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Japan's Economic Outlook No. 191 <Revised>

How will Japan's economy respond to Trump Shock? In this report we examine the following: (1) Overseas Investment Behavior, (2) Personal Consumption, and (3) How to Improve Economic Statistics

Japan to see real GDP growth of +1.1% in FY16 and +0.9% in FY17, with nominal GDP growth of +1.4% in FY16 and +1.3% in FY17.

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Main Points

- **How will Japan's economy respond to Trump Shock?:** In light of the 1st preliminary Jul-Sep 2016 GDP release (Cabinet Office) we have revised our economic growth outlook. We now forecast real GDP growth of +1.1% in comparison with the previous year for FY16 (+0.9% in the previous forecast), and +0.9% in comparison with the previous year for FY17 (+0.9% in the previous forecast). Japan's economy is expected to recover gradually due to the following domestic factors: (1) growth in real wages, (2) low price of crude oil and improvement in terms of trade, and (3) implementation of an economic stimulus package. However, there is downside risk for Japan's economy, which could arise from the ripple effects of Donald Trump's winning of the recent US presidential election. These are mainly (1) yen appreciation, (2) stock price lows, and (3) world economic slowdown. If nothing else, there is expected to be increasing uncertainty in the world economy in the mid to long-term, coupled with risk-off behavior in the global financial markets, which could cause worldwide stock price lows and a rapid depreciation of the dollar.

- **Overseas investment behaviors of Japanese corporations, and domestic ripple effect:** With both Japan's potential growth rate and expected growth rate at a low level, corporations are beginning to look for growth opportunities in overseas markets. An analysis of the investment behaviors of domestic corporations and their overseas subsidiaries reveals the tendency to take the practical approach and decrease the amount of domestic capex while rerouting resources to Asia and North America. Meanwhile, the divergence between real GDP and real GNI has been widening of late. In addition to improving terms of trade, this is due to

backflow of earnings from overseas subsidiaries to domestic parent companies accompanying increased overseas investments. Based on actual value in FY2015, the positive effect of backflow of overseas profits is estimated to have brought a 3.2 trillion yen improvement in employee compensation and an approximately 2.4 trillion yen increase in nominal personal consumption.

- **Why Does Personal Consumption Remain Stagnant?:** Personal income continues to decline despite the two-and-a-half years which have passed since the 2014 increase in consumption tax. Looking at the short-term factors behind this phenomenon, it is believed that personal consumption has been weighed down by the elimination of the special payment system for the national pension, stagnant growth in disposable income, and a reactionary decline following past economic stimulus measures. Between FY2012 and FY2014, these factors have brought downward pressure on personal consumption totaling 1.3%pt. On the other hand, structural problems may also become a drag on personal consumption in the midterm, including consumers becoming increasingly budget-minded, increasing uncertainty regarding the future, and issues surrounding employment for the younger generation. Hopes are that the government will build a sustainable social security system and speed up efforts to introduce the principle of equal pay for equal work.

- **What is needed to improve Japan's economic statistics?:** Japan's economic statistics compare poorly with those of other countries both in the area of accuracy and prompt reporting. With Japan's potential growth rate on the decline, we believe that it is important to first aim for more accuracy in economic statistics. In considering concrete methods of improving statistics, we performed an analysis using a survey of households. By replacing items within the category of goods which tend to fluctuate widely, we were able to solve the problem of underestimating. On the other hand, no improvement was gained in the category of services even when using figures which complemented the Household Survey. Figures remained weaker than those on the supply-side. Since this may have some effect on underestimating GDP, we believe that related statistics should also be studied closely. Further detailed analyses should be performed in the future in order to uncover problem points and consider means of handling potential problems in a manner appropriate for each statistic.

- **Risk factors facing Japan's economy:** Risk factors for the Japanese economy are: (1) The policies of President Elect Donald Trump, (2) The downward swing of China's economy, (3) Tumult in the economies of emerging nations in response to the US exit strategy, (4) A strong yen / weak stock market situation brought on by risk-off behavior of investors due to geopolitical risk, and (5) Negotiations regarding the UK's withdrawal from the EU (*Brexit*), and deleveraging at EU financial institutions.

- **BOJ's monetary policy:** We expect the BOJ to maintain current monetary policy for the time being. Considering the policy introduced in September to permanently battle deflation, the issue is expected to be creating a more flexible inflation target.

Our assumptions

- Public works spending is expected to increase by +6.8% in FY16, and then decrease by -2.4% in FY17.

- Average exchange rate of Y106.8/$ in FY16, and Y108.3/$ in FY17.

- US real GDP growth of +1.5% in CY16, and +2.1% in CY17.

Contents

Summary

How will Japan's economy respond to Trump Shock?

In light of the 1st preliminary Jul-Sep 2016 GDP release (Cabinet Office) we have revised our economic growth outlook. We now forecast real GDP growth of +1.1% in comparison with the previous year for FY16 (+0.9% in the previous forecast), and +0.9% in comparison with the previous year for FY17 (+0.9% in the previous forecast). Japan's economy is expected to recover gradually due to the following domestic factors: (1) growth in real wages, (2) low price of crude oil and improvement in terms of trade, and (3) implementation of an economic stimulus package. However, there is downside risk for Japan's economy, which could arise from the ripple effects of Donald Trump's winning of the recent US presidential election. These are mainly (1) yen appreciation, (2) stock price lows, and (3) world economic slowdown. If nothing else, there is expected to be increasing uncertainty in the world economy in the mid to long-term, coupled with risk-off behavior in the global financial markets, which could cause worldwide stock price lows and a rapid depreciation of the dollar.

GDP achieves major growth for 3rd consecutive quarter led by overseas demand, but deflator declines

The real GDP growth rate for Jul-Sep 2016 (1st preliminary est) grew by +2.2% q/q annualized (+0.5% q/q), while considerably exceeding market consensus (+0.8% q/q annualized, +0.2% q/q). Looking at results by source of demand, we see that positive contributions came from growth in personal consumption, capex, housing investment, and exports, while declines were experienced in public investment and imports. (The decline in imports is a plus for overall GDP growth rate.) All in all, performance was favorable. However, caution is still required since the major source of growth was in overseas demand and the GDP deflator fell, causing the growth rate in nominal GDP to be smaller than real GDP.

Overseas demand the driving force; consumption continues to bottom out

Performance by demand component in the Jul-Sep 2016 results shows private sector final consumption expenditure up just a bit for the third consecutive quarter by +0.1% q/q. Results were favorable despite the negative effects of typhoons which hit Japan in greater number than normal this year, and the unusually hot weather nationwide which continued into early autumn, taking a bite out of growth in purchase of seasonal items. Looking at personal consumption by sector we see gains for both goods and services. Durable goods grew by +1.5% q/q, with semi-durables at +0.1%, and services at +0.1%. Durables did especially well, winning considerable growth. The negative effect of pre-consumption over demand experienced since 2009 due to Eco-car related tax breaks, the Eco-Point program effecting household electronics, and last-minute demand prior to the increase in the consumption tax, is gradually falling away. On the other hand, nondurable goods (-0.5%) were unmoved. This is probably due to the fact that in addition to the factors mentioned above, real employee compensation is maintaining a firm undertone and the employment and income environment contributed a plus, but growth in real disposable income for households has been limited, with downward pressure on income produced by insurance rate hikes and the increase in tax rate for the highest tax bracket.

Housing investment grew for the second consecutive quarter at +2.3%. New housing starts, a leading indicator for housing investment as a portion of GDP, are continuing to grow as a result of lower interest rates, growth in rental property construction as an inheritance tax strategy, and last-minute demand which developed on the assumption that the consumption tax would again be increased in April of 2017. This in turn gave a lift to housing investment, which is recorded on a progressive basis.

Capital expenditure on the part of private sector corporations continues to mark time at +0.0% q/q. Though corporate earnings remain at a high level, the source of growth is not volume, but rather the decline in the cost of input and growth in the calculated price of exports. It has not led to an increase in

operating rates. Moreover, the slowdown in the overseas economy and the progressively strong yen create a major headwind for capex.

Contribution of private sector inventory to real GDP growth declined for the first time in two quarters at -0.1%pt. Distribution inventory made a negative contribution. Meanwhile, work in progress inventory and material & supplies inventories, which are provisional on the 1st preliminary GDP estimate, also made negative contributions.

Public investment declined for the first time in three quarters at -0.7% q/q. While the government having front-loaded the FY2015 supplementary budget brought a plus, the positive effect of past economic policies on public investment has begun to peter out. Government consumption was up by +0.4%. When averaged out this constitutes a continuation of the growth trend.

Exports grew for the first time in two quarters at +2.0% q/q. As for exports of goods, Asia has maintained the favorability of the previous quarter, while exports to the US and the EU show signs of a comeback. As for Asia, export volume of ICs expanded in anticipation of the marketing of new smartphone models. Meanwhile, export volume of automobiles to the US maintained a firm undertone despite some fluctuations. In a reflection of stagnant domestic demand, imports declined for the fourth consecutive quarter at -0.6%. As a result, overseas demand had a positive contribution of +0.5%pt to GDP for the first time in two quarters.

The GDP deflator declined for the second consecutive quarter at -0.3% q/q. The domestic demand deflator was down by -0.2%, while the export deflator declined by -2.4%. In y/y terms the GDP deflator was down by -0.1%, its first decline in eleven quarters. Meanwhile, nominal GDP was up for the third consecutive quarter at +0.8% q/q annualized (+0.2% q/q).

Moderate recovery expected for Japan's economy, but risk of possible downturn remains

We expect Japan's economy to continue in a moderate expansion phase. However, caution is required as domestic demand continues to lack strength. Overseas demand is expected to continue its gradual expansion. However, if the world economy becomes more uncertain in the future, this could cause domestic demand to stagnate, and to become a negative factor bringing downward pressure on Japan's overall economy. A further risk is the expectation that the US Fed will increase interest rates within the year. Doing so could cause a slowdown in the US economy, or capital outflow from the emerging nations associated with interest hikes. Meanwhile, the future of the world economy becomes increasingly uncertain with the election of Donald Trump to the US presidency. Risk-off behaviors in the global capital markets could cause stock price lows and rapid depreciation of the dollar. We therefore urge caution.

Personal consumption is expected to continue in a moderate expansion phase. The supply of labor continues to be tight, and this should provide underlying support for personal consumption through growth in employee compensation. Meanwhile, the growth rate in the consumer price index has turned in the negative direction, and this promises to continue pushing up real wages. This should provide a boost to personal consumption. On the other hand, corporate earnings appear to be about to peak out due to the strong yen and other factors, and uncertainty is increasing in regard to the future of the income environment. Households may become more budget-minded in the future due to recent increases in the price of fresh foods, hence caution is required.

Meanwhile, housing investment is expected to gradually slow down. Interest on housing loans remains low, and therefore should provide continued underlying support. However, housing starts, which had rapidly expanded with the expectation that there would be a rush to purchase homes before the additional increase in consumption tax originally planned for April 2017, are expected to decrease in

the future, especially for urban area condominiums, and housing investment is also expected to begin declining after that point.

Capex is expected to continue marking time. The supply of labor continues to be tight, and this should provide underlying support for replacement and renovation investment in the non-manufacturing industries. On the other hand, the stagnant world economy and the strong yen/weak dollar situation, is expected to continue eating away at the strength of domestic demand, and this brings the increasing sense that corporate earnings are about to peak out. Corporations are therefore likely to become more cautious as regards capex spending in the future.

Public investment is expected to move toward a comeback as we approach fiscal year-end. The government's second supplementary budget, which includes economic policy measures, has taken shape, and this should gradually provide more upward pressure for public investment as we move closer to the end of the fiscal year.

As for exports, with overseas economies continuing moderate growth, we can expect exports to maintain a firm undertone, centering on consumer goods. Looking at exports of goods by region, consumer goods are expected to maintain a strong undertone in the US, EU, and Asia backed by improvements in employment environment, the effects of monetary easing, and favorable personal consumption in all regions. On the other hand, growth in corporate earnings in the US is at a low level, and overcapacity in Asia, especially in the steel industry, requires adjustment. There is a good possibility that exports of capital goods and materials will continue to be slow.

Overseas investment behaviors of Japanese corporations, and domestic ripple effect

With both Japan's potential growth rate and expected growth rate at a low level, corporations are beginning to look for growth opportunities in overseas markets. An analysis of the investment behaviors of domestic corporations and their overseas subsidiaries reveals the tendency to take the practical approach and decrease the amount of domestic capex while rerouting resources to Asia and North America. Meanwhile, the divergence between real GDP and real GNI has been widening of late. In addition to improving terms of trade, this is due to backflow of earnings from overseas subsidiaries to domestic parent companies accompanying increased overseas investments. Based on actual value in FY2015, the positive effect of backflow of overseas profits is estimated to have brought a 3.2 trillion yen improvement in employee compensation and an approximately 2.4 trillion yen increase in nominal personal consumption.

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Risk factors facing Japan's economy: focus on trends in China's economy

Risk factors for the Japanese economy are: (1) The policies of President Elect Donald Trump, (2) The downward swing of China's economy, (3) Tumult in the economies of emerging nations in response to the US exit strategy, (4) A strong yen / weak stock market situation brought on by risk-off behavior of investors due to geopolitical risk, and (5) Negotiations regarding the UK's withdrawal from the EU (*Brexit*), and deleveraging at EU financial institutions. Our outlook for China's economy is optimistic in the short-term and pessimistic in the mid to long-term. Looking at China's economic situation in a somewhat reductive way, the fact is that China's government holds treasury funds totaling between 600 to 800 tril yen with which it is standing up to under 1,000 tril yen in excessive lending and over 550 tril yen in excess capital stock. China is expected to be able to avoid the bottom falling out of its economy for a little while, but in the mid to long-term, there is risk of a massive capital stock adjustment.

BOJ's monetary policy

We expect the BOJ to maintain current monetary policy for the time being. Considering the policy introduced in September to permanently battle deflation, the issue is expected to be creating a more flexible inflation target.

Main Economic Indicators and Real GDP Components

	FY15	FY16 (Estimate)	FY17 (Estimate)	CY15	CY16 (Estimate)	CY17 (Estimate)
Main economic indicators						
Nominal GDP (y/y %)	2.3	1.4	1.3	2.5	1.3	1.5
Real GDP (chained [2005]; y/y %)	0.9	1.1	0.9	0.6	0.8	1.1
Domestic demand (contribution, % pt)	0.8	0.9	0.5	0.1	0.6	0.9
Foreign demand (contribution, % pt)	0.1	0.3	0.3	0.4	0.2	0.2
GDP deflator (y/y %)	1.4	0.3	0.4	2.0	0.4	0.4
Index of All-industry Activity (y/y %)*	0.9	0.8	1.0	0.4	0.4	1.0
Index of Industrial Production (y/y %)	-1.0	0.4	2.0	-1.2	-0.9	2.0
Index of Tertiary Industry Activity (y/y %)	1.3	0.8	0.7	0.9	0.7	0.7
Corporate Goods Price Index (y/y %)	-3.3	-2.7	0.4	-2.3	-3.4	0.2
Consumer Price Index (excl. fresh food; y/y %)	-0.0	-0.2	0.4	0.5	-3.5	0.4
Unemployment rate (%)	3.3	3.1	3.0	3.4	3.1	3.0
Government bond yield (10 year; %)	0.26	-0.07	0.00	0.35	-0.07	0.00
Money stock; M2 (end-period; y/y %)	3.6	3.8	4.1	3.7	3.6	4.1
Balance of payments						
Trade balance (Y tril)	0.5	5.2	6.3	-0.6	4.7	6.0
Current balance ($100 mil)	1,499	1,901	2,116	1,356	1,839	2,057
Current balance (Y tril)	18.0	20.6	23.2	16.4	19.9	22.3
(% of nominal GDP)	3.5	4.1	4.5	3.3	3.9	4.3
Real GDP components (Chained [2005]; y/y %; figures in parentheses: contribution, % pt)						
Private final consumption	-0.1 (-0.1)	0.5 (0.3)	0.5 (0.3)	-1.2 (-0.7)	0.4 (0.2)	0.4 (0.3)
Private housing investment	2.4 (0.1)	5.8 (0.1)	-1.6 (-0.0)	-2.5 (-0.1)	5.2 (0.2)	-0.5 (-0.0)
Private fixed investment	2.1 (0.3)	0.2 (0.0)	0.9 (0.1)	1.6 (0.2)	0.3 (0.0)	0.7 (0.1)
Government final consumption	1.6 (0.3)	1.2 (0.2)	1.6 (0.3)	1.2 (0.2)	1.6 (0.3)	1.3 (0.3)
Public fixed investment	-2.7 (-0.1)	7.7 (0.3)	-2.7 (-0.1)	-2.5 (-0.1)	0.9 (0.0)	8.0 (0.4)
Exports of goods and services	0.4 (0.1)	0.8 (0.1)	4.6 (0.8)	2.8 (0.5)	-0.4 (-0.1)	4.0 (0.7)
Imports of goods and services	0.0 (-0.0)	-0.9 (0.1)	3.4 (-0.5)	0.4 (-0.1)	-1.6 (0.3)	2.7 (-0.4)
Major assumptions:						
1. World economy						
Economic growth of major trading partners	2.9	2.9	3.1	3.1	2.8	3.1
Crude oil price (WTI futures; $/bbl)	45.0	45.1	44.9	48.8	42.3	44.9
2. US economy						
US real GDP (chained [2009]; y/y %)	2.2	1.7	2.1	2.6	1.5	2.1
US Consumer Price Index (y/y %)	0.4	1.5	2.0	0.1	1.2	2.0
3. Japanese economy						
Nominal public fixed investment (y/y %)	-2.6	6.8	-2.4	-1.6	-0.2	8.4
Exchange rate (Y/$)	120.1	106.8	108.3	121.0	108.6	108.3
(Y/€)	132.5	117.0	116.3	133.7	119.9	116.3

Source: Compiled by DIR.
Note: Due to rounding, actual figures may differ from those released by the government.
* Excl. agriculture, forestry, and fisheries.
Estimate: DIR estimate.

Comparison with Previous Outlook

	Current outlook (Outlook 191)		Previous outlook (Outlook 190 update)		Difference between previous and current outlooks	
	FY16	FY17	FY16	FY17	FY16	FY17
Main economic indicators						
Nominal GDP (y/y %)	1.4	1.3	1.7	1.3	-0.3	-0.1
Real GDP (chained [2005]; y/y %)	1.1	0.9	0.9	0.9	0.2	-0.0
Domestic demand (contribution, % pt)	0.9	0.5	1.1	0.6	-0.2	-0.1
Foreign demand (contribution, % pt)	0.3	0.3	-0.1	0.2	0.4	0.1
GDP deflator (y/y %)	0.3	0.4	0.8	0.5	-0.5	-0.1
Index of All-industry Activity (y/y %)*	0.8	1.0	0.8	1.1	0.0	-0.2
Index of Industrial Production (y/y %)	0.4	2.0	0.3	2.1	0.1	-0.2
Index of Tertiary Industry Activity (y/y %)	0.8	0.7	0.7	0.9	0.1	-0.2
Corporate Goods Price Index (y/y %)	-2.7	0.4	-2.2	0.6	-0.5	-0.2
Consumer Price Index (excl. fresh food; y/y %)	-0.2	0.4	-0.1	0.8	-0.1	-0.4
Unemployment rate (%)	3.1	3.0	3.1	3.0	-0.0	0.0
Government bond yield (10 year; %)	-0.07	0.00	-0.11	-0.10	0.05	0.10
Money stock; M2 (end-period; y/y %)	3.8	4.1	3.9	4.1	-0.1	0.0
Balance of payments						
Trade balance (Y tril)	5.2	6.3	4.2	5.1	0.9	1.2
Current balance ($100 mil)	1,901	2,116	1,861	2,110	41	6
Current balance (Y tril)	20.6	23.2	19.4	21.7	1.1	1.5
(% of nominal GDP)	4.1	4.5	3.8	4.2	0.2	0.3
Real GDP components (chained [2005]; y/y %)						
Private final consumption	0.5	0.5	0.6	0.6	-0.1	-0.1
Private housing investment	5.8	-1.6	4.9	-3.0	0.8	1.4
Private fixed investment	0.2	0.9	0.4	1.1	-0.1	-0.2
Government final consumption	1.2	1.6	1.8	1.7	-0.5	-0.1
Public fixed investment	7.7	-2.7	8.0	-3.4	-0.3	0.7
Exports of goods and services	0.8	4.6	0.1	4.6	0.7	-0.1
Imports of goods and services	-0.9	3.4	0.7	4.0	-1.7	-0.6
Major assumptions:						
1. World economy						
Economic growth of major trading partners	2.9	3.1	2.9	3.1	0.1	-0.0
Crude oil price (WTI futures; $/bbl)	45.1	44.9	44.8	44.5	0.3	0.4
2. US economy						
US real GDP (chained [2009]; y/y %)	1.7	2.1	1.7	2.3	-0.0	-0.2
US Consumer Price Index (y/y %)	1.5	2.0	1.2	1.9	0.3	0.1
3. Japanese economy						
Nominal public fixed investment (y/y %)	6.8	-2.4	7.4	-3.0	-0.6	0.6
Exchange rate (Y/$)	106.8	108.3	103.2	101.5	3.6	6.8
(Y/€)	117.0	116.3	116.0	114.4	1.0	1.9

Source: Compiled by DIR.
Notes: Due to rounding, differences do not necessarily conform to calculations based on figures shown.
* Excl. agriculture, forestry, and fisheries.

1. How will Japan's Economy Respond to Trump Shock?

The US presidential and congressional elections were held on 8 November (US time), with the ballots counted the same day. Contrary to expectations, the presidential race was won by Republican Party candidate Donald Trump. Throughout the race, Mr. Trump stressed his opposition to the Trans-Pacific Partnership (TPP) agreement and touted inward-looking policies, including combatting other countries' currency devaluation strategies. With Mr. Trump's victory clouding visibility for the direction of the global economy, investors will likely need to brace for global weakness in stock prices and sharp dollar depreciation as global financial markets move into risk-off mode.

1.1 Estimating the Effects of Trump's Election to the Presidency on Japan's Economy

Donald Trump's victory appears likely to have negative repercussions for the Japanese economy due mainly to the ripple effects of yen appreciation, lower stock prices, and a global economic slowdown. In terms of yen appreciation, the yen is likely to be bought as a means of risk avoidance as uncertainty regarding the world economy increases. A stronger yen has a negative impact on Japan's economy, as it results in lower exports and erodes exporters' earnings. Meanwhile, lower stock prices have a chilling effect on consumer confidence, which causes personal consumption to decline. Finally, if the global economy slows as a result of inward-looking polices in the US, Japan's exports are likely to decline, which would result in lower GDP.

Chart 1 shows estimated values for the effect of a Trump presidency on Japan's economy using the DIR short-term macro model. We look at two scenarios with different assumptions for the global economy: (1) real GDP in the US falls 1.0% (worldwide real GDP declines by 0.2%) and (2) repercussions are on the same scale as seen in the financial crisis (worldwide real GDP declines by 1.3%). For both cases, we assume the same rate of appreciation in the yen vs. the dollar and the same rate of decrease in TOPIX.

According to our estimates, if the yen appreciates 15% vs. the dollar and TOPIX declines by 20%, Japan's real GDP would decline 0.71% vs. the benchmark under the first scenario above (real GDP in the US falls 1.0%). For the second scenario (repercussions on the same scale as seen in the financial crisis), we estimate Japan's real GDP would decline 1.12% vs. the benchmark.

However, though TOPIX fell steeply on November 9 on reports of Trumps win, it had recovered to its former level by the end of trade the next day. Considering this fact, the effects of the Trump factor on Japan's economy could just as well end up remaining fairly limited.

Scenario (1): real GDP in the US falls 1.0%

Rate of yen appreciation vs. dollar	Rate of decline in TOPIX				
	-10	-15	-20	-25	-30
5	-0.37	-0.42	-0.48	-0.54	-0.60
10	-0.47	-0.53	-0.59	-0.65	-0.70
15	-0.59	-0.65	-0.71	-0.76	-0.82
20	-0.72	-0.78	-0.84	-0.89	-0.95
25	-0.86	-0.92	-0.98	-1.04	-1.10

Scenario (2): repercussions on same scale as in Lehman crisis

Rate of yen appreciation vs. dollar	Rate of decline in TOPIX				
	-10	-15	-20	-25	-30
5	-0.96	-0.99	-1.02	-1.05	-1.08
10	-1.01	-1.04	-1.07	-1.10	-1.13
15	-1.06	-1.09	-1.12	-1.15	-1.18
20	-1.12	-1.15	-1.18	-1.21	-1.24
25	-1.19	-1.22	-1.25	-1.28	-1.31

Source: Simulation using DIR short-term macro model.
Notes: 1) Figures in chart denote extent to which Japan's real GDP would decrease in comparison to the benchmark (average of four quarters after occurrence).
2) Case (1) assumes US real GDP will decline by -1.0% (real GDP of global economy would decline by -0.2%).
Case (2) assumes effects in the same class as the global financial crisis of 2008 real GDP of global economy would decline by -1.3%).
3) Items within red frames assume effects on the same level as were experienced immediately after the global financial crisis of 2008 (Oct-Dec period of 2008: yen appreciated 14% against dollar, while TOPIX fell by 21%).

1.2 Impact on US Economic Cycle

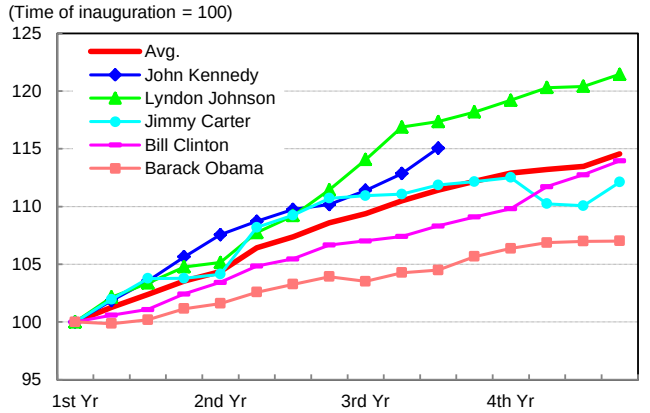
In order to examine the validity of the assumptions we used in the earlier calculations, we now discuss the relationship between the US economy and previous administrations.

Charts 2 and 3 show real GDP during past terms of Democratic and Republican presidents, respectively. We can see that real GDP grew steadily under Democratic administrations, while under Republican administrations real GDP tended to struggle in the first two years or so, but improved significantly from the third year. Although a selection bias probably exists to a certain degree in these

samples, we think there is a possibility that different economic cycles are generated reflecting a difference in party policies.

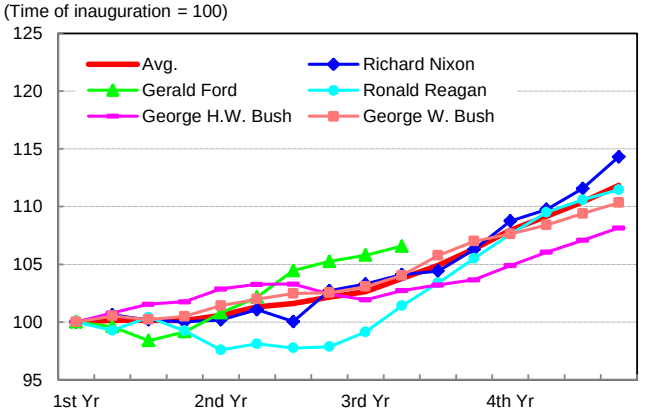
As the Democratic Party pursues big government and fiscal expansionism, the economy tends to grow steadily (outperformance of economically-sensitive sectors continues). Meanwhile, since the Republican Party focuses on structural reform under small government, the economy struggles at the beginning, but productivity improves significantly after a few years as a result of such structural reform (outperformance of growth sectors and underperformance of economically-sensitive ones continues).

Economic Growth Path Under Democratic Presidents **Chart 2**



Source: U.S. Bureau of Economic Analysis; compiled by DIR.

Economic Growth Path Under Republican Presidents **Chart 3**



Source: U.S. Bureau of Economic Analysis; compiled by DIR.

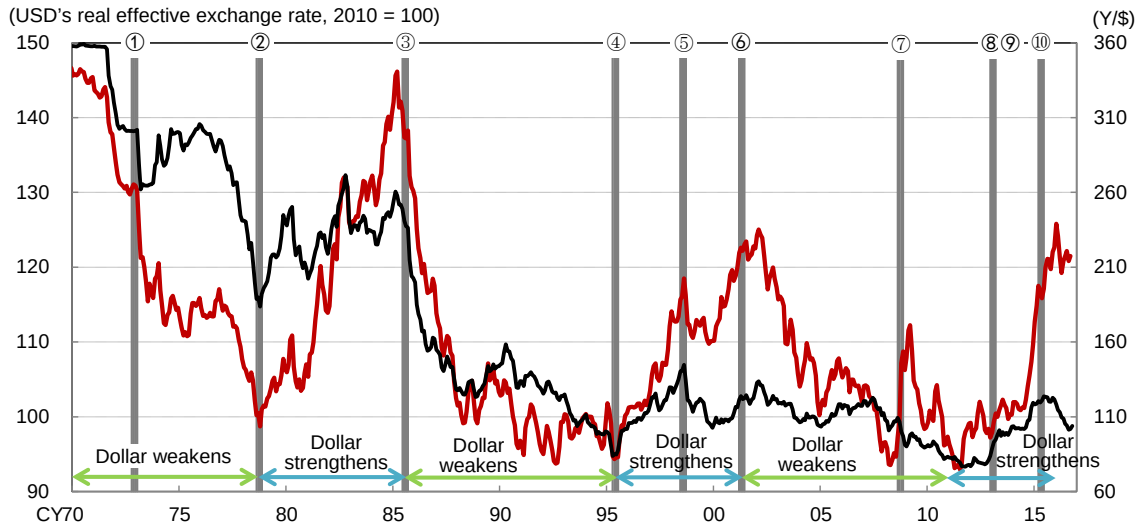
1.3 Impact on US Currency Strategy

There also seem to be cycles in US currency strategy reflecting changes of administration. As shown in Chart 4, for more than 40 years since the floating exchange rate regime began, the real effective exchange rate of the dollar (red line) has been moving in eight-year or four-year cycles.

