP*.

Japan: the underlying trend of consumer prices (excluding food and energy) will likely remain around 0.5%

[Outlook on the Japanese economy (major economic indicators)]

| | | 2016 | 2017 | 2018 | 2019 | 2017 | | | | 2018 | | | | 2019 | | | | 2020 |
|--|--------------------|-------------|--------------|--------|--------|---------|---------|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | FY | | | | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec | Jan-Mar |
| Industrial production | Q-o-q % ch | 1.1 | 4.7 | 2.4 | 1.7 | 0.2 | 2.1 | 0.4 | 1.8 | 0.0 | 0.7 | 0.5 | 0.4 | 0.4 | 0.8 | 1.3 | -1.2 | -0.1 |
| Ordinary profits (Lower line: excludes impact of special factors) | Y-o-y % ch | 10.0 7.3 | 11.6 13.8 | 4.0 | 2.7 | 26.6 | 22.6 | 5.5 17.9 | 11.8 | 6.5 | 7.4 | 5.0 | 1.9 | 1.8 | 5.8 | 8.2 | -1.7 | -0.6 |
| Nominal compensation of employees | Y-o-y % ch | 2.4 | 2.2 | 2.3 | 2.1 | 1.4 | 2.2 | 2.2 | 1.9 | 2.7 | 2.6 | 2.5 | 2.3 | 1.9 | 1.9 | 2.1 | 2.1 | 2.1 |
| Unemployment rate | % | 3.0 | 2.8 | 2.8 | 2.7 | 2.9 | 2.9 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.7 | 2.7 | 2.7 |
| New housing starts | P.a., 10,000 units | 97.4 | 95.6 | 95.6 | 98.6 | 97.2 | 98.7 | 95.5 | 94.8 | 93.2 | 94.2 | 94.5 | 94.3 | 99.9 | 103.4 | 102.3 | 96.9 | 91.2 |
| Current account balance | P.a., JPY tril | 20.4 | 20.8 | 17.9 | 17.2 | 21.7 | 19.1 | 24.7 | 22.5 | 17.7 | 18.6 | 19.0 | 18.6 | 16.2 | 16.2 | 14.8 | 19.0 | 19.8 |
| Domestic corporate goods prices | Y-o-y % ch | -2.3 | 2.6 | 2.3 | 2.0 | 1.0 | 2.1 | 2.9 | 3.4 | 2.3 | 2.1 | 2.6 | 2.6 | 1.9 | 1.4 | 1.0 | 2.7 | 2.7 |
| Domestic corporate goods prices (ex consumption tax) | Y-o-y % ch | - | - | - | 1.1 | - | - | - | - | - | - | - | - | - | - | - | 0.9 | 0.9 |
| Consumer prices, ex fresh food | Y-o-y % ch | -0.3 | 0.7 | 1.1 | 1.3 | 0.2 | 0.4 | 0.6 | 0.9 | 1.0 | 1.1 | 1.2 | 1.1 | 1.0 | 0.8 | 0.7 | 1.7 | 1.7 |
| Consumer prices, ex fresh food (ex consumption tax) | Y-o-y % ch | - | - | - | 0.8 | - | - | - | - | - | - | - | - | - | - | - | 0.7 | 0.6 |
| Consumer prices, ex fresh food and energy | Y-o-y % ch | 0.4 | 0.2 | 0.4 | 1.0 | 0.1 | 0.0 | 0.1 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 1.4 | 1.5 |
| Consumer prices, ex fresh food and energy (ex consumption tax) | Y-o-y % ch | 0.3 | - | - | 0.5 | - | - | - | - | - | - | - | - | - | - | - | 0.5 | 0.5 |
| Uncollateralized overnight call rate | % | -0.06 | -0.05 | -0.05 | -0.05 | -0.06 | -0.07 | -0.06 | -0.06 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 | -0.05 |
| Yield on newly-issued 10-yr JGBs | % | -0.05 | 0.05 | 0.08 | 0.08 | 0.07 | 0.04 | 0.05 | 0.05 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| Nikkei average | JPY | 17,520 | 21,200 | 24,500 | 24,700 | 19,241 | 19,503 | 19,880 | 22,188 | 23,200 | 24,000 | 24,300 | 24,600 | 24,900 | 25,000 | 24,700 | 24,200 | 24,700 |
| Exchange rate | JPY/USD | 108 | 111 | 111 | 109 | 114 | 111 | 111 | 113 | 109 | 111 | 112 | 111 | 111 | 110 | 109 | 109 | 108 |
| Crude oil price (WTI nearest term contract) | USD/bbl | 48 | 53 | 67 | 74 | 52 | 48 | 48 | 55 | 62 | 64 | 66 | 67 | 69 | 71 | 73 | 75 | 76 |

Notes: 1. Figures in the shaded areas are forecasts. The readings above may differ from public releases because the rates of change are calculated by MHRI

2. Ordinary profits are based upon the *Financial Statements Statistics of Corporations by Industry* (all industries basis) (ex finance & insurance)

3. Quarterly data on the unemployment rate, new housing starts and current account balance are seasonally-adjusted

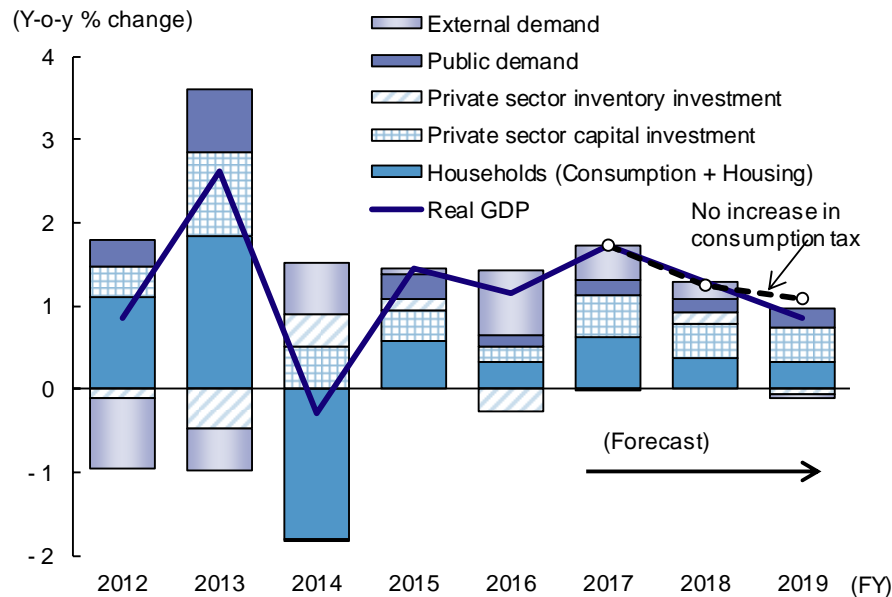
4. Of the finance-related indices, the uncollateralized overnight call rate refers to the rate at the end of term, the yield on newly-issued 10-yr JGBs refers to the average of the end-of-month rates during the relevant term, and all others are averages during the relevant terms

Sources: Made by MHRI based upon relevant statistics

Current status and forecast: firm in FY2018, but a slowdown in FY2019 due to the consumption tax hike

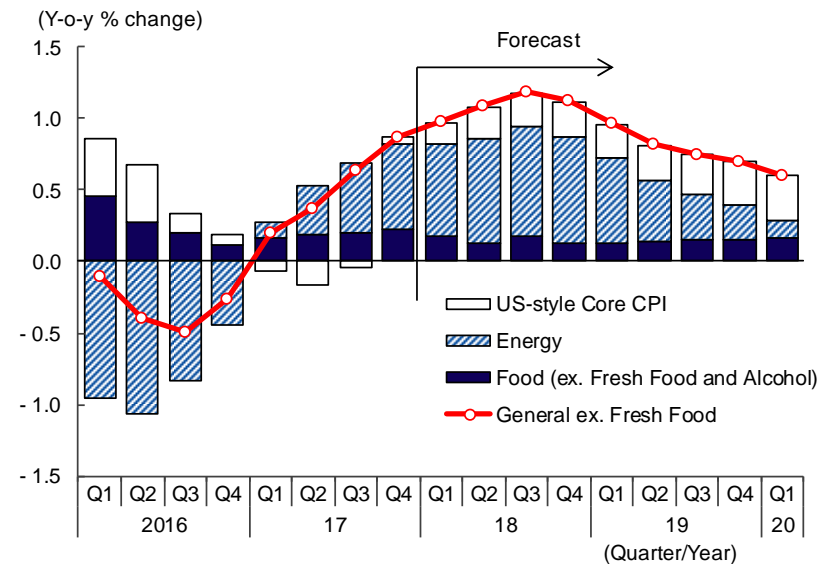
- ❑ Oct-Dec quarter real GDP grew +0.5% q-o-q p.a., recording the eight consecutive quarter of positive growth. Even though the pace of economic growth itself moderated due to the sharp increase of imports, our view is that the economy is continuing to follow firm footing with a recovery in consumption and acceleration of exports.
- ❑ FY2018: we forecast economic growth of +1.3% for FY2018. Despite a slowdown in exports and consumption, we forecast growth to remain above the potential growth rate.
- ❑ FY2019: we forecast economic growth of +0.8% for FY2019. The consumption tax hike will likely push down the growth rate by approximately 0.2% points.
- ❑ Core CPI will be boosted by energy prices throughout the forecast period. However, we forecast inflation excluding the impact of energy prices to be low, at around 0.5%.

[Factor contribution to the rate of growth in real GDP]



Source: Made by MHRI based upon Cabinet Office, *National Accounts*

[Consumer Price Index forecast (excluding consumption tax)]

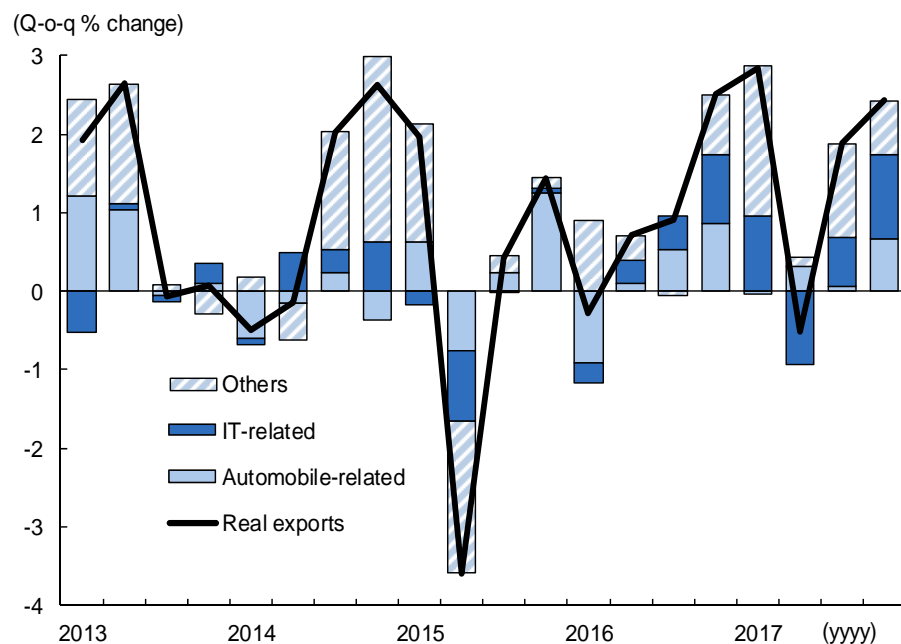


Note: Forecast from MHRI used for Q1 2018 and beyond
 Source: Made by MHRI based upon Ministry of Internal Affairs and Communications, *Consumer Price Index*

① Sustainability of exports and production: recent deterioration of inventory-shipment balance, particularly for electronic parts & devices

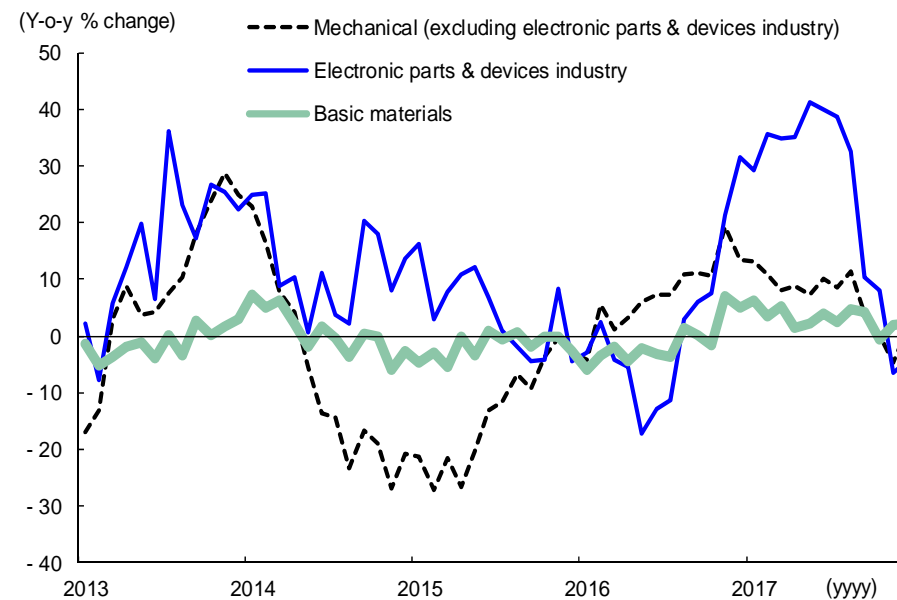
- Since 2016, the IT sector has generally boosted Japan's exports. Growth accelerated in the Oct-Dec quarter of 2017.
- On the other hand, the inventory-shipment balance has recently deteriorated, particularly for electronic parts and devices.
 - We are entering a period of build up in inventories. IT exports could slow in the near term.
 - ✓ Sluggish demand for the new model iPhone is likely to serve as headwinds.

