Japan's Economic Outlook No. 185

Fed vs. ECB: Which Will Be More Influential?
In this report we examine the effects of
unconventional monetary policies in Japan, the US
and Europe.

Japan to see real GDP growth of +1.7% in FY15 and +1.8% in FY16, with nominal GDP growth of +2.6% in FY15 and +2.2% in FY16.

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Main Points

■ **Main economic scenario for Japan:** In light of the 1st preliminary Jan-Mar 2015 GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +1.7% in comparison with the previous year for FY15 (+1.9% in the previous forecast) and +1.8% in comparison with the previous year for FY16 (+1.8% in the previous forecast). 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 unconventional monetary policies in Japan, the US, and Europe, (2) Influence of the Fed vs. the ECB, and (3) The future of wages and capex spending in light of the distribution of corporate profits.

■ **Issue (1) The effects of unconventional monetary policies in Japan, the US, and Europe:** In this section we compare the effects of unconventional monetary policies implemented by central banks in Japan, the US, and Europe. We provide a general overview of unconventional monetary policies, while considering what the implications for the future might be. The data indicates that the Fed's LSAP series was especially effective in improving the real economy. LSAP in the US was followed by growth in stock prices, as well as a major asset effect due to the high shareholding ratio of households in comparison to other countries. This in turn led to

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Economic Research

major growth in personal consumption. Meanwhile, the BOJ's QQE I had a major effect on CPI. The BOJ's monetary policy has not had a great effect on the real economy, but the realization of a major depreciation in Japan's currency has provided strong upward pressure on CPI.

- **Issue (2) Which will be more influential? The Fed or the ECB?:** There are fears that when the US raises federal fund rates this will have a negative effect on the world economy. Meanwhile, there are hopes that the ECB's quantitative monetary easing will provide underlying support for the world economy. Our estimates using the DIR macro model indicate that the Fed's actions will carry a stronger influence on both world economy and Japan's economy than will the ECB's. However, as long as the Fed raises interest rates at a pace which carries a neutral effect on the US economy, no major fears are needed. Meanwhile, improvement in the balance sheets of the emerging nations has brought a reduction in risk of a currency crisis. The biggest tail risk is the possibility of the collapse of China's economic bubble in association with the raising of US interest rates. China's monetary easing measures will provide underlying support to a certain extent, but doing what is necessary to resolve the intrinsic problems in that economy is being delayed. Therefore an amplified margin of correction will be unavoidable in the future.

- **Issue (3) Future of wages and capex spending in light of distribution of corporate profits:** Corporate earnings continue to progress at a high level, bringing increasing focus on what corporations plan to do to distribute the newly acquired wealth as a means of moving Japan's economy closer to a virtuous circle. Here we consider the future of wages and capex spending from the viewpoint of distribution of corporate profits. Small businesses in the non-manufacturing sector, where the labor shortage is strongly felt and labor's relative share is on the high side, the growth in personnel expenses is bringing pressure on earnings, and there is a strong possibility that this will inhibit capex spending. Our outlook for Japan's economy sees rising operating rates associated with rising operating rates and a continuation of the trend toward expansion in corporate earnings, leading in turn toward a continuation of the growth trend in capex spending as seen on the macro level. However, it should be noted that this trend will be centered for the most part on large corporations in the manufacturing sector.

- **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 due to loss of fiscal discipline, (2) The danger of China's economic bubble collapsing, (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%. We expect additional monetary easing measures by the BOJ to take place at the beginning of fall in 2015.

Our assumptions
- Public works spending is expected to decline by -5.2% in FY15, and -3.7% in FY16. An additional consumption tax hike is planned for April 2017.

- Average exchange rate of Y119.9/$ in FY15 and Y120.0/$ in FY16.

- US real GDP growth of +2.3% in CY15 and +2.7% in CY16.

Main Economic Indicators and Real GDP Components

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	FY14	FY15 (Estimate)	FY16 (Estimate)	CY14	CY15 (Estimate)	CY16 (Estimate)
Main economic indicators						
Nominal GDP (y/y %)	1.4	2.6	2.2	1.6	2.6	2.1
Real GDP (chained [2005]; y/y %)	-1.0	1.7	1.8	-0.1	0.8	1.8
Domestic demand (contribution, % pt)	-1.6	1.2	1.6	-0.1	0.3	1.6
Foreign demand (contribution, % pt)	0.6	0.6	0.2	0.0	0.6	0.2
GDP deflator (y/y %)	2.5	0.9	0.4	1.7	1.8	0.3
Index of All-industry Activity (y/y %)*	-1.5	1.7	2.5	-0.3	0.8	2.0
Index of Industrial Production (y/y %)	-0.3	1.9	4.9	2.1	0.8	3.9
Index of Tertiary Industry Activity (y/y %)	-1.7	2.1	1.9	-0.8	1.3	1.6
Corporate Goods Price Index (y/y %)	2.8	-1.3	0.9	3.2	-1.5	1.0
Consumer Price Index (excl. fresh food; y/y %)	2.8	0.4	1.1	2.6	0.6	1.0
Unemployment rate (%)	3.6	3.3	3.1	3.6	3.4	3.2
Government bond yield (10 year; %)	0.46	0.47	0.70	0.53	0.42	0.64
Money stock; M2 (end-period; y/y %)	3.3	3.4	4.0	3.4	3.4	3.9
Balance of payments						
Trade balance (Y tril)	-6.5	0.1	0.1	-10.4	0.1	0.5
Current balance ($100 mil)	673	1,419	1,495	250	1,366	1,506
Current balance (Y tril)	7.7	17.0	17.9	2.6	16.3	18.1
(% of nominal GDP)	1.6	3.4	3.5	0.5	3.3	3.5
Real GDP components						
(Chained [2005]; y/y % ; figures in parentheses: contribution, % pt)						
Private final consumption	-3.1 (-1.9)	1.7 (1.0)	1.4 (0.8)	-1.3 (-0.8)	0.2 (0.1)	1.2 (0.7)
Private housing investment	-11.6 (-0.4)	1.8 (0.0)	5.9 (0.1)	-5.1 (-0.2)	-3.3 (-0.1)	4.8 (0.1)
Private fixed investment	-0.5 (-0.1)	3.0 (0.4)	5.5 (0.8)	3.9 (0.5)	0.3 (0.0)	5.1 (0.7)
Government final consumption	0.5 (0.1)	0.9 (0.2)	1.0 (0.2)	0.3 (0.1)	0.8 (0.2)	1.0 (0.2)
Public fixed investment	2.0 (0.1)	-6.0 (-0.3)	-4.9 (-0.2)	3.8 (0.2)	-3.9 (-0.2)	-5.5 (-0.3)
Exports of goods and services	8.0 (1.3)	8.0 (1.4)	5.7 (1.1)	8.4 (1.4)	8.3 (1.5)	5.8 (1.1)
Imports of goods and services	3.7 (-0.7)	5.3 (-0.8)	5.3 (-0.8)	7.4 (-1.4)	4.3 (-0.9)	4.6 (-0.9)
Major assumptions:						
1. World economy						
Economic growth of major trading partners	3.4	3.4	3.5	3.3	3.4	3.5
Crude oil price (WTI futures; $/bbl)	80.5	60.2	63.8	92.9	56.9	62.9
2. US economy						
US real GDP (chained [2009]; y/y %)	2.7	2.2	2.7	2.4	2.3	2.7
US Consumer Price Index (y/y %)	1.3	0.6	1.9	1.6	0.1	2.0
3. Japanese economy						
Nominal public fixed investment (y/y %)	5.2	-5.2	-3.7	6.8	-2.7	-4.4
Exchange rate (Y/$)	109.9	119.9	120.0	105.8	119.6	120.0
(Y/€)	138.4	134.8	135.0	140.3	134.2	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 185)		Previous outlook (Outlook 184 update)		Difference between previous and current outlooks	
	FY15	FY16	FY15	FY16	FY15	FY16
Main economic indicators						
Nominal GDP (y/y %)	2.6	2.2	2.7	2.4	-0.1	-0.2
Real GDP (chained [2005]; y/y %)	1.7	1.8	1.9	1.8	-0.2	-0.0
Domestic demand (contribution, % pt)	1.2	1.6	1.3	1.7	-0.1	-0.1
Foreign demand (contribution, % pt)	0.6	0.2	0.6	0.2	-0.0	0.0
GDP deflator (y/y %)	0.9	0.4	0.8	0.6	0.1	-0.2
Index of All-industry Activity (y/y %)*	1.7	2.5	2.1	2.5	-0.4	-0.0
Index of Industrial Production (y/y %)	1.9	4.9	4.6	4.9	-2.7	-0.0
Index of Tertiary Industry Activity (y/y %)	2.1	1.9	1.5	1.9	0.6	0.0
Corporate Goods Price Index (y/y %)	-1.3	0.9	-1.5	0.9	0.2	-0.0
Consumer Price Index (excl. fresh food; y/y %)	0.4	1.1	0.3	1.1	0.0	-0.0
Unemployment rate (%)	3.3	3.1	3.3	3.2	0.0	-0.1
Government bond yield (10 year; %)	0.47	0.70	0.52	0.73	-0.05	-0.03
Money stock; M2 (end-period; y/y %)	3.4	4.0	3.4	4.0	0.0	0.0
Balance of payments						
Trade balance (Y tril)	0.1	0.1	-1.3	-1.2	1.4	1.3
Current balance ($100 mil)	1,419	1,495	1,485	1,584	-66	-90
Current balance (Y tril)	17.0	17.9	17.8	19.0	-0.8	-1.1
(% of nominal GDP)	3.4	3.5	3.5	3.7	-0.2	-0.2
Real GDP components (chained [2005]; y/y %)						
Private final consumption	1.7	1.4	1.8	1.5	-0.1	-0.1
Private housing investment	1.8	5.9	1.9	6.0	-0.1	-0.0
Private fixed investment	3.0	5.5	3.8	5.5	-0.8	0.0
Government final consumption	0.9	1.0	1.0	1.0	-0.1	-0.0
Public fixed investment	-6.0	-4.9	-5.6	-4.8	-0.4	-0.0
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Crude oil price (WTI futures; $/bbl)	60.2	63.8	57.7	62.7	2.5	1.0
2. US economy						
US real GDP (chained [2009]; y/y %)	2.2	2.7	2.7	2.7	-0.5	0.1
US Consumer Price Index (y/y %)	0.6	1.9	0.9	1.9	-0.3	-0.0
3. Japanese economy						
Nominal public fixed investment (y/y %)	-5.2	-3.7	-5.2	-3.6	0.0	-0.1
Exchange rate (Y/$)	119.9	120.0	120.0	120.0	-0.1	0.0
(Y/€)	134.8	135.0	130.0	130.0	4.8	5.0
Call rate (end-period; %)	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.

Contents

Summary

Main economic scenario for Japan

In light of the 1st preliminary Jan-Mar 2015 GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +1.7% in comparison with the previous year for FY15 (+1.9% in the previous forecast) and +1.8% in comparison with the previous year for FY16 (+1.8% in the previous forecast). 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.

Second consecutive quarter of growth achieved; performance exceeds market consensus

The real GDP growth rate for Jan-Mar 2015 (1st preliminary est) grew by +2.4% q/q annualized (+0.6% q/q). This is the second consecutive quarter of growth in GDP, and reconfirms that the economy is back on track and in a moderate growth phase. First quarter results were positive on three major points: (1) The pace of economic growth has accelerated in comparison to the previous quarter, (2) Performance exceeded market consensus (+1.6% q/q annualized and +0.4% q/q), and (3) Capital spending (capex), which had been in a downtrend until now, achieved a turnaround in the positive direction. Moreover, two important factors were behind the 1st quarter's performance, which exceeded market expectations: (1) Favorable growth in personal consumption, which was expected to slow down in previous forecasts, and (2) Inventory investment increased beyond expectations.

The real GDP growth rate on an annualized basis in FY2014 declined by -1.0%, the first decline in growth in five years (since FY2009). This was due to the downward pressure brought on the economy by the increase in consumption tax in April of that year. As of January 2014 before the consumption tax was raised, the government outlook for growth in FY2014 was +1.4% (*Fiscal 2014 Economic Outlook and Basic Stance Toward Fiscal Management, Cabinet Decision on January 24, 2014*), the Bank of Japan Policy Committee outlook was for +1.4% or middle of that range (*Midterm Evaluation, January 22, 2014*), and private sector economists came to a consensus of +0.84% (*January 2014 ESP Forecast Total Average Value*). All major sources issued outlooks for positive growth, but the effects of the increase in consumption tax were much larger than expected, ultimately resulting in a major downturn in the economy.

Personal consumption achieves a high while capex makes a comeback

Performance by demand component in the Jan-Mar 2015 results shows personal consumption up +0.4% q/q, its third consecutive quarter of growth, continuing in a moderate growth trend. Real employee compensation was up by +0.6% q/q for the third consecutive quarter, due to improvements in household employment and income environments, and contributing also to growth in personal consumption. In previous forecasts many sources expected the pace of growth in personal consumption to slow down in comparison with the Oct-Dec 2014 results (+0.4%), but the firm undertone continued thanks to gains in all personal consumption sectors, including goods and services. Looking at personal consumption by category, we see a comeback in durables though automobiles showed somewhat weak performance. This was balanced out by a moderate comeback for household electronics, which helped durables to register growth for the second consecutive quarter at +1.1% q/q. Semi-durables were up by +0.6% q/q, while non-durables were up by +0.4% q/q, both registering growth for the third consecutive quarter. This shows the comeback is continuing after the downtrend experienced subsequent to the increase in the consumption tax in 2014. Services also won growth for the second consecutive quarter at +0.4%. Looking at the level of performance we can conclude that the effects of the increase in consumption tax have pretty much run their course.

Housing investment grew for the first time in four quarters at +1.8%. Looking at the trend in new housing starts, a leading indicator for housing investment as a portion of GDP, pressures stemming

from the reactionary decline after last year's consumption tax increase appear to be gradually easing up, and the employment and income environment affecting households is improving, while interest on housing loans is at a low. These factors have helped housing starts make a gradual comeback since the Oct-Dec period of 2014. Housing investment and housing starts are recorded on a progressive basis, hence there is a lag in their performance, and only now do we see that housing investment has hit bottom with a shift into a growth trend seen after the Jan-Mar 2015 period.

Capex grew by +0.4% q/q for the first time in four quarters, showing that it is now back into a growth trend after having been in a downtrend for some time. The sense of overcapacity is easing up amongst corporations and is being replaced by a sense of under-capacity. Improvements can be seen in corporate earnings due to the weak yen, especially in the area of major manufacturers, and this should provide underlying support for capex spending in the future.

Public investment was down by -1.4% q/q. Front-loading the FY2013 supplementary budget and the FY2014 budget helped to accelerate public investment all the way through the Oct-Dec 2014 period, but the positive effect is gradually running out, leading to the first decline in four quarters.

Exports grew for the third consecutive quarter at +2.4% q/q. Exports to the US and EU helped to push overall figures up, while imports also managed a comeback at +2.9% q/q thanks to a comeback in domestic demand. This constituted the third consecutive quarter of growth for imports. Growth in imports brought downward pressure on overseas demand (net exports) causing a slight decline at -0.2%pt q/q. This was the first time in four quarters that overseas demand declined.

The GDP deflator grew for the second consecutive quarter at +1.3% q/q. Growth was considerably more than the previous quarter (+0.4%). The domestic demand deflator was down by -0.3% q/q, its first decline in seven quarters. The collapse in the price of crude oil at the end of 2014 caused the import deflator to decline considerably, while pushing up overall figures. (the import deflator tends to move in the opposite direction of the GDP deflator). In y/y terms the GDP deflator was up by +3.4%, its fifth consecutive quarter of growth, with growth rate exceeding that of the previous period. Meanwhile, nominal GDP was up for the second consecutive quarter at +7.7% q/q annualized (+1.9% q/q).

Japan's economy expected to continue expanding

Japan's economy is expected to continue growing at a moderate pace in the future. We expect real GDP to continue this growth trend during the Apr-Jun 2015 period and beyond. We also see personal consumption continuing in a moderate growth trend, and capex to move unambiguously toward a comeback.

As for personal consumption, the positive environment for households in the areas of employment and income is expected to lead to an improvement in the propensity to consume, and this will be the major impetus in the continuation of the growth trend. According to the Keidanren survey (preliminary results), wages are expected to grow around +0.7% y/y due to this year's pay scale increase, pushing revised pension amounts for FY2015 up +0.9% as compared to -0.7 in FY2014. With improvements in corporate earnings, summer bonuses are expected to grow for the third year in a row, bringing another plus factor into the mix. This is expected to begin showing up in increases in household disposable income by around May and promises to become a factor in increasing personal consumption a little further up the road. Meanwhile, the price of crude oil, which has experienced steep declines since the summer of 2014 is expected to continue at a low in the immediate future. There tends to be a time lag in the effects of this phenomenon, meaning that the consumer price will see downward pressure and real household wages will get a boost. Personal consumption should also increase as a side effect. Meanwhile, housing investment is expected to be free of the effects of the reactionary decline after the increase in consumption tax last year, and backed by improvements in the employment and income

environment, is expected to move toward a moderate recovery now that housing starts, a leading indicator, are clearly making a comeback.

As for capex, a moderately paced comeback is expected. Machinery orders, another leading indicator, are expected to continue in a growth trend, while the BOJ Tankan indicates that capex activities are reflecting a steady undertone. 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 the 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. Moreover, considering the increase in exports and the results of the indices of industrial production, moderate growth in production and capacity utilization is seen despite some weakness seen in this area.

As for exports, moderate growth is seen continuing as overseas economies gradually recover. As for the US economy, the real GDP growth rate experienced a major slowdown during the Jan-Mar 2015 period, though certain negative factors, such as the effects of bad weather on the winter period and the collapse in the price of natural resources, as well as the one-sided strength of the dollar, are easing up somewhat, while the expected increase in interest rates is now to be delayed, the economy is now expected to pull off a sure recovery after the Apr-Jun period. The recovery in the US economy is expected to help not only Japan's exports to the US, but exports of Japanese intermediate goods to Asia since the US is the location of final demand for many goods. 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 continuing favorably. As for China, whose economy has experienced slower growth recently, positive factors are now developing including the People's Bank of China showing stronger interest in monetary easing, bringing expectations that moderate growth can be maintained on into the future and that the economy's back will not be broken due to recent developments.

Three issues facing Japan's economy

In this report we examine the following three issues facing Japan's economy. (1) The effects of unconventional monetary policies in Japan, the US, and Europe, (2) Influence of the Fed vs. the ECB, and (3) The future of wages and capex spending in light of the distribution of corporate profits.

Issue (1): The effects of unconventional monetary policies in Japan, the US, and Europe

In this section we compare the effects of unconventional monetary policies implemented by central banks in Japan, the US, and Europe. We provide a general overview of unconventional monetary policies, while considering what the implications for the future might be. The data indicates that the Fed's LSAP series was especially effective in improving the real economy. Large-scale asset purchases (LSAP) in the US were followed by growth in stock prices, as well as a major asset effect due to the high shareholding ratio of households in comparison to other countries. This in turn led to major growth in personal consumption. Meanwhile, the Bank of Japan's quantitative and qualitative monetary easing measures (QQE I) had a major effect on the consumer price index (CPI). The BOJ's monetary policy has not had a great effect on the real economy, but the realization of a major depreciation in the country's currency has provided strong upward pressure on CPI.

Issue (2): Which will be more influential? The Fed or the ECB?

There are fears that when the US raises federal fund rates this will have a negative effect on the world economy. Meanwhile, there are hopes that the ECB's quantitative monetary easing will provide underlying support for the world economy. Our estimates using the DIR macro model indicate that the Fed's actions will carry a stronger influence on both world economy and Japan's economy than will

the ECB's. However, as long as the Fed raises interest rates at a pace which carries a neutral effect on the US economy, no major fears are needed. Meanwhile, improvement in the balance sheets of the emerging nations has brought a reduction in risk of a currency crisis. The biggest tail risk is the possibility of the collapse of China's economic bubble in association with the raising of US interest rates. Europe and China's monetary easing measures will provide underlying support to a certain extent, but doing what is necessary to resolve the intrinsic problems in that economy is being delayed. Therefore an amplified margin of correction will be unavoidable in the future.

Issue (3): Future of wages and capex spending in light of distribution of corporate profits

Corporate earnings continue to progress at a high level, bringing increasing focus on what corporations plan to do to distribute the newly acquired wealth as a means of moving Japan's economy closer to a virtuous circle. Here we consider the future of wages and capex spending from the viewpoint of distribution of corporate profits. Small businesses in the non-manufacturing sector, where the labor shortage is strongly felt and labor's relative share is on the high side, the growth in personnel expenses is bringing pressure on earnings, and there is a strong possibility that this will inhibit capex spending. Our outlook for Japan's economy sees rising operating rates associated with rising operating rates and a continuation of the trend toward expansion in corporate earnings, leading in turn toward a continuation of the growth trend in capex spending as seen on the macro level. However, it should be noted that this trend will be centered for the most part on large corporations in the manufacturing sector.

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 due to loss of fiscal discipline, (2) The danger of China's economic bubble collapsing, (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%. We expect additional monetary easing measures by the BOJ to take place at the beginning of fall in 2015.

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

1.1 Is This Time Different?

Nikkei stock average recovers – hits the 20,000 yen barrier

The Nikkei stock average recovered to its previous high, hitting the 20,000 yen barrier in the closing price on April 22, 2015 (Chart 1). This is the first time the Nikkei average hit the 20,000 yen level since April 14, 2000 – fifteen years ago. The major underlying reasons for this positive performance are the weak yen which has progressed since Abenomics policies went into play, the recovery of the domestic economy accompanying favorable corporate business performance, and additional monetary easing measures implemented in China and Europe, which have led to the continuation of the trend toward risk-on behavior around the world. After the Nikkei average hit its high in April, the market went into a temporary adjustment phase due to a cautious attitude on the part of investors towards high prices, then later continued its growth trend in response to favorable corporate business results and stock price highs in the US.

From a macro-economic viewpoint, how should we interpret the recent stock price highs? Taking a look at the relationship between the stock price index based on market capitalization (TOPIX) and nominal GDP, we see that historically, TOPIX has generally moved within a range of 2-8-months-worth of nominal GDP performance (Chart 2). However, after Japan's economic bubble burst, even when TOPIX rose, it would hit the ceiling at the level of 4 months of nominal GDP performance and then fall into a decline again. This pattern was repeated many times over. Some are of the opinion that the recent stock price highs indicate the market is overheating. Indeed, TOPIX is now about mid-range in terms of nominal GDP, meaning that it would be assumed to have hit the ceiling if we interpret this behavior in terms of the paradigm of Japan's Lost Decades after the bursting of the economic bubble.

But should we be thinking along the same lines now? The Abenomics effect has gotten Japan's economy moving toward its hoped for revitalization, while corporate finances improve and earning capacity strengthens. This question as to whether the recent rally in stock prices is different from last time is asked in the 2009 worldwide bestseller, This Time Is Different.[1] In this section we examine the long-term trends in fundamental macro-economic indices and consider the basic characteristics of the current rally in stock prices.

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[1] *This Time is Different: Eight Centuries of Financial Folly*, by C.M. Reinhart and K.S. Rogoff, Princeton University Press (2009).