These cycles stem from political cycles as indicated on page 14. A strong dollar policy tends to be pursued when the fiscal deficit expands. This is because the financing of the US fiscal burden is heavily dependent on foreign countries. This provides an incentive to allow a strong dollar in order to contain interest expenses.

When the dollar appreciates too much, US firms suffer, leading to a political backlash. As a result, the government's currency strategy changes. This cycle has occurred repeatedly over the past 40 years.

Cycle of US Exchange Rate Policy, US Dollar — Chart 4



	Date	News
①	Mar 73	Floating exchange rate system introduced
②	Nov 78	Jimmy Carter protected value of dollar
③	Sep 85	Plaza Accord: weak dollar policy adopted
④	Apr 95	Washington G7 meeting: coordinated currency intervention by Japan, US in Jul; dollar-buying intervention by US in Nov
⑤	Jun 98	Coordinated yen-buying/dollar-selling intervention by Japan, US
⑥	Mar 01	BOJ introduced quantitative easing, which remained in place through Mar 06; Japan did yen-selling intervention in 01 – 02
⑦	Sep 08	The financial crisis Introduction of QE1 (Nov 08-Jun 10), QE2 (Nov 10-Jun 11), QE3 (Sep 12-Dec 13) by US
⑧	Dec 12	Prime Minister Shinzo Abe took office; quantitative/qualitative easing introduced in Apr 13, further monetary easing implemented (Oct 14)
⑨	May 13	Bernanke Shock QE tapering began in Dec
⑩	Mar 15	QE introduced by ECB

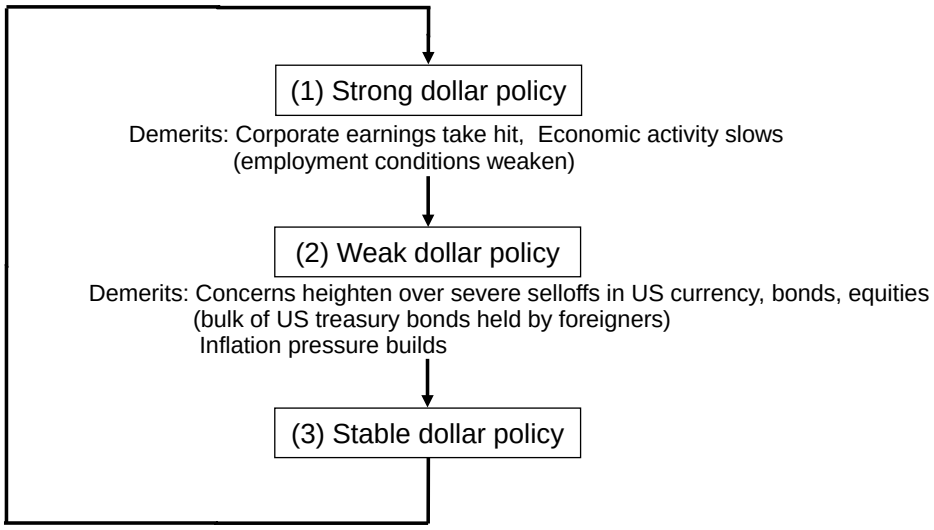
Source: Federal Reserve Board, Bank of International Settlement, Haver Analytics; compiled by DIR.

If we look at the recent situation bearing political cycles in mind, the US appears to have shifted to a weak dollar policy from early 2016 despite being under a Democratic administration. We believe this is ultimately because of substantial dissatisfaction among middle-income households due to deteriorating employment/income caused by a stronger dollar, which led to stronger-than-expected support for Donald Trump—the Democratic Party probably had no choice but to shift its currency stance to avoid "losing points" to the Republican Party.

In fact, entering this year, Secretary of Treasury Jacob Lew suddenly started making frequent comments regarding exchange rates. And G20 statements since February have all included commitment to refrain from competitive devaluation of currencies. Furthermore, in the April Semiannual Report on International Economic and Exchange Rate Policies, Japan was included in the US's "Monitoring List" for potentially unfair currency practices, and it remained on the list in the October report.

Given the results of the presidential/congressional elections, it should be noted that the US might take a weak dollar policy. However, the key will be whether the new administration will be oriented toward "big government" or "small government."

Main Factors Behind US Policy Cycle **Chart 5**



Source: Compiled by DIR.

1.4 Will past patterns be repeated?

Donald Trump's election manifesto contains policies which are typically Republican—such as cutting corporate tax, cutting/simplifying the income tax, and an emphasis on the government debt ceiling—but also those which are typically Democratic—such as increasing infrastructure investment and being against social insurance cutbacks (Chart 6). Indeed, his comments thus far have been inconsistent, and some policies in his manifesto contradict each other. With uncertainty regarding US government policy increasing, participants in the financial markets and the actual economy will likely become risk averse for the time being.

Attention going forward will likely be on whether Trump will be oriented toward "big government" or "small government." Considering that the Republican Party carried the day in the congressional contests, we think Trump will pursue policies with a bias towards the right.

Comparison of Presidential Candidates' Policies **Chart 6**

	Democratic Party Hillary Clinton	Republican Party Donald Trump	Previous Republican Party policies
Trade policies	Against TPP (calls for review)	Against TPP	Free trade
Social insurance (ObamaCare)	Calls for expansion	Abolish Obamacare Leave Medicaid to states	Scale back
Fiscal policy	Expand investment in infrastructure Curb corporate tax evasion Increase income taxes on the rich -	Expand investment in infrastructure Lower corporate taxes Simplify/lower income tax Emphasis on debt ceiling	Reduce annual expenditure (small government)
Employment policy	Raise the minimum wage	-	
Monetary policy	-	Ease monetary policy	-
Financial regulation	Increase regulation	Repeal Dodd-Frank Act	Ease regulation
Foreign policy	Emphasis on alliances	Noninterventionist, inward-looking	
Immigration	Tolerant	Intolerant	

Source: Compiled by DIR from various sources.

2. Japan's Main Economic Scenario

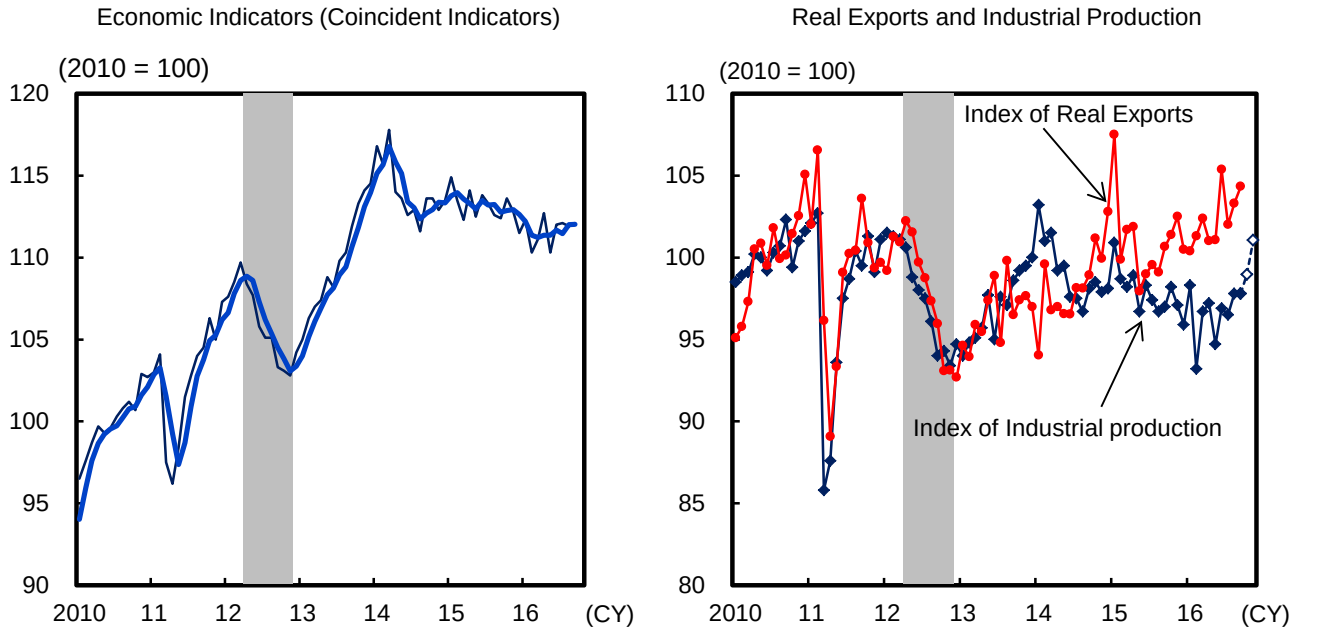
2.1 Signs of Overseas Economies Bottoming Out

Japan's economy has still been unable to pull out of the lull in which it has remained in recent months. Chart 7 illustrates trends in Japan's composite index (a coincident indicator), real exports, and industrial production. As for the composite index, though it has not completely deteriorated, it has continued weak performance since the middle of 2015. Meanwhile, industrial production continues in a gradual declining trend. However, real exports have recently shown signs of bottoming out, and there are signs of a comeback in future production plans.

There are three major factors behind exports bottoming out. These are (1) demand for consumer goods in the US is favorable due to improvements in the employment environment, (2) domestic demand in the EU is recovering due to the effects of bold monetary easing measures, and (3) the overseas economy, which had been strengthening its downward trend, now shows signs of bottoming out. This trend is most noticeable in China. The third factor mentioned here requires close monitoring in the future as explained in following chapter. Meanwhile, of important note is the recent US presidential election in which Republican Donald Trump emerged triumphant despite having been viewed as the underdog until that point. During his campaign, Trump accused Japan and other countries of currency manipulation, while suggesting policies considered isolationist. The future of the world economy is expected to be increasingly uncertain for the mid to long-term due to Trump's election, while global financial markets may see stock price lows and a sharp depreciation of the dollar due to growing risk-off behavior.

Our outlook for the future of Japan's economy is that it will continue its current lull for a while longer, and then recover gradually. As for overseas demand, there is underlying risk in the overseas economy, especially that of the US and China, which require caution, but there are some positive factors on the domestic side, including the following: (1) growth in real wages, (2) low price of crude oil and improvement in terms of trade, and (3) the implementation of an economic stimulus package. These factors are expected to provide underlying support. There are both positive and negative factors, but once through the ups and downs, we expect Japan's economy to gradually recover.

Coincident Indicator, Real Exports, and Industrial Production **Chart 7**



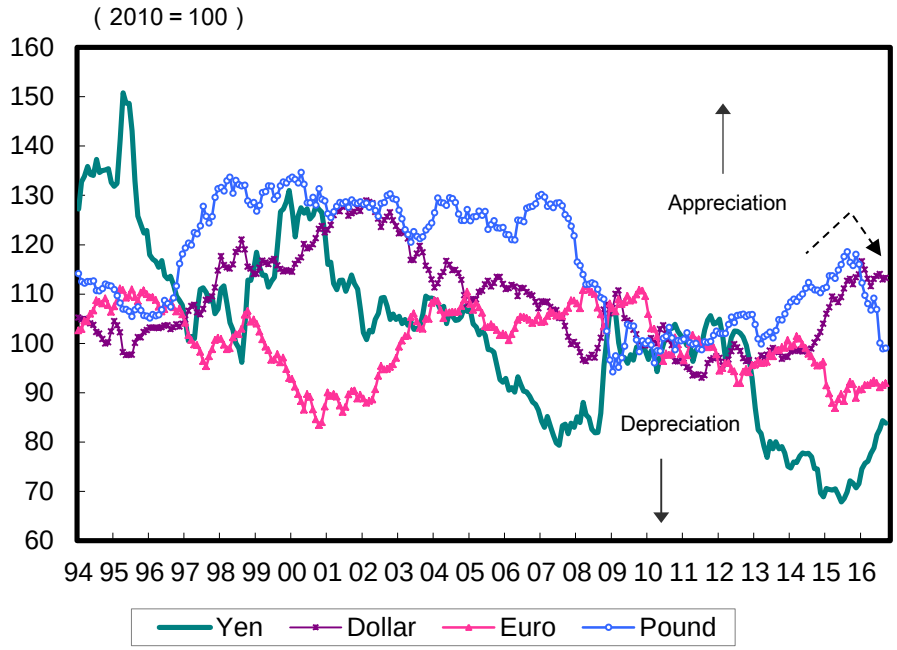
Source: Cabinet Office, Bank of Japan, Ministry of Economy, Trade and Industry; compiled by DIR.
Note: Shaded areas represent periods of recession. The thick line which represents the composite index is the 3-month moving average.
The most recent two months of industrial production is from METI's production forecast survey.

Weak dollar to provide underlying support for world economy

One of the major changes in the overseas economic environment which can be pointed out as affecting Japan's economy is the shift from a strong dollar to a weak dollar as a result of the predicted slowdown in the pace of the Fed's raising the interest rate. Taking a look at trends in the real effective exchange rate, we see that toward the end of 2015 the dollar appreciated in the face of the Fed's exit strategy (Chart 8). But once into 2016 the Fed began to pull back on the pace of its interest rate hikes due to turmoil in the global financial markets and fears that the world economy was facing a slowdown. This shift caused the real effective dollar rate to decline.

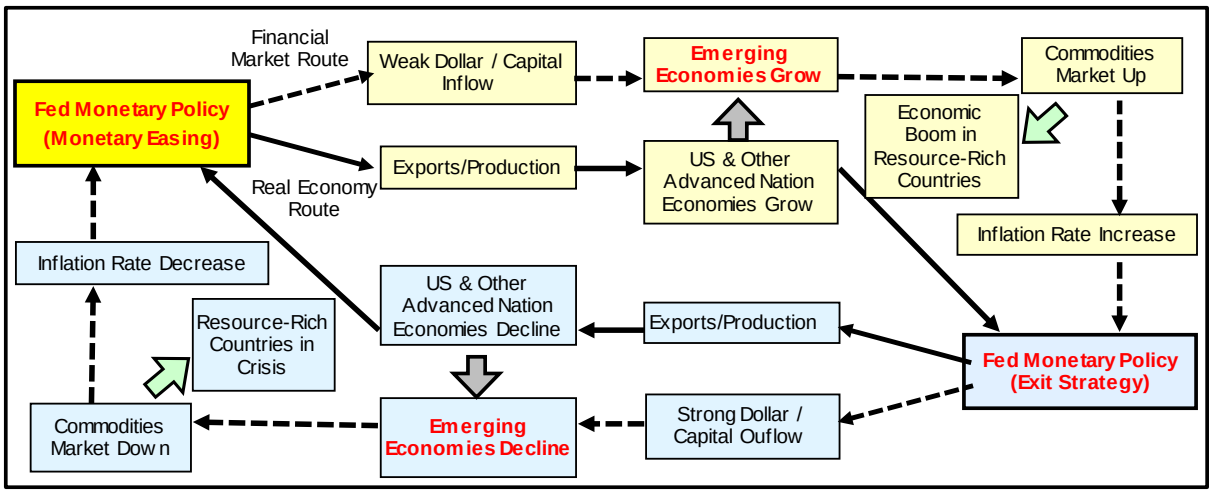
Chart 9 illustrates the worldwide economic cycle with a special focus on Fed decisions regarding interest rates. Based on this cycle, the progressive depreciation of the dollar is actually expected to provide underlying support for the world economy through recovery of the economies of emerging nations. Since the dollar began to decline, stock prices in emerging nations have surged, and hopes have grown stronger that those economies will soon head toward a comeback.

Real Effective Exchange Rates (Broad, Monthly) **Chart 8**



Source: BIS; compiled by DIR.

Worldwide Economic Cycle Focusing on Fed Monetary Policy **Chart 9**



Source: Compiled by DIR.

2.2 Domestic Demand Moves toward Modest Recovery

Growth in wages in the macro sense provides underlying support for personal consumption

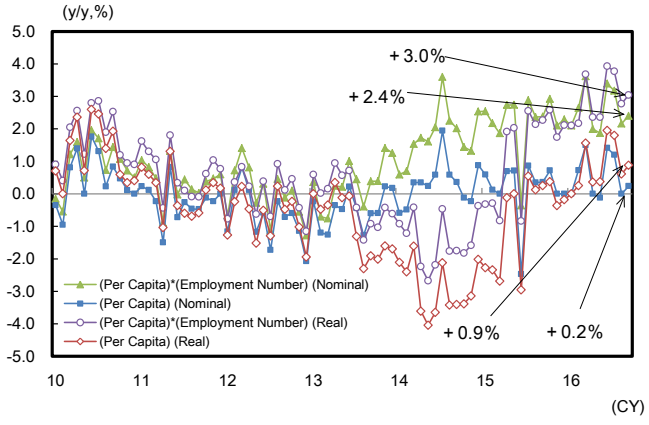
In this section we discuss the future of domestic demand. First, real wages have shifted into a growth trend, and are expected to provide underlying support for the Japanese economy in the form of encouraging moderate growth in personal consumption.

Chart 10 indicates that real per capita wages have recently exceeded levels of the same period of the previous year with regularity, and that the trend is becoming well-established. Wages continued to suffer major declines during FY2014 due to the increase in consumption tax, but during FY2015, the effect of tax hikes pushing up prices fell away and the price of crude oil, which collapsed after 2014, further encouraged prices to fall. This also had the effect of pushing up real wages. Along with the positive factor of prices, supply and demand for labor is tight and the salary scale of workers has increased, working toward pushing nominal wages upwards. This is serving to further growth in real wages per capita.

Looking at macro wages (per capita wages x employment), an even more important index for the Japanese economy, year-to-year growth of +3% or more is continuing and appears to have become well-established. Employment also continues to grow, creating a situation in which upward pressure continues on macro wages. Moreover, the absolute level of macro wages has also been in a growth trend since the second half of 2014. Its current level exceeds that seen in December 2012 at the time the Second Abe Cabinet was formed (Chart 11).

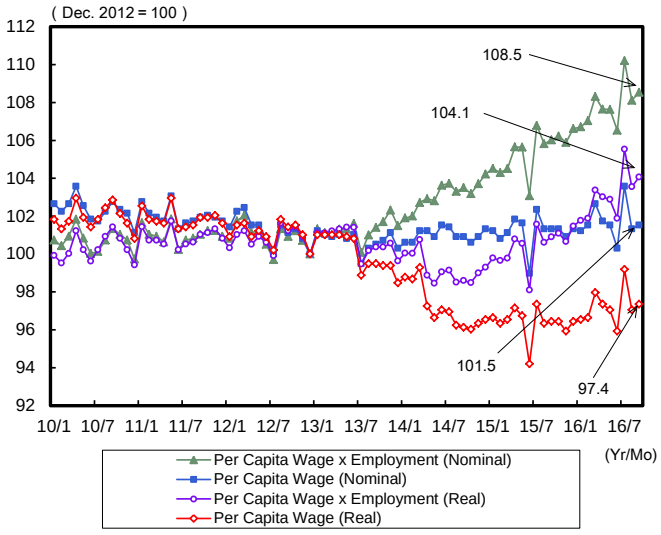
As for the future outlook for employment and the income environment, corporations continue to show brisk demand for labor; hence it is highly possible that employment will continue the current growth pattern. In addition, upward pressure on wages is also expected to continue due mainly to the fact that supply and demand for labor is tight. Moreover, prices are expected to be pushed downwards further due to the price of crude oil dropping further and a progressively stronger yen. As a result, real wages are expected to experience more upward pressure. This improvement in the income environment in macro terms is expected to give a certain degree of underlying support to personal consumption. (For a more detailed analysis of personal consumption, see Chapter 4.)

Per capita wages and Macro Wages (y/y) **Chart 10**



Source: Ministry of Health, Labour and Welfare; compiled by DIR.

Per capita wages and Macro Wages (Level) **Chart 11**



Source: Ministry of Health, Labour and Welfare; compiled by DIR.

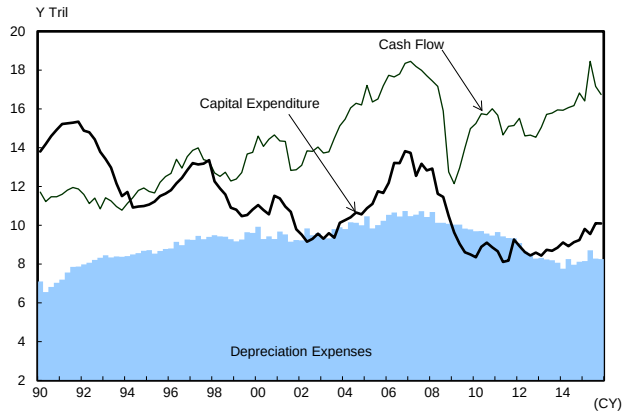
The future of capex and issues regarding earnings structure

As for the future of capex, we expect movement toward a gradual comeback, with underlying support from replacement and renovation investment backed by a high level of corporate earnings. First we look at Chart 12, which indicates changes in capital expenditure according to corporate statistics, cash flow, and depreciation expenses. Capital expenditure suffered a steep decline falling below depreciation expenses due to the rapid economic downturn which occurred after the global financial crisis of 2008, but has been in a moderate growth trend since the middle of 2012. Behind this development is the improvement in corporate earnings which has brought growth in cash flow, creating an environment which makes it easier for corporations to carry out capital investment. Corporate earnings are expected to maintain a steady undertone, especially in the non-manufacturing industries, and this is a factor which will provide underlying support for capex.

Next we consider corporate investment motive based on a survey carried out by the Development Bank of Japan (Chart 13). Especially noticeable in this chart are the categories of New Products & Product Upgrades and Maintenance & Repair during FY2016. This is interpreted to mean that investment is being encouraged in these categories by the existence of abundant cash flow, backed by a high level of corporate earnings. During the economic downturn which occurred after the global financial crisis of 2008, corporations drastically cut back on capital investment. Hence another factor contributing to replacement and renovation investment was the progression of aging and obsolescence of production facilities. In addition, investment in labor saving and energy saving due to the manpower shortage, as well as rationalization and upgrading are also expected.

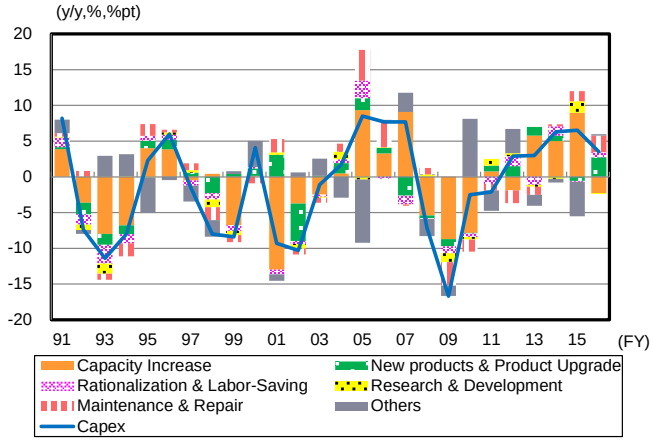
On the other hand, one problem which is often pointed out regarding recent trends in capex is that considering how favorable corporate earnings are, capital spending does not seem to grow as much as one would expect. Looking at the correlation between corporate earnings components and capital investment, we see that correlation is strongest with domestic sales volume and export sales volume. On the other hand, the correlation between variable expenses and export output price is not very strong. In other words, earnings growth attributed to volume has a greater effect on growth in capital spending than do other factors. Earnings growth attributed to price is more difficult to associate with growth in capital spending. Based on these relationships we can conclude that growth in domestic sales volume and export sales volume is key to capital investment's becoming full-scale.

Capital Expenditure and Cash Flow **Chart 12**



Source: Ministry of Finance; compiled by DIR.
Notes: 1) Seasonally adjusted figures for Depreciation Expenses calculated by DIR.
2) Cash Flow = Recurring Profits / 2 +Depreciation Expenses.

Factor Analysis of Capital Expenditure Based on Investment Motive **Chart 13**



Source: Development Bank of Japan; compiled by DIR.

3. Overseas Investment Behaviors of Japanese Corporations and Domestic Ripple Effect

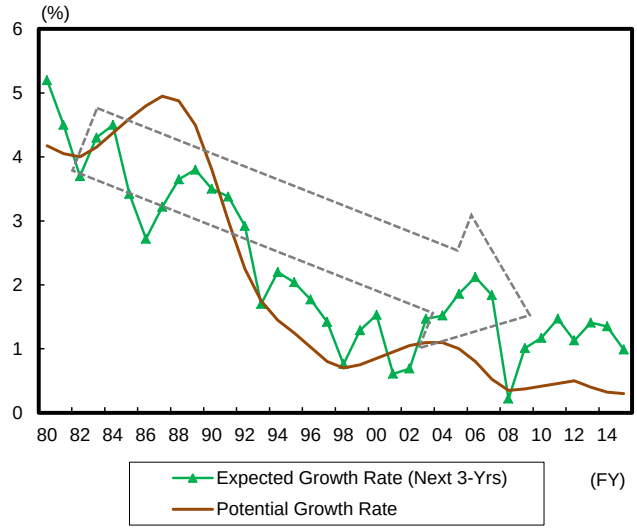
3.1 Corporations Seek Way to Growth in Overseas Markets

The history of Japanese corporations' entry into overseas markets

Japanese corporations began seeking new opportunities for growth in overseas markets during the 1990s when Japan's growth rate remained at a low (Chart 14). Chart 15 is a breakdown of manufacturing industry sales by domestic sales, overseas sales (including third country sales), and Japan's overall trade (the total of exports and imports from overseas subsidiaries). The chart indicates that Japan's domestic sales have been in a gradual decline, but that at the same time, local sales of overseas subsidiaries have entered an expansion phase. Share of total domestic and overseas sales in FY2014 was 65% for domestic sales and 22% for local overseas sales, while 14% of the total was trade transactions with Japan. The development of overseas markets by Japanese corporations has been more oriented toward selling goods manufactured overseas to the local market and other countries in the same region rather than toward using the overseas subsidiary as a production base for sale of products in the Japanese market. In other words, Japanese corporations have tended to carry out local production for local consumption.

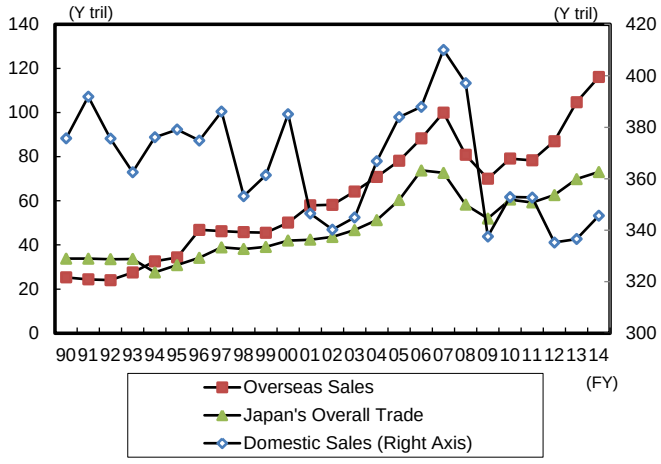
The main reason behind this tendency is of course that the growth rates of overseas economies are higher than that of the Japanese economy. Chart 16 shows the ratio of overseas GDP to Japan's GDP (overseas GDP ÷ Japan's GDP) on a nominal basis and in terms of purchasing power parity. This ratio has been in a growth trend since the 1990s due to Japan's slow growth rate as compared to overseas economies with higher growth rates, and the tendency is expected to continue in the future. Japanese corporations will very likely continue to increase the weight of their overseas business in the future.

Expected growth rate and Potential Growth Rate
Chart 14



Source: Cabinet Office; compiled by DIR.
Note: Potential growth rate is expressed as an annual average.