[Factor contribution to real exports]



Source: Made by MHRI based upon Bank of Japan, *Real Exports and Real Imports*,

[Inventory-shipment balance]

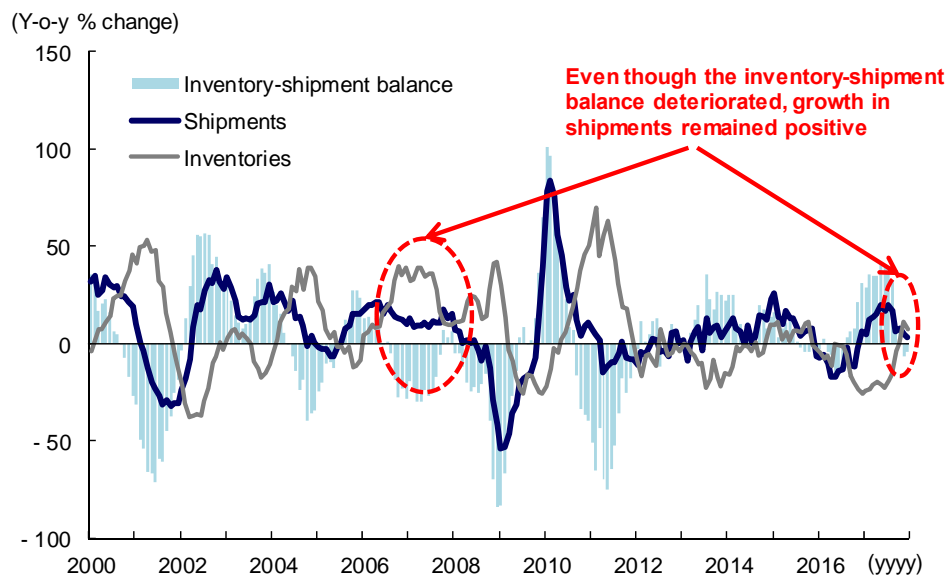


Source: Made by MHRI based upon Ministry of Economy, Trade and Industry, *Indices of Industrial Production*

① Sustainability of exports and production: final demand for IT remains firm

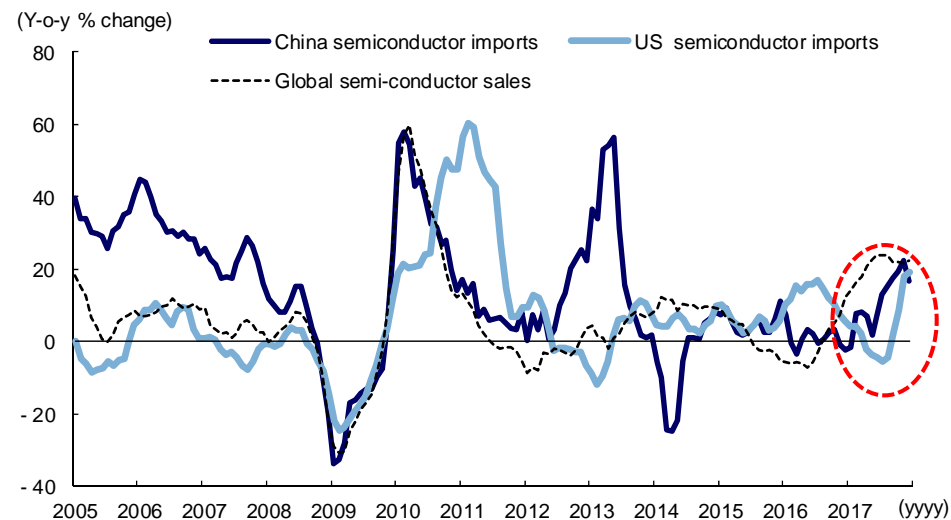
- ❑ However, it should be noted that the deterioration of the inventory-shipment balance is due to the increase in inventories and that shipments remain positive. The increase in inventories stems most likely from robust demand.
 - The inventory-shipment balance resembles the period around 2006 to 2007, and a full-fledged correction appears unlikely.
- ❑ In fact, semiconductor imports by China and the US are continuing to increase, where there is active promotion of IoT and measures to deal with labor shortages..
- ❑ While a slowdown from the high level of growth in 2017 is inevitable, demand for semiconductors should remain firm for the time being, against a backdrop of structural shifts over the medium- to long-term such as the expansion of uses such as in-vehicle installations, IoT and data centers and measures to deal with labor shortages.

[Inventory-shipment balance of electronic parts & devices]



Source: Made by MHRI based upon Ministry of Economy, Trade and Industry, *Indices of Industrial Production*

[Global semiconductor sales and US and Chinese semiconductor imports]

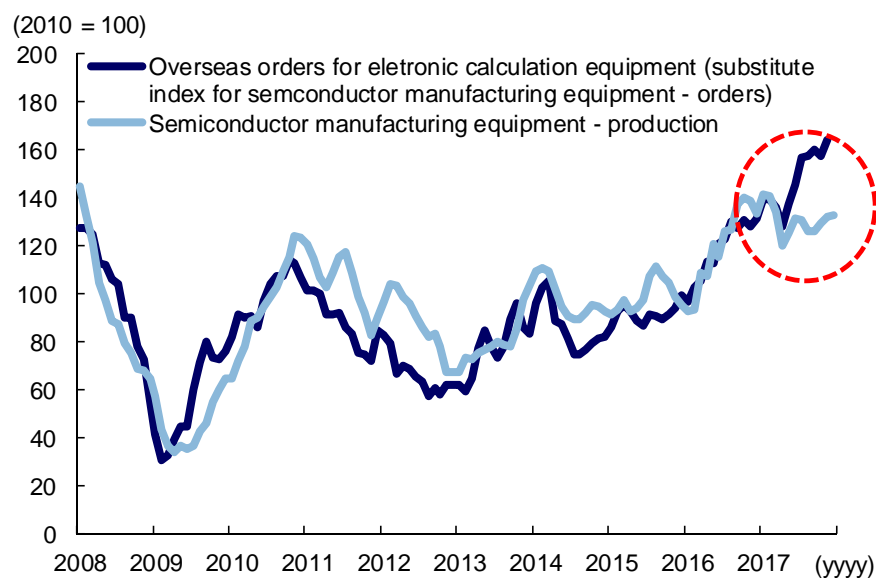


Note: Backward 3-month moving average y-o-y
Source: Made by MHRI based upon CEIC Data

① Sustainability of exports and production: risk that supply capacity limits could dampen production

- ❑ Shipments and orders for semiconductor manufacturing equipment have diverged since 2017. This suggests manufacturers of semiconductor manufacturing equipment are approaching the limits of their supply capacity.
 - Manufacturers curbed investment following the Lehman shock, leading to considerable increase in their capacity utilization rates to deal with the semiconductor boom without expanding capacity.
- ❑ We forecast increased capital investment by major semiconductor manufacturing equipment manufacturers with a gradual increase in the growth rate for production as the capacity of supply is increased.

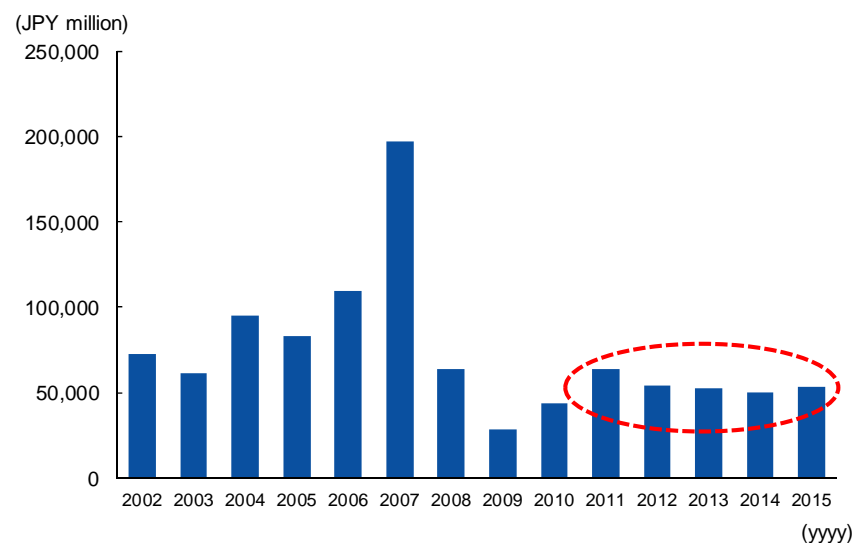
[Semiconductor manufacturing equipment orders and production]



Note: As the amount of orders for semiconductor manufacturing equipment is not disclosed, we have used electronic calculation equipment in external demand as a proxy. Semiconductor manufacturing equipment accounted for about 91% of this figure in 2016.

Source: Made by MHRI based upon Cabinet Office, *Machinery Orders*; and Ministry of Economy, Trade and Industry, *Indices of Industrial Production*

[Investment in tangible fixed assets by semiconductor manufacturing equipment manufacturers]

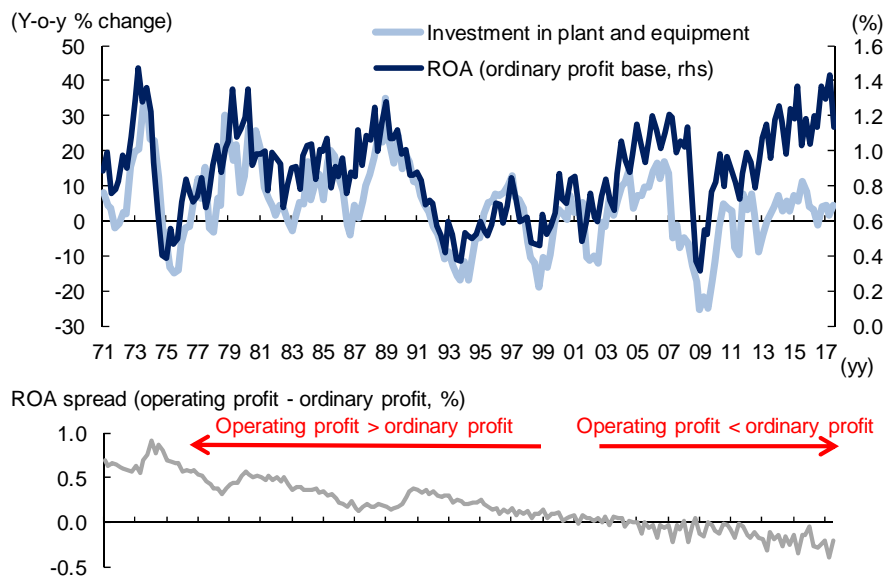


Source: Made by MHRI based upon Ministry of Economy, Trade and Industry, *Manufacturing Industry Statistics Survey*

② Recovery momentum of capital investment: companies focused on asset efficiency; increased profits do not necessarily mean increase of capital investment

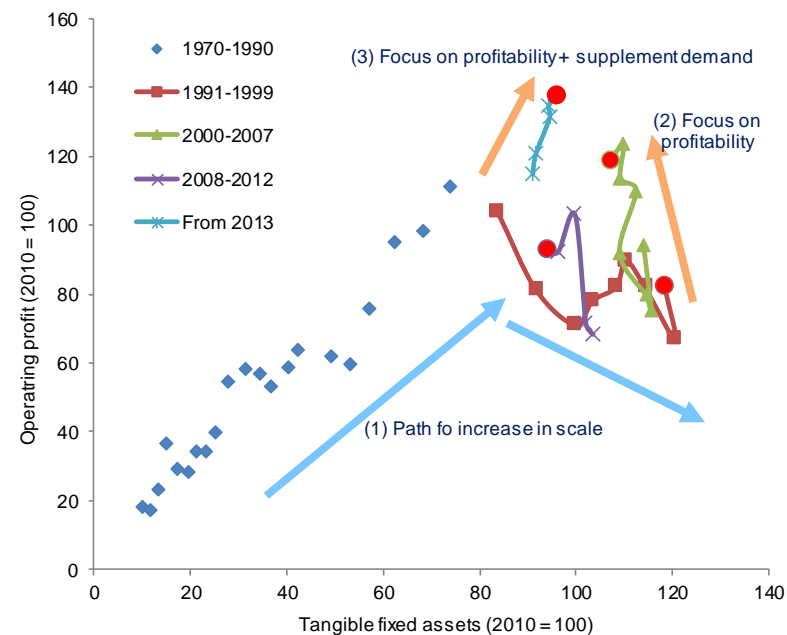
- A look at investment returns shows that the divergence between ROA and investment has gradually widened since 2000.
 - Up until around the mid-2000s, when non-operating revenue was negative, investment in plant and equipment was determined on the basis of profitability that included non-operating revenue. Since non-operating revenue turned positive, the decision to invest in plant and equipment appears to have been made on the profitability of core business.
- From the perspective of asset efficiency, investment since the introduction of Abenomics may be considered as falling within an appropriate range. The high level of ordinary profit is unlikely to be a reason to accelerate investment.