The Nikkei Stock Average and the Effective Exchange Rate

Chart 1

Legend:
— Nikkei Average
--- Nominal Effective Exchange Rate (Right Axis, Inverse Scale)
— Real Effective Exchange Rate (Right Axis, Inverse Scale)
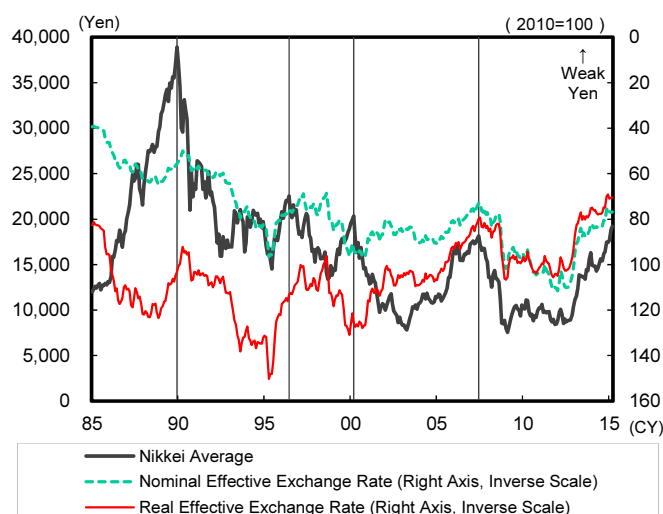
Source: The Nikkei, the Bank of Japan; compiled by DIR.
Note: Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.

TOPIX and Nominal GDP

Chart 2

Source: Cabinet Office, Tokyo Stock Exchange; compiled by DIR.

The three excesses which have plagued corporations: then and now
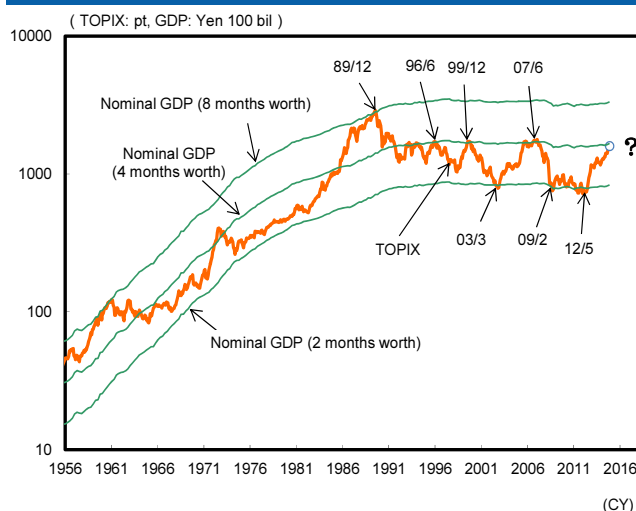
First of all, it should be emphasized that the type of overheating experienced in the housing and real estate markets during the bubble era are simply not to be seen anywhere at this time. Looking at real estate price valuation as seen in the real estate prices/rental relationship, we see that since 1991, real estate prices and rentals have experienced a continuous, long-term decline. It can be easily concluded that there is no sense at all that real estate prices are overvalued at this time (Chart 3). The number of housing starts per 1,000 households has declined to half that seen during the bubble era, and in recent years, the percentage of existing housing stock which remains vacant has been on the increase. Considering these facts, it cannot be concluded that the current new housing supply is in excess.

Next we consider changes in *the three excesses* which plagued Japanese corporations after the economic bubble burst. These are the employment situation, capex and corporate debt.

First, in regard to the employment situation, we look at the supply and demand of labor affecting corporations as indicated in the BOJ Tankan under the category "Employment Conditions DI (corporations of all sizes and all industries)." In March 2013, three months after the inauguration of the second Abe cabinet in December 2012, this category was declared to be "insufficient", and the shortage of employees has only worsened since (Chart 4). This appears to be mainly small businesses in the non-manufacturing area in construction, retailing, and accommodation, eating and drinking services, where the manpower shortage has been increasing. If we look at the cyclical unemployment rate (DIR estimate), which moves up and down with the business cycle, this figure has dropped to around zero recently. It appears that the labor market in Japan is experiencing an increasingly tight supply and demand situation.[2]

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[2] The cyclical unemployment rate was calculated by subtracting the Structural unemployment rate (which is not affected by business cycle factors such as employment mismatch) from the overall unemployment rate. Cyclical unemployment rate = Overall unemployment rate – Structural unemployment rate.

Housing and Real Estate
Chart 3

(March 1991 = 100) (Number of Houses (Annualized) / 1,000 Households)

Legend:
- Real Estate Prices/Rentals
- Housing Starts Per 1,000 Households (Right Axis)

(CY)

Source: The Nikkei, Japan Real Estate Institute, Ministry of Land, Infrastructure, Transport and Tourism, Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.

Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.
2) Real estate prices according to Indices of Urban Land Prices, housing rentals according to CPI.
3) Number of households according to linear interpolation of data. Years with no data available (2014 on) are assumed to be flat.

The Employment Situation
Chart 4

(Surplus - Shortage %pt) (%)

Legend:
- Employment Conditions DI
- Cyclical Unemployment Rate (Right Axis)

(CY)
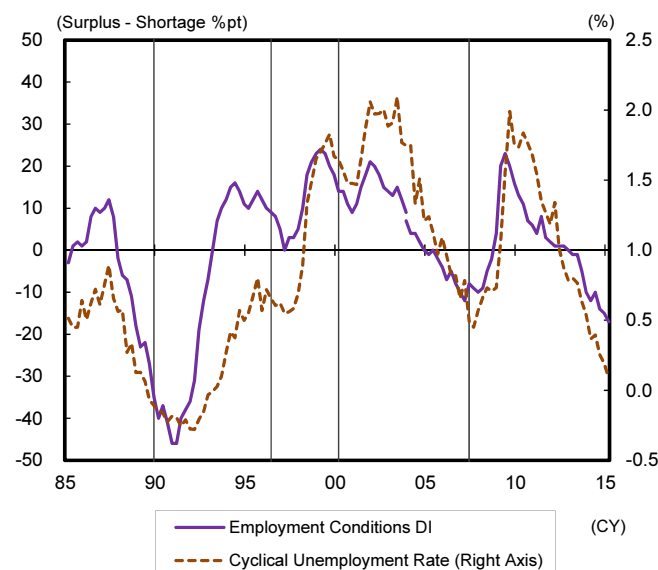
Source: The Nikkei, Bank of Japan, Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.

Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.
2) Employment Conditions DI includes corporations of all sizes and all industries, cyclical unemployment rate estimated by DIR.

Next is the question of capex. The ratio of capital spending to cash flow has declined significantly, hovering at a low level in recent years (Chart 5). This indicates that corporations are holding down capital spending relative to the profits they have been bringing in, and that they retain a cautious attitude toward capital spending even as corporate profits continue to improve. The BOJ Tankan category of production capacity DI (corporations of all sizes and all industries) has been in a downward trend since the middle of 2013 and is now close to zero. From a macro perspective, the sense of overcapacity has pretty much dissolved.

Our third question is related to corporate debt. Here too the sense of excess has resolved. The ratio of interest expenses to interest bearing liability and net assets of Japanese corporations remained flat for a while after the economic bubble burst in 1990. Corporations began working at reducing their interest bearing liabilities and by the end of the 1990s, the ratio began to decline, finally heading toward the dissolving of excessive debt (Chart 6). Moreover, corporations are also working toward reinforcing their operating foundations by increasing their net worth. As for corporate financing, the BOJ Tankan indicates that the financial position DI (corporations of all sizes and all industries) has recently recovered to where it was during the early 1990s after a major deterioration suffered during the US financial crisis of 2008. Things have improved since the recovery of Japan's domestic economy and the BOJ's bold monetary easing measures.

Now to sum things up, no bubble-like overheating has been observed in Japan's current housing and real estate market, and *the three excesses*, the major factors in Japan's long-term stagnation, can also be concluded to have been resolved. The current Japanese economy is moving toward the perfect opportunity to completely shed itself of the Lost Decades, leaving behind the negative legacy of the past.

Capital Spending Conditions
Chart 5
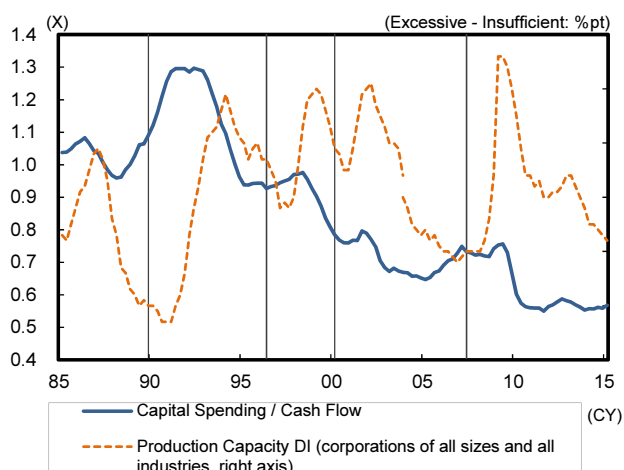
Legend:
— Capital Spending / Cash Flow
- - - Production Capacity DI (corporations of all sizes and all industries, right axis)

(CY)

Source: The Nikkei, Ministry of Finance, Bank of Japan; compiled by DIR.
Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.
2) Capital spending to cash flow uses the four quarter moving average value. Corporations of all sizes and all industries (excluding finance and insurance).

Condition of Liabilities
Chart 6

Legend:
— Ratio of Interest Bearing Liabilities to Net Assets
- - - Equity Ratio (Right Axis)
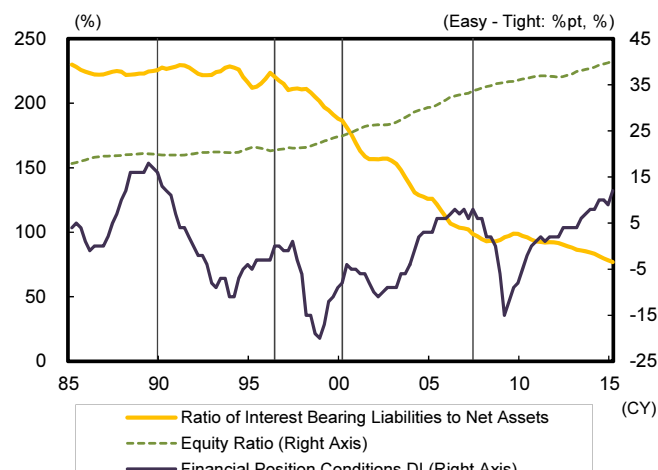— Financial Position Conditions DI (Right Axis)

(CY)

Source: The Nikkei, Ministry of Finance, Bank of Japan; compiled by DIR.
Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.
2) Ratio of interest bearing liabilities and equity ratio use the four quarter moving average value. Corporations of all sizes and all industries (excluding finance and insurance).
3) Financial position conditions DI includes corporations of all sizes and all industries.

Steady improvement in corporate earnings power enabling performance to break through past barriers

As a part of our macro-economic assessment of the recent rally in stock prices, we now take a look at changes in corporate earnings power. According to corporate statistics, recurring profits hit a historic high during the Oct-Dec period of 2014 (Chart 7). This was due to considerable progress which has been made in the improvement of business performance, especially for export driven manufacturers, associated with the development of a progressively cheap yen since the fall of 2012, in addition to the recovery of the domestic economy, which has helped non-manufacturing corporations to continue to move toward improved business performance. Looking at ROA (return on assets based on recurring profits – the ratio used to measure corporate earning power), we see that corporate finances have been improving, with corporate earning power having risen to about the level it was just before the US financial crisis of 2008. Furthermore, if we look at changes in the break-even point, the ratio which indicates corporate profitability, we see that there has been a continuing trend towards decline (indicating improvement) since late 2009. Currently the level is below that seen during the bubble era.

Considering the current situation in which corporate recurring profits, earning power, and profitability are on the rise, the possibility that TOPIX may soon break through the 4-months-worth of nominal GDP barrier has begun to take on the appearance of reality.

Bringing an end to deflation and implementing a bold growth strategy are the next tasks to accomplish

In closing I would like to touch upon some future issues. First of all, though Japan's economy may no longer be in a deflationary situation in the sense of the continuous decline in prices, it has yet to bring an end completely to deflation. When it comes to the stock market there's an old saying that you should buy during an inflationary period and sell when there's deflation. If Japan's economy runs into another deflationary period stock prices will likely fall. Bringing an end to deflation for good is an

important task not only for the revitalization of Japan's economy overall, but for long-term growth in stock prices as well.

In order to bring an end to deflation, the growth rate of nominal wages must exceed the rate of inflation. If we do a year-to-year comparison of regular base pay (based on businesses with 30 employees or more), we see that the extent of negative growth shrank significantly soon after the beginning of 2014, whereas recently it has been moving in the positive range (Chart 8). However, this is not enough to say with confidence that growth in wages has become entrenched or that it has exceeded the rate of inflation. As for the future, agreements reached in recent labor negotiations and improvements in corporate earnings are expected to bring a base wage increase rate exceeding that of the previous year. Summer bonuses are also expected to grow for the third consecutive year. These developments are expected to contribute to growth in the nominal GDP in May and beyond.

At the same time, we must take heed of the fact that the expected growth rate of corporations has not risen. The expected growth rate (which covers the next five years) was over 3% during Japan's bubble era, but fell into a long-term decline once the bubble burst. Just recently it had risen as far as the 1% and a half level. While the favorable corporate sector brings positive influence on the personal sector through improvements in the employment and income environments, increasing the anticipated growth rate of corporations by strengthening the *Third Arrow* of Abenomics (growth strategy) remains a pressing issue.

The above considerations should reconfirm the importance of the tasks which have already been set before the Japanese economy for some years now and which have been put in perspective by the growth in the stock market. These are (1) bringing an end to deflation, and (2) implementing a bold growth strategy.

Corporate Earnings Situation

Chart 7
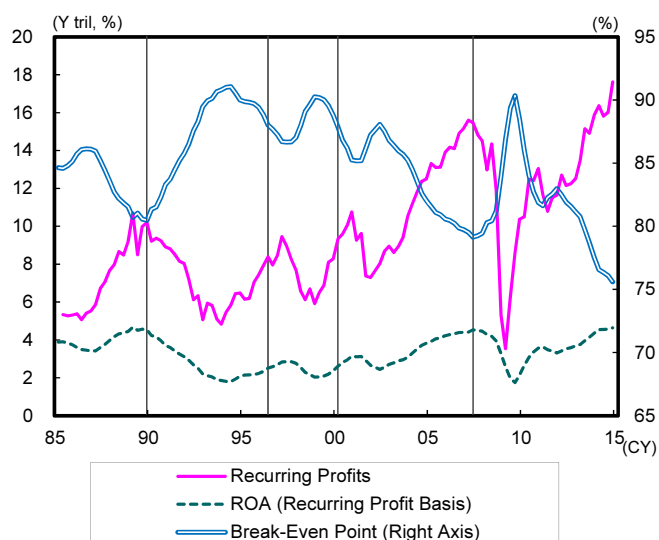
Source: The Nikkei, Ministry of Finance; compiled by DIR.
Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.
2) ROA and the break-even point are four quarter moving average values. Covers corporations of all sizes and all industries (excluding finance and insurance).

Prices, Wages, and Anticipated Growth Rate

Chart 8
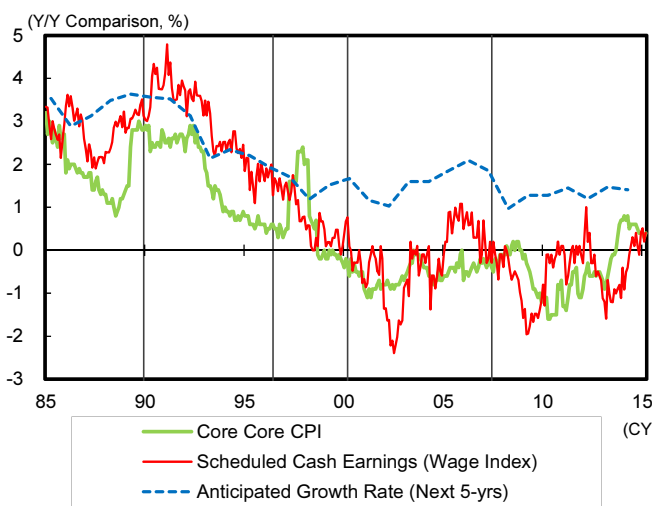
Source: The Nikkei, Ministry of Internal Affairs and Communications, Bank of Japan, Ministry of Health, Labour and Welfare, Cabinet Office; compiled by DIR.
Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.
2) Influence of core core CPI at the time the consumption tax was increased in April 2014 makes use of data from the BOJ, which was then adjusted by DIR.
3) The anticipated growth rate is an outlook covering the next five years. Results were used from each fiscal year covered, and that figure applied to April of the fiscal year in question.

1.2 Main Economic Scenario for Japan

Japan's economy is expected to move toward a moderate recovery

Japan's economy is seen as having entered a recession since peaking in January 2014. However, the downtrend appears to have ended fairly quickly. 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, which should bring a moderate recovery.

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 two consecutive quarters starting in the Oct-Dec 2014 period. The coincident index had also been deteriorating, but began heading toward a comeback after bottoming out in August. With its peak in January 2014, it appears that the economy may have fallen into a recession, but ended in around August, making it a fairly short one. The economy began expanding again in around September and beyond. (See Chart 9.) Most recently, the coincident index has come under some downward pressure due to weak production statistics and some special factors, but the Ministry of Economy, Trade and Industry's production forecast survey for April was positive and special factors fell by the wayside, with leading indicators for business conditions maintaining a firm undertone, leading us to believe that the future will bring a moderate recovery.

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, are now in a growth trend. Expansion of domestic and overseas demand also encouraged production in the manufacturing industry to begin a recovery around the middle of 2014. Production is now continuing a gradual comeback, and there is a growing sense that the economy has bottomed out.

Coincident & Leading Indicators, Real Exports, and Industrial Production   **Chart 9**
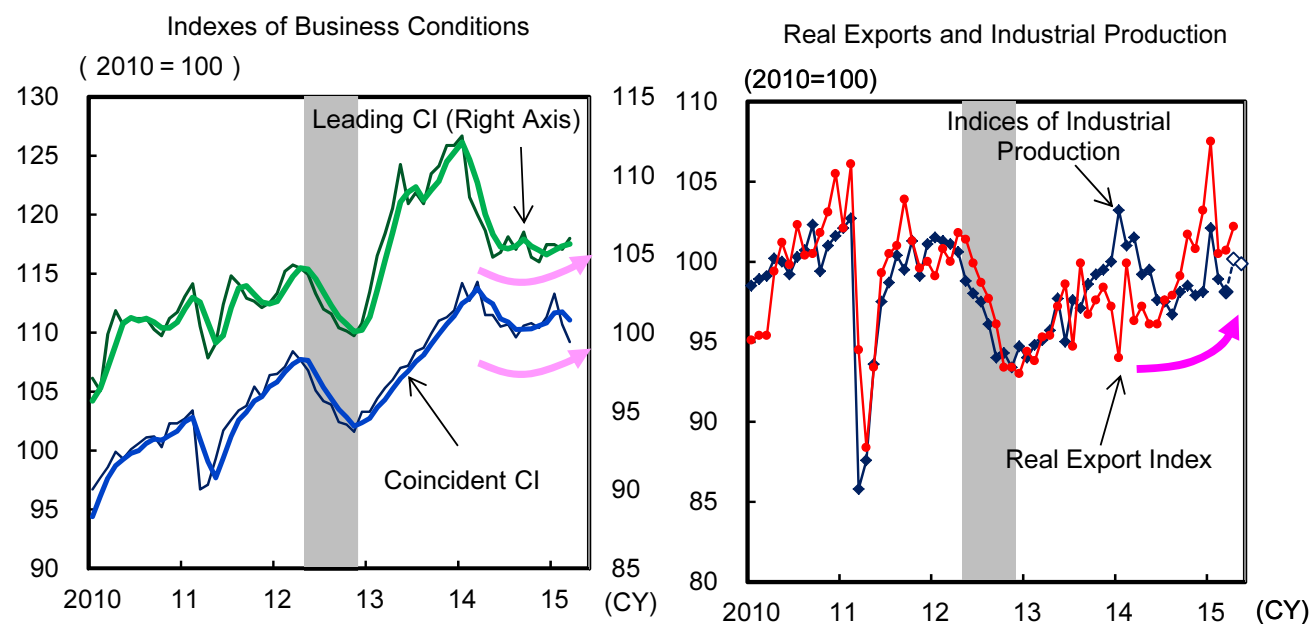
Source: Cabinet Office, Bank of Japan, and Ministry of Economy, Trade and Industry; compiled by DIR.
Note: The shaded areas represent periods of economic slowdown. The coincident index is represented by the bold lines in the chart on the left, and figures used are the 3-month moving average value. Data for the latest two months of industrial production make use of values from METI's production forecast survey.

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 10, 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. The wage increase rate is expected to exceed that of the previous year in 2015 as well. 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.

Sales, Wages, and Prices (y/y %)   **Chart 10**
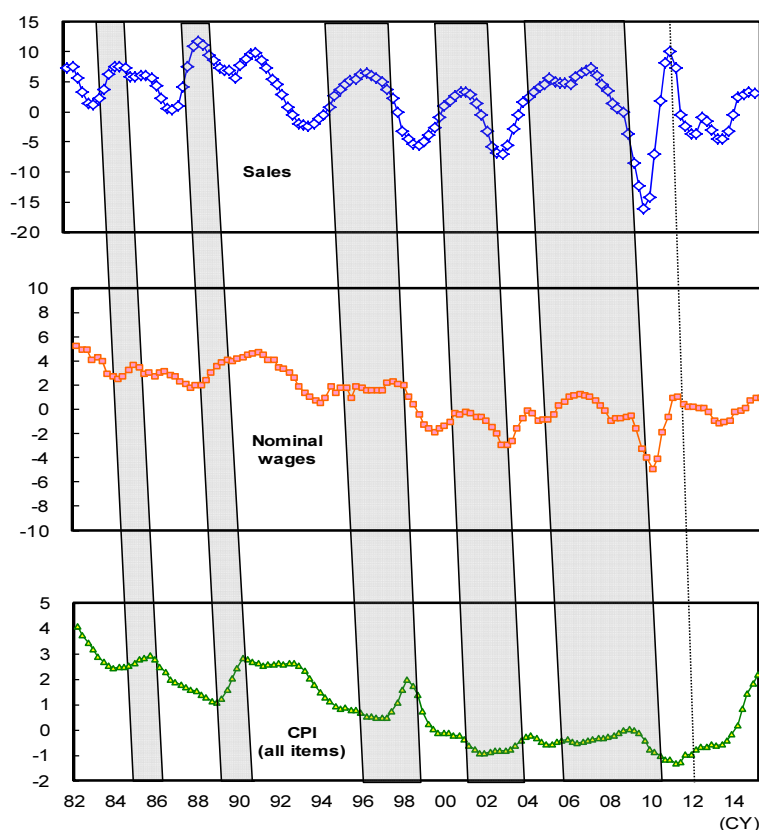
Source: Ministry of Finance, Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.
Notes: 1) Y/y comparison of four-quarter moving average.
2) Shaded bars denote periods when sales were on uptrend. Bars tilted in order to show roughly 6-month lag from sales graph to nominal wages graph and from there to CPI graph, respectively.

Collapse of energy prices a factor in pushing up real wages

Here we examine the effects of the low price in crude oil on Japan's economy.