Breakdown of Manufacturing Industry Sales by Domestic and Overseas Sales
Chart 15



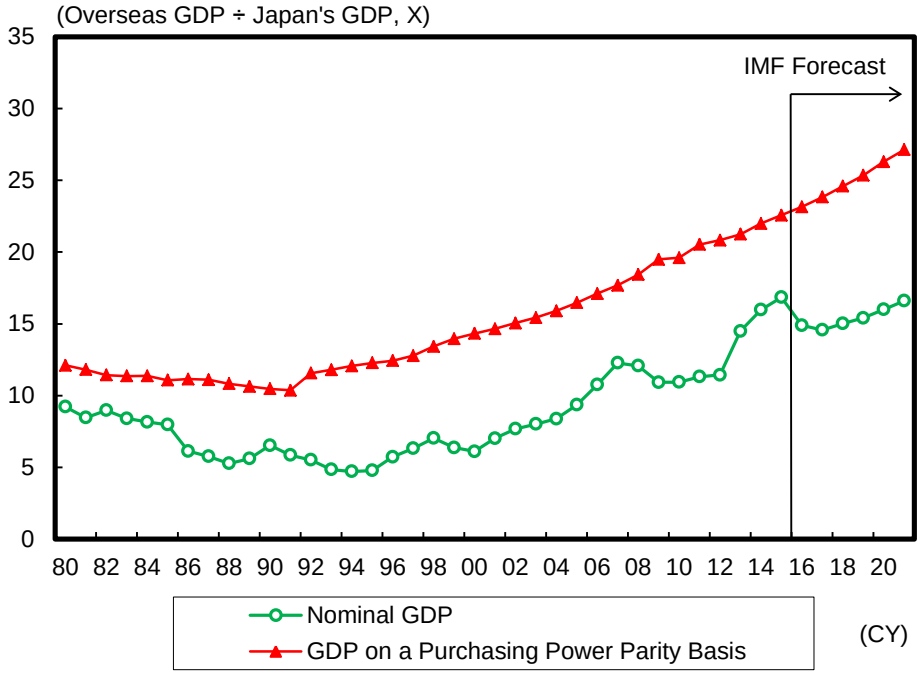
Source: Ministry of Finance, Ministry of Economy, Trade and Industry; compiled by DIR.

Note: Domestic Sales = Domestic Corporate Sales - Export Sales of Domestic Corporations.

Overseas Sales = Sales of Overseas Subsidiaries - Overseas Subsidiaries Export Sales to Japan.

Japan's Overall Trade = Export Sales of Domestic Corporations + Overseas Subsidiaries Export Sales to Japan.

Ratio of Overseas GDP to Japan's GDP **Chart 16**



Source: IMF; compiled by DIR.
Note: Overseas GDP is world GDP minus Japan's GDP.

Where do corporations make the most money?

Chart 17 shows growth rate of sales and profit ratios of domestic corporations and their overseas subsidiaries. The growth rate of sales is shown on the horizontal axis, while the vertical axis shows the ratio of recurring profits. Domestic corporations experienced a major slowdown in the growth of sales after Japan's economic bubble collapsed. Growth has never completely recovered since that time, but on the other hand, profit ratios are up and profitability is growing. Meanwhile, overseas subsidiaries have topped their Japanese parent companies both in growth rate of sales and in ratio of recurring profits since the 2000s, thereby firmly establishing businesses with high growth and high profitability overseas.

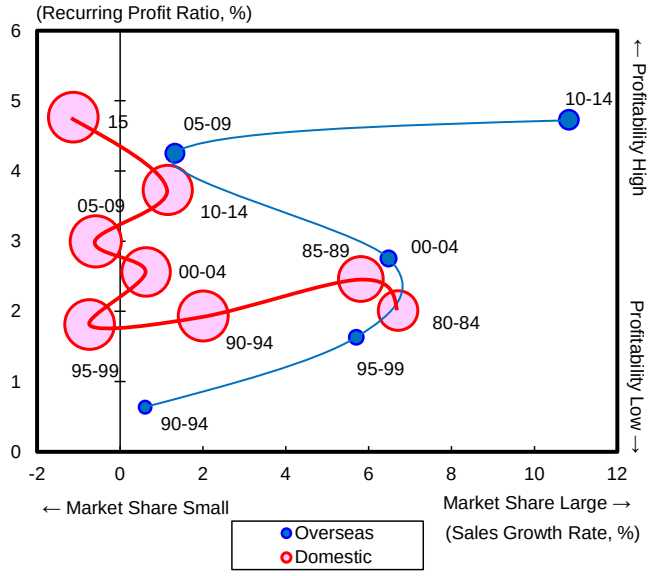
Looking at corporate planning as well, we can see that there are numerous corporations positioning their overseas subsidiaries as drivers of growth, while at the same time increasing the profitability of their domestic business even as it shrinks as a result of Japan's declining birthrate and aging population. This trend also becomes evident in viewing the above chart.

Chart 18 indicates sales growth rates and recurring profit ratios of overseas subsidiaries by region. Here we see that both growth potential and profitability are higher in Asia than in Europe and North America. Sales share is also larger in Asia. The major factors behind Japan's successful entry are the rapid expansion of the Asian market in a wide variety of industries, as well as the cultural affinity between Japan and the Asian countries, not to mention relative closeness geographically. However, while profitability has been on the way up, the level of profitability in Europe and North America has not necessarily been better than in Japan's domestic market.

There are also risks involved in doing business overseas. One of the major risk factors as shown in Chart 17 is sales volatility. We can see here that sales growth rate in overseas markets has undergone violent fluctuations over time. Moreover, sales converted into yen can also vary widely due to fluctuation in foreign exchange rates, while growing uncertainty in the world economy can bring yen appreciation. When major events such as the global financial crisis of 2008 occur, leading to a

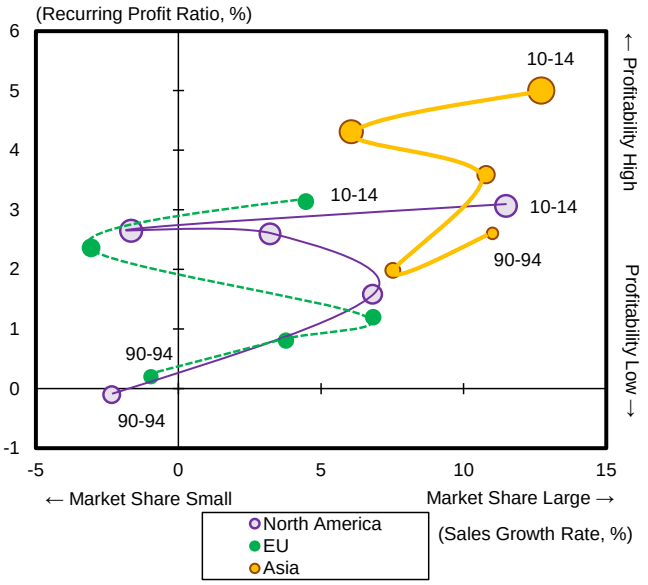
worldwide economic slowdown, the sales growth rate can plunge into a steep decline. And since market share is not necessarily large overseas, the uncertainty factor can loom quite large for a business.

Sales Growth Rate and Recurring Profit Ratio in Domestic and Overseas Markets
Chart 17



Source: Ministry of Finance, Ministry of Economy, Trade and Industry; compiled by DIR.
Notes: 1) Figures for recurring profit ratio and sales growth rate are period averages.
2) Size of circles indicates extent of sales.

Sales Growth Rate and Recurring Profit Ratio in Europe, North America, and Asia
Chart 18



Source: Ministry of Finance, Ministry of Economy, Trade and Industry; compiled by DIR.
Notes: 1) Figures for recurring profit ratio and sales growth rate are period averages.
2) Size of circles indicates extent of sales.

Investment portfolios of Japanese corporations

Up until this point we have focused on the growth potential and profitability of overseas subsidiaries, but what do the investment activities of Japanese corporations look like from the viewpoint of consolidated business?

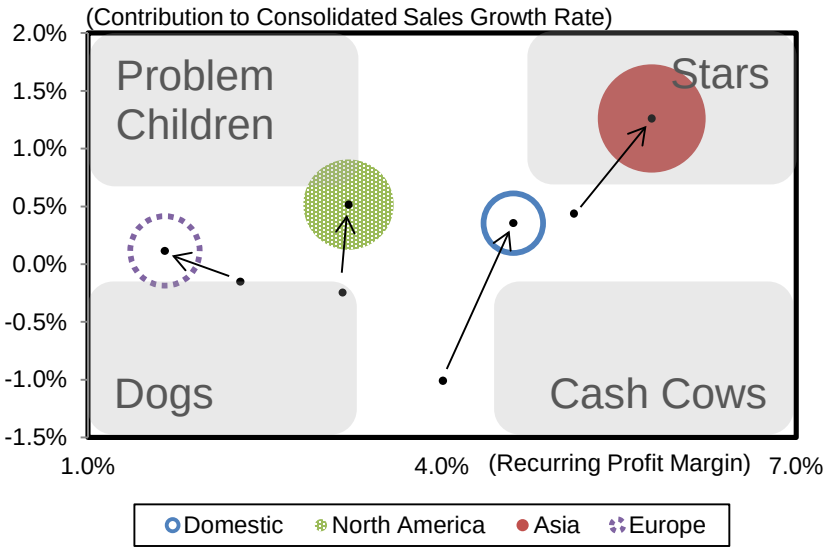
Chart 19 shows extent of contribution to recurring profit margins and consolidated sales growth rates in terms of average values during the periods FY2005-2009 and FY2010-2014. This is based on the Boston Consulting Group's BCG Matrix business analysis framework. The categories in this matrix are "Stars" – highly profitable businesses in a market with promising growth, "Cash Cows" – profitable businesses, but in markets which cannot promise much growth, "Problem Children" – businesses with low profitability, but in markets which promise growth, and "Dogs" – businesses with low profitability in markets which cannot promise growth. Meanwhile, the sizes of the colored circles represent investment growth rates between the periods FY2005-2009 and FY2010-2014. The regions with larger circles are those in which corporations have been highly selective in the distribution of their resources.

First of all, corporations have clearly been highly selective in how they have gone about investing in Asia, which is represented here as the Star with high growth and high profitability. On the other hand, this has meant reducing investments in the domestic Japanese market. During the period lasting FY2010-2014, the domestic sales growth rate was on the positive side, but it is still an unavoidable fact that in the long-term, the domestic market will continue to shrink. We can therefore conclude that it would be most rational for corporations to direct profits made in the domestic market to investments in Asia. If, on the other hand, we consider the fact that though sales may be in a decline, profitability will improve simultaneously with improvements in the corporate governance code, then we might see a strengthening of the Cash Cow characteristics of the domestic market in the future. With capital

expenditure's production function strongly lacking, while at the same time corporations increase investments in research and development and M&A, there seems to be a fair amount of consistency regarding this point.

Following Japanese corporate activity in Asia, investment in North America is also expanding. In addition to fears that China's economy may slow down in the future, all eyes are now on what the future may bring to the US economy under the new president elect, Donald Trump. Japanese corporations are hoping that they will be able to increase their profitability in North America and bring their businesses closer to Star power level. Meanwhile, it appears that corporations are reducing their investments in Europe where they have been struggling. Europe's economic growth has remained low ever since the global economic crisis of 2008, followed by the more recent debt crisis.

Manufacturing Industry Profitability, Sales Growth Rate, and Investment Growth Rate by Region Between the Periods FY2005-2009 and FY2010-2014 **Chart 19**



Source: Ministry of Finance, Ministry of Economy, Trade and Industry; compiled by DIR.
Notes: 1) Size of circles = (Cumulative Amounts in Investments in FY2010-2014) / (Cumulative Amounts in Investments in FY2005-2010)
(Domestic investments = capex minus software, overseas = direct foreign investment. Both domestic and European investments have decreased since last period.)
2) Consolidated Sales = Domestic Sales + Overseas Sales.

3.2 Verifying Effects of Backflow of Corporate Earnings

Real GNI exhibits more favorable performance than real GDP

Up to this point we have considered the effect of overseas investments of Japanese corporations from the macro viewpoint. Next, we make a comparison between trends in gross domestic product (GDP) and real GNI (gross national income), which includes other elements such as overseas transactions (Chart 20). In this comparison we notice the following relationship: Real GNI = Real GDP + Trading Gains & Losses + Real Net Income from Abroad. The category of Trading Gains & Losses is made up of increase or decrease of real income associated with changes in terms of trade, which indicates the relative price of exports and imports.

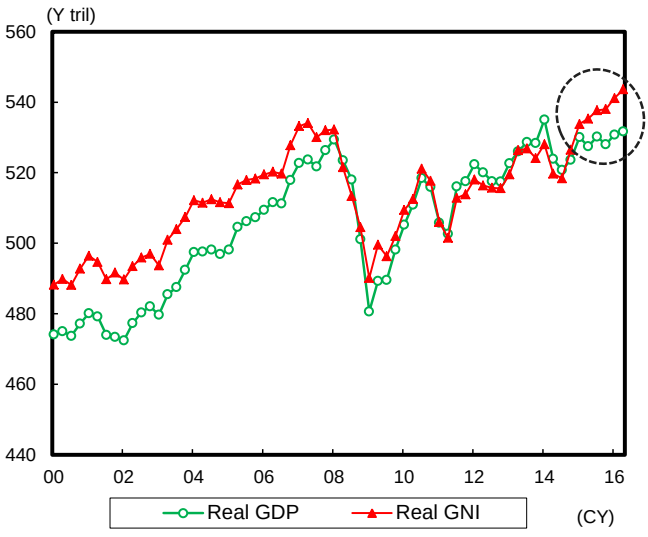
In verifying changes in real GDP, we find that since the middle of 2015 when the Japanese economy entered a temporary lull, performance has continued to be dissatisfying overall, but especially in domestic demand. This is due to the weak recovery for consumption and investment as households continue to be more budget-minded and corporations remain cautious. On the other hand, real GNI continues to be robust. This has resulted in a widening gap between GDP and GNI of late.

In Chart 21 we examine the causes of divergence between GDP and GNI more closely by performing a factor analysis on contributions to cumulative change in real GNI since 2012. First we identify trends in the real GDP factor. Ever since the beginning of Abenomics brought a recovery to Japan's economy, GDP has contributed to growth in GNI. However, this factor has remained flat since 2015 as a result of Japan's economy entering a temporary lull.

Next we find that until the first half of 2014, the factor of trading gains & losses was suffering increasingly greater declines. Then in the summer of that year the price of natural resources fell steeply, due especially to the collapse in the price of crude oil. This brought a major improvement in Japan's terms of trade, which moved gradually in the positive direction. Just recently it has contributed considerably to growth in GNI, and this has resulted in the growing divergence between real GDP and real GNI.

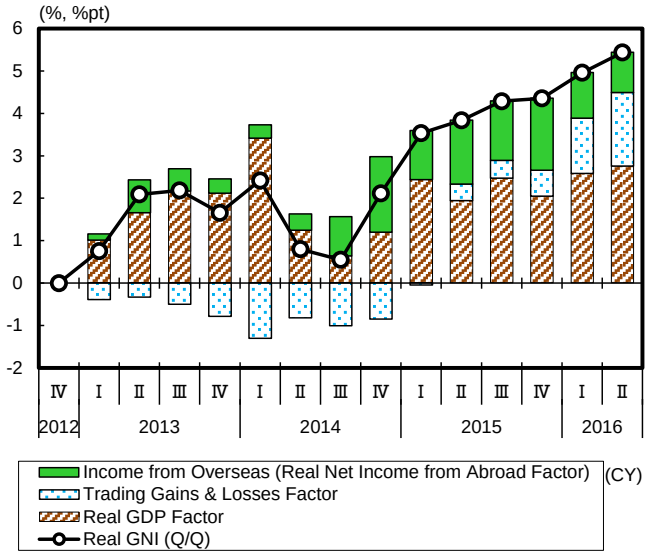
Meanwhile, we can see that the factor of overseas income (real net income from abroad) has been moving steadily in the positive direction despite ups and downs. Behind this progress is backflow of overseas profits from the subsidiaries of Japanese corporations due to progress in overseas investment. However, it should be noted that since the end of 2015, the yen has steadily appreciated, bringing a decline in the amount of yen-based income received from overseas subsidiaries, while also reducing the extent of positive contribution to GNI.

Real GDP and Real GNI **Chart 20**



Source: Cabinet Office; compiled by DIR.

Cumulative Contribution to Rate of Change in Real GNI **Chart 21**



Source: Cabinet Office; compiled by DIR.

Income on corporate direct investment overseas helps push up real GNI

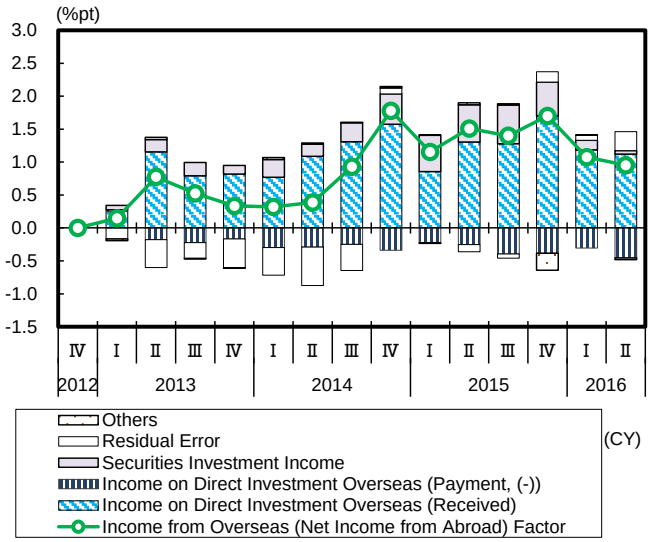
Next we perform an analysis of earnings structure associated with the overseas investments of Japanese corporations. Looking at the breakdown of the Income from Overseas (Real Net Income from Abroad) Factor, we can see that income on direct investment overseas has contributed considerably to pushing up real GDP (Chart 22). This is due to growth in overseas profits and profit ratios of Japanese corporations associated with the establishment of overseas subsidiaries and the acquisition of local overseas companies, as well as the effects of yen depreciation.

Looking at the breakdown of income on direct investment, we see that the progressively weak yen after the autumn of 2012 was a major contributor to pushing up the balance of direct investment (including fluctuation in foreign exchange rates) (Chart 23). As of this point we should note that this factor's positive contribution has been gradually shrinking since the yen began appreciating at the end

of 2015. However, its weight in comparison to other factors is still large. Meanwhile, the profitability factor is also contributing to the positive side. This suggests that the earnings power of Japanese corporations overseas is improving.

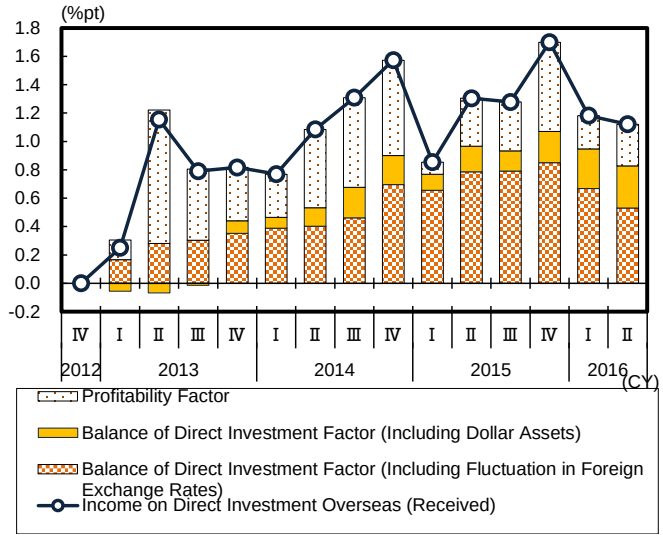
Moreover, it should be noted that the positive contribution of the balance of direct investment factor (including dollar assets) is growing steadily due to developments in overseas investment on the part of Japanese corporations. As has been mentioned previously, Japanese corporations are maintaining a cautious stance in regard to domestic capex due to Japan's stagnant anticipated and potential growth rates, with nominal capital investment as a proportion of GDP marking time (Chart 24). However, direct investment as a proportion of GDP is growing as more Japanese corporations develop business overseas, and this fact is encouraging growth in income on direct investment.

Breakdown of Income from Overseas (Net Income from Abroad) Factor **Chart 22**



Source: Cabinet Office, Ministry of Finance; compiled by DIR.

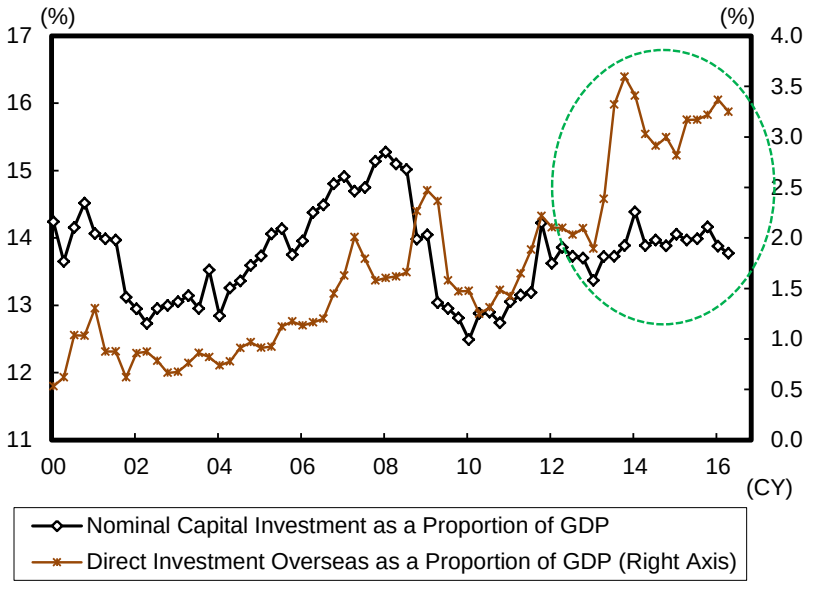
Breakdown of Income on Direct Investment Overseas (Received) Factor **Chart 23**



Source: Cabinet Office, Ministry of Finance, Bank of Japan; compiled by DIR

Note: Approximation error distributed proportionally based on ratio of each factor.

Nominal Capital Investment as a Proportion of GDP and Direct Investment Overseas as a Proportion of GDP **Chart 24**



Source: Cabinet Office, Ministry of Finance, Bank of Japan; compiled by DIR.

Note: Direct investment overseas seasonally adjusted by DIR and 3MA.

3.3 Backflow of Overseas Profits into Domestic Economy Improves Personal Consumption by 2.4 Trillion Yen

Real GNI and real GDP are interdependent. Real GNI grows when corporate earnings associated with overseas investments expand, and the backflow of these profits into the domestic economy has the effect of pushing up GDP. The actual economic transmission mechanism occurs in two phases as follows: (1) Employee compensation grows when overseas profits return to Japan's domestic economy via the phenomenon of backflow, and are then distributed to workers, then (2) Growth in employee compensation brings upward pressure on personal consumption.

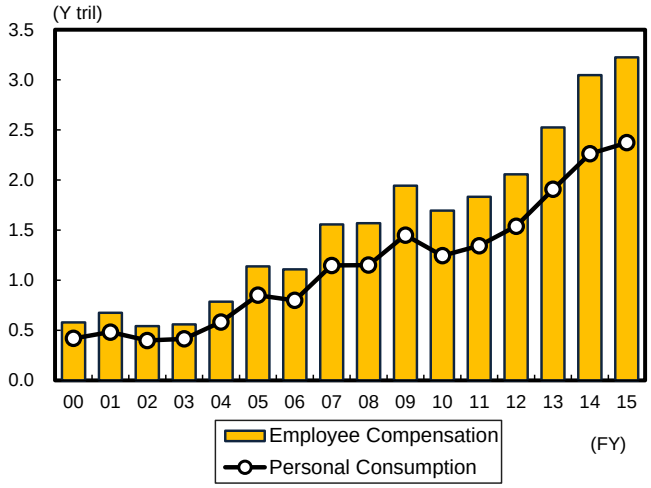
Next we estimate the effect of increasing employee compensation and personal consumption through backflow of overseas profits into the domestic economy. Our concrete method is to multiply branch earnings from dividends & dividend allotments (received), which indicates backflow of overseas profits, by labor's relative share, which represents profit sharing and distribution to workers. This gives us an estimate of how much employee compensation is increased. Then we multiply this value with average propensity to consume. This latter figure represents the percentage of household income going toward consumption. This brings us the amount by which consumption is increased.

Chart 25 shows changes in employee compensation and the effect of pushing up personal consumption. Both of these factors have been on the rise ever since the mid-2000s, accompanying the growth being experienced at that time in overseas investment on the part of Japanese corporations. There was a temporary slowdown in growth after the global financial crisis of 2008, but then since 2013, growth has again accelerated. Based on the FY2015 performance values, backflow of overseas profits into the domestic economy are estimated to have pushed up employee compensation by around 3.2 trillion yen and nominal personal consumption by around 2.4 trillion yen. These results of course must be viewed with a certain grain of salt, but there is no doubt that growth in overseas investment on the part of Japanese corporations is benefitting Japan's domestic economy as well.

At the same time we must remain aware that the effect of this phenomenon depends largely on corporate policy regarding distribution of profits, as well as the consumer behavior of Japanese households. For instance, if wage increases for workers do not progress as hoped due to the cautious stance of corporations regarding the future of the economy, or if personal consumption declines due to households becoming more budget-minded, this could take a big bite out of the positive effects of overseas profits. A variety of possible scenarios for FY2015 are presented in Chart 26. This data suggests that we can expect personal consumption to be pushed up a certain amount even if labor's relative share and the average propensity to consume are lower than the basic scenario.

Beneficial Effects of Backflow of Overseas Profits into Domestic Economy

Chart 25



Source: Cabinet Office, Ministry of Finance, Bank of Japan; compiled by DIR.

Notes: 1) The effect of pushing up employee compensation is estimated by multiplying branch earnings from dividends & dividend allotments (received) by over 100 million yen in labor's relative share as paid out by corporations. However, this figure is adjusted by adding non-operating income as denominator. Labor's Relative Share (Adjusted) = Personnel Expenses ÷ (Added Value + Non-Operating Income).

2) The effect of pushing up personal consumption is estimated by multiplying the amount that employee compensation is pushed up by average propensity to consume (includes worker households and households engaged in farming, forestry, and fishing).

Multiple Scenarios in which Consumption is Pushed Up due to Backflow of Overseas Profits (FY2015, Y tril)

Chart 26

		Labor's Relative Share (Adjusted) (%)								
		44	46	48	50	52	54	56	58	60
Average Propensity to Consume (%)	66	1.81	1.89	1.97	2.06	2.14	2.22	2.30	2.38	2.47
	68	1.86	1.95	2.03	2.12	2.20	2.29	2.37	2.46	2.54
	70	1.92	2.01	2.09	2.18	2.27	2.35	2.44	2.53	2.62
	72	1.97	2.06	2.15	2.24	2.33	2.42	2.51	2.60	2.69
	74	2.03	2.12	2.21	2.30	2.40	2.49	2.58	2.67	2.77
	76	2.08	2.18	2.27	2.37	2.46	2.56	2.65	2.75	2.84
	78	2.14	2.23	2.33	2.43	2.53	2.62	2.72	2.82	2.91
	80	2.19	2.29	2.39	2.49	2.59	2.69	2.79	2.89	2.99
	82	2.25	2.35	2.45	2.55	2.66	2.76	2.86	2.96	3.06

Source: Ministry of Finance, Ministry of Internal Affairs and Communications, Bank of Japan; compiled by DIR.

Note: Figures framed in red are the basic scenario estimated from FY2015 performance values.

4. Why Does Personal Consumption Remain Stagnant?

Increasing the consumption tax triggered a substitution effect (in other words, the last minute demand occurring before the tax hike followed by a reactionary decline), and ultimately invited the attenuation (or decay) of consumption due to the income effect which was caused by declining real income. As a result, households, which had earlier reaped the benefits of income growth in an improved economy brought on by Abenomics, had now grown cold when it came to consumer confidence. Few now would object to the viewpoint that the increase in the consumption tax in April 2014 was the turning point where personal consumption fell off track after having continued at a favorable level since the inauguration of the Second Abe Cabinet.

Even now, over two-and-a-half years after the tax hike, personal consumption still lacks momentum. Why is personal consumption so slow to get back on track? In this chapter, we bring the factors to light which have led to the recent lack of momentum in personal consumption, and consider the issues in moving toward expansion in personal consumption.

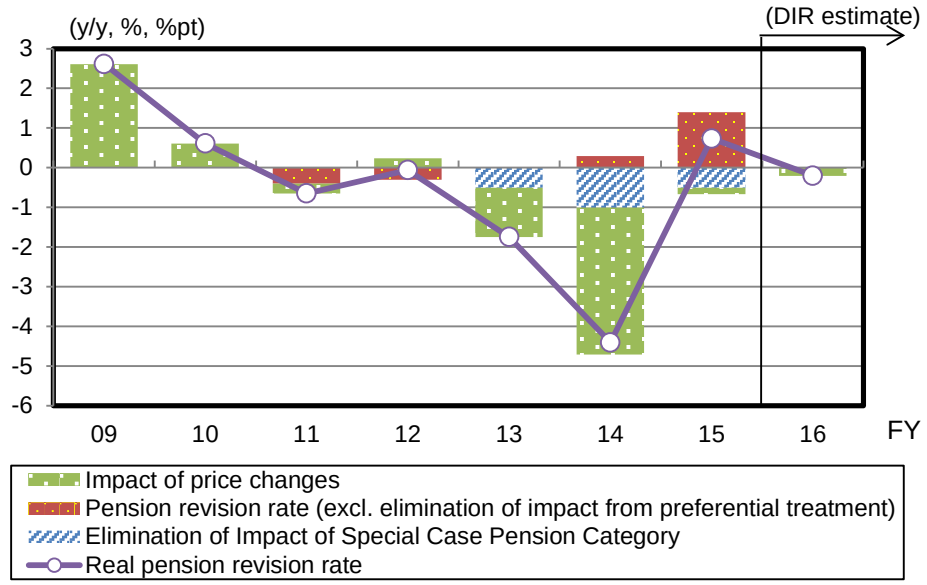
4.1 Three Short-Term Factors behind Stagnant Personal Consumption

The decline in income for non-working people due to the elimination of special cases for receiving pensions

Factors leading to the stagnation of personal consumption can be divided into short-term and mid to long-term categories. First we look at the short-term factors: (1) Elimination of the special case pension category, (2) Sluggish growth for disposable income, and (3) Reactionary decline following past economic stimulus measures.

