Japan's Economic Outlook No. 179

Why Are Wages Stagnant in Japan?: Strengthening the third arrow of Abenomics (growth strategy) is the true path toward revitalizing Japan's economy

Japan to see real GDP growth of +2.6% in FY13 and +1.0% in FY14, nominal GDP growth of +2.4% and +2.5%

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Main Points

- **Economic outlook revised:** In light of the first preliminary Jul-Sep GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +2.6% y/y for FY13 (previous forecast: +3.0%) and +1.0% for FY14 (+1.2%). We have revised our economic outlook downward mainly in view of the economic growth rate for Jul-Sep 2013 coming in lower than anticipated.

- **Why are wages stagnant in Japan?:** The need to increase wages has become a leading political issue in Japan. In this report, we provide a multifaceted examination of the reasons why wages have stagnated in Japan and present our outlook going forward. First, an international comparison of real wages demonstrates that wages are stagnating in Japan not because labor's share is low, but because there are issues involving labor productivity and corporate competitiveness. Thus the key is to increase labor productivity and improve corporate competitiveness by strengthening the third arrow of Abenomics (growth strategy) in order to raise real wages in Japan. Second, a simulation of the future direction of wages reveals that wages are likely to gradually trend upward as the economy undergoes a cyclical recovery. It is also highly likely that regular payments will continue to grow at the macro level given an improvement in the supply-demand balance for labor. However, the increase in per-employee wages will be limited if it is based solely on a cyclical economic recovery. For wages to exceed their former peak, it will be crucial for the government to (1) strengthen the third arrow of Abenomics (structural reform of non-manufacturing and medical and nursing care sectors) and to (2) address the problems associated with non-regular employment. Companies will also need to accelerate the pace of wage increases as much as possible to avoid the "fallacy of composition".

Economic Research

- **Will a virtuous circle actually take hold in Japan's economy as intended by the government?:** First, from a wage perspective, an increase in wages will have a positive impact on non-manufacturing sector. In particular, higher contractual cash earnings will invigorate personal consumption, centering on durable goods. However for the virtuous circle to be sustained, a key issue will be whether or not the increase in wages can be passed through to output prices. Second, from a capex perspective, a tax cut for capital investments could invoke more such investments in the future. However, given Japan's sluggish capacity utilization rate, the ability of capex to recover will likely to be weak. The moderate downtrend of capex's production inducement coefficient in recent years is also a matter of concern. The capex trend is greatly influenced by growth expectations. Hence, increasing the growth expectations of companies through measures such as cutting the corporation tax and drastic deregulation is the true path towards the recovery of capex. Finally, we examine the effects of corporation tax cut and present a quantitative simulation of economic trends.

- **Main scenario for Japan's economy:** After hitting bottom in November 2012, Japan's economy has entered a recovery phase. We believe it will continue to expand steadily supported by (1) increases in exports based on the backs of the US economic recovery, (2) ongoing depreciation of the yen and the rise in stock prices supported by the BOJ's monetary easing, and (3) economic stimulus measures to offset the effects of the consumption tax hike.

- **Four risk factors facing Japan's economy:** Risks that will need to be kept in mind regarding the Japanese economy are: (1) turbulence in emerging economies, (2) China's shadow banking problem, (3) a reigniting of the European sovereign debt crisis, and (4) a surge in crude oil prices stemming from geopolitical risk.

- **BOJ monetary policy:** The BOJ is likely to purchase additional risk assets (ETFs and other assets) in Apr-Jun 2014 and beyond in part to mitigate the adverse impact of a higher consumption tax rate.

Our assumptions
- Public works spending will grow +16.2% in FY13 and –4.7% in FY14; the consumption tax rate hike is scheduled for April 2014