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 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 should have dissipated 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, 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 11**
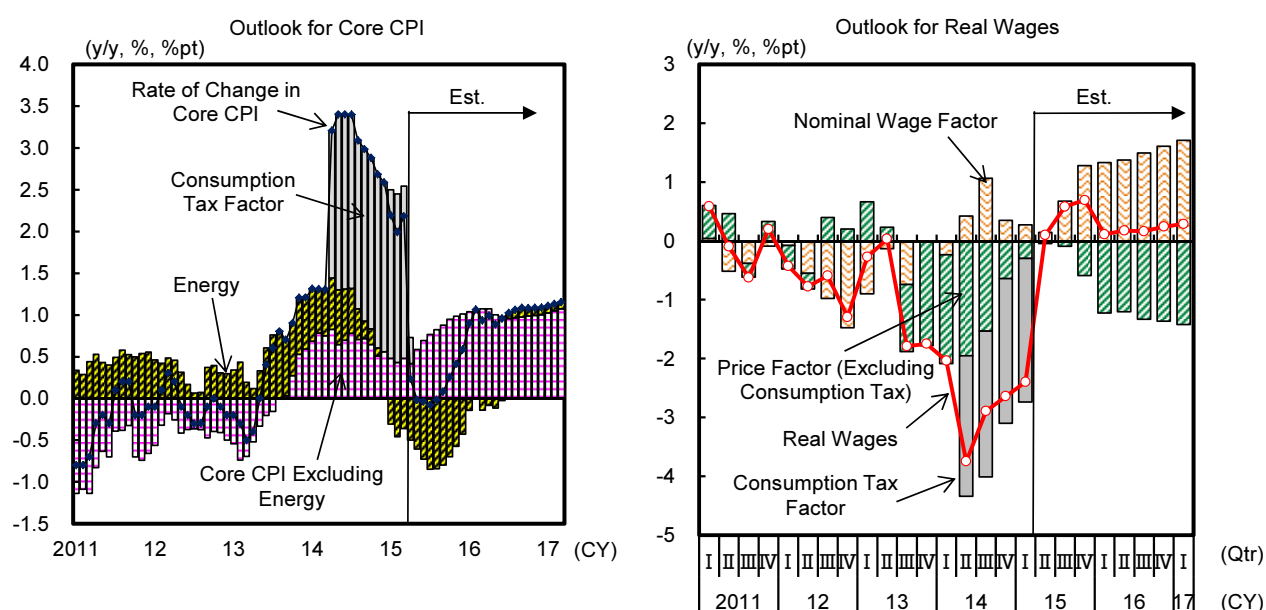
Source: Ministry of Internal Affairs and Communications and Ministry of Health, Labour, and Welfare; compiled by DIR.

The collapse in the price of crude oil will boost real GDP by +0.52% in FY2015

Estimates obtained 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 12). 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: +0.19% in FY2014, +0.52% in FY2015, and +0.42% in FY2016. Meanwhile, effects on the growth rate in real GDP were +0.19%pt, +0.34%pt, and -0.10%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 can be seen by the above, 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 12

		Real GDP %	Personal Consumption %	Housing Investment %	Capital Expenditure %	Exports %	Imports %	Nominal GDP %	GDP Deflator %	GDP Growth Rate %
WTI = Difference from $105 Scenario	FY2014	0.19	0.27	0.45	0.91	0.16	0.96	1.15	0.95	0.19
	FY2015	0.52	0.84	2.09	2.23	0.33	2.68	2.41	1.88	0.34
	FY2016	0.42	0.61	1.54	2.19	0.29	2.20	2.26	1.83	-0.10
WTI = Difference from $70 Scenario	FY2014	0.05	0.07	0.09	0.25	0.05	0.25	0.31	0.26	0.05
	FY2015	0.19	0.35	0.85	0.58	0.11	0.98	0.56	0.37	0.14
	FY2016	0.11	0.20	0.37	0.35	0.06	0.57	0.28	0.17	-0.08
20% Increase in Price of Crude Oil	FY2014	-0.02	-0.01	0.01	-0.13	-0.03	-0.08	-0.16	-0.14	-0.02
	FY2015	-0.09	-0.07	-0.21	-0.65	-0.10	-0.43	-0.75	-0.66	-0.07
	FY2016	-0.10	-0.08	-0.43	-0.77	-0.10	-0.49	-0.85	-0.75	-0.01

		Current Account Balance / Nominal GDP %pt	Import Price %	Export Price %	CGPI %	Core CPI %	Industrial Production %	Tertiary Industry Activity Index %	All Industry Activity Index %
WTI = Difference from $105 Scenario	FY2014	1.08	-7.07	-0.81	-1.08	-0.32	0.38	0.20	0.22
	FY2015	2.16	-14.52	-1.66	-2.34	-0.97	1.04	0.55	0.61
	FY2016	2.12	-12.87	-1.43	-2.07	-0.86	0.88	0.48	0.52
WTI = Difference from $70 Scenario	FY2014	0.30	-1.97	-0.26	-0.34	-0.08	0.10	0.05	0.06
	FY2015	0.51	-4.49	-0.54	-0.75	-0.43	0.36	0.18	0.21
	FY2016	0.32	-2.62	-0.31	-0.44	-0.35	0.21	0.10	0.11
20% Increase in Price of Crude Oil	FY2014	-0.15	0.93	0.13	0.17	0.01	-0.03	-0.02	-0.02
	FY2015	-0.65	4.38	0.51	0.71	0.03	-0.19	-0.12	-0.12
	FY2016	-0.73	4.58	0.51	0.73	0.03	-0.23	-0.14	-0.15

Source: Compiled by DIR.
Notes: 1) Simulation run using the DIR short-term macro model. Values show rate of deviation from normal solution.
2) WTI = Difference from $105 Scenario assumes most recent WTI peak of June 2014 and beyond to be flat at $105/bbl.
WTI = Difference from $70 Scenario assumes the 2014 and 2015 Jan-Mar period and beyond to be flat at $70/bbl.

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

In this section we examine the return of capex to the domestic market, an issue which has recently been made much of in the mass media.

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.[3]

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 13). 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 14). 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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[3] 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 13
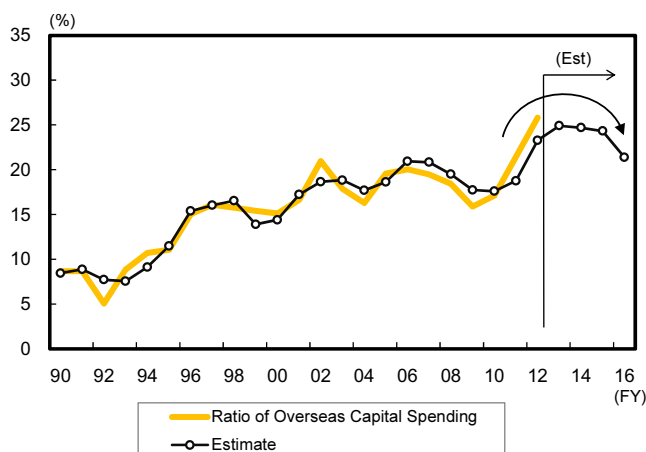
Ratio of Overseas Capital Spending
Estimate

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.
Ratio of Overseas Capital Spending (t) = -75.44 + 1.11 x Ratio of Overseas Production (t) + 16.55 x ln (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 14
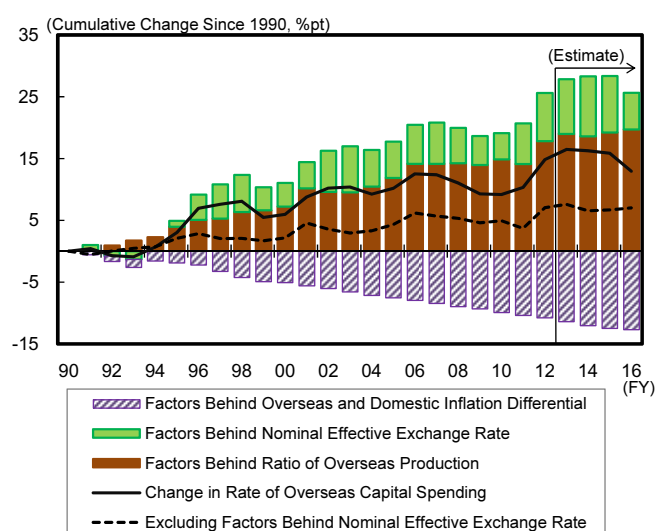
Factors Behind Overseas and Domestic Inflation Differential
Factors Behind Nominal Effective Exchange Rate
Factors Behind Ratio of Overseas Production
Change in Rate of Overseas Capital Spending
Excluding Factors Behind Nominal Effective Exchange Rate

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. (≒ increase in production costs).

2. Issue (1): The Effects of Unconventional Monetary Policies in Japan, the US, and Europe

2.1 Comparing a Cross-Section of Unconventional Monetary Policies

The differing effects of unconventional monetary policies of central banks in different countries

In this section we compare the effects of unconventional monetary policies implemented by central banks in Japan, the US, and Europe. We provide a general overview of unconventional monetary policies, while considering what the implications for the future might be. (Conclusions are shown in Chart 15.)

The first thing we notice is that the quantitative and qualitative monetary easing measures (QQE I & II) implemented by the Bank of Japan, as well as the Fed's LSAP II & III and quantitative easing measures implemented by the ECB all resulted in major growth in stock prices. It appears that global stock markets have all had a positive response to unconventional monetary policies.

Next we look at the effects on the real economy. In the US, where the stock shareholding ratio of households is high in comparison to other countries, there was a major asset effect followed by significant growth in personal consumption. In Japan as well, we can detect the asset effect due to growth in stock prices, though it pales in comparison to the US.

Finally, we consider the influence on CPI from the duel perspectives of improvement in the supply-demand gap and currency depreciation. Here it appears that the Bank of Japan's quantitative and qualitative monetary easing measures were the most effective. As for improvement in the supply-demand gap, Japan's efforts were not as effective as that of the Fed's LSAP series, but the major depreciation in the country's currency on the foreign exchange market has provided strong upward pressure on CPI.

International Comparison of the Effectiveness of Unconventional Monetary Policies   **Chart 15**

			Quantitative & Qualitative Monetary Easing Measures		LSAP		ECB Quantitative Easing
			I	II	II	III	
Change in Financial Markets	Long-Term Interest	(%pt)	0.02	-0.10	-0.81	0.58	-0.24
	Foreign Exchange	(%)("-" denotes currency depreciation)	-9.93	-3.99	1.14	9.49	-2.86
	Stock Prices	(%)	20.25	19.73	17.30	23.90	8.63
Real Economy	Personal Consumption	(%)	0.28	0.27	0.63	0.87	0.12
	Exports	(%)	0.87	0.35	-	-	0.24
	Imports	(%)	0.13	0.13	0.28	0.39	0.06
	Real GDP	(%)	0.29	0.20	0.38	0.53	0.15
CPI	Improvement in GDP Gap	(%pt)	0.03	0.02	0.10	0.13	0.03
	Currency Depreciation	(%pt)	0.15	0.06	-	-	0.02
	Total	(%pt)	0.18	0.08	0.10	0.13	0.05

Source: Bloomberg; compiled by DIR.
Note: Shaded areas denote areas in which the normally expected effects were not detected.

2.2 Method of Analysis

Calculating effects using a partial equilibrium model

An overview of the partial equilibrium model used in this chapter is shown in Chart 16.

First, we examined changes in the financial markets (stock prices, long-term interest rates, and foreign exchange rates) during the period unconventional monetary policies were used.

Second, we estimated the effects of changes in the financial markets on the real economy. This involved estimating the consumption function for each of the countries covered in our analysis and then calculating the extent to which the change in stock prices pushed up personal consumption. At the same time, we estimated the export function to obtain the amount of increase in exports, since expansion in personal consumption triggers an increase in imports through growth in domestic demand. In addition, we estimating the export function and calculated the extent to which foreign exchange rates pushed up exports. Finally, we obtained the effect which unconventional monetary policies had in each of the countries on growth in real GDP through changes in the financial markets by totaling the amount of change in each of the items examined.

The third step was to estimate the effect on CPI through improvements in the real economy and currency deflation. This involved calculating the extent of GDP gap reduction due to changes in GDP as calculated in the previous step, then using a Phillip's curve expressing the situations of each country or region examined, calculating the extent to which the improved GDP gap had the effect of pushing up CPI. In addition, in order to estimate the effect of a weak currency on pushing up CPI through an increase in import prices as was observed in Japan, we estimated the divergence of the CPI growth rate which was estimated using the actual CPI growth rate and the Phillip's curve, using the mathematical function explained in the foreign exchange rate and AR(1), to calculate the effect which the exchange rate had in pushing up CPI.

Overview of Mathematical Method **Chart 16**
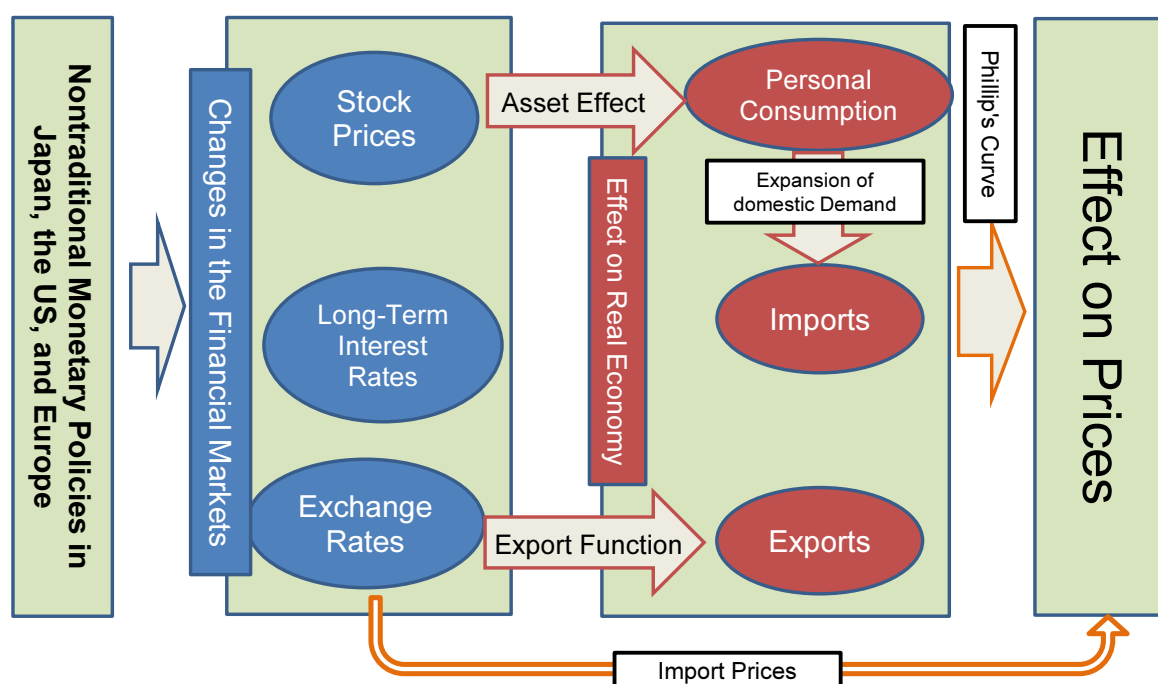
Source: Compiled by DIR.

2.3 Reaction of Financial Markets

Reaction of the financial markets to unconventional monetary policies

First we consider the reaction of the financial markets to unconventional monetary policies adopted in each of the locations covered in this chapter. The one thing which all of the various policies had in common was the effect on the stock market. In all of these locations stock prices rose after policies were implemented. Stock markets easily react to news and events, and for investors, the implementation of unconventional monetary policies has been a major bullish factor.

In Japan and the EU, depreciation of currency exchange rates was observed. While there is of course the argument that, logically speaking, there is no advantage in bringing on the depreciation of one's currency and expanding the monetary base with the interest rate at zero, most participants in the foreign exchange market generally act on the assumption that currency depreciation can occur with a monetary approach even when interest rates are at zero. Perhaps this is why unconventional monetary policies have been able to induce self-fulfilling currency depreciation. Moreover, in recent years in Japan, stock prices and the foreign exchange market have been closely linked. Hence quantitative and qualitative monetary easing has brought about a spiral effect causing currency depreciation and stock price highs. Policy has been very successful in causing fluctuations in exchange rates and stock prices.

In contrast, the use of large-scale asset purchases (LSAP) in the US induced a stronger dollar. Intuitively, one would think that an LSAP series would have the opposite effect, but it is possible that upward pressure on the dollar due to the recent EU debt crisis and other factors exceeded whatever downward pressures there might have been as a result of LSAP.

Looking at long-term interest rates, we can see that Japan's quantitative and qualitative monetary easing measures were quite effective. Monetary easing in Japan triggered an enormous amount in purchases of long-term government bonds. Included in the purchases were long-term bonds recently issued by the Ministry of Finance, and this situation brought a major reduction in the risk premium of the new bond issue. Quantitative easing implemented by the ECB is also thought to have been effective in reducing long-term interest rates in the EU. Not only the ECB but other central banks in Europe also implemented negative interest rates, bringing more downward pressure on long-term interest in the EU. On the other hand, the Fed's LSAP III brought on a major increase in long-term interest, but this was because of the market reaction to the announcement of tapering while still in the midst of the period in which said monetary policy was in effect. The Fed's experience here should be instructive to the BOJ and the ECB, reminding them to be aware that when exiting from quantitative easing measures, market reaction could bring on sharp increases in long-term interest.

Financial Market Trends After Implementation of Unconventional Monetary Policies	Chart 17
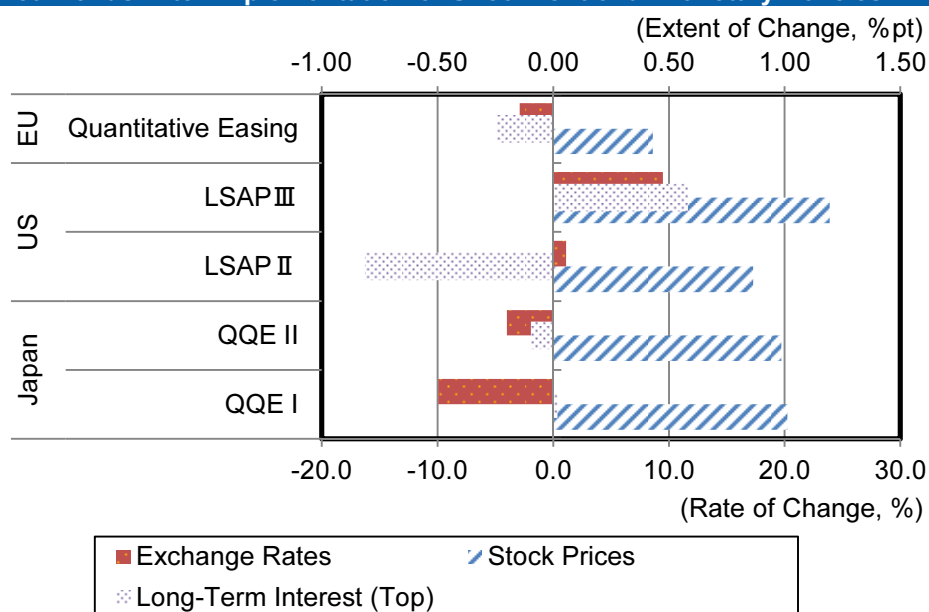
Source: Bloomberg; Compiled by DIR.
Note: Total extent of change experienced from the time policy went into effect until its end. In the case of current policies, extent of change is from the time of implementation till just recently.

2.4 Fed's Policy Most Effective in GDP; BOJ Did Best with CPI

Effect of pushing up CPI through yen depreciation stands out in quantitative and qualitative easing

In this last section we perform a quantitative analysis of the effects that changes in the financial markets had on the real economies and CPI of each country or region.

Chart 18 (left side) shows a calculation of the effect of unconventional monetary policies on real GDP. This was done by comparing the totals of the three major effects of monetary policy: (1) Growth in personal consumption due to the increase in stock prices, (2) Growth in imports associated with growth in personal consumption, and (3) Growth in exports in association with depreciation of currency value on the foreign exchange market. The results show that the Fed's LSAP series was the most effective in improving the real economy. After the LSAP program was implemented in the US, there was a continual rise in stock prices, and the household sector experienced a major asset effect due to the high rate of stock share holdings in comparison to other countries. This led to significant growth in personal consumption. This same effect occurred in Japan and the EU due to growth in stock prices, but it was much smaller than in the US. However, the reactions on the foreign exchange markets in Japan and Europe in response to unconventional monetary policies were much more sensitive, and growth in exports as a result of currency devaluation led to growth in exports and ultimately GDP.

Next we take a look at the effect of unconventional monetary policies on CPI shown on the right side of Chart 18. We used the following steps to calculate this effect: (1) We estimated the Phillip's curve, then estimated the extent to which CPI was increased through improvement in the supply-demand gap due to the positive effect of GDP as calculated above, then (2) Using the residual error of the estimated values of the CPI actual value and the Phillip's curve obtained in the previous step, we estimated the effect that foreign exchange rates had on pushing up CPI by performing a regression using the foreign exchange rate and AR(1) term. Looking at the results, we see that CPI was given a considerable lift by the BOJ's QQEI. As was indicated earlier, the BOJ's monetary policy did not have a large effect on the real economy in general, but it realized a major depreciation in the yen and brought considerable upward pressure on CPI. On the other hand, the EU's quantitative easing measures increased CPI a bit, but were deficient in the power to sweep away fears of deflation in Europe. For this reason, there is a very good possibility that the ECB will implement additional monetary easing measures in the future.
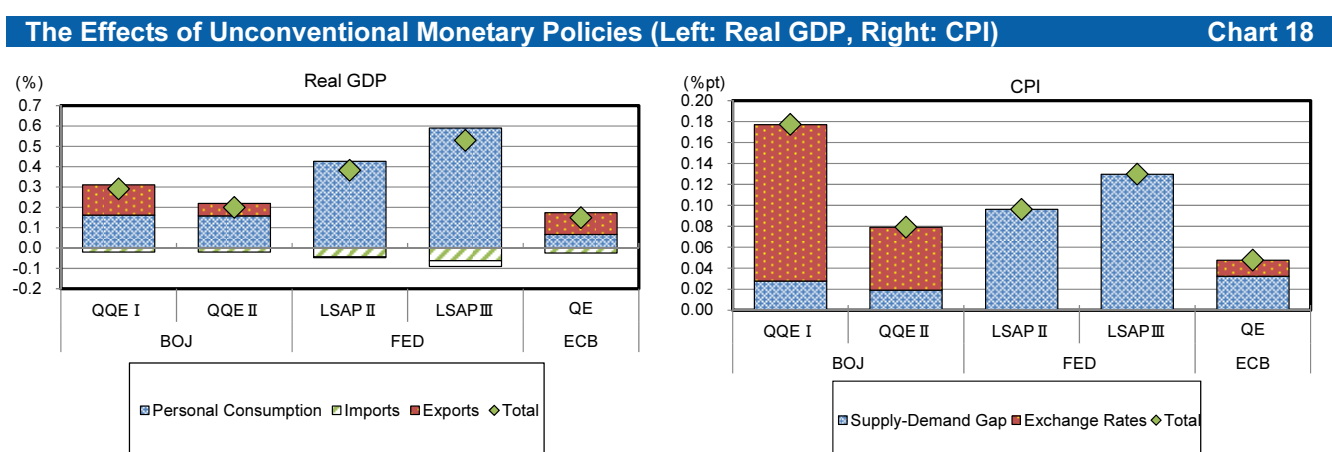
The Effects of Unconventional Monetary Policies (Left: Real GDP, Right: CPI)   **Chart 18**

Source: Compiled by DIR.
Note: No effect on foreign exchange was detected in LSAP II or LSAP III, so this value does not include foreign exchange. Areas with white spots denote effects taking into consideration the effect of foreign exchange.

Source: Compiled by DIR.
Note: No effect on foreign exchange was detected in LSAP II or LSAP III, so this value does not include foreign exchange.