First we consider the issues surrounding (1) Elimination of the special case pension category. After the inauguration of the Second Abe Cabinet, corporate earnings expanded considerably due to yen depreciation, but wages did not grow as much as had been expected. This is a discrepancy which is often pointed out. However, income of non-working people was more sluggish than worker incomes. This is because pension payment amounts suffered during this time. Annual pension amounts are determined each year by major trends in prices and wages. But despite the decline in prices in past years, pension payment amounts were left untouched until FY2012 when special measures were introduced to keep payments at an artificially high level. After FY2013 special measures were eliminated, bringing a reduction in per capita pension payments (Chart 27). As Japan's population of pensioners grows due to its super-aged society, the total amount in pension payments is actually growing, but with somewhere around 40 million people receiving public pensions as of the end of FY2014, per capita pension payments must unfortunately be reduced. We assume here that this fact has caused a decline in consumer confidence amongst the elderly.

Real Pension Revision Rate **Chart 27**



Source: Ministry of Health, Labour, and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.

Gross salaries have grown, but net payments have not

Next we look at income related issues as mentioned in (2) Sluggish growth for disposable income. In the case of disposable income, negative factors appeared even in the consumer behavior of working age individuals. Chart 28 is a factor analysis of changes in wages, salaries, employee compensation, and disposable income between FY2012 and FY2014.

The chart reveals that these years, employee compensation grew by a total of nearly 7 trillion yen. On the other hand, this also spurred growth in income tax totaling around 3.9 trillion yen, in addition to growth in employee's share of social security contributions totaling 3.3 trillion yen, all of which served to inhibit growth in disposable income. Similarly, employee compensation grew after the inauguration of the Second Abe Cabinet, only to find the pace of growth in disposable income to slow when social security contributions later increased. This kind of situation has ended up putting out the fire in working generation consumption. Meanwhile, the highest tax bracket for income tax was increased in FY2015, adding yet another factor keeping down disposable income. It appears that the situation where net payment of salaries fails to increase even when gross salaries have grown continues.

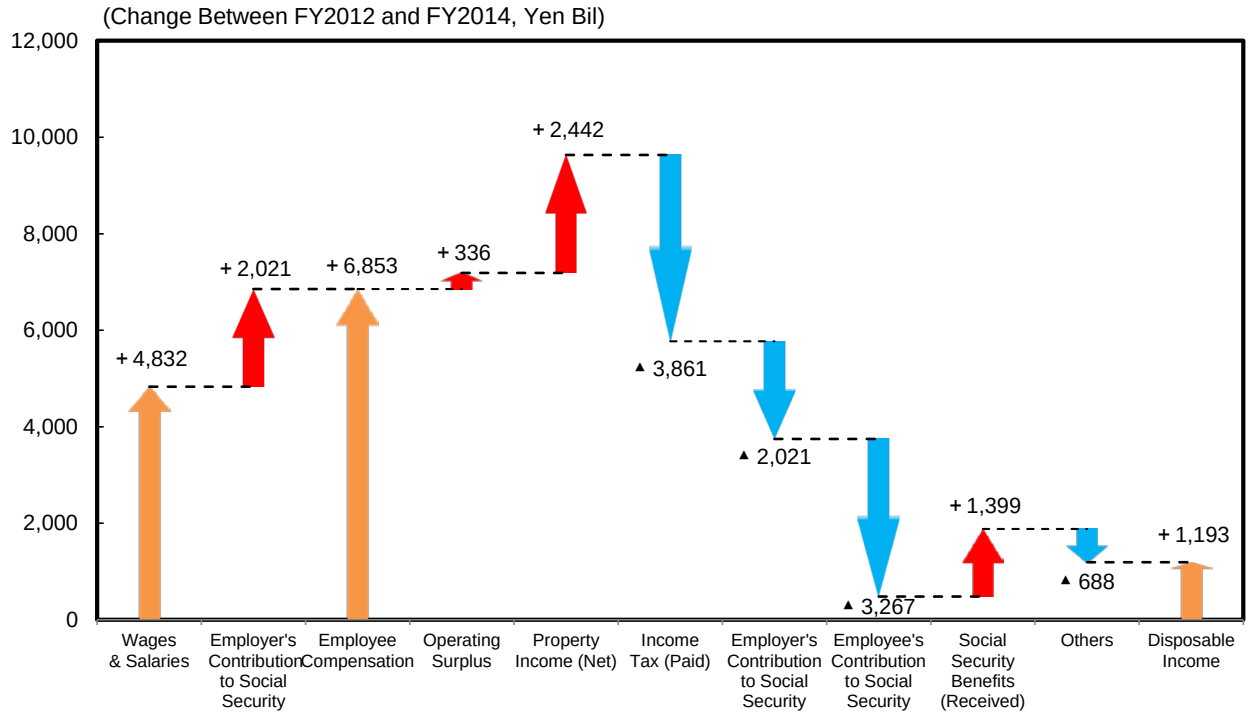
Past economic stimulus measures lead to pre-consumption over demand, putting the brakes on growth in personal consumption

The last short-term factor up for discussion here is (3) Reactionary decline following past economic stimulus measures. The economic stimulus measures referred to here were for the most part implemented after 2009 in the wake of the global financial crisis of 2008. These were Eco-car related tax breaks and the Eco-Point program effecting household electronics.

Chart 29 shows changes in real consumer expenditure on durable goods since 1994. The Eco-car subsidy and the Eco-Point program for household electronics were established after the year 2009 to provide underlying support for personal consumption during the period for which they were valid. The effect of these programs until they completed their period of validity in the Jan-Mar period of 2014, coupled with the last minute demand just prior to the increase in consumption tax in April of 2014 (though this phenomenon was not, properly speaking, an economic stimulus measure) provided impetus for more growth in consumer expenditure in durable goods than at any time in the past. On the other hand, considering the fact that real employee compensation was stagnant until the inauguration of the Second Abe Cabinet, consumption expenditure on durables could be considered overly high in

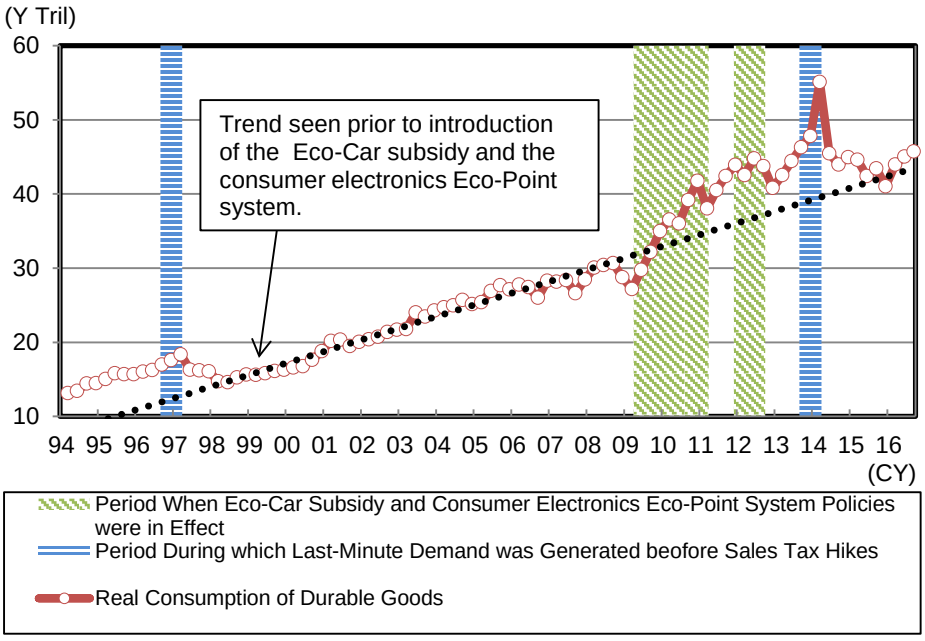
contrast to income during the year 2009 up to just before the increase in consumption tax. Because of economic stimulus programs occurring back to back with the last minute demand phenomenon, it is highly possible that pre-consumption over demand was generated. It is believed that the reactionary decline occurring after these economic stimulus programs completed their terms of validity may have been amplified by the introduction of the increase in consumption tax at the same time, thereby making the decline in consumption of durable goods after that point even worse than it might have been otherwise.

Factor Analysis of Changes in Employee Compensation and Disposable Income (FY2012 – FY2014) **Chart 28**



Source: Cabinet Office; compiled by DIR.

Changes in Consumer Expenditure in Durable Goods **Chart 29**



Source: Cabinet Office; compiled by DIR.

Effects of short-term factors on personal consumption

In this section we examine the extent to which short-term factors influenced personal consumption. Chart 30 provides a quantitative analysis of the extent to which each of the short-term factors mentioned earlier influenced personal consumption between FY2012 and FY2014.

One approach would be to look at a breakdown of the price factor, real personal income in terms of disposable income, and average propensity to consume, but here we want to measure the influence of short-term factors on personal income, and in order to do so we need to look at more detailed factors, such as non-consumption expenditure and income. Moreover, we want to look at the short-term factors listed in the previous section in the context of their relationship to other factors as follows: (1) Elimination of the special case pension category: the per capita pension payment factor, (2) Sluggish growth for disposable income: the social security contribution factor, and (3) Reactionary decline following past economic stimulus measures: the economic stimulus measures factor.

Looking at Chart 30 we see that the greatest weight holding down personal consumption is brought on by prices. This observation is consistent with the general opinion, which considers the increase in consumption tax in 2014 to be what triggered the stagnation in personal consumption. On the other hand, the disposable income and average propensity to spend factors have actually brought positive contributions, and considering this fact, it seems that if prices had not gone up as a result of the increase in consumption tax, personal consumption would have to have been maintaining favorable performance backed by growth in income. Next we look at each of the three short-term factors and find that they have all contributed negatively to personal consumption as follows: (1) Elimination of the special case pension category (-0.4%pt), (2) Sluggish growth for disposable income (-0.7%pt), and (3) Reactionary decline following past economic stimulus measures (-0.2%pt). Total negative contribution of the three short-term factors is -1.3%pt.

Elimination of special case pension category and reactionary decline following past economic stimulus measures are expected to lose their negative influence in the future

Next we look at the future of personal consumption based on the above arguments. First of all, there is a very good possibility that two of the short-term factors listed above will lose their negative influence in the near future. These are (1) Elimination of the special case pension category, and (3) Reactionary decline following past economic stimulus measures. The special level for pension payment amounts was eliminated in FY2015, and its influence in the form of reactionary decline after pre-consumption over demand is expected to have soon run its course. Meanwhile, seven years have passed since 2009 when economic stimulus measures encouraged sales of durables, meaning that we are now entering a period when consumers will be replacing older durables. And if wage hikes continue into FY2017, personal consumption stands a good chance of achieving a moderate recovery with further help from the recent fall in prices.

On the other hand, we still have the issue of sluggish growth for disposable income mentioned in (2) in the previous section. This point is expected to require continued monitoring in the future. Insurance premiums for the employee pension plan will be raised in September 2017 and then fixed at that level. With no way out seen from Japan's low birth rate, super-aged society, the social security burden on the individual will have to be raised in the mid to long-term, and it is not expected to be lowered at any time in the future.

Factor Analysis of Growth Rate for Real Personal Consumption (FY2012-FY2014) **Chart 30**

Real Personal Consumption	Price Factor	Disposable Income Factor										Average propensity to Consume Factor				
			Non-Consumption Expenditure			Income Factor							Nominal Personal Consumption Factor			
				Income Tax Factor	Social Security Burden Factor ②		Wages & Salaries Factor	Social Benefit Factor			Income from Property and Other Factors			Economic Stimulus Measures Factor ③	Structural Factors	Disposable Income Factor
									Number of Public Pension Beneficiaries Factor	Per Capita Pension Payment Factor ①						
▲0.6	▲2.4	1.0	▲1.8	▲1.1	▲0.7	2.2	2.0	0.2	0.6	▲0.4	0.7	0.7	1.8	▲0.2	2.0	▲1.0

Source: Ministry of Health, Labour and Welfare, Cabinet Office; compiled by DIR.
Note: Units are % and %pt. We performed a factor analysis on changes in personal consumption between FY2012 and FY2014. Then we used the nominal value of difference between trends in real consumption of durable goods and rate of increase in the actual value as the economic stimulus measure factor. It should be noted at the same time that an error occurs in this calculation. Hence the total of extent of contribution does not agree with the growth rate of personal consumption.

4.2 Mid to Long-Term Factors Causing Stagnant Personal Consumption

Households becoming increasingly negative in regard to consumption

Next we examine mid to long-term factors influencing personal consumption. These include increasing budget-mindedness on the part of households, increasing uncertainty regarding the future, and issues surrounding employment for the younger generation.

Chart 31 shows changes in worker household propensity to consume. Though recently there has been some movement toward making a comeback, we see that since June of 2016 average propensity to consume suffered a steep decline. The recent decline in average propensity to consume is caused by sluggish consumer spending despite growth in disposable income. The other side of decline in average propensity to consume is that it means the savings rate is growing. This indicates that in response to the decision to delay the additional consumption tax hike originally planned for April 2017 and the growing sense that corporate earnings are about to peak out, the future of the Japanese economy and the government's fiscal situation have become increasingly uncertain, and with this as background, households have begun to suppress non-essential, non-urgent consumption, moving further in the direction of budget-mindedness.

Household sector may be experiencing simultaneous development of one-point luxury principle and budget-mindedness

In this section we consider whether or not households are actually becoming more budget-minded recently, based on average price of purchases by households and data on purchase volume.

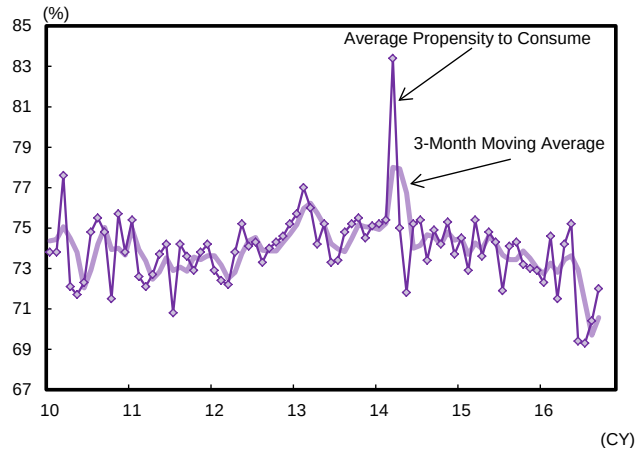
Chart 32 shows changes in quality and purchase volume of various goods by individual article. If the growth rate in the consumer price index associated with a particular product exceeds the growth rate of the average purchase price paid by households for this article, this means that households have begun to purchase a product whose price has risen beyond the inflation rate. (It is assumed that the product is relatively high quality.) In other words, we can assume that products purchased by households are as high-quality as those shown on the right-hand side of the chart. Now taking another look at Chart 32, we can see that rate of change in quality and purchase volume has a negative correlation. As households begin to purchase high quality goods less frequently, we see that at the same time frequency of purchase of lower quality products increases.

The implications of this phenomenon are as follows. Recently the tendency has been for households to go ahead and purchase certain high-quality / high-priced goods, but then to retain a balanced approach towards spending by increasing their purchase volume of low quality products in relation to which they reduce the average purchase price they pay, and in this way cut down on expenditures. In other words, households are making use of the one-point luxury principle in their spending habits, whereby

one allows oneself the purchase of one high-quality / high-priced item and for everything else one cuts back on price, while at the same time strengthening their generally budget-minded habits.

Change in Average Propensity to Consume (Worker Households)

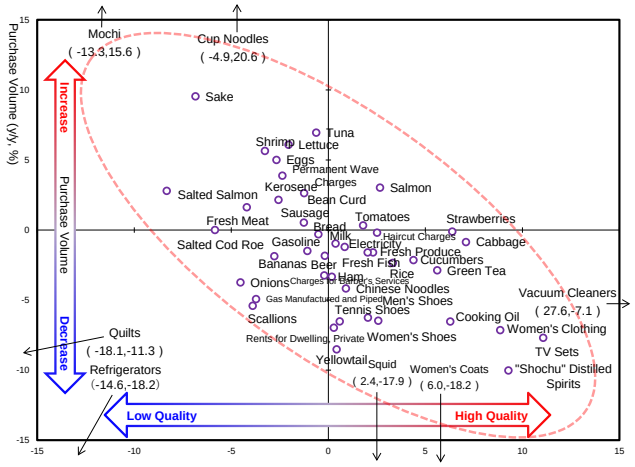
Chart 31



Source: Ministry of Internal Affairs and Communications; compiled by DIR.

Changes in Quality and Purchase Volume by Individual Article

Chart 32



Source: Ministry of Internal Affairs and Communications; compiled by DIR.

Note: Apr-Jun 2015 and Apr-Jun 2016 periods, year-to-year comparison. Data from household survey and consumer price index. Fifty articles with the greatest weight in consumer price index were used and plotted on the graph.

Risk of return to deflation implied by collapse of unit purchase price

A difficult point that we must remain aware of is that behind the increasing budget-mindedness of households lies increasing risk of a return to deflation. Chart 33 compares consumer price index and unit purchase price index based on data from the Household Survey. The unit purchase price index generally leads the consumer price index. Recently the growth rate of the unit purchase price index has entered the negative area ahead of the consumer price index.

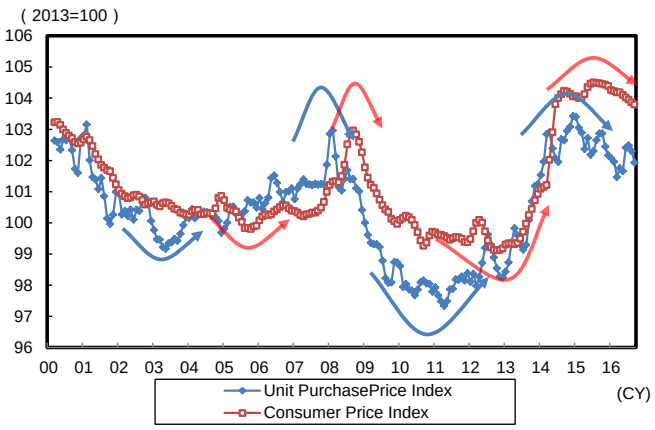
Why does the unit purchase price index lead the consumer price index? In the first place, the consumer price index principally indicates changes in regular prices of items of equal quality. On the other hand, the unit purchase price index indicates the prices actually paid by consumers. If consumers start buying higher quality products, the consumer price will remain unchanged, but a change becomes evident in the unit purchase price, which rises. Conversely, if consumers start accepting lower quality, the unit purchase price will fall. If a retail store has a sale, consumers will be able to buy a high quality product at a price lower than the regular price. Then the behaviors of consumers on the demand side and retailers on the supply-side can cause the unit purchase price to decline simply by repeating the process of consumers choosing cheaper items and the retailer responding by having more sales where products are sold more cheaply than normal.

Assuming that consumers are showing a preference for lower priced, lower quality items, corporations will then get a strong sense that they can only sell low-priced items. When this happens, a company stands a good chance of recovering market share by utilizing the strategy of cutting prices. In this way, the budget-minded behavior of consumers can invite deflation. On the other hand, repeated sales carried out by retailers can lead to avoidance of the regular price by consumers who have gotten used to the lower price, thereby causing the sale price to be adopted as the new regular price.[1]

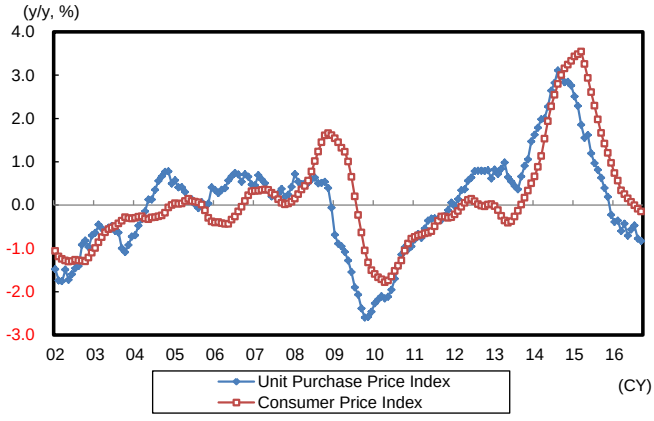
[1] "Does a Higher Frequency of Micro-level Price Changes Matter for Macro Price Stickiness?" by Yoshiyuki Kurachi, Kazuhiro Hiraki & Shinichi Nishioka, Bank of Japan Working Paper Series No.16-E-9 (2016).

The deflationary mindset of consumers and retailers can actually bring down the unit purchase price and bring strong downward pressure on the price of commodities. It goes without saying that this places the Japanese economy in an extremely precarious position, having only recently managed to pull itself out of the deflationary spiral. For this reason it is now necessary to keep in mind a new risk factor – that of a return to the deflation of the past.

Changes in Unit Purchase Price Index and Consumer Price Index (Left: Level, Right: y/y) **Chart 33**



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Seasonally adjusted 3-month moving average.



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Year-to-year comparison according to 12-month moving average.

Anxiety about the future may be keeping consumption in check, especially for young generation

In this section, we examine the phenomenon of the rise in anxiety about the future. Chart 34 shows amounts in national pension plan insurance premiums paid and pension benefits received by birth year according to the Ministry of Health, Labour and Welfare's 2014 report on Japan's fiscal condition – *Current Fiscal Condition and Outlook as Pertains to the National Pension System and Employee Pensions*. According to estimates published in this report, total premium payment burden and benefit payout rate for persons born in 1945 who were 70 years old as of 2015 was 5.2x. The younger the beneficiary, the more the payout rate declines, with those born in 1995 (age 20 as of the year 2015) with a payout rate of 2.3x. There is quite a noticeable gap between generations. These estimates are based on the assumptions utilized by the Cabinet Office in its publication, *Mid to Long-Term Economic and Fiscal Estimate (Economic Revitalization Version)*, submitted by the Council on Fiscal and Economic Policy, January 20, 2014. Using stricter assumptions than the government, one finds that the gap in payout ratio between the generations becomes even larger. Some are of the opinion that the social security system should not take losses and gains into consideration. The younger generation considers this to be unfair. Unsurprisingly, the younger generation feels insecure and wonders whether they will be able to receive any pension at all in the future. We believe that this is one of the major factors keeping consumption in check in the younger generation.

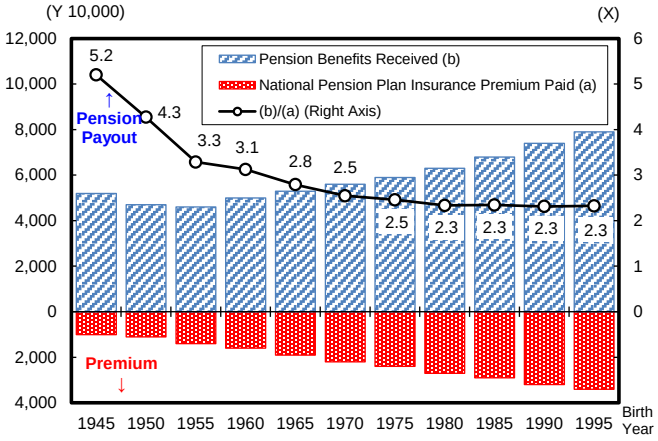
Average propensity to consume amongst young people declines step by step for each age group

There was a time when the worries of the younger generation regarding the future were relatively few. This was certainly the case for those who are now middle-aged. But what is the relationship to consumption of the younger generation today? To what extent is their attitude negative? Chart 35 takes a look at average propensity to consume based on the generation and age of the head of household. In cases where the head of household is between age 30 and 50, incomes tend to grow and consumption expenditure expands as well. However, we found that the level of propensity to consume tends to decline as the generation gets younger.

For people born between 1946-1950, the Japanese economy was in a rapid growth phase when they were in their 30s and 40s, hence propensity to consume easily moves into the higher bracket for this

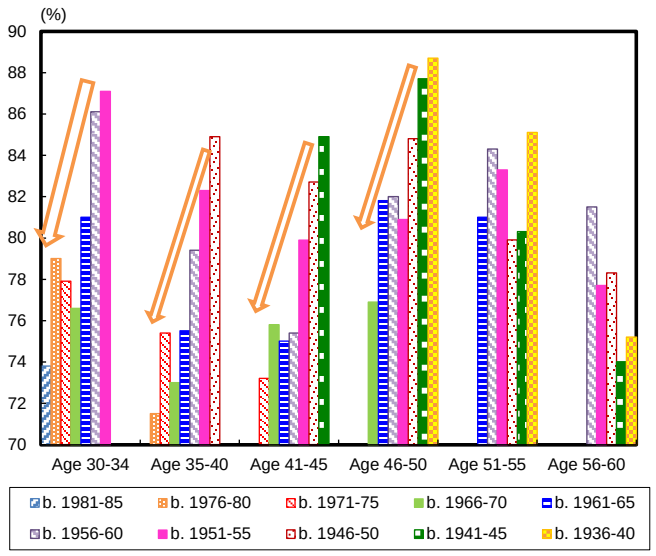
generation. However, each of the generations that follow tends toward a progressively lower average propensity to consume, with declines seen in each subsequent generation. Fears regarding the sustainability of the public pension system have grown over the years, and this sense of insecurity is thought to be a factor in pushing the younger generation more toward a preference for saving. In addition, with the continued long-term stagnation, the seniority system has crumbled and the outlook is not good for future income growth. This is yet another factor in holding down consumption amongst members of the younger generation.

Generation Gap in Employee Pension Payout Ratio
Chart 34



Source: Ministry of Health, Labour and Welfare; compiled by DIR.
Notes: 1) Amounts of premiums paid and pension benefits received by persons in each birth year were converted using growth rate in wages to find price as of age 65, then this amount was reduced using growth rate of commodities prices to find current value (as of FY2014).
2) Economic assumptions: For years up to 2023 we used the case based on the standard in the Cabinet Office publication, *Mid to Long-Term Economic and Fiscal Estimate (Economic Revitalization Version)*, submitted by the Council on Fiscal and Economic Policy, January 20, 2014. After 2023 we used a case based on the lowest growth rate with reference to Cabinet Office estimates. Our assumptions regarding population are based on the moderate range projection in Population Projection for Japan: 2011-2060 (January 2012), produced by the National Institute of Population and Social Security Research.

Average Propensity to Consume Based on Generation and Age of Head of Household
Chart 35



Source: Ministry of Internal Affairs and Communications; compiled by DIR.

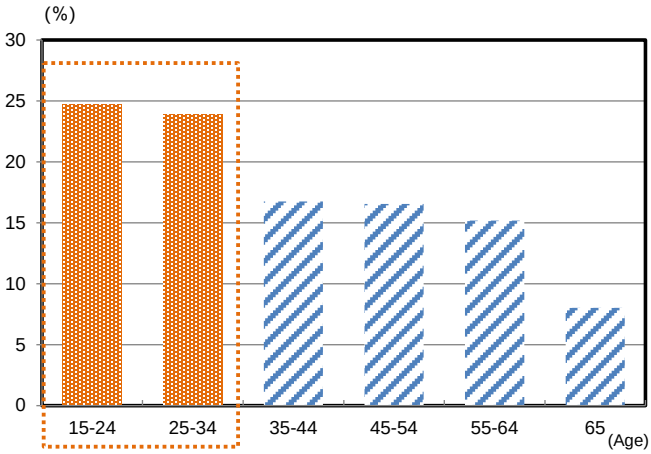
Improvement in employment environment for younger generation urgently needed

Finding ways to expand personal consumption amongst members of the younger generation is essential as a means of increasing personal consumption in the mid to long-term, and doing so requires finding ways to improve the employment environment for the young.

The first thing needed to improve the employment environment for the younger generation is to decrease the number of instances of involuntary non-regular employment. Chart 36 shows the percentage of the overall number of non-regular employees accounted for by involuntary non-regular employees. As is made clear by this chart, the ratio of involuntary non-regular employees who are members of the younger generation is high as compared to those of other generations. While there are some benefits to non-regular employment, such as the freedom to work during hours that are convenient for the individual worker, there are also disadvantageous factors, such as unstable employment and a lower wage. If involuntary non-regular employees were to be offered terms of employment more satisfactory to them, it stands to reason that anxiety about the future would recede and lifetime earnings would increase, thereby creating the possibility that consumer expenditure also might be encouraged to expand.

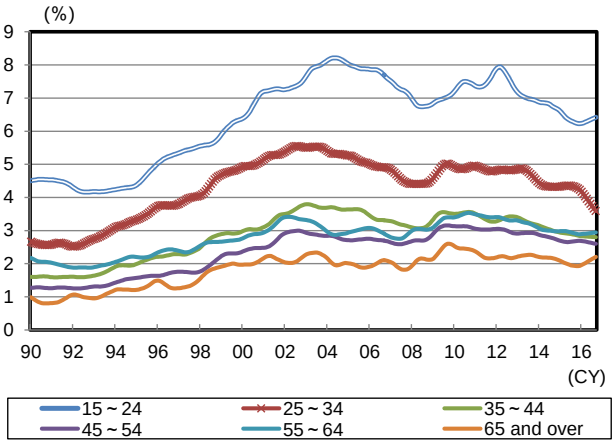
Second is the importance of eliminating the problem of employment mismatch. This would encourage a decline in the unemployment rate for the younger generation. Chart 37 shows the structural unemployment rate by age group. The structural unemployment rate has been high recently for the 15-24 and 25-34 age groups, in other words the younger generation, in comparison to other age groups. Meanwhile, looking at past trends we can see that structural unemployment rose sharply for the younger generation during the 1990s as well. This suggests that the problem of employment mismatch is larger for the younger generation than for other age groups, and that this problem has been a long-term one. If the problem of employment mismatch can be resolved, it could also reduce the unemployment rate amongst the younger generation, leading to growth in income and a decline in feelings of anxiety about the future, and finally, it would also promise to help stimulate personal consumption.

