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# Japan's Economic Outlook No. 184

*In this report we examine three issues facing Japan's economy: (1) The effects of cheap oil, (2) The return of capex spending to domestic investments, and (3) Is the Euro Zone Headed Toward Japanization?*

Japan to see real GDP growth of -0.9% in FY14 and +1.9% in FY15, and +1.8% in FY16, with nominal GDP growth of +1.4% in FY14 and +2.7% in FY15, and +2.4% in FY16.

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## Main Points

- **Main economic scenario for Japan:** In light of the 1<sup>st</sup> preliminary Oct-Dec GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of -0.9% in comparison with the previous year for FY14 (-0.5% in the previous forecast) and +1.9% in comparison with the previous year for FY15 (+1.8% in the previous forecast). In this report we have added our outlook for FY16 as well, with real GDP growth rate seen at +1.8% in comparison with the previous year. As we have indicated in our previous outlook, Japan's economy is now seen as having entered a recession since having peaked in January 2014. However, the downtrend appears to have ended fairly quickly as of around August. We expect Japan's economy to gradually recover due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) The gradual firming up of exports centering on the US.
- **Three issues facing Japan's economy:** In this report we examine the following three issues facing Japan's economy. (1) The effects of cheap oil, (2) The return of capex spending to domestic investments, and (3) Is the Euro Zone headed toward Japanization?
- **Issue (1) The effects of cheap oil on Japan's economy:** The sudden collapse of the price of crude oil in the summer of 2014 is expected to benefit both households and corporations, while giving a push to Japan's overall economic situation. Household purchasing should increase due to falling prices, while the increase in real wages should improve confidence,

leading to improvements in personal consumption. As for the corporate sector, lower costs will be a factor in pushing up earnings, and this is expected to encourage increases in capex spending and higher wages. According to a simulation we ran using a macro model, lower crude oil prices since the summer of 2014 will give a boost to real GDP figures for fiscal years 2014-16 as follows: FY14 +0.20%, FY15 +0.50%, and FY16 +0.41%.

- **Issue (2) The return of capex spending to domestic investments:** As the yen has become increasingly weak in recent years, some manufacturers are returning production facilities back to domestic locations from their former overseas operations. This new phenomenon has gotten a lot of media coverage of late. Calculating the ratio of overseas capex spending using a regression model, we predict that it will begin to decline in FY2014 and beyond. Results of a survey sent out to corporations shows similar results. The manufacturing industry plans on cutting back on its overseas capex spending during the FY2014 year. As the effects of Abenomics gradually appear in the future, more capex spending is expected to return to domestic investments after a series of years where investment in overseas production facilities became excessive due to the high yen.
- **Issue (3) Is the Euro Zone headed toward Japanization?:** In comparing the economies of the Euro Zone and Japan, we see that each has positive and negative factors. Overall, the Euro Zone still has room for additional policy moves, and if they can learn from Japan's lost decades, with government and the ECB cooperating to come up with the appropriate policies, they will be able to avoid falling into a long-term structural recession. However, the Euro Zone has one structural defect – they have a unified monetary policy, but have not combined the fiscal policies of the various countries. The biggest danger for the Euro Zone at this time is the possibility that the populism spreading in some member countries could become a fatal hindrance to attempts to free themselves from their predicament.
- **Four risk factors facing Japan's economy:** Risks factors for the Japanese economy are: (1) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market stemming from the postponement of the additional consumption tax hike, (2) China's shadow banking problem, (3) tumult in the economies of emerging nations in response to the US exit strategy, and (4) a worldwide decline in stock values due to geopolitical risk.
- **BOJ's monetary policy:** Our current outlook is that it will be difficult for the BOJ to reach its target growth rate in consumer price of 2% by the original deadline. We expect additional monetary easing measures by the BOJ to take place at the beginning of fall in 2015, but the timing of monetary easing could come much earlier than that.

#### Our assumptions

- Public works spending will grow by +5.1% in FY14, then decline by -5.3% in FY15, and is expected to decline again in FY16 by -3.5%. An additional consumption tax hike is now planned for April 2017.
- Average exchange rate of Y109.9/\$ in FY14, Y120.0/\$ in FY15, and Y120.0/\$ in FY16.
- US real GDP growth of +3.0% in CY15 and +2.7% in CY16.

## Main Economic Indicators and Real GDP Components

## Japan's Economic Outlook No. 184

	FY14 (Estimate)	FY15 (Estimate)	FY16 (Estimate)	CY14	CY15 (Estimate)	CY16 (Estimate)
<b>Main economic indicators</b>						
Nominal GDP (y/y %)	1.4	2.7	2.4	1.7	2.5	2.4
Real GDP (chained [2005]; y/y %)	-0.9	1.9	1.8	0.0	1.0	1.9
Domestic demand (contribution, % pt)	-1.5	1.3	1.7	0.1	0.3	1.7
Foreign demand (contribution, % pt)	0.8	0.6	0.2	-0.0	0.7	0.1
GDP deflator (y/y %)	2.4	0.8	0.5	1.6	1.5	0.5
Index of All-industry Activity (y/y %)*	-1.4	2.0	2.5	-0.2	1.0	2.1
Index of Industrial Production (y/y %)	-0.4	4.3	4.9	2.0	2.8	4.3
Index of Tertiary Industry Activity (y/y %)	-1.9	1.5	1.9	-0.8	0.5	1.6
Corporate Goods Price Index (y/y %)	2.7	-1.5	0.9	3.2	-1.7	1.0
Consumer Price Index (excl. fresh food; y/y %)	2.9	0.4	1.1	2.6	0.7	1.0
Unemployment rate (%)	3.5	3.3	3.2	3.6	3.3	3.2
Government bond yield (10 year; %)	0.47	0.52	0.73	0.53	0.47	0.67
Money stock; M2 (end-period; y/y %)	3.2	3.4	4.0	3.4	3.3	3.9
Balance of payments						
Trade balance (Y tril)	-7.0	-1.1	-1.0	-10.4	-1.4	-0.6
Current balance (\$100 mil)	742	1,589	1,697	248	1,542	1,710
Current balance (Y tril)	8.5	19.1	20.4	2.6	18.5	20.5
(% of nominal GDP)	1.7	3.8	4.0	0.6	3.7	4.0
<b>Real GDP components</b> (Chained [2005]; y/y %; figures in parentheses: contribution, % pt)						
Private final consumption	-3.1 (-1.8)	1.6 (0.9)	1.5 (0.9)	-1.2 (-0.8)	0.2 (0.1)	1.3 (0.8)
Private housing investment	-11.9 (-0.3)	2.1 (0.1)	6.0 (0.2)	-5.2 (-0.2)	-3.4 (-0.1)	5.1 (0.2)
Private fixed investment	-0.2 (-0.0)	3.8 (0.5)	5.5 (0.8)	4.1 (0.6)	1.0 (0.1)	5.3 (0.7)
Government final consumption	0.4 (0.1)	0.9 (0.2)	1.0 (0.2)	0.2 (0.0)	0.8 (0.2)	1.0 (0.2)
Public fixed investment	2.0 (0.1)	-5.7 (-0.2)	-4.7 (-0.2)	3.6 (0.2)	-3.7 (-0.2)	-5.2 (-0.2)
Exports of goods and services	7.5 (1.2)	6.7 (1.2)	5.5 (1.0)	8.2 (1.3)	6.9 (1.2)	5.4 (1.0)
Imports of goods and services	3.0 (-0.4)	4.0 (-0.6)	5.1 (-0.8)	7.2 (-1.4)	2.5 (-0.5)	4.4 (-0.9)
<b>Major assumptions:</b>						
<b>1. World economy</b>						
Economic growth of major trading partners	3.5	3.7	3.6	3.3	3.7	3.6
Crude oil price (WTI futures; \$/bbl)	81.4	57.7	62.7	92.9	55.8	61.5
<b>2. US economy</b>						
US real GDP (chained [2009]; y/y %)	2.9	2.8	2.7	2.4	3.0	2.7
US Consumer Price Index (y/y %)	1.3	0.9	1.9	1.6	0.4	2.0
<b>3. Japanese economy</b>						
Nominal public fixed investment (y/y %)	5.1	-5.3	-3.5	6.7	-2.9	-4.1
Exchange rate (Y/\$)	109.9	120.0	120.0	105.8	119.8	120.0
(Y/€)	139.0	135.0	135.0	140.3	135.0	135.0
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10

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 184)			Previous outlook (Outlook 183 Update)		Difference between previous and current outlooks	
	FY14	FY15	FY16	FY14	FY15	FY14	FY15
<b>Main economic indicators</b>							
Nominal GDP (y/y %)	1.4	2.7	2.4	1.5	2.5	-0.1	0.2
Real GDP (chained [2005]; y/y %)	-0.9	1.9	1.8	-0.5	1.8	-0.3	0.0
Domestic demand (contribution, % pt)	-1.5	1.3	1.7	-1.2	1.6	-0.4	-0.2
Foreign demand (contribution, % pt)	0.8	0.6	0.2	0.6	0.3	0.1	0.3
GDP deflator (y/y %)	2.4	0.8	0.5	2.1	0.7	0.3	0.1
Index of All-industry Activity (y/y %)*	-1.4	2.0	2.5	-1.4	2.6	-0.0	-0.5
Index of Industrial Production (y/y %)	-0.4	4.3	4.9	-0.8	4.5	0.4	-0.3
Index of Tertiary Industry Activity (y/y %)	-1.9	1.5	1.9	-1.9	2.1	-0.1	-0.5
Corporate Goods Price Index (y/y %)	2.7	-1.5	0.9	3.6	1.9	-0.9	-3.4
Consumer Price Index (excl. fresh food; y/y %)	2.9	0.4	1.1	3.1	1.1	-0.2	-0.7
Unemployment rate (%)	3.5	3.3	3.2	3.6	3.5	-0.1	-0.2
Government bond yield (10 year; %)	0.47	0.52	0.73	0.55	0.69	-0.08	-0.17
Money stock; M2 (end-period; y/y %)	3.2	3.4	4.0	3.4	4.1	-0.3	-0.7
Balance of payments							
Trade balance (Y tril)	-7.0	-1.1	-1.0	-9.1	-8.2	2.0	7.1
Current balance (\$100 mil)	742	1,589	1,697	413	659	329	930
Current balance (Y tril)	8.5	19.1	20.4	4.7	7.9	3.8	11.2
(% of nominal GDP)	1.7	3.8	4.0	1.0	1.6	0.8	2.2
<b>Real GDP components (chained [2005]; y/y %)</b>							
Private final consumption	-3.1	1.6	1.5	-2.7	1.7	-0.4	-0.1
Private housing investment	-11.9	2.1	6.0	-10.8	2.6	-1.0	-0.5
Private fixed investment	-0.2	3.8	5.5	0.8	4.9	-1.1	-1.1
Government final consumption	0.4	0.9	1.0	0.5	1.2	-0.2	-0.3
Public fixed investment	2.0	-5.7	-4.7	0.5	-7.9	1.5	2.2
Exports of goods and services	7.5	6.7	5.5	6.0	4.7	1.5	2.0
Imports of goods and services	3.0	4.0	5.1	2.3	3.6	0.7	0.4
<b>Major assumptions:</b>							
1. World economy							
Economic growth of major trading partners	3.5	3.7	3.6	3.4	3.7	0.1	-0.0
Crude oil price (WTI futures; \$/bbl)	81.4	57.7	62.7	86.3	70.0	-5.0	-12.3
2. US economy							
US real GDP (chained [2009]; y/y %)	2.9	2.8	2.7	2.7	2.8	0.2	-0.0
US Consumer Price Index (y/y %)	1.3	0.9	1.9	1.7	1.9	-0.4	-1.1
3. Japanese economy							
Nominal public fixed investment (y/y %)	5.1	-5.3	-3.5	3.8	-6.7	1.3	1.4
Exchange rate (Y/\$)	109.9	120.0	120.0	110.3	120.0	-0.4	0.0
(Y/€)	139.0	135.0	135.0	142.8	150.0	-3.8	-15.0
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.00	0.00

Source: Compiled by DIR.

Notes: Due to rounding, differences do not necessarily conform to calculations based on figures shown.

\* Excl. agriculture, forestry, and fisheries.

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## Summary

### *Main economic scenario for Japan*

In light of the 1<sup>st</sup> preliminary Oct-Dec GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of -0.9% in comparison with the previous year for FY14 (-0.5% in the previous forecast) and +1.9% in comparison with the previous year for FY15 (+1.8% in the previous forecast). In this report we have added our outlook for FY16 as well, with real GDP growth rate seen at +1.8% in comparison with the previous year. As we have indicated in our previous outlook, Japan's economy is now seen as having entered a recession since having peaked in January 2014. However, the downtrend appears to have ended fairly quickly as of around late August. We expect Japan's economy to gradually recover due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) The gradual firming up of exports centering on the US.

### *Real GDP wins growth for first time in three qtrs, but falls below consensus*

The real GDP growth rate for Oct-Dec 2014 (1<sup>st</sup> preliminary est) grew by +2.2% q/q annualized (+0.6% q/q). This is the first time growth in GDP has been recorded in three quarters, and confirms that the economy is finally back on track after a period in the doldrums. However, despite the positive growth rate, performance fell below market consensus (+3.7% q/q annualized and +0.9% q/q), leaving a somewhat negative impression. One of the main factors behind results falling below market predictions was the fact that growth in personal consumption was not nearly as high as had been originally expected.

### *Personal consumption lacks in strength; capex also leaves something to be desired*

Performance by demand component shows personal consumption up +0.3% q/q, its second consecutive quarter of growth. Real employee compensation was up by +0.1% q/q for the second consecutive quarter, meaning that personal consumption will continue to make a gradual comeback with the help of improvements in the employment and income environment. However, the market forecast had been expecting an acceleration in growth rate, and this figure remains at about the same level as the Jul-Sep period, a result lacking in real strength. Looking at personal consumption by category, we see a comeback in durables such as automobiles, which had been sluggish ever since the increase in consumption tax. Durables were up by +0.7% q/q, the first instance of growth seen in three quarters. Meanwhile, services were also up by +0.5% q/q for the first time in three quarters, moving back into a growth phase. Non-durables were up slightly by +0.1% q/q, while semi-durables suffered a decline for the first time in two quarters by -0.4%.

Housing investment declined for the third consecutive quarter at -1.2%, continuing the downtrend it has experienced ever since the reactionary decline after the increase in consumption tax last year. New housing starts, a leading indicator for housing investment as a portion of GDP, bottomed out during the Jul-Sep period. Pressures stemming from the reactionary decline after last year's consumption tax increase appear to be gradually easing up.

Capex grew by +0.1% q/q for the first time in three quarters, showing that it has indeed bottomed out and is now back into a growth trend. Improvements can be seen in operating rates as production begins to recover, and with the progressively weaker yen, corporate earnings continue to improve, especially in the area of major manufacturers. This should provide support for capex spending. However, the coincident index for capex, shipments of capital goods, shows growth in capex is still extremely limited, with results leaving a bit to be desired.

Public investment was up for the third quarter in a row at +0.6% q/q. Front-loading the FY2013 and FY2014 budgets helped to accelerate public investment during the Jul-Sep period, but the positive effect is gradually running out, and growth now shows signs of slowing.

Exports grew for the second consecutive quarter at +2.7% q/q. Exports to the US and Asia helped to push overall figures up, while imports also managed a comeback at +1.3% q/q, winning a second consecutive quarter of growth. Overseas demand (net exports) grew only slightly at +0.2%pt q/q.

The GDP deflator grew considerably in comparison to the previous period at +0.5% q/q, the first time it has recorded growth in two quarters. The domestic demand deflator also grew for the sixth consecutive quarter at +0.3% q/q, and the export deflator grew considerably by +2.9% q/q, due to the weak yen. In y/y terms the GDP deflator was up by +2.3%, its fourth consecutive quarter of growth. Meanwhile, nominal GDP was up for the first time in two quarters at +4.5% q/q annualized (+1.1% q/q).

### ***Japan's economy expected to continue expanding***

Results for the period showed considerable growth for real GDP, its first positive growth in three quarters. This indicates that Japan's economy is heading toward a comeback after a recession following the increase in consumption tax last year. We expect real GDP to continue this growth trend during the Jan-Mar 2015 period and beyond. We expect Japan's economy to continue expanding gradually.

We also see personal consumption continuing in a growth trend due mainly to improvements in real employee compensation, conditions positively influencing households. Meanwhile, the price of crude oil which has experienced steep declines since the summer of 2014 will bring downward pressure on consumer price, providing added support to growth in personal consumption, which is in turn affected by rising real wages. Meanwhile, housing investment, which suffered from the effects of the reactionary decline last year, is expected to move steadily toward recovery now that housing starts, a leading indicator, are clearly making a comeback.

As for capex, the growth trend is expected to continue. In addition to continued improvement in machinery orders, another leading indicator, the BOJ Tankan indicates that capex activities are reflecting a steady undertone. Production, which had been continually worsening since the beginning of 2014, is now making a comeback and operating rates are in a growth trend. Both non-manufacturing, which has reflected a growing sense of deficiency in capex for some time now, and the manufacturing sector will continue to be relieved of any sense of surplus in capex, and this should encourage more capex related demand in the future. Meanwhile, as yen continues to be weak, some manufacturers appear to be increasing the percentage of their domestic production, while improvements in corporate earnings due to the major decline in the price of crude oil should also become a factor encouraging an increase in capex spending.

As for exports, moderate growth is seen continuing as overseas economies gradually recover. The major factor pulling exports along is the US whose economy continues to improve. Meanwhile, the expanding US economy is expected to help not only Japan's exports to the US, but exports of Japanese intermediate goods to Asia which is the location of final demand for many goods. One worrisome factor is Europe and China whose economies are still suffering a slowdown. However, Europe's economy is expected to move gradually toward a comeback due to the effects of additional monetary easing on the part of the ECB, and so Japan's exports are seen strengthening their growth trend.

### ***Three issues facing Japan's economy***

In this report we examine the following three issues facing Japan's economy. (1) The effects of cheap oil, (2) The return of capex spending to domestic investments, and (3) Is the Euro Zone headed toward Japanization?

#### ***Issue (1): The effects of cheap oil on Japan's economy***

The sudden collapse of the price of crude oil in the summer of 2014 is expected to benefit both households and corporations, while giving a push to Japan's overall economic situation. Household purchasing should increase due to falling prices, while the increase in real wages should improve confidence, leading to improvements in personal consumption. As for the corporate sector, lower costs will be a factor in pushing up earnings, and this is expected to encourage increases in capex spending and higher wages. According to a simulation we ran using a macro model, lower crude oil prices since the summer of 2014 will give a boost to real GDP figures for fiscal years 2014-16 as follows: FY14 +0.20%, FY15 +0.50%, and FY16 +0.41%.

#### ***Issue (2): The return of capex spending to domestic investments***

As the yen has become increasingly weak in recent years, some manufacturers are returning production facilities back to domestic locations from their former overseas operations. This new phenomenon has gotten a lot of media coverage of late. Calculating the ratio of overseas capex spending using a rolling regression model, we predict that it will begin to decline in FY2014 and beyond. Results of a survey sent out to corporations shows similar results. The manufacturing industry plans on cutting back on its overseas capex spending during the FY2014 year. As the effects of Abenomics gradually appear in the future, more capex spending is expected to return to domestic investments after a series of years where investment in overseas production facilities became excessive due to the high yen.

#### ***Issue (3): Is the Euro Zone headed toward Japanization?***

In comparing the economies of the Euro Zone and Japan, we see that each has positive and negative factors. Overall, the Euro Zone still has room for additional policy moves, and if they can learn from Japan's lost decades, with government and the ECB cooperating to come up with the appropriate policies, they will be able to avoid falling into a long-term structural recession. However, the Euro Zone has one structural defect – they have a unified monetary policy, but have not combined the fiscal policies of the various countries. The biggest danger for the Euro Zone at this time is the possibility that the populism spreading in some member countries could become a fatal hindrance to attempts to free themselves from their predicament.

### ***Four risk factors facing Japan's economy***

Risks factors for the Japanese economy are: (1) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market stemming from the postponement of the additional consumption tax hike, (2) China's shadow banking problem, (3) tumult in the economies of emerging nations in response to the US exit strategy, and (4) a worldwide decline in stock values due to geopolitical risk.

#### ***BOJ's monetary policy***

Our current outlook is that it will be difficult for the BOJ to reach its target growth rate in consumer price of 2% by the original deadline. We expect additional monetary easing measures by the BOJ to take place at the beginning of fall in 2015, but the timing of monetary easing could come much earlier than that.



# 1. Main economic scenario for Japan: Economy to gradually expand

## *Japan's economy moving toward expansion phase*

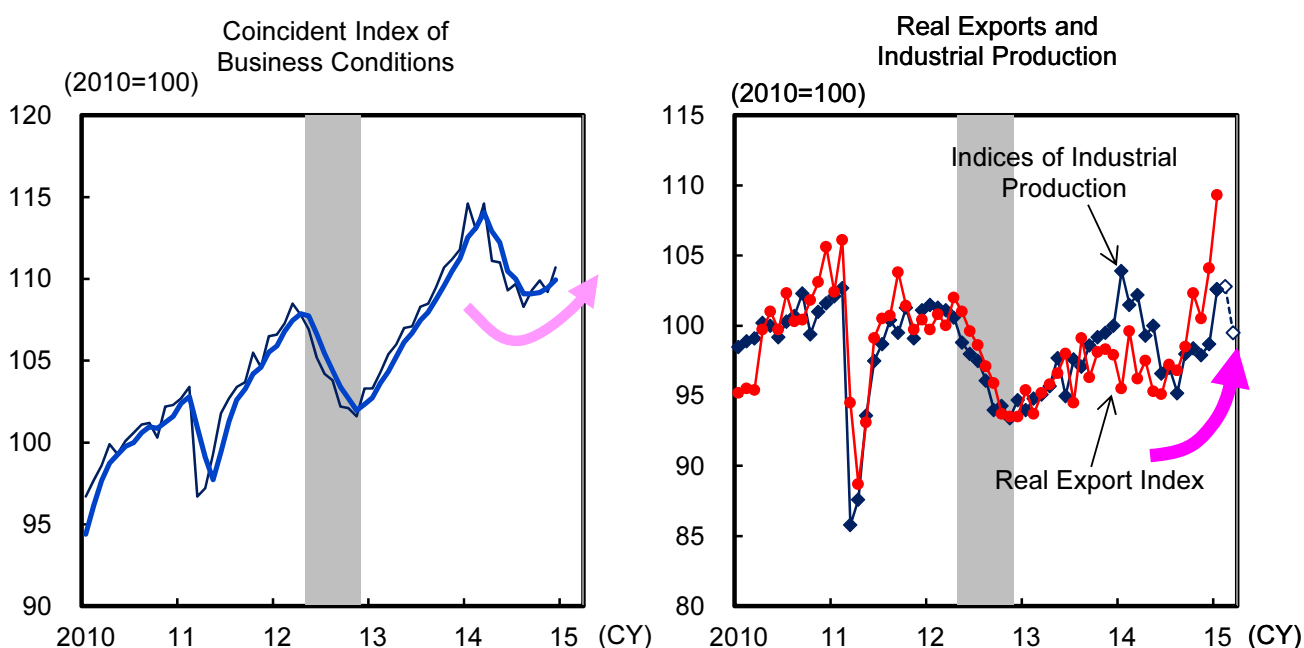
As we have indicated in our previous outlook, Japan's economy is now seen as having entered a recession since having peaked in January 2014. However, the downtrend appears to have ended fairly quickly as of around August. We expect Japan's economy to gradually recover due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) The gradual firming up of exports centering on the US.

Real GDP registered negative growth for two quarters in a row beginning in the Apr-Jun 2014 period. The coincident index of business conditions peaked in January 2014 and then entered a downward trend. However, the GDP shifted back into the positive range for the first time in three quarters during the Oct-Dec 2014 period. The coincident index had also been deteriorating, but began heading toward a comeback after bottoming out in August. The assessment of the coincident index of business conditions indicated improvement in December 2014. Beginning in January 2014 and lasting till around August, the downtrend ended within a fairly short period. (See Chart 1.)

Behind the return to economic expansion was the gradual comeback exhibited by personal consumption, which experienced a steep downturn due to the reactionary decline occurring after the increase in the consumption tax. Personal consumption gained support from the steady undertone of the employment and income environment. Meanwhile, the progressively weakening yen also brought upward pressure, along with continuing improvement in corporate earnings and a steady undertone for demand from the corporate sector including capex spending. In addition, real exports, which had been sluggish ever since the economic expansion phase at the end of the year 2012, began to strengthen their growth tendency around the middle of 2014. Expansion of domestic and overseas demand also encouraged production in the manufacturing industry to begin a recovery around the middle of 2014.

**Coincident Indicator, Real Exports, and Production in the Manufacturing Industry**

**Chart 1**



Source: Cabinet Office, Bank of Japan, and Ministry of Economy, Trade and Industry; compiled by DIR.

Note: The shaded areas represent periods of economic slowdown. The coincident index is represented by the bold line, and figures used are the 3-month moving average value. Data for the latest two months of industrial production make use of values from METI's production forecast survey.