3. Issue (2): Which will be more influential? The Fed or the ECB?

Outlook for US long-term interest rate and risk scenario
There are fears that when the US raises interest rates this will have a negative effect on the world economy. Assuming that this is the case, to what extent would it influence other economies? The ECB has also implemented quantitative easing, but which of these two policies will carry the most influence? In this section we perform an analysis in order to get an idea of what kind of effects the raising of the US long-term interest and the EU's quantitative easing may have on the world economy as well as Japan's.

Before proceeding with the considerations which this section focuses on, let us first provide a simple explanation of our outlook for the US long-term interest rate.

The left side of Chart 19 presents our outlook for the US long-term interest rate. A bird's eye view of the US economy during the period which our outlook covers sees gradual upward pressure on long-term interest due to the following two factors: (1) The real economy is expected to continue to gradually improve, and (2) Prices are expected to continue in a growth trend. In addition, under these economic conditions the Fed is expected to move forward on interest rate hikes, doing so at a set pace, which should bring a gradual increase in long-term interest as we move forward.

According to our main scenario, a gradual increase in long-term interest rates is seen, but in terms of our risk scenario, a certain amount of care should be taken as regards growth in the term premium. In terms of the Fed's exit strategy, we believe that the term premium will have an important effect on the pace of reinvestment in long-term government bonds (US Treasury 10-Year bond). As of this point the Fed has not made an announcement regarding the pace with which it will decrease the amount of reinvestment in long-term bonds, and no market consensus on this question has yet formed either. As far as this year is concerned, the amount of government bonds nearing their redemption date is not large, so the pace of reinvestment is not a big problem. However, but once the year 2016 arrives, there will be a steep rise in bond redemptions. When that happens, the extent to which the term premium is influenced by the pace of reduction in reinvestment through the supply-demand balance of bonds is expected to increase. The Fed will likely make an announcement during the latter part of 2015 expressing its intentions regarding reinvestment, and for this reason we need to be on the lookout for influence this will have on the long-term interest rate.

Keeping this in mind, our outlook for US interest rates, which forms the basis of our economic outlook, sees the Fed starting interest hikes during 4Q of 2015. We expect the US long-term interest rate to gradually increase, and see it growing around 3% by the end of the year 2016.

US Long-Term Interest Rate Trends (Left: US Interest Rate Outlook, Right: Decomposition Analysis of Long-Term Interest) **Chart 19**
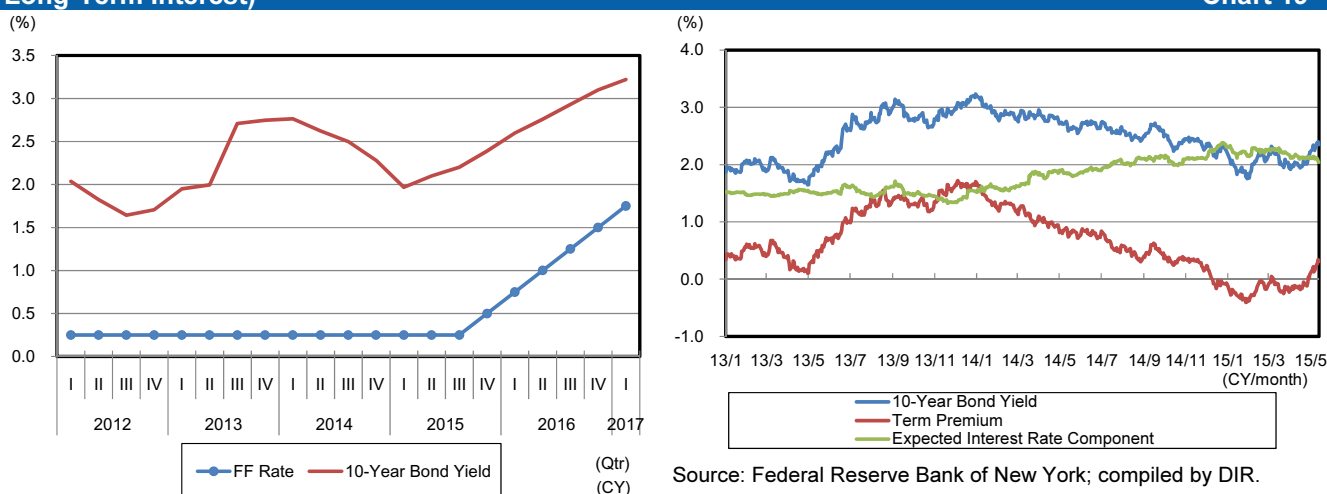
Source: Haver Analytics; compiled by DIR.

Source: Federal Reserve Bank of New York; compiled by DIR.

3.1 What Will US Interest Rate Hikes Bring to the World Economy?

Upward pressure on worldwide interest rates and strong dollar will act as a weight on the world economy

Next we proceed with the main theme of this chapter – an examination of the influence of US interest rate hikes and EU quantitative easing will have on the world economy as well as on Japan's economy.

First of all, the rise in the long-term interest rate in response to the hikes in the US policy rate will not only slow down the US economy, but also effect the raising of interest rates in other countries as well, due to arbitrage requirements for international interest rates. Chart 20 shows the worldwide flow of investment capital. The US procures capital from sources outside the US by selling government bonds, and supplies capital to overseas locations in the form of equity. In other words international credit creation takes place with the US as its axis. If US interest rates rise within this structure of international credit creation, the required rate of return on investment capital supplied to the world by the US will also increase. This would then cause interest rates around the world to rise. The concern is that as a result, the worldwide increase in interest would cause downward pressure on the world economy.

The increase in the dollar's value associated with the rise in US interest rates induces a change in income distribution through an change in export competitiveness. In other words, it merely causes a spillover in demand from the US to countries other than the US. However, for countries which procure capital in dollars, especially the emerging nations, this will bring a negative effect. Some of the emerging nations make use of rigid foreign exchange systems such as the dollar peg system, in which case they will be forced to raise interest rates in order to protect their own currency. The worst case scenario would be that a country might use up its foreign currency reserve, thereby triggering a currency crisis as has happened in the past.
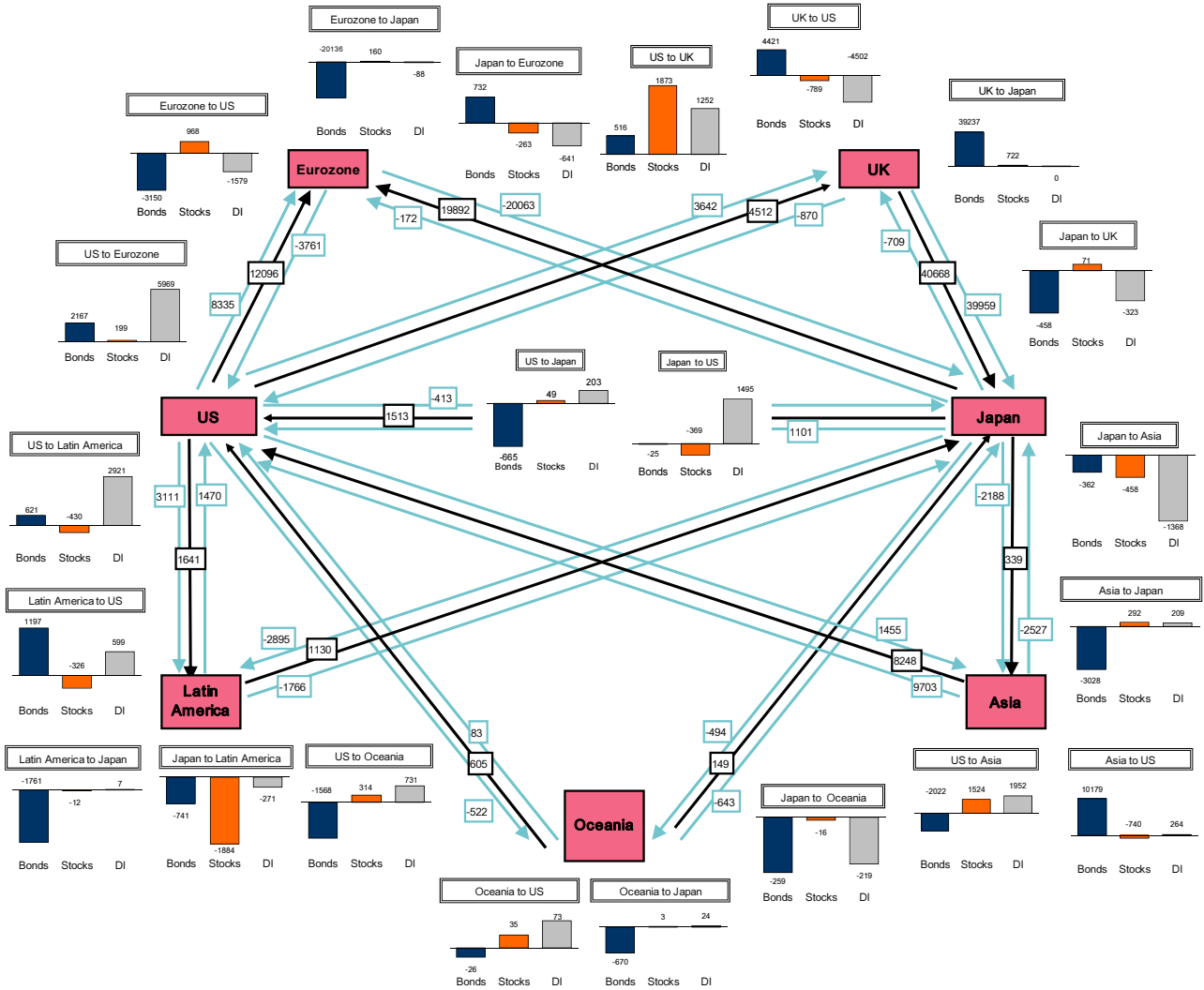
Source: US Dept. of Treasury, US Dept. of Commerce, Ministry of Finance; compiled by DIR.
Note: Unit: 100 mil dlrs, annualized rate. Data for Eurozone to Japan includes EU (25 countries) and UK. Asia does not include Japan. Latin America includes the Caribbean. Data for US-Oceania includes only Australia.

World economic model

Based on the above considerations, we built a world economic model for this outlook. Using this model we calculated the influence on the world economy and Japan's economy set in motion by monetary policies in the US and the EU.

An overview of the model is shown in Charts 21 and 22. The two charts show economic interdependence between the advanced nations and between advanced nations and emerging nations respectively. Our world economic model adopts two mechanisms – (1) Fluctuations in interest rates and foreign exchange rates which influence the real economy in relations between advanced nations, and (2) Fluctuations in interest rates and foreign exchange rates which result in fluctuations in foreign currency reserves and sovereign interest spreads, and in this way influence the real economy in relations between advanced nations and emerging nations.

Economic Interdependence Between the US and Europe   **Chart 21**
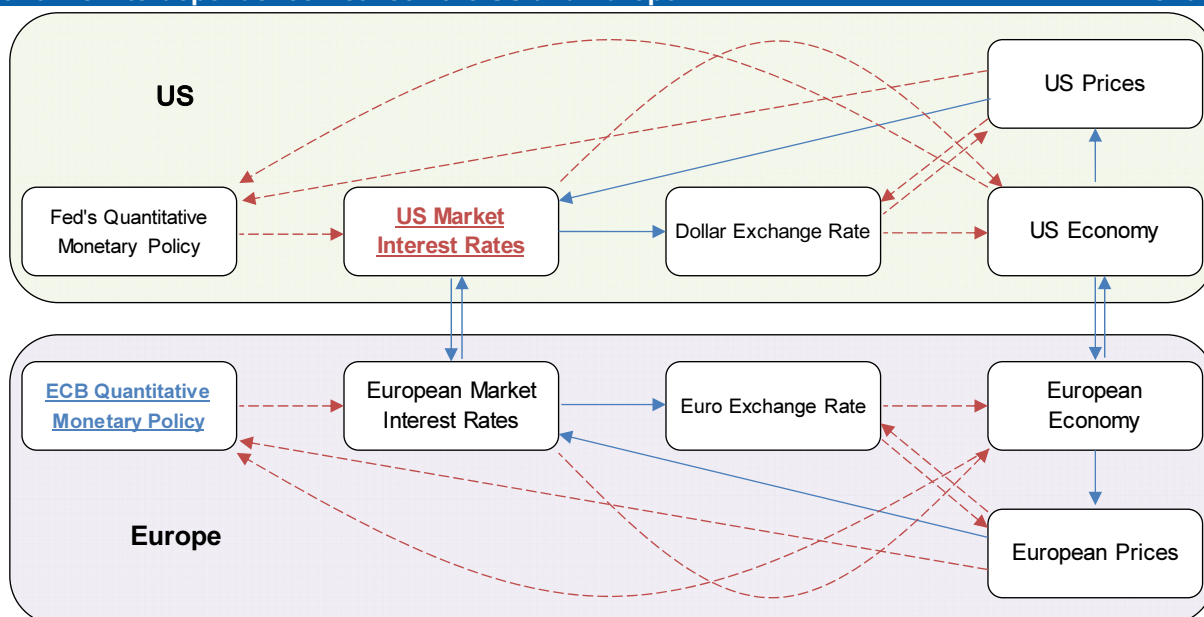
Source: Compiled by DIR
Note: Solid lines denote positive factors while dotted lines denote negative factors.

Economic Interdependence Between Advanced Nations and Emerging Nations   **Chart 22**
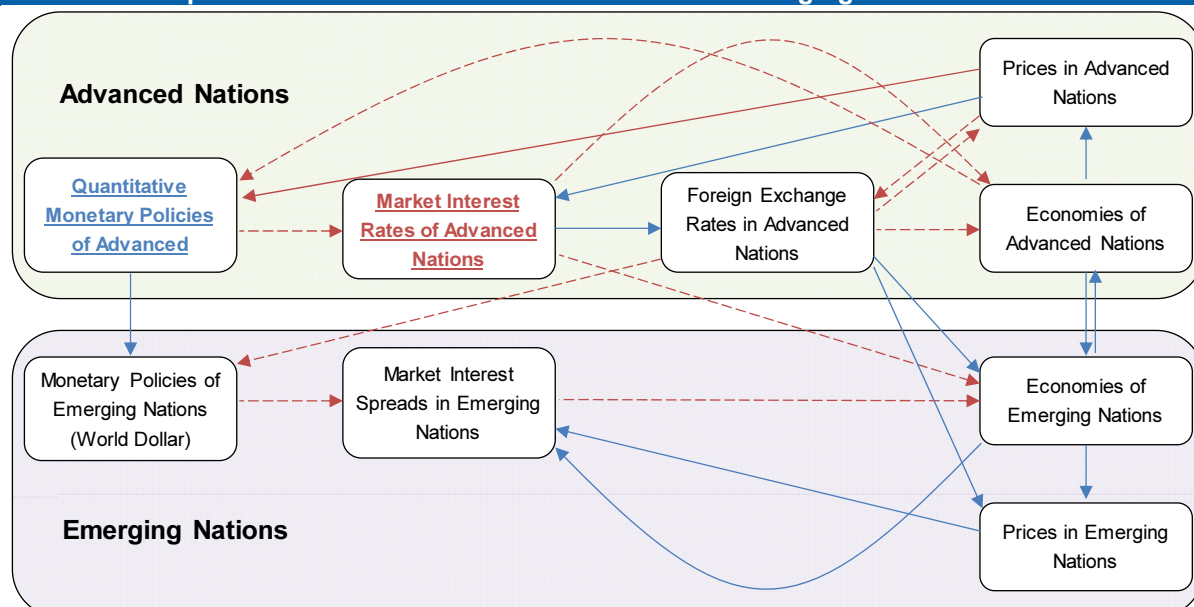
Source: Compiled by DIR
Note: Solid lines denote positive factors while dotted lines denote negative factors.

3.2 Will EU Quantitative Monetary Policy Be Able to Support World Economy?

Are the negative effects of US interest rate hikes unavoidable? An overly pessimistic view is unnecessary.

While the US is expected to move toward interest rate hikes, the ECB has introduced quantitative easing measures, having purchased 60 bln Euros in bonds per month since March of 2015 with plans of continuing purchases until September 2016. Quantitative easing will bring a decline in EU interest rates and is expected to provide underlying support for the world economy through fluctuations in interest rates in the advanced nations, and foreign currency reserves and interest spreads in the emerging nations.

Can EU quantitative easing ultimately compensate for the negative influence of the US interest rate hikes? In order to answer this question, we summed up the simulation results using our world economic model in Chart 23. The implications of these results are summed up in the following three paragraphs.

First of all, it will be difficult for the ECB quantitative easing measures to compensate for the negative influence of the US interest rate hikes. The farthest left column of the chart shows the total effect of US interest rate hikes and the ECB quantitative easing measures. According to these results we should expect the world economy to be pushed down by a cumulative total of 0.25% by 2017.

Secondly, the US itself will also feel some negative effects from the interest rate hikes, though the Fed's current stance is not to raise rates at such a pace that would bring negative effects on the economy. Far from it, the prerequisite to going ahead with the hikes is that it will ultimately improve the economy. For this reason, it would be more realistic to observe what happens when interest rate hikes are carried out at a neutral pace in relation to the US economy. Simulation results conforming to just this type of situation are shown in the right column of Chart 23. These values demonstrate that if the Fed's interest rate hikes can be kept to a neutral pace in relation to the US economy, there will be no negative effects. Or to put it in a different way, if the US economy performs favorably in parallel with the Fed's rate hikes, there will be no negative effects on the world economy.

Finally, there is one more point which must be noted. That is emerging nations other than China are no longer in danger of tail risk. (We will discuss China's situation in a later section of this report.) The emerging nations are undoubtedly subject to negative effects in the financial area from the strong dollar according to our model. However, the extent of the negative influence is one which will easily be counterbalanced by the increase in exports.

Simulation Results Using World Economic Model   **Chart 23**

		US Interest Rate Hikes + EU Quantitative Easing			US Interest Rate Hikes at Neutral Pace + EU Quantitative Easing
			US Interest Rate Hikes	EU Quantitative Easing	
US	2015	0.01%	0.00%	0.02%	0.00%
	2016	-0.09%	-0.14%	0.09%	0.00%
	2017	-0.27%	-0.34%	0.13%	0.00%
EU	2015	0.02%	0.00%	0.04%	0.01%
	2016	-0.06%	-0.15%	0.14%	0.02%
	2017	-0.25%	-0.39%	0.20%	-0.01%
Emerging Nations	2015	0.01%	0.00%	0.02%	0.00%
	2016	-0.08%	③ -0.12%	0.09%	-0.01%
	2017	-0.24%	-0.31%	0.12%	-0.05%
World	2015	0.01%	0.00%	0.03%	0.00%
	2016	① -0.08%	-0.13%	0.10%	② 0.00%
	2017	-0.25%	-0.34%	0.14%	-0.02%

Source: Compiled by DIR
Notes: 1) Cumulative rate of deviation from baseline.
2) Figures for the world are a total of the values of the US, EU, and the emerging nations (covers about 82% of world GDP).
3) The US interest rate hike case starts in the Oct-Dec period of 2015, and assumes increases in the 10-yr bond yield of 25bp at a time for 8 consecutive quarters.
4) The EU quantitative easing case starts in the Jan-Mar period of 2015 and assumes an expansion of the ECB balance sheet of 180 bln Euros at a time for 8 consecutive quarters.
5) Simulation run using the DIR world economic model.

3.3 Emerging Nations No Longer Face Tail Risk

Balance sheets of emerging nations have improved considerably

How is it that the emerging nations (excluding China) have managed to escape tail risk? The major factor here is that their external balance sheets have improved considerably.

Chart 24 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 goods and services exports, a leading indicator used to determine country risk, has fallen for the most part (conditions have improved) since the financial crisis.

Risk Resilience of Emerging Market Economies   **Chart 24**
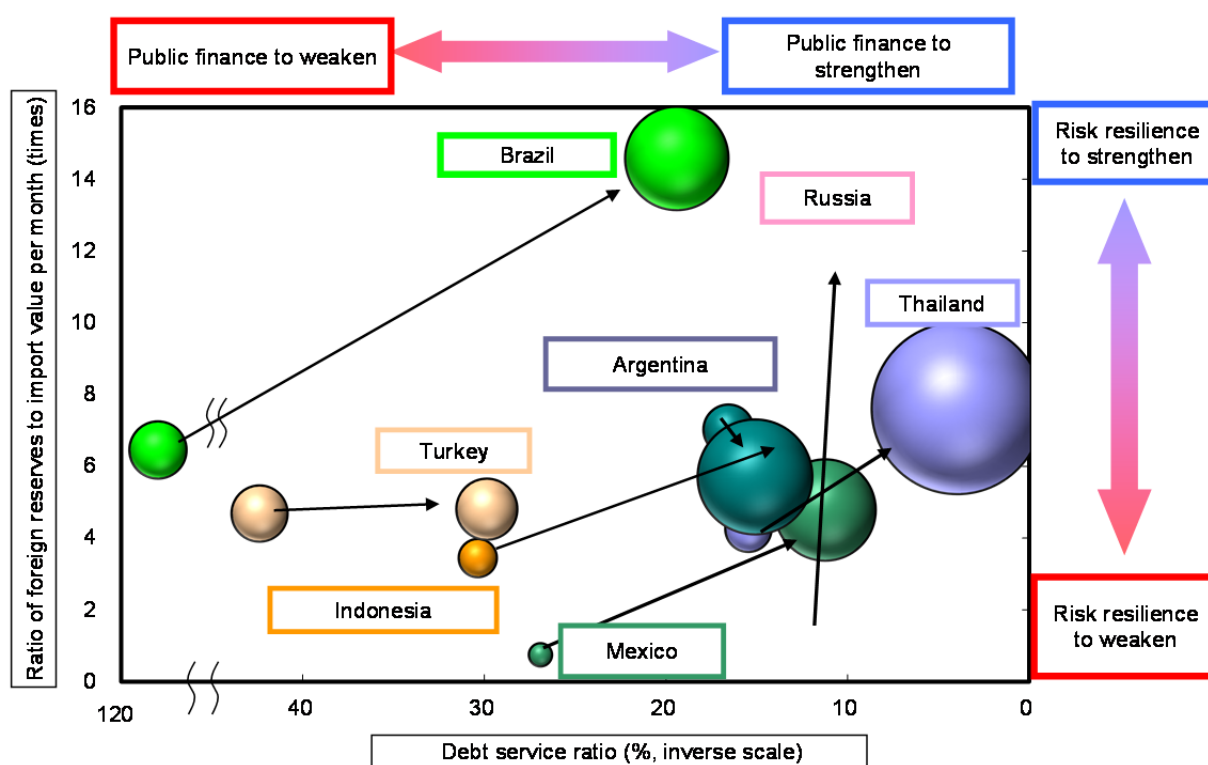
Source: Haver Analytics; compiled by DIR.
Notes: 1) Arrows denote shift of positions at critical moments to 2012.
    2) Year of crises defined as 1994 for Mexico, 1997 for Thailand and Indonesia, 1998 for Russia, 1999 for Brazil, 2001 for Turkey, and 2002 for Argentina.
    3) Size of circles shows ratio of foreign reserves to foreign debt with less than one-year maturity. The larger the circle, the greater the resilience.

3.4 Effects of US and EU Monetary Policies on Japan's Economy

No worries of Japan's economy slowing down or contingencies such as drastic yen appreciation

In light of what has been discussed so far in this section, we now calculate the effects on Japan's economy using another model (Japan's short-term macro-economic model) (see Chart 25). The implications of these findings are explained in the following.

First of all, it is inevitable that Japan's economy will slow down as the US heads towards interest rate hikes. The column on the furthest left side of the chart shows the total effect of US interest rate hikes

and ECB quantitative easing measures. According to these results we should expect Japan's real GDP to be reduced by a cumulative total of 0.18% by 2017.