Ratio of Involuntary Non-Regular Employees
Chart 36



Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Notes: 1) Percentage of non-regular employees accounted for by persons who accepted non-regular employment because there were no openings available for regular employees.
2) Number of non-regular employees in the 15-24 age group excludes those attending school.

Structural Unemployment Rate by Age Group
Chart 37



Source: Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.
Note: Estimates by DIR.

Mid to long-term factors keeping personal consumption in check are structural problems requiring government intervention in the form of effective policy

The mid to long-term factors causing stagnant personal consumption which we have discussed in this chapter are structural problems which are not easy to resolve. It is quite possible that these same factors will continue to inhibit the expansion of personal consumption on into the future. Therefore we believe that it is necessary for the government to promote reforms such as building a sustainable social security system which will remove the feelings of anxiety about the future now held by citizens. Meanwhile, improvements must be made in the employment environment for younger workers. This can be done by correcting the polarization of the labor market and introducing equal pay for equal work.

5. What Is Needed to Improve Japan's Economic Statistics?

Arguments regarding the state of Japan's economic statistics have been quite animated of late. In this chapter, we examine a variety of issues regarding Japan's economic statistics and point out some of the practical issues which must be resolved in order to move toward making improvements. Then we perform a test run of one possible method of improving the Household Survey.

5.1 Accuracy and Prompt Reporting Most Important in Economic Statistics

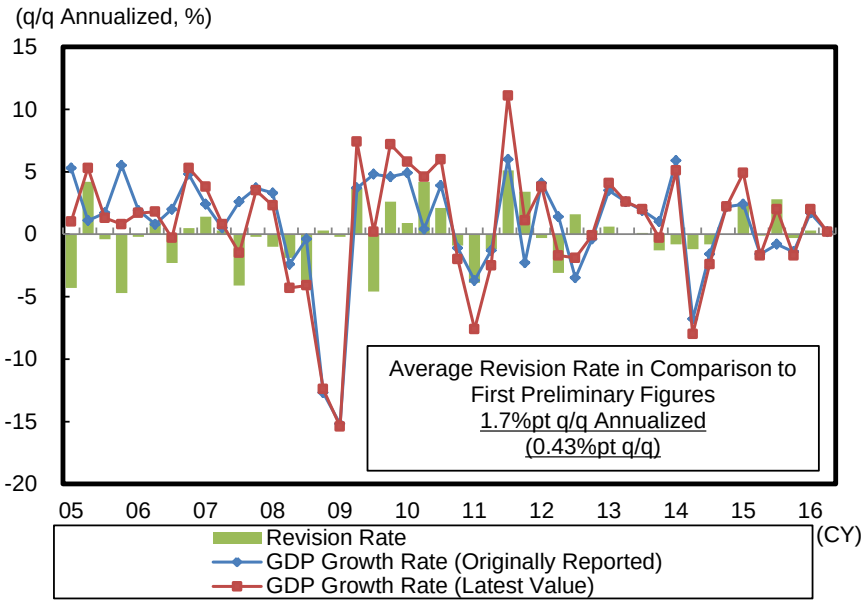
Japan's economic statistics compare poorly with those of other countries in accuracy and prompt reporting.

The most important factors in economic statistics are accuracy and prompt reporting. No matter how accurate statistics are, their use-value drops dramatically if it takes years to make them public. On the other hand, even improvements made in the prompt reporting of a particular statistic are no help without accuracy – having to report multiple revisions to a statistic make it look like one is misreading the actual economic situation.

Looking at current statistical data, which do you suppose is most problematic for Japan – accuracy or prompt reporting? Unfortunately, we have to say that both aspects of Japan's statistics require improvements. Chart 38 compares the originally publicized value for Japan's GDP growth rate with the most recent value. Between 2005 and the 2nd quarter of 2016, the average rate of revision of the quarter-to-quarter annualized growth rate for GDP was 1.7%pt. Looking at statistics reported by the US and Eurozone during this same time we see that revisions were fairly small in comparison to Japan, with the US averaging 1.0%pt and Eurozone averaging around 0.6%pt for its revision rate.

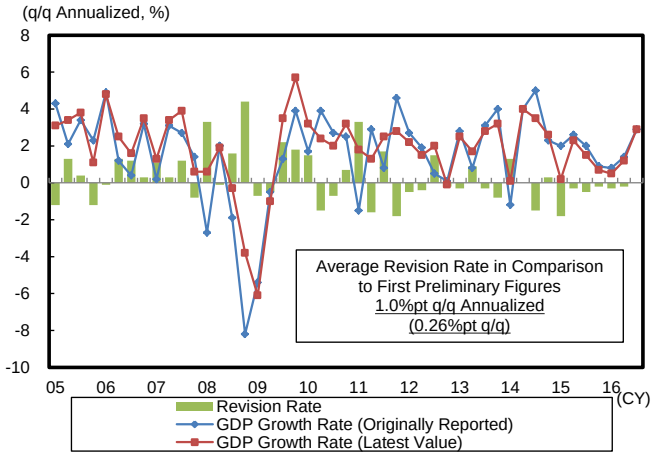
Meanwhile, another problem with Japan's GDP reporting is that it is slow. Japan's Jul-Sep 2016 1st preliminary GDP estimate was officially made public on November 14th. In comparison, the US GDP figures were made public on October 28th while Eurozone GDP was publicized on October 31st. But not only that; despite the time it takes to report, Japan's GDP figures require fairly large revisions. Japan's economic statistics pale in comparison to those of other countries in the area of both accuracy and prompt reporting.

GDP Growth Rate: Comparison of Latest Value with Originally Reported Value (Japan) **Chart 38**



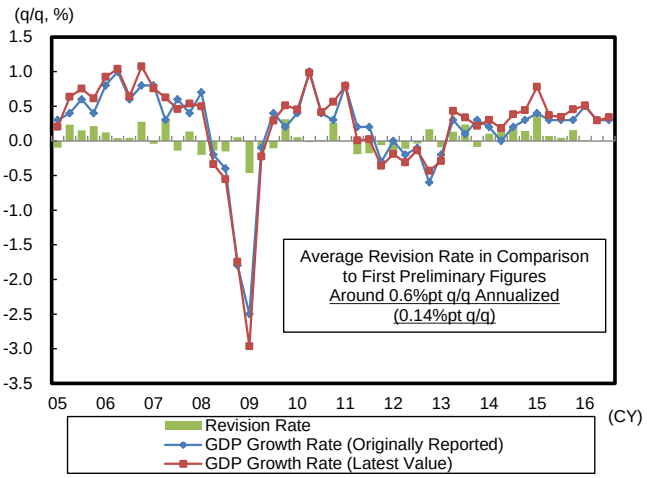
Source: Cabinet Office; compiled by DIR.

GDP Growth Rate: Comparison of Latest Value with Originally Reported Value (US)
Chart 39



Source: BEA; compiled by DIR.

GDP Growth Rate: Comparison of Latest Value with Originally Reported Value (Eurozone)
Chart 40



Source: Eurostat; compiled by DIR.

With its potential growth rate at a low, errors in Japan's statistics can wield great influence

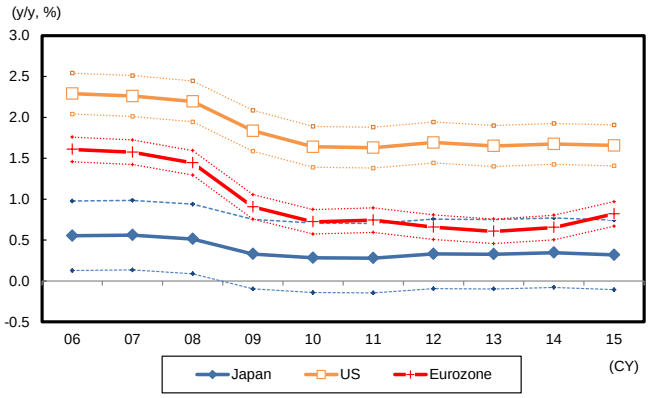
The reason that economic statistics have been problematized to such a degree in Japan is because of its low potential growth rate. Chart 41 shows OECD estimates of potential growth rates in Japan, the US, and the Eurozone. Japan's 2015 potential growth rate, at +0.3% y/y, was considerably lower than that of the US or the Eurozone. What becomes problematic here is that the average revision rate of the GDP statistic exceeds Japan's potential growth rate. The statistical revision rate could conceivably go either way, but if growth rate is pushed further downwards due to a statistical error, it could sink further downwards into negative numbers, even though it is actually at the same level as the potential growth rate.

In Japan, the diffusion index is used to determine whether the economy has entered an expansion phase or a recession. However, often the simplified method is used, meaning a technical recession is called if negative growth is experienced for two consecutive quarters. There are also opinions that in the Japanese economy with its potential growth rate having declined, the fact that it might temporarily fall into the negative numbers does not necessarily mean that a recession has occurred. Often when a technical recession is called this triggers the political necessity of implementing economic stimulus measures. Fluctuations in statistics can also cause the economic growth rate to lapse into negative territory, providing the grounds for implementing special economic measures. In fact, this could happen at any time. Implementing economic stimulus measures when the economy has not actually worsened causes waste, such as expenditure on unnecessary administrative expenses. Therefore it can also be said that economic statistics now require even more accuracy than they did in the past so that the management and operation of economic stimulus measures can be concentrated on those projects which are the most needed.

Furthermore, the method of estimating potential growth rate in Japan is in itself problematic. Chart 42 shows potential growth rate as estimated and reported by the Cabinet Office, in other words, potential growth rate as understood by the government. When we examine this chart, there is one important factor that stands out in relief – that is the fact that the estimate for Japan's potential growth rate has been continually revised downwards over the past year-and-a-half. If it turns out that the government has been misreading the data on potential growth rate all along, then this would also mean that there is a greater possibility for making errors in judgment in regard to the management and operation of economic stimulus measures. Although we acknowledge the fact that potential growth rate is not an official government statistic meant for publicizing but is simply used as a kind of fixture amongst the various reference materials used in managing and operating economic policy, we still have the hope

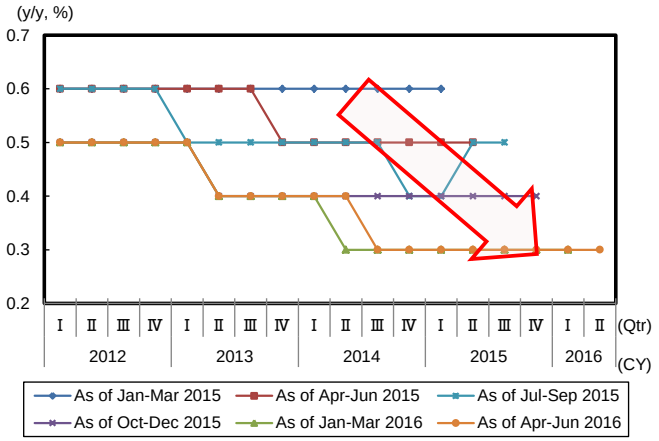
and expectation that the Cabinet Office will increase its efforts to improve accuracy when it comes to estimating this statistic as well as others.

Changes in Potential Growth Rate in Japan, the US, and Eurozone
Chart 41



Source: OECD; compiled by DIR.
Note: Dotted lines represent the potential growth rates of each country with average growth rate correction amount (q/q) added or subtracted.

Transitions in Potential Growth Rate as Estimated by the Cabinet Office
Chart 42



Source: Cabinet Office; compiled by DIR.

5.2 Is Personal Consumption Underestimated on the Household Survey?

Consumption expenditure on the Household Survey shown performing weaker than on the Current Survey of Commerce

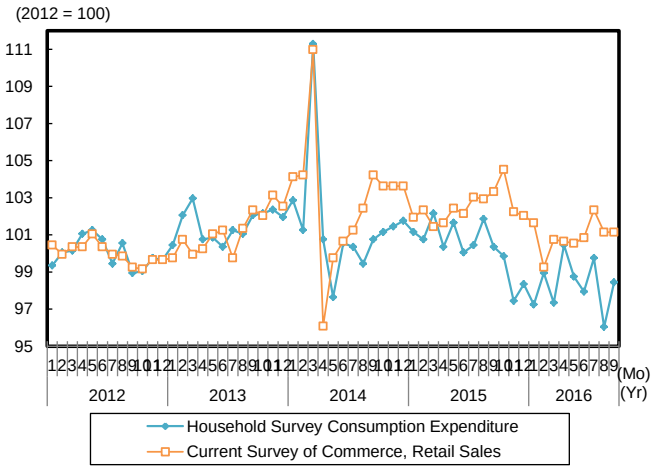
Next we place our focus on a question which has attracted major concerns in arguments associated with economic indices. That is the question of accuracy in the Household Survey. In this section we perform a close analysis of the survey. The main subjects of our analysis are (1) Have estimates of the trend in personal consumption on the Household Survey been overly low? And (2) Is this a factor in underestimating personal consumption on the GDP statistic?

The argument that the Household Survey may be underestimating personal consumption stems from the fact that consumption expenditure on the Household Survey is shown performing weaker than it does on the Current Survey of Commerce. Chart 43 shows a comparison of these two statistics. The data on the chart suggest that there was more or less linkage between the two until around March 2014. Divergence begins in April 2014 after the increase in consumption tax was implemented. From this point on the Household Survey shows a weaker trend for consumption expenditure in comparison to retail sales on the the Current Survey of Commerce. At the same time, however, we must take into consideration that the scope of these two statistics differs. The Household Survey includes consumption of services in its collection of data, while the the Current Survey of Commerce considers only goods in its computation of retail sales. It is difficult to judge whether trends in consumption are underestimated on the Household Survey without first making an adjustment for this fact.

Chart 44 shows a comparison between goods as they appear on the Household Survey, and the retail sales category on the the Current Survey of Commerce. This tells us that consumption expenditure on the Household Survey is still lower than retail sales on the the Current Survey of Commerce even when the scope of these two statistics is brought more into alignment. The difference between figures for the year 2014 is lessened somewhat in this case, but then a downward swing occurs in 2015. We can therefore conclude that the lack of consistency between consumption expenditure on the Household Survey and retail sales on the the Current Survey of Commerce is not due to differences in the scope of the two statistics. For a better comparison with the the Current Survey of Commerce we also take a look at the composite index of consumption expenditures (explained further in the section

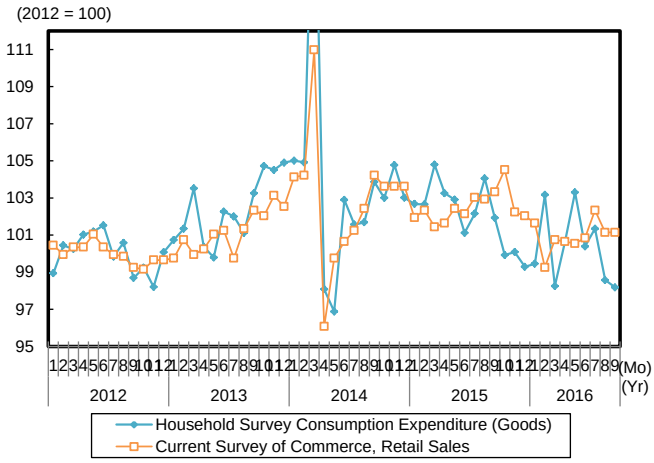
that follows). It is here that we find final proof that personal consumption is underestimated on the Household Survey.

Comparison of Household Survey and Current Survey of Commerce **Chart 43**



Source: Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry; compiled by DIR.
Note: Figures are seasonally adjusted. Seasonal adjustment performed by DIR.

Comparison with Goods Category on Household Survey and Current Survey of Commerce **Chart 44**

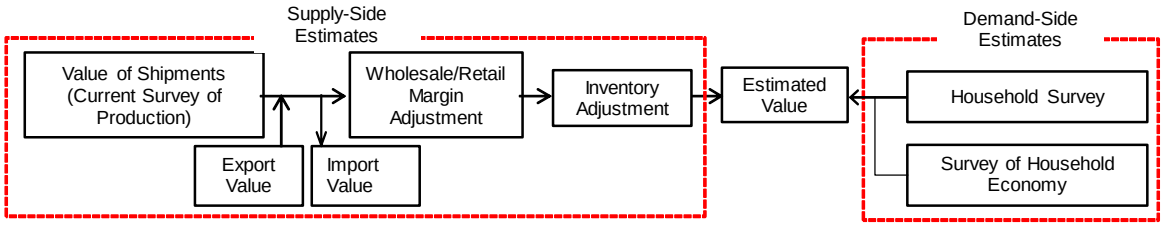


Source: Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry; compiled by DIR.
Note: Figures are seasonally adjusted. Seasonal adjustment performed by DIR.

Does the overly low estimate of personal consumption on the Household Survey influence the GDP statistic? (Comparison based on consumption of goods).

Is the Household Survey a factor in overly low estimates of personal consumption on the GDP statistic? Only one particular portion of the Household Survey data is used in estimating GDP (Chart 45). Value of shipments and other supply-side figures are used, but for items which tend to experience large fluctuations, other statistics, such as the Survey of Household Economy are used. The Household Survey is not used in this case. In order to determine the degree to which the Household Survey contributes to overly low estimates of personal consumption on the GDP statistic, we separate items in the Household Survey that are not used in the GDP statistic from those portions that are, and compare the degree to which these two different groups of items cause overly low estimates.

Technique of Estimating Consumption Expenditure in the GDP Statistic (Preliminary Figure) **Chart 45**



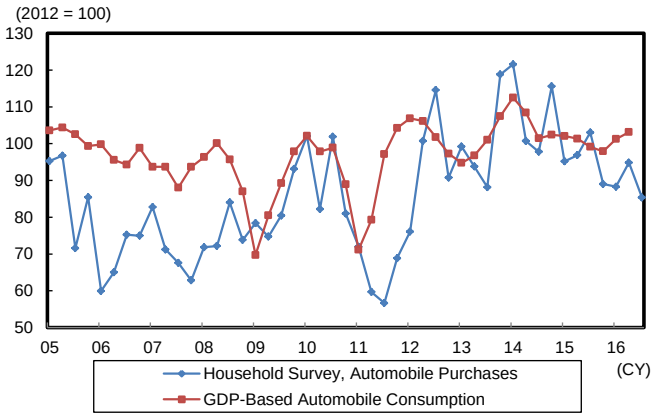
Source: Cabinet Office; compiled by DIR.

First we examine the data on automobiles as this item tends to fluctuate widely in comparison to other aspects of consumption expenditure, as well as having a large monetary value. Chart 46 is a comparison of consumption expenditure on automobiles in the Household Survey and GDP-based consumption expenditure on automobiles. Here we get the impression that broadly speaking the two statistics are linked when it comes to automobiles. However, just recently the Household Survey's figure has begun to display some weakness. It appears that one of the factors behind excessively low estimates in the Household Survey is the overly low estimate for consumption expenditure on automobiles. However, the GDP estimate utilizes only the supply-side figure in its estimate of consumption expenditure on automobiles. It does not make use of data from the Household Survey.

Therefore, even if the Household Survey is producing an excessively low estimate for consumption expenditure on automobiles, it can't be a factor in the overly low GDP estimate.

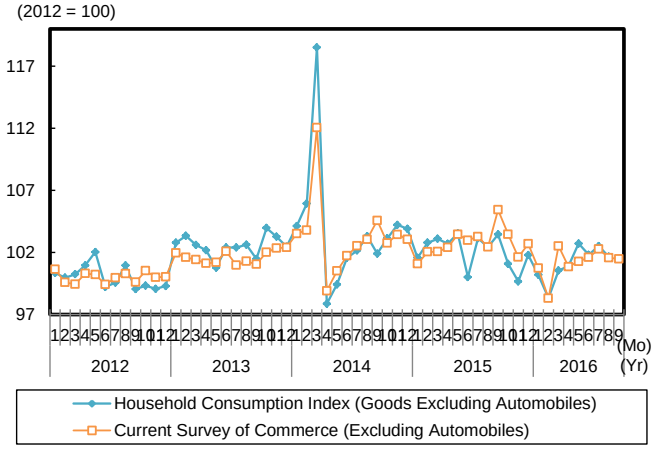
Next we take another look at items in the Household Survey that tend to exhibit wide fluctuations (such as household electronics and clothing), and look at these as they are represented on the composite index of consumption expenditures, which is made up of items from both the Household Survey and the Survey of Household Economy. Chart 47 shows data on goods from the composite index of consumption expenditures alongside data on retail sales from the the Current Survey of Commerce. Here we compare figures excluding those for automobiles discussed earlier. Here we find fairly close linkage, especially when we look at more detailed figures such as the monthly figures. Here we make corrections for the divergence between the the Current Survey of Commerce and the Household Survey by supplementing the figures with data from the Survey of Household Economy. The way this is done is to replace figures on the Household Survey which make use of overly low estimates with a comparative figure on the Survey of Household Economy. Limiting the scope of our investigation to goods, it appears that there is a good chance the Household Survey does not contribute to excessively low estimates on the GDP statistic after all.

Difference in Expenditure on Automobiles in the Household Survey Data and the GDP Statistic
Chart 46



Source: Ministry of Internal Affairs and Communications, Cabinet Office; compiled by DIR.
Notes: 1) Consumption expenditure on automobiles on a GDP basis estimated by DIR.
2) Figures are seasonally adjusted. Seasonal adjustment performed by DIR.

Comparison of Household Consumption Index and The Current Survey of Commerce
Chart 47



Source: Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry; compiled by DIR.
Note: Figures are seasonally adjusted. Seasonal adjustment performed by DIR.

Is the estimate for consumption of services excessively low on the Household Survey?

Up to this point our arguments and analysis have been limited to goods. Next we consider the data on services in the Household Survey.

When it comes to the services sector, the equivalent statistic to retail sales on the the Current Survey of Commerce is the Indices of Tertiary Industry Activity. Chart 48 suggests general linkage between comprehensive personal services from the Indices of Tertiary Industry Activity and consumption of services in the GDP statistics when monetary values are compared. In other words, by comparing expenditure on services in the Household Survey to figures from the Indices of Tertiary Industry Activity, we can determine whether or not the Household Survey is producing overly low estimates.

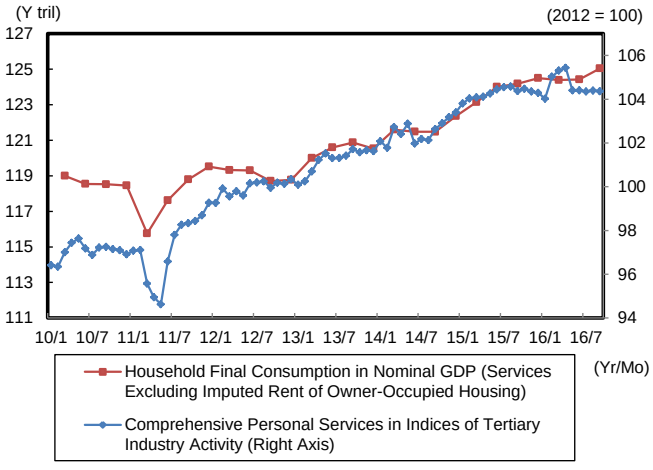
Most items from household survey are not used in estimating personal consumption of services in the GDP statistics. The items that do share estimates in both statistics are house rentals, medical & nursing care, insurance, finance, and real estate brokerage and management. Only supply-side data is used.

These items account for approximately half of the components for consumption of services in the GDP statistics.

Chart 49 is a comparison between comprehensive personal services in the Indices of Tertiary Industry Activity and the composite index of consumption expenditures (services sector) excluding the above listed shared items. Recently the composite index of consumption expenditures has fallen below comprehensive personal services in the Indices of Tertiary Industry Activity. In other words, when it comes to consumption of services, even when we exclude items that are not used in estimating the GDP statistics and use the Survey of Household Economy to supplement missing items, estimates may still be excessively low.

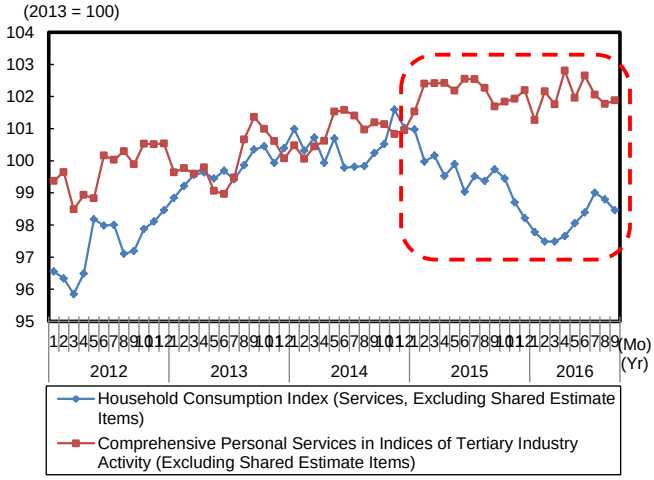
However, when we identify which items in the composite index of consumption expenditures (service sector) are at considerable lows in terms of expenditure, we find items such as airfare and tour packages standing out. These items may have experienced declines in expenditure due to the collapse of the price of crude oil, which brought a major decline in the fuel surcharge added to airfare. The unit purchase price of commodities such as this has declined more than the consumer price index. In putting together the Indices of Tertiary Industry Activity, consumer prices such as airfare and tour packages are made use of, and so it is possible that the difference between consumer price and unit purchase price have some kind of influence on the composite index of consumption expenditures being at such a low. If prices surveyed for the consumer price index were to continue to perform on the high side in a divergence from the price at which consumers actually purchase particular items, that would suggest the possibility that there is a statistical error in the consumer price index (see Chart 33 in the previous chapter). In conclusion, a serious investigation is required in order to determine whether consumption of services is being underestimated on the Household Survey and the Survey of Household Economy.

Personal Services Activity Index and Consumption of Services in GDP Statistics
Chart 48



Source: Cabinet Office, Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry; compiled by DIR.
Notes: 1) Personal services in the Indices of Tertiary Industry Activity is the 3-month moving average of the seasonally adjusted values.
2) The nominal figure for personal services in the Indices of Tertiary Industry Activity is found by multiplying the figure by the figure for CPI (Service Sector).

Household Consumption Index (Service Sector) and Personal Services Activity Index
Chart 49



Source: Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry; compiled by DIR.
Note: The nominal figure for personal services in the Indices of Tertiary Industry Activity is found by multiplying the figure by the figure for CPI (Service Sector).

5.3 Accurate Analysis Is First Step toward Improving Statistics

Overly low estimates on the Household Survey are not responsible for underestimating on GDP

The Household Survey continues to perform at a low in comparison to other statistics such as the the Current Survey of Commerce, naturally attracting suspicions that it may be underestimating the data. However, when we exclude items not used in the Household Survey for estimating personal consumption on the GDP preliminary figures (flash report), we find that the difference with the performance of the Current Survey of Commerce is for the most part resolved. If we consider only the category of goods in the various statistics, we can say that in at least this case, underestimating on the Household Survey has no connection with overly low estimates on the GDP.

On the other hand, when it comes to consumption of services, even if we exclude items not used in estimating GDP, suspicions arise that figures in the Household Survey may have been underestimated. Items which are thought to have been underestimated are those which were influenced considerably by the collapse in the price of crude oil, such as travel expenditures, airfare and so on. When compared with supply-side statistics, some items may be underestimated somewhat, but there is just as much of a possibility if not more, that supply-side statistics were overestimated. In other words, the consumer price index has overly high estimates, meaning that the Indices of Tertiary Industry Activity are also estimated on the high side. Hence, rather than focusing only on the Household Survey as being the problem, a serious approach needs to be taken to making a judgment regarding all of Japan's economic indices.

A summary of the above findings is shown in Chart 50. Ultimately, items on the Household Survey which have raised suspicions regarding possibly having been underestimated and which also may have influenced GDP are actually very few.

Items on Household Survey Which May Have Been Underestimated, and Their Influence on GDP **Chart 50**

Item	Influence on GDP	Method of Estimating GDP Flash Report
Automobiles	×	Only supply-side values used in estimate. Household survey not used.
Household Electronics	×	Demand-side values from the Survey of Household Economy used.
Clothing	×	Demand-side values from the Survey of Household Economy used.
Medical & Nursing Care	×	Estimates of National Medical Care Expenditure used. Household survey not used.
Insurance	×	Only supply-side values used in estimate. Household survey not used.
Travel Expenditures, Airfare	△	Demand-side values from the Survey of Household Economy used.

Source: Compiled by DIR.

Accurately grasping the problems based on the use of each statistic is the first step to making improvements

Validation of statistics requires a close analysis of all public statistics and a comparison with others as a means of locating problems, as well as detecting how far the problems have spread. Doing the work of clarifying problems and examining them in detail is what is needed if statistics are to be improved. Then adjustments can be made based on function and use of each statistic once we know exactly what is needed to make improvements in individual statistics such as the Household Survey and GDP.