- Average exchange rate of Y99.4/$ in FY13 and Y100.0/$ in FY14

- US real GDP growth of +1.7% in CY13 and +2.5% in CY14

Main Economic Indicators and Real GDP Components

	FY12 (Actual)	FY13 (Estimate)	FY14 (Estimate)	CY12 (Actual)	CY13 (Estimate)	CY14 (Estimate)
Main economic indicators						
Nominal GDP (y/y %)	0.3	2.4	2.5	1.1	1.3	2.8
Real GDP (chained [2005]; y/y %)	1.2	2.6	1.0	1.9	1.8	1.6
Domestic demand (contribution, % pt)	2.0	2.6	0.3	2.8	2.0	1.5
Foreign demand (contribution, % pt)	-0.8	0.0	0.6	-0.9	-0.2	0.1
GDP deflator (y/y %)	-0.9	-0.2	1.5	-0.9	-0.5	1.2
Index of All-industry Activity (y/y %)*	0.2	2.0	2.3	1.2	0.8	2.8
Index of Industrial Production (y/y %)	-3.0	3.3	5.2	0.6	-0.5	6.3
Index of Tertiary Industry Activity (y/y %)	0.8	1.6	1.6	1.4	1.1	1.9
Corporate Goods Price Index (y/y %)	-1.0	1.8	3.8	-0.9	1.3	3.3
Consumer Price Index (excl. fresh food; y/y %)	-0.2	0.6	2.9	-0.1	0.3	2.4
Unemployment rate (%)	4.3	4.0	3.8	4.4	4.1	3.9
Government bond yield (10 year; %)	0.76	0.76	0.93	0.80	0.73	0.88
Money stock; M2 (end-period; y/y %)	2.5	3.7	4.0	2.5	3.5	4.0
Balance of payments						
Trade balance (Y tril)	-6.9	-10.3	-8.5	-5.8	-10.0	-9.7
Current balance ($100 mil)	524	411	771	605	426	571
Current balance (Y tril)	4.4	4.1	7.7	4.8	4.2	5.7
(% of nominal GDP)	0.9	0.8	1.5	1.1	0.9	1.2
Real GDP components **(Chained [2005]; y/y %; figures in parentheses: contribution, % pt)**						
Private final consumption	1.6 (1.0)	2.1 (1.2)	-0.5 (-0.3)	2.3 (1.4)	1.7 (1.0)	0.4 (0.2)
Private housing investment	5.3 (0.2)	8.3 (0.2)	-2.6 (-0.1)	3.0 (0.1)	8.7 (0.3)	0.1 (0.0)
Private fixed investment	-1.3 (-0.2)	1.1 (0.1)	4.8 (0.6)	2.0 (0.3)	-1.6 (-0.2)	4.6 (0.6)
Government final consumption	2.1 (0.4)	1.7 (0.3)	1.1 (0.2)	2.4 (0.5)	1.5 (0.3)	1.3 (0.3)
Public fixed investment	14.9 (0.7)	14.5 (0.7)	-5.8 (-0.3)	12.5 (0.5)	15.2 (0.7)	-0.4 (-0.0)
Exports of goods and services	-1.2 (-0.2)	4.1 (0.6)	7.3 (1.2)	-0.1 (-0.0)	1.9 (0.3)	6.4 (1.0)
Imports of goods and services	3.9 (-0.6)	4.4 (-0.6)	3.8 (-0.5)	5.5 (-0.9)	2.8 (-0.5)	4.9 (-0.9)
Major assumptions:						
1. World economy						
Economic growth of major trading partners	3.1	3.1	3.8	3.3	2.9	3.7
Crude oil price (WTI futures; $/bbl)	92.0	100.0	100.0	94.1	98.6	100.0
2. US economy						
US real GDP (chained [2009]; y/y %)	2.3	2.0	2.6	2.8	1.7	2.5
US Consumer Price Index (y/y %)	1.8	1.5	2.0	2.1	1.5	1.8
3. Japanese economy						
Nominal public fixed investment (y/y %)	14.6	16.2	-4.7	12.2	16.5	0.8
Exchange rate (Y/$)	83.1	99.4	100.0	79.8	97.5	100.0
(Y/€)	107.4	132.6	135.0	103.5	129.3	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 179)		Previous outlook (Outlook 178 Update)		Difference between previous and current outlooks	
	FY13	FY14	FY13	FY14	FY13	FY14
Main economic indicators						
Nominal GDP (y/y %)	2.4	2.5	2.7	2.6	-0.3	-0.1
Real GDP (chained [2005]; y/y %)	2.6	1.0	3.0	1.2	-0.5	-0.2
Domestic demand (contribution, % pt)	2.6	0.3	2.5	0.3	0.1	-0.1
Foreign demand (contribution, % pt)	0.0	0.6	0.6	0.8	-0.6	-0.2
GDP deflator (y/y %)	-0.2	1.5	-0.3	1.4	0.2	0.1
Index of All-industry Activity (y/y %)*	2.0	2.3	2.7	2.7	-0.7	-0.4
Index of Industrial Production (y/y %)	3.3	5.2	3.3	6.1	-0.0	-0.9
Index of Tertiary Industry Activity (y/y %)	1.6	1.6	2.5	1.9	-0.9	-0.3
Corporate Goods Price Index (y/y %)	1.8	3.8	1.5	3.6	0.3	0.1
Consumer Price Index (excl. fresh food; y/y %)	0.6	2.9	0.6	2.9	0.1	-0.1
Unemployment rate (%)	4.0	3.8	4.0	3.9	-0.0	-0.0
Government bond yield (10 year; %)	0.76	0.93	0.83	1.00	-0.07	-0.07
Money stock; M2 (end-period; y/y %)	3.7	4.0	3.7	4.0	0.0	-0.0
Balance of payments						
Trade balance (Y tril)	-10.3	-8.5	-7.1	-4.3	-3.2	-4.1
Current balance ($100 mil)	411	771	895	1,431	-484	-660
Current balance (Y tril)	4.1	7.7	8.9	14.3	-4.8	-6.6
(% of nominal GDP)	0.8	1.5	1.8	2.9	-1.0	-1.3
Real GDP components (chained [2005]; y/y %)						
Private final consumption	2.1	-0.5	2.4	-0.8	-0.3	0.3
Private housing investment	8.3	-2.6	8.1	-2.7	0.1	0.1
Private fixed investment	1.1	4.8	2.5	5.8	-1.3	-1.0
Government final consumption	1.7	1.1	1.8	1.1	-0.1	-0.0
Public fixed investment	14.5	-5.8	11.0	-2.5	3.6	-3.3
Exports of goods and services	4.1	7.3	6.8	8.9	-2.7	-1.6
Imports of goods and services	4.4	3.8	3.3	4.8	1.1	-1.0
Major assumptions:						
1. World economy						
Economic growth of major trading partners	3.1	3.8	3.0	3.8	0.1	-0.0
Crude oil price (WTI futures; $/bbl)	100.0	100.0	98.5	100.0	1.5	0.0
2. US economy						
US real GDP (chained [2009]; y/y %)	2.0	2.6	1.8	2.8	0.2	-0.2
US Consumer Price Index (y/y %)	1.5	2.0	1.2	1.9	0.2	0.1
3. Japanese economy						
Nominal public fixed investment (y/y %)	16.2	-4.7	12.0	-1.2	4.2	-3.5
Exchange rate (Y/$)	99.4	100.0	99.7	100.0	-0.3	0.0
(Y/€)	132.6	135.0	129.9	130.0	2.7	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.