[Growth rate for ROA (ordinary profit base) and investment in plant and equipment]



Note: ROA = ordinary profits / total assets (average of previous year and current year).
 Investment in plant and equipment = new investment in fixed assets
 Source: Made by MHRI based upon Ministry of Finance, *Financial Statements Statistics of Corporations by Industry*

[Change in profitability and size of tangible fixed assets (fiscal year base)]

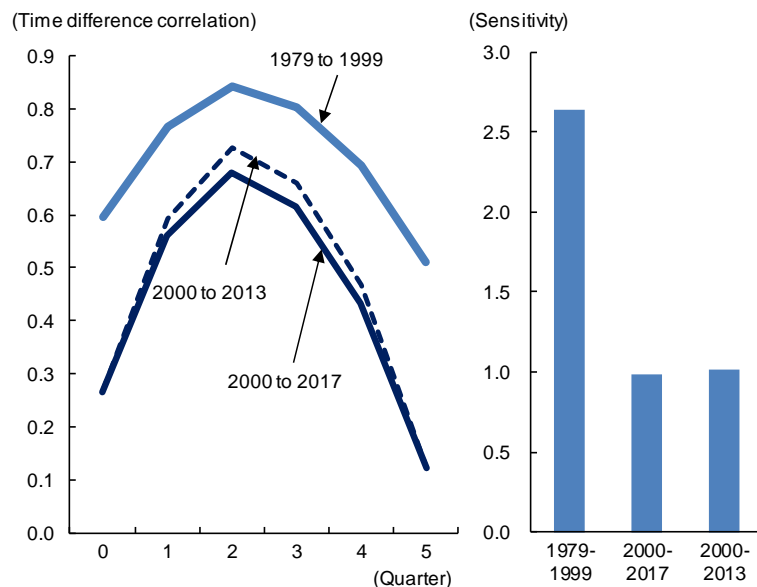


Note: Red dots indicate the closing point for each period. The final point since 2013 is the 1H 2017 actual
 Source: Made by MHRI based upon Ministry of Finance, *Financial Statements Statistics of Corporations by Industry*

② Recovery momentum for capital investment: even though capital investment will continue to grow, it will gradually enter a cyclical slowdown

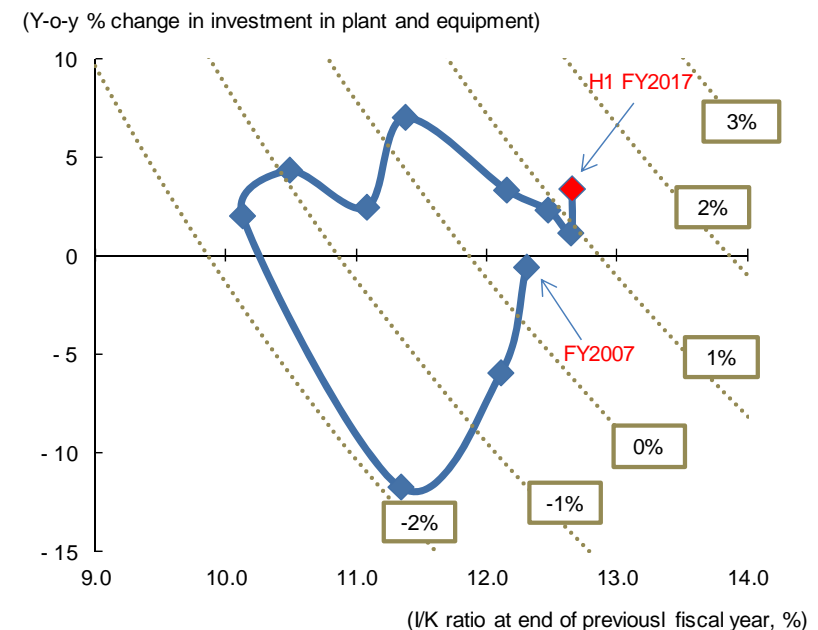
- ❑ The correlation coefficients and sensitivity for capital investment relative to the capacity utilization ratio have both fallen compared to before the 1990s and after 2000, when companies pursued increased scale.
 - This suggests investment in plant and equipment might not occur even when demand increases unless it is profitable.
- ❑ In terms of the capital stock cycle, investment is increasing in a way that is somewhat reverse to the normal cycle.
 - This is attributed to active labor saving investment and investment in projects related to the 2020 Tokyo Olympic Games. While the increase should continue in the near term, we forecast the pace of growth will slow.

[Correlation between the capacity utilization ratio and real investment in plant and equipment]



Note: Investment in plant and equipment is made real with the corporate goods price index (capital goods)
 Source: Made by MHRI based upon Ministry of Economy, Trade and Industry, *Indices of Industrial Production*, Bank of Japan, *Corporate Goods Price Index*, and Ministry of Finance, *Financial Statements Statistics of Corporations by Industry*

[Capital stock cycle]

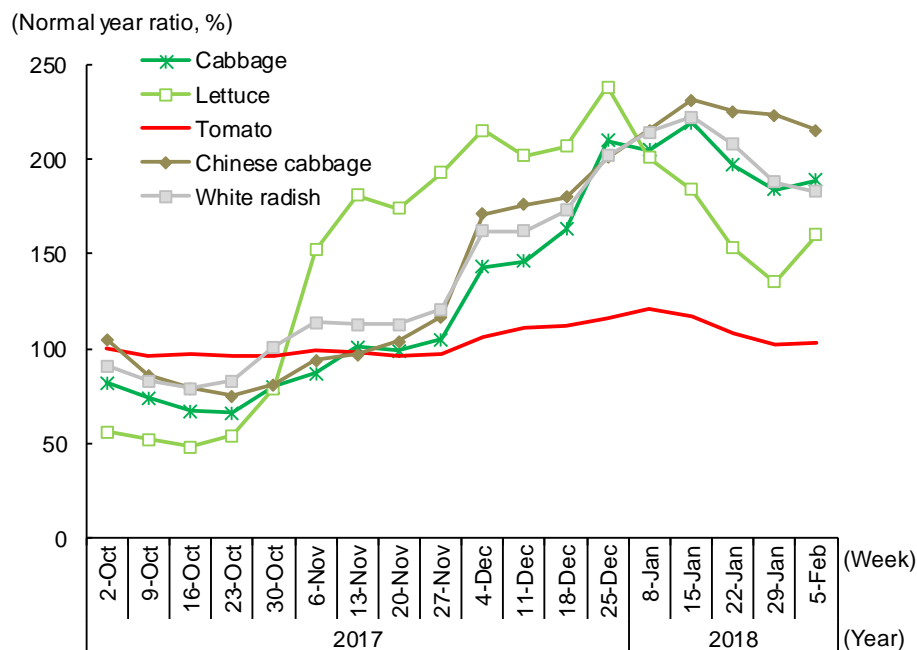


Note: The dotted lines indicate the expected rate of growth calculated from the trend in the eliminations rate and the capital coefficient.
 Source: Made by MHRI based upon Cabinet Office

③ Thrift consciousness and consumption: recent surge in the thrift-consciousness index

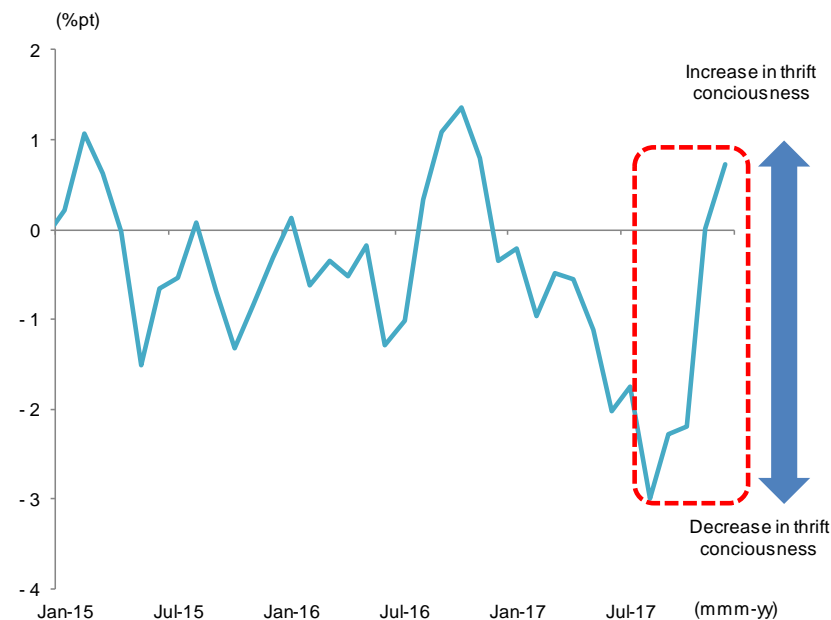
- Household thrift consciousness rose sharply due to factors such as the surge of vegetable prices.
 - Poor weather in October and November pushed up the price of fresh vegetables. The price of gasoline is also rising due to the higher price of crude oil.
 - As a result, the thrift-consciousness index (the difference between the price increase in the CPI and in the average price in the household expenditure survey) has risen sharply.

[Price of fresh food]



Note: Normal year ratio is the comparison to the 5-year average price for the survey price from food price trend survey operations for FY2012 to FY2016
 Source: Made by MHRI based upon Ministry of Agriculture, Forestry and Fisheries, *Consumer price trends survey (vegetables)*

[Thrift-consciousness index (backward 3-month moving average)]

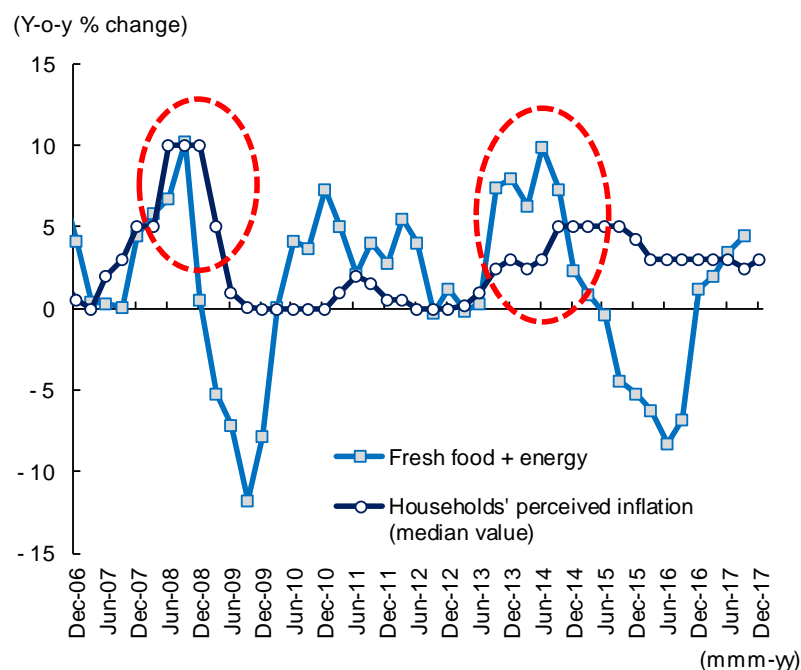


Note: The thrift-consciousness index is calculated by comparing the 137 items that are common to the CPI and the *Family Income and Expenditure Survey*, and taking the difference between the CPI (y-o-y) and the y-o-y rate of growth in the average price for each item weighting by the CPI (2015 standard). Backward 3-month moving average.
 Source: Made by MHRI based upon Ministry of Internal Affairs and Communications, *Consumer Price Index, Family Income and Expenditure Survey*

③ Thrift consciousness and consumption: real consumption is determined by households' perceived inflation

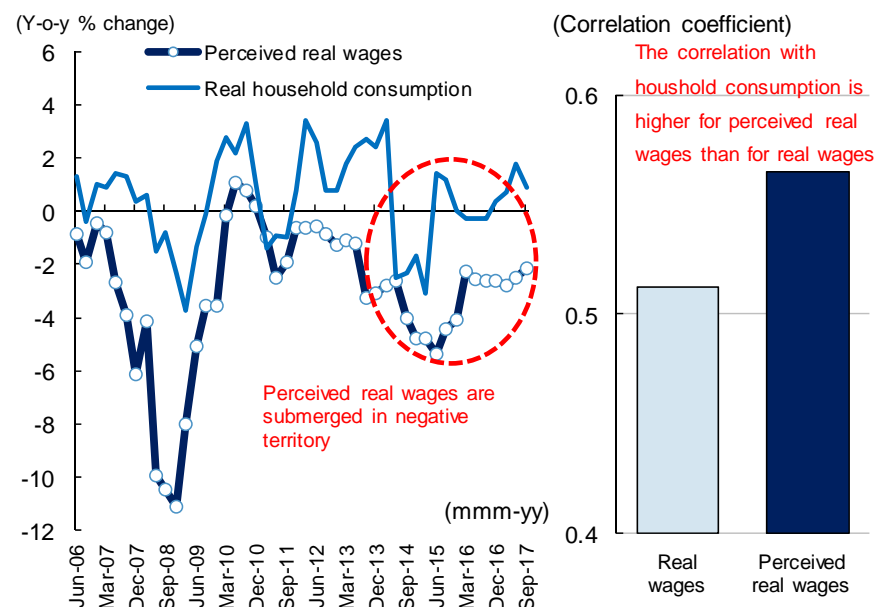
- ❑ The calculation of households' perceived inflation indicates a trend that is closer to that of fresh food and energy than total consumer prices.
- ❑ "Perceived real wages" calculated by deflating nominal wages by households' perceived inflation has a stronger correlation with real consumption than CPI-based real wages (deflated by the CPI excluding imputed rents on homes).
 - Perceived inflation is a much greater determinant of household consumption behavior than the CPI.