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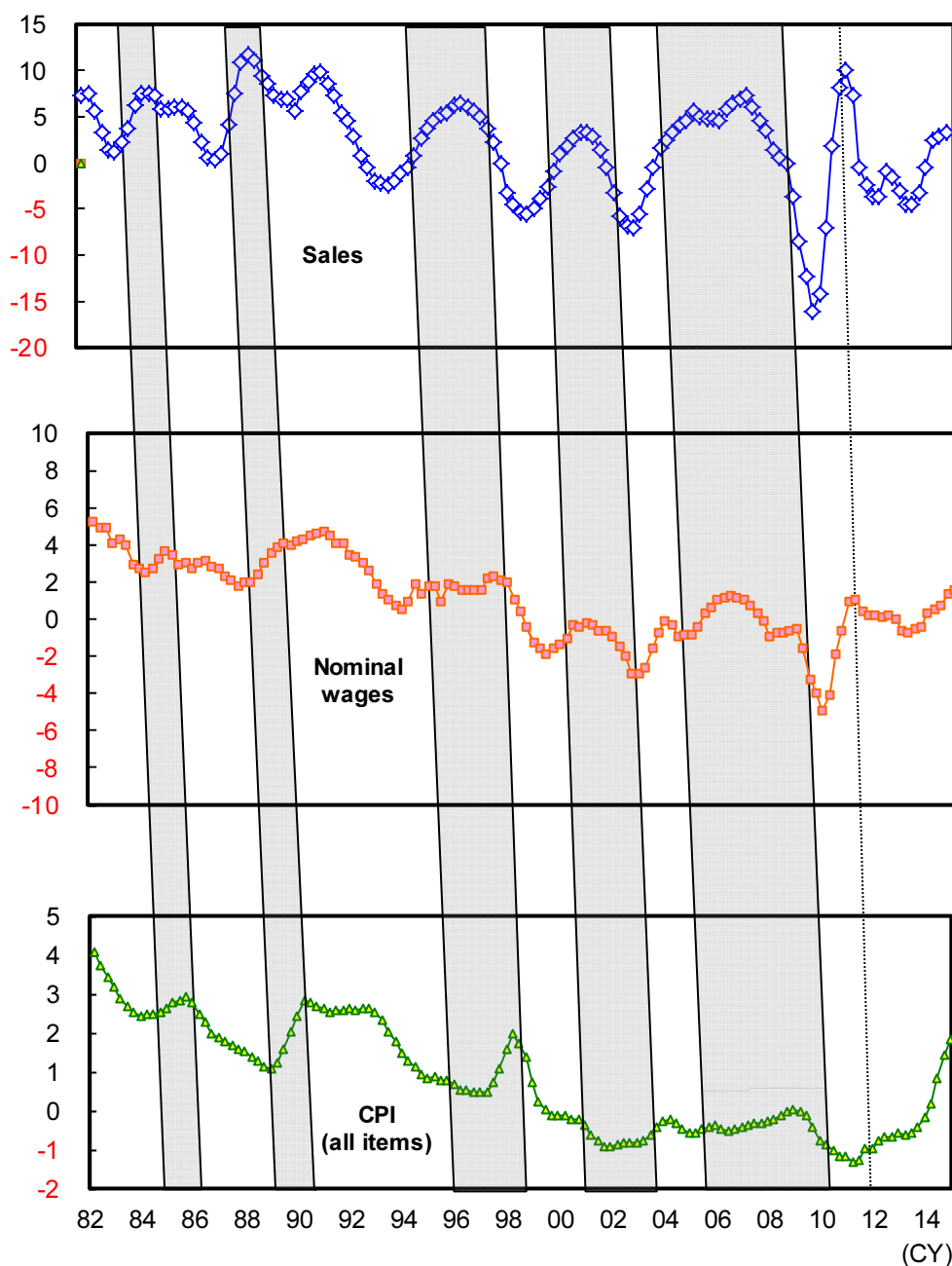
### *Virtuous circle brought on by Abenomics to continue*

Japan's economy is expected to be supported by the virtuous circle brought on by Abenomics.

Criticisms have been voiced by the opposition parties and the mass media claiming that employee compensation has failed to increase despite the progress of inflation, and that Abenomics will only cause the people more pain. However, as is shown in Chart 2, historical data reveals that there is a recurring economic cycle in Japan moving from sales growth to wage growth and then to price increases. In other words, wage hikes in Japan tend to occur six months to a year after growth in sales, and then another six months later the consumer price index tends to rise.

With this in mind we can see that the BOJ's monetary easing policy and the government's pro-business policy have been designed to encourage growth in sales. In this sense, the basic thinking behind Abenomics is right on target in understanding that the starting point for shaking off deflation is to induce sales growth.

In actual fact, the corporate sector has been favorable recently, and as the employment and income environment improves, the personal sector is gradually improving also. The wage increase rate after the 2014 annual spring labor offensive was 2.2%, the highest it has been for the past fifteen years. Hence, looking at the big picture, we can see that the first buds of the virtuous circle as envisioned by Abenomics (production → income → consumption) have already sprouted.



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

Notes: 1) Y/y comparison of four-quarter moving average.

2) Shaded bars denote periods when sales were on uptrend. Bars tilted in order to show roughly 6-month lag from sales graph to nominal wages graph and from there to CPI graph, respectively.

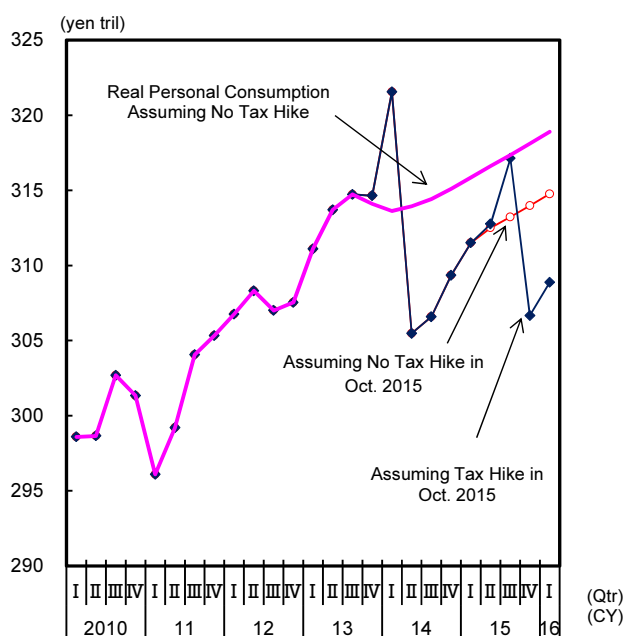
### ***Postponement of additional consumption tax hike increased FY2015 real GDP growth rate by +0.53%pt***

On November 18, 2014 Japan's Prime minister Shinzo Abe announced the postponement of the additional consumption tax hike of 10% from the originally planned October 2015 date to April 2017, a delay of eighteen months. According to our estimates this has encouraged real GDP growth rate for the FY2015 period to grow an additional +0.53%pt. Although probability that this will occur in the immediate future is not especially high, we feel that it is essential to continue closely monitoring the risk of developing the *Triple Weaknesses* (a weak bond market, weak yen, and weak stock market) due to postponement of the additional consumption tax hike.

Chart 3 illustrates the effects of an increase in consumption tax on the economy. Estimates were obtained with the use of a macro model produced by DIR. According to our estimates, by postponing the consumption tax hike which was to have been implemented in October 2015 (an increase from 8% to 10%) till April 2017, the FY 2015 real GDP was increased by around 2.8 tril yen, an increase in real GDP growth rate by 0.53%pt. If the October 2015 consumption tax hike had actually been implemented, first there would be last minute demand followed by a reactionary decline in demand, and since these would occur within the same fiscal year, the influence on GDP on a fiscal year basis would be minor. As recovery in personal consumption after the April 2014 increase in consumption tax has been slow, the downswing in personal consumption in FY 2015 (by about 2.3 tril yen), caused mainly by the decrease in real income, has brought downward pressure on real GDP.

When the effects of the increase in consumption tax implemented in April 2014 are calculated using the same method, results show that Fiscal 2013 personal consumption was given a boost by last minute demand prior to the implementation of the tax hike to the tune of around 2.1 tril yen, bringing overall real GDP to a high of 2.6 tril yen. When the consumption tax was raised in 1997, personal consumption due to last minute demand is said to have been valued at around 2 tril yen, meaning that the more recent tax hike topped 1997 last minute demand only slightly. Real personal consumption in Fiscal 2014 was pushed down by 5.4 tril yen, while personal consumption was decreased by 6.6 tril yen. The Fiscal 2014 real GDP growth rate is expected to be down by about 1.5%pt in comparison to what it would have been if there had not been an increase in the consumption tax.<sup>1</sup>

**Effects on the Economy of the April 2014 Consumption Tax Increase and Postponing the October 2015 Consumption Tax Increase** Chart 3



Effects of Postponing Oct. 2015 Consumption Tax Hike (8%→10%)

Amount (yen tril)			
	FY2013	FY2014	FY2015
Real GDP	—	—	2.8
Private Sector Final Consumption Expenditure	—	—	2.3
Effect on Real GDP Growth Rate (%pt)			
	FY2013	FY2014	FY2015
Real GDP	—	—	0.53
Private Sector Final Consumption Expenditure	—	—	0.43

Effects of Raising Consumption Tax in Apr. 2014 (5%→8%)

Amount (yen tril)			
	FY2013	FY2014	FY2015
Real GDP	2.6	-5.4	-2.8
Private Sector Final Consumption Expenditure	2.1	-6.6	-4.1
Effect on Real GDP Growth Rate (%pt)			
	FY2013	FY2014	FY2015
Real GDP	0.50	-1.51	0.49
Private Sector Final Consumption Expenditure	0.41	-1.65	0.48

Source: Cabinet Office; Compiled by DIR.

Note: Calculation values are from the DIR short-term macro-economic model.

Source: Cabinet Office; compiled by DIR.

Notes: 1) Estimated figures for the "No Tax Hike" category taken after 4<sup>th</sup> qtr of 2013, while those for the "Tax Hike" category and the "assuming no tax hike in Oct. 2015" category are taken from after the 4<sup>th</sup> quarter of 2014.

2) Calculation values are from the DIR short-term macro-economic model, Figures are different from those used in the economic outlook.

<sup>1</sup> The reason real GDP declines by a smaller amount than personal consumption is because stagnant domestic demand causes imports, which are deducted from the GDP calculation, to decline.

## 2. Issue (1): The Effects of Cheap Oil on Japan's Economy

### *The price of crude oil has declined rapidly since the middle of 2014*

The sudden collapse of the price of crude oil occurred after its peak in the summer of 2014. The WTI, the international crude oil price index, rose to over \$100/bbl as of June 2014 and was maintaining that level until hitting a sudden precipitous drop to under \$50/bbl. Ultimately the price fell to half its former level in the space of only six months or so.

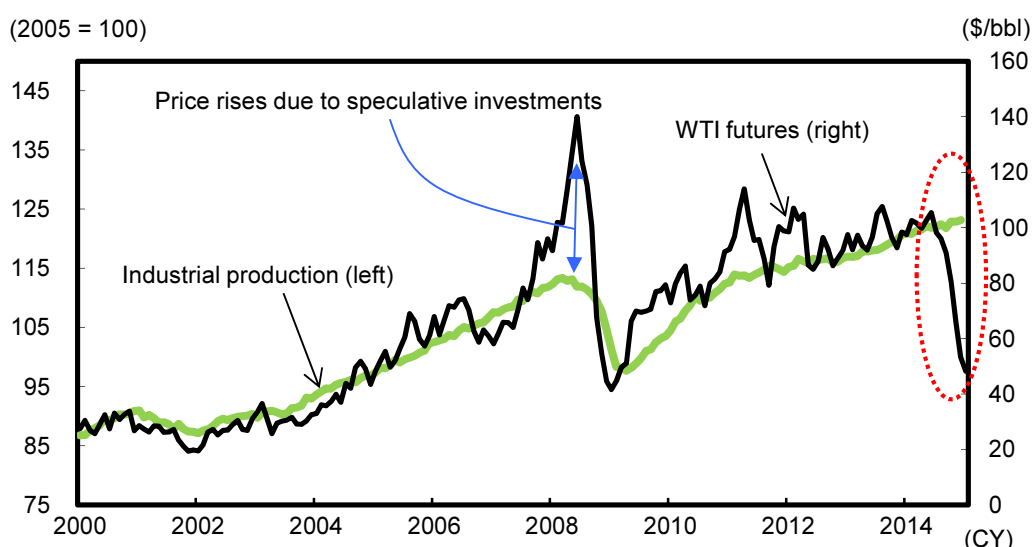
It is extremely difficult to determine what the most appropriate level should be for the price of crude oil. If indeed the actual price of crude oil has fallen below fair value which is determined by supply and demand, then countries which are net importers of oil can expect to see many benefits to their real economies.

Chart 4 shows the relationship between the price of crude oil and world industrial production, the proxy variable of worldwide demand for crude oil. First, we take a look at what the relationship was in the past. In the years following the year 2000 world industrial production and the price of crude oil appear to have been closely linked. But then, between 2007-2008, the price of crude oil rose rapidly. During this period the price of oil grew faster than the world economy, which was improving at that time. But the high price of oil was not driven by actual demand. It is possible that speculative investments were really what drove the price up. Then after this period, the world's economy worsened due to the US financial crisis and the price of oil rapidly declined along with it. With the exception of this one period in time, the price of crude oil has generally moved along the same lines as the world's real economy.

Meanwhile, taking a closer look at the recent level of crude oil prices, we see that oil falls significantly below world industrial production despite the fact that one would assume that the latter figure can explain the current level of the price of oil. Though its pace has slowed, the world economy continues to achieve moderate growth led by the US whose economy maintains a firm undertone. The rapid decline in the economy as was seen after the US financial crisis is now nowhere to be seen. In conclusion, it seems that the sudden collapse in the price of crude oil in recent months has been due more to supply factors rather than demand. In any case, both the world economy and Japan's are expected to reap major rewards as the price of crude oil remains low with the world economy in gradual recovery.

World Economy and the Price of Crude Oil

Chart 4



Source: CPB Netherlands Bureau for Economic Policy Analysis, NYMEX; compiled by DIR.

## 2.1 Effects of cheap oil on the household sector

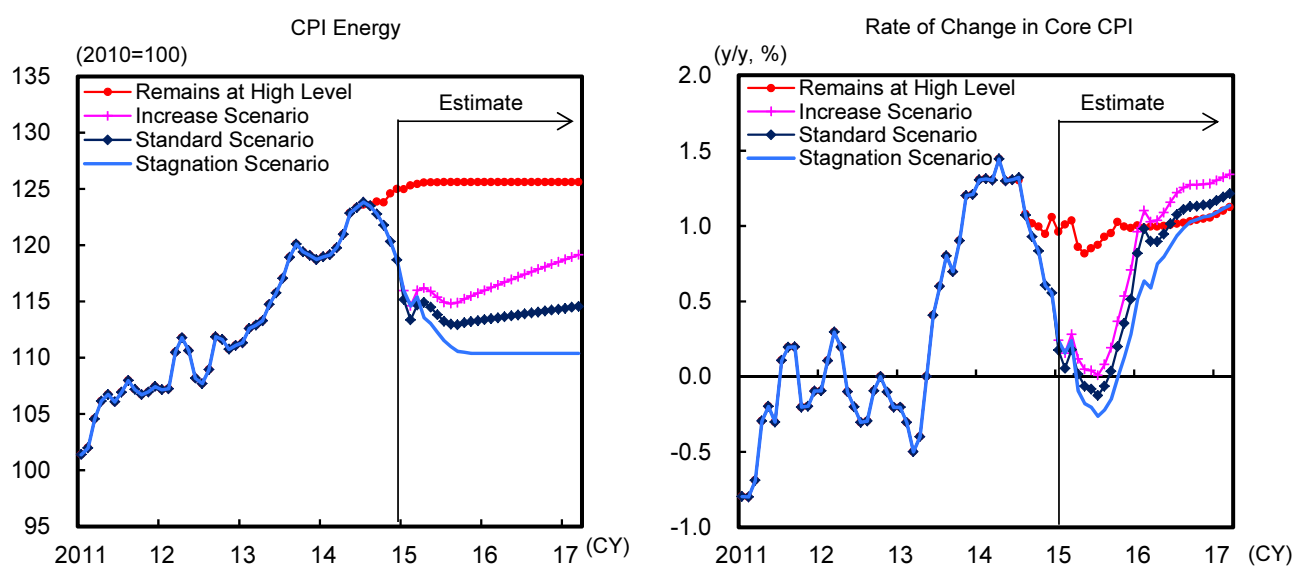
### *The effects of the low price of crude oil on the consumer price index*

The low price of crude oil will affect Japan's economy in a variety of ways. First we take a look at how it will affect the consumer price index. Chart 5 presents estimates of rate of change in CPI energy and core CPI assuming four possible scenarios: (1) Remains at High Level, (2) Increase Scenario, (3) Standard Scenario, and (4) Stagnation Scenario. (See detailed explanation of scenarios in notes to Chart 5.)

First, we consider CPI energy. The price of energy is closely linked to the price of raw materials, specifically, the international crude oil market. Hence prices have been on the decline in reaction to the falling crude oil price ever since the summer of 2014. In the case of electricity, Japan's price revision system dictates that there be a time lag of several months after price changes in fuels such as crude oil. Therefore, even if the price of crude oil suddenly begins climbing again, energy prices in Japan will continue to drop until around spring of 2015.

Next, we look at estimates of core CPI for each scenario. If the price of crude oil had not collapsed, but instead maintained more or less the level it did before its steep decline, we estimate that core CPI would then be fluctuating at around +1% in comparison with the previous year. From this we can conclude that the decline in the price of energy has significantly forced the overall level of core CPI downwards. As was mentioned previously, the price of energy lags behind the international market for crude oil and therefore it can be assumed that it will decline further in the future. We can also conclude from this fact that there is a very good possibility that core CPI will be pushed further downwards to a significant degree in the months ahead. If the declining trend in the price of crude oil does not continue, the extent that energy contributes to the decline in core CPI will gradually dissipate, and yet it is still estimated that downward pressure on the rate of change in core CPI on a y/y basis will continue for some time to come. This is because the decline in the price of crude oil toward the end of 2014 happened so quickly and the extent of change was so huge, that even in the event of the price increase scenario we still have to assume the above conclusion.

**Effect of Fluctuations in Crude Oil Price on Rate of Change in CPI Energy and Core CPI** **Chart 5**



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

Note: Calculated values excluding effects of consumption tax. Assumptions regarding price of crude oil (WTI) in each scenario are as follows.

Remains at High Level: Marks time at \$105/bbl after June 2014.

Increase Scenario: Increases up to \$85/bbl as of March 2017.

Standard Scenario: Rises as far as \$65/bbl as of March 2017.

Stagnation Scenario: Levels out at \$40/bbl after March 2015.

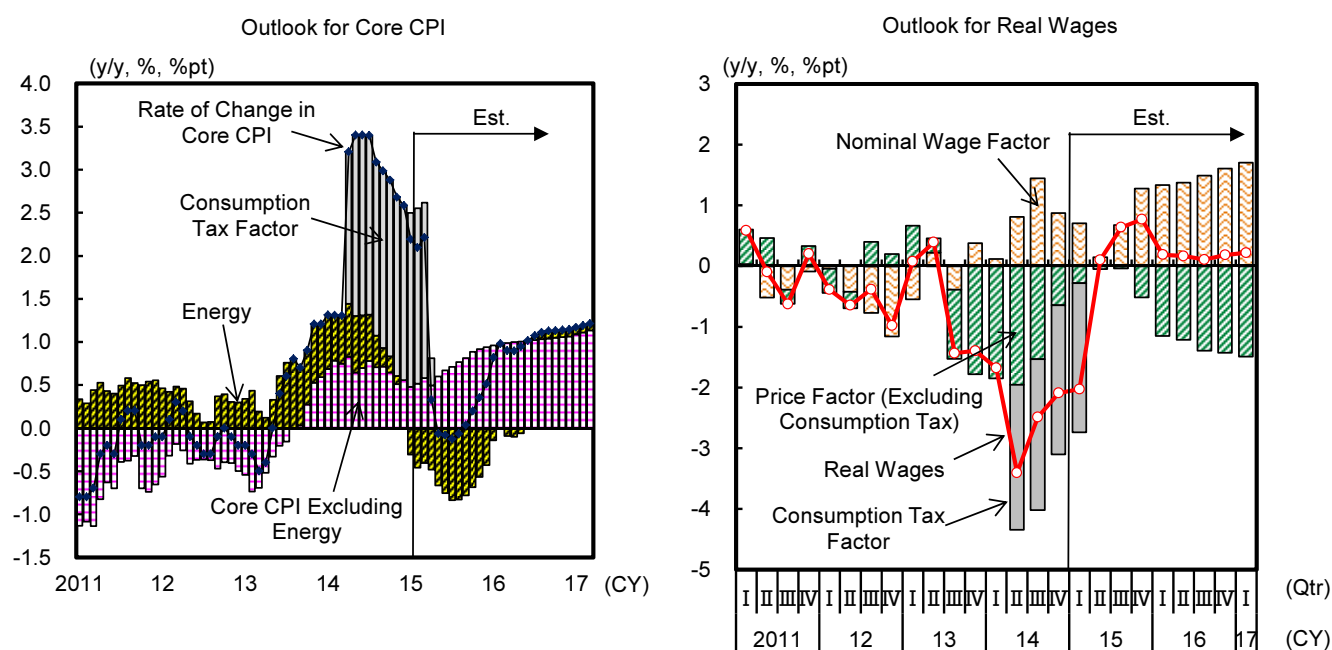
### *The decline in energy price is expected to become a factor in pushing up real wages*

In forecasting the future of core CPI based on the collapse in the price of crude oil, downward pressure brought on by the energy price is expected to remain a major factor in suppressing growth in core CPI for the rest of the year 2015. Still, prices other than energy are expected to continue in a growth trend for a while longer. This is because (1) the economy is now seen to be moving toward recovery and as it advances along the road of expansion, the supply-demand gap from a macro perspective is expected to continue improving, and (2) the weak yen, which has continued to progress at the same time the price of crude has fallen, has the effect of pushing prices upwards, and its residual effect is expected to be around for some time. However, the extent to which the decline in energy prices brings downward pressure on core CPI is expected to be temporarily greater than the effect of upward pressure on core CPI that factors other than energy have. Furthermore, the upward pressure on prices brought on by the increase in the consumption tax in April of 2014 is expected to dissipate by April of this year (2015). Therefore we believe there is a growing possibility that core CPI will fall below last year's level on a y/y basis this spring.

As the growth rate in prices momentarily falls into negative numbers, real wages which were stagnant for quite some time stand an excellent chance of improving rapidly. During the Apr-Jun 2015 period when the effects of the previous year's increase in consumption tax become a thing of the past, the growth rate in real wages is expected to shift into the positive range in y/y terms. Meanwhile, as will be explained later, the collapse in the price of crude oil will be a factor in the improvement of corporate earnings, a portion of which will be distributed to households as the improved corporate earnings become a factor in pushing up the nominal wage. Then, beginning around the middle of 2015, downward pressure on prices brought on by the steep decline in the price of energy is expected to gradually dissipate, and the extent of growth in prices is expected to increase again. However, the underlying growth trend in nominal wage is expected to continue, keeping real wages in the positive range. The memory of stagnant personal consumption after the tax hike last year remains fresh, when the rise in prices due to the increase in consumption tax brought downward pressure on real wages. But in the future, we expect that real wages will shift into a growth trend and become a driving force in revitalizing personal consumption.