However, as long as US interest rate hikes are implemented in a way so that their influence on the economy is neutral, the negative effect will be limited. The far right column of Chart 25 shows simulation results assuming the Fed's interest rate hikes are carried out at a pace which has a neutral effect on the economy. If the US economy performs favorably in parallel with the Fed's rate hikes, the effects on Japan's economy will be extremely limited.

Finally, since there is no cause at this time for fears of tail risk associated with the emerging nations, neither is there reason to worry about any possible drastic yen appreciation associated with risk-off behavior or a major deterioration in Japan's economy. As the second column from the left in Chart 25 indicates, there is a greater chance that US interest rate hikes will invite a more pronounced strong dollar – weak yen relationship due to the increased interest rate differential between the US and Japan rather than contingencies such as yen appreciation.

Simulation Results Using Japan Economic Model   **Chart 25**

		US Interest Rate Hikes + EU Quantitative Easing			US Interest Rate Hikes with Neutral Effect on Economy + EU Quantitative Easing
			US Interest Rate Hikes	EU Quantitative Easing	
Real GDP	2015	0.00%	0.00%	0.01%	0.00%
	2016	① -0.06%	-0.08%	0.05%	② -0.01%
	2017	-0.18%	-0.23%	0.09%	-0.01%
Exports	2015	0.02%	0.00%	0.07%	-0.02%
	2016	-0.36%	-0.52%	0.34%	-0.03%
	2017	-1.06%	-1.34%	0.50%	-0.05%
capex	2015	0.00%	0.00%	0.02%	0.00%
	2016	-0.09%	-0.13%	0.09%	-0.02%
	2017	-0.29%	-0.37%	0.15%	-0.05%
Nominal Effective Yen Rate	2015	0.02%	-0.07%	0.20%	0.02%
	2016	-0.71%	③ -0.92%	0.44%	-0.71%
	2017	-1.50%	-1.73%	0.48%	-1.50%

Source: Compiled by DIR
Notes: 1) Cumulative rate of deviation from baseline.
     2) The US interest rate hike case starts in the Oct-Dec period of 2015, and assumes increases in the 10-yr bond yield of 25bp at a time for 8 consecutive quarters.
     3) The EU quantitative easing case starts in the Jan-Mar period of 2015 and assumes an expansion of the ECB balance sheet of 180 bln Euros at a time for 8 consecutive quarters.
     4) Simulation run using the DIR short-term macro model.

3.5 Can the Collapse of China's Economic Bubble Be Prevented?

China can stimulate its economy through monetary easing, but an amplified margin of correction is likely in the future

The thing to look out for in the future is China. There are two factors at work in China's recent slowdown – the structural factor and the cyclical factor. Of the two, the cyclical factor has the possibility of getting even worse in the future. The fact is that the Chinese yuan is pegged to the dollar. This is why procuring funds in dollars at low interest and then investing in Chinese yuan denominated domestic investments has been a sure way of obtaining profits. However, as dollar denominated interest grows in the future, profit margins will begin to shrink. At the same time, the effect of increased liquidity supply also weakens due to foreign exchange interventions and consequently, the enthusiasm for speculation fades. In light of this situation, we would have to conclude that a certain amount of care should be taken as regards the possibility that growth in US interest rates could trigger a collapse in China's economic bubble.

China's means of handling these developments has been to reduce the ratio of cash reserves to deposits, having already lowered the ratio by 1.5%pt at the beginning of this year. The result is that the credit multiplier has been raised by 3.6%. In terms of money stock this is the equivalent of around 4.6 trillion yuan, or 2.3 trillion yuan in terms of nominal GDP.

If the ratio of cash reserves to deposits is reduced to the level where it was just after the US financial crisis of 2008, the credit multiplier could be expected to move up another 8% (10.2 trillion yuan in terms of money stock) (see Chart 26). In addition, the interest rate has been lowered three times since November 2014 (from 6.00% to 5.10%), complementing the economic stimulus effect of reducing the ratio of cash reserves to deposits.

However, even though the economy has been given somewhat of a lift through the use of policy, if surplus capital resulting from monetary easing goes into real estate development when there is no demand or excess capital expenditure, the result will be merely a temporary improvement. In conclusion, China's monetary easing measures will provide underlying support to a certain extent, but doing what is necessary to resolve the intrinsic problems in that economy is being delayed. Therefore an amplified margin of correction will be unavoidable in the future. China's economy will likely retain the element of tail risk for some time.

China's Credit Multiplier **Chart 26**
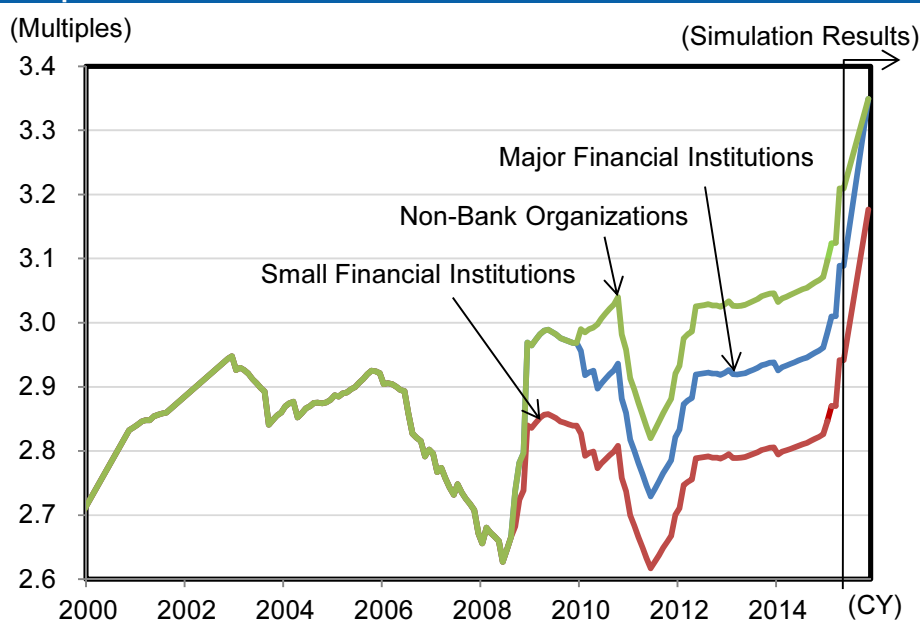
Source: People's Bank of China; compiled by DIR.
Note: Simulation results assume that the ratio of cash reserves to deposits will be reduced to the level where it was just after the US financial crisis of 2008.

4. Issue (3): Future of Wages and Capex Spending in Light of Distribution of Corporate Profits

4.1 Quantitative Analysis of Distribution of Profits by Industry and Size of Corporation

Growth in personnel expenses may rein in capex spending by small corporations

The Japanese economy has been recently continuing a gradual expansion phase. Corporate earnings continue to progress at a high level, with the weak yen trend helping to increase export sales and cost-cutting, especially in the area of fixed expenses, improving corporate earnings capability. According to corporate statistics, recurring profits in macro terms hit a historical high during the Oct-Dec 2014 period. Moreover, the sudden collapse in the price of crude oil since the middle of 2014 is seen pushing up corporate earnings in a six-month time lag, thus corporate profits will likely grow even more in the near future. Backed by favorable corporate earnings the economy is expected to experience a gradual expansion of the virtual circle, including movement toward raising the base wage. However, while a comeback is seen in capex spending, we still see some underperformance. In this section we consider the future of wages and capex spending from the viewpoint of distribution of corporate profits.

Chart 27 shows the elasticity coefficients of employment surplus, labor's relative share, and capex in relation to corporate earnings by scale of corporation and industry. Our conclusions based on this data are that small businesses in the non-manufacturing sector, where the labor shortage is strongly felt and labor's relative share is on the high side, the growth in personnel expenses is bringing pressure on earnings, and there is a strong possibility that this will inhibit capex spending. Moreover, since the elasticity coefficient for capex in relation to corporate earnings is high, there is a strong possibility that the decline in earnings due to growth in personnel expenses will rein in capex spending. On the other hand, large corporations in the non-manufacturing sector feel a major shortage of labor while there is growing pressure to increase personnel expenses. But since labor's relative share is low in this case, the extent to which the earnings situation will bring downward pressure on capex spending is limited. Meanwhile, in the case of large corporations in the manufacturing sector, chances that the increase in personnel expenses might limit capex spending are low. We see an increase in production associated with rising operating rates and a continuation of the trend toward expansion in corporate earnings, leading in turn toward a continuation of the growth trend in capex spending as seen on the macro level. However, this trend will be centered for the most part on large corporations in the manufacturing sector.

Earnings Elasticity Coefficient of Labor Surplus/Shortage, Labor's Relative Share, and Capex by Scale of Corporation and Industry   **Chart 27**
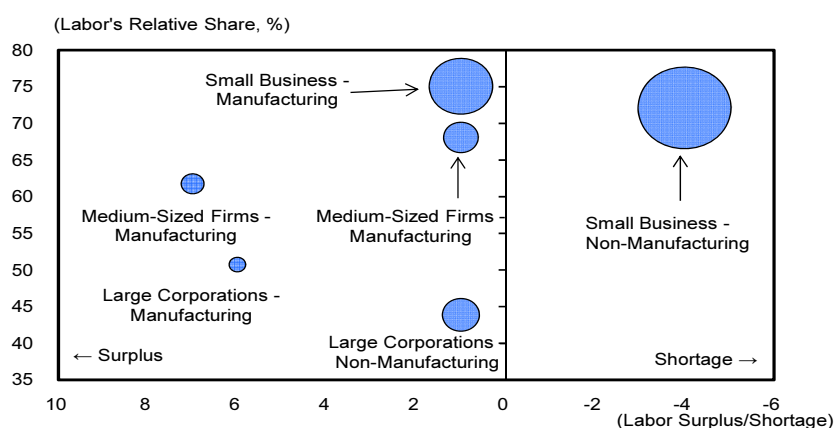
Source: Ministry of Finance, Bank of Japan; compiled by DIR.
Note: Size of circles denotes elasticity of capex in relation to corporate earnings (cash flow). Labor surplus/shortage from BOJ Tankan, divergence of Employment Conditions DI from year 2000 peak. Labor's relative share is the seasonally adjusted figure as of the Oct-Dec period of 2014, calculated by DIR.

Rising sense of shortages in capex and labor

In considering how the high level of corporate earnings will be distributed to capex and wages, we first have to check how much investment demand each of these two categories has. Looking at production capacity DI and employment conditions DI according to the BOJ Tankan (Chart 28), we see that demand for both production capacity (capex) and labor (employment conditions DI) have recently been in a recovery trend. As for production capacity DI, after the US financial crisis of 2008, recovery in production levels was lagging and production capacity continued at surplus levels, but recently it has recovered to pre-financial crisis levels and the sense of surplus capacity has dissipated. Meanwhile, employment conditions DI continued a sense of shortage since around the beginning of 2013, but recently has risen to the point where it has exceeded the peak levels it reached prior to the financial crisis of 2008, indicating that the supply-demand situation for labor is extremely tight.

Next we look at the increasing sense of shortage in both production capacity DI (capex) and employment conditions DI in order to determine which of these is most urgent. Chart 29 presents data on this question, listed by scale of corporation and industry. According to the chart, corporations of all sizes appear to be experiencing pronounced labor shortages. This trend appears to be most severe in the case of small and medium-sized corporations. The labor shortage has been felt strongly since the 1990s when the manpower shortage first became acute. As for large corporations, the labor shortage is not as severe as it is for small and middle-sized corporations, but relatively speaking, the sense of a shortage is on the rise. On the other hand, when it comes to manufacturing, the sense of a labor shortage is growing more serious. All in all, the labor shortage is not that serious for large corporations when comparing with the absolute levels of the past.

Production Capacity DI and Employment Conditions DI (Corporations of All Sizes and Industries)	Differences in How Production Capacity DI and Employment Conditions DI Are Experienced
Chart 28	Chart 29
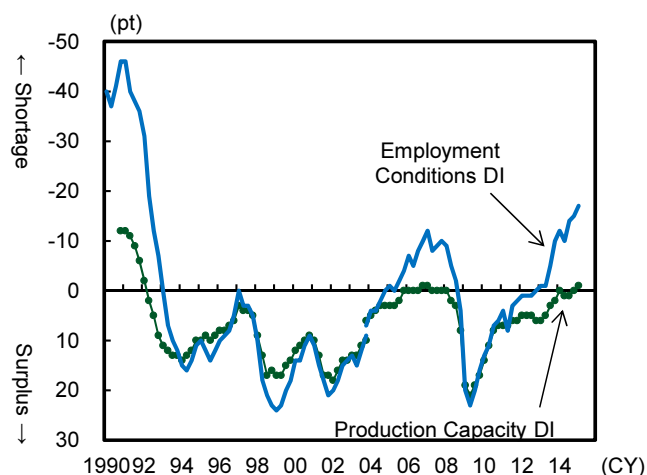
Source: Bank of Japan; compiled by DIR.
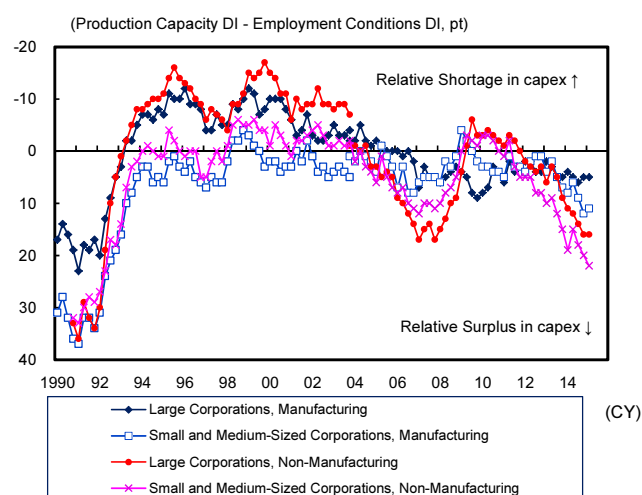
Source: Bank of Japan; compiled by DIR.

With a tight labor supply and demand situation, small and medium-sized corporations experience upward pressure on personnel expenses

As economic expansion continues, demand increases for production capacity and labor, and this leads to a stronger sense of a shortage of labor. In order to resolve the shortage, corporations must increase the number of employees. Possibilities are therefore high that corporate personnel expenses will increase in the future. In Macro terms, the supply and demand situation for labor is extremely tight,

with the unemployment rate nearing the level of the structural unemployment rate, and the ratio of jobs to applicants exceeding 1x. For this reason, the cost to corporations of obtaining additional labor, in other words wages, will also likely experience upward pressure, becoming a factor in the increase in personnel expenses.

In Chart 30 we bring together data on past labor shortages and surpluses as well as personnel expenses in order to consider the relationship between these phenomena. As for large corporations, both those in the manufacturing industry and the non-manufacturing industry show little relation between personnel expenses and the supply and demand of labor. In other words, we must assume that there is some factor other than the supply and demand of labor influencing growth and decline in personnel expenses. On the other hand, small and medium-sized corporations do show a certain amount of relationality between the shortage or surplus of labor and personnel expenses. The data suggest that labor shortage may be a factor in the growth of personnel expenses. As was previously confirmed, the overall recent economy shows an increasingly tight employment market, with small and medium-sized corporations experiencing an especially serious version of the labor shortage problem. In focusing on past relationality between these factors, we see an increase in the burden of personnel expenses for small and medium-sized corporations.

Relationship Between Sense of Labor Surplus-Shortage and Personnel Expenses by Size of Corporation and Industry — **Chart 30**

Manufacturing Industry
(Personnel Expenses y/y, %)

Small and Medium-Sized Corporations:
y = -0.1582x + 1.1183 R² = 0.6238

Large Corporations:
y = -0.1162x + 1.7701
R² = 0.2501

◆ Large Corporations, Manufacturing
☐ Small and Medium-Sized Corporations, Manufacturing

Shortage ← → Surplus
(Employment Conditions DI)

Non-Manufacturing Industry
(Personnel Expenses y/y, %)

Small and Medium-Sized Corporations:
y = -0.1672x + 1.0683
R² = 0.4945

Large Corporations:
y = -0.1412x - 0.2761
R² = 0.0864

● Large Corporations, Non-Manufacturing
✕ Small and Medium-Sized Corporations, Non-Manufacturing

Shortage ← → Surplus
(Employment Conditions DI)

Source: Bank of Japan, Ministry of Finance; compiled by DIR.
Note: Period covered by data: 1990 1Q - 2014 4Q.

Source: Bank of Japan, Ministry of Finance; compiled by DIR.
Note: Period covered by data: 1990 1Q - 2014 4Q.

Labor's relative share is high amongst small and medium-sized corporations, and earnings have a major influence on capex

In consideration of distribution of net profit, corporations could prioritize capex and payment of dividends to stockholders, while holding down personnel expenses. But as was confirmed in the previous section, there is an increasing sense of labor shortage in relative terms, while in addition, supply and demand of labor has become extremely tight in macro terms. Therefore corporations are expected to find an increase in personnel expenses unavoidable in order to obtain more labor. An increase in personnel expenses will have the effect of reducing corporate earnings, and the negative effect will be felt more strongly by corporations and industries whose ratio of personnel expenses to

total costs is high. Chart 31 shows changes labor's relative share by size of corporation and industry. The data indicates that labor's relative share is on the high side in structural terms for small and medium corporations for both manufacturing and non-manufacturing. In other words, the increase in personnel expenses will carry more influence on the earnings of small and medium-sized corporations.

However, while changes in corporate earnings will affect capex, this will be only one of the factors determining capex spending. Moreover, the influence of changes in earnings on capex spending will not be the same for all corporations. Chart 32 shows our estimates of the capex function by size of corporation and industry. When we compare the extent of influence of changes in corporate earnings on capex spending (elasticity coefficient), we find that the smaller the corporation, the larger this influence tends to be.

Due to the above, we expect growth in personnel expenses to be a factor in deterioration of earnings for small and medium sized corporations with a strong sense of shortage of labor and whose share of total costs accounted for by personnel expenses is high. Furthermore, the extent of influence of changes in earnings on capex spending will also be large, since the elasticity coefficient for capex in relation to corporate earnings is high amongst small and medium sized corporations. However, behind the rise in personnel expenses lies an increase in production, which should evoke demand for capex spending as the sense of surplus capacity dissipates. For this reason we still expect capex spending to continue in a growth trend. It will of course be difficult for small and medium-sized corporations to increase capex spending, but growth in capex is expected to center on large corporations. Moreover, supply and demand factors are expected to be major in continuing the growth trend in capex spending, so there is still a very good possibility that even small and medium-sized corporations will be part of this trend. There is therefore no reason to adopt an overly pessimistic attitude as regards this situation.

Labor's Relative Share by Size of Corporation and Industry
Chart 31
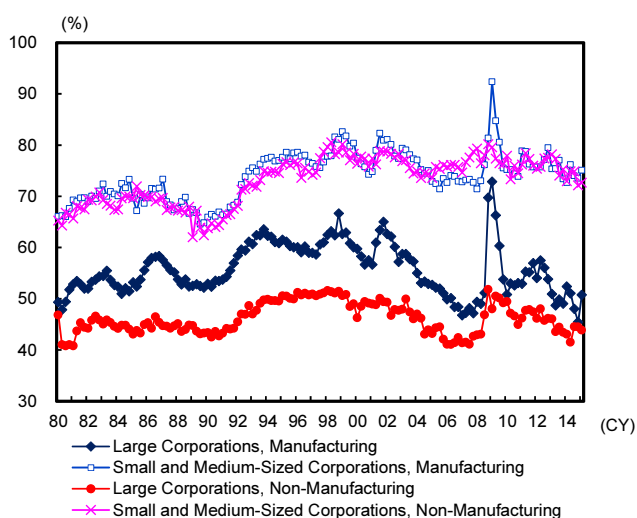
Source: Ministry of Finance; compiled by DIR.
Note: Labor's relative share = personnel expenses / (recurring profits + personnel expenses + depreciation expenses + interest paid). Seasonal adjustment by DIR.

Elasticity Coefficient of Capex Spending in Relation to Corporate Earnings
Chart 32
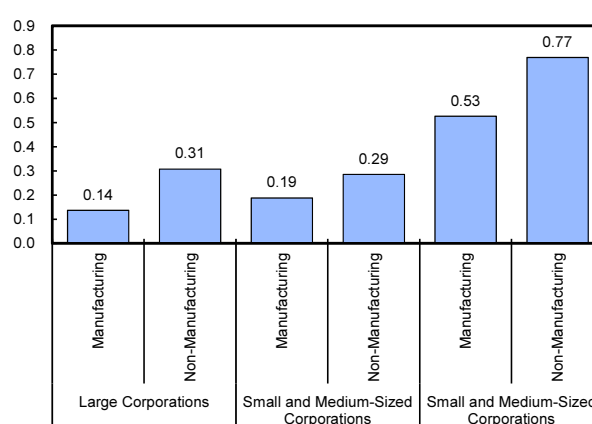
Source: Ministry of Finance, Bank of Japan; compiled by DIR.
Note: Values in the chart are represented by the α value in the capex function by size of corporation and industry shown below:
1n (real capex) = α1n (real cash flow) + β production capacity DI + γ real interest + constant term
capex, cash flow and interest are substantiated by the capex deflator.

4.2 Survey: Corporate Stance toward Distribution of Profits

Large corporations prioritize capex, while small and medium-sized corporations prioritize employee compensation

We now shift our viewpoint to a survey of corporations which reveals their stance toward distribution of profits based on size of corporation and industry (see Chart 33). Taking a look first at all-industry results, we see that large corporations mostly prioritize capex (60.3%), while 56.1% will prioritize retained earnings and 55.4% lean toward shareholder dividends. This is the first time in seven years (since 2007) that a majority of corporations decided to prioritize capex. This confirms our assessment that corporate willingness to invest in capex is improving. On the other hand, small and medium-sized corporations tend to prioritize retained earnings (56.8%), while 55.4% prefer to pass on profits to employees. The percentage of small to medium-sized corporations prioritizing capex is 39.8%, lagging significantly behind the orientation toward capex of large corporations.

Looking at results by industry (manufacturing and non-manufacturing), we see that small and medium-sized manufacturers also had a fairly high percentage preferring capex (51.1%), ranking second in capex orientation in overall responses to the survey. Meanwhile, small and medium-sized corporations in the non-manufacturing industry showed only 37.5% prioritizing capex, a fairly low percentage, indicating that there is still some wariness remaining when it comes to investment. The results of the survey are fairly consistent with the quantitative analysis covered in the first part of this section, where it was suggested that the shortage in labor and increasing personnel expenses are likely behind the unwillingness of small and medium-sized corporations to carry out capex spending.

Corporate Stance Towards Distribution of Profits						Chart 33

(Component percentages of total number of respondents, %)

	All Industries		Manufacturing		Non-Manufacturing	
	Large Corporations	Small and Medium-Sized Corporations	Large Corporations	Small and Medium-Sized Corporations	Large Corporations	Small and Medium-Sized Corporations
capex	① 60.3	39.8	① 69.7	② 51.1	② 55.4	37.5
Research & Development	24.9	14.3	43.8	26.5	14.9	11.8
Capitalization of Associate Companies, M&A	10.3	3.7	9.8	3.1	10.5	3.8
Reduce Interest-Bearing Liabilities	21.8	30.2	24.3	27.6	20.4	30.7
Increase Number of New Employees	7.3	19.1	2.8	20.0	9.7	18.9
Profit-Sharing with Employees	27.2	② 55.4	26.0	① 62.1	27.8	② 54.1
Compensation, Bonuses to Directors	3.3	22.8	2.4	18.1	3.7	23.7
Dividend Payout to Shareholders	55.4	9.3	② 55.7	7.9	55.2	9.6
Retained Earnings	② 56.1	① 56.8	44.3	47.9	① 62.4	① 58.6
Others	1.7	3.0	0.8	2.3	2.1	3.2

Source: Cabinet Office, Ministry of Finance; compiled by DIR.
Notes: 1) Component percentages of total number of respondents. Respondents were asked to provide answers to at least three out of a total of ten questions.
2) Questionnaire took place in Jan-Mar 2015 period, based on FY2014 business performance.