[Households' perceived inflation]



Note: Households' perceived inflation is the median value of the results to the survey question: By what percent do you think prices have changed compared with one year ago?
 Source: Made by MHRI based upon Bank of Japan, *Opinion Survey on the General Public's Mindset and Behavior* and Ministry of Internal Affairs and Communications, *Consumer Price Index*

[Trends in perceived real wages and real consumption and correlation coefficient]

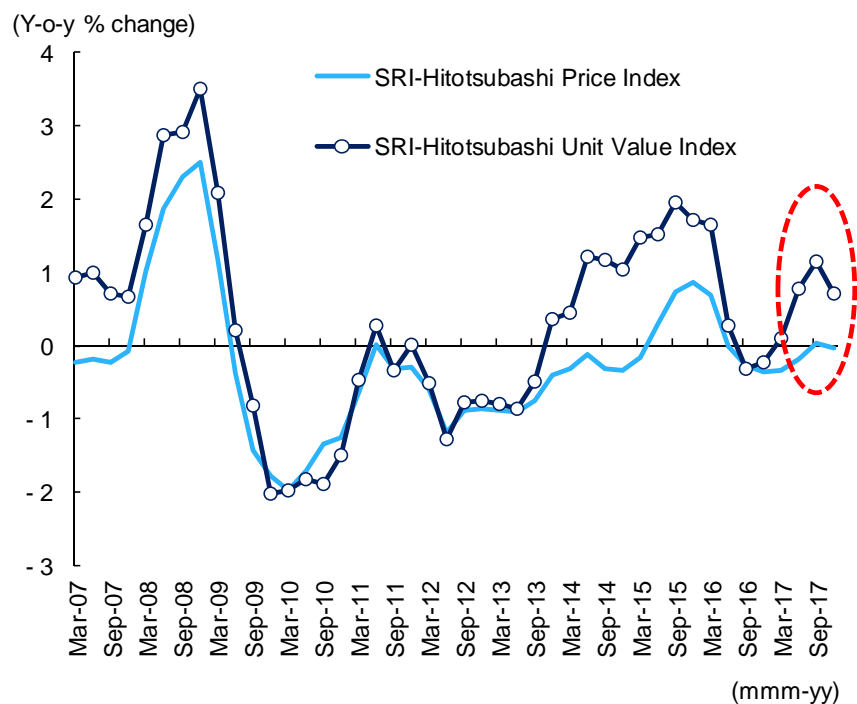


Note: Households' perceived inflation is the median value of the results to the survey question: By what percent do you think prices have changed compared with one year ago?
 Source: Made by MHRI based upon Bank of Japan, *Opinion Survey on the General Public's Mindset and Behavior*, Ministry of Internal Affairs and Communications, *Consumer Price Index* and Cabinet Office, *National Accounts (SNA)*

③ Thrift consciousness and consumption: perceived inflation is also sensitive to shrinkflation

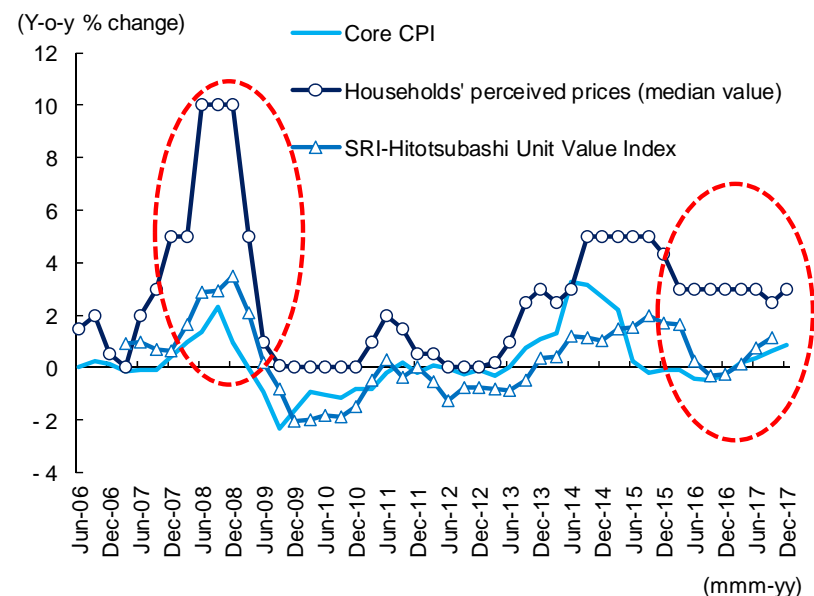
- ❑ The rise of the SRI-Hitotsubashi Unit Value Index has recently surpassed the SRI-Hitotsubashi Price Index, suggesting hidden price increase (shrinkflation) may be progressing.
- ❑ Households' perceived inflation is highly correlated to the Unit Value Index (correlation coefficient of 0.87), demonstrating household sensitivity to such hidden price increase.

[SRI-Hitotsubashi Unit Value Index and Price Index]



Note: Quarterly average
Source: Made by MHRI based upon SRI-Hitotsubashi Consumer Purchase Index

[Perceived inflation, SRI-Hitotsubashi Unit Value Index, Core CPI]

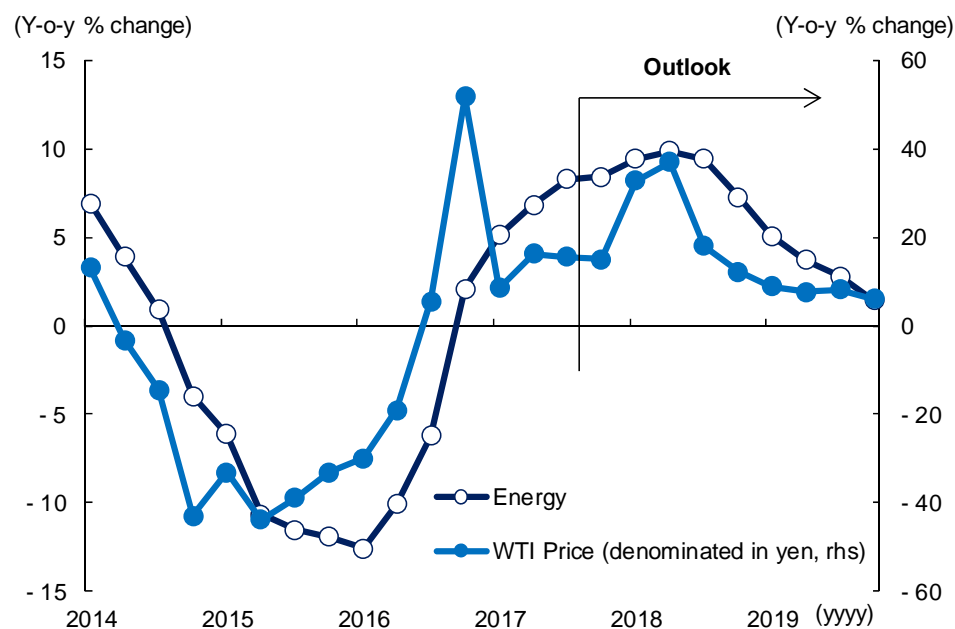


Note: Households' perceived inflation is the median value of the results to the survey question: By what percent do you think prices have changed compared with one year ago?
Source: Made by MHRI based upon Bank of Japan, *Opinion Survey on the General Public's Mindset and Behavior*, Ministry of Internal Affairs and Communications, *Consumer Price Index* and Cabinet Office, *National Accounts (SNA)*

③ Thrift consciousness and consumption: higher prices weigh on consumption, but higher incomes are forecast to push up consumption

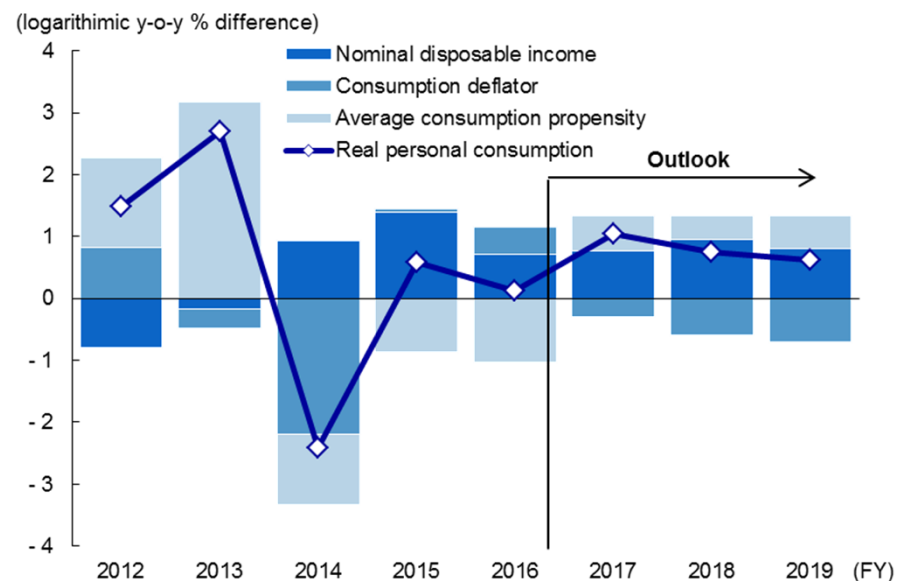
- ❑ Perceived real wages will decline in the event energy and fresh food prices continue to rise or shrinkflation has occurred.
 - Given forecasts of the rise of energy prices, there are concerns that higher energy prices will push down consumption through the fall of perceived real wages.
- ❑ However, real consumption should continue to follow firm footing since the rise of incomes, due primarily to the growth in nominal wages, will offset the downward pressure from prices.

[Outlook on energy prices]



Note: Estimates by MHRI for Jan-Mar 2018 quarter and beyond
 Source: Made by MHRI based upon Ministry of Internal Affairs and Communications, Consumer Price Index

[Outlook on consumer spending]



Source: Made by MHRI based upon Cabinet Office, First Preliminary Quarterly Estimates of GDP

④ Policy stimulus (1): FY2017 supplementary budget will push up FY2018 growth rate by 0.3%

- The FY2017 supplementary budget, passed on February 1, includes 2.7 trillion yen in additional expenditures, mainly on public works.
 - The supplementary budget was the smallest to date under the Abe administration. The contraction is attributed to the inability to secure the financial resources because of the lack of increase in tax revenues.
- The expenditures are forecast to boost the FY2018 growth rate by 0.3% (cumulatively when including the impact on FY2019 and beyond, the impact is a boost to GDP of about 0.5%)
 - GDP is mainly boosted by public works such as disaster recovery projects. However, since the size is contracting on a year-on-year basis, fiscal year public investment is negative.
 - In addition, there is also the risk of a delay in the progress of public works (refer to the next page).

[Overview of additional expenditure]

| Government spending (billion yen) | |
|--|-------------------------|
| I. Productivity revolution & human resources development revolution | 482.2 |
| (1) Productivity revolution | 393.1 |
| Support manufacturing, commerce and upgrading service-sector management skills; consolidate regional creation hubs | |
| (2) Human resources development revolution | 89.1 |
| Prepare childcare arrangements (nursery schools, accredited centers for early childhood education and care, etc.) | |
| II. Disaster recovery, disaster prevention and reduction projects | 1256.7 |
| (1) Disaster recovery projects | 343.6 |
| Restore damaged civil engineering facilities etc. | |
| (2) Disaster prevention and reduction projects | 913.1 |
| Disaster prevention and reduction measures for avoiding natural disaster risk; disaster prevention and reduction measures for schools etc. | |
| III. Measures for realizing comprehensive fundamental principles of TPP, etc. | 346.5 |
| Consolidate small agricultural fields and convert paddies to dry field etc., cluster the livestock industry | |
| IV. Measures for other urgent issues | 621.9 |
| (1) Secure peace and security of people's lives | 306.4 |
| Ensure stable operation of the Self-Defense Forces; cope with ballistic missile attacks | |
| (2) Others | 315.4 |
| Total Additional Expenditure | 2.7 trillion yen |

Source: Made by MHRI based upon Ministry of Finance

[Economic impact of the supplementary budget]

| | National expenditure (Trillion yen) | Economic impact | | |
|---|-------------------------------------|-----------------------|--------------------------------|--------------------------------|
| | | Cumulative total | | Boost to FY2018 |
| | | Amount (Trillion yen) | Contribution to GDP (% points) | Contribution to GDP (% points) |
| Total | 2.55 | 2.73 | 0.50 | 0.29 |
| Personal consumption + housing investment | 0.16 | 0.04 | 0.01 | 0.01 |
| Investment in plant and equipment | 0.83 | 0.59 | 0.11 | 0.05 |
| Public demand | 1.56 | 2.09 | 0.38 | 0.23 |
| Government consumption | 0.43 | 0.43 | 0.08 | 0.08 |
| Public investment | 1.13 | 1.67 | 0.30 | 0.15 |

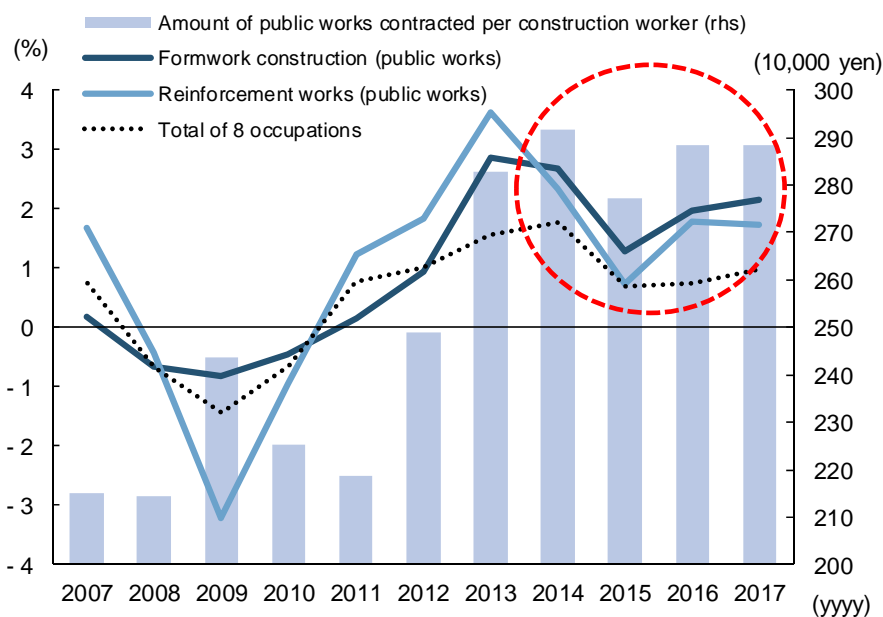
- Note:
1. Factors not having an impact on GDP are excluded from this calculation when considering the difference in the amount of expenditure in the supplementary budget
 2. Calculated by MHRI based on information available at the time of writing. The results need to be considered allowing for considerable margin of error.
 3. Some sections do not total due to rounding.

Source: Made by MHRI based upon each Ministry and Agencies' materials concerning the FY2017 supplementary budget

④ Policy stimulus (1): however, there are risks of delay in progress of public works due to labor constraints

- If progress in public works is delayed, it could limit the economic impact of the supplementary budget.
 - Given the increase of public works under the Abe administration, the shortage ratio for public works occupations has been rising.
 - The amount of unspent public works-related expenditures in the previous fiscal year (the unnecessary amount + amount brought forward to the following fiscal year), more than 30% of the budget, is exceeding the amount of budget supplementation.