#### Outlook for Core CPI and Real Wages

#### Chart 6

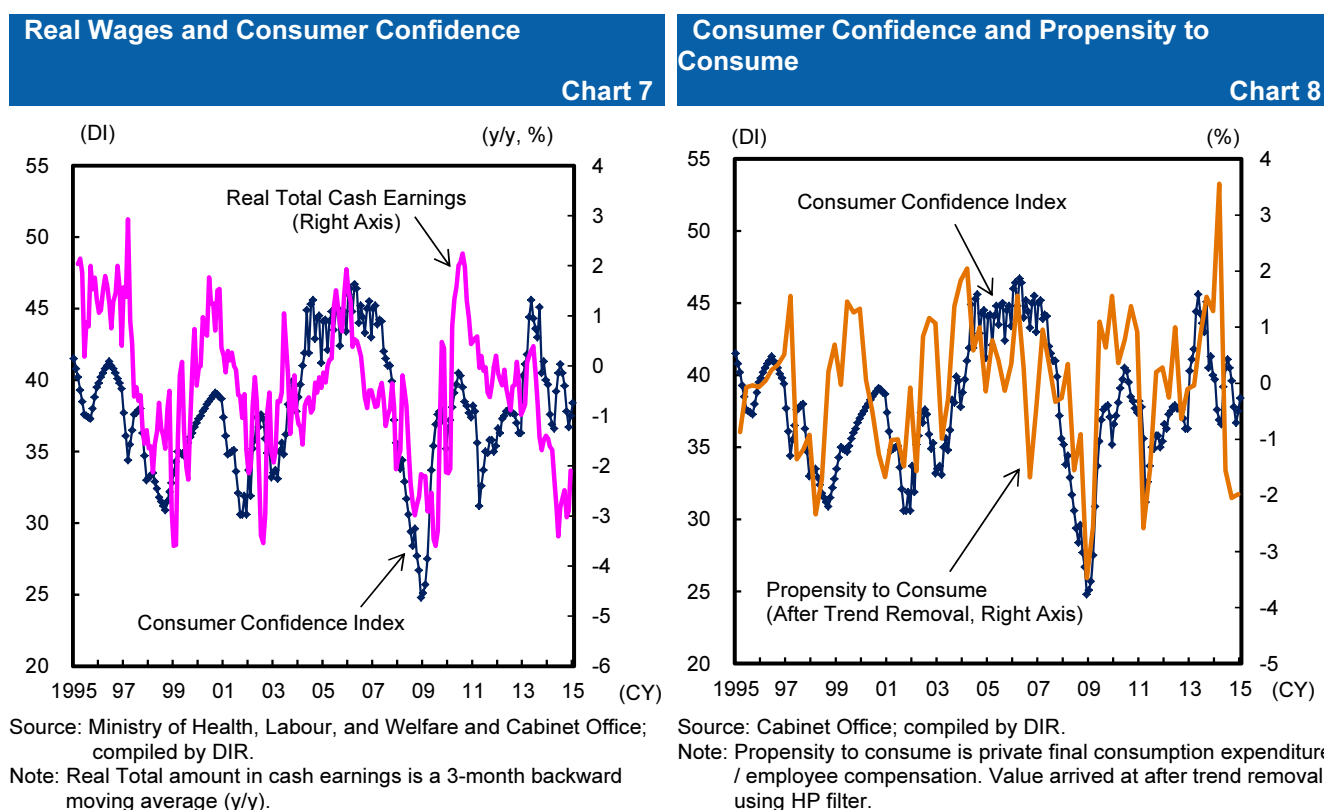


Source: Ministry of Internal Affairs and Communications and Ministry of Health, Labour, and Welfare; compiled by DIR.

### *Growth in real wages will contribute to improving consumer confidence*

An increase in real wages promises in turn to have the effect of improving consumer confidence. The relationship between real wages and consumer confidence is shown in Chart 7. Here the linkage between these two phenomena, though moderate, becomes evident.<sup>2</sup> Looking at the question of consumer confidence, we see that between fall of 2014 and year end consumer confidence was weak, due mostly to the increase in prices of imported goods as a result of the weak yen. More recently it appears that consumer confidence is beginning to pick up. In the economy watchers survey reasons for assessment, the collapse of crude oil and gasoline prices have been welcomed by many, which seems to bear out our assumption that growth in real income will contribute to improvements in consumer confidence. As was mentioned in the previous section, our outlook sees real wages rapidly being pushed upwards due to the decline in the price of crude oil up to this point, and we believe that there is a very good possibility that consumer confidence will also trend toward improvement in the future.

Improved consumer confidence promises to bring along with it an increase in propensity to consume amongst households, which in turn will produce the effect of increasing personal consumption. In actual fact, consumer confidence as measured according to surveys is generally linked to propensity to consume as confirmed by actual consumer behavior (see Chart 8). Propensity to consume was recently at a low due to negative influence from the reactionary decline just after the increase in the consumption tax last year, in addition to downward pressure from worsening tendency of consumer confidence around the same time. However, negative influence from the increase in consumption tax is now easing up and growth in real income has been contributing to improvements in consumer confidence. Hence possibilities are very good that propensity to consume will also increase in the future. The significance of growth in the propensity to consume is that it indicates that growth rate in personal consumption is somewhat higher than that of income.



<sup>2</sup> The consumer confidence index as used here is made up of four consumer perception indices –overall livelihood, income growth, employment, and willingness to buy durable goods. In comparing each of these perception indices with the real wage correlation coefficient, we find that the correlation with nominal wage is higher than the correlation with real wage in the case of income growth, while in the case of overall livelihood and willingness to buy durable goods, the correlation is higher with real wages.



## 2.2 Effects of cheap oil on the corporate sector

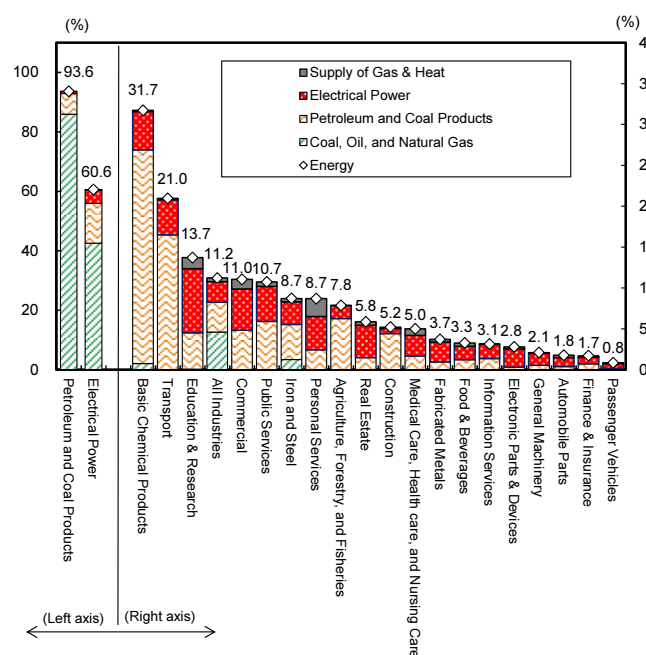
### *A decline of 50% in the price of crude oil means a 4.6% lift in corporate earnings*

For the corporate sector, cheap oil means improved earnings. With its dependence on imports for most of its resources, Japan has only a limited number of companies for whom cheap oil would be a disadvantage. For most companies it brings positive effects. The low price of crude oil means downward pressure on the ratio of variable expenses. This in turn means a lower break-even point and an improvement in earnings.

However, this effect on earnings depends largely on the cost structure of the particular industry and company. Chart 9 shows the percent share of intermediate inputs of corporations accounted for by energy costs. Here we see that it is mainly two industries which exhibit a large percentage of crude oil input – petroleum and coal products and electrical power. Most others do not carry out inputs directly in crude oil, but in processed petroleum and coal products as well as electrical power. This means that most industries will not gain the benefits of cheaper crude oil right away. It is only after the crude oil price has been passed on to petroleum and coal products or electricity rates that benefits are felt.

Chart 10 calculates the effect a 50% decline in crude oil price would have on corporate earnings (operating surplus). The result is +4.6% on an all-industry basis. Looking at the benefits of cheap crude oil on an industry by industry basis, manufacturing gets a +9.8% boost in earnings, while non-manufacturing gains +3.9%. Looking at individual industries, we see that most will see improvements in earnings. Using the past average rate of price pass-through, we see that petroleum and coal products will gain major benefits due to the decline in input price, but on the opposite end, earnings will be pushed down due to the decline in sales price. However, it should be noted that these estimates are based on the input-output structure prevalent in 2011. The same goes for the price pass-through rate. Therefore, these results should be taken with a certain grain of salt.

**Ratio of Intermediate Input Accounted for by Energy Input by Industry**  
Chart 9



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

**Effect of 50% Decline in Crude Oil Price on Corporate Earnings (Operating Surplus)**  
Chart 10

	Amount: Y bil	Rate of Change %
All Industries	3,894	4.6
Manufacturing	1,055	9.8
Food & Beverages	54	1.4
Pulp, Paper, and Paper Products	33	8.6
Chemicals	513	36.3
Petroleum and Coal Products	-98	-65.4
Ceramics, Stone, and Clay Products	52	12.9
Iron and Steel	305	64.5
Non-Ferrous Metals	19	15.6
Fabricated Metals	18	5.6
General Machinery	28	2.6
Electrical Machinery	12	4.0
Information and communication electronics equipment	4	3.8
Electronic Parts and Devices	16	17.8
Transport Equipment	46	5.8
Precision Machinery	4	2.5
Non-Manufacturing	2,838	3.9
Agriculture, Forestry, and Fisheries	77	2.3
Construction	233	51.7
Electrical Power	506	61.9
Wholesale & Retail	349	2.3
Finance & Insurance	20	0.3
Real Estate	20	0.3
Transport	530	25.2
Information and communication	53	1.3
Personal Services	124	2.2

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

Note: Calculation of values based on input-output structure of 2011.

## 2.3 Effects of Cheap Crude Oil – Macro Simulation

### *The collapse in the price of crude oil will boost real GDP by +0.50% in FY2015*

Using the conclusions reached as of this point in our examination of this issue, we performed a calculation using the DIR macroeconomic model in order to get a better idea of the effects that cheap crude oil will have on the Japanese economy (see Chart 11). According to the results of the simulation, the price of crude oil declined from its price of \$105/bbl as of June 2014, thereby boosting real GDP levels between FY2014 and FY2016 by the following amounts: +0.20% in FY2014, +0.50% in FY2015, and +0.41% in FY2016. Meanwhile, effects on the growth rate in real GDP were +0.20%pt, +0.31%pt, and -0.09%pt respectively.

Looking at the effect of cheap oil by category of demand we see that personal consumption and housing investment are expected to achieve growth due to the increase in real wages, while growth in corporate earnings is expected to be a factor in pushing up capital expenditure. Meanwhile, a portion of the increase in corporate earnings is expected to be distributed to households in the form of improved wages, so growth in corporate income will contribute to increased household demand. At the same time, the decline in the crude oil price will push down prices, which in turn will trigger growth in the real interest rate. The latter will bring downward pressure on housing investment and capital expenditure, but this negative factor will be balanced by the positive factor of growth in income.

Regarding prices, CGPI and CPI are expected to receive downward pressure from the decline in import prices, and the domestic demand deflator will experience a major decline. A decline in the import deflator, which is a deductible item, will mean growth for the GDP deflator. As a result, nominal GDP will get an even bigger boost than real GDP.

Meanwhile, since resource import value, which will grow to just under 40% of all imports, will suffer a major decline, the trade deficit will see a major reduction, while current account balance is expected to move significantly deeper into the black. As for the trade balance, the continued deficit can be attributed to the Great East Japan Earthquake of 2011. The assumption was that this deficit would likely stick around for some time to come, but the sudden collapse in the price of crude oil just may make the dream of a return to the black into a reality.

As is evident in the data presented in this chapter, the collapse in the price of crude oil promises to bring major benefits to Japan's economy. Japan's economy remained in a slump from the beginning of 2014 till around the middle of the year, and recently it has been seen to be moving toward a sustainable recovery. The low price of crude oil provides an additional tailwind which promises to bring all the more strength to that recovery.

## Effect of the Collapse in the Price of Crude Oil on Japan's Economy

Chart 11

		Real GDP %	Personal Consumption %	Housing Investment %	Capital Expenditure %	Exports %	Imports %	Nominal GDP %	GDP Deflator %	GDP Growth Rate %
Difference from Scenario in Which Crude Oil Price Remains High	FY2014	0.20	0.27	0.46	0.94	0.16	0.96	1.19	0.99	0.20
	FY2015	0.50	0.77	1.92	2.24	0.33	2.53	2.42	1.91	0.31
	FY2016	0.41	0.57	1.54	2.24	0.29	2.14	2.31	1.89	-0.09
Difference from Previous Estimate's Assumptions	FY2014	0.06	0.08	0.11	0.29	0.06	0.29	0.36	0.30	0.06
	FY2015	0.16	0.26	0.64	0.60	0.11	0.79	0.61	0.45	0.10
	FY2016	0.09	0.14	0.35	0.40	0.06	0.46	0.35	0.26	-0.07

		Current Account Balance / Nominal GDP %pt	Import Price %	Export Price %	CGPI %	Core CPI %	Industrial Production %	Tertiary Industry Activity Index %	All Industry Activity Index %
Difference from Scenario in Which Crude Oil Price Remains High	FY2014	1.12	-7.38	-0.83	-1.11	-0.32	0.38	0.21	0.22
	FY2015	2.17	-14.67	-1.68	-2.36	-0.88	0.99	0.53	0.58
	FY2016	2.14	-13.05	-1.45	-2.10	-0.77	0.86	0.48	0.52
Difference from Previous Estimate's Assumptions	FY2014	0.34	-2.34	-0.29	-0.38	-0.09	0.11	0.06	0.07
	FY2015	0.54	-4.45	-0.54	-0.74	-0.30	0.30	0.16	0.18
	FY2016	0.35	-2.62	-0.31	-0.44	-0.22	0.18	0.10	0.11

Source: Compiled by DIR.

Notes: 1) Simulation run using the DIR short-term macro model. Values show rate of deviation from normal solution.

2) Difference from Scenario in Which Crude Oil Price Remains High assumes most recent WTI peak of June 2014 and beyond to be flat at \$105/bbl.

Difference from Previous Estimate's Assumptions assumes the 2014 and 2015 Jan-Mar period and beyond to be flat at \$70/bbl.

### 3. Issue (2): The Return of Capex to Domestic Investments

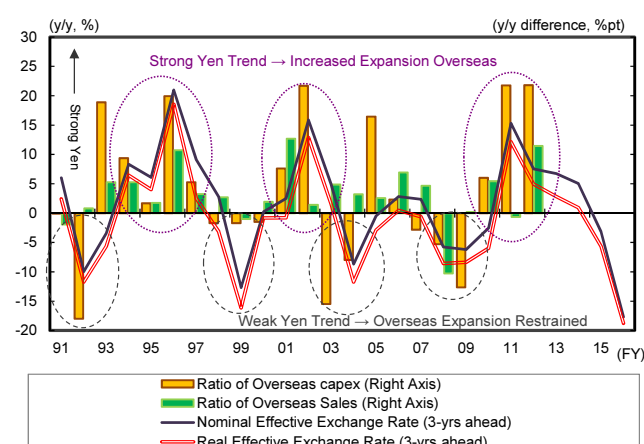
#### 3.1 Linkage between exchange rates and transfer of production overseas

##### *Restraint seen in transfer of production overseas lagging 2-3 years behind shift to weak yen*

As globalization of the economy progressed, Japan's manufacturing firms increasingly transferred their production facilities overseas to developing nations where personnel expenses were cheaper, in order to keep production costs under control and maintain their price competitiveness. In recent years the concept of local production for local consumption has also been influential, leading to the increasing sense that production facilities should be nearby to the location where products are consumed. This is a major trend in business now, and most likely in the long-term, corporate decisions on where to locate production facilities will continue to be made based on a comparison of demand versus production costs in overseas locations and Japan. In comparison to Japan where domestic demand remains slow due to its declining population, overseas markets are sure to expand in the future. Due to this fact, corporations will continue to enter overseas markets. In the long-term, the ratio of overseas capital expenditure is expected to continue in a moderate growth trend.

On the other hand, changes in international price competitiveness associated with fluctuation in exchange rates will have a major influence on decisions whether to transfer production overseas in the medium term. An examination of the ratio of overseas capital expenditure and overseas sales, as well as the historical relationship to the yen's effective exchange rate, reveals that the rate of overseas capital expenditure and overseas sales tends to expand or contract 2-3 years after a new yen exchange rate tendency (strong yen or weak yen) takes hold (see Chart 12). Generally speaking, it takes several years to complete the whole process leading from planning of large scale capital expenditure to finally taking action, so there is a time lag before a change is actually seen in the effective exchange rate and the rate of overseas capital expenditure. The yen's effective exchange rate shifted into a major weak yen trend after the beginning of fall 2012 due to the sense of expectation in regard to Abenomics and the effect of the BOJ's bold monetary easing measures (see Chart 13). Under these new circumstances, some manufacturers are returning production facilities to domestic locations from their former overseas locations. This new phenomenon has gotten a lot of media coverage of late. The effects of the weak yen are gradually becoming manifest.

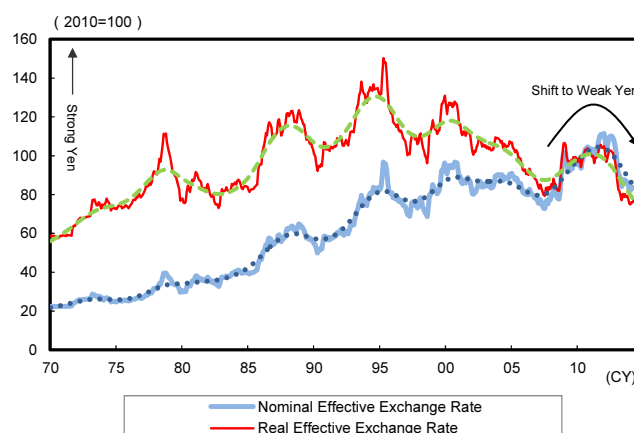
**Manufacturing Industry's Overseas Capex & Sales Ratio, and the Yen's Effective Exchange Rate**  
Chart 12



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

Note: Ratio of overseas capex and ratio of overseas sales from METI's Survey of Overseas Business Activities and Ministry of Finance Statistics of Corporations by Industry.

**The Yen's Effective Exchange Rate**  
Chart 13



Source: Bank of Japan; compiled by DIR.

Note: Dotted Line Shows trend according to HP filter.

### 3.2 Advantage of domestic production as seen in real effective exchange rate and terms of trade

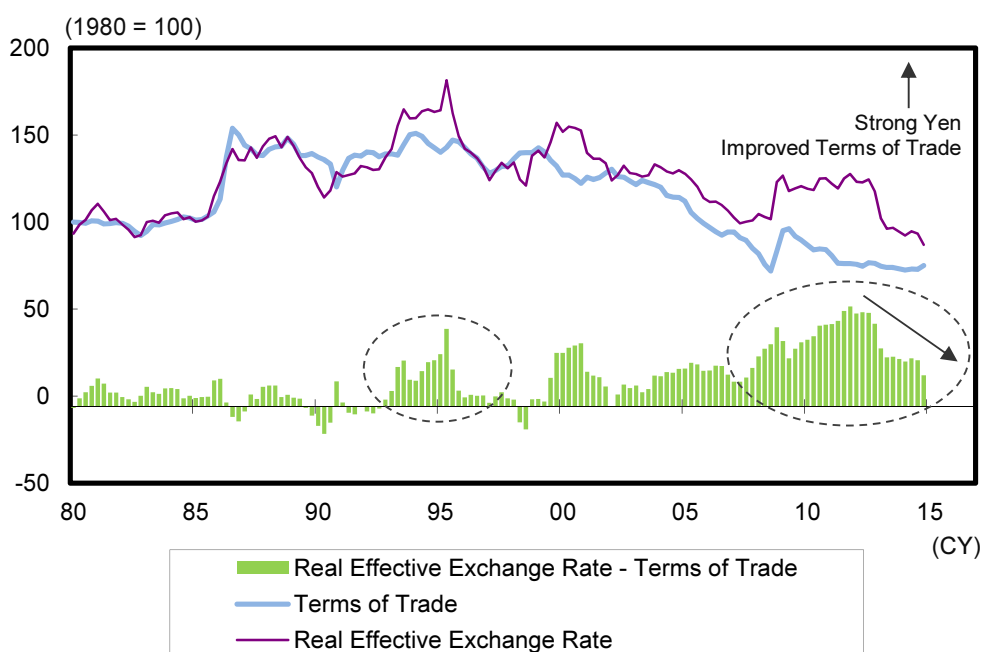
#### *Deviation between real effective exchange rate and terms of trade narrowing as weak yen takes hold*

In considering the move toward returning production facilities to domestic locations, one of the phenomena urging the trend on is the narrowing of deviation between the real effective exchange rate and terms of trade (= export price / import price). Normally the real effective exchange rate and terms of trade tend to be closely linked. When the yen is strong, terms of trade improve, and when it is weak, terms of trade worsen (see Chart 14). Due to the structure of Japan's trade, fluctuations in import prices, such as energy resources, are larger than fluctuations in export prices. In other words, when the yen is strong import prices decline more than export prices, thereby bringing an improvement in terms of trade (= export price / import price increases). Conversely, when the yen weakens terms of trade worsen.

Looking at past performance we see that during the 1995 strong yen phase and then later when the yen strengthened after the US financial crisis, terms of trade did not improve when the yen was strengthening. This placed domestic production carried out by Japan's manufacturers in a disadvantageous position, left carrying a double burden. But then in early fall 2012, the yen entered a weak phase and continued to weaken significantly thereafter. Even so, terms of trade worsened only slightly. Finally, beginning in the summer of 2014 the price of crude oil suddenly collapsed, and then recently terms of trade have begun to improve. As a result, deviation between the real effective exchange rate and terms of trade are now narrowing. We believe that this change in the economic environment is a factor in bringing Japan's manufacturer's back home to carry out production operations domestically.

Real Effective Exchange Rate and Terms of Trade

Chart 14



Source: BOJ; compiled by DIR.

Note: Terms of Trade = Export Price / Import Price, yen basis.

### 3.3 Estimating the manufacturing industry's ratio of overseas capex

#### *Excessive overseas capex stands good chance of correction due to weak yen effect*

The question now arises regarding just how to think about the future the overseas capex ratio. In this section we perform an estimate of future overseas capex ratio based on two determining factors – (1) ratio of overseas production and (2) real effective exchange rate, and attempt to gain a view of future trends.<sup>3</sup>

Firstly, though the ratio of overseas capex fluctuates up and down in the short-term, in the long-term it is continuing its upward trend (see Chart 15). Looking a little closer at this phenomenon, we see that structurally speaking Japan's inflation rate is lower than it is overseas, and this inflation differential factor brings a negative contribution to the relationship. The overseas market has a more rapid growth rate than does Japan's domestic market, and this factor works toward continued growth in the overseas capex ratio (see Chart 16). Meanwhile, the nominal effective exchange rate also accompanies these fluctuations, and in the long run contributes to pushing up the ratio of overseas capex when in a strong yen trend.

Secondly, during past strong yen phases, the nominal effective exchange rate factor tends to grow even larger 2-3 years after a strong yen trend is established, and this becomes one of the causes of corporations aggressively relocating production overseas. As was pointed out earlier, a corporation's decision regarding whether to locate its production facilities overseas is determined by the difference between demand and cost in the overseas location and Japan. When the yen becomes increasingly strong, the rate of deviation from the trend based on the comparative demand and production cost overseas and in Japan becomes larger, and this factor is seen as being key in increasing the ratio of overseas capex spending.

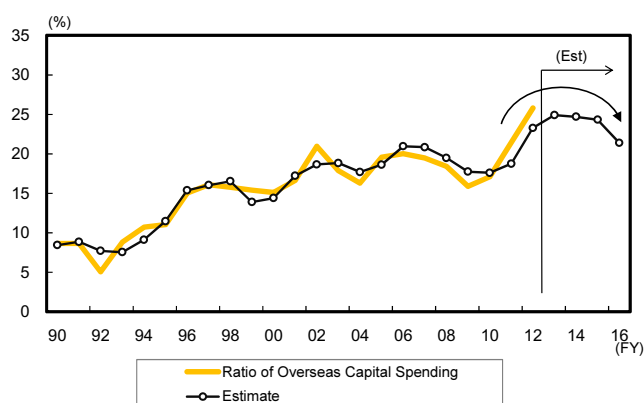
Finally, according to the IMF outlook for the world economy and the results of our estimates based on the recent nominal effective exchange rate, the ratio of overseas capex is expected to decline beginning in FY2014 and beyond due to the progressively weaker yen since the fall of 2012.

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<sup>3</sup> Results of factor analysis of the ratio of overseas capital expenditure are subject to some uncertainty due to the method of carrying out estimates and the period from which data is sampled. Hence a margin of error should be assumed.

## Manufacturing Industry's Ratio of Overseas Capex

Chart 15



Source: Ministry of Economy, Trade, and Industry, Ministry of Finance, BOJ, Cabinet Office, and IMF; compiled by DIR.

Notes: 1) The following were used in determining the ratio of overseas capital spending: Ministry of Economy, Trade and Industry's Survey of Overseas Business Activities and Ministry of Finance Corporate Statistics. Ratio of overseas production was found using the Cabinet Office's Annual Survey of Corporate Behaviors.

2) Formula for calculating ratio of overseas capital spending is as follows.

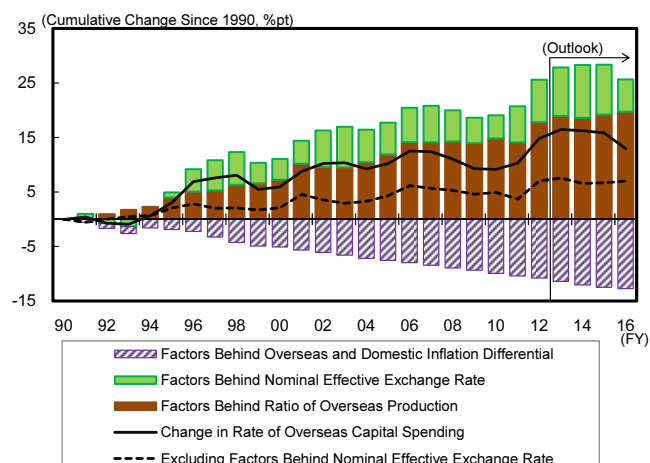
$$\text{Ratio of Overseas Capital Spending (t)} = -75.44 + 1.11 \times \text{Ratio of Overseas Production (t)} + 16.55 \times \ln(\text{Real Effective Exchange Rate}) (t-3)$$

All have significance of 1%. Estimates found using the GMM method. Instrumental variables used were constant term, overseas production ratio (t-1), nominal GDP ratio for world and Japan (t-3), and ln (real effective exchange rate) (t-3).