6. Risk Factors Facing Japan's Economy: Focus on Chinese Economy

Risks facing Japan's economy

Risk factors for the Japanese economy are: (1) The policies of President Elect Donald Trump, (2) The downward swing of China's economy, (3) Tumult in the economies of emerging nations in response to the US exit strategy, (4) A strong yen / weak stock market situation brought on by risk-off behavior of investors due to geopolitical risk, and (5) Negotiations regarding the UK's withdrawal from the EU (*Brexit*), and deleveraging at EU financial institutions.

In this chapter we place focus on the China's economy which is of the utmost concern, and we provide an in-depth analysis of the situation. Our outlook for China's economy is optimistic in the short-term and pessimistic in the mid to long-term. Looking at China's economic situation in a somewhat reductive way, the fact is that China's government holds treasury funds totaling between 600 to 800 tril yen with which it is standing up to just under 1,000 tril yen in excessive lending and over 550 tril yen in excess capital stock. China is expected to be able to avoid the bottom falling out of its economy for a little while, but in the mid to long-term, there is risk of a massive capital stock adjustment.

6.1 Overview of Problems that China's Economy Faces

Optimistic in the short-term and pessimistic in the mid to long-term

Since the summer of 2015 fears have grown rapidly regarding the imminent collapse of China's economic bubble. China's sudden step towards devaluation of the renminbi triggered a seismic event in the global financial markets. How are we to understand the risks now facing the Chinese economy? (More detail on this subject can be found in *Japan's Economic Outlook No. 186* , September 10, 2015, by Mitsumaru Kumagai.)

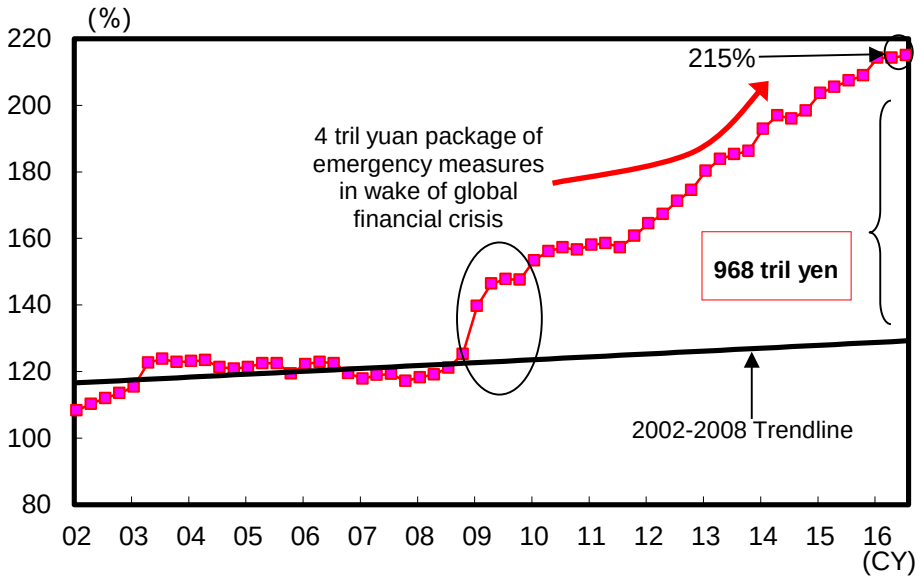
In a word, our view of China's economy is optimistic in the short-term but pessimistic in the mid to long-term. Since China is a Socialist country, it can give its economy a shot in the arm mostly in the form of public investment, thereby delaying the inevitable for another year or two. But in another three to five years the risk of China's economic bubble bursting will again come to the fore.

China's excesses: (1) Excessive lending of just under 1,000 tril yen

In this section we discuss China's two huge excesses. The first financial excess is excessive lending. Excessive lending in China is estimated at a total of just under 1,000 tril yen (see Chart 51). If a certain percentage of this amount becomes irrecoverable, it would mean hundreds of trillions of yen in non-performing loans. When Japan's economic bubble burst, it carried non-performing loans totaling 100 tril yen. Considering this fact, it is not an overstatement to call this the biggest economic bubble in history.

The global financial markets are increasingly nervous about the possible risk scenarios, including (1) China drawing down its foreign currency reserves (around $3.2 tril as of end July 2016) to deal with non-performing debt, causing long-term interest rates to surge in the US, and (2) the yen rapidly appreciating from a global flight to quality.

China's Total Social Financing (% of GDP) Chart 51



Source: People's Bank of China, National Bureau of Statistics of China; compiled by DIR.
Note: Outstanding balance of total social financing as of end-Dec 2001 to be 1.1 times bank lending

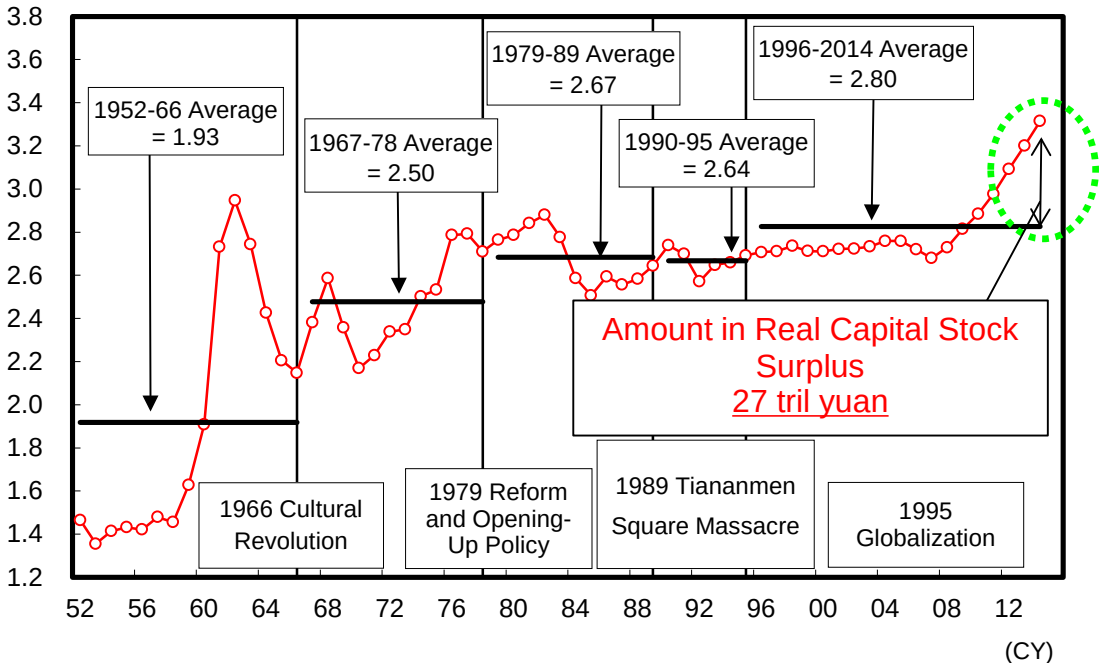
China's excesses: (2) Excess capital stock totaling over 550 tril yen

China's second excess is in the area of surplus factories and machinery, in other words excess capital stock. The gross amount in capital stock is estimated at over 550 tril yen. China now stands at a major crossroads in its economic growth model, which until now was a hand-to-mouth approach to managing an economy, focusing on attracting foreign investment and using that to increase capital stock which would stimulate growth.

Chart 52 shows long-term change in China's capital coefficient (= real capital stock / real GDP). This chart indicates that China's policies for handling the aftermath of the financial crisis of 2008 led to the carrying out of large-scale capital investment, and we see that in recent years, the capital coefficient has been on the rise. Recently, the coefficient has moved further upwards on the chart, diverging markedly from the trend of the past twenty years. It appears that the sense of overcapacity is increasing.

Using the rate of deviation from past trends in the capital coefficient, we can calculate the amount of surplus in real capital stock. This shows us that as of the year 2014, China held a surplus of over 27 tril yuan (about 15% of real capital stock and 550 tril yen in nominal terms).

Changes in China's Capital Coefficient **Chart 52**



Source: National Bureau of Statistics of China, CEIC, Haver Analytics, World Bank; compiled by DIR.
Notes: 1) Capital coefficient = real capital stock / real GDP
2) Figures from the year 2010 are used for both real capital stock and real GDP.

Room for around 600-800 tril yen in public spending

How much fiscal expenditure is China able to come up with in order to deal with this problem? Assuming that like other countries this would mean expanding the balance of debt on a stock basis, we estimate that there is room for around 600-800 tril yen in public spending.

According to data from the IMF on general government debt-to-GDP ratio in 2014, the G5 nations (except for Japan) had an average value of 90%, while the GIIPS nations (except for Greece) had an average value of 118%. In comparison to these figures, China's is relatively low 41% (see Chart 53). Moreover, in comparison to Japan, whose fiscal condition is the worst amongst the major industrialized nations at 246%, China weighs in at only one sixth that amount.

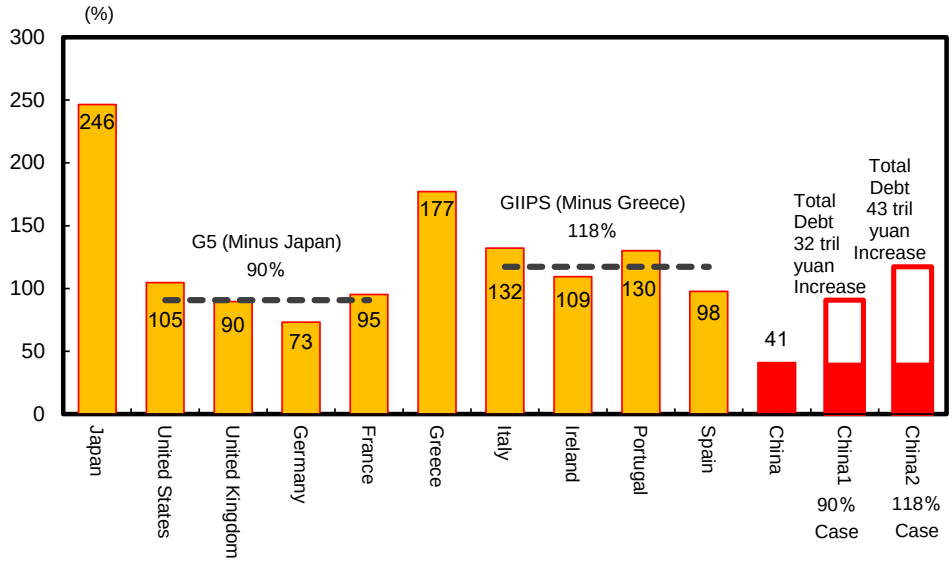
Presuming that China's general government debt-to-GDP ratio has room to grow to 90%, or around the same amount as the G5 nations (except for Japan) we can estimate the margin China has for public spending at around 32 trillion yuan. This means that in an international comparison, China has a large margin for mid to long-term public spending.

Problems facing China's economy: the big picture

To explain the situation which China's economy now faces in as simple terms as possible, it holds just under 1,000 tril yen in excessive lending and over 550 tril yen in excess capital stock in relation to which the Chinese government has funds of around 600-800 tril yen in its treasury.

It is simply not possible to take an optimistic view of China's economy in the mid to long-term view. Even if the Chinese government carries out major public spending it cannot solve the intrinsic structural problems the economy has. As long as China does not handle the many fundamental problems facing state-owned enterprises, attempting to apply a quick cure such as public spending will merely put off the problems for another few years. The worst case scenario, in which an even more colossal bubble bursts in the future, may be unavoidable.

General Government Debt-to-GDP Ratio (2014) Chart 53



Source: IMF; compiled by DIR.

6.2 Potential Magnitude of the Collapse of China's Economic Bubble

If China's economic bubble bursts, what would be the magnitude?

Here we take a quantitative look at the potential magnitude of the collapse of China's economic bubble assuming it occurs. According to our simulation, a meltdown scenario caused by surplus capital stock adjustment would cause China's potential growth to fall to 1.6%, while the real economic growth rate would be in the negative numbers (See Chart 54).

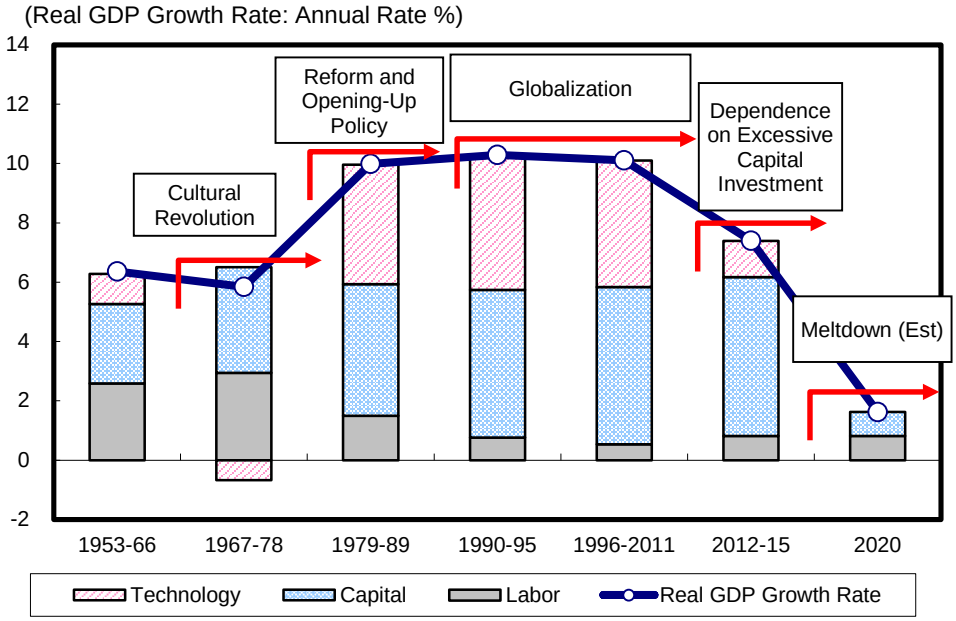
In terms of the effect on Japan's economy, there is still of course the general argument that it is the US which drives the world economy, not China, and hence even if China's economy slows down somewhat, the effect on Japan would be only slight.

However, if China's economy were to experience a meltdown, it would be an entirely different story. The impact of such an event would more than likely send the world economy into a tailspin.

It is hoped that China's policymakers will recognize the situation they are in and implement mid to long-term structural reforms, while using short-term measures to stimulate the economy. With the right balance it may be possible to guide China's economy to a soft landing.

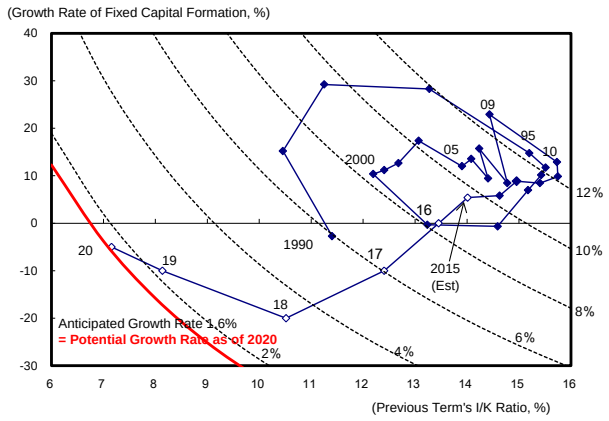
Simulation: China's Economy (Meltdown Scenario) **Chart 54**

Factor Analysis of Potential Growth Rate



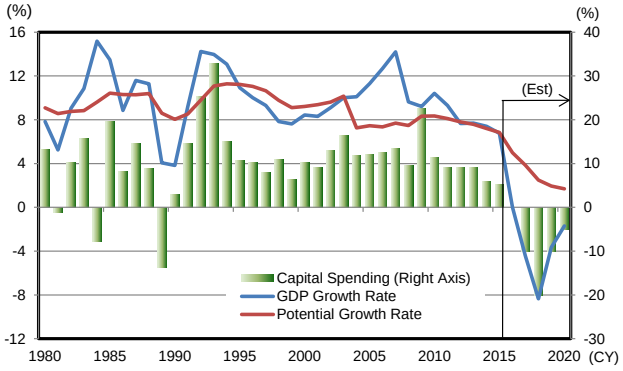
Source: CEIC, World Bank; compiled by DIR.
Note: Major events: 1966 – The Cultural Revolution, 1978 - Reform and Opening-Up Policy, 1989 – Tiananmen Square Massacre

Capital Stock Circulation



Source: National Bureau of Statistics of China, Haver Analytics, World Bank; compiled by DIR.

Economic Growth Rate



Source: CEIC, World Bank; compiled by DIR.

6.3 Policy Measures Seen Holding up China's Economy for the Time Being

China's business cycle signal index sees economy bottoming out

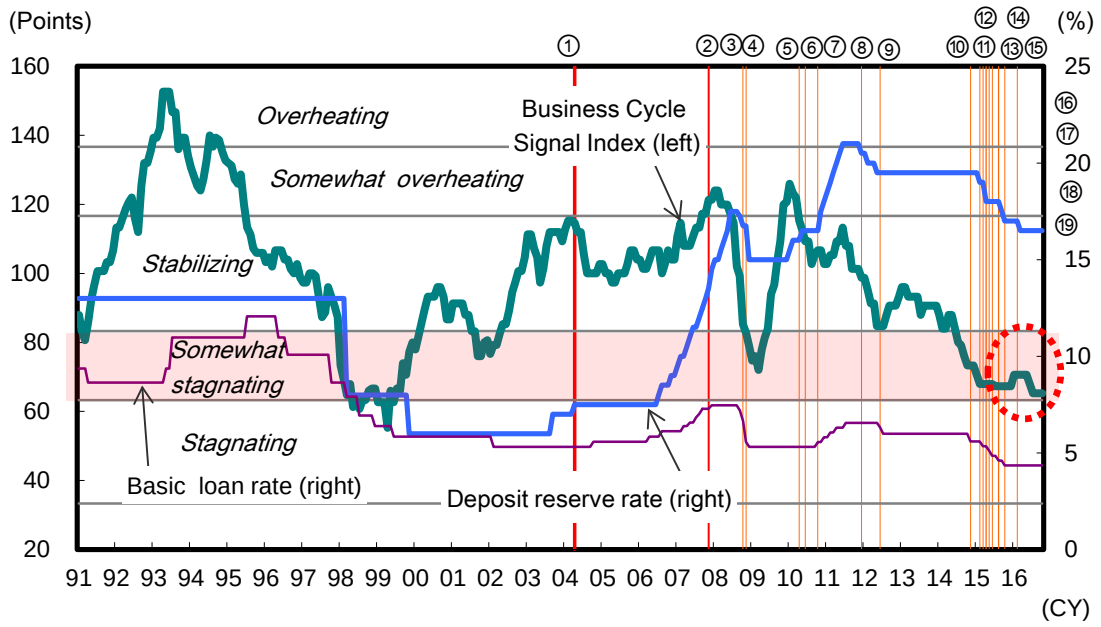
Despite what we have stated in the previous section, looking at a time span of 1-2 years, China's economy is expected to be propped up by policy measures.

Looking at China's business cycle signal index (see Chart 55), we see that the economy began strengthening its downward trend after the beginning of 2014, and is now in the zone indicating that it is "somewhat stagnant" (63.33-83.33), though it retains a steady undertone. With the help of recent fiscal and monetary measures, the index is not expected to suffer a major downturn in the future.

Key words: Socialist market economy, collective leadership, and gradualism

China does not have a truly Capitalist system, but what is called a socialist market economy, and this fact may provide underlying support for the time being. Since economic problems could cause political instability, China's political leaders would of course prefer to avoid the bottom falling out of the economy as much as possible. Since China is not a truly capitalist society, they could delay having to deal directly with the problems for 1-2 years, and would likely do everything they can to delay the problems for as long as possible. Since political decision-making is by a collective leadership working under a philosophy of gradualism, the Chinese economy can probably avoid seeing the bottom fall out in the short-term.

China's Business Cycle Signal Index **Chart 55**



1. Apr 2004: Restrictions on aggregate loans strengthened
2. Oct 2007: Restrictions on aggregate loans strengthened
3. Oct 2008: Restrictions on aggregate loans eased
4. Nov 2008: Stimulus package of 4 tril yuan announced
5. Apr 2010: Real estate regulations strengthened
6. Jun 2010: More flexible regime for control of yuan exchange rate
7. Oct 2010-Jul 2011: Period of loan rate hikes
8. From Dec 2011: A series of deposit reserve rate lowering moves began
9. From Jun 2012: A series of loan rate cuts began
10. Nov 2014: Loan rate cuts
11. Feb 2015: A series of deposit reserve rate lowering moves began
12. Mar 2015: Loan rate cuts
13. Apr 2015: A series of deposit reserve rate lowering moves began
14. May 2015: Loan rate cuts
15. Jun 2015: Loan rate cuts
    A series of deposit reserve rate lowering moves began
16. Jul 2015: Price keeping operation
17. Aug 2015: Reserve deposit rate cut, interest rates lowered
18. Oct 2015: Reserve deposit rate cut, interest rates lowered
19. Feb 2016: Reserve deposit rate cut

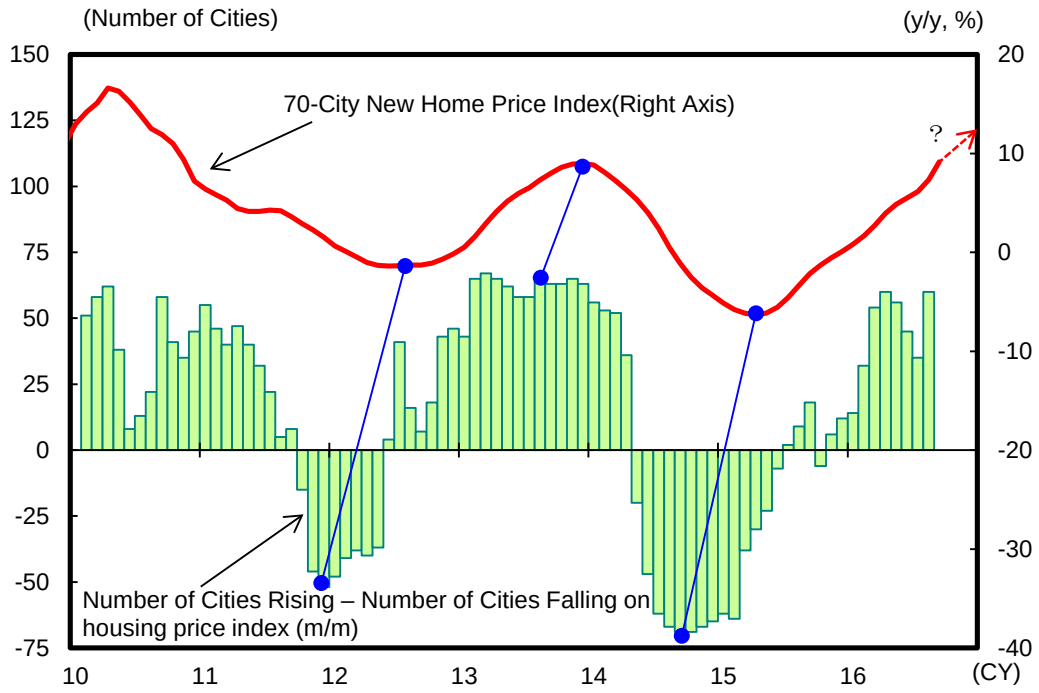
Source: National Bureau of Statistics of China, People's Bank of China, CEIC; compiled by DIR.

Real estate prices in China linked to personal consumption seen bottoming out

We should also note here that the leading index of the 70-City New Home Price Index (y/y change) is now moving upward (Chart 56). The "number of cities rising – number of cities falling" category under the Respective City Price Index (m/m change) of China's 70-City New Home Price Index tends to lead the 70-City New Home Price Index (y/y change) by six months. Taking a look at changes in the "number of cities rising – number of cities falling" category, we see that it has been gradually rising after having hit bottom in September of 2014, and has picked up the pace of growth since March 2015. The 70-City New Home Price Index, lagging behind the "number of cities rising – number of cities falling" index by seven months, hit bottom in April 2015, and since then has been in a growth phase. The "number of cities rising – number of cities falling" index has recently been continuing its growth phase. Hence there is a good possibility that the 70-City New Home Price Index will also continue to rise.

According to DIR quantitative analysis, China's personal consumption is determined by real estate prices rather than stock prices. Considering this fact, it is likely that real estate prices will continue in a growth trend for some time. This is an extremely positive factor for China's economy overall.

China's 70-City New Home Price Index **Chart 56**



Source: National Bureau of Statistics of China; compiled by DIR.
Note: The 70-City New Home Price Index is the simple average value of home prices in 70 cities.

7. Supplement: Alternative scenarios

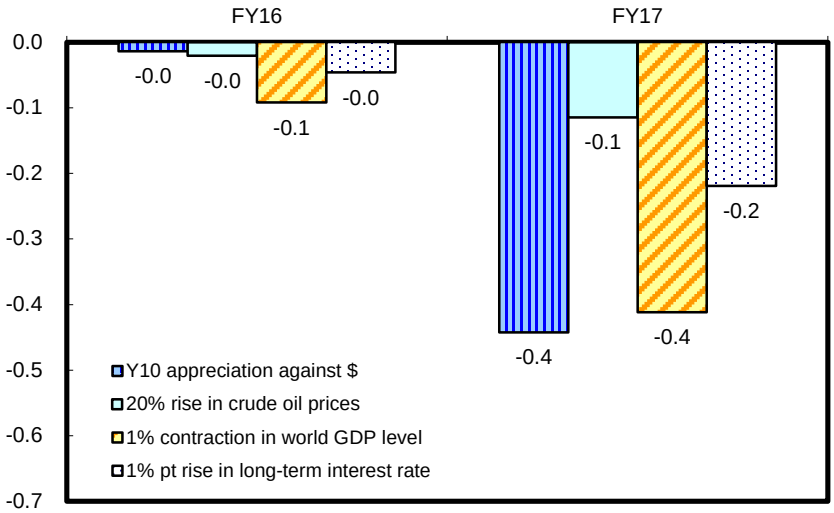
Here, we estimate likely economic effects from changes in our assumptions. The assumptions and effects of alternative scenarios are shown in the two charts below. The charts below show the effects on real GDP based on the assumptions used in our standard scenario, as well as cases in which one of the four risk scenarios covered earlier in this report actually occurs. We assume alternative scenarios might emerge from Jan-Mar 2017.

Standard and Alternate Scenario Assumptions

	Standard scenario		Alternate scenario (in each quarter in both years)
Case 1: Forex rate	Y106.8/$ in FY16 and Y108.3/$ in FY17	→	Y10 appreciation against $
Case 2: Crude oil prices (WTI futures)	$45.1/bbl in FY16 and $44.9/bbl in FY17		20% rise
Case 3: World GDP	+2.8% y/y in CY16 and +3.1% y/y in CY17		1% contraction in world GDP level
Case 4: Long-term interest rate	-0.07% in FY16 and 0.00% in FY17		1% pt rise

Source: Compiled by DIR.

Effects on Real GDP (% change from standard scenario) **Chart 57**



Source: Compiled by DIR.

7.1 Yen Appreciation

Appreciation of the yen could result in a decline in exports via weakened price competitiveness, which in turn would curb the production of export industries (electrical machinery, transportation equipment) and operations of related non-manufacturing industries (transportation, electric utilities, commerce), resulting in lower sales and profits, reducing cash flow, and worsening expectations of economic growth. Thus, capex would be restricted. Meanwhile, lower import prices (reflecting a stronger yen) would reduce general domestic prices, meaning lower prices of corporate and consumer goods. Thus, although the real purchasing power of households would increase, a stronger yen could adversely affect consumption because the decline in corporate profits could impact households through deterioration in the employment and income environment. However, considering the long time lag before effects on consumption are felt, the likely impact within our simulation period would be minimal. If the yen appreciates as indicated in our alternative scenario, real GDP level is forecast to shrink 0.0% and 0.4% in FY16 and FY17, respectively, compared to our standard scenario.

7.2 Surge in crude oil prices

If crude oil prices rise by 20% above our standard scenario, real GDP level is forecast to shrink 0.0% in FY16 and 0.1% in FY17 compared to our standard scenario.

Higher crude oil prices would increase the import deflator, which would increase nominal import value, a drag on net export value. This would lower nominal GDP. At the same time, higher oil prices would increase energy prices and push up the prices of final goods through higher material prices. This would lower the real purchasing power of the household sector and depress personal spending.

Higher material costs would lower corporate profits, leading to a slowdown in capex. Weakened business sentiment would negatively affect capex the following year. Meanwhile, lower corporate profits would worsen employment and income conditions, dampening consumer sentiment. This would also depress personal spending.

7.3 Contraction of world GDP

If world demand (GDP) contracts by 1% from our standard scenario, Japan's real GDP level would shrink 0.1% in FY16 and 0.4% in FY17 compared to our standard scenario.

A slowdown in world demand would reduce exports from Japan, and the lower sales of the manufacturing sector would worsen corporate profits. Also, the decline of production activities in the manufacturing sector would spread to the non-manufacturing sector and would broadly undermine corporate profits. In addition to the decrease in corporate profits, capex would diminish due to a lower capacity utilization rate stemming from the waning of industrial production and due to the growing sentiment of excess capacity. Moreover, the decrease in corporate profits would place downward pressure on wages, and demand in the household sector in the form of personal consumption and housing investment would falter with a lag. Should such a situation arise, imports would also contract from the decrease in domestic demand.