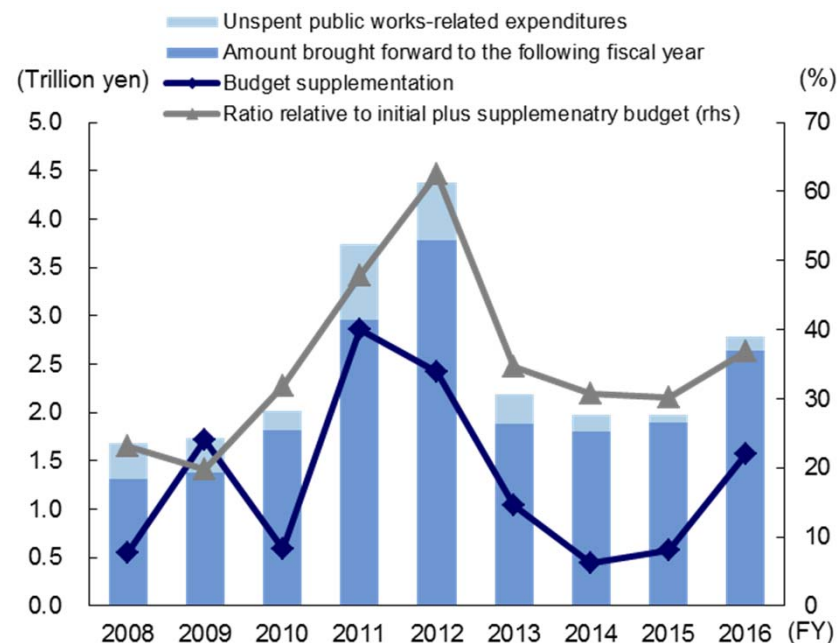
[Amount of public works contracted + shortage ratio for public works occupations]



Note: The shortage ratio is (the number of workers the companies wanted, but were unable to secure - the number of workers that were secured but were surplus to requirements) / (the number of workers secured + the number of workers the companies wanted, but were unable to secure) x 100

Source: Made by MHRI based upon three construction surety companies, *Public works prepayment surety statistics* (in Japanese) and Ministry of Land, Infrastructure, Transport and Tourism, *Survey on supply and demand of construction labor* (in Japanese)

[Unspent public works-related expenditures]



Source: Made by MHRI based upon Ministry of Finance

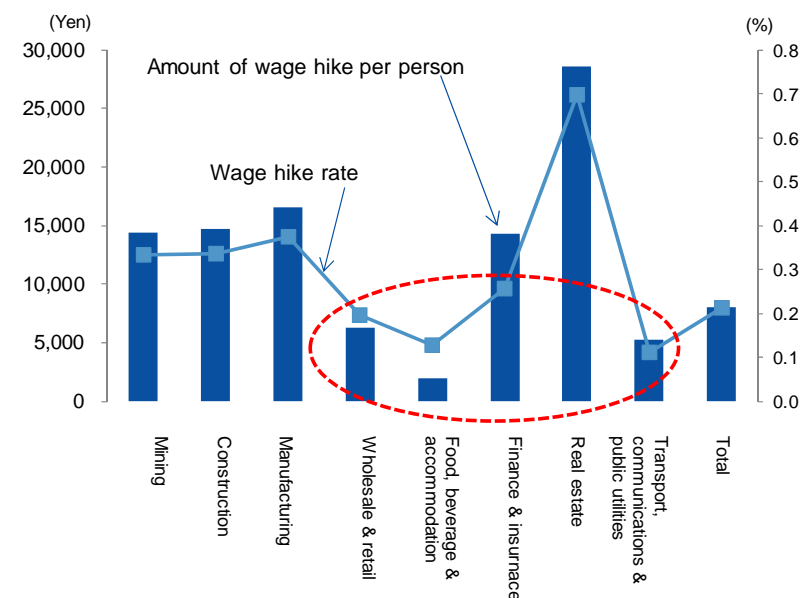
④ Policy stimulus (2): past tax system to spur income growth only had limited effect

- The wage hike effect from the tax system to spur income growth, introduced in FY2013, was approximately 453.9 billion yen in FY2012 (approximately 8,000 yen per employee), equivalent to a wage hike rate of about 0.21% (relative to FY2012).
 - By company size, whereas the wage hike among large enterprises was 353.5 billion yen (wage hike rate of 0.36%), the wage hike was only 100.4 billion yen (wage hike rate of 0.09%) among small enterprises.
 - By industry, the wage hike impact was inadequate in industries with comparatively low nominal wages such as wholesale & retail, and food, beverages & accommodation.
 - Since the measures did not apply to loss-making companies, this tax system alone did not have much of an impact to raise wages.

[Impact of wage hikes by size of enterprises]

| Category | Amount of wage hike (100 million yen) | Wage hike rate (%) | Average annual wage hike rate (%) |
|-------------------|---------------------------------------|--------------------|-----------------------------------|
| Large enterprises | 3,535 | 0.36 | 0.12 |
| Small enterprises | 1,004 | 0.09 | 0.03 |
| Total | 4,539 | 0.21 | 0.07 |

[Impact of wage hikes by industry]



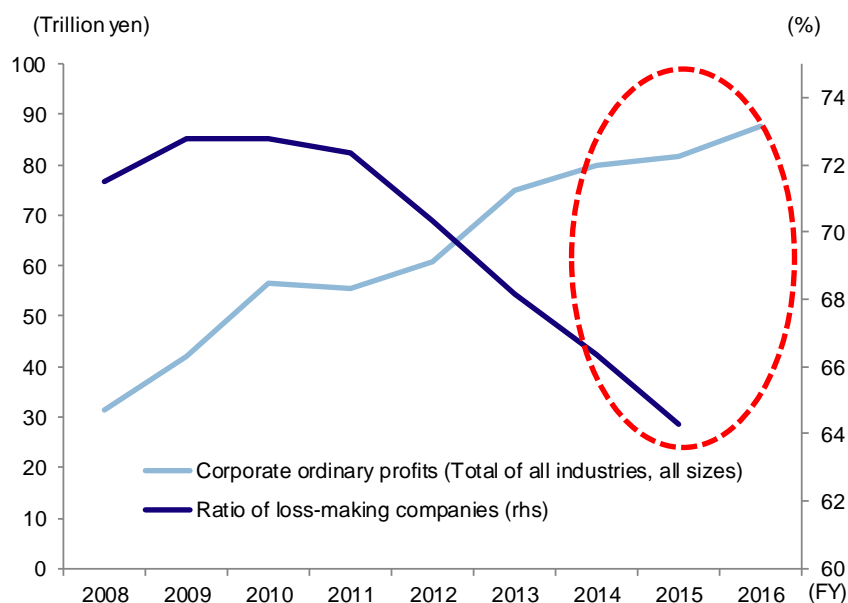
Note: Calculating the policy impact with reference to Kato, Motohashi and Tsutsumi (2017) by the proportion of companies whose decision to hike wages was boosted by “the amount applicable to the tax system / rate of tax deductions (0.1) x tax system” (18.8% for large enterprises, 7.7% for small enterprises).

Source: Made by MHRI based upon Ministry of Finance, Deloitte Tohmatsu Consulting LLC (2015), and Kato, T., Motohashi, N., Tsutsumi, M., 2017. “Extracting a wage and income related policy impact under Abenomics (in Japanese)

④ Policy stimulus (2): FY2018 tax system reform raises the hurdles for application of the tax system to spur income growth

- The amount of tax credits under the tax system to spur income growth has been expanded under the FY2018 tax reform framework.
 - Considering that corporate profits are improving and the ratio of loss-making companies has fallen in recent years, the number of newly qualifying companies may increase.
 - However, the revised qualification criteria requires nominal wages (i.e., the average wages per employee, not the total amount of wages paid) to increase by 3% against FY2017 levels. Given the high hurdles for qualification, the policy impact could be limited.

[Corporate profits and ratio of loss-making companies]



Source: Made by MHRI based upon Ministry of Finance, *Financial Statement Statistics of Corporations by Industry* and National Tax Agency, *Company Basic Survey*

[Outline of revised tax system]

| | Old system | New system (Main points of FY2018 Tax Reform) |
|-----------------------|---|--|
| Wage hike criteria | <ul style="list-style-type: none"> • The proportion of increase in wages relative to FY2012 is 3% in FY2015, 4% in FY2016 and 5% or more in FY2017 (3% or more for small and medium-sized companies) • Amount of wages paid is above previous year • Amount of average wages paid exceeds previous year (2% or more for large enterprises in FY2017) | <ul style="list-style-type: none"> • Growth in the average wage is 3% or more from the previous year (1.5% or more for small and medium-sized companies) |
| Other criteria | | <ul style="list-style-type: none"> • Domestic investment counts for 90% or more of depreciation cost in the current fiscal year |
| Amount of tax credits | <ul style="list-style-type: none"> • 10% of the amount of increase in wages paid • Upper limit of 10% of the corporations tax for the current period (20% for small and medium-sized companies) • Measures on top of the increase in the amount of wages paid in FY2017 | <ul style="list-style-type: none"> • 15% of the amount of increase in wages paid * 20% of the amount of increase in wages paid, when the rate of increase in training costs is 20% or more, * 25% of the amount of increase in wages paid, when small and medium-sized companies achieve 25% or more in the rate of increase in the average amount of wages paid, * Upper limit of 20% of the corporations tax for the current period |

Source: Made by MHRI based upon Ministry of Finance

BOJ: ongoing gap between the rate of increase in prices and the target level makes a policy shift unlikely

- ❑ Monetary policy will most likely be left unchanged. The BOJ will monitor price trends during 2018 taking account of the wage hikes from the *shunto* spring labor-management wage negotiations and corporate stance on price setting. Policy adjustments are unlikely in the second half of the year ahead of the Abe administration's decision on the consumption tax hike.
- ❑ In view of the fact that the rate of rise of the CPI has only risen to about 1% despite progress in wage hikes in the *shunto* spring wage negotiations, the BOJ will most likely maintain current policy during the forecast period. However, amid growing concerns about the side-effects of prolonged low interest rates, there could be a second comprehensive assessment.

[Outlook for Economic Activity and Prices (January 2018)]

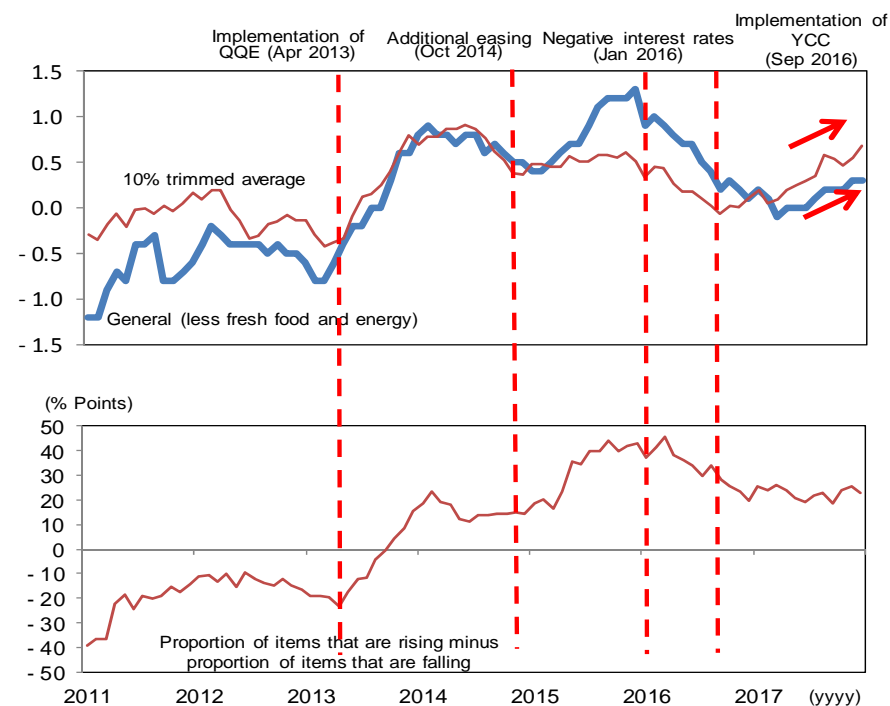
(Y-o-y % change)

| | Real GDP | CPI (All items less fresh food) | |
|--------------------------------|------------------------|---------------------------------|---|
| | | | Excluding effects of consumption tax hike |
| FY2017 | +1.8 to +2.0 (+1.9) | +0.7 to +1.0 (+0.8) | |
| Forecasts made in October 2017 | +1.7 to +2.0 (+1.9) | +0.7 to +1.0 (+0.8) | |
| FY2018 | +1.3 to +1.5 (+1.4) | +1.3 to +1.6 (+1.4) | |
| Forecasts made in October 2017 | +1.2 to +1.4 (+1.4) | +1.1 to +1.6 (+1.4) | |
| FY2019 | +0.7 to +0.9 (+0.7) | +2.0 to +2.5 (+2.3) | +1.5 to +2.0 (+1.8) |
| Forecasts made in October 2017 | +0.7 to +0.8 (+0.7) | +2.0 to +2.5 (+2.3) | +1.5 to +2.0 (+1.8) |

Note: Forecasts of the Majority of Policy Board members. Figures in brackets indicate the median of the Policy Board members' forecasts (point estimates)

Source: Made by MHRI based upon Bank of Japan materials

[Basic price trends]