3) Future values were calculated using results from estimates of ratio of overseas production, nominal GDP ratio for world and Japan (PPP basis) (t-2) and nominal effective exchange rate (t-2).

## Factor Analysis of Manufacturing Industry's Ratio of Overseas Capex

Chart 16



Source: Ministry of Economy, Trade, and Industry, Ministry of Finance, BOJ, Cabinet Office, and IMF; compiled by DIR.

Note: Factors Behind Overseas and Domestic Inflation Differential found by dividing Nominal Effective Exchange Rate by Real Effective Exchange Rate. When Japan's inflation differential is lower than overseas, it becomes a factor in reducing overseas capital spending. ( $\neq$  increase in production costs).

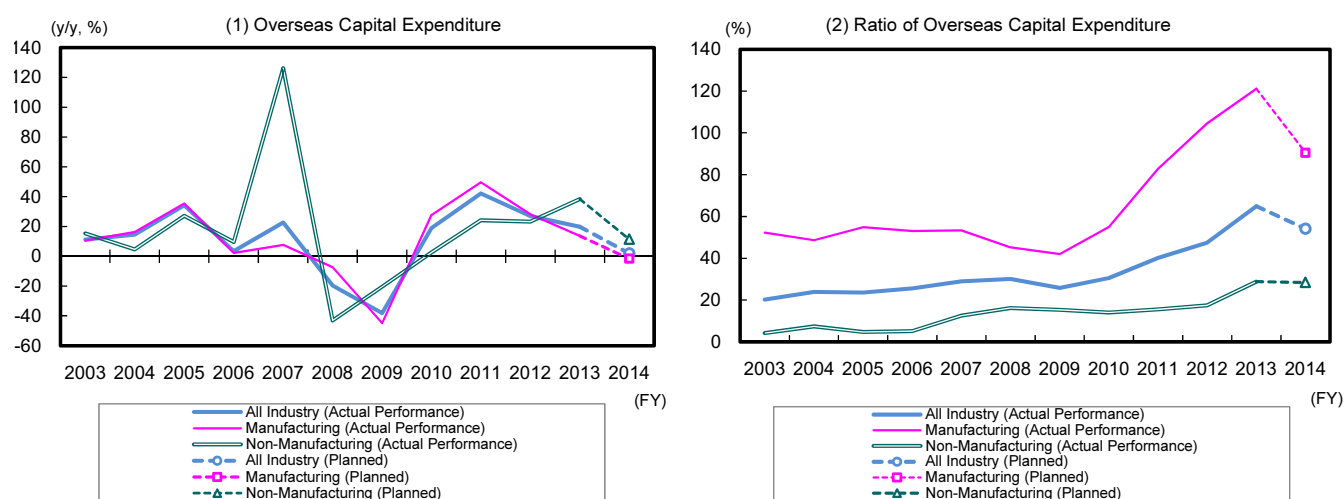
### Outlook for reigning in of overseas capex also has basis in survey of corporations

According to a survey carried out by the Development Bank of Japan regarding the overseas capital expenditure plans of manufacturing companies, the growth rate in overseas capex spending in FY2014 recorded negative figures, the first time in five years that negative results were recorded. The ratio of overseas capex is also expected to decline for the first time in five years (see Chart 17). Results are attributed to a decline in overseas capital expenditure on the part of corporations in the automobile, nonferrous metals, and chemicals industries, as well as an increase in domestic capex in comparison with the previous year.

Both the results of estimates performed with the use of statistical relations for this purpose and surveys of corporate plans indicate that overseas capex is on the decline. The Abenomics effect is gradually making itself manifest, and we expect that excessive overseas capex which developed due to the strong yen will progressively find its way back to Japan in domestic investments.

## Trend in Overseas Capital Expenditure and Ratio of Overseas Capital Expenditure According to Corporate Survey

Chart 17



Source: Development Bank of Japan; compiled by DIR.

### 3.4 Is the return of manufacturing to domestic locations genuine?

*What to watch out for in the future: whether a reversal occurs in the trend in import penetration ratio and trade specialization coefficient*

In evaluating the current status of the return of manufacturing to Japanese domestic locations, we need to look at two important indices – import penetration ratio (the share of total domestic supply of industrial products accounted for by imported products) and the trade specialization coefficient, which indicates export competitiveness. As Japanese manufacturing moved overseas in recent years, the import penetration ratio entered a growth trend, while the trade specialization coefficient has seen a significant downward trend in the field of household durable goods. In determining whether or not the return of manufacturing to domestic locations is genuine, the question will be whether or not there is a reversal in this trend.

Looking at the import penetration ratio by type of goods, we see that investment goods, production goods, and consumer goods have also been in a growth trend (see Chart 18). This relationship developed because with manufacturers producing goods overseas, the ratio of imports accounting for total goods sold entered a growth trend. However, the import penetration ratio for production goods and non-durables has been in a downtrend. This may be due to the weak yen and the move toward replacing imported goods with domestically produced goods, along with the shift to domestic production on the part of some manufacturers. At the same time, it is difficult to say whether a reversal of the growth trend in import penetration ratio for these particular goods has truly taken place. The trend will require close monitoring on into the future. Another factor to take note of is that the import penetration ratio for durable goods began to strengthen its growth trend only since the middle of 2014.

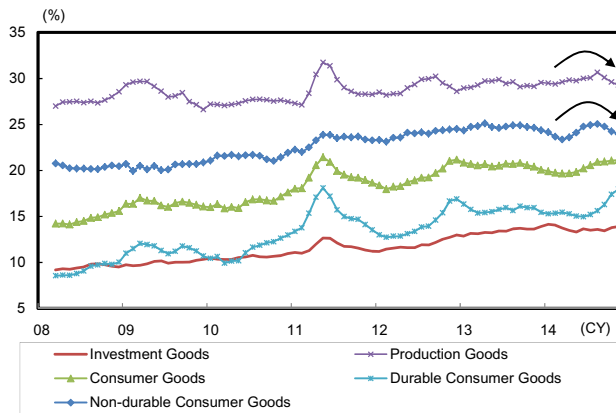
Similarly, when we consider the long-term movements of the trade specialization coefficient for durable goods, we find that it entered a significant downtrend after the rapid strengthening of the yen in 1985 just after the Plaza Accord, and continued that trend until the mid-1990s. The coefficient remained stagnant for a while after that period, and then after the US financial crisis began again to move gradually downward (see Chart 19). As for home appliances, the trade specialization coefficient has been largely marking time since 2009, maintaining a considerably negative level.

In light of this analysis, the move toward a return of manufacturing to domestic locations cannot be considered to have taken hold completely as of yet. However, the ratio of overseas capital expenditure is expected to decline in the future due to the progressively weak yen, and therefore, the trend in the



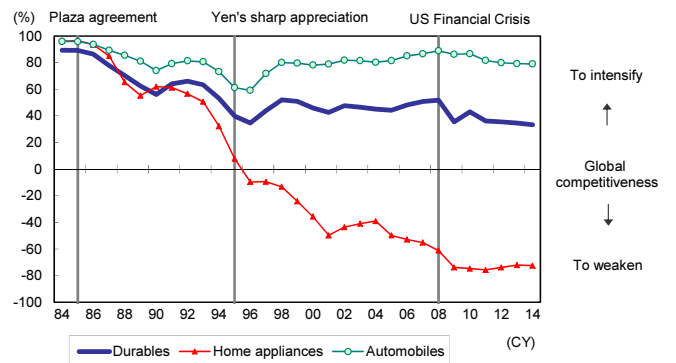
import penetration ratio and the trade specialization coefficient is expected to see a reversal gradually take place in the future.

**Import Penetration Ratio by Type of Goods**  
Chart 18



Source: Ministry of Economy, Trade and Industry; compiled by DIR.  
Note: Values based on 3-month moving average.

**Durable Goods Trade Specialization Coefficient**  
Chart 19



Source: Ministry of Finance; compiled by DIR.  
Note: Trade specialization coefficient = (exports – imports) / (exports + imports) x 100.

## 4. Issue (3): Is the Euro Zone Headed Toward Japanization?

### *Will the greatest risk factor in 2015 be EU politics?*

World renowned political scientist Ian Bremmer, president of the Eurasia Group, has identified EU politics as being the biggest risk factor in the year 2015. At the center of the current political ferment is Greece, where a leftist administration was formed in January this year. The new administration is gradually deviating from the austerity policies of the former leadership and conflict is developing with Germany, which had been giving them assistance up to now.

There is political risk involved with this new direction, which holds the danger of plunging Europe into a long-term structural recession, sometimes referred to as *Japanization*. Europe's performance since the debt crisis has been so weak it reminds one of Japan's *Lost Decades*. The global financial markets are keeping a close watch now on the Euro Zone economy, wondering whether it will fall into the same long-term structural recession that Japan did not so long ago. In this chapter, we compare Japan's lost decades with the Euro Zone economy and assess the possibilities of Europe's economy becoming Japanized. The conclusions emerging from our study can be found in Chart 20.

In comparing the economies of the Euro Zone and Japan, we see that each has positive and negative factors. Overall, the Euro Zone still has room for additional policy moves, and if they can learn from Japan's lost decades, with government and the ECB cooperating to come up with the appropriate policies, they will be able to avoid falling into a long-term structural recession. However, the Euro Zone has one structural defect – they have a unified monetary policy, but have not combined the fiscal policies of the various countries. The biggest danger for the Euro Zone at this time is the possibility that the populism spreading in some member countries could become a fatal hindrance to attempts to free themselves from their predicament.

### Is the Euro Zone Economy Headed Toward Japanization?

Chart 20

#### (1) Comparison of Economic Environments (Overview)

Downturn of [real GDP](#) and [potential GDP](#) in EU is cause for anxiety, but [nominal GDP](#) and [CPI](#) have not deteriorated as much as they did in recent years in Japan.

#### (2) Positive Factors for EU

1. [Expected inflation](#) is stable.
2. [Hourly wage in comparison to labor productivity](#) is exhibiting stable growth.
3. [Capital stock cycle](#) is showing improvement.
4. [Labor force population](#) is growing.

#### (3) Issues of Concern for the EU (Requires Monitoring Over Time)

1. [Financial policy](#) – still room for additional monetary easing measures.
2. Still some issues remaining as regards [flexibility of the labor market \(speed of employment adjustment, etc.\)](#)
3. Concern regarding trends in [the asset market \(real estate and stock markets\)](#)

## 4.1 Comparison of economic environments (overview)

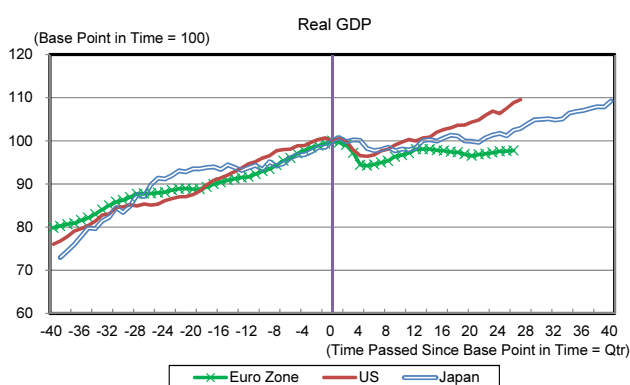
First we compare the economic environments of Japan, the US, and Euro Zone during periods in which the danger of long-term structural recession emerged in each of these economies (see Chart 21).

Looking at changes in real GDP, we get the impression that the Euro Zone's attempts to pull itself out of its slump are rather dull in comparison to Japan. In contrast, almost immediately after its economic crisis the US showed a clear recovery trend. The firm undertone in the US economy can also be seen in its potential GDP. There was a temporary slump in the pace of growth in potential GDP after the economic crisis, but gradually the US economy recovered its pre-crisis pace of growth. On the other hand, growth in potential GDP is stagnant in both Japan and the Euro Zone.

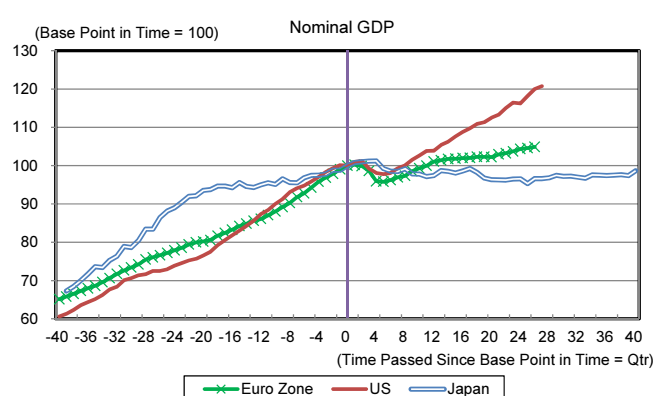
In contrast, when we look at nominal GDP, the Euro Zone differs from Japan's continued stagnation in that it maintains a moderate growth trend. As for the US, its economic performance becomes increasingly bold and appears to be in a robust recovery. Meanwhile, taking a look now at prices, in contrast to Japan which plunged deep into deflation during its difficult era, the US and the Euro Zone continue to see prices move upwards.

### Comparison of Economic Environments (Overview)

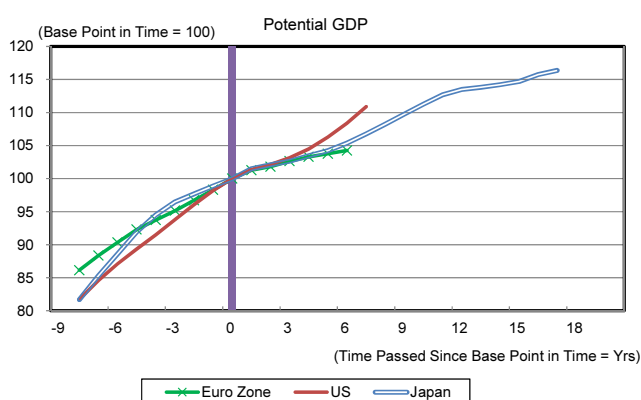
Chart 21



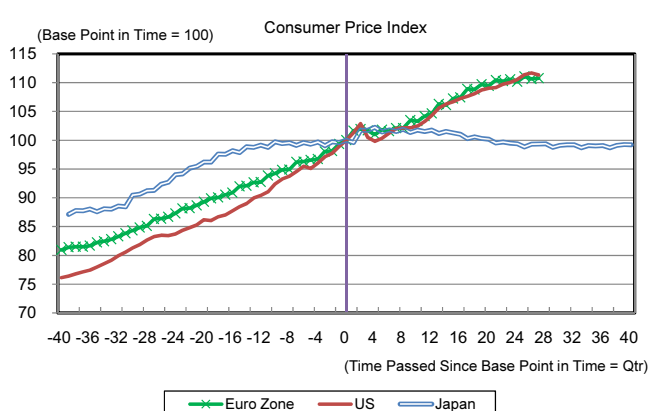
Source: Cabinet Office and Haver Analytics; compiled by DIR.  
Note: Base point in time is 2008 1Q for the Euro Zone and the US, and 1996 4Q for Japan.



Source: Cabinet Office and Haver Analytics; compiled by DIR.  
Note: Base point in time is 2008 1Q for the Euro Zone and the US, and 1996 4Q for Japan.



Source: Cabinet Office and Haver Analytics; compiled by DIR.  
Note: Base Point in Time is 2007 for Euro Zone and US, 1996 for Japan.



Source: Ministry of Internal Affairs and Communications and Haver Analytics; compiled by DIR.  
Note: Base point in time is 2008 1Q for the Euro Zone and the US, and 1996 4Q for Japan.

## 4.2 Four Positive Factors in the Euro Zone Economy

In this chapter we consider positive factors in the Euro Zone economy in a comparison with the Japanese economy. (See Chart 22.)

### *(1) Expected rate of inflation*

The area where the difference between Japan and the Euro Zone becomes most graphically evident is the expected rate of inflation. The expected rate of inflation for the next year recently announced by the ECB is in a downtrend due to weak economic performance and the collapse in the price of crude oil. However, the expected rate of inflation five years from now shows almost no decline. It appears that the ECB's inflation targeting has gained confidence. Looking back at Japan's experience, just after the economic bubble burst the initial response of both the fiscal and monetary policy was slow, hence the expected inflation rate entered a trend of secular decline. At the same time, the potential growth rate was clearly stagnant. In contrast, the ECB has learned from Japan's mistake and is avoiding a decline in the expected inflation rate by virtue of carrying out successive monetary easing measures. In this way it has continued to make efforts to avoid a long-term structural recession of the type that Japan experienced.

### *(2) Hourly wage/productivity ratio*

The next factor we consider is labor productivity in contrast to hourly wage. This factor has continued to be fairly stable in the Euro Zone, and it has continued to maintain a fairly comfortable position in this regard. After Japan's economic bubble collapsed, wages continued to rise in contrast to productivity, but then this robbed corporations of their profitability and became one of the factors leading to Japan's economic stagnation. Meanwhile, burdened with high labor costs, most Japanese corporations reined in capital expenditure. Then with Japan's economy spiraling out of control, corporations were forced to carry out significant capital stock adjustments. This finally led to the increasing dependence on temp workers and non-regular employees in Japan and the hourly wage plummeted. Ironically enough, wages, which remained at a high earlier in the 90s, now became the cause of deepening deflation as they went into a downturn.

In other words, wages become a problem not only when they are too high, but when they are too low as well. If we take a look now at movements in the hourly wage/productivity relationship in the Euro Zone, we see that immediately after the US financial crisis they were unable to keep up with wage adjustment and temporarily the wage/productivity ratio grew sharply. But then, wages gradually fell until reaching the stable zone recently, where they have remained.

### *(3) Capital stock cycle*

Looking at the capital stock cycle in the Euro Zone, it appears that capital expenditure is close to hitting bottom. This is another positive factor. In Japan's case, the ratio of hourly wage to labor productivity hovered on the high side after its economic bubble burst, leading to deteriorating financial health of corporations. Meanwhile, the expected growth rate as it appears on the stock cycle chart buckled under the pressure and capital stock adjustment entered a downward spiral. The Euro Zone shows an essentially different pattern than Japan in that wage adjustment has progressed relatively smoothly, and now capital expenditure is gradually recovering as a result. The expected growth rate is also getting back into a growth trend now and is generally in better condition than it was in Japan some years ago.

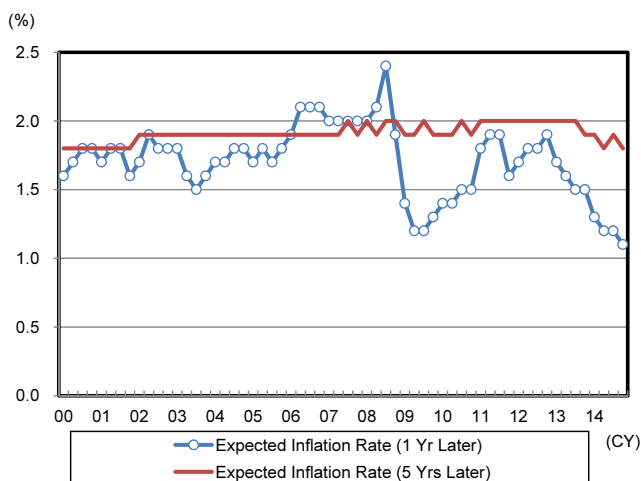
### *(4) Labor force population*

Finally, the Euro Zone is also doing better from the viewpoint of demographics than was Japan when it was in its period of stagnation. Looking at labor force population, we see that just after Japan's

economy began to stagnate its labor force population also went into decline, becoming yet another factor in pushing down potential GDP. In the Euro Zone, labor force population is in a growth trend, and promises to contribute to pushing up the potential GDP in the future.

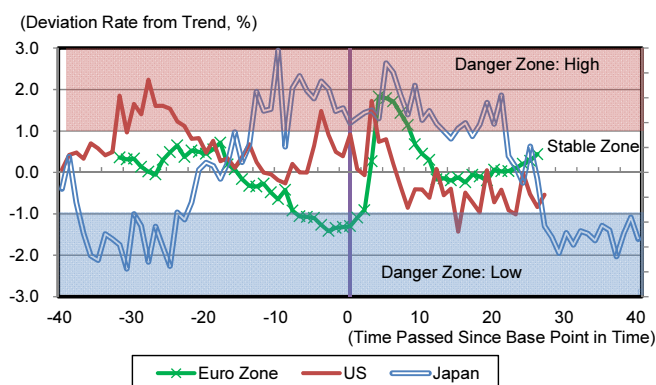
**Positive Factors in the Euro Zone Economy** **Chart 22**

**(1) Expected rate of inflation**



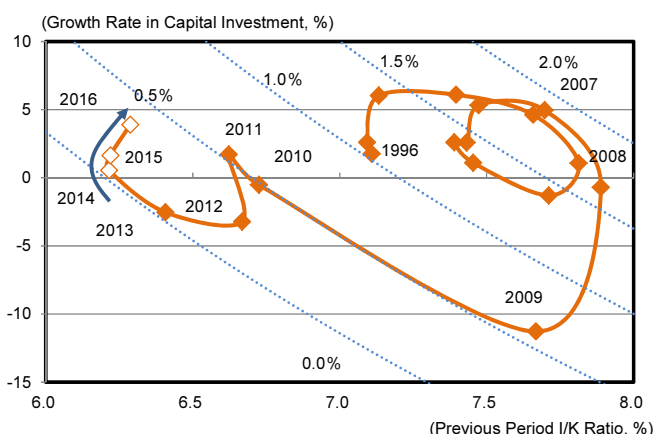
Source: European Central Bank; compiled by DIR.

**(2) Hourly wage/productivity ratio**



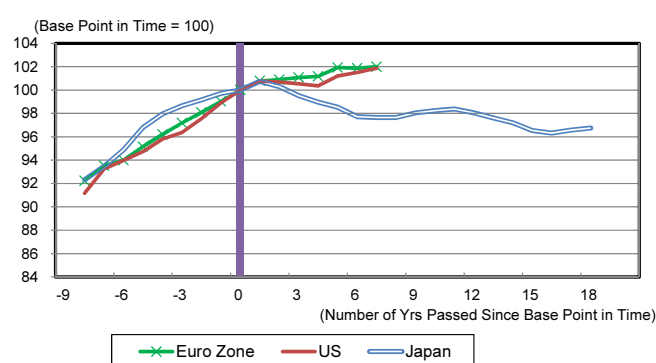
Source: Cabinet Office, Haver Analytics; compiled by DIR.  
 Notes: 1) High Danger Zone deviates more than +1% from trend.  
 Low Danger Zone deviates more than -1% from trend.  
 2) Base Point in Time is 1st Qtr 2008 for Euro Zone and US, 4th Qtr 1996 for Japan.

**(3) Capital stock cycle (Euro Zone)**



Source: Haver Analytics; compiled by DIR.  
 Note: Items in white are European Commission Estimates.

**(4) Labor force population**



Source: Ministry of Internal Affairs and Communications, Haver Analytics; compiled by DIR.  
 Note: Base Point in Time is 2007 for Euro Zone and US, 1996 for Japan.

**4.3 Three Negative Factors in the Euro Zone Economy**

In this chapter we consider negative factors in the Euro Zone economy (see Chart 23).

**(1) Judging from the ECB's B/S to nominal GDP ratio, there is still room for additional monetary easing measures**

Looking at the European Central Bank's B/S to nominal GDP ratio, whether from the viewpoint of an international comparison or the quantitative monetary easing measures recently adopted by the bank, one can easily reach the conclusion that the scale of the ECB's monetary easing measures is insufficient. The current ECB monetary easing measures pale in comparison to the Bank of Japan's 2001 quantitative measures as well as with the quantitative and qualitative easing measures currently being implemented by the BOJ. The ECB will likely come under pressure again in the future to

implement much larger monetary easing measures. This will be especially so if the economy begins faltering or growth rate in prices slows down.

***(2) Issues remain unresolved regarding the EU's labor market flexibility (speed of employment adjustment, etc.)***

One of the issues the Euro Zone faces is the flexibility of the labor market. Looking at changes in the cyclical unemployment rate, we see that in the US, where employment adjustment tends to be fairly quick, the unemployment rate rose rapidly after the economic crisis. Then once the economy began to recover, employment rose quickly. On the same token, the decline in the cyclical unemployment rate was also rapid. In contrast, both Japan and Europe have slower employment adjustment. Even when the economy is in a recession the Euro Zone's cyclical unemployment rate is slow to rise. On the other hand, the Euro Zone has the problem of the cyclical unemployment rate being too slow to decline when the economy is in an expansion phase. In the future it may be desirable to develop an even more flexible labor market by increasing labor mobility in each of the Euro Zone's member states.

***(3) Trends in asset markets (real estate and stocks) cause for concern***

Finally, we evaluate the asset related indices. Trends in the Euro Zone's asset markets (real estate and stocks) leave some cause for concern.