7.4 Higher interest rates

If long-term interest rates rise 1% point above our standard scenario, real GDP level would contract 0.0% in FY16 and 0.2% in FY17 compared to our standard scenario. Increased fund-raising costs due to higher interest rates would curb capex and housing investment. Such an adverse impact would accelerate once it took hold.

The direct impact on individuals would depend on the amount of net interest-bearing liabilities. In the case of households, interest-bearing assets have exceeded interest-bearing liabilities. Earned income will suffer a decline due to the slowing of investment, but this will be offset by an increase in income from property. Therefore we believe the effect on personal consumption will be minor.

As in the other cases, we did not allow for changes in the external environment when estimating the impact of higher interest rates. Interest rates do not usually rise independently, but increase in response to economic recovery or a shift to a positive economic outlook. In such instances, the expected rate of inflation also increases, which restricts the rise of real interest rates. As a result, the marginal return on investment (difference between return on investment and real interest rates) remains unchanged, which is not particularly negative for capex. It is therefore possible that our simulation overemphasizes the adverse effects of higher interest rates.

However, increases in long-term interest rates due to worsening of the fiscal balance (owing to economic stimulus measures and other fiscal commitments to spending) translate into crowding out of

capex and housing investment. Thus, the impact of higher interest rates on the economy would likely be similar to that of our simulation.

Simulation Results — Chart 58

	Standard Scenario		Case 1: Y10 appreciation against $				Case 2: 20% rise in crude oil prices			
	FY16	FY17	FY16		FY17		FY16		FY17	
Nominal GDP (Y/y %)	1.4	1.3	1.3	(-0.1)	0.6	(-0.8)	1.3	(-0.1)	0.8	(-0.6)
Real GDP (Chained [2005]; y/y %)	**1.1**	**0.9**	**1.1**	**(-0.0)**	**0.4**	**(-0.4)**	**1.1**	**(-0.0)**	**0.8**	**(-0.1)**
GDP deflator (Y/y %)	0.3	0.4	0.2	(-0.1)	0.2	(-0.4)	0.1	(-0.1)	0.0	(-0.5)
All-industry Activity Index (Y/y %)	0.8	1.0	0.7	(-0.1)	0.5	(-0.6)	0.8	(-0.0)	0.9	(-0.1)
Industrial Production Index (Y/y %)	0.4	2.0	0.0	(-0.4)	0.4	(-2.0)	0.4	(-0.0)	1.8	(-0.2)
Tertiary Industry Activity Index (Y/y %)	0.8	0.7	0.7	(-0.1)	0.4	(-0.4)	0.8	(-0.0)	0.6	(-0.1)
Corporate Goods Price Index (Y/y %)	-2.7	0.4	-3.0	(-0.3)	-0.6	(-1.3)	-2.5	(0.2)	1.0	(0.7)
Consumer Price Index (Y/y %)	-0.2	0.4	-0.3	(-0.1)	0.2	(-0.2)	-0.2	(0.0)	0.5	(0.2)
Unemployment rate (%)	3.1	3.0	3.1	(-0.0)	3.0	(0.0)	3.1	(0.0)	3.0	(-0.0)
Trade balance (Y tril)	5.2	6.3	5.1	(-0.0)	6.2	(-0.2)	4.7	(-0.5)	4.5	(-1.9)
Current balance (US$100 mil)	1,901	2,116	2,043	(142)	2,138	(22)	1,858	(-43)	1,960	(-156)
Current balance (Y tril)	20.6	23.2	20.7	(0.1)	21.6	(-1.7)	20.1	(-0.5)	21.6	(-1.7)
Real GDP components (Chained [2005]; y/y %)										
Private consumption	0.5	0.5	0.5	(0.0)	0.4	(-0.1)	0.5	(-0.0)	0.4	(-0.2)
Private housing investment	5.8	-1.6	5.7	(-0.0)	-1.8	(-0.3)	5.8	(-0.0)	-1.9	(-0.4)
Private non-housing investment	0.2	0.9	0.2	(-0.1)	-0.5	(-1.5)	0.1	(-0.1)	0.5	(-0.5)
Government final consumption	1.2	1.6	1.2	(0.0)	1.7	(0.1)	1.2	(-0.0)	1.6	(-0.0)
Public fixed investment	7.7	-2.7	7.9	(0.2)	-2.2	(0.6)	7.7	(-0.0)	-2.8	(-0.2)
Exports of goods and services	0.8	4.6	0.7	(-0.1)	3.9	(-0.7)	0.8	(-0.0)	4.5	(-0.1)
Imports of goods and services	-0.9	3.4	-1.0	(-0.1)	3.4	(-0.1)	-1.0	(-0.1)	3.0	(-0.6)

	Case 3: 1% contraction of World GDP				Case 4: 1% pt rise in 10-yr JGB yield				(Reference) Y5 depreciation and 20% rise in crude oil prices			
	FY16		FY17		FY16		FY17		FY16		FY17	
Nominal GDP (Y/y %)	1.3	(-0.1)	0.9	(-0.4)	1.4	(-0.0)	1.1	(-0.2)	1.3	(-0.1)	1.1	(-0.2)
Real GDP (Chained [2005]; y/y %)	**1.1**	**(-0.1)**	**0.5**	**(-0.4)**	**1.1**	**(-0.0)**	**0.7**	**(-0.2)**	**1.1**	**(-0.0)**	**1.0**	**(0.1)**
GDP deflator (Y/y %)	0.3	(-0.0)	0.4	(-0.0)	0.3	(0.0)	0.4	(0.0)	0.2	(-0.1)	0.2	(-0.3)
All-industry Activity Index (Y/y %)	0.7	(-0.1)	0.8	(-0.3)	0.8	(-0.0)	0.9	(-0.1)	0.8	(0.0)	1.1	(0.2)
Industrial Production Index (Y/y %)	0.2	(-0.3)	1.1	(-1.1)	0.4	(-0.1)	1.6	(-0.4)	0.6	(0.2)	2.6	(0.8)
Tertiary Industry Activity Index (Y/y %)	0.8	(-0.0)	0.6	(-0.1)	0.8	(-0.0)	0.7	(-0.1)	0.8	(0.0)	0.8	(0.1)
Corporate Goods Price Index (Y/y %)	-2.7	(-0.0)	0.4	(-0.1)	-2.7	(0.0)	0.4	(-0.0)	-2.4	(0.3)	1.5	(1.4)
Consumer Price Index (Y/y %)	-0.2	(-0.0)	0.4	(-0.0)	-0.2	(0.0)	0.4	(-0.0)	-0.2	(0.1)	0.6	(0.3)
Unemployment rate (%)	3.1	(-0.0)	3.0	(0.0)	3.1	(0.0)	3.1	(0.0)	3.1	(0.0)	3.0	(-0.0)
Trade balance (Y tril)	5.0	(-0.2)	5.7	(-0.6)	5.2	(0.0)	6.8	(0.5)	4.7	(-0.5)	4.5	(-1.8)
Current balance (US$100 mil)	1,876	(-25)	2,023	(-93)	1,905	(4)	1,895	(-221)	1,787	(-114)	1,949	(-167)
Current balance (Y tril)	20.3	(-0.3)	22.3	(-1.0)	20.6	(0.0)	20.9	(-2.4)	20.1	(-0.5)	22.4	(-0.8)
Real GDP components (Chained [2005]; y/y %)												
Private consumption	0.5	(-0.0)	0.4	(-0.1)	0.5	(-0.0)	0.5	(-0.0)	0.5	(-0.0)	0.4	(-0.1)
Private housing investment	5.8	(-0.0)	-1.8	(-0.2)	5.7	(-0.1)	-2.2	(-0.8)	5.8	(0.0)	-1.8	(-0.2)
Private non-housing investment	0.2	(0.0)	0.5	(-0.4)	-0.0	(-0.3)	-0.3	(-1.5)	0.1	(-0.1)	1.3	(0.2)
Government final consumption	1.2	(0.0)	1.6	(0.0)	1.2	(0.0)	1.6	(0.0)	1.2	(-0.0)	1.5	(-0.1)
Public fixed investment	7.7	(0.0)	-2.7	(0.0)	7.7	(-0.0)	-2.7	(0.0)	7.6	(-0.1)	-3.1	(-0.5)
Exports of goods and services	0.3	(-0.6)	3.2	(-1.8)	0.8	(-0.0)	4.5	(-0.0)	0.9	(0.0)	4.8	(0.3)
Imports of goods and services	-1.0	(-0.1)	3.2	(-0.3)	-1.0	(-0.1)	2.9	(-0.6)	-1.0	(-0.1)	3.0	(-0.5)

Source: Compiled by DIR.
Note: Figures in parentheses indicate changes from those under standard scenario. Due to rounding, they do not necessarily conform to calculations based on figures shown.

8. Quarterly Forecast Tables

1.1 Selected Economic Indicators

	2014			2015				2016	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2014	2015	2014	2015
Nominal GDP (SAAR; Y tril)	487.2	484.0	488.4	498.2	497.6	501.5	500.0	503.8	489.6	500.6	486.9	499.3
Q/q %	-0.1	-0.6	0.9	2.0	-0.1	0.8	-0.3	0.8				
Q/q %, SAAR	-0.3	-2.6	3.7	8.3	-0.5	3.2	-1.2	3.0				
Y/y %	1.9	0.5	1.3	2.2	2.2	3.6	2.2	1.1	1.5	2.3	1.6	2.5
Real GDP (chained [2005]; SAAR; Y tril)	524.2	520.6	523.5	530.0	528.2	530.2	528.0	530.8	524.8	529.4	526.1	529.1
Q/q %	-2.0	-0.7	0.6	1.2	-0.3	0.4	-0.4	0.5				
Q/q %, SAAR	-7.8	-2.8	2.3	5.0	-1.3	1.6	-1.6	2.1				
Y/y %	-0.3	-1.5	-0.9	-1.0	0.8	1.9	0.7	0.2	-0.9	0.9	-0.0	0.6
Contribution to GDP growth (% pt)												
Domestic demand	-2.9	-0.7	0.2	1.1	-0.1	0.4	-0.5	0.4	-1.6	0.8	0.0	0.1
Foreign demand	0.9	0.0	0.4	0.1	-0.3	0.0	0.1	0.1	0.6	0.1	-0.0	0.4
GDP deflator (y/y %)	2.2	2.0	2.3	3.3	1.4	1.7	1.5	0.9	2.5	1.4	1.7	2.0
Index of All-Industry Activity (2010=100)	101.1	101.1	101.7	102.6	102.5	102.5	102.3	102.3	101.7	102.6	102.0	102.5
Q/q %; y/y %	-2.8	0.0	0.6	0.9	-0.1	0.0	-0.2	0.1	-1.1	0.9	0.1	0.4
Index of Industrial Production (2010=100)	98.8	97.4	98.2	99.3	98.0	97.0	97.1	96.1	98.4	97.4	99.0	97.8
Q/q %; y/y %	-3.1	-1.3	0.8	1.1	-1.3	-1.0	0.0	-1.0	-0.5	-1.0	2.1	-1.2
Index of Tertiary Industry Activity (2005=100)	101.2	101.7	102.2	103.1	103.3	103.4	103.3	103.6	102.1	103.5	102.3	103.2
Q/q %; y/y %	-2.8	0.5	0.6	0.8	0.2	0.1	-0.1	0.3	-1.1	1.3	-0.4	0.9
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	106.0	106.5	105.1	103.3	103.7	102.6	101.2	99.7	105.2	101.8	105.1	102.7
Y/y %	4.4	4.0	2.4	0.5	-2.2	-3.7	-3.7	-3.5	2.8	-3.3	3.2	-2.3
CPI (excl. fresh food; 2010=100)	100.0	100.3	100.2	99.6	100.2	100.1	100.1	99.5	100.0	100.0	102.7	103.2
Y/y %	3.3	3.2	2.7	2.2	0.2	-0.2	-0.1	-0.1	2.8	-0.0	2.6	0.5
Unemployment rate (%)	3.6	3.6	3.5	3.5	3.4	3.4	3.3	3.2	3.5	3.3	3.6	3.4
Government bond yield (10 year; %)	0.59	0.52	0.40	0.34	0.40	0.38	0.29	-0.01	0.46	0.26	0.53	0.35
Money stock; M2 (y/y %)	3.2	3.0	3.5	3.5	3.9	4.0	3.4	3.2	3.3	3.6	3.4	3.7
Trade balance (SAAR; Y tril)	-9.4	-9.8	-6.2	-0.7	-1.6	-1.5	1.4	3.6	-6.6	0.5	-10.5	-0.6
Current balance (SAAR; $100 mil)	430	437	1,025	1,193	1,316	1,304	1,581	1,724	794	1,499	367	1,356
Current balance (SAAR; Y tril)	4.4	4.5	11.7	14.2	16.0	15.9	19.2	19.9	8.7	18.0	3.9	16.4
(% of nominal GDP)	0.9	0.9	2.4	2.9	3.2	3.2	3.8	3.9	1.8	3.5	0.8	3.3
Exchange rate (Y/$)	102.1	103.9	114.5	119.1	121.4	122.2	121.5	115.4	109.9	120.1	105.8	121.0
(Y/Euro)	139.5	137.8	143.8	132.6	135.0	135.6	131.5	128.0	138.4	132.5	140.3	133.7

Source: Compiled by DIR.
Notes: 1) Quarterly figures (excl. y/y %) seasonally adjusted, other unadjusted.
2) Index of All-Industry Activity Index: excl. agriculture, forestry, and fisheries.
3) Due to rounding, figures may differ from those released by the government.

1.2 Selected Economic Indicators

	2016			2017				2018	FY		CY	
	4-6	7-9	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2016 (E)	2017 (E)	2016 (E)	2017 (E)
Nominal GDP (SAAR; Y tril)	504.5	505.5	508.7	511.9	513.6	513.8	514.0	515.1	507.7	514.1	505.7	513.3
Q/q %	0.1	0.2	0.6	0.6	0.3	0.0	0.0	0.2				
Q/q %, SAAR	0.6	0.8	2.6	2.5	1.3	0.2	0.2	0.9				
Y/y %	1.4	0.8	1.8	1.6	1.8	1.6	1.0	0.6	1.4	1.3	1.3	1.5
Real GDP (chained [2005]; SAAR; Y tril)	531.6	534.5	536.2	538.4	539.7	539.7	539.7	540.4	535.4	540.0	533.5	539.5
Q/q %	0.2	0.5	0.3	0.4	0.2	0.0	0.0	0.1				
Q/q %, SAAR	0.7	2.2	1.3	1.7	0.9	0.0	0.0	0.5				
Y/y %	0.6	0.9	1.6	1.4	1.5	0.9	0.6	0.4	1.1	0.9	0.8	1.1
Contribution to GDP growth (% pt)												
Domestic demand	0.3	0.1	0.4	0.4	0.2	-0.1	-0.1	0.1	0.9	0.5	0.6	0.9
Foreign demand	-0.2	0.5	0.0	0.0	0.0	0.1	0.1	0.0	0.3	0.3	0.2	0.2
GDP deflator (y/y %)	0.7	-0.1	0.2	0.2	0.3	0.7	0.4	0.3	0.3	0.4	0.4	0.4
Index of All-Industry Activity (2010=100)	102.7	103.2	103.4	103.6	103.8	104.1	104.4	104.7	103.4	104.4	102.9	103.9
Q/q %; y/y %	0.3	0.5	0.2	0.1	0.2	0.3	0.3	0.3	0.8	1.0	0.4	1.0
Index of Industrial Production (2010=100)	96.3	97.4	98.0	98.2	98.6	99.1	99.6	100.2	97.9	99.8	96.9	98.9
Q/q %; y/y %	0.2	1.1	0.6	0.3	0.4	0.5	0.5	0.6	0.4	2.0	-0.9	2.0
Index of Tertiary Industry Activity (2005=100)	103.8	104.2	104.3	104.4	104.6	104.8	105.1	105.3	104.3	105.0	103.9	104.7
Q/q %; y/y %	0.2	0.4	0.2	0.1	0.1	0.2	0.3	0.2	0.8	0.7	0.7	0.7
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	99.1	98.9	99.0	99.2	99.3	99.4	99.5	99.7	99.1	99.5	99.2	99.3
Y/y %	-4.4	-3.6	-2.1	-0.5	0.2	0.5	0.5	0.5	-2.7	0.4	-3.4	0.2
CPI (excl. fresh food; 2010=100)	99.8	99.6	99.7	99.9	100.2	100.0	100.1	100.3	99.7	100.1	99.6	100.1
Y/y %	-0.4	-0.5	-0.4	0.4	0.4	0.4	0.4	0.4	-0.2	0.4	-3.5	0.4
Unemployment rate (%)	3.2	3.0	3.1	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.1	3.0
Government bond yield (10 year; %)	-0.15	-0.12	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	0.00	-0.07	0.00
Money stock; M2 (y/y %)	3.4	3.4	4.2	4.1	4.1	4.1	4.1	4.1	3.8	4.1	3.6	4.1
Trade balance (SAAR; Y tril)	4.8	5.0	5.3	5.6	5.9	6.0	6.5	6.8	5.2	6.3	4.7	6.0
Current balance (SAAR; $100 mil)	1,715	1,989	1,929	1,972	2,019	2,080	2,158	2,207	1,901	2,116	1,839	2,057
Current balance (SAAR; Y tril)	18.5	20.4	20.9	21.4	21.9	22.5	23.4	23.9	20.6	23.2	19.9	22.3
(% of nominal GDP)	3.7	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.1	4.5	3.9	4.3
Exchange rate (Y/$)	108.1	102.4	108.3	108.3	108.3	108.3	108.3	108.3	106.8	108.3	108.6	108.3
(Y/Euro)	120.7	114.7	116.3	116.3	116.3	116.3	116.3	116.3	117.0	116.3	119.9	116.3

Source: Compiled by DIR.
Notes: 1) Quarterly figures (excl. y/y %) seasonally adjusted, other unadjusted.
2) Index of All-Industry Activity Index: excl. agriculture, forestry, and fisheries.
3) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.

2.1 Real Gross Domestic Expenditure (chained [2005]; Y tril)

	2014			2015				2016	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2014	2015	2014	2015
Gross domestic expenditure	524.2	520.6	523.5	530.0	528.2	530.2	528.0	530.8	524.8	529.4	526.1	529.1
Q/q %, SAAR	-7.8	-2.8	2.3	5.0	-1.3	1.6	-1.6	2.1				
Y/y %	-0.3	-1.5	-0.9	-1.0	0.8	1.9	0.7	0.2	-0.9	0.9	-0.0	0.6
Domestic demand	515.8	512.5	513.7	519.1	518.4	520.6	518.1	520.1	515.5	519.3	518.5	519.1
Q/q %, SAAR	-11.1	-2.5	0.9	4.3	-0.5	1.6	-1.9	1.6				
Y/y %	-0.3	-1.7	-1.9	-2.3	0.6	1.5	0.7	0.2	-1.6	0.7	-0.0	0.1
Private demand	392.4	388.4	389.2	394.7	393.5	395.6	393.2	394.3	391.3	394.2	394.3	394.2
Q/q %, SAAR	-13.3	-4.1	0.8	5.8	-1.2	2.2	-2.4	1.1				
Y/y %	-0.3	-2.1	-2.4	-2.9	0.3	1.8	0.9	-0.1	-2.0	0.7	-0.1	-0.0
Final consumption	306.0	306.1	308.0	308.1	306.2	307.8	305.2	307.4	307.2	306.7	310.5	306.8
Q/q %, SAAR	-17.8	0.1	2.5	0.2	-2.5	2.1	-3.3	2.9				
Y/y %	-2.5	-2.7	-2.1	-4.1	0.1	0.5	-1.0	-0.2	-2.9	-0.1	-0.9	-1.2
Residential investment	13.8	12.8	12.8	13.2	13.4	13.5	13.5	13.4	13.1	13.5	13.7	13.4
Q/q %, SAAR	-37.0	-26.6	0.6	10.4	6.9	4.7	-1.6	-1.1				
Y/y %	-2.1	-12.5	-15.5	-15.4	-3.3	5.9	4.8	2.0	-11.7	2.4	-5.3	-2.5
Non-residential investment	70.3	70.0	70.0	72.2	71.4	72.0	72.9	72.4	70.7	72.2	71.0	72.1
Q/q %, SAAR	-15.6	-1.5	-0.3	13.2	-4.1	3.4	5.0	-2.7				
Y/y %	1.5	0.6	-0.1	-1.3	1.4	2.7	4.1	0.5	0.1	2.1	3.1	1.6
Change in inventories	2.2	-0.6	-1.6	1.2	2.5	2.3	1.6	1.0	0.3	1.8	-0.9	1.9
Public demand	123.3	124.1	124.5	124.4	125.0	125.0	124.9	125.9	124.2	125.1	124.3	124.8
Q/q %, SAAR	-3.5	2.7	1.2	-0.3	1.8	0.0	-0.2	3.1				
Y/y %	-0.2	-0.4	-0.3	-0.3	1.3	0.7	0.2	0.9	-0.3	0.8	0.2	0.5
Government final consumption	101.8	102.2	102.4	102.6	103.1	103.4	104.0	104.9	102.3	103.9	102.2	103.3
Q/q %, SAAR	-0.8	1.3	1.0	0.9	1.8	1.1	2.6	3.5				
Y/y %	-0.3	-0.2	0.3	0.6	1.3	1.2	1.6	2.2	0.1	1.6	0.1	1.2
Fixed investment	21.5	21.8	22.1	21.7	21.8	21.6	20.9	20.9	21.8	21.2	22.1	21.5
Q/q %, SAAR	-15.8	7.4	3.9	-5.9	2.3	-4.6	-12.9	0.2				
Y/y %	-0.1	-2.6	-2.5	-4.1	2.1	-0.7	-5.3	-4.7	-2.6	-2.7	0.4	-2.5
Change in inventories	0.0	0.1	0.0	0.0	0.0	-0.0	-0.0	0.1	0.1	0.0	0.0	0.0
Net exports of goods and services	9.8	10.1	12.2	13.0	11.1	11.6	11.7	12.3	11.3	11.6	9.6	11.8
Exports of goods and services	88.8	90.2	93.1	94.7	90.7	93.1	92.2	92.3	91.7	92.1	90.1	92.7
Q/q %, SAAR	1.7	6.5	13.7	7.0	-15.8	10.9	-3.9	0.5				
Y/y %	5.5	7.5	11.2	7.3	2.0	3.2	-0.9	-2.5	7.9	0.4	8.3	2.8
Imports of goods and services	79.0	80.0	80.9	81.7	79.6	81.5	80.5	80.0	80.4	80.4	80.5	80.8
Q/q %, SAAR	-15.2	5.4	4.3	4.0	-9.6	9.9	-4.9	-2.5				
Y/y %	5.9	5.1	3.6	-0.5	0.7	1.6	-0.3	-1.9	3.4	0.0	7.2	0.4

Source: Compiled by DIR.
Notes: 1) Subtotals by demand (domestic demand, private demand, and public demand) are simple aggregates of respective components, which differ from figures released by the government.
2) Y/y growth rates and FY and CY figures unadjusted; other seasonally adjusted.
3) Due to rounding, figures may differ from those released by the government.

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2.2 Real Gross Domestic Expenditure (chained [2005]; Y tril)

	2016			2017				2018	FY		CY	
	4-6	7-9	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2016 (E)	2017 (E)	2016 (E)	2017 (E)
Gross domestic expenditure	531.6	534.5	536.2	538.4	539.7	539.7	539.7	540.4	535.4	540.0	533.5	539.5
Q/q %, SAAR	0.7	2.2	1.3	1.7	0.9	0.0	0.0	0.5				
Y/y %	0.6	0.9	1.6	1.4	1.5	0.9	0.6	0.4	1.1	0.9	0.8	1.1
Domestic demand	521.6	522.1	524.4	526.5	527.4	527.1	526.6	527.0	524.0	526.9	522.3	526.9
Q/q %, SAAR	1.2	0.4	1.8	1.6	0.7	-0.3	-0.4	0.4				
Y/y %	0.6	0.3	1.3	1.3	1.0	0.9	0.3	0.0	0.9	0.5	0.6	0.9
Private demand	395.7	395.9	395.8	396.1	396.7	397.3	398.1	398.7	396.0	397.8	395.5	397.1
Q/q %, SAAR	1.4	0.2	-0.0	0.3	0.6	0.6	0.8	0.7				
Y/y %	0.5	0.1	0.7	0.5	0.2	0.3	0.5	0.7	0.5	0.5	0.3	0.4
Final consumption	307.8	308.0	308.2	308.6	309.0	309.5	310.0	310.4	308.2	309.8	308.0	309.3
Q/q %, SAAR	0.5	0.2	0.3	0.5	0.5	0.5	0.7	0.5				
Y/y %	0.5	0.1	1.0	0.4	0.4	0.4	0.6	0.6	0.5	0.5	0.4	0.4
Residential investment	14.1	14.4	14.2	14.1	13.9	14.0	14.0	14.0	14.2	14.0	14.1	14.0
Q/q %, SAAR	21.7	9.6	-5.9	-4.7	-3.2	1.2	1.0	0.6				
Y/y %	5.7	7.1	5.7	4.7	-1.3	-3.3	-1.5	-0.1	5.8	-1.6	5.2	-0.5
Non-residential investment	72.3	72.3	72.5	72.6	72.8	72.9	73.2	73.4	72.4	73.1	72.4	72.9
Q/q %, SAAR	-0.5	0.1	0.8	0.8	0.9	0.9	1.2	1.3				
Y/y %	1.0	0.3	-0.6	0.2	0.8	0.9	0.9	1.1	0.2	0.9	0.3	0.7
Change in inventories	1.4	1.1	0.9	0.8	0.9	0.9	0.9	0.9	1.1	0.9	1.1	0.9
Public demand	126.0	126.3	128.6	130.4	130.8	129.8	128.5	128.3	128.1	129.1	126.7	129.8
Q/q %, SAAR	0.4	0.9	7.5	5.8	1.2	-2.9	-4.0	-0.6				
Y/y %	1.0	1.1	3.1	4.0	3.3	2.7	-0.3	-2.0	2.3	0.8	1.5	2.4
Government final consumption	104.6	105.0	105.3	105.6	106.0	106.5	107.1	107.7	105.2	106.9	105.0	106.3
Q/q %, SAAR	-1.3	1.7	1.2	1.1	1.4	1.8	2.3	2.2				
Y/y %	1.5	1.6	1.2	0.7	1.3	1.4	1.7	1.9	1.2	1.6	1.6	1.3
Fixed investment	21.3	21.2	23.2	24.7	24.7	23.3	21.4	20.6	22.8	22.2	21.7	23.4
Q/q %, SAAR	9.3	-2.7	43.1	29.4	0.2	-21.5	-29.1	-13.8				
Y/y %	-2.2	-1.7	11.0	18.9	15.8	9.8	-7.8	-16.9	7.7	-2.7	0.9	8.0
Change in inventories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports of goods and services	11.4	13.6	13.8	13.9	14.0	14.4	14.9	15.2	13.1	14.6	12.7	14.3
Exports of goods and services	90.9	92.6	93.6	94.5	95.5	96.5	97.6	98.7	92.9	97.1	92.3	96.0
Q/q %, SAAR	-6.0	8.1	4.1	4.3	4.1	4.3	4.9	4.5				
Y/y %	-0.2	-0.4	1.4	2.4	5.3	4.1	4.4	4.4	0.8	4.6	-0.4	4.0
Imports of goods and services	79.5	79.0	79.8	80.6	81.5	82.1	82.7	83.5	79.7	82.5	79.6	81.7
Q/q %, SAAR	-2.5	-2.4	4.1	4.3	4.2	3.0	3.0	4.1				
Y/y %	-0.3	-3.1	-0.9	0.7	2.6	3.9	3.7	3.6	-0.9	3.4	-1.6	2.7

Source: Compiled by DIR.
Notes: 1) Subtotals by demand (domestic demand, private demand, and public demand) are simple aggregates of respective components, which differ from figures released by the government.
2) Y/y growth rates and FY and CY figures unadjusted; other seasonally adjusted.
3) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.