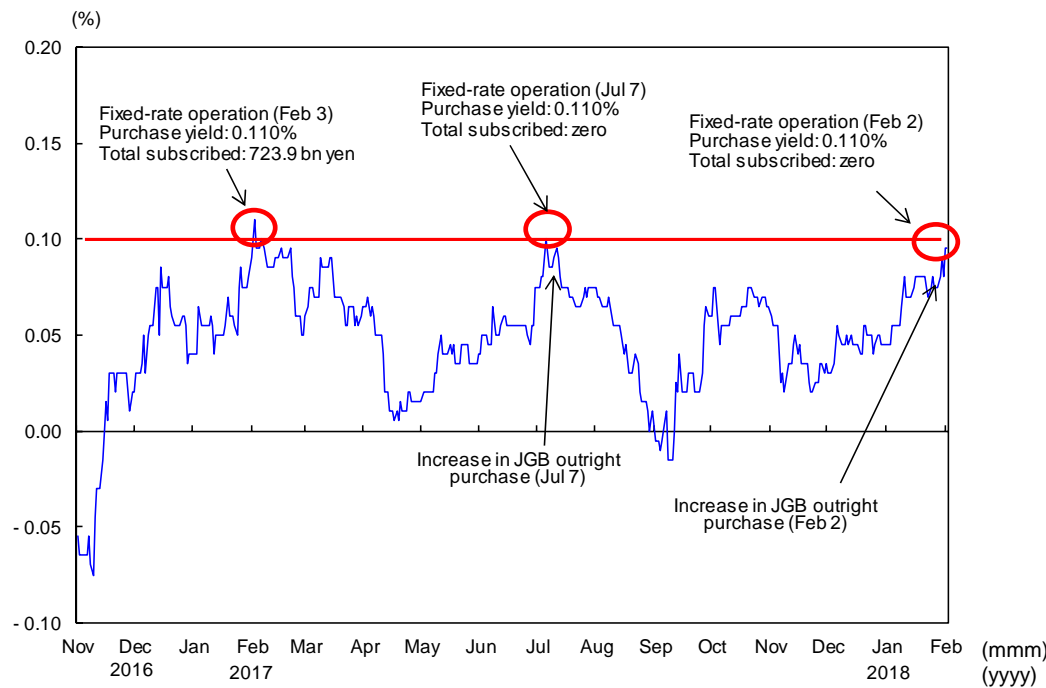
Note: 10% trimmed mean: calculated by deducting 10% on a weight base from each of the item with the largest value and item with the smallest value

Source: Made by MHRI based upon Bank of Japan

Japanese interest rates: 10Y JGB yields are close to 0.1%. Speculation is lingering on a BOJ policy shift

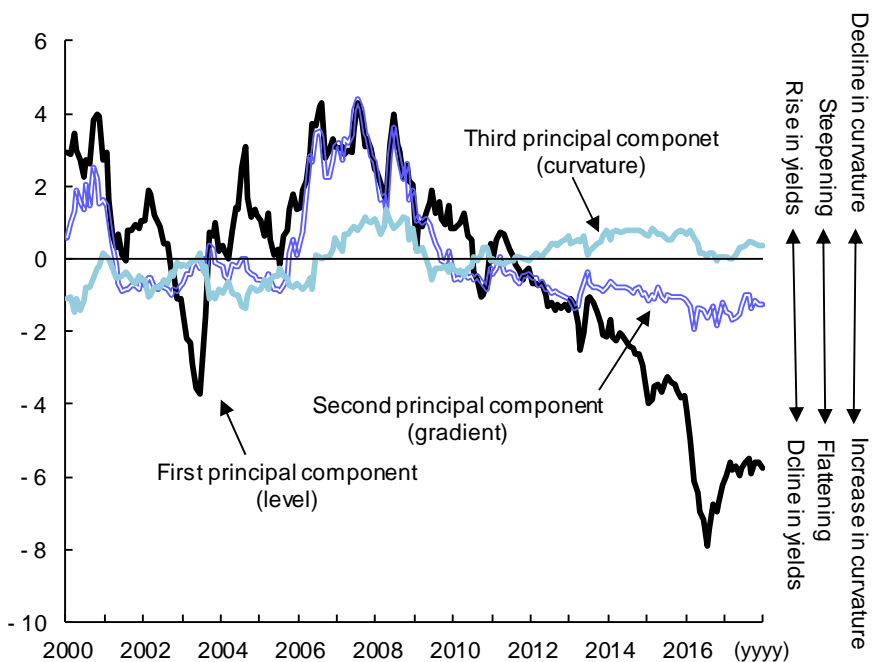
- 10Y JGB yields are low due to the BOJ's yield curve control. Speculation on a BOJ policy shift have a tendency to rise amid expectations that the BOJ will reduce the size of its outright purchases of JGBs, keeping yields close to 0.1%. The reduction in market issuance of JGBs is likely to inhibit a rise in yields because of demand and supply factors.
 - Ahead of the government's decision on the consumption tax hike during 2018, the BOJ is likely to conduct fixed-rate operations when there is increased upward pressure on yields.
 - The yield curve has not steepened even after the introduction of the yield curve control policy. Investment conditions remain difficult for life insurance companies and pension funds.

[JGB yields and fixed-rate operations]



Source: Made by MHRI based upon Bloomberg materials

[Principal component analysis of the yield curve]

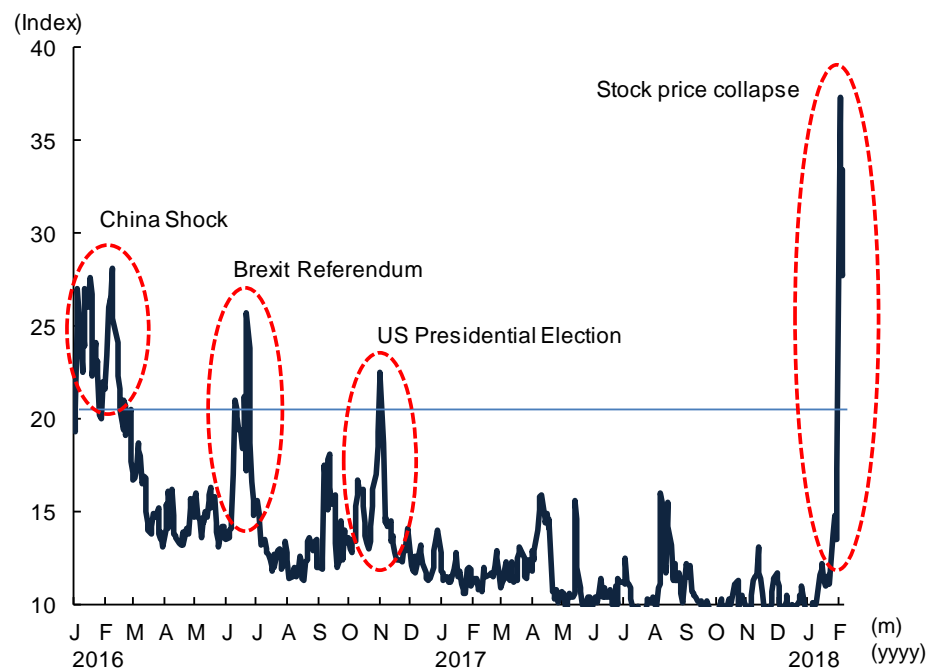


Source: Made by MHRI based upon Bloomberg materials

Financial markets: need to be wary of the risk of a rise in US and European long-term yields

- ❑ The VIX Index, which is an indicator of investor uncertainty, surged to above 50 due to the sudden drop in share prices. Market instability could continue for awhile.
- ❑ Inflation expectations have risen in the US bond market. In the US, expectations toward economic stimulus by tax cuts and infrastructure are prone to rise, making it necessary keep a close eye upon the risk of the rise of long-term yields. Amid a pause in investment in US Treasuries by overseas investors, Japanese and European monetary policy will also serve as factors affecting US yields.

[VIX index]



Note: The VIX Index is an indicator of investor anxiety conveyed by the volatility of the S&P500 stock index option prices.

Source: Made by MHRI based upon Bloomberg materials

[Inflation expectations in the Japanese, US and German bond markets]

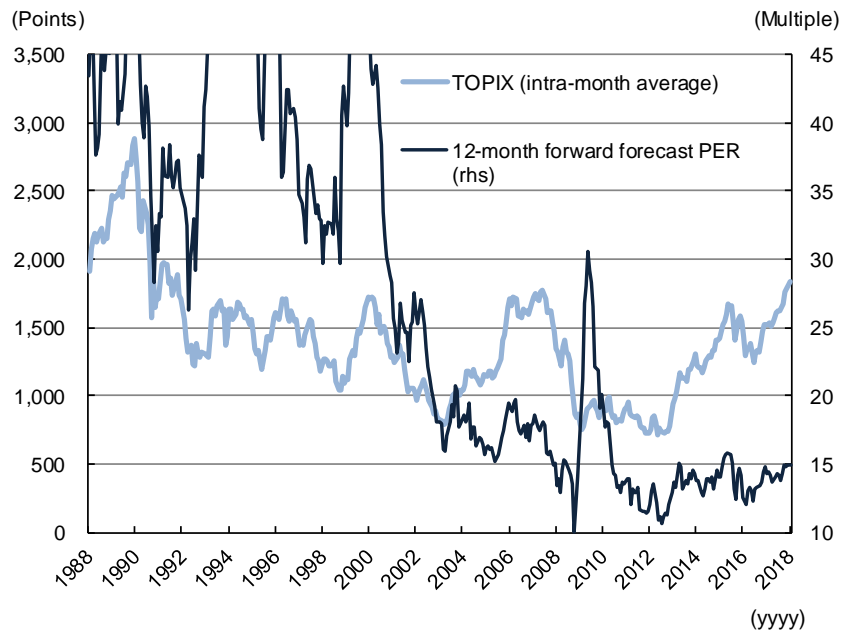


Note: US: 10Y BEI; Europe: 5 year-forward 5-year inflation swap; Japan: 10Y BEI
Source: Made by MHRI based upon Bloomberg materials

Japanese stocks: no sense of being overvalued, rising in line with the pace of improvement in earnings

- ❑ While Japanese stocks have maintained a strong upward trend since the beginning of 2018, they have recently declined due to the appreciation of the yen and fall of US stocks.
- ❑ The upside will be limited in the near term due to concerns regarding the appreciation of the yen and fall of US stocks. However, in the absence of market perceptions that Japanese stocks are overvalued, stock price levels should step up along with the rise of expectations toward the improvement of FY2018 earnings.
 - Having said so, the pace of rise should slow down in 2019 in the runup to the consumption tax hike.

[Long-term trend in TOPIX and forecast EPS]



Source: Made by MHRI based upon Thomson Reuters

[TOPIX price matrix]

| | | Current level | | | | |
|------------------------------------|------------------------------|----------------|-------|-------|-------|-------|
| | | PER (Multiple) | | | | |
| 12-month forward forecast EPS (\$) | Recent market forecast 124.4 | 13 | 14 | 15 | 16 | 17 |
| | | 110 | 1,430 | 1,540 | 1,650 | 1,760 |
| 115 | 1,500 | 1,610 | 1,730 | 1,840 | 1,960 | |
| 120 | 1,560 | 1,680 | 1,800 | 1,920 | 2,040 | |
| 125 | 1,630 | 1,750 | 1,880 | 2,000 | 2,130 | |
| 130 | 1,690 | 1,820 | 1,950 | 2,080 | 2,210 | |
| 135 | 1,760 | 1,890 | 2,030 | 2,160 | 2,300 | |
| 140 | 1,820 | 1,960 | 2,100 | 2,240 | 2,380 | |

Level anticipated for late 2018 to early 2019

Source: Made by MHRI based upon Datastream

Foreign exchange: expectations toward tapering of monetary easing in Japan and Europe and interest rate hikes exert upward pressure on the yen and the euro

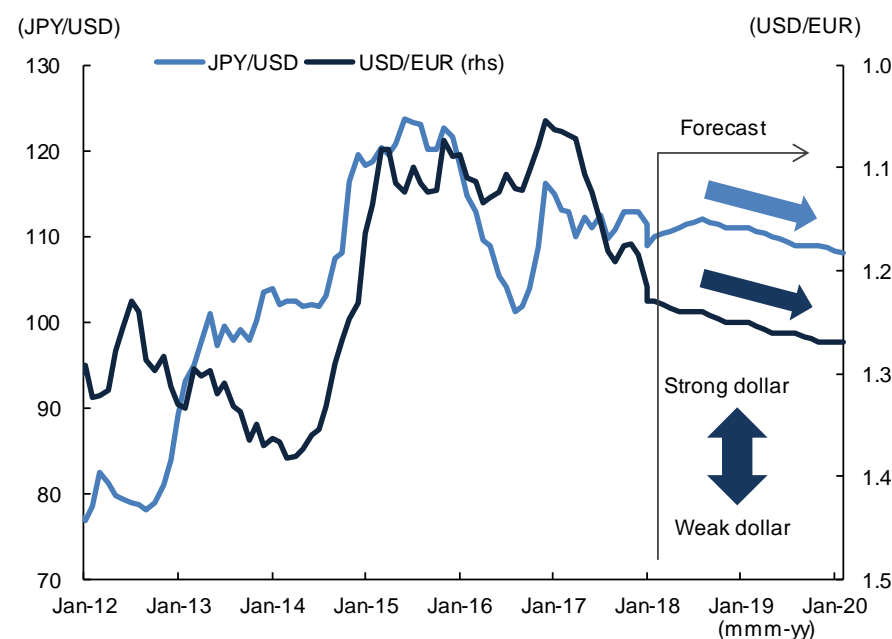
- ❑ The yen and the euro are both expected to appreciate against the dollar toward FY2019.
 - Expectations for tapering of US and European monetary easing exert upward pressure on the yen and the euro.
 - ✓ While this has already been priced into the market to some extent, the euro is expected to appreciate even further once change in ECB monetary policy is confirmed.
 - ✓ Although a major change in BOJ monetary policy is unlikely, the yen remains subject to upward pressures due to lingering market expectations for a tapering of monetary policy.
- ❑ The end of the period of US interest rate hikes will put downward pressure on the dollar along with the ebb of expectations toward future US rate hikes.