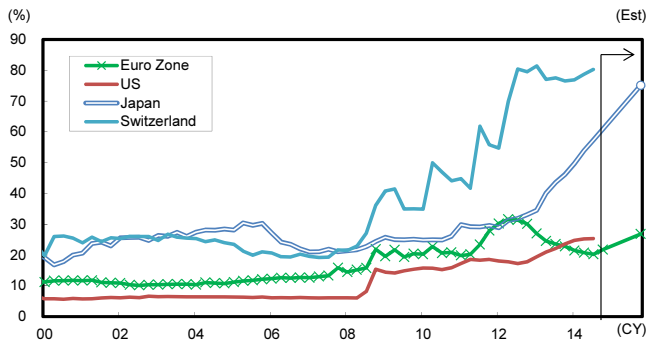
***(3)-1 Real estate values as a percentage of nominal GDP***

Looking at real estate values as a percentage of nominal GDP, we see that in the case of Japan, real estate values are still stagnant long after the real estate bubble burst in the early 1990s. Now turning our gaze to the US, we see that after the subprime loan bubble burst, real estate values rapidly declined, but recently values are making a noticeable comeback. On the other hand, in the case of the Euro Zone, real estate values are still high. It therefore seems that we can expect a major adjustment in the future. The situation requires close monitoring.

***(3)-2 Stock market trends***

As for trends in the stock market, the US stands out as having experienced a robust recovery, while in contrast, the Euro Zone's market remains stagnant. Caution is needed here due to the possibility that the real economy could be negatively influenced by the collapse in the stock market in what is referred to as the negative wealth effect.

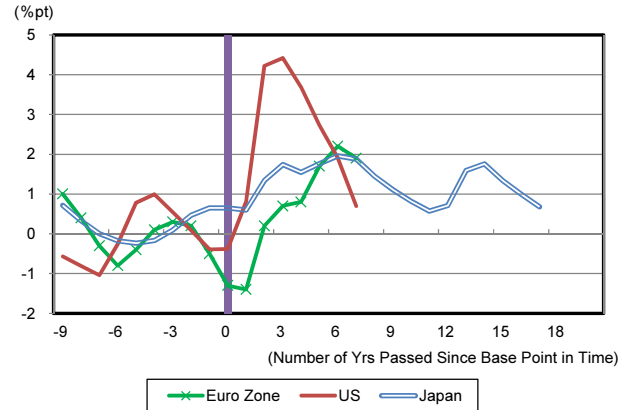
**(1) B/S to nominal GDP ratio of Central Banks**



Source: BOJ, Cabinet Office, FRB, BEA, Eurostat, ECB, SNB; compiled by DIR.

Note: Outlined figures calculated by DIR based on BOJ and ECB outlooks.

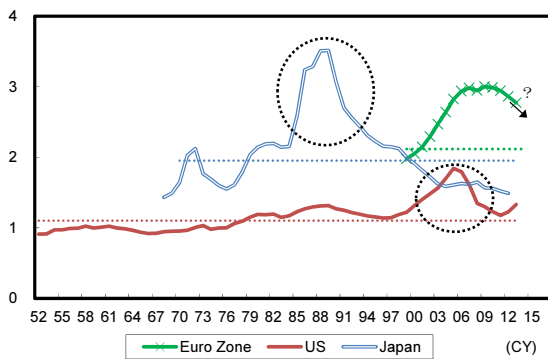
**(2) Cyclical Unemployment ratio**



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

Note: Base point is 2007 for the Euro Zone and the US, 1996 for Japan.

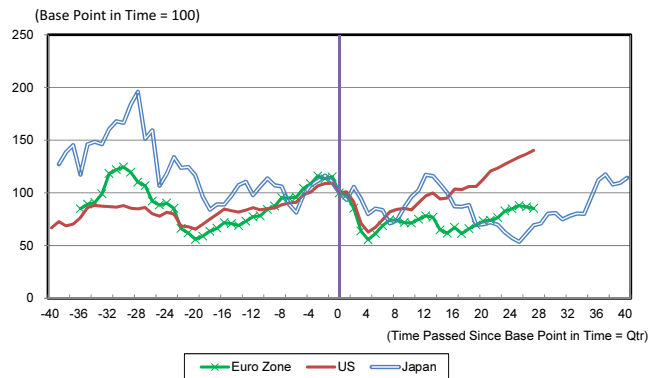
**(3)-1 Real estate values / nominal GDP**



Source: Eurostat, ECB, FRB, US Dept. of Commerce, Cabinet Office; compiled by DIR.

Notes: 1) Japan: land market capitalization, US: real estate market capitalization, Euro Zone: Housing Wealth  
 2) Parallel lines represent average values before bubble burst. Between 1952-2002 for the US (1.10x), 1970-1985 for Japan (1.95x), 1999-2002 for the euro Zone (2.12x).

**(3)-2 Stock market trends**



Source: The Nihon Keizai Shimbun and Haver Analytics; compiled by DIR.

Note: Base point in time is 2008 1Q for the Euro Zone and the US, and 1996 4Q for Japan.

## 5. Four Risk Factors Facing Japan's Economy

### *Four risk factors facing Japan's economy*

In this section we examine the four risk factors facing Japan's economy.

Risk factors for the Japanese economy are: (1) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market stemming from the postponement of the additional consumption tax hike, (2) China's shadow banking problem, (3) tumult in the economies of emerging nations in response to the US exit strategy, and (4) a worldwide decline in stock values due to geopolitical risk.

### **5.1 Risk (1): The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market stemming from the postponement of the additional consumption tax hike**

#### *Postponement of the additional consumption tax hike triggers a host of new problems*

The first risk we examine here is the *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market stemming from the postponement of the additional consumption tax hike.

Implementing monetary easing measures while at the same time forfeiting fiscal discipline is indeed an action tinged with monetization. If the bond market were to suddenly drop (which means a major increase in the long-term interest rate), there would be danger of a situation occurring where a malignantly weak yen and rising import prices would go unchecked, and which would in turn run into stagflation.

#### *Five structural changes in Japan's economy*

The Japanese government must steadily work toward fiscal reconstruction, keeping in mind the dramatic changes in the environment Japan will find itself in further up the road. As shown in Chart 24, the economic environment influencing Japan will likely see the following five structural changes: (1) an expanding fiscal deficit, (2) a dwindling current account surplus, (3) the shift from a strong yen to a weak yen, (4) the move from deflation to inflation, or stagflation, and (5) a change in the declining long-term interest rate to rising interest rates. The danger is that these five factors could suddenly occur all at once, upsetting Japan's entire economy. These structural changes would cause a huge shock to the system.

Japan's population is now aging faster than any other country in the world and this brings greater risk of a major increase in the fiscal deficit.

Then the increase in fiscal deficit would bring with it a decline in current account surplus as the public sector's condition worsens, causing the investment-savings balance to crumble, meaning the public sector would lose the capital surplus it needs. (In macro-economics the desirable equation to achieve is current account balance (excess savings in international trade) = fiscal balance (excess savings in the public sector) + excess savings in the private sector.)

Meanwhile, the yen would continue to weaken on the foreign exchange markets if the following were to occur: (1) the timing of the BOJ's shift to monetary restraint is seen as being too far behind similar actions of central banks in other countries and (2) Japan's current account surplus shrinks.

As a result of the BOJ's qualitative and quantitative monetary easing measures, Japan is now moving quickly to the point where it will experience a shift from deflation to inflation. The danger here is that if fiscal discipline is lost, the yen rate could diverge from Japan's economic fundamentals and fall

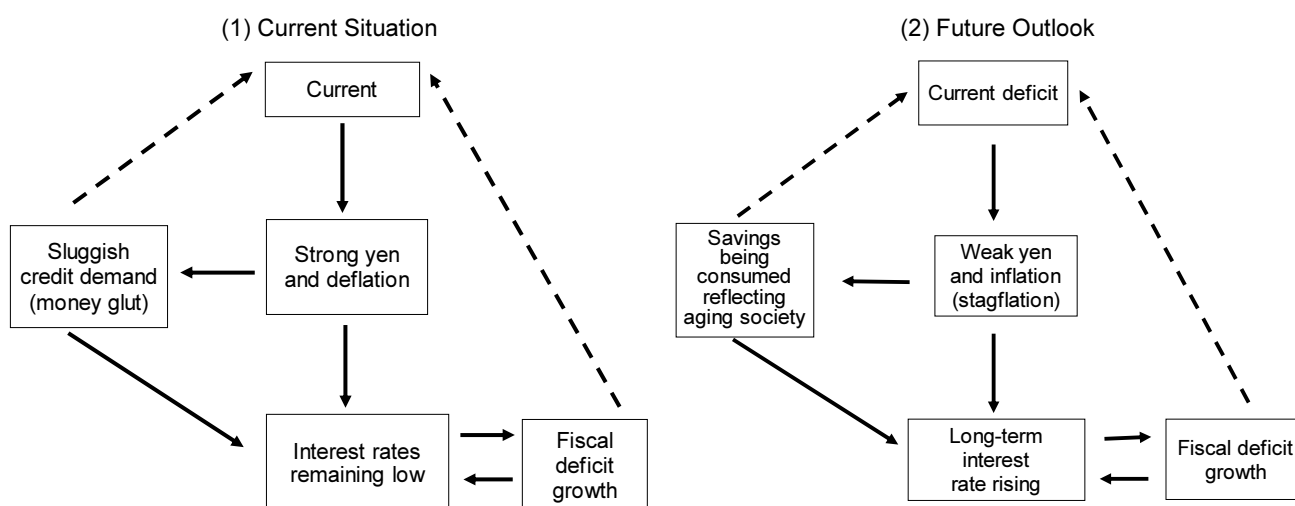


considerably against other currencies, aggravating imported inflation pressure and putting the squeeze on Japanese pocketbooks.

Finally, there would be an increasing risk of Japan's government bond bubble bursting if the above issues all came to a head at once. In this environment, the collapse of the government bond market is always there, hovering nearby.

### Changes in Japan's Economic Environment

Chart 24



Source: Compiled by DIR

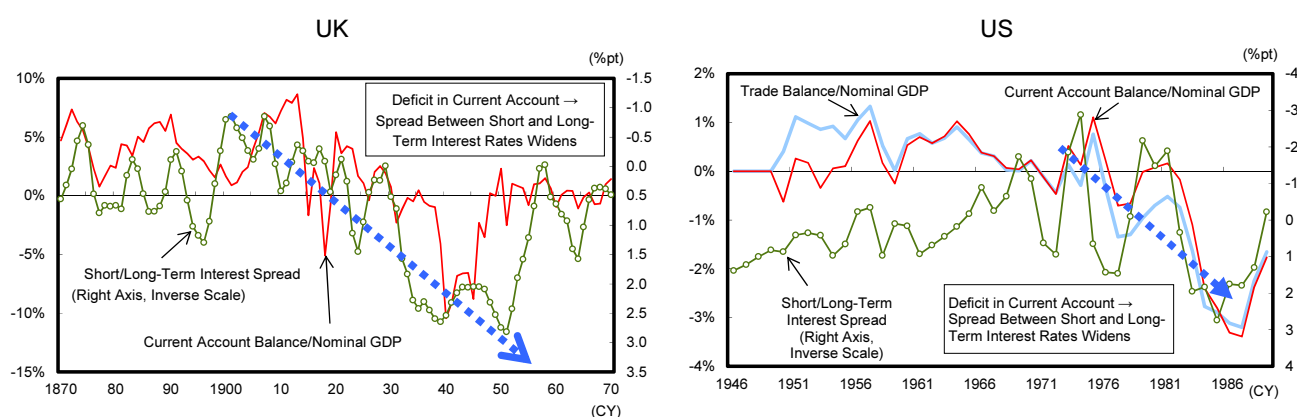
### *Spread between short and long-term interest rates widens when current account balance worsens*

Historical data tells us that when the current account balance worsens, the spread between short and long-term interest rates tends to widen.

Chart 25 shows changes in the spread between short and long-term interest rates during periods when there were deficits in current account in the UK and the US (UK: 1920-1940, US: 1970-1980). In both cases, the spread between short and long-term interest rates rapidly widened. Considering the cumulative increases Japan has already experienced in its fiscal deficit, we should remain on the lookout religiously for the possibility of a rapid increase in the spread between short and long-term interest rates as soon as signs develop of a deficit in current account in the future.

## Current Account Balance and Spread Between Short and Long-Term Interest Rates (UK &amp; US)

Chart 25



Source: International Historic Statistics, by Brian R. Mitchell (Palgrave Macmillan), *A History of Interest Rates*; compiled by DIR. Source: Historical Statistics of the United States; compiled by DIR.

Note: Long-term interest rate expressed in terms of 3-qr moving average.

### ***Be on guard for rapid increase in long-term interest rate during exit from bold monetary easing***

The long-term interest rate has currently stabilized at a low level due to the effects of the BOJ's aggressive purchase of government bonds. However, we need to be on guard for a rapid increase in the long-term interest rate once exit begins from the BOJ's qualitative and quantitative monetary easing measures.

Chart 26 is a simulation of movement in the long-term interest rate once BOJ comes out with its exit strategy.

Scenario (1) approximates the BOJ's own assumptions, while Scenario (2) is closer to what the market would presume. Meanwhile, Scenario (3) is a simulation of what would happen if prices were to rise above the BOJ's inflation target. While qualitative and quantitative monetary easing measures are still ongoing, downward pressure remains on the long-term interest rate since the BOJ's purchase of large volumes of government bonds keeps supply and demand tight. The one point all of these simulations have in common is that they all conclude that the long-term interest rate will increase rapidly as of the point the BOJ stops purchasing long-term government bonds.

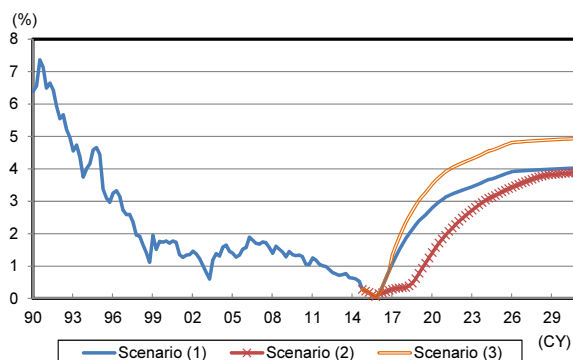
During the recent additional monetary easing measures announced on October 31, not only was the amount in long-term government bonds purchased increased, but the average duration was also lengthened. The assumption here is that the intent was, from a supply and demand point of view, to force interest rates in the long-term zone further downwards. However, this type of policy can also foster the malfunctioning of the bond market, causing it to lose its function of demanding an appropriate risk premium. And when the bond market recovers its normal functioning as of the point when an exit strategy is implemented and the market suddenly becomes aware of the necessity of coming up with an appropriate risk premium, with the additional factor of a relaxation of supply and demand, it could end up overshooting the appropriate level for the long-term interest rate. Hence when the BOJ begins moving toward exit from its qualitative and quantitative monetary easing measures, credibility of the budgetary policy will be extremely important.

In November 2014 Japan's Prime minister Shinzo Abe announced the postponement of the additional consumption tax hike. While this decision may prevent the risk of the economy from moving into a downward swing, it may also bring about pessimism regarding Japan's ability to maintain its fiscal integrity on into the future, and this could cause tumult in the bond market. The other risk is that this

decision may be assessed as having been a major turning point in Japan's handling of its fiscal situation.

### Simulation of Long-Term Interest Rate

Chart 26



Source: Bloomberg; Compiled by DIR.

#### Shared Assumptions

##### Forecasting Formula

- Long-Term Interest Rate =  $0.89 + 0.47 * \text{Call Rate} + 0.2 * \text{Core core CPI} - 3.57 * (\text{BOJ Long-Term Bond Holdings/Nominal GDP}) + 0.24 * \text{US Long-Term Interest Rate}$
- Call Rate =  $0.89 * \text{Call Rate (t-1)} + 0.11 * ((\text{Potential Growth Rate} + 2) + 0.8 * \text{GDP Gap} + 1.53 * (\text{Core core CPI}-2))$

##### Macro Assumptions

- Real GDP uses annual rate + 2.0%, Nominal GDP uses annual rate + 3.0%, Potential Growth Rate uses annual rate + 0.64%, Assumed GDP Gap will not increase more than 1.5%.
- While Core core CPI is 2% or less, Call Rate assumed to be 0.1%.
- Bank of Japan long-term bond purchase and duration based on October 31, 2014 announcement.

#### Scenario Assumptions

##### Scenario (1)

- Purchase of long-term government bonds stops after March 2016.
- Core core CPI growth rate reaches 2% during the 2016 Jan-Mar Period, and maintains 2% level after that point.

##### Scenario (2)

- Tapering begins in March 2018, and long-term government bond purchases stop after March 2019.
- Core core CPI growth rate reaches 2% during the 2016 Jan-Mar Period, and maintains 2% level after that point.

##### Scenario (3)

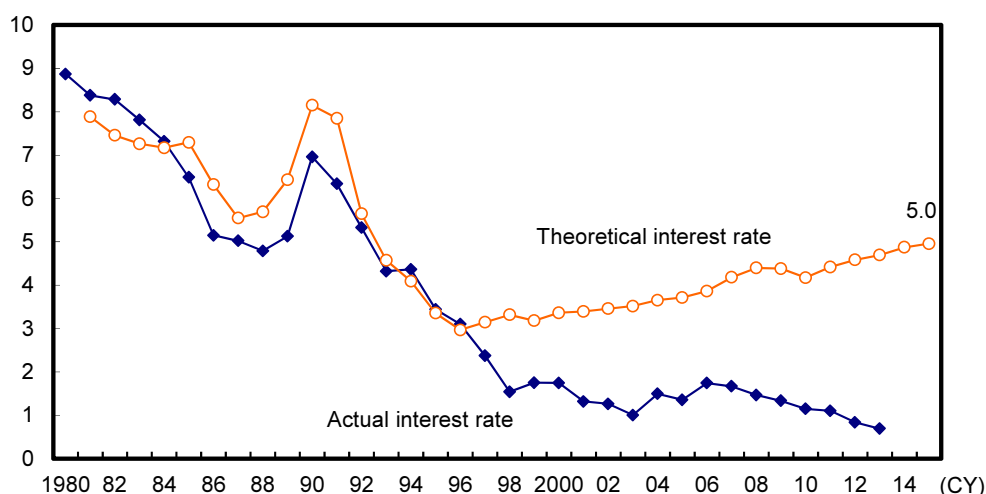
- Purchase of long-term government bonds stops after March 2016.
- Core core CPI growth rate reaches 3% during the 2016 Jan-Mar Period, and maintains 3% level after that point.

Note: Core core CPI = All items, less food (less alcoholic beverages) and energy

### *Risk of long-term interest rate rising to 5% in future*

Chart 27 shows estimated values for Japan's long-term interest rate obtained through extrapolation in comparison to a long-term interest coefficient estimated using OECD data (21 member countries excluding Japan). In other words, a variable is used which explains long-term interest and the relationship to the long-term interest which is explained by that variable and then the level Japan's long-term interest estimated assuming that the OECD countries exhibit that same relationship. The estimate makes use of three variables – short-term interest, ratio of outstanding general government deficits to nominal GDP, and the GDP deflator. The estimated interest rates begin to deviate from actual figures after around 1997, and then the rate of deviation grows thereafter. The estimated value for long-term interest rate rises gradually and then hits 5.0% as of the year 2015. In comparison, the actual value of the long-term interest rate has maintained a low level at around 1% since the last half of the 1990s.

In conclusion, it should be kept in mind that if the long-term interest rate were determined in the same way as the OECD countries, considering the huge amount of government debt, Japan's long-term interest rate could possibly rise to as much as 5% in the future. Of course, using just one variable which has the ability to explain a certain amount about the OECD countries (short-term interest, ratio of outstanding general government deficits to nominal GDP, and the GDP deflator) does not help in explaining why Japan's interest has been so low up to now. Hence these estimates should be taken with a certain grain of salt.



Source: OECD; compiled by DIR.

Note: Estimating equation for theoretical interest rate:

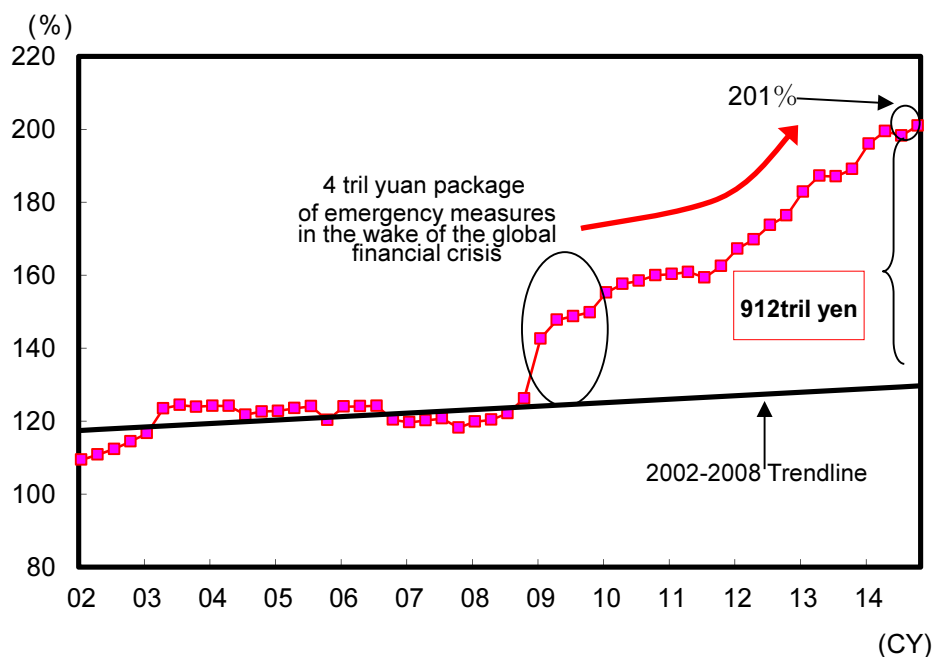
$$\text{Long-term interest rate} = 1.07 + 0.76 \times \text{short-term interest rate} + 0.02 \times \text{outstanding balance of general government debt (\% of nominal GDP)} + 0.06 \times \text{GDP deflator (y/y)}$$

Estimation period 1981-2013; Significance of coefficients: 5%; Adjusted R2: 0.87; Coefficients derived from estimation results of long-term interest rates of OECD 21 nations (excl. Japan).

## 5.2 Risk (2): China's shadow banking problem

The third major risk facing Japan's economy is China's shadow banking problem

Excessive lending has become a problem in China in the wake of its response to the global financial crisis in 2008. Chart 28 provides an estimate of total social financing in China as a proportion of China's GDP. Such financing jumped from its long-term trend in 2009 and has continued to expand, reaching 201% of nominal GDP at the end of December 2014. Comparing current levels to the long-term trend, we estimate excessive lending in China to be around Y912 trillion. Should part of these assets become non-performing, this could cause major turbulence in China and global financial markets. Risk scenarios that should be kept in mind include (1) China drawing down its foreign currency reserves (around \$3.9 tril) to deal with non-performing debt, causing long-term interest rates to surge in the US, and (2) the yen appreciating from a global flight to quality.



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

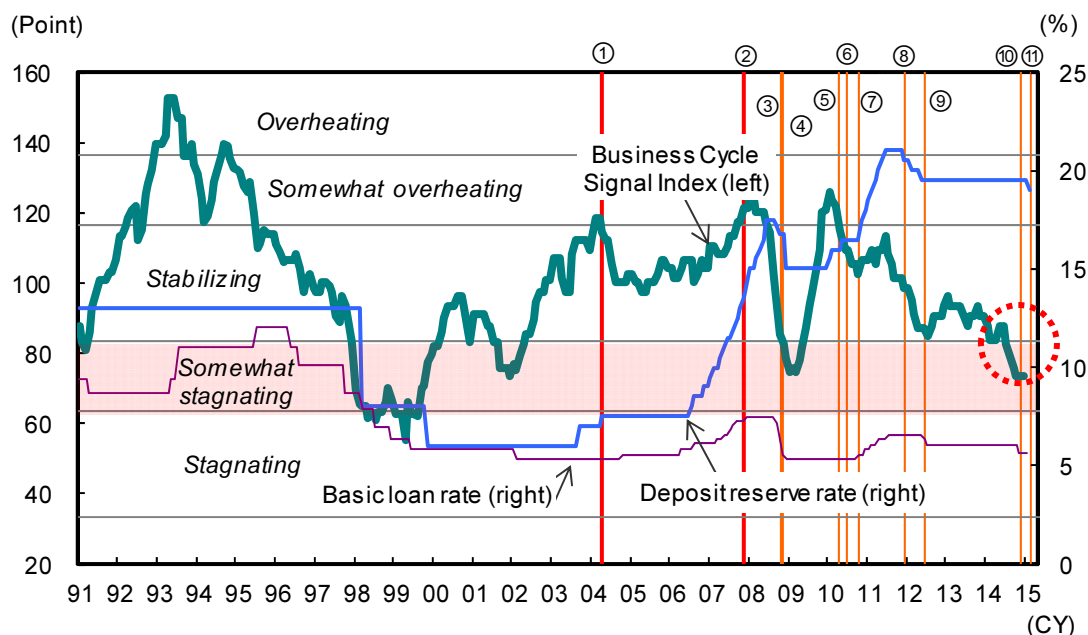
Assumption: Outstanding balance of total social financing as of end-Dec 2001 to be 1.1 times bank lending.