3.1 Nominal Gross Domestic Expenditure (Y tril)

	2014			2015				2016	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2014	2015	2014	2015
Gross domestic expenditure	487.2	484.0	488.4	498.2	497.6	501.5	500.0	503.8	489.6	500.6	486.9	499.3
Q/q %, SAAR	-0.3	-2.6	3.7	8.3	-0.5	3.2	-1.2	3.0				
Y/y %	1.9	0.5	1.3	2.2	2.2	3.6	2.2	1.1	1.5	2.3	1.6	2.5
Domestic demand	501.4	498.3	499.7	504.0	503.8	505.8	503.1	502.8	501.0	503.8	502.1	504.1
Q/q %, SAAR	-5.3	-2.4	1.1	3.5	-0.1	1.6	-2.2	-0.2				
Y/y %	2.4	0.6	0.1	-0.9	0.5	1.5	0.6	-0.3	0.5	0.6	1.9	0.4
Private demand	377.6	373.5	374.5	379.0	378.4	380.4	377.8	377.2	376.2	378.5	377.8	378.9
Q/q %, SAAR	-7.5	-4.4	1.1	4.8	-0.5	2.1	-2.6	-0.6				
Y/y %	2.4	0.2	-0.6	-1.6	0.3	1.8	0.7	-0.5	0.1	0.6	1.8	0.3
Final consumption	292.3	292.6	294.2	293.5	292.0	293.5	290.9	291.6	293.2	292.0	295.4	292.5
Q/q %, SAAR	-12.4	0.4	2.1	-1.0	-2.1	2.1	-3.5	1.0				
Y/y %	0.2	-0.3	-0.2	-2.9	-0.0	0.2	-1.2	-0.6	-0.8	-0.4	1.1	-1.0
Residential investment	15.2	14.1	14.1	14.5	14.7	14.9	14.8	14.7	14.4	14.8	15.0	14.7
Q/q %, SAAR	-29.9	-26.9	0.4	11.8	5.6	5.2	-1.0	-3.8				
Y/y %	2.7	-9.0	-13.1	-13.0	-3.4	5.9	5.0	1.3	-8.5	2.2	-2.0	-1.7
Non-residential investment	67.6	67.6	67.8	70.0	69.5	70.1	70.8	69.9	68.4	70.1	68.4	70.1
Q/q %, SAAR	-13.5	-0.1	1.1	13.8	-3.2	4.0	3.8	-5.1				
Y/y %	2.9	2.0	1.5	0.1	2.5	3.6	4.4	0.0	1.5	2.5	4.5	2.5
Change in inventories	2.5	-0.9	-1.6	1.0	2.3	1.9	1.3	1.1	0.2	1.6	-1.0	1.6
Public demand	123.7	124.9	125.2	125.0	125.4	125.5	125.2	125.6	124.7	125.3	124.3	125.3
Q/q %, SAAR	1.7	3.7	1.0	-0.4	1.3	0.2	-0.8	1.1				
Y/y %	2.1	2.1	2.1	1.3	1.3	0.4	0.0	0.2	1.9	0.5	2.2	0.7
Government final consumption	100.4	100.9	101.2	101.3	101.5	101.9	102.5	103.0	101.0	102.3	100.5	101.8
Q/q %, SAAR	4.4	2.0	1.1	0.6	0.8	1.6	2.2	2.1				
Y/y %	1.9	1.9	2.7	2.1	1.0	0.9	1.4	1.8	2.2	1.3	1.8	1.4
Fixed investment	23.3	23.8	23.9	23.6	23.9	23.6	22.7	22.5	23.7	23.0	23.8	23.4
Q/q %, SAAR	-9.0	8.6	3.2	-5.5	4.6	-5.5	-13.7	-3.5				
Y/y %	3.8	1.2	0.1	-1.9	2.8	-0.5	-5.0	-5.5	0.4	-2.6	3.4	-1.6
Change in inventories	0.1	0.2	0.0	0.1	0.0	-0.0	0.0	0.1	0.1	0.0	0.1	0.0
Net exports of goods and services	-14.2	-14.3	-11.3	-5.7	-6.3	-4.4	-3.1	0.9	-11.4	-3.2	-15.2	-4.9
Exports of goods and services	83.8	86.3	91.6	91.6	88.4	90.5	86.8	83.8	88.4	87.4	86.4	89.3
Q/q %, SAAR	0.8	12.8	26.6	-0.1	-13.2	9.7	-15.0	-13.4				
Y/y %	6.6	9.6	16.3	9.5	5.1	4.8	-4.9	-8.6	10.5	-1.1	11.4	3.4
Imports of goods and services	98.0	100.7	102.9	97.3	94.6	94.8	89.9	82.8	99.8	90.5	101.6	94.2
Q/q %, SAAR	-22.1	11.3	9.2	-20.0	-10.5	0.8	-19.2	-28.0				
Y/y %	8.7	8.8	7.0	-7.0	-3.8	-5.8	-12.2	-15.1	4.0	-9.3	11.4	-7.3

Source: Compiled by DIR.
Notes: 1)Y/y growth rates and FY and CY figures unadjusted; other seasonally adjusted.
2) Due to rounding, figures may differ from those released by the government.

3.2 Nominal Gross Domestic Expenditure (Y tril)

	2016			2017				2018	FY		CY	
	4-6	7-9	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2016 (E)	2017 (E)	2016 (E)	2017 (E)
Gross domestic expenditure	504.5	505.5	508.7	511.9	513.6	513.8	514.0	515.1	507.7	514.1	505.7	513.3
Q/q %, SAAR	0.6	0.8	2.6	2.5	1.3	0.2	0.2	0.9				
Y/y %	1.4	0.8	1.8	1.6	1.8	1.6	1.0	0.6	1.4	1.3	1.3	1.5
Domestic demand	503.1	502.6	505.7	508.7	510.2	510.1	509.8	510.7	505.3	509.9	503.7	509.6
Q/q %, SAAR	0.2	-0.4	2.5	2.3	1.2	-0.1	-0.2	0.7				
Y/y %	-0.1	-0.7	0.6	1.3	1.2	1.5	0.7	0.3	0.3	0.9	-0.1	1.2
Private demand	377.7	376.8	377.3	378.1	379.1	380.0	381.1	382.1	377.5	380.7	377.3	379.6
Q/q %, SAAR	0.4	-0.9	0.5	0.9	1.1	0.9	1.1	1.1				
Y/y %	-0.2	-0.9	-0.1	0.2	0.4	0.9	1.0	1.1	-0.2	0.8	-0.4	0.6
Final consumption	291.3	290.9	291.4	292.1	292.8	293.3	294.0	294.5	291.4	293.7	291.3	293.1
Q/q %, SAAR	-0.5	-0.5	0.7	0.9	0.9	0.7	0.9	0.7				
Y/y %	-0.3	-0.9	0.2	0.2	0.5	0.8	0.9	0.8	-0.2	0.8	-0.4	0.6
Residential investment	15.3	15.7	15.5	15.3	15.3	15.3	15.3	15.4	15.5	15.3	15.3	15.3
Q/q %, SAAR	18.5	10.1	-4.8	-3.7	-2.2	1.3	0.8	1.4				
Y/y %	4.4	5.9	4.6	4.6	-0.4	-2.5	-1.0	0.3	4.9	-0.9	4.1	0.1
Non-residential investment	69.5	69.3	69.6	70.0	70.3	70.6	71.0	71.5	69.6	70.9	69.6	70.4
Q/q %, SAAR	-2.1	-1.5	2.0	2.3	1.8	1.6	2.2	2.7				
Y/y %	-0.1	-1.3	-1.7	0.0	1.2	2.0	2.0	2.1	-0.7	1.9	-0.7	1.2
Change in inventories	1.5	0.9	0.8	0.7	0.8	0.8	0.8	0.8	1.0	0.8	1.1	0.8
Public demand	125.4	125.8	128.4	130.5	131.1	130.1	128.7	128.5	127.8	129.3	126.3	130.0
Q/q %, SAAR	-0.5	1.2	8.6	6.7	1.6	-3.0	-4.2	-0.5				
Y/y %	0.2	0.2	2.7	4.5	3.8	3.4	0.1	-2.1	1.9	1.2	0.9	2.9
Government final consumption	102.4	103.0	103.4	103.8	104.3	104.9	105.6	106.2	103.1	105.2	102.9	104.6
Q/q %, SAAR	-2.2	2.2	1.6	1.5	1.8	2.2	2.7	2.6				
Y/y %	0.8	0.9	0.9	0.7	1.8	1.9	2.1	2.4	0.8	2.0	1.1	1.6
Fixed investment	22.9	22.8	25.0	26.7	26.8	25.2	23.1	22.3	24.6	24.0	23.4	25.3
Q/q %, SAAR	8.0	-2.5	44.8	30.4	0.6	-21.5	-29.1	-13.7				
Y/y %	-3.7	-3.1	10.0	19.2	16.5	10.5	-7.5	-16.8	6.8	-2.4	-0.2	8.4
Change in inventories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports of goods and services	1.4	2.9	3.0	3.2	3.4	3.7	4.2	4.5	2.6	3.9	2.1	3.6
Exports of goods and services	80.5	80.1	81.1	82.3	83.5	84.6	86.0	87.2	81.0	85.3	81.3	84.1
Q/q %, SAAR	-14.9	-1.8	5.1	6.0	5.9	5.6	6.4	6.0				
Y/y %	-9.4	-11.2	-6.8	-1.7	4.0	5.5	6.1	6.0	-7.3	5.4	-9.0	3.4
Imports of goods and services	79.1	77.2	78.1	79.1	80.1	80.9	81.7	82.8	78.3	81.4	79.2	80.5
Q/q %, SAAR	-16.9	-9.2	4.7	5.3	5.2	4.0	4.1	5.2				
Y/y %	-16.6	-18.5	-13.3	-4.4	1.4	4.7	4.8	4.6	-13.5	3.9	-15.9	1.6

Source: Compiled by DIR.
Notes: 1)Y/y growth rates and FY and CY figures unadjusted; other seasonally adjusted.
2) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.

4.1 Gross Domestic Expenditure, Implicit Deflators (2005=100)

	2014			2015				2016	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2014	2015	2014	2015
Gross domestic expenditure	92.9	93.0	93.3	94.0	94.2	94.6	94.7	94.9	93.3	94.6	92.5	94.4
Q/q %, SAAR	2.0	0.0	0.3	0.8	0.2	0.4	0.1	0.2				
Y/y %	2.2	2.0	2.3	3.3	1.4	1.7	1.5	0.9	2.5	1.4	1.7	2.0
Private final consumption	95.5	95.6	95.5	95.2	95.3	95.4	95.3	94.9	95.5	95.2	95.1	95.3
Q/q %, SAAR	1.6	0.1	-0.1	-0.3	0.1	0.0	-0.0	-0.5				
Y/y %	2.7	2.4	1.9	1.3	-0.1	-0.3	-0.2	-0.5	2.1	-0.3	1.9	0.2
Private residential investment	109.9	109.8	109.7	110.1	109.7	109.8	110.0	109.2	109.8	109.7	109.0	109.9
Q/q %, SAAR	2.7	-0.1	-0.0	0.3	-0.3	0.1	0.1	-0.7				
Y/y %	4.9	3.9	2.9	2.9	-0.2	0.1	0.3	-0.7	3.6	-0.1	3.5	0.8
Private non-residential investment	96.2	96.5	96.9	97.0	97.2	97.4	97.1	96.5	96.7	97.0	96.3	97.2
Q/q %, SAAR	0.6	0.3	0.4	0.1	0.2	0.2	-0.3	-0.6				
Y/y %	1.4	1.4	1.6	1.4	1.1	0.9	0.3	-0.5	1.4	0.4	1.3	0.9
Government final consumption	98.6	98.8	98.8	98.7	98.5	98.6	98.5	98.2	98.7	98.4	98.3	98.5
Q/q %, SAAR	1.3	0.2	0.0	-0.1	-0.3	0.1	-0.1	-0.3				
Y/y %	2.1	2.1	2.4	1.5	-0.2	-0.3	-0.3	-0.4	2.0	-0.3	1.6	0.2
Public fixed investment	108.5	108.8	108.6	108.7	109.3	109.1	108.8	107.8	108.7	108.7	107.9	108.9
Q/q %, SAAR	1.9	0.3	-0.2	0.1	0.6	-0.2	-0.2	-0.9				
Y/y %	3.9	3.9	2.6	2.3	0.7	0.2	0.3	-0.8	3.1	0.0	3.0	0.9
Exports of goods and services	94.4	95.8	98.4	96.7	97.4	97.2	94.2	90.8	96.4	94.9	95.9	96.4
Q/q %, SAAR	-0.2	1.5	2.7	-1.7	0.8	-0.3	-3.0	-3.6				
Y/y %	1.0	1.9	4.6	2.0	3.0	1.6	-4.0	-6.3	2.4	-1.5	2.8	0.6
Imports of goods and services	124.1	125.8	127.2	119.1	118.8	116.3	111.7	103.5	124.0	112.5	126.2	116.6
Q/q %, SAAR	-2.1	1.4	1.2	-6.4	-0.2	-2.1	-4.0	-7.3				
Y/y %	2.6	3.5	3.3	-6.6	-4.4	-7.3	-11.9	-13.5	0.6	-9.3	3.9	-7.6

Source: Compiled by DIR.
Notes: 1) Y/y growth rates and FY and CY figures unadjusted; other seasonally adjusted.
2) Due to rounding, figures may differ from those released by the government.

4.2 Gross Domestic Expenditure, Implicit Deflators (2005=100)

	2016			2017				2018	FY		CY	
	4-6	7-9	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2016 (E)	2017 (E)	2016 (E)	2017 (E)
Gross domestic expenditure	94.9	94.6	94.9	95.1	95.2	95.2	95.2	95.3	94.8	95.2	94.8	95.1
Q/q %, SAAR	-0.0	-0.3	0.3	0.2	0.1	0.0	0.0	0.1				
Y/y %	0.7	-0.1	0.2	0.2	0.3	0.7	0.4	0.3	0.3	0.4	0.4	0.4
Private final consumption	94.6	94.5	94.5	94.6	94.7	94.8	94.8	94.9	94.6	94.8	94.6	94.7
Q/q %, SAAR	-0.2	-0.2	0.1	0.1	0.1	0.1	0.1	0.0				
Y/y %	-0.7	-1.0	-0.8	-0.2	0.1	0.4	0.3	0.2	-0.7	0.3	-0.7	0.1
Private residential investment	108.5	108.6	108.9	109.2	109.4	109.5	109.4	109.7	108.8	109.5	108.8	109.4
Q/q %, SAAR	-0.7	0.1	0.3	0.3	0.2	0.0	-0.0	0.2				
Y/y %	-1.2	-1.1	-1.0	-0.0	0.9	0.8	0.5	0.4	-0.8	0.7	-1.0	0.5
Private non-residential investment	96.2	95.8	96.1	96.4	96.6	96.8	97.0	97.4	96.1	97.0	96.1	96.7
Q/q %, SAAR	-0.4	-0.4	0.3	0.4	0.2	0.2	0.2	0.3				
Y/y %	-1.1	-1.7	-1.1	-0.1	0.5	1.1	1.0	1.0	-1.0	0.9	-1.1	0.6
Government final consumption	97.9	98.1	98.2	98.3	98.4	98.5	98.6	98.7	98.0	98.5	98.0	98.4
Q/q %, SAAR	-0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	-0.6	-0.6	-0.3	0.0	0.5	0.5	0.4	0.4	-0.4	0.4	-0.5	0.4
Public fixed investment	107.5	107.5	107.9	108.1	108.2	108.2	108.2	108.2	107.8	108.2	107.8	108.2
Q/q %, SAAR	-0.3	0.0	0.3	0.2	0.1	0.0	0.0	0.0				
Y/y %	-1.5	-1.4	-0.9	0.2	0.6	0.6	0.3	0.1	-0.8	0.4	-1.1	0.4
Exports of goods and services	88.6	86.5	86.7	87.0	87.4	87.7	88.0	88.3	87.2	87.9	88.1	87.6
Q/q %, SAAR	-2.5	-2.4	0.2	0.4	0.4	0.3	0.4	0.4				
Y/y %	-9.2	-10.9	-8.1	-4.0	-1.2	1.4	1.6	1.5	-8.1	0.8	-8.6	-0.6
Imports of goods and services	99.5	97.7	97.9	98.1	98.3	98.6	98.8	99.1	98.3	98.7	99.6	98.5
Q/q %, SAAR	-3.9	-1.8	0.2	0.2	0.2	0.2	0.2	0.3				
Y/y %	-16.4	-15.9	-12.5	-5.1	-1.1	0.8	1.1	0.9	-12.7	0.4	-14.5	-1.1

Source: Compiled by DIR.
Notes: 1) Y/y growth rates and FY and CY figures unadjusted; other seasonally adjusted.
2) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.

5.1 Contribution to Real GDP Growth by Component

	2014			2015				2016	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2014	2015	2014	2015
1) Q/q %												
GDP growth rate	-2.0	-0.7	0.6	1.2	-0.3	0.4	-0.4	0.5	-0.9	0.9	-0.0	0.6
Domestic demand	-2.9	-0.7	0.2	1.1	-0.1	0.4	-0.5	0.4	-1.6	0.8	0.0	0.1
Private demand	-2.7	-0.9	0.1	1.1	-0.2	0.4	-0.5	0.2	-1.5	0.6	-0.1	0.0
Private consumption	-3.0	0.0	0.4	0.0	-0.4	0.3	-0.5	0.4	-1.7	-0.1	-0.5	-0.7
Residential investment	-0.4	-0.2	0.0	0.1	0.0	0.0	-0.0	-0.0	-0.4	0.1	-0.2	-0.1
Private fixed investment	-0.6	-0.1	-0.0	0.4	-0.1	0.1	0.2	-0.1	0.0	0.3	0.4	0.2
Change in private inventories	1.3	-0.6	-0.2	0.6	0.3	-0.0	-0.1	-0.1	0.6	0.3	0.2	0.6
Public demand	-0.2	0.2	0.1	-0.0	0.1	-0.0	-0.0	0.2	-0.1	0.2	0.1	0.1
Government final consumption	-0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.0	0.3	0.0	0.2
Public fixed investment	-0.2	0.1	0.0	-0.1	0.0	-0.1	-0.2	0.0	-0.1	-0.1	0.0	-0.1
Change in public inventories	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	0.0	0.0	-0.0	0.0	-0.0
Net exports of goods and services	0.9	0.0	0.4	0.1	-0.3	0.0	0.1	0.1	0.6	0.1	-0.0	0.4
Exports of goods and services	0.1	0.3	0.6	0.3	-0.8	0.5	-0.2	0.0	1.3	0.1	1.3	0.5
Imports of goods and services	0.8	-0.3	-0.2	-0.2	0.5	-0.5	0.3	0.1	-0.7	-0.0	-1.4	-0.1
2) Y/y %												
GDP growth rate	-0.3	-1.5	-0.9	-1.0	0.8	1.9	0.7	0.2	-0.9	0.9	-0.0	0.6
Domestic demand	-0.2	-1.7	-2.0	-2.3	0.6	1.6	0.8	0.2	-1.6	0.8	0.0	0.1
Private demand	-0.1	-1.6	-1.9	-2.2	0.2	1.5	0.8	0.0	-1.5	0.6	-0.1	0.0
Private consumption	-1.5	-1.7	-1.3	-2.5	0.1	0.3	-0.6	-0.1	-1.7	-0.1	-0.5	-0.7
Residential investment	-0.1	-0.4	-0.5	-0.5	-0.1	0.2	0.1	0.1	-0.4	0.1	-0.2	-0.1
Private fixed investment	0.2	0.1	-0.0	-0.2	0.2	0.4	0.5	0.1	0.0	0.3	0.4	0.2
Change in private inventories	1.3	0.4	-0.1	1.0	0.1	0.6	0.7	-0.1	0.6	0.3	0.2	0.6
Public demand	-0.1	-0.1	-0.1	-0.1	0.3	0.2	0.0	0.2	-0.1	0.2	0.1	0.1
Government final consumption	-0.1	-0.0	0.1	0.1	0.3	0.2	0.3	0.5	0.0	0.3	0.0	0.2
Public fixed investment	-0.0	-0.1	-0.1	-0.2	0.1	-0.0	-0.3	-0.2	-0.1	-0.1	0.0	-0.1
Change in public inventories	0.0	0.1	-0.0	0.0	-0.0	-0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0
Net exports of goods and services	-0.2	0.2	1.1	1.3	0.2	0.2	-0.1	-0.1	0.6	0.1	-0.0	0.4
Exports of goods and services	0.9	1.2	1.8	1.2	0.3	0.6	-0.2	-0.4	1.3	0.1	1.3	0.5
Imports of goods and services	-1.1	-1.0	-0.7	0.1	-0.1	-0.3	0.1	0.4	-0.7	-0.0	-1.4	-0.1

Source: Compiled by DIR.
Notes: 1) Q/q growth rates seasonally adjusted; y/y growth rates and FY and CY figures unadjusted.
2) Due to rounding, figures may differ from those released by the government.

5.2 Contribution to Real GDP Growth by Component

	2016			2017				2018	FY		CY	
	4-6	7-9	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2016 (E)	2017 (E)	2016 (E)	2017 (E)
1) Q/q %												
GDP growth rate	0.2	0.5	0.3	0.4	0.2	0.0	0.0	0.1	1.1	0.9	0.8	1.1
Domestic demand	0.3	0.1	0.4	0.4	0.2	-0.1	-0.1	0.1	0.9	0.5	0.6	0.9
Private demand	0.3	0.0	-0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.2	0.3
Private consumption	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.2	0.3
Residential investment	0.1	0.1	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.1	-0.0	0.2	-0.0
Private fixed investment	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Change in private inventories	0.1	-0.1	-0.0	-0.0	0.0	0.0	0.0	0.0	-0.1	-0.0	-0.1	-0.0
Public demand	0.0	0.0	0.4	0.3	0.1	-0.2	-0.2	-0.0	0.6	0.2	0.4	0.6
Government final consumption	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3
Public fixed investment	0.1	-0.0	0.4	0.3	0.0	-0.3	-0.4	-0.1	0.3	-0.1	0.0	0.4
Change in public inventories	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0
Net exports of goods and services	-0.2	0.5	0.0	0.0	0.0	0.1	0.1	0.0	0.3	0.3	0.2	0.2
Exports of goods and services	-0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.8	-0.1	0.7
Imports of goods and services	0.1	0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	0.1	-0.5	0.3	-0.4
2) Y/y %												
GDP growth rate	0.6	0.9	1.6	1.4	1.5	0.9	0.6	0.4	1.1	0.9	0.8	1.1
Domestic demand	0.6	0.3	1.3	1.3	0.9	0.9	0.3	0.0	0.9	0.5	0.6	0.9
Private demand	0.4	0.1	0.5	0.3	0.2	0.3	0.4	0.5	0.3	0.3	0.2	0.3
Private consumption	0.3	0.1	0.6	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Residential investment	0.2	0.2	0.1	0.1	-0.0	-0.1	-0.0	-0.0	0.1	-0.0	0.2	-0.0
Private fixed investment	0.1	0.0	-0.1	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.1
Change in private inventories	-0.2	-0.2	-0.1	-0.0	-0.1	-0.0	-0.0	0.0	-0.1	-0.0	-0.1	-0.0
Public demand	0.2	0.2	0.7	1.0	0.8	0.6	-0.1	-0.5	0.6	0.2	0.4	0.6
Government final consumption	0.3	0.3	0.2	0.1	0.3	0.3	0.3	0.4	0.2	0.3	0.3	0.3
Public fixed investment	-0.1	-0.1	0.5	0.9	0.5	0.4	-0.4	-0.9	0.3	-0.1	0.0	0.4
Change in public inventories	0.0	0.0	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0
Net exports of goods and services	0.0	0.5	0.4	0.3	0.5	0.1	0.2	0.2	0.3	0.3	0.2	0.2
Exports of goods and services	-0.0	-0.1	0.2	0.4	0.9	0.7	0.8	0.8	0.1	0.8	-0.1	0.7
Imports of goods and services	0.1	0.6	0.1	-0.1	-0.4	-0.6	-0.5	-0.5	0.1	-0.5	0.3	-0.4

Source: Compiled by DIR.
Notes: 1) Q/q growth rates seasonally adjusted; y/y growth rates and FY and CY figures unadjusted.
2) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.

6.1 Major Assumptions

	2014			2015				2016	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2014	2015	2014	2015
1) World economy												
Economic growth of major trading partners												
Y/y %	3.4	3.5	3.4	3.6	3.2	2.9	2.8	2.7	3.5	2.9	3.5	3.1
Crude oil price (WTI futures; $/bbl)	103.0	97.2	73.2	48.6	57.8	46.5	42.2	33.6	80.5	45.0	92.9	48.8
Y/y %	9.4	-8.1	-25.0	-50.7	-43.9	-52.2	-42.4	-30.8	-18.7	-44.1	-5.2	-47.5
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	15,901	16,095	16,187	16,269	16,374	16,455	16,491	16,525	16,113	16,461	15,982	16,397
Q/q %, SAAR	4.0	5.0	2.3	2.0	2.6	2.0	0.9	0.8				
Y/y %	2.4	2.9	2.5	3.3	3.0	2.2	1.9	1.6	2.8	2.2	2.4	2.6
Consumer Price Index												
(1982-84 avg=100)	236.8	237.3	237.1	235.4	236.8	237.6	238.1	237.9	236.7	237.7	236.7	237.0
Q/q %, SAAR	1.9	0.9	-0.3	-2.9	2.4	1.4	0.8	-0.3				
Y/y %	2.1	1.8	1.2	-0.1	-0.0	0.1	0.5	1.1	1.3	0.4	1.6	0.1
Producer Price Index												
(Final demand; 2009.Nov=100)	110.9	111.3	111.1	109.8	110.0	110.2	109.6	109.7	110.8	109.9	110.9	109.9
Q/q %, SAAR	2.2	1.2	-0.7	-4.6	1.0	0.6	-2.0	0.4				
Y/y %	1.9	1.8	1.2	-0.5	-0.8	-0.9	-1.3	0.0	1.1	-0.8	1.6	-0.9
FF rate (%)	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.50	0.25	0.50	0.25	0.50
(Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	2.62	2.50	2.28	1.97	2.17	2.22	2.19	1.92	2.34	2.12	2.54	2.14
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	100.4	100.9	101.2	101.3	101.5	101.9	102.5	103.0	101.0	102.3	100.5	101.8
Q/q %, SAAR	4.4	2.0	1.1	0.6	0.8	1.6	2.2	2.1				
Y/y %	1.9	1.9	2.7	2.1	1.0	0.9	1.4	1.8	2.2	1.3	1.8	1.4
Nominal public fixed investment												
Y tril; SAAR	23.3	23.8	23.9	23.6	23.9	23.6	22.7	22.5	23.7	23.0	23.8	23.4
Q/q %, SAAR	-9.0	8.6	3.2	-5.5	4.6	-5.5	-13.7	-3.5				
Y/y %	3.8	1.2	0.1	-1.9	2.8	-0.5	-5.0	-5.5	0.4	-2.6	3.4	-1.6
Exchange rate (Y/$)	102.1	103.9	114.5	119.1	121.4	122.2	121.5	115.4	109.9	120.1	105.8	121.0
(Y/€)	139.5	137.8	143.8	132.6	135.0	135.6	131.5	128.0	138.4	132.5	140.3	133.7

Source: Compiled by DIR.
Note: Due to rounding, figures may differ from those released by the government.

6.2 Major Assumptions

	2016			2017				2018	FY		CY	
	4-6	7-9	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2016 (E)	2017 (E)	2016 (E)	2017 (E)
1) World economy												
Economic growth of major trading partners												
Y/y %	2.8	2.9	2.9	3.1	3.1	3.0	3.0	3.1	2.9	3.1	2.8	3.1
Crude oil price (WTI futures; $/bbl)	45.6	44.9	44.9	44.9	44.9	44.9	44.9	44.9	45.1	44.9	42.3	44.9
Y/y %	-21.1	-3.4	6.6	33.6	-1.5	0.0	0.0	0.0	0.2	-0.4	-13.3	6.3
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	16,583	16,702	16,784	16,868	16,953	17,038	17,126	17,217	16,734	17,084	16,649	16,996
Q/q %, SAAR	1.4	2.9	2.0	2.0	2.0	2.0	2.1	2.1				
Y/y %	1.3	1.5	1.8	2.1	2.2	2.0	2.0	2.1	1.7	2.1	1.5	2.1
Consumer Price Index												
(1982-84 avg=100)	239.4	240.4	241.9	243.0	244.1	245.4	246.5	247.6	241.2	245.9	239.9	244.7
Q/q %, SAAR	2.5	1.6	2.6	1.8	1.9	2.0	1.8	1.9				
Y/y %	1.0	1.1	1.6	2.1	2.0	2.1	1.9	1.9	1.5	2.0	1.2	2.0
Producer Price Index												
(Final demand; 2009.Nov=100)	110.2	110.4	111.0	111.4	111.9	112.4	112.9	113.4	110.8	112.7	110.3	112.2
Q/q %, SAAR	1.7	0.7	2.1	1.6	1.7	1.8	1.7	1.7				
Y/y %	0.1	0.2	1.2	1.5	1.5	1.8	1.7	1.8	0.8	1.7	0.4	1.7
FF rate (%)	0.50	0.50	0.75	0.75	1.00	1.00	1.25	1.25	0.75	1.25	0.75	1.25
(Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	1.75	1.56	2.04	2.26	2.32	2.47	2.51	2.66	1.91	2.49	1.82	2.39
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	102.4	103.0	103.4	103.8	104.3	104.9	105.6	106.2	103.1	105.2	102.9	104.6
Q/q %, SAAR	-2.2	2.2	1.6	1.5	1.8	2.2	2.7	2.6				
Y/y %	0.8	0.9	0.9	0.7	1.8	1.9	2.1	2.4	0.8	2.0	1.1	1.6
Nominal public fixed investment												
Y tril; SAAR	22.9	22.8	25.0	26.7	26.8	25.2	23.1	22.3	24.6	24.0	23.4	25.3
Q/q %, SAAR	8.0	-2.5	44.8	30.4	0.6	-21.5	-29.1	-13.7				
Y/y %	-3.7	-3.1	10.0	19.2	16.5	10.5	-7.5	-16.8	6.8	-2.4	-0.2	8.4
Exchange rate (Y/$)	108.1	102.4	108.3	108.3	108.3	108.3	108.3	108.3	106.8	108.3	108.6	108.3
(Y/€)	120.7	114.7	116.3	116.3	116.3	116.3	116.3	116.3	117.0	116.3	119.9	116.3

Source: Compiled by DIR.
Notes: Due to rounding, figures may differ from those released by the government.
E: DIR estimate.