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) The danger of China's economic bubble collapsing, (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

The danger of forfeiting fiscal discipline

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 34, 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 34**

(1) Current Situation

(2) Future Outlook
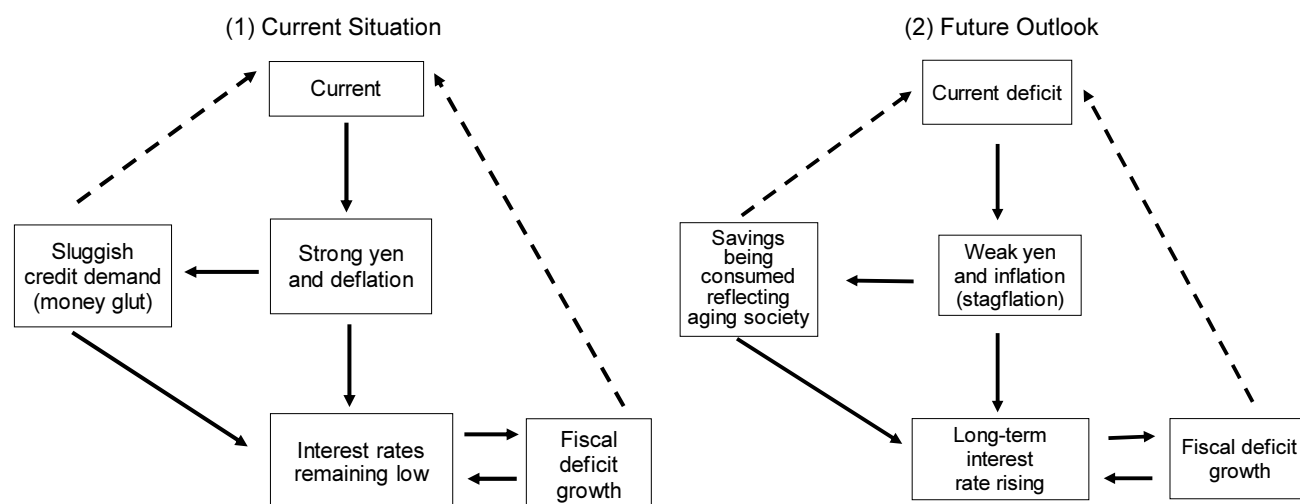
Source: Compiled by DIR

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 35 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 & US) — **Chart 35**

UK

US
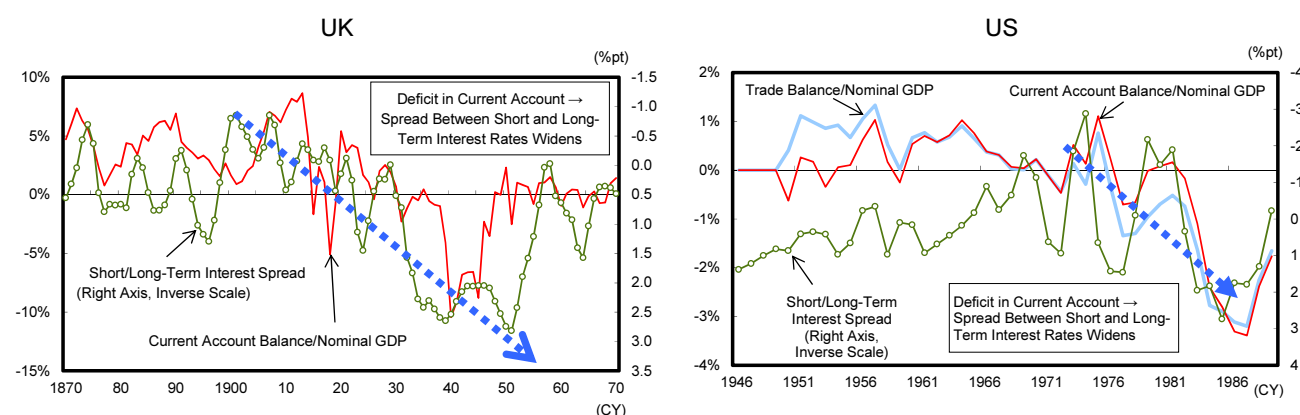
Source: International Historic Statistics, by Brian R. Mitchell (Palgrave Macmillan), A History of Interest Rates; compiled by DIR.

Source: Historical Statistics of the United States; compiled by DIR.

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

5.2 Risk (2): The danger of China's economic bubble collapsing

The third major risk facing Japan's economy is the danger of China's economic bubble collapsing.

Excessive lending has become a problem in China in the wake of its response to the global financial crisis in 2008. Chart 36 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 208% of nominal GDP at the end of March 2015. Comparing current levels to the long-term trend, we estimate excessive lending in China to be around Y998 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.

China's Total Social Financing (% of GDP)	Chart 36
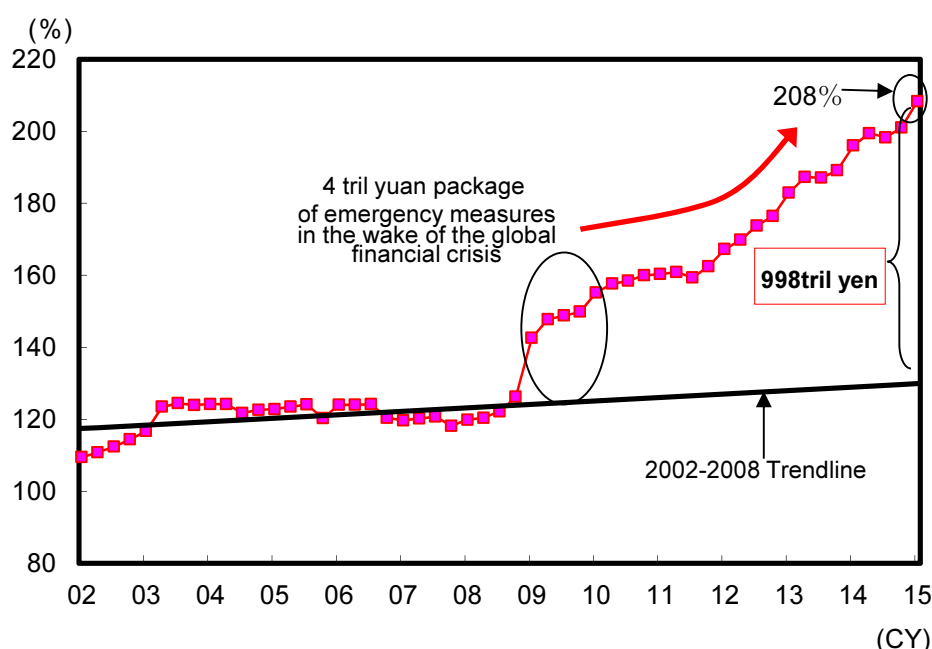
Source: People's Bank of China, National Bureau of Statistics of China; compiled by DIR.

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 37 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, Premier Li Keqiang announced at

The National People's Congress on March 5, 2015 that the lower limit for the growth rate of real GDP in China will be targeted at around 7%, which is considered the minimum on the global financial markets.

China: Business Cycle Signal Index   **Chart 37**
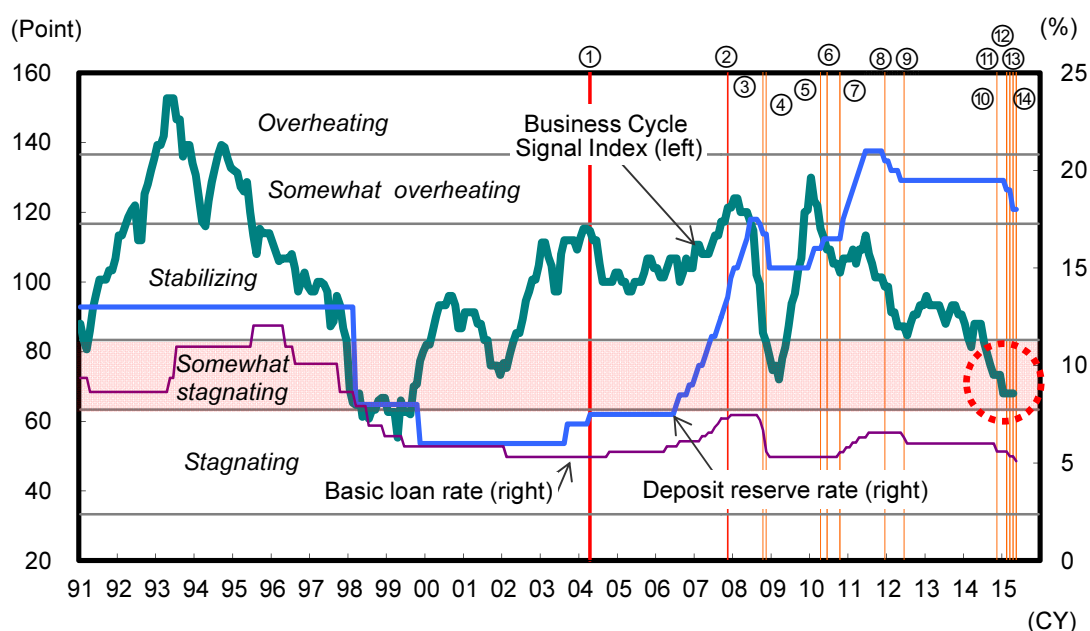
Source: National Bureau of Statistics of China, People's Bank of China, CEIC Data; compiled by DIR.

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
12. Mar 2015:Loan rate cuts
13. Apr 2015:A series of deposit reserve rate lowering moves began
14. May 2015:Loan rate cuts

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 38 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 38**
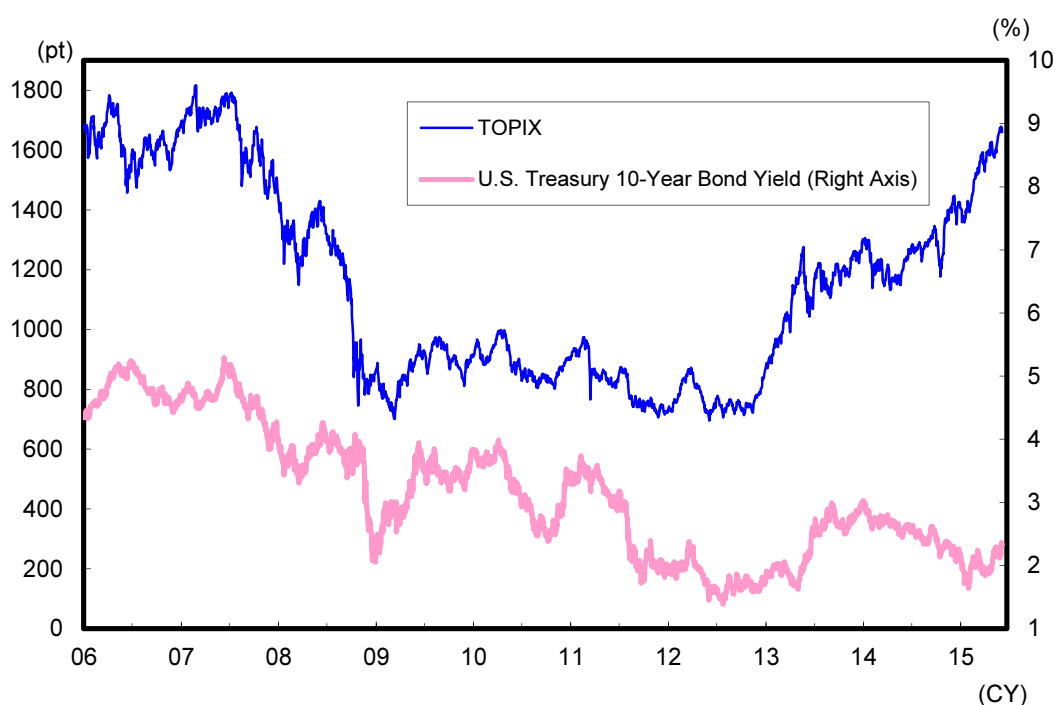
Source: Tokyo Stock Exchange and FRB; compiled by DIR.

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 39 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 39
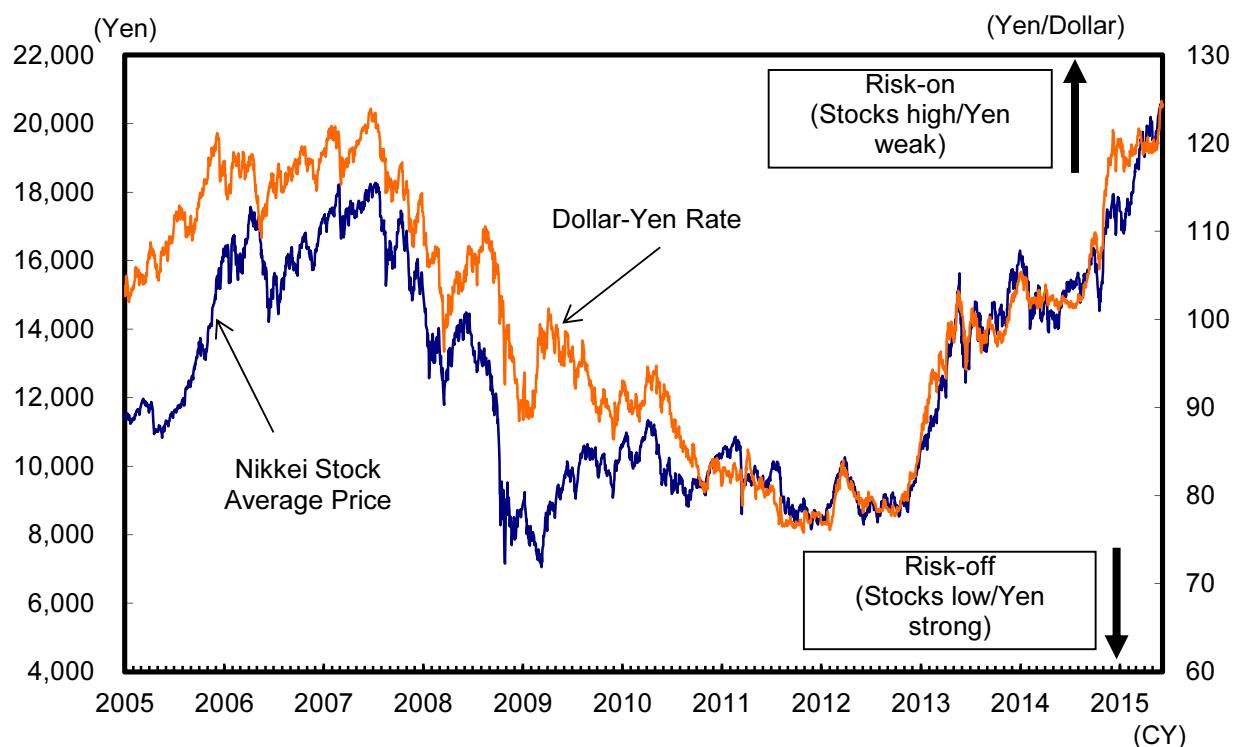
Source: Bloomberg, Nikkei; compiled by DIR.

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 40).

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 40**

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.

Claims Held Against Russia (2014, Q1)

($ 100 mil)

Source: Statistics from BIS; 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
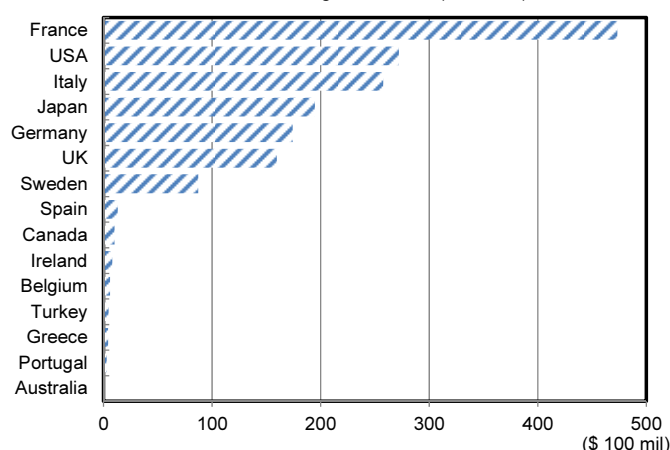
Source: Statistics from IMF; compiled by DIR.

Claims Held Against Iraq (2014, Q1)

($ 100 mil)
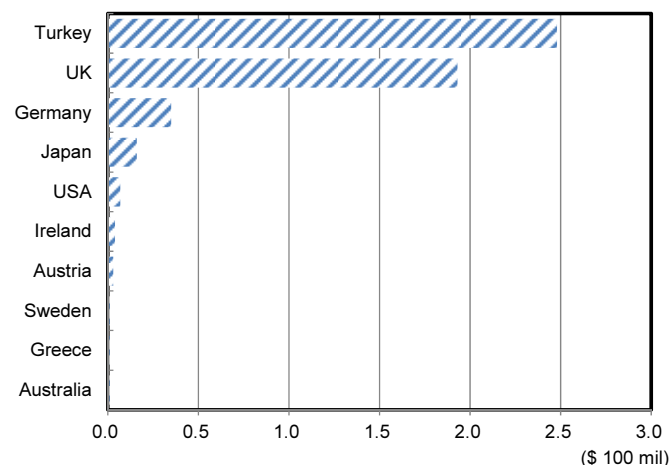
Source: Statistics from BIS; compiled by DIR.

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 Jul-Sep 2015.

Standard and Alternate Scenario Assumptions

	Standard scenario	Alternate scenario (in each quarter in both years)
Case 1: Forex rate	Y119.9/$ in FY15 and Y120.0/$ in FY16	Y10 appreciation against $
Case 2: Crude oil prices (WTI futures)	$60.2/bbl in FY15 and 63.8/bbl in FY16	20% rise per qtr
Case 3: World GDP	+3.4% y/y in CY15 and +3.5% y/y in CY16	1% contraction in world GDP level
Case 4: Long-term interest rate	0.47% in FY15 and 0.70% in FY16	1% pt rise

Source: Compiled by DIR.

Effects on Real GDP (% change from standard scenario)   Chart 41
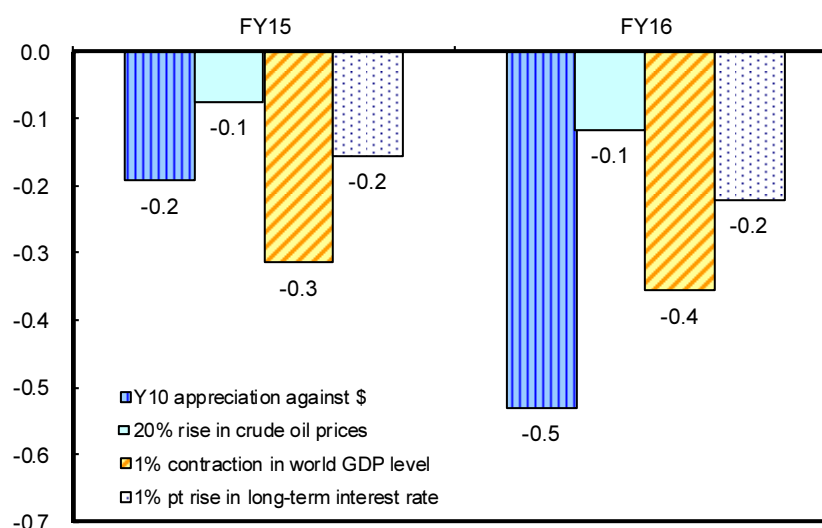
Source: Compiled by DIR.

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 0.2% 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 0.3% in FY15 and 0.4% 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 42**

	Standard Scenario		Case 1 — Y10 appreciation against $				Case 2 — 20% rise in crude oil prices			
	FY15	FY16	FY15		FY16		FY15		FY16	
Nominal GDP (Y/y %)	2.6	2.2	2.1	(-0.5)	1.9	(-0.8)	2.1	(-0.4)	2.0	(-0.6)
Real GDP (Chained [2005]; y/y %)	**1.7**	**1.8**	**1.5**	**(-0.2)**	**1.5**	**(-0.5)**	**1.6**	**(-0.1)**	**1.8**	**(-0.1)**
GDP deflator (Y/y %)	0.9	0.4	0.6	(-0.3)	0.4	(-0.3)	0.5	(-0.4)	0.2	(-0.5)
All-industry Activity Index (Y/y %)	1.7	2.5	1.3	(-0.4)	2.2	(-0.6)	1.6	(-0.1)	2.4	(-0.1)
Industrial Production Index (Y/y %)	1.9	4.9	0.5	(-1.4)	4.2	(-2.0)	1.8	(-0.1)	4.8	(-0.2)
Tertiary Industry Activity Index (Y/y %)	2.1	1.9	1.8	(-0.3)	1.7	(-0.4)	2.0	(-0.1)	1.8	(-0.1)
Corporate Goods Price Index (Y/y %)	-1.3	0.9	-2.3	(-1.0)	0.6	(-1.3)	-0.8	(0.5)	1.1	(0.7)
Consumer Price Index (Y/y %)	0.4	1.1	0.2	(-0.2)	1.0	(-0.3)	0.5	(0.1)	1.1	(0.2)
Unemployment rate (%)	3.3	3.1	3.3	(0.0)	3.2	(0.0)	3.3	(-0.0)	3.1	(-0.0)
Trade balance (Y tril)	0.1	0.1	0.3	(0.2)	-0.2	(-0.3)	-1.8	(-1.9)	-2.6	(-2.7)
Current balance (US$100 mil)	1,419	1,495	1,532	(113)	1,396	(-98)	1,269	(-150)	1,289	(-206)
Current balance (Y tril)	17.0	17.9	16.8	(-0.2)	15.4	(-2.6)	15.2	(-1.8)	15.5	(-2.5)
Real GDP components (Chained [2005]; y/y %)										
Private consumption	1.7	1.4	1.7	(-0.0)	1.3	(-0.1)	1.6	(-0.1)	1.4	(-0.2)
Private housing investment	1.8	5.9	1.6	(-0.2)	5.5	(-0.5)	1.6	(-0.2)	5.6	(-0.4)
Private non-housing investment	3.0	5.5	2.2	(-0.8)	4.8	(-1.5)	2.7	(-0.4)	5.2	(-0.6)
Government final consumption	0.9	1.0	0.9	(0.1)	1.2	(0.2)	0.8	(-0.0)	1.0	(-0.0)
Public fixed investment	-6.0	-4.9	-5.5	(0.5)	-4.7	(0.7)	-6.1	(-0.1)	-4.9	(-0.2)
Exports of goods and services	8.0	5.7	7.6	(-0.4)	5.0	(-1.0)	7.9	(-0.1)	5.6	(-0.1)
Imports of goods and services	5.3	5.3	5.0	(-0.3)	5.9	(0.4)	4.9	(-0.4)	5.0	(-0.6)