### ***How will the world economy be affected by the collapse of China's debt bubble?***

We believe that the impact on the world economy of the collapse of China's debt bubble should not be excessively overstated. Chart 29 presents the Business Cycle Signal Index for China. According to this index, we can confirm that China's economy has slowed significantly. After peaking at 123.3 in February 2010, the index has fallen to the lower bound of the zone signaling stability, between 83.33 and 116.66. Similar to previous instances when the economy has slowed to this extent, the likelihood is high that authorities will respond with some form of a stimulus measure and that the collapse of China's economy will be avoided one way or another.

### ***Key phrases are "socialist market economy," "collective leadership," and "gradualism"***

China being a socialist market economy rather than a pure capitalist economy may also be a factor supporting the economy for the time being. During the change in political leadership that occurs once a decade, it is natural for leaders to want to circumvent a rapid deceleration of the economy as much as possible. Politically speaking, collective leadership and a policy of gradualism could also be factors that preclude a short-term relapse of the Chinese economy. In fact, there are growing views that the lower limit for the growth rate of real GDP in China is currently around 7% based on comments such as those recently made by Premier Li Keqiang.



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

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. From Feb 2015: A series of deposit reserve rate lowering moves began

### 5.3 Risk (3): Tumult in emerging markets in response to the US exit strategy

#### *The US exit strategy will be a plus for the Japanese economy*

The third risk factor facing Japan's economy is the question of whether or not the US exit strategy will cause tumult in the emerging markets.

In this section we contemplate how the global financial markets have been evaluating the US exit strategy since 2013.

We believe that the US exit strategy will hold many beneficial points for the Japanese economy. Possibilities are good that the US long-term interest rate will rise gradually in a mirroring of the recovery in the actual economy. Chart 30 shows changes in the US long-term interest rate and TOPIX. More recently Japan's stock market had been moving up due to expectations in regard to Abenomics, while US long-term interest has fallen into a decline due to fears regarding geopolitical risk. Movements of these two indices have historically maintained moderate linkage.

The question is why are the US long-term interest rate and Japanese stocks moderately linked?

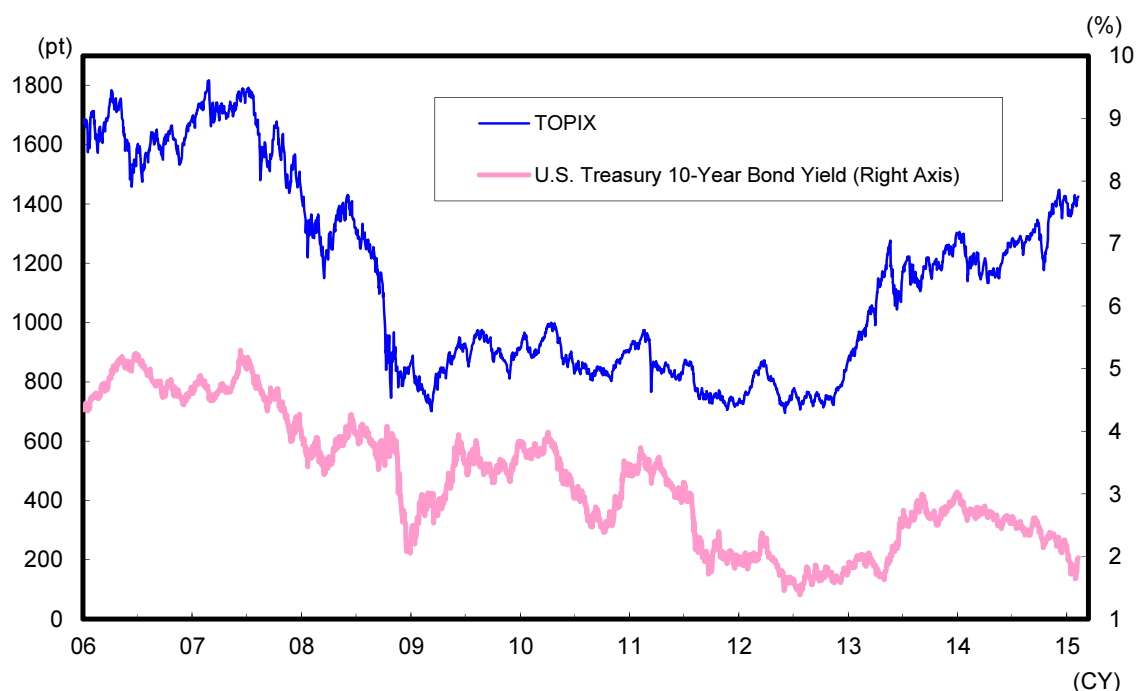
The first reason is that the difference between US and Japan interest rates widens the more the US long-term interest rate rises, and this becomes a factor in the current weak yen/strong dollar relationship. As yen depreciation progresses, the amount of exports that Japan's corporations can achieve grows.

The second reason is that when the US long-term interest rate is tending upwards, it is usually because the US economy is strong. A favorable US economy provides fundamental support for Japan's overall exports.

Finally, if the FRB gives its official stamp to the recovery of the actual US economy, allowing for the moving ahead of a serious exit strategy, this will provide more confidence in the economy. FRB chair Janet Yellen recently announced that she would gradually move forward with an exit strategy while carefully observing the recovery in the actual economy. In conclusion, we believe that any risk of the FRB's exit strategy being too fast, hence leading to major confusion in the international markets, especially emerging nations, is extremely limited.

TOPIX and U.S. Treasury 10-Year Bond Yield

Chart 30

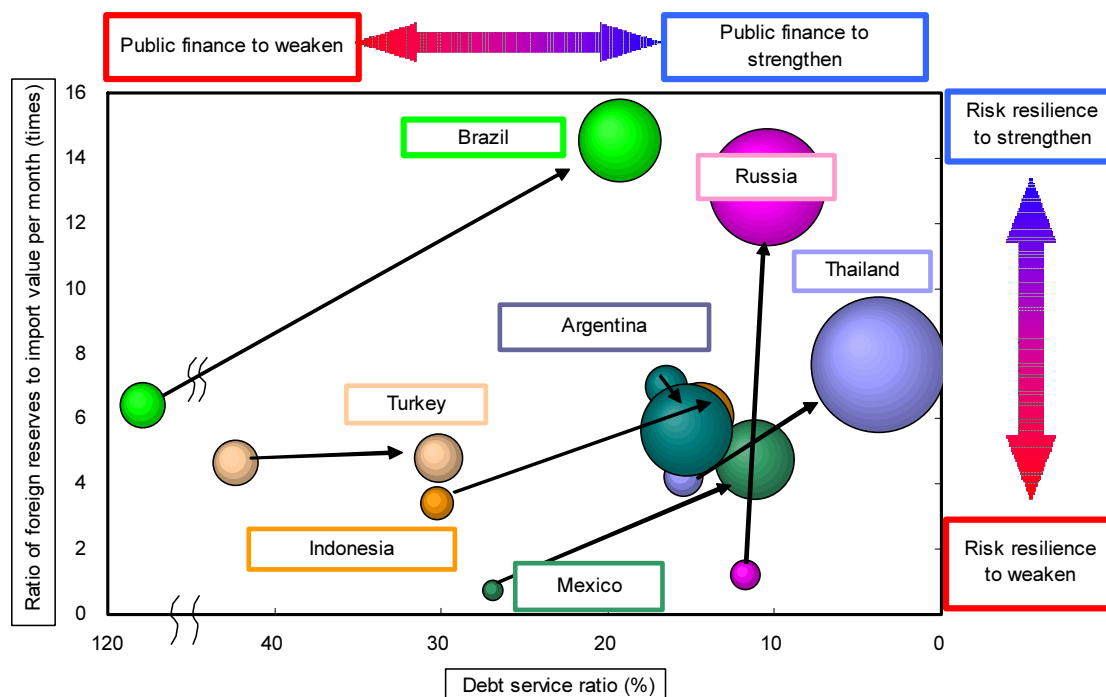


Source: Tokyo Stock Exchange and FRB; compiled by DIR.

### ***Possibility of a serious crisis in emerging economies is limited***

We believe there is a limited possibility that emerging economies will experience a serious crisis similar to the Asian currency crisis in 1997. Chart 31 depicts changes in risk resilience of emerging market nations from the year each nation experienced a financial crisis. Learning from past financial crises, these nations have amassed huge foreign currency reserves. Not only has the absolute size of such reserves increased, but the size of foreign currency reserves relative to goods and services imports (vertical axis) and that relative to short-term foreign debt (the sizes of circles) have also improved for most nations. Moreover, the debt service ratio, defined as debt service payments for external debt as a percentage share of good and service exports, a leading indicator used to determine country risk, has fallen for the most part (conditions have improved) since the financial crisis.

As far as we can see from this chart, the possibilities of turmoil occurring in the world financial markets after January 2014 are rather slim. The ignition point for the last crisis was Argentina, but it seems to be an exception. Looking at the emerging nations overall, we see steady improvement in the fundamentals.



Source: Haver Analytics; compiled by DIR.

Notes: 1) Arrows denote shift of positions at critical moments to 2012.

2) Year of crises defined as 1994 for Mexico, 1997 for Thailand and Indonesia, 1998 for Russia, 1999 for Brazil, 2001 for Turkey, and 2002 for Argentina.

3) Size of circles shows ratio of foreign reserves to foreign debt with less than one-year maturity. The larger the circle, the greater the resilience.

## 5.4 Risk (4): A worldwide decline in stock values due to geopolitical risk

### *Will investors switch from risk-on to risk-off?*

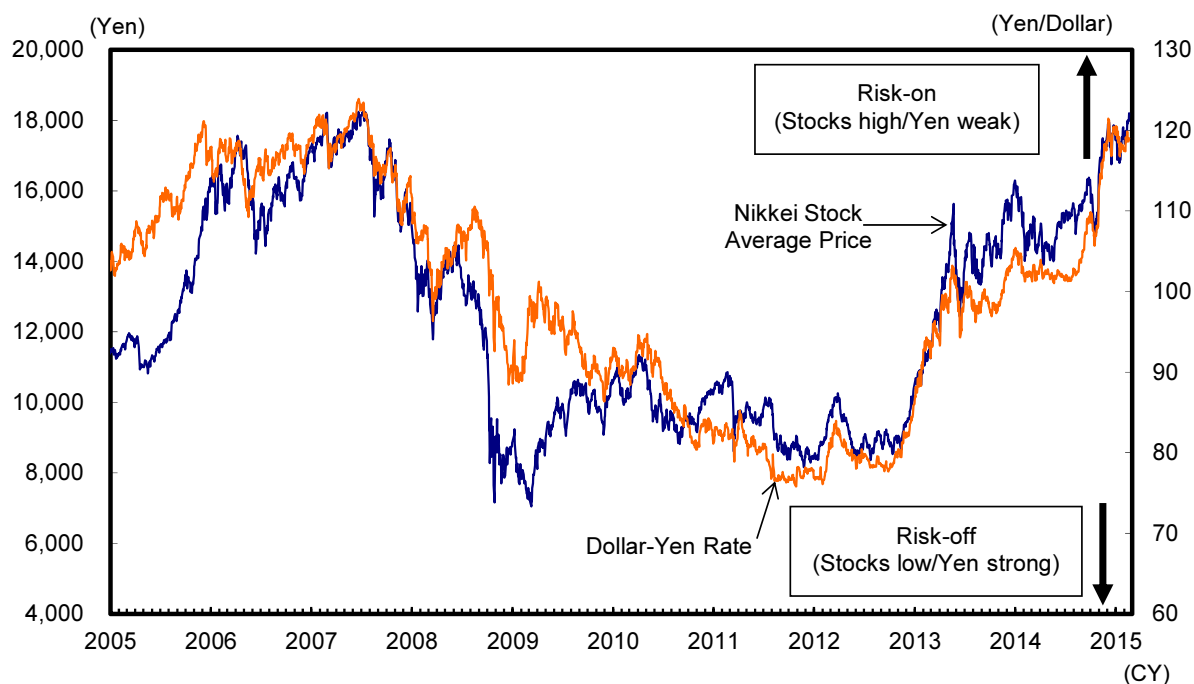
The fourth risk factor which the Japanese economy faces is geopolitical.

When the sense of caution increases in the business world due to geopolitical risk, the global financial markets tend to move away from risk-on to risk-off investment behavior. Chart 32 shows changes in the yen/dollar rate and the Nikkei stock average price over the last several years. In recent years, the yen exchange rate and the Nikkei average have exhibited a close linkage. As the global economy has begun to recover, investors have shown more willingness to take risks in their investments. This is called “risk-on” behavior. The Bank of Japan’s bold monetary easing measures have also had an effect on investor behavior, and ever since the last part of 2012, investors have acted with a positive, risk-on behavior. The weak yen and rising stock prices have been moving in tandem since that time. In the future, caution in regard to geopolitical risk may encourage investors to switch to a risk-off approach, and the yen could strengthen again, influencing Japan’s export business negatively. If this occurs, caution will also be necessary in regard to downward pressure on personal consumption due to falling stock prices.



Dollar-Yen Rate and Nikkei Stock Average

Chart 32



Source: Bloomberg, Nikkei; compiled by DIR.

### ***Which countries are most susceptible to geopolitical risk?***

Next we examine how the economies of various countries might be affected by geopolitical risk if the Russia-Ukraine situation, as well as developments in Iraq, get any worse (see Chart 33).

First we take a look at geopolitical risk in Russia. Considering Russia's trade relations, we see that the greater share of Russia's exports are to the Netherlands, Italy, and Germany. Russia is closely linked with the EU via energy exports. The balance of credit to Russia is also significant for members of the EU such as France and Italy. As far as we can see by the above data, if geopolitical risk associated with Russia were to worsen in the near future, it is quite possible that Europe would be most susceptible to negative influence in both the financial area and in the real economy.

In contrast, if geopolitical risk in Iraq worsens, direct influence on the EU would be limited, as trade levels and credit balance are rather low. However, there is some collateral risk such as the possibility of a surge in the price of crude oil. Countries with an especially high dependence on imported oil could see economic conditions deteriorate rapidly. Hence geopolitical risk in these areas should be continually monitored.

Lastly, we would like to emphasize the close-knit nature of China's economic relationship with Russia and Iraq. If geopolitical risk rises to the surface in Russia or Iraq in the future, the sense of uncertainty as regards China's economy could deepen further. This is another area which requires close monitoring on into the future.

Trade Relations with Russia and Iraq Chart 33

Russian Imports & Exports (2013)

Exports		Imports	
Country	Share (%)	Country	Share (%)
EU	39.4	EU	31.2
Netherlands	13.3	China	16.9
Italy	7.5	Germany	12.0
Germany	7.0	USA	5.3
China	6.8	Ukraine	5.0
Turkey	4.8	Italy	4.6
Ukraine	4.5	Belarus	4.4
Belarus	3.8	Japan	4.3
Japan	3.7	France	4.1
Poland	3.7	Korea	3.3

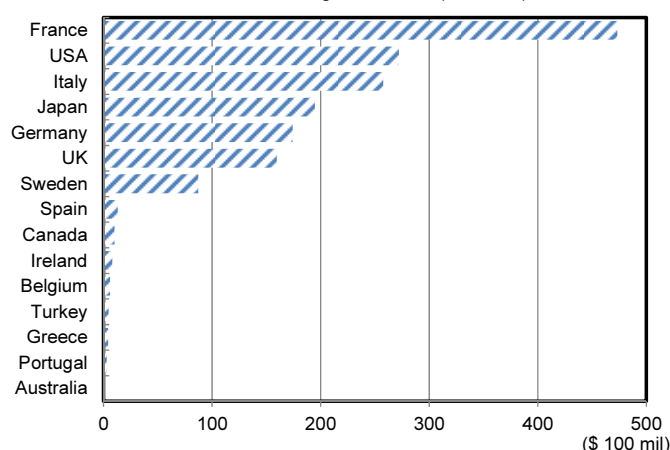
Source: Statistics from IMF; compiled by DIR.

Iraq Imports & Exports (2013)

Exports		Imports	
Country	Share (%)	Country	Share (%)
India	21.6	Turkey	25.4
China	19.8	Syria	18.1
EU	15.1	China	14.7
USA	14.6	EU	11.2
Korea	10.2	USA	4.3
Greece	5.3	Korea	4.2
Italy	4.3	Germany	3.5
Canada	3.8	Italy	3.5
Singapore	3.3	Jordan	2.6
Japan	2.9	India	2.0

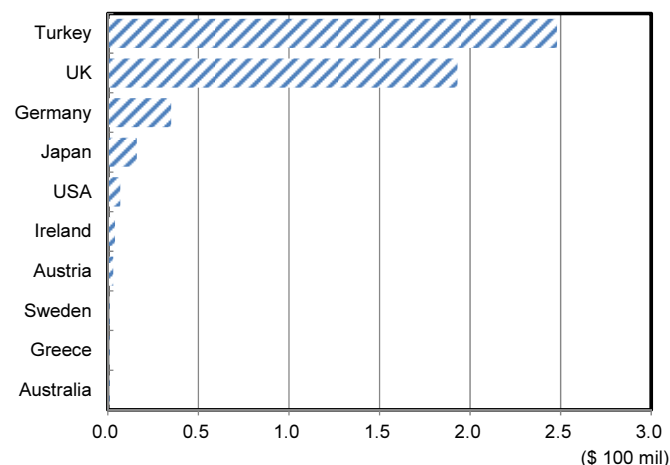
Source: Statistics from IMF; compiled by DIR.

Claims Held Against Russia (2014, Q1)



Source: Statistics from BIS; compiled by DIR.

Claims Held Against Iraq (2014, Q1)



Source: Statistics from BIS; compiled by DIR.

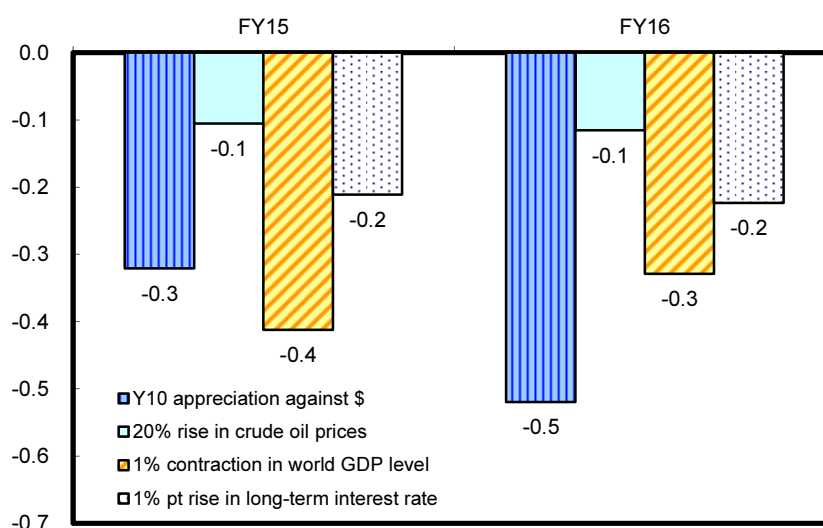
## 6. Supplement: Alternative scenarios

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. We assumed alternative scenarios might emerge from Apr-Jun 2015.

Standard and Alternate Scenario Assumptions		
	Standard scenario	Alternate scenario (in each quarter in both years)
Case 1: Forex rate	Y120.0/\$ in FY15 and Y120.0/\$ in FY16	Y10 appreciation against \$
Case 2: Crude oil prices (WTI futures)	\$57.7/bbl in FY15 and 62.7/bbl in FY16	20% rise per qtr
Case 3: World GDP	+3.7% y/y in CY15 and +3.6% y/y in CY16	1% contraction in world GDP level
Case 4: Long-term interest rate	0.52% in FY15 and 0.73% in FY16	1% pt rise

Source: Compiled by DIR.

Effects on Real GDP (% change from standard scenario) Chart 34



Source: Compiled by DIR.

### 6.1 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 depressing the expected economic growth rate. 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 0.3% and 0.5% in FY15 and FY16, respectively, compared to our standard scenario.

## 6.2 Surge in crude oil prices

If crude oil prices rise by 20% above our standard scenario, real GDP level is forecast to shrink 0.1% in FY15 and 0.1% again in FY16 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.

## 6.3 Contraction of world GDP

If world demand (GDP) contracts by 1% from our standard scenario, Japan's real GDP level would shrink 0.4% in FY15 and 0.3% in FY16 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.

## 6.4 Higher interest rates

If long-term interest rates rise 1 point above our standard scenario, real GDP level would contract 0.2% in FY15 and 0.2% again in FY16 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 companies and households 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 35