[Impact of monetary policy shifts upon foreign exchange rates]

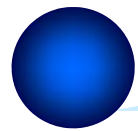
| | Anticipated monetary policy shifts in FY2018-19 | Impact on foreign exchange rates |
|--------|---|--|
| US | End of US interest rate hikes | Ebb of expectations toward future interest rate hikes serves as dollar-weakening pressure |
| Europe | End of ECB asset purchases Contraction in deposit facility rate Increase in interest rate on major refinance operations | Upward pressure on the euro due to expectations for contraction in ECB monetary easing and interest rate hikes |
| Japan | - | Upward pressure on the yen persists due to lingering expectations for contraction in BOJ monetary easing |

Source: Made by MHRI

[Outlook for JPY/USD and USD/EUR]



Source: Made by MHRI based upon Bloomberg



III. The Asian Economies

**Even though Asia's economic expansion will gradually moderate,
China's economic slowdown should be benign**

The Asian Economies: the pace of economic growth is forecast to moderate in 2019

- ❑ In the Oct-Dec quarter of 2017, the Chinese economy grew at the same pace as the previous quarter, maintaining firm growth. The full year growth rate accelerated for the first time in 7 years, mainly due to the boost from net exports. Despite firm domestic consumption, investment has slowed.
- ❑ In terms of the outlook for China, the Central Economic Work Conference (December 2017), which deliberated policy direction, turned out to tolerate a decline in the growth rate. We thus expect policies to curb speculation and excessive production capacity to be stepped up. The growth rate will gradually decline, but within the scope that ensures the plan to double incomes from 2010 to 2020.
- ❑ In Asian economies (ex. China), while growth rates in the Oct-Dec quarter slowed from the high growth in the Jul-Sep quarter in some countries, overall the economies remained firm. Throughout the year 2017, the global economy accelerated with exports among each of the countries serving as the drivers of growth. Furthermore, domestic demand also grew strongly in the ASEAN.
- ❑ In terms of the outlook for the Asian economies (excluding China), we expect growth in the global economy to gradually peak toward 2019. We anticipate a waning of overall momentum for economic expansion, particularly exports. However, consumption is firm in the ASEAN5 on the back of favorable employment conditions. The Indian economy is also forecast to recover as the slowdown in 2017 due to temporary factors runs its course.
- ❑ As a result of the foregoing, the pace of Asia's economic growth as a whole is forecast to moderate in 2019.

Asia: compared to China and the NIEs, ASEAN is firm and India is stable

- ❑ China: in view of the reinforcement of reforms to curb speculation and adjust excessive production capacity, we expect the Chinese economy to gradually slow down, albeit at a pace which ensures its plan to double income by 2020.
- ❑ NIEs: given the NIEs high dependence upon exports, their pace of economic expansion will moderate, reflecting global economic trends.
- ❑ ASEAN: despite a slight slowdown of exports, the decline in economic growth will remain limited due to the support from domestic demand such as firm consumption reflecting favorable employment conditions.
- ❑ India: the Indian economy will pick up in 2018, given the fading impact of factors such as the abolition of high-denomination bank notes. In 2019, the Indian economy will remain on stable footing supported mainly by domestic demand, given its low dependence upon exports.

[Outlook on the Asian economies]

| | (Units: %) | | | | | | (Units: % points) | |
|---|------------------|------------------|------------------|--------------------|--------------------|--------------------|---|------|
| | 2014 (Actual) | 2015 (Actual) | 2016 (Actual) | 2017 (Forecast) | 2018 (Forecast) | 2019 (Forecast) | 2017 (Change from December forecast) | 2018 |
| Asia | 6.4 | 6.2 | 6.2 | 6.1 | 6.2 | 6.0 | 6.1 | 6.1 |
| China | 7.3 | 6.9 | 6.7 | 6.9 | 6.5 | 6.4 | 6.8 | 6.4 |
| NIEs | 3.5 | 2.1 | 2.2 | 3.1 | 2.8 | 2.5 | 3.1 | 2.6 |
| South Korea | 3.3 | 2.8 | 2.8 | 3.1 | 3.0 | 2.6 | 3.2 | 2.9 |
| Taiwan | 4.0 | 0.8 | 1.4 | 2.9 | 2.5 | 2.4 | 2.6 | 2.3 |
| Hong Kong | 2.8 | 2.4 | 2.0 | 3.6 | 2.4 | 2.2 | 3.5 | 2.0 |
| Singapore | 3.6 | 1.9 | 2.0 | 3.6 | 3.1 | 2.5 | 3.3 | 2.6 |
| ASEAN5 | 4.6 | 4.9 | 4.9 | 5.3 | 5.3 | 5.1 | 5.3 | 5.3 |
| Indonesia | 5.0 | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 | 5.1 | 5.2 |
| Thailand | 1.0 | 3.0 | 3.3 | 3.9 | 3.5 | 2.9 | 3.9 | 3.5 |
| Malaysia | 6.0 | 5.0 | 4.2 | 5.9 | 5.4 | 5.0 | 5.9 | 5.4 |
| The Philippines | 6.1 | 6.1 | 6.9 | 6.6 | 6.6 | 6.5 | 6.5 | 6.7 |
| Vietnam | 6.0 | 6.7 | 6.2 | 6.8 | 6.6 | 6.5 | 6.7 | 6.6 |
| India | 7.0 | 7.5 | 7.9 | 6.3 | 7.3 | 7.3 | 6.3 | 7.3 |
| Australia | 2.5 | 2.5 | 2.6 | 2.3 | 2.8 | 2.7 | 2.3 | 2.8 |
| (Reference) Asia ex. China and India | 4.2 | 3.8 | 3.9 | 4.5 | 4.3 | 4.1 | 4.5 | 4.3 |
| (Reference) Asia ex. China | 5.4 | 5.4 | 5.7 | 5.3 | 5.7 | 5.6 | 5.3 | 5.7 |

Note: Real GDP growth rate (y-o-y). Average figures are calculated from the 2015 GDP share from the IMF (purchasing power parity base)

Source: Made by MHRI based upon statistics of the relevant countries and regions

Asia: overall economic expansion has been driven by exports to date

- ❑ Economic growth among the countries of Asia generally remained firm in the Oct-Dec quarter of 2017 even though some countries fell short of the high levels of growth in the Jul-Sep quarter.
- ❑ In the countries of Asia, economic expansion was generally driven by exports throughout 2017, backed by the improvement of the global economy.
 - ASEAN maintained strong domestic demand, but India was notable for its slowdown in domestic demand attributed to factors such as the abolition of high-denomination bank notes.

[Rate of growth in real GDP]

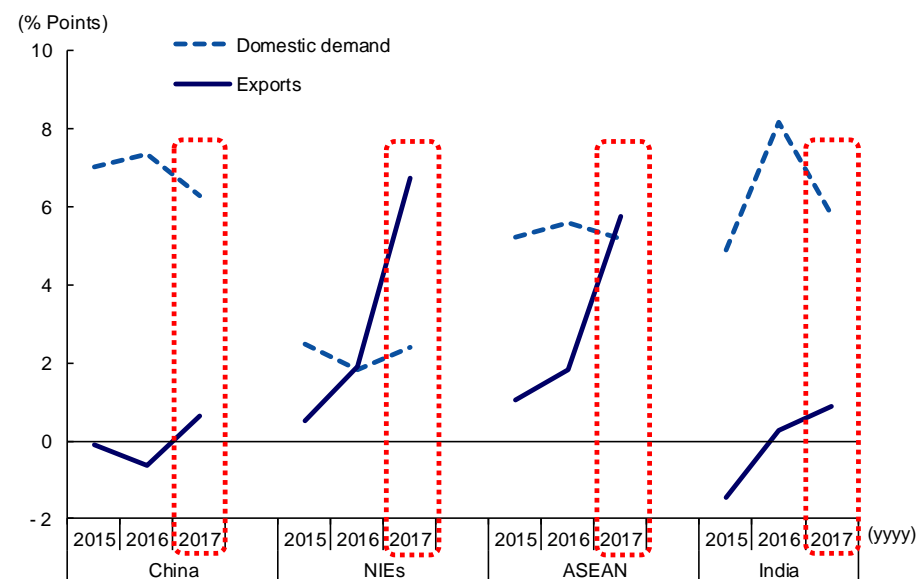
(Y-o-y % change, annualized)

| | 2016 | | | | 2017 | | | |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec | Jan-Mar | Apr-Jun | Jul-Sep | Oct-Dec |
| South Korea | 2.0 | 3.7 | 1.9 | 2.0 | 4.3 | 2.4 | 6.3 | -0.9 |
| Taiwan | 3.2 | 1.8 | 4.0 | 2.6 | 2.3 | 1.1 | 5.7 | 4.3 |
| Hong Kong | -1.2 | 6.0 | 3.2 | 5.0 | 2.8 | 4.5 | 2.0 | N/A |
| Singapore | 2.9 | 1.5 | 0.8 | 9.7 | -1.5 | 2.8 | 11.2 | 2.1 |
| Thailand | 4.0 | 3.8 | 2.2 | 2.0 | 5.3 | 5.7 | 4.0 | N/A |
| Malaysia | 3.1 | 4.3 | 5.7 | 5.1 | 7.5 | 5.2 | 7.2 | 3.6 |
| The Philippines | 6.1 | 7.9 | 5.5 | 7.0 | 5.5 | 7.9 | 6.9 | 6.2 |

(Y-o-y % change)

| | | | | | | | | |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|
| China | 6.7 | 6.7 | 6.7 | 6.8 | 6.9 | 6.9 | 6.8 | 6.8 |
| Indonesia | 4.9 | 5.2 | 5.0 | 4.9 | 5.0 | 5.0 | 5.1 | 5.2 |
| Vietnam | 5.5 | 5.8 | 6.6 | 6.7 | 5.2 | 6.3 | 7.5 | 7.7 |
| India | 9.1 | 7.9 | 7.5 | 7.0 | 7.0 | 5.7 | 6.3 | N/A |

[Components of demand (contribution to growth rate)]



Note: NIEs and ASEAN: the simple average for the level of contribution by each country. China's exports are net exports.

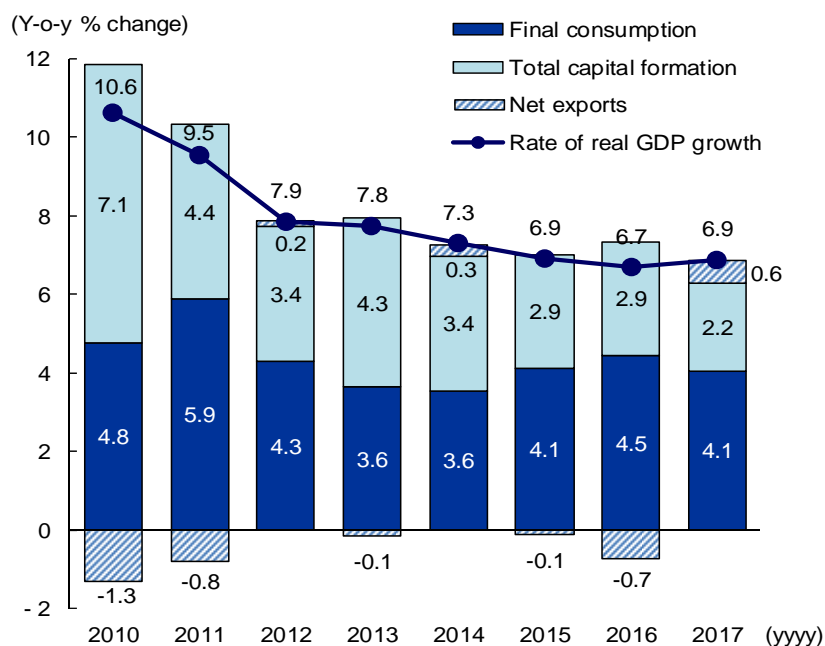
Source: Made by MHRI based upon the relevant country and region's statistics, and CEIC Data

Source: Made by MHRI based upon the relevant country's and region's statistics, and CEIC Data

China: the economy remains firm due to increased external demand; a moderate slowdown is forecast

- ❑ China's real GDP grew +6.8% y-o-y in the Oct-Dec quarter of 2017 (c.f., Jul-Sep quarter: +6.8%), remaining firm.
 - 2017 full year growth was +6.9% y-o-y, the first increase in 7 years. The growth rate was boosted by the shift to positive net exports along with the increase of exports. Even though final consumption remained firm, the contribution to total capital formation was at its lowest level since 2000.
 - ✓ As for investment in fixed assets (real terms), manufacturing and real estate development slumped over the year-end. Even though the growth of infrastructure investment was high, it slowed down.
- ❑ The Central Economic Work Conference, held in December 2017 turned out to tolerate a moderation of economic growth. The economy is forecast to gradually slow in 2018 due to factors such as tighter regulatory controls.