	Case 3 — 1% contraction of World GDP				Case 4 — 1% pt rise in 10-yr JGB yield				(Reference) Y5 depreciation and 20% rise in crude oil prices			
	FY15		FY16		FY15		FY16		FY15		FY16	
Nominal GDP (Y/y %)	2.3	(-0.3)	2.2	(-0.4)	2.4	(-0.2)	2.1	(-0.2)	2.4	(-0.2)	2.2	(-0.2)
Real GDP (Chained [2005]; y/y %)	**1.4**	**(-0.3)**	**1.8**	**(-0.4)**	**1.5**	**(-0.2)**	**1.8**	**(-0.2)**	**1.7**	**(0.0)**	**1.9**	**(0.1)**
GDP deflator (Y/y %)	0.9	(-0.0)	0.4	(-0.0)	0.9	(0.0)	0.4	(-0.0)	0.7	(-0.2)	0.2	(-0.4)
All-industry Activity Index (Y/y %)	1.5	(-0.2)	2.4	(-0.2)	1.6	(-0.1)	2.4	(-0.1)	1.8	(0.1)	2.5	(0.2)
Industrial Production Index (Y/y %)	1.0	(-0.9)	4.9	(-0.9)	1.6	(-0.3)	4.8	(-0.4)	2.5	(0.5)	5.2	(0.8)
Tertiary Industry Activity Index (Y/y %)	2.0	(-0.1)	1.8	(-0.1)	2.1	(-0.1)	1.9	(-0.1)	2.2	(0.1)	1.9	(0.1)
Corporate Goods Price Index (Y/y %)	-1.4	(-0.0)	0.9	(-0.1)	-1.3	(0.0)	0.9	(-0.0)	-0.3	(1.0)	1.3	(1.4)
Consumer Price Index (Y/y %)	0.4	(-0.0)	1.0	(-0.0)	0.4	(0.0)	1.0	(-0.0)	0.6	(0.2)	1.2	(0.3)
Unemployment rate (%)	3.3	(-0.0)	3.1	(0.0)	3.3	(0.0)	3.2	(0.0)	3.3	(-0.0)	3.1	(-0.0)
Trade balance (Y tril)	-0.6	(-0.7)	-0.4	(-0.5)	0.5	(0.3)	0.7	(0.6)	-1.9	(-2.0)	-2.4	(-2.5)
Current balance (US$100 mil)	1,340	(-79)	1,401	(-94)	1,381	(-38)	1,140	(-355)	1,213	(-206)	1,338	(-156)
Current balance (Y tril)	16.1	(-1.0)	16.8	(-1.1)	16.6	(-0.5)	13.7	(-4.3)	15.3	(-1.7)	16.8	(-1.2)
Real GDP components (Chained [2005]; y/y %)												
Private consumption	1.6	(-0.1)	1.4	(-0.0)	1.7	(-0.0)	1.4	(-0.0)	1.6	(-0.1)	1.4	(-0.1)
Private housing investment	1.7	(-0.1)	5.6	(-0.4)	1.2	(-0.5)	5.8	(-0.7)	1.7	(-0.1)	5.8	(-0.2)
Private non-housing investment	2.8	(-0.2)	5.2	(-0.5)	2.0	(-1.0)	4.9	(-1.6)	3.1	(0.0)	5.6	(0.1)
Government final consumption	0.9	(0.0)	1.1	(0.0)	0.9	(0.0)	1.1	(0.0)	0.8	(-0.0)	1.0	(-0.1)
Public fixed investment	-5.9	(0.0)	-4.9	(0.1)	-6.0	(-0.0)	-4.9	(0.0)	-6.3	(-0.4)	-5.0	(-0.5)
Exports of goods and services	6.3	(-1.6)	5.7	(-1.6)	8.0	(-0.0)	5.6	(-0.0)	8.1	(0.1)	5.9	(0.4)
Imports of goods and services	5.0	(-0.3)	5.3	(-0.3)	5.0	(-0.3)	5.0	(-0.6)	5.1	(-0.2)	4.7	(-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 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	2014	CY 2013	2014
Nominal GDP (SAAR; Y tril)	479.5	481.9	481.2	488.4	488.3	485.1	488.5	497.6	483.1	489.9	480.1	487.7
Q/q %	0.3	0.5	-0.2	1.5	-0.0	-0.6	0.7	1.9				
Q/q %, SAAR	1.0	2.1	-0.6	6.1	-0.1	-2.6	2.8	7.7				
Y/y %	0.8	1.9	2.0	2.5	1.8	0.6	1.4	1.9	1.8	1.4	1.0	1.6
Real GDP (chained [2005]; SAAR; Y tril)	527.5	530.0	528.6	535.0	525.5	522.7	524.2	527.3	530.6	525.1	527.5	527.0
Q/q %	0.7	0.5	-0.3	1.2	-1.8	-0.5	0.3	0.6				
Q/q %, SAAR	2.7	1.9	-1.0	4.9	-6.9	-2.1	1.1	2.4				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.9	-1.4	2.1	-1.0	1.6	-0.1
Contribution to GDP growth (% pt)												
Domestic demand	0.6	0.8	0.3	1.5	-2.8	-0.6	0.0	0.8	2.6	-1.6	1.9	-0.1
Foreign demand	0.0	-0.4	-0.5	-0.3	1.1	0.1	0.3	-0.2	-0.5	0.6	-0.3	0.0
GDP deflator (y/y %)	-0.6	-0.3	-0.3	0.1	2.2	2.1	2.4	3.4	-0.3	2.5	-0.6	1.7
Index of All-Industry Activity (2005=100)	97.1	97.6	97.9	99.3	95.7	96.1	97.1	97.4	98.0	96.6	97.3	97.0
Q/q %; y/y %	0.6	0.5	0.3	1.4	-3.7	0.4	1.1	0.3	1.9	-1.5	0.8	-0.3
Index of Industrial Production (2010=100)	96.1	97.8	99.6	101.9	98.8	97.4	98.2	99.7	98.9	98.6	97.0	99.0
Q/q %; y/y %	1.6	1.7	1.8	2.3	-3.1	-1.3	0.8	1.6	3.3	-0.3	-0.8	2.1
Index of Tertiary Industry Activity (2005=100)	100.1	100.2	100.0	101.6	97.6	98.3	99.3	100.0	100.5	98.8	100.0	99.2
Q/q %; y/y %	0.4	0.0	-0.2	1.6	-3.9	0.7	1.0	0.8	1.3	-1.7	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	103.3	102.4	105.3	101.9	105.1
Y/y %	0.6	2.2	2.5	2.0	4.4	4.0	2.5	0.5	1.8	2.8	1.3	3.2
CPI (excl. fresh food; 2010=100)	99.9	100.3	100.7	100.6	103.3	103.5	103.4	102.7	100.4	103.2	100.1	102.7
Y/y %	0.0	0.7	1.1	1.3	3.3	3.2	2.7	2.1	0.8	2.8	0.4	2.6
Unemployment rate (%)	4.0	4.0	3.9	3.6	3.6	3.6	3.5	3.5	3.9	3.6	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	0.34	0.69	0.46	0.70	0.53
Money stock; M2 (y/y %)	3.5	3.8	4.2	3.9	3.2	3.0	3.5	3.5	3.9	3.3	3.6	3.4
Trade balance (SAAR; Y tril)	-6.0	-9.3	-11.7	-15.8	-8.4	-10.6	-7.4	0.3	-11.0	-6.5	-8.8	-10.4
Current balance (SAAR; $100 mil)	967	315	-96	-518	313	193	931	1,254	147	673	403	250
Current balance (SAAR; Y tril)	9.6	3.1	-1.0	-5.3	3.2	2.0	10.7	14.9	1.5	7.7	3.9	2.6
(% of nominal GDP)	2.0	0.6	-0.2	-1.1	0.7	0.4	2.2	3.0	0.3	1.6	0.8	0.5
Exchange rate (Y/$)	98.8	98.9	100.4	102.8	102.1	103.9	114.5	119.1	100.2	109.9	97.6	105.8
(Y/Euro)	129.6	130.7	139.9	140.3	139.5	137.8	143.8	132.6	135.1	138.4	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 4-6 (E)	7-9 (E)	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
Nominal GDP (SAAR; Y tril)	498.1	501.2	503.9	506.3	509.0	512.5	515.3	517.7	502.6	513.8	500.4	511.0
Q/q %	0.1	0.6	0.5	0.5	0.5	0.7	0.6	0.5				
Q/q %, SAAR	0.4	2.5	2.2	2.0	2.1	2.8	2.2	1.8				
Y/y %	2.0	3.3	3.2	1.8	2.2	2.2	2.2	2.2	2.6	2.2	2.6	2.1
Real GDP (chained [2005]; SAAR; Y tril)	529.6	532.7	535.1	537.0	539.2	541.9	544.4	547.9	533.9	543.6	531.4	540.8
Q/q %	0.4	0.6	0.4	0.4	0.4	0.5	0.5	0.6				
Q/q %, SAAR	1.8	2.4	1.8	1.4	1.6	2.0	1.9	2.6				
Y/y %	0.8	1.9	2.1	1.8	1.8	1.7	1.7	2.0	1.7	1.8	0.8	1.8
Contribution to GDP growth (% pt)												
Domestic demand	0.2	0.5	0.4	0.3	0.3	0.4	0.4	0.8	1.2	1.6	0.3	1.6
Foreign demand	0.3	0.1	0.1	0.1	0.1	0.1	0.1	-0.2	0.6	0.2	0.6	0.2
GDP deflator (y/y %)	1.3	1.4	1.1	-0.1	0.4	0.5	0.5	0.2	0.9	0.4	1.8	0.3
Index of All-Industry Activity (2005=100)	97.5	98.0	98.4	98.9	99.5	100.1	100.7	102.3	98.2	100.7	97.8	99.8
Q/q %; y/y %	0.2	0.4	0.5	0.5	0.6	0.6	0.6	1.5	1.7	2.5	0.8	2.0
Index of Industrial Production (2010=100)	99.2	99.9	100.8	101.8	103.0	104.3	105.9	108.2	100.5	105.5	99.8	103.7
Q/q %; y/y %	-0.5	0.7	0.9	1.0	1.2	1.3	1.5	2.1	1.9	4.9	0.8	3.9
Index of Tertiary Industry Activity (2005=100)	100.4	100.7	101.1	101.5	101.9	102.3	102.8	104.2	100.9	102.8	100.5	102.1
Q/q %; y/y %	0.3	0.3	0.4	0.4	0.4	0.4	0.4	1.4	2.1	1.9	1.3	1.6
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	103.3	103.6	104.0	104.3	104.6	104.8	104.9	105.0	103.8	104.8	103.6	104.6
Y/y %	-2.5	-2.7	-1.0	1.0	1.2	1.1	0.8	0.6	-1.3	0.9	-1.5	1.0
CPI (excl. fresh food; 2010=100)	103.3	103.5	103.8	103.7	104.3	104.6	105.0	104.9	103.6	104.7	103.3	104.4
Y/y %	0.1	0.0	0.4	1.0	0.9	1.1	1.1	1.1	0.4	1.1	0.6	1.0
Unemployment rate (%)	3.4	3.3	3.3	3.2	3.2	3.2	3.1	3.1	3.3	3.1	3.4	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; %)	0.40	0.44	0.49	0.55	0.61	0.67	0.73	0.80	0.47	0.70	0.42	0.64
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	3.4	3.9
Trade balance (SAAR; Y tril)	-0.2	-0.0	0.1	0.5	0.4	0.4	0.5	-0.9	0.1	0.1	0.1	0.5
Current balance (SAAR; $100 mil)	1376	1401	1434	1465	1496	1522	1543	1418	1419	1495	1366	1506
Current balance (SAAR; Y tril)	16.4	16.8	17.2	17.6	17.9	18.3	18.5	17.0	17.0	17.9	16.3	18.1
(% of nominal GDP)	3.3	3.4	3.4	3.5	3.5	3.6	3.6	3.3	3.4	3.5	3.3	3.5
Exchange rate (Y/$)	119.5	120.0	120.0	120.0	120.0	120.0	120.0	120.0	119.9	120.0	119.6	120.0
(Y/Euro)	134.2	135.0	135.0	135.0	135.0	135.0	135.0	135.0	134.8	135.0	134.2	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 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	FY 2014	CY 2013	CY 2014
Gross domestic expenditure	527.5	530.0	528.6	535.0	525.5	522.7	524.2	527.3	530.6	525.1	527.5	527.0
Q/q %, SAAR	2.7	1.9	-1.0	4.9	-6.9	-2.1	1.1	2.4				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.9	-1.4	2.1	-1.0	1.6	-0.1
Domestic demand	518.3	522.5	523.8	531.9	516.6	514.1	514.3	518.0	524.5	515.9	519.9	519.4
Q/q %, SAAR	2.6	3.2	1.0	6.4	-11.0	-1.9	0.2	2.9				
Y/y %	1.5	2.2	2.7	3.6	-0.4	-1.6	-1.9	-2.6	2.5	-1.6	1.9	-0.1
Private demand	394.6	397.8	398.9	407.6	391.7	388.6	388.6	392.4	400.0	390.4	395.9	394.2
Q/q %, SAAR	2.0	3.3	1.1	9.0	-14.7	-3.1	-0.0	4.0				
Y/y %	1.2	1.8	2.3	4.3	-0.7	-2.4	-2.8	-3.8	2.4	-2.4	1.6	-0.4
Final consumption	314.9	316.0	315.4	322.1	305.6	306.7	307.8	308.9	317.2	307.3	314.6	310.6
Q/q %, SAAR	3.5	1.4	-0.7	8.7	-19.0	1.4	1.5	1.4				
Y/y %	1.9	2.3	2.3	3.4	-2.9	-3.1	-2.4	-4.1	2.5	-3.1	2.1	-1.3
Residential investment	14.2	14.8	15.2	15.5	13.9	13.0	12.9	13.1	15.0	13.2	14.5	13.8
Q/q %, SAAR	6.3	19.8	12.3	8.3	-36.7	-23.2	-2.4	7.5				
Y/y %	6.6	8.3	10.2	11.9	-2.0	-12.4	-15.5	-15.3	9.3	-11.6	8.8	-5.1
Non-residential investment	69.5	70.0	70.9	75.1	71.1	71.1	71.1	71.3	71.5	71.2	69.5	72.2
Q/q %, SAAR	9.3	3.0	5.1	25.9	-19.2	-0.4	-0.2	1.4				
Y/y %	-0.2	1.2	3.0	10.8	2.4	1.4	0.2	-4.8	4.0	-0.5	0.4	3.9
Change in inventories	-3.9	-2.9	-2.6	-5.2	1.1	-2.1	-3.2	-1.0	-3.7	-1.3	-2.7	-2.4
Public demand	123.7	124.6	124.9	124.4	125.0	125.5	125.8	125.6	124.5	125.5	124.0	125.2
Q/q %, SAAR	4.6	3.0	0.7	-1.6	1.9	1.8	0.8	-0.7				
Y/y %	2.7	3.8	4.2	1.6	0.7	0.8	0.9	0.8	3.1	0.8	2.9	1.0
Government final consumption	102.2	102.2	102.2	101.9	102.3	102.5	102.8	102.9	102.2	102.7	102.1	102.4
Q/q %, SAAR	2.6	-0.3	0.2	-1.2	1.6	0.8	1.1	0.4				
Y/y %	2.6	2.0	1.5	0.2	0.1	0.3	0.6	0.9	1.6	0.5	1.9	0.3
Fixed investment	21.5	22.6	22.6	22.4	22.6	23.0	23.0	22.7	22.4	22.8	22.0	22.8
Q/q %, SAAR	12.3	22.2	0.6	-3.7	3.0	6.7	0.5	-5.5				
Y/y %	3.6	14.1	16.1	6.6	4.4	2.0	2.3	0.4	10.3	2.0	8.0	3.8
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	9.7	8.0	5.7	5.7	10.0	10.5	12.3	12.2	7.3	11.2	8.1	9.6
Exports of goods and services	83.9	83.6	83.7	88.8	88.8	90.2	93.1	95.3	85.0	91.9	83.2	90.2
Q/q %, SAAR	12.5	-1.5	0.3	26.8	-0.1	6.5	13.5	9.9				
Y/y %	-0.6	2.6	6.8	9.1	5.7	7.7	11.3	7.4	4.4	8.0	1.2	8.4
Imports of goods and services	74.2	75.6	78.0	83.1	78.8	79.7	80.8	83.1	77.8	80.6	75.1	80.6
Q/q %, SAAR	10.1	7.5	13.1	29.3	-19.3	4.3	5.8	12.0				
Y/y %	0.5	2.9	8.9	14.8	6.0	5.2	3.8	-0.0	6.7	3.7	3.1	7.4

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.

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

	2015 4-6 (E)	7-9 (E)	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
Gross domestic expenditure	529.6	532.7	535.1	537.0	539.2	541.9	544.4	547.9	533.9	543.6	531.4	540.8
Q/q %, SAAR	1.8	2.4	1.8	1.4	1.6	2.0	1.9	2.6				
Y/y %	0.8	1.9	2.1	1.8	1.8	1.7	1.7	2.0	1.7	1.8	0.8	1.8
Domestic demand	518.9	521.4	523.4	524.9	526.7	529.1	531.3	535.9	522.3	530.9	520.6	528.1
Q/q %, SAAR	0.7	1.9	1.5	1.2	1.4	1.8	1.7	3.5				
Y/y %	0.4	1.5	1.7	1.4	1.5	1.5	1.4	2.2	1.2	1.6	0.2	1.4
Private demand	393.8	396.4	398.4	399.9	401.7	404.1	406.3	410.8	397.3	405.9	395.4	403.0
Q/q %, SAAR	1.4	2.7	2.1	1.5	1.8	2.4	2.2	4.5				
Y/y %	0.5	2.0	2.6	2.0	2.0	1.9	1.9	2.9	1.8	2.2	0.3	1.9
Final consumption	310.5	312.2	313.3	313.7	314.4	315.2	316.6	321.3	312.5	317.0	311.3	315.1
Q/q %, SAAR	2.1	2.2	1.4	0.6	0.8	1.1	1.7	6.1				
Y/y %	1.6	1.9	1.8	1.5	1.2	0.9	1.1	2.4	1.7	1.4	0.2	1.2
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	4.9	3.6	2.0	2.4	5.3	13.4	7.0	4.5				
Y/y %	-4.1	3.4	4.6	3.1	3.3	5.7	6.9	7.6	1.8	5.9	-3.3	4.8
Non-residential investment	71.9	72.7	73.6	74.6	75.6	76.6	77.7	79.0	73.3	77.4	72.4	76.1
Q/q %, SAAR	3.6	4.5	5.1	5.3	5.5	5.6	5.7	7.0				
Y/y %	1.1	2.4	3.7	4.5	5.1	5.3	5.5	6.0	3.0	5.5	0.3	5.1
Change in inventories	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.5	-4.2	-2.0	-2.7	-1.7	-2.1
Public demand	125.1	125.0	125.0	125.0	125.0	125.0	125.1	125.1	125.0	125.0	125.2	125.1
Q/q %, SAAR	-1.4	-0.3	-0.2	0.1	-0.0	0.1	0.2	0.2				
Y/y %	0.3	-0.4	-0.9	-0.5	0.1	0.1	-0.0	-0.0	-0.4	0.0	-0.0	-0.1
Government final consumption	103.1	103.4	103.6	103.9	104.2	104.4	104.7	105.0	103.5	104.6	103.3	104.3
Q/q %, SAAR	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1				
Y/y %	0.8	0.8	0.8	1.0	1.0	1.0	1.1	1.1	0.9	1.0	0.8	1.0
Fixed investment	22.0	21.6	21.3	21.1	20.8	20.5	20.3	20.1	21.5	20.4	21.9	20.7
Q/q %, SAAR	-11.5	-6.0	-5.7	-4.5	-5.3	-4.7	-4.1	-4.2				
Y/y %	-2.4	-5.9	-7.6	-6.7	-5.5	-5.0	-4.5	-4.8	-6.0	-4.9	-3.9	-5.5
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	14.2	14.5	14.9	15.3	15.6	16.0	14.9	14.3	15.5	13.6	15.5
Exports of goods and services	96.7	98.6	100.0	101.3	102.6	104.0	105.5	107.0	99.2	104.8	97.7	103.4
Q/q %, SAAR	6.1	7.8	6.1	5.1	5.3	5.6	5.7	5.9				
Y/y %	9.0	9.4	7.5	6.2	6.1	5.5	5.4	5.6	8.0	5.7	8.3	5.8
Imports of goods and services	83.2	84.4	85.5	86.4	87.3	88.4	89.5	92.1	84.9	89.3	84.1	87.9
Q/q %, SAAR	0.2	6.1	5.3	4.1	4.5	4.9	5.3	12.1				
Y/y %	5.6	6.0	5.7	3.9	5.0	4.7	4.7	6.7	5.3	5.3	4.3	4.6

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

3.1 Nominal Gross Domestic Expenditure (Y tril)

	2013 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	2014	CY 2013	2014
Gross domestic expenditure	479.5	481.9	481.2	488.4	488.3	485.1	488.5	497.6	483.1	489.9	480.1	487.7
Q/q %, SAAR	1.0	2.1	-0.6	6.1	-0.1	-2.6	2.8	7.7				
Y/y %	0.8	1.9	2.0	2.5	1.8	0.6	1.4	1.9	1.8	1.4	1.0	1.6
Domestic demand	490.6	496.0	499.4	508.7	501.9	499.7	500.5	502.8	499.0	501.3	493.8	502.8
Q/q %, SAAR	1.0	4.5	2.7	7.7	-5.2	-1.7	0.7	1.8				
Y/y %	1.2	2.8	3.4	4.4	2.3	0.7	0.2	-1.2	2.9	0.5	1.9	1.8
Private demand	369.6	373.8	376.7	385.4	376.8	373.2	373.8	375.6	376.7	374.9	372.0	377.4
Q/q %, SAAR	1.2	4.6	3.2	9.5	-8.6	-3.8	0.6	2.0				
Y/y %	0.7	2.3	3.0	5.1	2.0	-0.2	-0.9	-2.6	2.8	-0.5	1.6	1.4
Final consumption	292.9	294.7	295.7	302.5	292.0	293.0	294.3	294.0	296.6	293.4	293.5	295.5
Q/q %, SAAR	2.8	2.5	1.3	9.5	-13.2	1.5	1.7	-0.4				
Y/y %	1.2	2.7	2.9	4.2	-0.3	-0.7	-0.5	-2.8	2.7	-1.1	1.9	0.7
Residential investment	14.9	15.6	16.3	16.6	15.3	14.2	14.2	14.4	15.9	14.5	15.3	15.0
Q/q %, SAAR	11.4	22.5	16.9	8.8	-28.5	-24.2	-2.3	8.4				
Y/y %	8.9	11.6	13.9	15.0	2.8	-9.0	-13.0	-12.8	12.5	-8.4	11.3	-1.8
Non-residential investment	65.9	66.6	67.6	71.7	68.3	68.5	68.7	69.0	68.2	68.7	66.0	69.4
Q/q %, SAAR	10.2	4.2	6.0	26.6	-17.4	0.7	1.5	1.9				
Y/y %	0.2	2.3	4.3	11.7	3.6	2.6	1.6	-3.5	4.9	0.8	1.2	5.1
Change in inventories	-4.1	-3.2	-2.8	-5.4	1.3	-2.5	-3.4	-1.9	-3.9	-1.7	-2.8	-2.5
Public demand	121.0	122.2	122.6	123.3	125.0	126.4	126.8	127.2	122.4	126.4	121.7	125.4
Q/q %, SAAR	0.2	4.1	1.4	2.2	5.9	4.5	1.1	1.3				
Y/y %	2.8	4.3	4.3	2.1	3.0	3.7	3.4	3.0	3.3	3.3	3.0	3.0
Government final consumption	98.6	98.7	98.6	99.3	100.6	101.4	101.8	102.4	98.8	101.5	98.8	100.8
Q/q %, SAAR	-2.9	0.3	-0.3	3.1	5.3	3.0	1.7	2.5				
Y/y %	2.5	1.9	1.0	0.0	2.1	2.8	3.1	3.1	1.3	2.8	1.7	2.0
Fixed investment	22.4	23.7	24.0	23.8	24.4	24.9	25.0	24.7	23.6	24.8	23.0	24.6
Q/q %, SAAR	12.1	25.4	5.0	-2.0	9.3	9.8	0.3	-4.3				
Y/y %	4.5	16.0	18.8	8.7	8.3	5.9	5.0	2.9	12.4	5.2	9.5	6.8
Change in inventories	0.0	-0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	-0.0	0.1
Net exports of goods and services	-11.1	-14.1	-18.2	-20.3	-13.6	-14.6	-12.1	-5.3	-15.9	-11.4	-13.6	-15.2
Exports of goods and services	78.0	78.8	79.2	83.7	83.6	86.4	91.5	91.8	80.0	88.4	77.5	86.4
Q/q %, SAAR	23.0	4.1	2.4	24.3	-0.3	14.1	26.1	1.0				
Y/y %	8.5	14.1	17.8	13.2	6.6	9.6	16.2	9.6	13.3	10.5	10.8	11.4
Imports of goods and services	89.1	92.8	97.4	104.0	97.2	101.0	103.6	97.0	95.9	99.8	91.2	101.5
Q/q %, SAAR	19.6	17.8	21.3	29.8	-23.6	16.3	11.0	-23.2				
Y/y %	10.3	17.9	24.5	22.2	8.6	8.7	6.9	-6.8	18.8	4.0	15.2	11.4