	Standard Scenario		Case 1 Y10 appreciation against \$				Case 2 20% rise in crude oil prices			
	FY15	FY16	FY15	FY16	FY15	FY16	FY15	FY16		
Nominal GDP (Y/y %)	2.7	2.4	2.0 (-0.7)	2.3 (-0.8)	2.1 (-0.6)	2.3 (-0.7)	2.1 (-0.6)	2.3 (-0.7)		
<b>Real GDP (Chained [2005]; y/y %)</b>	<b>1.9</b>	<b>1.8</b>	<b>1.5 (-0.3)</b>	<b>1.6 (-0.5)</b>	<b>1.7 (-0.1)</b>	<b>1.8 (-0.1)</b>	<b>1.7 (-0.1)</b>	<b>1.8 (-0.1)</b>		
GDP deflator (Y/y %)	0.8	0.5	0.4 (-0.4)	0.6 (-0.3)	0.3 (-0.5)	0.5 (-0.4)	0.3 (-0.5)	0.5 (-0.5)		
All-industry Activity Index (Y/y %)	2.0	2.5	1.4 (-0.6)	2.4 (-0.6)	1.9 (-0.1)	2.4 (-0.1)	1.9 (-0.1)	2.4 (-0.1)		
Industrial Production Index (Y/y %)	4.3	4.9	2.3 (-1.9)	4.8 (-2.0)	4.1 (-0.2)	4.9 (-0.2)	4.1 (-0.2)	4.9 (-0.2)		
Tertiary Industry Activity Index (Y/y %)	1.5	1.9	1.1 (-0.4)	1.8 (-0.4)	1.4 (-0.1)	1.9 (-0.1)	1.4 (-0.1)	1.9 (-0.1)		
Corporate Goods Price Index (Y/y %)	-1.5	0.9	-2.8 (-1.3)	0.9 (-1.4)	-0.8 (0.7)	1.0 (0.7)	-0.8 (0.7)	1.0 (0.7)		
Consumer Price Index (Y/y %)	0.4	1.1	0.2 (-0.2)	1.0 (-0.3)	0.5 (0.2)	1.1 (0.2)	0.5 (0.2)	1.1 (0.2)		
Unemployment rate (%)	3.3	3.2	3.3 (0.0)	3.2 (0.0)	3.3 (-0.0)	3.2 (0.0)	3.3 (-0.0)	3.2 (0.0)		
Trade balance (Y tril)	-1.1	-1.0	-0.8 (0.4)	-1.5 (-0.5)	-3.9 (-2.7)	-3.9 (-2.9)	-3.9 (-2.7)	-3.9 (-2.9)		
Current balance (US\$100 mil)	1,589	1,697	1,659 (70)	1,576 (-121)	1,377 (-212)	1,470 (-227)	1,377 (-212)	1,470 (-227)		
Current balance (Y tril)	19.1	20.4	18.2 (-0.8)	17.3 (-3.0)	16.5 (-2.5)	17.6 (-2.7)	16.5 (-2.5)	17.6 (-2.7)		
Real GDP components (Chained [2005]; y/y %)										
Private consumption	1.6	1.5	1.5 (-0.1)	1.5 (-0.1)	1.5 (-0.1)	1.5 (-0.1)	1.5 (-0.1)	1.5 (-0.1)		
Private housing investment	2.1	6.0	1.8 (-0.3)	5.7 (-0.5)	1.8 (-0.3)	5.8 (-0.4)	1.8 (-0.3)	5.8 (-0.4)		
Private non-housing investment	3.8	5.5	2.5 (-1.2)	5.3 (-1.4)	3.3 (-0.5)	5.4 (-0.6)	3.3 (-0.5)	5.4 (-0.6)		
Government final consumption	0.9	1.0	1.0 (0.1)	1.2 (0.2)	0.8 (-0.0)	1.0 (-0.0)	0.8 (-0.0)	1.0 (-0.0)		
Public fixed investment	-5.7	-4.7	-5.1 (0.6)	-4.7 (0.7)	-5.9 (-0.2)	-4.7 (-0.2)	-5.9 (-0.2)	-4.7 (-0.2)		
Exports of goods and services	6.7	5.5	6.1 (-0.6)	5.0 (-1.0)	6.6 (-0.1)	5.5 (-0.1)	6.6 (-0.1)	5.5 (-0.1)		
Imports of goods and services	4.0	5.1	3.7 (-0.3)	6.0 (0.5)	3.5 (-0.5)	5.1 (-0.6)	3.5 (-0.5)	5.1 (-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	
	FY15	FY16	FY15	FY16	FY15	FY16	FY15	FY16
Nominal GDP (Y/y %)	2.2 (-0.4)	2.4 (-0.4)	2.4 (-0.2)	2.4 (-0.2)	2.4 (-0.2)	2.4 (-0.2)	2.4 (-0.2)	2.4 (-0.3)
<b>Real GDP (Chained [2005]; y/y %)</b>	<b>1.4 (-0.4)</b>	<b>1.9 (-0.3)</b>	<b>1.6 (-0.2)</b>	<b>1.8 (-0.2)</b>	<b>1.9 (0.1)</b>	<b>1.9 (0.1)</b>	<b>1.9 (0.1)</b>	<b>1.9 (0.1)</b>
GDP deflator (Y/y %)	0.8 (-0.0)	0.5 (-0.0)	0.8 (0.0)	0.5 (-0.0)	0.5 (-0.3)	0.4 (-0.4)	0.5 (-0.3)	0.4 (-0.4)
All-industry Activity Index (Y/y %)	1.8 (-0.3)	2.5 (-0.2)	1.9 (-0.1)	2.5 (-0.1)	2.2 (0.2)	2.5 (0.2)	2.2 (0.2)	2.5 (0.2)
Industrial Production Index (Y/y %)	3.1 (-1.1)	5.2 (-0.9)	3.9 (-0.4)	4.9 (-0.4)	5.0 (0.7)	5.0 (0.8)	5.0 (0.7)	5.0 (0.8)
Tertiary Industry Activity Index (Y/y %)	1.4 (-0.1)	1.9 (-0.1)	1.4 (-0.1)	1.9 (-0.1)	1.6 (0.1)	1.9 (0.1)	1.6 (0.1)	1.9 (0.1)
Corporate Goods Price Index (Y/y %)	-1.6 (-0.0)	0.8 (-0.1)	-1.5 (0.0)	0.9 (-0.0)	-0.2 (1.4)	1.0 (1.4)	-0.2 (1.4)	1.0 (1.4)
Consumer Price Index (Y/y %)	0.4 (-0.0)	1.0 (-0.1)	0.4 (-0.0)	1.1 (-0.0)	0.6 (0.3)	1.1 (0.3)	0.6 (0.3)	1.1 (0.3)
Unemployment rate (%)	3.3 (-0.0)	3.2 (0.0)	3.3 (0.0)	3.2 (0.0)	3.3 (-0.0)	3.2 (-0.0)	3.3 (-0.0)	3.2 (-0.0)
Trade balance (Y tril)	-2.0 (-0.8)	-1.5 (-0.5)	-0.6 (0.6)	-0.3 (0.6)	-4.0 (-2.9)	-3.7 (-2.7)	-4.0 (-2.9)	-3.7 (-2.7)
Current balance (US\$100 mil)	1,486 (-103)	1,593 (-104)	1,484 (-105)	1,274 (-423)	1,342 (-247)	1,531 (-166)	1,342 (-247)	1,531 (-166)
Current balance (Y tril)	17.8 (-1.2)	19.1 (-1.2)	17.8 (-1.3)	15.3 (-5.1)	16.9 (-2.1)	19.2 (-1.2)	16.9 (-2.1)	19.2 (-1.2)
Real GDP components (Chained [2005]; y/y %)								
Private consumption	1.5 (-0.1)	1.5 (-0.0)	1.6 (-0.0)	1.5 (-0.0)	1.5 (-0.1)	1.5 (-0.1)	1.5 (-0.1)	1.5 (-0.1)
Private housing investment	1.9 (-0.2)	5.8 (-0.4)	1.3 (-0.8)	6.1 (-0.6)	1.9 (-0.1)	5.9 (-0.2)	1.9 (-0.1)	5.9 (-0.2)
Private non-housing investment	3.4 (-0.3)	5.4 (-0.5)	2.3 (-1.4)	5.3 (-1.6)	3.9 (0.1)	5.5 (0.1)	3.9 (0.1)	5.5 (0.1)
Government final consumption	0.9 (0.0)	1.1 (0.0)	0.9 (0.0)	1.1 (0.0)	0.8 (-0.1)	1.0 (-0.1)	0.8 (-0.1)	1.0 (-0.1)
Public fixed investment	-5.7 (0.0)	-4.7 (0.1)	-5.7 (-0.0)	-4.7 (0.0)	-6.2 (-0.5)	-4.8 (-0.5)	-6.2 (-0.5)	-4.8 (-0.5)
Exports of goods and services	4.6 (-2.0)	5.9 (-1.6)	6.7 (-0.0)	5.5 (-0.0)	6.9 (0.2)	5.7 (0.4)	6.9 (0.2)	5.7 (0.4)
Imports of goods and services	3.7 (-0.3)	5.2 (-0.2)	3.5 (-0.5)	5.1 (-0.5)	3.6 (-0.4)	4.6 (-0.8)	3.6 (-0.4)	4.6 (-0.8)

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.

## 7. Quarterly Forecast Tables

## 1.1 Selected Economic Indicators

	2013			2014			2015		FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3 (E)	2013	2014 (E)	2013	2014
Nominal GDP (SAAR; Y tril)	480.1	481.7	481.0	488.2	489.1	484.9	490.2	496.8	483.1	490.1	480.1	488.2
Q/q %	0.4	0.3	-0.1	1.5	0.2	-0.9	1.1	1.3				
Q/q %, SAAR	1.8	1.3	-0.6	6.1	0.7	-3.4	4.5	5.4				
Y/y %	0.8	1.9	2.0	2.5	1.8	0.6	1.8	1.6	1.8	1.4	1.1	1.7
Real GDP (chained [2005]; SAAR; Y tril)	528.0	529.9	528.0	535.1	525.9	522.9	525.8	528.9	530.6	525.8	527.4	527.6
Q/q %	0.8	0.4	-0.4	1.3	-1.7	-0.6	0.6	0.6				
Q/q %, SAAR	3.2	1.5	-1.4	5.5	-6.7	-2.3	2.2	2.4				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.5	-1.3	2.1	-0.9	1.6	0.0
Contribution to GDP growth (% pt)												
Domestic demand	0.7	0.7	0.2	1.7	-2.7	-0.6	0.3	0.4	2.6	-1.5	1.9	0.1
Foreign demand	0.1	-0.4	-0.5	-0.3	1.1	0.1	0.2	0.2	-0.5	0.8	-0.3	-0.0
GDP deflator (y/y %)	-0.6	-0.3	-0.3	0.1	2.2	2.0	2.3	2.9	-0.3	2.4	-0.5	1.6
Index of All-Industry Activity (2005=100)	97.1	97.6	97.9	99.5	96.1	96.0	96.9	97.5	98.0	96.6	97.3	97.1
Q/q %; y/y %	0.6	0.5	0.3	1.6	-3.4	-0.1	0.9	0.7	1.9	-1.4	0.8	-0.2
Index of Industrial Production (2010=100)	96.1	97.8	99.6	102.5	98.6	96.7	98.4	100.5	98.9	98.5	97.0	99.0
Q/q %; y/y %	1.6	1.7	1.8	3.0	-3.8	-1.9	1.7	2.1	3.2	-0.4	-0.8	2.0
Index of Tertiary Industry Activity (2005=100)	100.1	100.2	100.0	101.8	97.9	98.3	98.9	99.2	100.5	98.6	100.0	99.2
Q/q %; y/y %	0.4	0.0	-0.2	1.8	-3.8	0.4	0.7	0.3	1.3	-1.9	0.7	-0.8
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	101.6	102.4	102.6	102.9	106.0	106.5	105.1	103.0	102.4	105.1	101.9	105.1
Y/y %	0.6	2.2	2.5	2.0	4.3	4.0	2.5	0.2	1.8	2.7	1.3	3.2
CPI (excl. fresh food; 2010=100)	99.9	100.3	100.7	100.6	103.3	103.5	103.4	102.8	100.4	103.3	100.1	102.7
Y/y %	0.0	0.7	1.1	1.3	3.3	3.2	2.7	2.3	0.8	2.9	0.4	2.6
Unemployment rate (%)	4.0	4.0	3.9	3.6	3.6	3.6	3.5	3.4	3.9	3.5	4.0	3.6
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Government bond yield (10 year; %)	0.77	0.73	0.64	0.61	0.59	0.52	0.40	0.38	0.69	0.47	0.70	0.53
Money stock; M2 (y/y %)	3.5	3.8	4.2	4.0	3.3	3.0	3.4	3.0	3.9	3.2	3.6	3.4
Trade balance (SAAR; Y tril)	-6.7	-9.3	-11.2	-15.6	-8.8	-10.4	-7.2	-1.8	-11.0	-7.0	-8.8	-10.4
Current balance (SAAR; \$100 mil)	747	229	0	-536	269	232	991	1,475	83	742	331	248
Current balance (SAAR; Y tril)	7.4	2.3	0.0	-5.5	2.8	2.4	11.4	17.5	0.8	8.5	3.2	2.6
(% of nominal GDP)	1.5	0.5	0.0	-1.1	0.6	0.5	2.3	3.5	0.2	1.7	0.7	0.6
Exchange rate (Y/\$)	98.8	98.9	100.4	102.8	102.1	103.9	114.5	119.0	100.2	109.9	97.6	105.8
(Y/Euro)	129.6	130.7	139.9	140.3	139.5	137.8	143.8	135.0	135.1	139.0	130.6	140.3

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.

## 1.2 Selected Economic Indicators

	2015			2016			2017			FY		CY	
	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)	
Nominal GDP (SAAR; Y tril)	498.8	501.5	504.3	507.3	510.5	514.0	516.5	519.6	503.1	515.2	500.4	512.2	
Q/q %	0.4	0.5	0.6	0.6	0.6	0.7	0.5	0.6					
Q/q %, SAAR	1.7	2.2	2.3	2.4	2.5	2.8	2.0	2.4					
Y/y %	2.0	3.5	2.9	2.2	2.3	2.5	2.4	2.4	2.7	2.4	2.5	2.4	
Real GDP (chained [2005]; SAAR; Y tril)	531.8	534.2	536.5	539.0	541.5	544.3	546.3	549.4	535.6	545.5	533.0	542.9	
Q/q %	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.6					
Q/q %, SAAR	2.2	1.8	1.7	1.8	1.9	2.1	1.4	2.3					
Y/y %	1.1	2.2	2.1	2.0	1.8	1.9	1.8	1.9	1.9	1.8	1.0	1.9	
Contribution to GDP growth (% pt)													
Domestic demand	0.5	0.4	0.4	0.4	0.4	0.5	0.3	0.8	1.3	1.7	0.3	1.7	
Foreign demand	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-0.2	0.6	0.2	0.7	0.1	
GDP deflator (y/y %)	0.9	1.2	0.8	0.3	0.5	0.6	0.6	0.5	0.8	0.5	1.5	0.5	
Index of All-Industry Activity (2005=100)	97.9	98.4	98.8	99.3	99.9	100.5	101.1	102.7	98.6	101.0	98.1	100.2	
Q/q %; y/y %	0.4	0.4	0.5	0.5	0.6	0.6	0.6	1.5	2.0	2.5	1.0	2.1	
Index of Industrial Production (2010=100)	101.4	102.3	103.2	104.2	105.4	106.8	108.4	110.7	102.7	107.8	101.7	106.1	
Q/q %; y/y %	0.9	0.8	0.9	1.0	1.2	1.3	1.5	2.1	4.3	4.9	2.8	4.3	
Index of Tertiary Industry Activity (2005=100)	99.5	99.9	100.2	100.6	101.1	101.5	101.9	103.4	100.1	102.0	99.7	101.3	
Q/q %; y/y %	0.3	0.3	0.4	0.4	0.4	0.4	0.4	1.4	1.5	1.9	0.5	1.6	
Corporate Goods Price Index components (2010=100)													
Domestic Company Goods Price Index	103.0	103.3	103.7	104.0	104.3	104.5	104.6	104.7	103.5	104.5	103.3	104.3	
Y/y %	-2.8	-2.9	-1.3	1.0	1.2	1.1	0.8	0.6	-1.5	0.9	-1.7	1.0	
CPI (excl. fresh food; 2010=100)	103.4	103.5	103.9	103.8	104.4	104.7	105.0	105.0	103.6	104.8	103.4	104.5	
Y/y %	0.1	0.0	0.4	0.9	0.9	1.1	1.1	1.2	0.4	1.1	0.7	1.0	
Unemployment rate (%)	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.3	3.2	3.3	3.2	
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Government bond yield (10 year; %)	0.45	0.49	0.54	0.59	0.64	0.70	0.76	0.83	0.52	0.73	0.47	0.67	
Money stock; M2 (y/y %)	3.2	3.4	3.5	3.6	3.8	3.9	4.2	4.1	3.4	4.0	3.3	3.9	
Trade balance (SAAR; Y tril)	-1.5	-1.3	-1.1	-0.7	-0.6	-0.6	-0.7	-2.1	-1.1	-1.0	-1.4	-0.6	
Current balance (SAAR; \$100 mil)	1512	1561	1620	1664	1705	1729	1743	1611	1589	1697	1542	1710	
Current balance (SAAR; Y tril)	18.1	18.7	19.4	20.0	20.5	20.7	20.9	19.3	19.1	20.4	18.5	20.5	
(% of nominal GDP)	3.6	3.7	3.9	3.9	4.0	4.0	4.0	3.7	3.8	4.0	3.7	4.0	
Exchange rate (Y/\$)	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	119.8	120.0	
(Y/Euro)	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	

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)

	2013			2014			2015		FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3 (E)	2013	2014 (E)	2013	2014
Gross domestic expenditure	528.0	529.9	528.0	535.1	525.9	522.9	525.8	528.9	530.6	525.8	527.4	527.6
Q/q %, SAAR	3.2	1.5	-1.4	5.5	-6.7	-2.3	2.2	2.4				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.5	-1.3	2.1	-0.9	1.6	0.0
Domestic demand	518.7	522.3	523.2	531.9	517.0	514.3	516.0	517.9	524.4	516.3	519.8	520.0
Q/q %, SAAR	2.9	2.9	0.7	6.8	-10.7	-2.1	1.3	1.5				
Y/y %	1.5	2.2	2.7	3.6	-0.3	-1.6	-1.4	-2.7	2.5	-1.5	1.9	0.0
Private demand	395.0	397.7	398.1	407.7	392.3	388.8	390.4	392.7	399.9	391.0	395.8	394.9
Q/q %, SAAR	2.3	2.8	0.5	10.0	-14.3	-3.4	1.6	2.5				
Y/y %	1.1	1.7	2.2	4.3	-0.6	-2.3	-2.1	-3.9	2.4	-2.2	1.5	-0.2
Final consumption	314.7	315.7	315.3	322.2	305.9	306.7	307.5	309.1	317.1	307.3	314.5	310.6
Q/q %, SAAR	3.2	1.3	-0.6	9.1	-18.8	1.0	1.1	2.0				
Y/y %	1.9	2.3	2.3	3.4	-2.8	-3.0	-2.5	-4.2	2.5	-3.1	2.1	-1.2
Residential investment	14.2	14.8	15.2	15.5	13.9	13.0	12.8	13.1	14.9	13.2	14.5	13.8
Q/q %, SAAR	7.7	17.7	10.8	10.0	-35.4	-25.1	-4.8	8.7				
Y/y %	6.6	8.2	10.1	11.8	-2.0	-12.4	-15.7	-16.0	9.3	-11.9	8.7	-5.2
Non-residential investment	69.5	70.0	70.8	75.1	71.3	71.2	71.3	71.9	71.5	71.4	69.5	72.3
Q/q %, SAAR	9.3	3.0	4.9	26.0	-18.5	-0.6	0.4	3.2				
Y/y %	-0.2	1.2	3.0	10.8	2.6	1.6	0.5	-4.4	4.0	-0.2	0.4	4.1
Change in inventories	-3.5	-2.8	-3.2	-5.1	1.1	-2.0	-1.3	-1.3	-3.7	-0.9	-2.7	-1.8
Public demand	123.7	124.6	125.1	124.2	124.8	125.4	125.6	125.2	124.5	125.4	124.0	125.1
Q/q %, SAAR	4.8	3.1	1.3	-2.8	1.9	2.2	0.5	-1.4				
Y/y %	2.7	3.8	4.2	1.6	0.6	0.7	0.5	0.9	3.1	0.7	2.9	0.9
Government final consumption	102.2	102.1	102.3	101.9	102.2	102.4	102.5	102.7	102.2	102.5	102.1	102.3
Q/q %, SAAR	2.6	-0.3	0.5	-1.5	1.3	0.8	0.4	0.9				
Y/y %	2.6	2.0	1.5	0.2	-0.0	0.3	0.3	0.9	1.6	0.4	1.9	0.2
Fixed investment	21.4	22.6	22.8	22.3	22.5	23.0	23.1	22.4	22.4	22.8	21.9	22.7
Q/q %, SAAR	13.2	23.6	2.9	-8.6	4.2	8.5	2.3	-11.0				
Y/y %	3.6	14.0	16.1	6.5	4.3	1.9	1.7	1.0	10.3	2.0	8.0	3.6
Change in inventories	0.0	-0.1	0.0	0.0	0.1	0.1	-0.0	-0.0	0.0	0.0	-0.0	0.0
Net exports of goods and services	9.8	8.1	5.7	5.8	10.0	10.5	11.9	13.2	7.3	11.4	8.1	9.5
Exports of goods and services	84.1	83.6	83.5	89.0	88.7	90.0	92.5	94.5	85.1	91.4	83.2	90.1
Q/q %, SAAR	12.8	-2.0	-0.7	28.8	-1.3	6.2	11.4	9.1				
Y/y %	-0.1	3.1	6.8	9.2	5.4	7.5	10.9	6.2	4.7	7.5	1.5	8.2
Imports of goods and services	74.3	75.6	77.8	83.2	78.7	79.5	80.6	81.4	77.7	80.1	75.1	80.5
Q/q %, SAAR	9.7	7.2	12.5	30.3	-19.7	4.2	5.3	4.1				
Y/y %	0.5	2.9	8.9	14.7	5.8	5.1	3.7	-2.2	6.7	3.0	3.1	7.2

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.

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

	2015			2016			2017			FY		CY	
	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)	
Gross domestic expenditure	531.8	534.2	536.5	539.0	541.5	544.3	546.3	549.4	535.6	545.5	533.0	542.9	
Q/q %, SAAR	2.2	1.8	1.7	1.8	1.9	2.1	1.4	2.3					
Y/y %	1.1	2.2	2.1	2.0	1.8	1.9	1.8	1.9	1.9	1.8	1.0	1.9	
Domestic demand	520.3	522.3	524.2	526.2	528.4	530.9	532.6	536.8	523.4	532.3	521.2	529.5	
Q/q %, SAAR	1.9	1.5	1.4	1.5	1.6	1.9	1.3	3.2					
Y/y %	0.6	1.6	1.5	1.7	1.6	1.6	1.5	2.1	1.4	1.7	0.2	1.6	
Private demand	395.4	397.5	399.4	401.4	403.5	406.0	407.7	411.8	398.5	407.3	396.2	404.6	
Q/q %, SAAR	2.7	2.1	2.0	2.0	2.1	2.5	1.7	4.1					
Y/y %	0.7	2.3	2.3	2.4	2.0	2.1	2.0	2.7	1.9	2.2	0.3	2.1	
Final consumption	310.7	311.8	312.7	313.6	314.5	315.5	316.6	320.9	312.2	316.9	311.1	315.1	
Q/q %, SAAR	2.2	1.4	1.1	1.2	1.2	1.3	1.3	5.6					
Y/y %	1.5	1.7	1.7	1.5	1.2	1.2	1.3	2.3	1.6	1.5	0.2	1.3	
Residential investment	13.3	13.4	13.5	13.6	13.7	14.2	14.4	14.6	13.4	14.2	13.3	14.0	
Q/q %, SAAR	5.7	4.5	3.2	2.4	4.5	13.9	7.0	4.9					
Y/y %	-4.8	3.4	5.5	4.0	3.6	5.9	6.8	7.5	2.1	6.0	-3.4	5.1	
Non-residential investment	72.6	73.5	74.5	75.5	76.5	77.5	78.6	79.9	74.1	78.2	73.0	76.9	
Q/q %, SAAR	4.5	4.9	5.3	5.4	5.5	5.6	5.7	7.0					
Y/y %	1.9	3.3	4.5	5.1	5.3	5.4	5.5	5.9	3.8	5.5	1.0	5.3	
Change in inventories	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-2.0	-3.7	-1.3	-2.0	-1.3	-1.4	
Public demand	125.0	124.9	124.8	124.8	124.9	124.9	124.9	125.0	124.9	125.0	125.0	125.0	
Q/q %, SAAR	-0.6	-0.3	-0.2	0.1	0.1	0.1	0.1	0.2					
Y/y %	0.3	-0.4	-0.9	-0.4	0.1	0.1	-0.0	0.0	-0.4	0.0	-0.0	-0.1	
Government final consumption	103.0	103.2	103.5	103.7	104.0	104.3	104.6	104.8	103.4	104.5	103.1	104.2	
Q/q %, SAAR	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1					
Y/y %	0.7	0.8	0.9	1.0	1.0	1.0	1.1	1.1	0.9	1.0	0.8	1.0	
Fixed investment	22.0	21.7	21.3	21.1	20.8	20.6	20.4	20.1	21.5	20.5	21.9	20.8	
Q/q %, SAAR	-7.4	-6.0	-5.7	-4.5	-4.6	-4.8	-4.5	-4.2					
Y/y %	-1.9	-5.8	-7.7	-6.0	-5.4	-4.8	-4.5	-4.5	-5.7	-4.7	-3.7	-5.2	
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	13.6	14.0	14.5	14.9	15.3	15.6	15.8	14.7	14.2	15.3	13.8	15.4	
Exports of goods and services	95.7	96.9	98.1	99.4	100.8	102.1	103.6	105.1	97.5	102.9	96.3	101.5	
Q/q %, SAAR	4.9	5.1	5.3	5.5	5.5	5.6	5.7	5.9					
Y/y %	7.9	7.7	6.0	5.2	5.3	5.4	5.6	5.6	6.7	5.5	6.9	5.4	
Imports of goods and services	82.1	82.8	83.7	84.5	85.5	86.6	87.8	90.3	83.3	87.6	82.5	86.1	
Q/q %, SAAR	3.4	3.7	4.1	4.3	4.5	5.3	5.7	12.1					
Y/y %	4.3	4.2	3.7	3.9	4.1	4.5	5.0	6.9	4.0	5.1	2.5	4.4	

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.

E: DIR estimate.

## 3.1 Nominal Gross Domestic Expenditure (¥ tril)

	2013			2014			2015		FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3 (E)	2013	2014 (E)	2013	2014
Gross domestic expenditure	480.1	481.7	481.0	488.2	489.1	484.9	490.2	496.8	483.1	490.1	480.1	488.2
Q/q %, SAAR	1.8	1.3	-0.6	6.1	0.7	-3.4	4.5	5.4				
Y/y %	0.8	1.9	2.0	2.5	1.8	0.6	1.8	1.6	1.8	1.4	1.1	1.7
Domestic demand	491.0	495.9	499.3	508.5	502.3	499.7	502.7	503.5	499.0	502.0	493.8	503.4
Q/q %, SAAR	1.5	4.1	2.8	7.5	-4.7	-2.1	2.4	0.7				
Y/y %	1.2	2.8	3.4	4.4	2.3	0.7	0.6	-1.1	2.9	0.6	1.9	2.0
Private demand	370.0	373.7	376.6	385.3	377.4	373.4	376.1	377.6	376.7	376.0	372.0	378.1
Q/q %, SAAR	1.8	4.1	3.1	9.6	-7.9	-4.2	2.9	1.6				
Y/y %	0.7	2.3	3.0	5.1	2.0	-0.2	-0.3	-2.2	2.8	-0.2	1.6	1.6
Final consumption	292.9	294.6	296.1	302.3	292.3	293.2	294.6	295.5	296.6	293.8	293.5	295.6
Q/q %, SAAR	3.0	2.4	2.1	8.6	-12.6	1.2	1.9	1.2				
Y/y %	1.2	2.7	2.9	4.2	-0.1	-0.6	-0.5	-2.4	2.7	-0.9	1.9	0.7
Residential investment	14.9	15.6	16.2	16.6	15.3	14.2	14.1	14.4	15.9	14.5	15.3	15.0
Q/q %, SAAR	11.9	21.0	16.7	9.7	-27.9	-25.4	-2.9	8.2				
Y/y %	8.9	11.6	13.9	15.0	2.8	-9.0	-13.1	-13.4	12.5	-8.6	11.3	-1.8
Non-residential investment	66.0	66.6	67.5	71.7	68.5	68.5	68.9	69.2	68.2	68.8	66.0	69.5
Q/q %, SAAR	10.4	4.1	5.6	26.9	-16.5	0.0	2.0	2.0				
Y/y %	0.2	2.3	4.3	11.7	3.9	2.7	1.9	-3.6	4.9	0.9	1.2	5.3
Change in inventories	-3.7	-3.1	-3.3	-5.3	1.3	-2.6	-1.5	-1.5	-3.9	-1.1	-2.8	-2.0
Public demand	121.0	122.2	122.7	123.2	124.9	126.3	126.6	125.9	122.4	126.0	121.7	125.3
Q/q %, SAAR	0.4	4.1	1.7	1.6	5.7	4.6	0.9	-2.0				
Y/y %	2.8	4.3	4.3	2.1	2.9	3.6	3.1	2.3	3.3	3.0	3.0	2.9
Government final consumption	98.6	98.6	98.6	99.4	100.6	101.2	101.5	101.6	98.8	101.2	98.8	100.7
Q/q %, SAAR	-2.9	0.1	-0.3	3.4	4.7	2.7	1.1	0.5				
Y/y %	2.5	1.9	1.0	0.0	2.1	2.7	2.8	2.2	1.3	2.4	1.7	1.9
Fixed investment	22.3	23.7	24.1	23.7	24.3	25.0	25.1	24.3	23.6	24.8	23.0	24.5
Q/q %, SAAR	13.4	26.6	6.9	-6.6	11.0	11.4	2.1	-11.7				
Y/y %	4.5	16.0	18.8	8.7	8.3	5.9	4.5	3.1	12.4	5.1	9.5	6.7
Change in inventories	0.0	-0.1	0.1	0.1	0.1	0.1	-0.0	-0.0	0.0	0.0	-0.0	0.1
Net exports of goods and services	-10.9	-14.2	-18.3	-20.3	-13.3	-14.8	-12.4	-6.7	-15.9	-11.8	-13.6	-15.2
Exports of goods and services	78.1	78.8	79.1	83.6	83.6	86.4	91.3	93.3	80.0	88.7	77.5	86.3
Q/q %, SAAR	23.6	3.9	1.8	24.7	-0.4	14.1	24.9	9.1				
Y/y %	9.0	14.6	17.8	13.2	6.5	9.5	16.0	11.4	13.6	10.9	11.2	11.3
Imports of goods and services	88.9	93.0	97.4	103.9	96.8	101.2	103.7	100.1	95.9	100.5	91.2	101.5
Q/q %, SAAR	18.4	19.8	20.5	29.3	-24.6	19.1	10.6	-13.4				
Y/y %	10.3	17.9	24.5	22.1	8.5	8.6	7.0	-3.8	18.7	4.8	15.2	11.3

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.