[Real GDP growth (contribution by components of demand)]



Source: Made by MHRI based upon National Bureau of Statistics China

[Outcomes of Central Economic Work Conference]

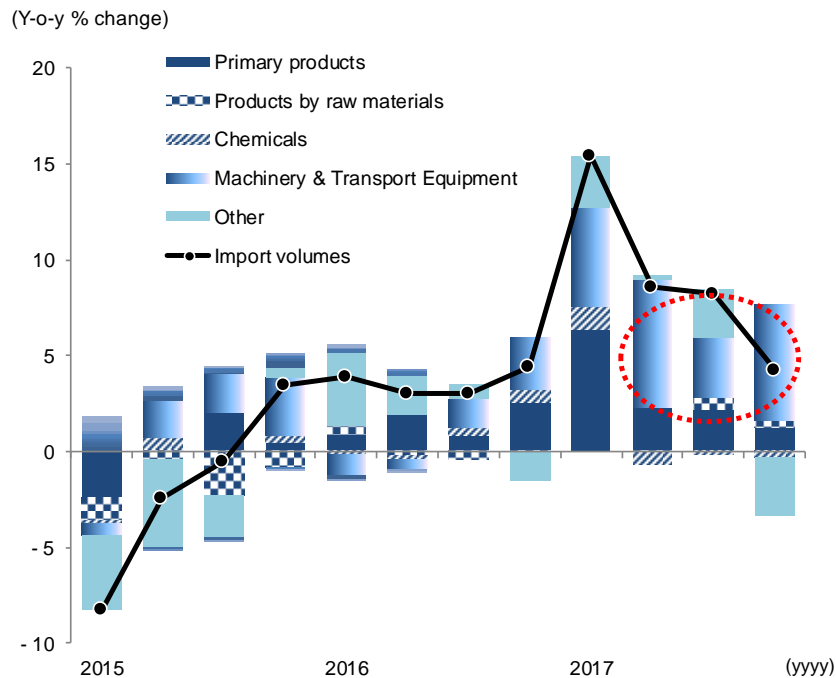
| | Previous time | This time |
|----------------------|--|--|
| Basic policy | <ul style="list-style-type: none"> • 2017 is the year to deepen supply-side structural reforms • Progress in supply side structural reforms is key, and a victorious 19th National Congress of the Communist Party of China must be held with achievements of superior outcomes through appropriate expansion of total demand | <ul style="list-style-type: none"> • Promotion of "High quality development" is an indispensable foundation • Progress 'battle with the 3 challenges' of <u>preventing major risks, targeted poverty reduction and pollution control, by sticking to reforms</u> with a focus on supply-side structural reforms |
| Important principles | "Seeking progress while maintaining stability". <u>Stability was made the basic tone for the year, with a certain degree of progress to be made in key sectors on the basis of stability</u> | Continue with "Seeking progress while maintaining stability". <u>Stability and progress have become a single unit</u> |
| Fiscal policy | Proactive fiscal to be <u>more proactive and effective</u> | No change to initiatives for proactive fiscal policy |
| Monetary policy | Maintain prudent neutral monetary policy | Prudent monetary policy should be kept neutral |
| Key activities | <ol style="list-style-type: none"> ① Focus on progressing five tasks (cutting excess industrial capacity, destocking, de-leveraging, lowering corporate costs, and improving weak links in supply) ② Deepen supply-side reform for agriculture ③ Stimulate the real economy ④ Promote steady and sound development of the real estate market | <ol style="list-style-type: none"> ① Deepen supply-side structural reforms ② Extract dynamism of each city ③ Implement strategy for promoting rural areas ④ Implement strategy for regional development and cooperation between cities ⑤ Promote the formation of a new framework for overall liberalization ⑥ Improve living standards and social security ⑦ Increase housing supply, accelerating the establishment of a housing system for both purchase and renting ⑧ Increase pace of ecological development and enhance environmental protection |

Source: Made by MHRI based upon websites of the Central People's Government of the Republic of China

China: imports are firm, particularly for semiconductor related imports. Imports of high-tech products will be firm

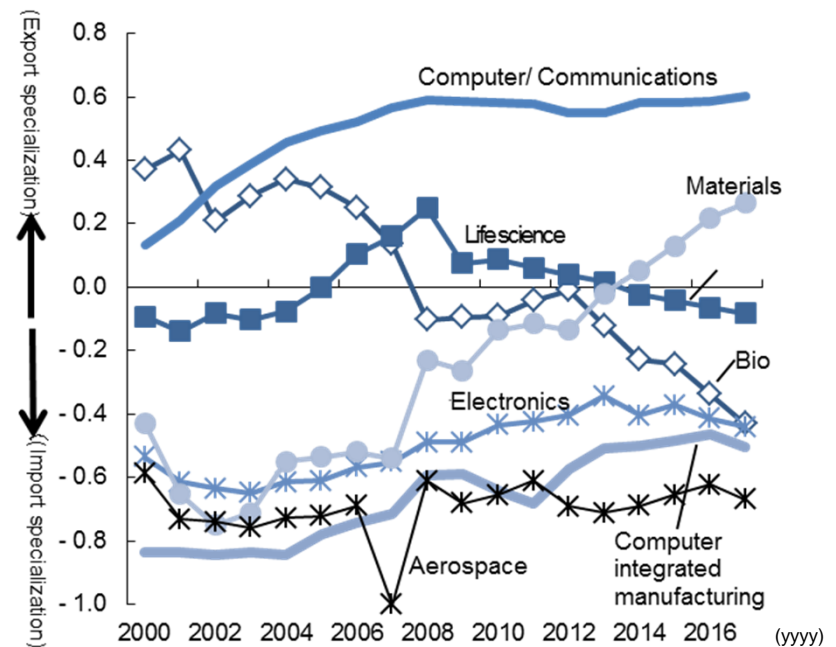
- Although growth in the Import Volume Index for the Oct-Dec quarter of 2017 fell substantially, machinery imports grew. Looking forward, imports of high-tech products should remain firm.
 - Semiconductors contributed to about 50% of the growth in machinery imports on a value basis for the FY2017 full year, while semiconductor manufacturing equipment contributed 8%, revealing that semiconductor related imports account for more than half.
 - Apart from computers, communications and materials, high-tech products still tend to be specialized imports. We forecast that high-tech imports will remain firm for the near term due to upgrading in the manufacturing sector.

[Breakdown of Import Volume Index]



Note: Factor contribution weighted using the FY2015 value index
 Source: Made by MHRI based upon Customs General Administration, China

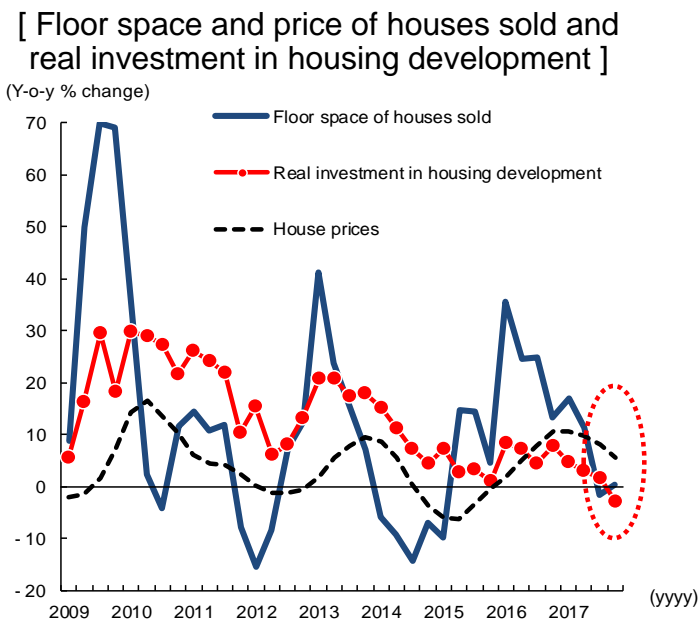
[Trade specialization coefficient for high-tech products]



Note: Trade specialization coefficient = net export/ trade amount
 Source: Made by MHRI based upon Customs General Administration, China

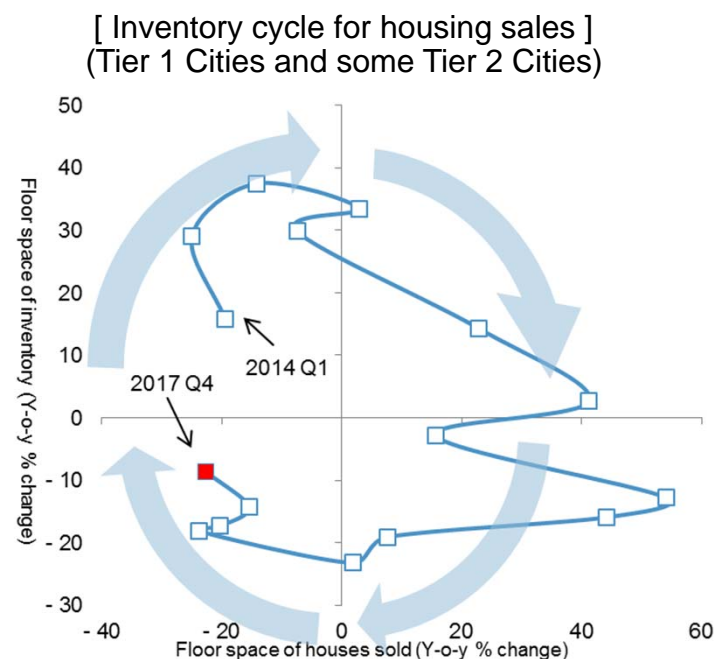
China: housing investment is subdued reflecting the reinforcement of policy measures to curb speculative housing investment and financial regulations

- Housing investment was negative y-o-y in the Oct-Dec quarter of 2017 due to the reinforcement of policy measures to curb speculative housing investment. Investment should remain low for the near term.
 - Adjustments in sales and prices, particularly in Tier 1 and 2 Cities persist, weighing on investment. Tier 3 cities, which are currently booming, should also enter an adjustment cycle.
 - From 2018 onward, constraints upon loans to real estate developers due to the reinforcement of financial regulations will serve as shackles and keep housing investment subdued. However, the recovery of inventories in Tier 1 and 2 Cities, which have taken the lead on adjustments, will serve as underpinnings and keep investment from falling out.
- ✓ The inventory cycles for Tier 1 and 2 Cities indicate the progress of adjustment, providing prospects that the real estate market may enter an inventory build-up phase from around the second half of 2018.



Note: Investment in housing development is made real using the deflator that weights the average for the fixed asset investment price index (construction and installation investment) using the amount of investment by real estate use 2016

Source: Made by MHRI based upon National Bureau of Statistics China and CEIC Data, Wind



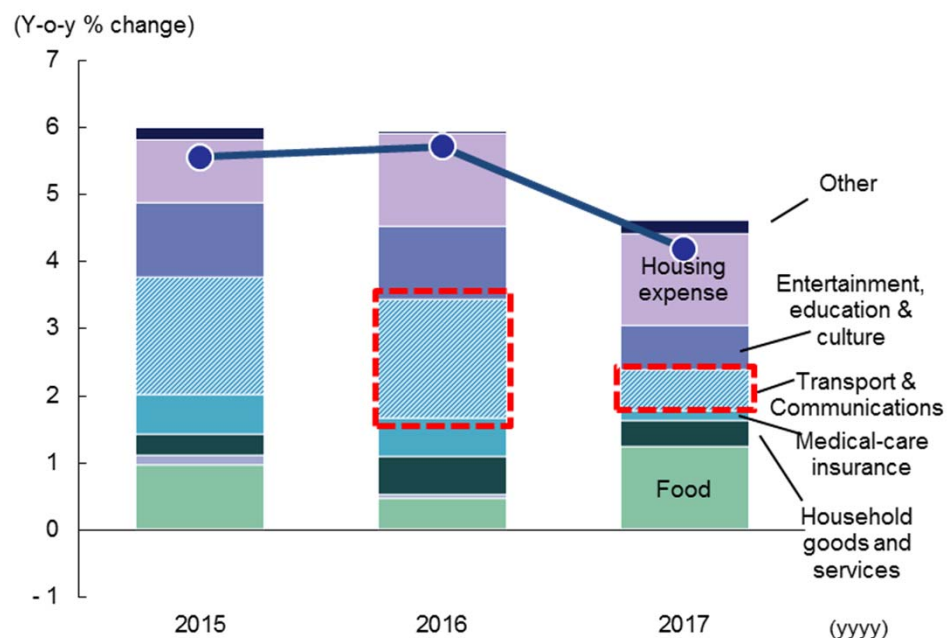
Note: Cities referred to are Tier 1 cities and some Tier 2 cities (Nanjing, Suzhou, Hangzhou, Ningbo, Xiamen and Qingdao)

Source: Made by MHRI based upon National Bureau of Statistics China and CEIC Data, Wind

China: despite solid consumption growth, widening income disparities may weigh on consumption

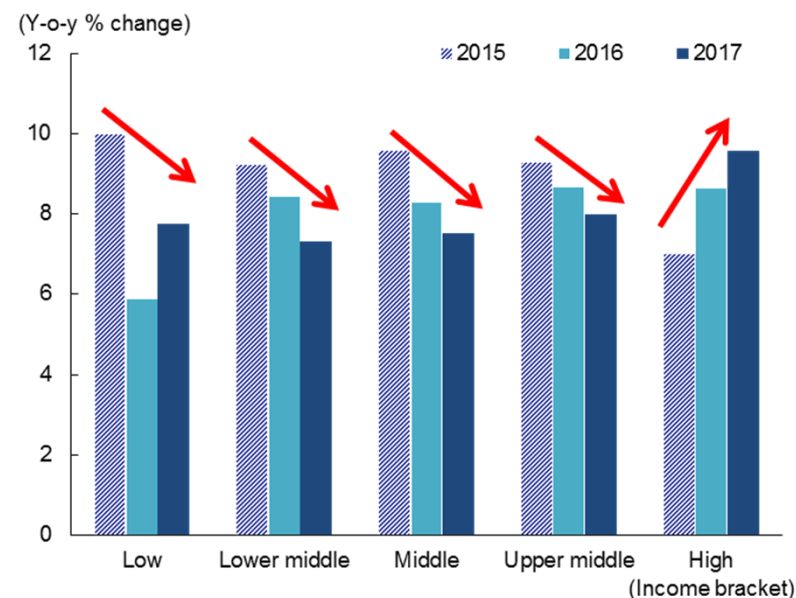
- While the growth of per capita consumption expenditure was firm in 2017, consumer spending slowed mainly in areas such as transport and communications.
 - Although sales of communications equipment was on a par with the previous year, car sales grew only +1.9% y-o-y (c.f., +15.1% in 2016). The sharp contraction stems from the avoidance of gasoline-powered cars triggered by the announcement of NEV regulations (policy to promote new energy vehicles) in September.
- In addition to the avoidance of gasoline-powered cars, the widening disparity of incomes since 2016 such as the improvements in incomes focused upon the high income bracket may also weigh on consumption.
 - The shift of growth into high valued-added industries and increased contribution from property income appear to have exacerbated the disparity in disposable incomes.

[Real consumption expenditure per capita]



Note: Made real with each corresponding series in the CPI
 Source: Made by MHRI based upon National Bureau of Statistics China

[Growth in disposable incomes by income brackets]



Note: Nominal value
 Source: Made by MHRI based upon National Bureau of Statistics China

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