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 (Y tril)

	2015 4-6 (E)	7-9 (E)	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	2016 (E)	CY 2015 (E)	2016 (E)
Gross domestic expenditure	498.1	501.2	503.9	506.3	509.0	512.5	515.3	517.7	502.6	513.8	500.4	511.0
Q/q %, SAAR	0.4	2.5	2.2	2.0	2.1	2.8	2.2	1.8				
Y/y %	2.0	3.3	3.2	1.8	2.2	2.2	2.2	2.2	2.6	2.2	2.6	2.1
Domestic demand	502.3	505.2	507.9	510.3	513.0	516.6	519.5	523.6	506.5	518.3	504.6	514.9
Q/q %, SAAR	-0.4	2.4	2.2	1.9	2.1	2.8	2.3	3.2				
Y/y %	0.1	1.1	1.4	1.5	2.2	2.3	2.1	2.7	1.0	2.3	0.4	2.0
Private demand	375.5	378.4	381.0	383.3	385.8	389.2	391.9	395.7	379.7	390.8	377.7	387.5
Q/q %, SAAR	-0.2	3.2	2.8	2.4	2.7	3.5	2.8	4.0				
Y/y %	-0.4	1.4	2.0	2.2	2.7	2.8	2.7	3.5	1.3	2.9	0.1	2.6
Final consumption	294.9	296.9	298.4	299.4	300.5	302.1	304.1	309.4	297.5	304.1	296.1	301.6
Q/q %, SAAR	1.3	2.7	2.0	1.3	1.5	2.1	2.7	7.2				
Y/y %	1.0	1.4	1.4	1.8	1.9	1.7	1.9	3.3	1.4	2.2	0.2	1.8
Residential investment	14.6	14.8	14.9	15.0	15.3	15.8	16.1	16.4	14.8	15.9	14.7	15.6
Q/q %, SAAR	5.3	4.5	3.0	3.5	6.5	15.1	8.5	6.0				
Y/y %	-4.1	3.9	5.4	4.0	4.4	6.9	8.3	9.0	2.3	7.2	-2.2	5.9
Non-residential investment	69.7	70.5	71.5	72.6	73.8	75.1	76.4	77.9	71.2	75.9	70.2	74.4
Q/q %, SAAR	3.6	4.9	5.9	6.4	6.7	6.9	7.2	8.6				
Y/y %	2.0	3.1	4.1	5.1	6.0	6.4	6.7	7.4	3.7	6.7	1.1	6.0
Change in inventories	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-4.7	-8.0	-3.8	-5.1	-3.3	-4.0
Public demand	126.8	126.8	126.9	127.1	127.2	127.4	127.6	127.8	126.8	127.5	126.9	127.3
Q/q %, SAAR	-1.2	0.1	0.3	0.5	0.4	0.6	0.7	0.7				
Y/y %	1.6	0.2	-0.0	-0.3	0.6	0.5	0.5	0.4	0.4	0.5	1.2	0.3
Government final consumption	102.8	103.1	103.5	103.8	104.2	104.6	105.0	105.4	103.3	104.8	102.9	104.4
Q/q %, SAAR	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5				
Y/y %	2.1	1.7	1.7	1.4	1.4	1.5	1.4	1.5	1.7	1.4	2.1	1.4
Fixed investment	24.0	23.7	23.4	23.2	22.9	22.7	22.6	22.4	23.5	22.6	23.9	22.9
Q/q %, SAAR	-11.2	-5.2	-4.7	-3.4	-4.1	-3.4	-2.8	-2.8				
Y/y %	-1.3	-5.4	-6.7	-5.8	-4.5	-3.8	-3.3	-3.5	-5.2	-3.7	-2.7	-4.4
Change in inventories	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Net exports of goods and services	-4.2	-4.1	-4.1	-4.0	-4.0	-4.1	-4.2	-5.9	-4.1	-4.5	-4.4	-4.1
Exports of goods and services	93.1	94.9	96.3	97.5	98.8	100.2	101.6	103.0	95.6	101.0	94.1	99.6
Q/q %, SAAR	6.1	7.8	6.1	5.1	5.3	5.6	5.7	5.9				
Y/y %	11.7	9.9	4.9	6.3	5.9	5.5	5.6	5.6	8.1	5.6	8.9	5.8
Imports of goods and services	97.3	99.0	100.4	101.6	102.8	104.2	105.7	108.9	99.6	105.5	98.5	103.6
Q/q %, SAAR	1.2	7.2	5.9	4.6	5.1	5.5	5.9	12.7				
Y/y %	0.3	-1.9	-3.3	4.8	5.6	5.2	5.4	7.2	-0.1	5.9	-3.0	5.2

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 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	2014	CY 2013	2014
Gross domestic expenditure	90.9	90.9	91.0	91.3	92.9	92.8	93.2	94.4	91.0	93.3	91.0	92.5
Q/q %, SAAR	-0.4	0.0	0.1	0.3	1.8	-0.1	0.4	1.3				
Y/y %	-0.6	-0.3	-0.3	0.1	2.2	2.1	2.4	3.4	-0.3	2.5	-0.6	1.7
Private final consumption	93.0	93.3	93.7	93.9	95.5	95.6	95.6	95.2	93.5	95.5	93.3	95.1
Q/q %, SAAR	-0.2	0.3	0.5	0.2	1.7	0.0	0.1	-0.5				
Y/y %	-0.7	0.3	0.5	0.8	2.7	2.4	2.0	1.3	0.2	2.1	-0.3	2.0
Private residential investment	105.0	105.5	106.6	106.8	110.0	109.7	109.7	109.9	106.0	109.8	105.3	108.9
Q/q %, SAAR	1.2	0.5	1.0	0.1	3.1	-0.3	0.0	0.2				
Y/y %	2.1	3.0	3.4	2.9	4.9	3.9	2.9	2.9	2.9	3.6	2.3	3.5
Private non-residential investment	94.9	95.2	95.4	95.5	96.0	96.3	96.7	96.8	95.3	96.5	95.0	96.1
Q/q %, SAAR	0.2	0.3	0.2	0.1	0.6	0.3	0.4	0.1				
Y/y %	0.4	1.2	1.2	0.9	1.2	1.2	1.4	1.4	0.9	1.3	0.7	1.1
Government final consumption	96.4	96.6	96.5	97.5	98.4	98.9	99.0	99.5	96.7	98.9	96.7	98.4
Q/q %, SAAR	-1.4	0.2	-0.1	1.1	0.9	0.5	0.2	0.5				
Y/y %	-0.1	-0.1	-0.5	-0.2	2.1	2.5	2.5	2.1	-0.2	2.3	-0.2	1.7
Public fixed investment	104.0	104.7	105.8	106.3	107.9	108.7	108.6	109.0	105.4	108.6	104.8	107.8
Q/q %, SAAR	-0.1	0.7	1.1	0.4	1.5	0.7	-0.0	0.3				
Y/y %	0.9	1.7	2.3	2.0	3.8	3.8	2.6	2.5	1.8	3.1	1.3	2.9
Exports of goods and services	92.9	94.2	94.7	94.2	94.2	95.8	98.3	96.3	94.1	96.2	93.2	95.7
Q/q %, SAAR	2.3	1.4	0.5	-0.5	-0.0	1.7	2.7	-2.1				
Y/y %	9.1	11.1	10.3	3.7	0.9	1.8	4.4	2.0	8.5	2.3	9.5	2.7
Imports of goods and services	120.0	122.8	124.9	125.1	123.3	126.7	128.3	116.7	123.3	123.7	121.4	126.0
Q/q %, SAAR	2.1	2.3	1.8	0.1	-1.4	2.8	1.2	-9.0				
Y/y %	9.8	14.6	14.3	6.4	2.4	3.3	3.0	-6.8	11.3	0.3	11.7	3.7

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 4-6 (E)	7-9 (E)	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	2016 (E)	CY 2015 (E)	2016 (E)
Gross domestic expenditure	94.0	94.1	94.2	94.3	94.4	94.6	94.7	94.5	94.1	94.5	94.2	94.5
Q/q %, SAAR	-0.3	0.0	0.1	0.1	0.1	0.2	0.1	-0.2				
Y/y %	1.3	1.4	1.1	-0.1	0.4	0.5	0.5	0.2	0.9	0.4	1.8	0.3
Private final consumption	95.0	95.1	95.3	95.4	95.6	95.8	96.1	96.3	95.2	95.9	95.1	95.7
Q/q %, SAAR	-0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2				
Y/y %	-0.6	-0.5	-0.4	0.3	0.6	0.8	0.8	0.9	-0.3	0.8	-0.0	0.6
Private residential investment	110.0	110.3	110.5	110.8	111.1	111.5	111.9	112.3	110.4	111.7	110.2	111.4
Q/q %, SAAR	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4				
Y/y %	-0.0	0.5	0.8	0.8	1.0	1.1	1.3	1.4	0.5	1.2	1.1	1.1
Private non-residential investment	96.8	96.9	97.1	97.4	97.6	97.9	98.3	98.6	97.1	98.2	96.9	97.8
Q/q %, SAAR	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.4				
Y/y %	0.8	0.6	0.4	0.6	0.8	1.0	1.2	1.3	0.6	1.1	0.8	0.9
Government final consumption	99.6	99.7	99.8	99.9	100.0	100.1	100.2	100.3	99.7	100.1	99.7	100.0
Q/q %, SAAR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	1.3	0.8	0.9	0.4	0.4	0.4	0.4	0.4	0.8	0.4	1.3	0.4
Public fixed investment	109.1	109.3	109.6	109.9	110.3	110.7	111.1	111.5	109.5	110.9	109.2	110.5
Q/q %, SAAR	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.4				
Y/y %	1.1	0.6	0.9	0.9	1.1	1.3	1.3	1.4	0.8	1.3	1.3	1.1
Exports of goods and services	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3
Q/q %, SAAR	-0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0				
Y/y %	2.5	0.5	-2.4	0.1	-0.1	0.0	0.1	-0.1	0.1	-0.0	0.6	0.0
Imports of goods and services	117.0	117.3	117.4	117.6	117.8	117.9	118.1	118.3	117.4	118.1	117.1	117.9
Q/q %, SAAR	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	-5.0	-7.5	-8.6	0.8	0.6	0.6	0.6	0.5	-5.1	0.6	-7.0	0.7

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 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	FY 2014	CY 2013	CY 2014
1) Q/q %												
GDP growth rate	0.7	0.5	-0.3	1.2	-1.8	-0.5	0.3	0.6	2.1	-1.0	1.6	-0.1
Domestic demand	0.6	0.8	0.3	1.5	-2.8	-0.6	0.0	0.8	2.6	-1.6	1.9	-0.1
Private demand	0.3	0.7	0.2	1.6	-3.0	-0.7	-0.0	0.8	1.8	-1.8	1.2	-0.3
Private consumption	0.5	0.2	-0.1	1.3	-3.2	0.2	0.2	0.2	1.5	-1.9	1.3	-0.8
Residential investment	0.0	0.1	0.1	0.1	-0.4	-0.2	-0.0	0.1	0.3	-0.4	0.3	-0.2
Private fixed investment	0.3	0.1	0.2	0.8	-0.8	-0.0	-0.0	0.1	0.5	-0.1	0.1	0.5
Change in private inventories	-0.5	0.2	0.1	-0.5	1.3	-0.7	-0.2	0.5	-0.5	0.5	-0.4	0.1
Public demand	0.3	0.2	0.1	-0.1	0.1	0.1	0.0	-0.0	0.8	0.2	0.7	0.3
Government final consumption	0.1	-0.0	0.0	-0.1	0.1	0.0	0.1	0.0	0.3	0.1	0.4	0.1
Public fixed investment	0.1	0.2	0.0	-0.0	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	0.0	-0.4	-0.5	-0.3	1.1	0.1	0.3	-0.2	-0.5	0.6	-0.3	0.0
Exports of goods and services	0.4	-0.1	0.0	1.0	-0.0	0.3	0.6	0.4	0.7	1.3	0.2	1.4
Imports of goods and services	-0.4	-0.3	-0.5	-1.3	1.1	-0.2	-0.3	-0.6	-1.2	-0.7	-0.5	-1.4
2) Y/y %												
GDP growth rate	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.9	-1.4	2.1	-1.0	1.6	-0.1
Domestic demand	1.5	2.3	2.8	3.6	-0.2	-1.6	-1.9	-2.7	2.6	-1.6	1.9	-0.1
Private demand	0.9	1.4	1.8	3.2	-0.4	-1.9	-2.2	-2.9	1.8	-1.8	1.2	-0.3
Private consumption	1.1	1.4	1.4	2.0	-1.8	-1.9	-1.5	-2.5	1.5	-1.9	1.3	-0.8
Residential investment	0.2	0.3	0.3	0.4	-0.1	-0.4	-0.5	-0.5	0.3	-0.4	0.3	-0.2
Private fixed investment	-0.0	0.2	0.4	1.7	0.3	0.2	0.0	-0.8	0.5	-0.1	0.1	0.5
Change in private inventories	-0.4	-0.5	-0.4	-0.8	1.1	0.2	-0.2	0.9	-0.5	0.5	-0.4	0.1
Public demand	0.7	0.9	1.1	0.5	0.2	0.2	0.2	0.2	0.8	0.2	0.7	0.3
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	0.1
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	-0.2	-0.1	-0.5	-1.3	-0.2	0.2	1.1	1.3	-0.5	0.6	-0.3	0.0
Exports of goods and services	-0.1	0.4	0.9	1.4	0.9	1.2	1.8	1.3	0.7	1.3	0.2	1.4
Imports of goods and services	-0.1	-0.5	-1.5	-2.7	-1.1	-1.0	-0.7	0.0	-1.2	-0.7	-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 4-6 (E)	7-9 (E)	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
1) Q/q %												
GDP growth rate	0.4	0.6	0.4	0.4	0.4	0.5	0.5	0.6	1.7	1.8	0.8	1.8
Domestic demand	0.2	0.5	0.4	0.3	0.3	0.4	0.4	0.8	1.2	1.6	0.3	1.6
Private demand	0.3	0.5	0.4	0.3	0.3	0.4	0.4	0.8	1.3	1.6	0.3	1.6
Private consumption	0.3	0.3	0.2	0.1	0.1	0.2	0.3	0.9	1.0	0.8	0.1	0.7
Residential investment	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	-0.1	0.1
Private fixed investment	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.8	0.0	0.7
Change in private inventories	-0.2	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.1	-0.1	0.1	-0.1
Public demand	-0.1	-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	-0.1	-0.0	-0.0	-0.0	-0.3	-0.2	-0.2	-0.3
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	0.3	0.1	0.1	0.1	0.1	0.1	0.1	-0.2	0.6	0.2	0.6	0.2
Exports of goods and services	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	1.4	1.1	1.5	1.1
Imports of goods and services	-0.0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.5	-0.8	-0.8	-0.9	-0.9
2) Y/y %												
GDP growth rate	0.8	1.9	2.1	1.8	1.8	1.7	1.7	2.0	1.7	1.8	0.8	1.8
Domestic demand	0.4	1.4	1.7	1.3	1.5	1.5	1.4	2.1	1.2	1.6	0.3	1.6
Private demand	0.4	1.5	1.9	1.5	1.5	1.4	1.4	2.1	1.3	1.6	0.3	1.6
Private consumption	0.9	1.1	1.0	0.9	0.7	0.6	0.6	1.4	1.0	0.8	0.1	0.7
Residential investment	-0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.1	-0.1	0.1
Private fixed investment	0.1	0.3	0.5	0.7	0.6	0.7	0.7	0.9	0.4	0.8	0.0	0.7
Change in private inventories	-0.6	0.0	0.3	-0.2	0.0	0.0	-0.1	-0.4	-0.1	-0.1	0.1	-0.1
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	0.2	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	-0.3	-0.2	-0.2	-0.3
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	0.4	0.5	0.3	0.3	0.3	-0.0	0.6	0.2	0.6	0.2
Exports of goods and services	1.5	1.6	1.3	1.1	1.1	1.0	1.0	1.0	1.4	1.1	1.5	1.1
Imports of goods and services	-0.8	-0.9	-0.9	-0.6	-0.8	-0.7	-0.8	-1.1	-0.8	-0.8	-0.9	-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 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	FY 2014	CY 2013	CY 2014
1) World economy												
Economic growth of major trading partners												
Y/y %	3.0	3.2	3.5	3.3	3.3	3.4	3.3	3.5	3.2	3.4	3.1	3.3
Crude oil price (WTI futures; $/bbl)	94.2	105.8	97.6	98.6	103.0	97.2	73.2	48.6	99.1	80.5	98.0	92.9
Y/y %	0.9	14.8	10.6	4.5	9.4	-8.1	-25.0	-50.7	7.6	-18.7	4.1	-5.2
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	15,607	15,780	15,916	15,832	16,010	16,206	16,295	16,305	15,784	16,204	15,710	16,086
Q/q %, SAAR	1.8	4.5	3.5	-2.1	4.6	5.0	2.2	0.2				
Y/y %	1.8	2.3	3.1	1.9	2.6	2.7	2.4	3.0	2.3	2.7	2.2	2.4
Consumer Price Index												
(1982-84 avg=100)	232.1	233.4	234.2	235.4	236.8	237.5	237.0	235.2	233.8	236.7	233.0	236.7
Q/q %, SAAR	-0.1	2.3	1.4	2.1	2.4	1.2	-0.9	-3.1				
Y/y %	1.4	1.6	1.2	1.4	2.1	1.8	1.2	-0.1	1.4	1.3	1.5	1.6
Producer Price Index												
(Finished goods; 1982=100)	195.7	196.8	197.6	199.6	201.3	201.5	199.0	192.9	197.4	198.8	196.6	200.4
Q/q %, SAAR	-1.4	2.2	1.6	4.2	3.4	0.5	-5.0	-11.6				
Y/y %	1.5	1.2	0.8	1.6	2.8	2.5	0.8	-3.2	1.3	0.7	1.2	1.9
FF rate (%)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
(Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	2.00	2.71	2.75	2.76	2.62	2.50	2.28	1.97	2.55	2.34	2.35	2.54
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	98.6	98.7	98.6	99.3	100.6	101.4	101.8	102.4	98.8	101.5	98.8	100.8
Q/q %, SAAR	-2.9	0.3	-0.3	3.1	5.3	3.0	1.7	2.5				
Y/y %	2.5	1.9	1.0	0.0	2.1	2.8	3.1	3.1	1.3	2.8	1.7	2.0
Nominal public fixed investment												
Y tril; SAAR	22.4	23.7	24.0	23.8	24.4	24.9	25.0	24.7	23.6	24.8	23.0	24.6
Q/q %, SAAR	12.1	25.4	5.0	-2.0	9.3	9.8	0.3	-4.3				
Y/y %	4.5	16.0	18.8	8.7	8.3	5.9	5.0	2.9	12.4	5.2	9.5	6.8
Exchange rate (Y/$)	98.8	98.9	100.4	102.8	102.1	103.9	114.5	119.1	100.2	109.9	97.6	105.8
(Y/€)	129.6	130.7	139.9	140.3	139.5	137.8	143.8	132.6	135.1	138.4	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 4-6 (E)	7-9 (E)	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
1) World economy												
Economic growth of major trading partners												
Y/y %	3.5	3.3	3.3	3.5	3.5	3.5	3.5	3.5	3.4	3.5	3.4	3.5
Crude oil price (WTI futures; $/bbl)	58.1	60.0	60.8	61.7	62.5	63.3	64.2	65.0	60.2	63.8	56.9	62.9
Y/y %	-43.5	-38.3	-16.9	27.0	7.5	5.6	5.5	5.4	-25.3	6.0	-38.8	10.6
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	16,388	16,507	16,623	16,738	16,850	16,961	17,071	17,176	16,564	17,014	16,456	16,905
Q/q %, SAAR	2.1	2.9	2.8	2.8	2.7	2.6	2.6	2.5				
Y/y %	2.4	1.9	2.0	2.7	2.8	2.7	2.7	2.6	2.2	2.7	2.3	2.7
Consumer Price Index												
(1982-84 avg=100)	236.4	237.6	238.8	240.0	241.3	242.2	243.1	244.2	238.2	242.8	237.0	241.7
Q/q %, SAAR	2.0	2.1	2.0	2.1	2.2	1.5	1.5	1.8				
Y/y %	-0.2	0.0	0.7	2.1	2.1	1.9	1.8	1.7	0.6	1.9	0.1	2.0
Producer Price Index												
(Finished goods; 1982=100)	193.7	194.9	195.4	196.9	198.1	199.0	199.7	200.6	195.3	199.5	194.3	198.6
Q/q %, SAAR	1.6	2.6	1.0	3.2	2.4	1.9	1.4	1.7				
Y/y %	-3.8	-3.3	-1.8	2.1	2.3	2.1	2.2	1.8	-1.7	2.1	-3.0	2.2
FF rate (%)	0.25	0.25	0.50	0.75	1.00	1.25	1.50	1.75	0.75	1.75	0.50	1.50
(Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	2.10	2.20	2.39	2.60	2.76	2.93	3.10	3.22	2.32	3.00	2.16	2.85
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	102.8	103.1	103.5	103.8	104.2	104.6	105.0	105.4	103.3	104.8	102.9	104.4
Q/q %, SAAR	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5				
Y/y %	2.1	1.7	1.7	1.4	1.4	1.5	1.4	1.5	1.7	1.4	2.1	1.4
Nominal public fixed investment												
Y tril; SAAR	24.0	23.7	23.4	23.2	22.9	22.7	22.6	22.4	23.5	22.6	23.9	22.9
Q/q %, SAAR	-11.2	-5.2	-4.7	-3.4	-4.1	-3.4	-2.8	-2.8				
Y/y %	-1.3	-5.4	-6.7	-5.8	-4.5	-3.8	-3.3	-3.5	-5.2	-3.7	-2.7	-4.4
Exchange rate (Y/$)	119.5	120.0	120.0	120.0	120.0	120.0	120.0	120.0	119.9	120.0	119.6	120.0
(Y/€)	134.2	135.0	135.0	135.0	135.0	135.0	135.0	135.0	134.8	135.0	134.2	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.