E: DIR estimate.

## 3.2 Nominal Gross Domestic Expenditure (¥ tril)

	2015			2016			2017		FY		CY	
	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
Gross domestic expenditure	498.8	501.5	504.3	507.3	510.5	514.0	516.5	519.6	503.1	515.2	500.4	512.2
Q/q %, SAAR	1.7	2.2	2.3	2.4	2.5	2.8	2.0	2.4				
Y/y %	2.0	3.5	2.9	2.2	2.3	2.5	2.4	2.4	2.7	2.4	2.5	2.4
Domestic demand	505.4	507.9	510.5	513.3	516.4	520.1	522.8	527.7	509.3	521.8	506.8	518.1
Q/q %, SAAR	1.5	2.0	2.1	2.2	2.4	2.9	2.1	3.8				
Y/y %	0.6	1.7	1.5	2.0	2.2	2.4	2.3	2.9	1.5	2.4	0.7	2.2
Private demand	379.6	382.0	384.6	387.2	390.1	393.6	396.1	400.9	383.4	395.3	380.9	391.7
Q/q %, SAAR	2.1	2.6	2.7	2.8	3.0	3.6	2.6	4.9				
Y/y %	0.5	2.4	2.2	2.8	2.7	3.0	2.9	3.7	2.0	3.1	0.7	2.8
Final consumption	296.5	297.8	299.1	300.5	302.0	303.7	305.4	310.3	298.5	305.4	297.2	303.0
Q/q %, SAAR	1.4	1.9	1.8	1.9	2.0	2.3	2.3	6.6				
Y/y %	1.4	1.6	1.6	1.8	1.9	1.9	2.1	3.2	1.6	2.3	0.5	1.9
Residential investment	14.6	14.8	15.0	15.1	15.3	15.9	16.2	16.4	14.9	16.0	14.7	15.6
Q/q %, SAAR	6.1	5.3	4.2	3.5	5.6	15.5	8.5	6.4				
Y/y %	-4.5	4.2	6.0	4.9	4.7	7.1	8.2	8.9	2.7	7.3	-2.2	6.3
Non-residential investment	70.0	70.9	72.0	73.1	74.3	75.5	76.8	78.4	71.6	76.3	70.4	74.8
Q/q %, SAAR	4.5	5.3	6.1	6.4	6.7	6.9	7.2	8.6				
Y/y %	2.1	3.5	4.5	5.7	6.1	6.5	6.8	7.3	4.1	6.7	1.4	6.2
Change in inventories	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-2.3	-4.4	-1.5	-2.4	-1.5	-1.7
Public demand	125.8	125.9	125.9	126.1	126.3	126.4	126.6	126.9	125.9	126.6	125.9	126.4
Q/q %, SAAR	-0.3	0.1	0.2	0.5	0.5	0.6	0.6	0.7				
Y/y %	0.9	-0.5	-0.6	-0.1	0.6	0.5	0.5	0.5	-0.1	0.5	0.5	0.4
Government final consumption	101.9	102.3	102.6	103.0	103.4	103.8	104.1	104.5	102.4	103.9	102.1	103.6
Q/q %, SAAR	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5				
Y/y %	1.3	1.0	1.2	1.4	1.4	1.5	1.4	1.5	1.2	1.4	1.4	1.4
Fixed investment	23.9	23.6	23.3	23.1	22.9	22.7	22.5	22.4	23.4	22.6	23.8	22.8
Q/q %, SAAR	-7.0	-5.3	-4.7	-3.4	-3.4	-3.4	-3.1	-2.8				
Y/y %	-1.5	-5.8	-7.3	-5.3	-4.3	-3.6	-3.3	-3.1	-5.3	-3.5	-2.9	-4.1
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	-6.6	-6.4	-6.2	-6.0	-5.9	-6.0	-6.3	-8.1	-6.3	-6.6	-6.4	-6.0
Exports of goods and services	94.4	95.7	97.0	98.4	99.8	101.2	102.6	104.1	96.5	102.0	95.2	100.6
Q/q %, SAAR	4.9	5.3	5.7	5.8	5.7	5.8	5.7	5.9				
Y/y %	13.3	10.8	5.9	5.5	5.5	5.7	5.9	5.7	8.7	5.7	10.3	5.7
Imports of goods and services	101.0	102.0	103.2	104.4	105.7	107.2	108.8	112.2	102.7	108.5	101.6	106.6
Q/q %, SAAR	3.9	4.1	4.5	4.8	5.1	5.9	6.3	12.7				
Y/y %	4.5	0.9	-0.8	4.3	4.5	5.0	5.6	7.4	2.2	5.7	0.1	4.9

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)

	2013			2014			2015	FY		CY		
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3 (E)	2013	2014 (E)	2013	2014
Gross domestic expenditure	90.9	90.9	91.1	91.2	93.0	92.7	93.2	93.9	91.1	93.2	91.0	92.5
Q/q %, SAAR	-0.3	-0.0	0.2	0.1	1.9	-0.3	0.5	0.7				
Y/y %	-0.6	-0.3	-0.3	0.1	2.2	2.0	2.3	2.9	-0.3	2.4	-0.5	1.6
Private final consumption	93.1	93.3	93.9	93.8	95.6	95.6	95.8	95.6	93.5	95.6	93.3	95.2
Q/q %, SAAR	-0.1	0.3	0.7	-0.1	1.9	0.0	0.2	-0.2				
Y/y %	-0.7	0.3	0.6	0.8	2.7	2.4	2.0	1.9	0.3	2.2	-0.2	2.0
Private residential investment	104.8	105.5	106.9	106.8	109.8	109.7	110.3	110.2	106.1	110.0	105.3	109.1
Q/q %, SAAR	1.0	0.7	1.3	-0.1	2.8	-0.1	0.5	-0.1				
Y/y %	2.1	3.1	3.4	2.9	4.9	4.0	3.0	3.1	2.9	3.7	2.3	3.5
Private non-residential investment	94.9	95.2	95.3	95.5	96.1	96.2	96.6	96.3	95.3	96.3	95.0	96.1
Q/q %, SAAR	0.3	0.2	0.2	0.2	0.6	0.2	0.4	-0.3				
Y/y %	0.4	1.2	1.2	0.8	1.2	1.1	1.4	0.9	0.9	1.1	0.7	1.1
Government final consumption	96.5	96.6	96.4	97.6	98.4	98.8	99.0	98.9	96.7	98.7	96.7	98.4
Q/q %, SAAR	-1.4	0.1	-0.2	1.2	0.8	0.4	0.2	-0.1				
Y/y %	-0.1	-0.1	-0.5	-0.2	2.1	2.5	2.5	1.3	-0.2	2.1	-0.2	1.7
Public fixed investment	104.1	104.8	105.8	106.4	108.1	108.8	108.7	108.5	105.4	108.6	104.8	107.9
Q/q %, SAAR	0.1	0.6	1.0	0.6	1.6	0.7	-0.1	-0.2				
Y/y %	0.9	1.8	2.3	2.0	3.9	3.8	2.8	2.1	1.9	3.0	1.4	3.0
Exports of goods and services	92.8	94.2	94.8	94.0	94.2	95.9	98.7	98.7	94.0	97.0	93.2	95.8
Q/q %, SAAR	2.3	1.5	0.6	-0.8	0.2	1.8	2.9	0.0				
Y/y %	9.1	11.1	10.3	3.7	1.0	1.9	4.6	5.0	8.5	3.2	9.5	2.8
Imports of goods and services	119.7	123.0	125.2	124.9	123.0	127.2	128.7	123.0	123.4	125.5	121.4	126.0
Q/q %, SAAR	1.9	2.8	1.7	-0.2	-1.6	3.4	1.2	-4.5				
Y/y %	9.8	14.6	14.3	6.5	2.5	3.3	3.1	-1.6	11.3	1.7	11.7	3.8

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.

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

	2015			2016			2017		FY		CY	
	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
Gross domestic expenditure	93.8	93.9	94.0	94.1	94.3	94.4	94.6	94.6	93.9	94.4	93.9	94.3
Q/q %, SAAR	-0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0				
Y/y %	0.9	1.2	0.8	0.3	0.5	0.6	0.6	0.5	0.8	0.5	1.5	0.5
Private final consumption	95.4	95.5	95.7	95.8	96.0	96.2	96.5	96.7	95.6	96.4	95.5	96.1
Q/q %, SAAR	-0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2				
Y/y %	-0.2	-0.1	-0.1	0.3	0.6	0.8	0.8	0.9	-0.0	0.8	0.4	0.6
Private residential investment	110.3	110.5	110.8	111.0	111.4	111.8	112.2	112.6	110.6	112.0	110.4	111.6
Q/q %, SAAR	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4				
Y/y %	0.4	0.7	0.5	0.8	1.0	1.1	1.2	1.4	0.6	1.2	1.2	1.1
Private non-residential investment	96.3	96.4	96.6	96.9	97.1	97.4	97.8	98.1	96.6	97.7	96.4	97.3
Q/q %, SAAR	-0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.4				
Y/y %	0.3	0.2	-0.0	0.6	0.8	1.0	1.2	1.3	0.3	1.1	0.4	0.9
Government final consumption	99.0	99.1	99.2	99.3	99.4	99.5	99.6	99.7	99.1	99.5	99.0	99.4
Q/q %, SAAR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	0.6	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.4
Public fixed investment	108.6	108.8	109.1	109.4	109.8	110.2	110.5	110.9	109.0	110.5	108.8	110.0
Q/q %, SAAR	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.4				
Y/y %	0.4	0.0	0.4	0.8	1.1	1.3	1.3	1.4	0.4	1.3	0.8	1.1
Exports of goods and services	98.7	98.8	98.9	98.9	99.0	99.0	99.0	99.0	98.9	99.1	98.8	99.1
Q/q %, SAAR	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0				
Y/y %	5.0	2.9	-0.1	0.2	0.2	0.3	0.3	0.1	1.9	0.2	3.1	0.2
Imports of goods and services	123.1	123.2	123.3	123.5	123.6	123.8	124.0	124.2	123.3	124.0	123.2	123.8
Q/q %, SAAR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	0.2	-3.1	-4.3	0.4	0.4	0.5	0.6	0.6	-1.8	0.5	-2.3	0.5

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

	2013			2014			2015			FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3 (E)	2013	2014 (E)	2013	2014	
<b>1) Q/q %</b>													
GDP growth rate	0.8	0.4	-0.4	1.3	-1.7	-0.6	0.6	0.6	2.1	-0.9	1.6	0.0	
Domestic demand	0.7	0.7	0.2	1.7	-2.7	-0.6	0.3	0.4	2.6	-1.5	1.9	0.1	
Private demand	0.4	0.5	0.1	1.8	-2.9	-0.8	0.3	0.5	1.8	-1.7	1.2	-0.1	
Private consumption	0.5	0.2	-0.1	1.3	-3.1	0.2	0.2	0.3	1.5	-1.8	1.3	-0.8	
Residential investment	0.1	0.1	0.1	0.1	-0.3	-0.2	-0.0	0.1	0.3	-0.3	0.3	-0.2	
Private fixed investment	0.3	0.1	0.2	0.8	-0.7	-0.0	0.0	0.1	0.5	-0.0	0.1	0.6	
Change in private inventories	-0.4	0.1	-0.1	-0.4	1.3	-0.7	0.2	0.0	-0.5	0.5	-0.4	0.2	
Public demand	0.3	0.2	0.1	-0.2	0.1	0.1	0.0	-0.1	0.8	0.2	0.7	0.2	
Government final consumption	0.1	-0.0	0.0	-0.1	0.1	0.0	0.0	0.0	0.3	0.1	0.4	0.0	
Public fixed investment	0.1	0.2	0.0	-0.1	0.0	0.1	0.0	-0.1	0.5	0.1	0.4	0.2	
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	0.1	-0.4	-0.5	-0.3	1.1	0.1	0.2	0.2	-0.5	0.8	-0.3	-0.0	
Exports of goods and services	0.4	-0.1	-0.0	1.1	-0.1	0.3	0.5	0.4	0.7	1.2	0.2	1.3	
Imports of goods and services	-0.4	-0.3	-0.5	-1.3	1.1	-0.2	-0.3	-0.2	-1.2	-0.4	-0.5	-1.4	
<b>2) Y/y %</b>													
GDP growth rate	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.5	-1.3	2.1	-0.9	1.6	0.0	
Domestic demand	1.5	2.3	2.8	3.6	-0.2	-1.6	-1.4	-2.7	2.6	-1.5	1.9	0.1	
Private demand	0.9	1.3	1.7	3.2	-0.3	-1.8	-1.6	-2.9	1.8	-1.7	1.2	-0.1	
Private consumption	1.1	1.4	1.4	2.0	-1.7	-1.8	-1.5	-2.5	1.5	-1.8	1.3	-0.8	
Residential investment	0.2	0.3	0.3	0.4	-0.1	-0.4	-0.5	-0.5	0.3	-0.3	0.3	-0.2	
Private fixed investment	-0.0	0.2	0.4	1.7	0.3	0.2	0.1	-0.7	0.5	-0.0	0.1	0.6	
Change in private inventories	-0.4	-0.5	-0.4	-0.8	1.1	0.2	0.4	0.7	-0.5	0.5	-0.4	0.2	
Public demand	0.7	0.9	1.1	0.5	0.1	0.2	0.1	0.2	0.8	0.2	0.7	0.2	
Government final consumption	0.5	0.4	0.3	0.0	-0.0	0.1	0.1	0.2	0.3	0.1	0.4	0.0	
Public fixed investment	0.1	0.6	0.8	0.4	0.2	0.1	0.1	0.0	0.5	0.1	0.4	0.2	
Change in public inventories	-0.0	-0.0	0.0	0.1	0.0	0.1	-0.0	-0.0	0.0	0.0	-0.0	0.0	
Net exports of goods and services	-0.1	0.0	-0.5	-1.2	-0.2	0.2	1.0	1.3	-0.5	0.8	-0.3	-0.0	
Exports of goods and services	-0.0	0.5	0.9	1.4	0.9	1.2	1.7	1.0	0.7	1.2	0.2	1.3	
Imports of goods and services	-0.1	-0.5	-1.5	-2.7	-1.1	-1.0	-0.7	0.3	-1.2	-0.4	-0.5	-1.4	

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.

## 5.2 Contribution to Real GDP Growth by Component

	2015			2016			2017		FY		CY	
	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
<b>1) Q/q %</b>												
GDP growth rate	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.6	1.9	1.8	1.0	1.9
Domestic demand	0.5	0.4	0.4	0.4	0.4	0.5	0.3	0.8	1.3	1.7	0.3	1.7
Private demand	0.5	0.4	0.4	0.4	0.4	0.5	0.3	0.8	1.4	1.6	0.3	1.8
Private consumption	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.8	0.9	0.9	0.1	0.8
Residential investment	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	-0.1	0.2
Private fixed investment	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.8	0.1	0.7
Change in private inventories	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.1	-0.1	0.1	-0.0
Public demand	-0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	-0.0	-0.0
Government final consumption	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Public fixed investment	-0.1	-0.1	-0.1	-0.0	-0.0	-0.0	-0.0	-0.0	-0.2	-0.2	-0.2	-0.2
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	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-0.2	0.6	0.2	0.7	0.1
Exports of goods and services	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	1.2	1.0	1.2	1.0
Imports of goods and services	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.5	-0.6	-0.8	-0.5	-0.9
<b>2) Y/y %</b>												
GDP growth rate	1.1	2.2	2.1	2.0	1.8	1.9	1.8	1.9	1.9	1.8	1.0	1.9
Domestic demand	0.6	1.6	1.5	1.6	1.5	1.6	1.5	2.0	1.3	1.7	0.3	1.7
Private demand	0.5	1.7	1.7	1.7	1.5	1.6	1.5	2.0	1.4	1.6	0.3	1.8
Private consumption	0.9	1.0	1.0	0.9	0.7	0.7	0.7	1.3	0.9	0.9	0.1	0.8
Residential investment	-0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	-0.1	0.2
Private fixed investment	0.2	0.5	0.6	0.8	0.7	0.7	0.7	0.9	0.5	0.8	0.1	0.7
Change in private inventories	-0.5	0.1	0.0	-0.0	0.0	0.0	-0.1	-0.4	-0.1	-0.1	0.1	-0.0
Public demand	0.1	-0.1	-0.2	-0.1	0.0	0.0	-0.0	0.0	-0.1	0.0	-0.0	-0.0
Government final consumption	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Public fixed investment	-0.1	-0.2	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
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	0.7	0.7	0.5	0.3	0.3	0.3	0.2	-0.0	0.6	0.2	0.7	0.1
Exports of goods and services	1.4	1.3	1.0	0.9	1.0	1.0	1.0	1.0	1.2	1.0	1.2	1.0
Imports of goods and services	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	-0.8	-1.1	-0.6	-0.8	-0.5	-0.9

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

	2013			2014			2015		FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3 (E)	2013	2014 (E)	2013	2014
<b>1) World economy</b>												
Economic growth of major trading partners												
Y/y %	3.0	3.2	3.6	3.3	3.3	3.4	3.3	3.9	3.2	3.5	3.1	3.3
Crude oil price (WTI futures; \$/bbl)												
Y/y %	94.2	105.8	97.6	98.6	103.0	97.2	73.2	52.0	99.1	81.4	98.0	92.9
	0.9	14.8	10.6	4.5	9.4	-8.1	-25.0	-47.3	7.6	-17.9	4.1	-5.2
<b>2) US economy</b>												
Real GDP (chained [2009]; \$ bil; SAAR)												
Q/q %, SAAR	15,607	15,780	15,916	15,832	16,010	16,206	16,312	16,415	15,784	16,236	15,710	16,090
Y/y %	1.8	4.5	3.5	-2.1	4.6	5.0	2.6	2.6	2.3	2.9	2.2	2.4
Consumer Price Index (1982-84 avg=100)												
Q/q %, SAAR	232.2	233.5	234.1	235.2	237.0	237.7	236.9	236.0	233.8	236.9	233.0	236.7
Y/y %	0.4	2.2	1.1	1.9	3.0	1.1	-1.2	-1.6	1.4	1.3	1.5	1.6
Producer Price Index (Finished goods; 1982=100)												
Q/q %, SAAR	195.7	196.8	197.6	199.6	201.3	201.5	198.9	196.9	197.4	199.7	196.6	200.4
Y/y %	-1.4	2.2	1.6	4.2	3.4	0.5	-5.1	-4.0	1.3	1.2	1.2	1.9
FF rate (%) (Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	2.00	2.71	2.75	2.76	2.62	2.50	2.28	2.09	2.55	2.37	2.35	2.54
<b>3) Japanese economy</b>												
Nominal government final consumption												
Y tril; SAAR	98.6	98.6	98.6	99.4	100.6	101.2	101.5	101.6	98.8	101.2	98.8	100.7
Q/q %, SAAR	-2.9	0.1	-0.3	3.4	4.7	2.7	1.1	0.5	1.3	2.4	1.7	1.9
Y/y %	2.5	1.9	1.0	0.0	2.1	2.7	2.8	2.2	1.3	2.4	1.7	1.9
Nominal public fixed investment												
Y tril; SAAR	22.3	23.7	24.1	23.7	24.3	25.0	25.1	24.3	23.6	24.8	23.0	24.5
Q/q %, SAAR	13.4	26.6	6.9	-6.6	11.0	11.4	2.1	-11.7	12.4	5.1	9.5	6.7
Y/y %	4.5	16.0	18.8	8.7	8.3	5.9	4.5	3.1	12.4	5.1	9.5	6.7
Exchange rate (Y/\$)												
(Y/€)	98.8	98.9	100.4	102.8	102.1	103.9	114.5	119.0	100.2	109.9	97.6	105.8
	129.6	130.7	139.9	140.3	139.5	137.8	143.8	135.0	135.1	139.0	130.6	140.3
Call rate (end-period; %)												
	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Source: Compiled by DIR.

Notes: 1) Japanese consumption tax hike expected in April 2017.

2) Due to rounding, figures may differ from those released by the government.

E: DIR estimate.

## 6.2 Major Assumptions

	2015			2016			2017		FY		CY	
	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
<b>1) World economy</b>												
Economic growth of major trading partners												
Y/y %	3.8	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.7	3.6	3.7	3.6
Crude oil price (WTI futures; \$/bbl)												
Y/y %	55.8	57.1	58.3	59.6	60.8	62.1	63.3	64.6	57.7	62.7	55.8	61.5
	-45.8	-41.3	-20.3	14.6	9.0	8.8	8.6	8.4	-29.1	8.7	-39.9	10.1
<b>2) US economy</b>												
Real GDP (chained [2009]; \$ bil; SAAR)												
Q/q %, SAAR	16,524	16,631	16,737	16,847	16,957	17,076	17,187	17,294	16,685	17,129	16,577	17,017
Y/y %	2.7	2.6	2.6	2.7	2.6	2.8	2.6	2.5	2.8	2.7	3.0	2.7
Consumer Price Index (1982-84 avg=100)												
Q/q %, SAAR	237.1	238.3	239.4	241.0	242.1	242.9	243.6	245.4	239.0	243.5	237.7	242.4
Y/y %	1.9	2.1	1.8	2.8	1.7	1.4	1.2	2.9	0.9	1.9	0.4	2.0
Producer Price Index (Finished goods; 1982=100)												
Q/q %, SAAR	197.7	199.0	199.5	201.0	202.2	203.2	203.9	204.8	199.3	203.6	198.3	202.6
Y/y %	1.6	2.6	1.0	3.2	2.4	1.9	1.4	1.7	-0.2	2.1	-1.0	2.2
FF rate (%) (Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	0.25	0.25	0.50	0.75	1.00	1.25	1.50	1.75	0.75	1.75	0.50	1.50
	2.33	2.51	2.71	2.93	3.09	3.26	3.43	3.55	2.62	3.33	2.41	3.18
<b>3) Japanese economy</b>												
Nominal government final consumption												
Y triI; SAAR	101.9	102.3	102.6	103.0	103.4	103.8	104.1	104.5	102.4	103.9	102.1	103.6
Q/q %, SAAR	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.2	1.4	1.4	1.4
Y/y %	1.3	1.0	1.2	1.4	1.4	1.5	1.4	1.5	1.2	1.4	1.4	1.4
Nominal public fixed investment												
Y triI; SAAR	23.9	23.6	23.3	23.1	22.9	22.7	22.5	22.4	23.4	22.6	23.8	22.8
Q/q %, SAAR	-7.0	-5.3	-4.7	-3.4	-3.4	-3.4	-3.1	-2.8	-5.3	-3.5	-2.9	-4.1
Y/y %	-1.5	-5.8	-7.3	-5.3	-4.3	-3.6	-3.3	-3.1	-5.3	-3.5	-2.9	-4.1
Exchange rate (Y/\$)												
(Y/€)	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	119.8	120.0
	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
Call rate (end-period; %)												
	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Source: Compiled by DIR.

Notes: 1) Japanese consumption tax hike expected in April 2017.

2) Due to rounding, figures may differ from those released by the government.

E: DIR estimate.