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Summary

Economic outlook revised

In light of the first preliminary Jul-Sep GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +2.6% y/y for FY13 (previous forecast: +3.0%) and +1.0% for FY14 (+1.2%). We have revised our economic outlook downward mainly in view of due to the economic growth rate for Jul-Sep 2013 coming in lower than anticipated.

Jul-Sep 2013 real GDP increased an annualized 1.9% q/q in the first preliminary estimate

The first preliminary estimate of Jul-Sep 2013 real GDP (Cabinet Office) posted an advance of 0.5% q/q, annualized at +1.9%, the fourth quarterly positive growth in a row and overshooting the market consensus (+0.4%; annualized at +1.7%). The major factor behind the overshoot was a larger-than-expected positive contribution of inventories (+0.4 percentage points). Other demand components were almost on par with expectations in general. Domestic demand saw the fourth positive contribution to q/q GDP growth in a row (+0.9 points), while foreign demand saw the first negative contribution in three quarters (–0.5 points) due to a slide in exports. In other words, a slide in foreign demand held down GDP growth.

Personal consumption increased 0.1% q/q, the fourth quarterly gain in a row. While spending on durables/semi-durables increased, that on non-durables and services declined, resulting in a moderate increase as a whole. Although the gain in personal consumption was limited, it was favorable bearing in mind that real employee compensation declined 0.6%, the first slide in three quarters, and also that improved consumer sentiment was the driving force, although it has recently turned to worsen.

Housing investment increased 2.7% q/q, the sixth quarterly gain in a row. While housing investment has been steady, supported by ongoing lower housing loan rates and reconstruction demand, it has gained momentum, likely reflecting a surge in demand in advance of the consumption tax hike in April 2014.

Capex increased 0.2% q/q, the third quarterly gain in a row. Although the increase was minor, the uptrend confirmed that corporate sentiment regarding capex has begun to turn around, perhaps reflecting improvement in corporate earnings due to higher sales owing to a weaker yen and firm domestic demand.

Public investment increased 6.5% q/q, the seventh consecutive quarterly gain. While investment level has been high, the pace of growth regained momentum along with the earnest execution of the FY12 supplementary budget, which propped up the economy.

Exports declined 0.6% q/q, the first slide in three quarters. Along with the bottoming out of the EU economy, exports to the EU have turned around from persistent stagnation. Meanwhile, reflecting a slowdown in ASEAN economies, exports to Asian trading partners were sluggish, pulling down overall exports. Imports increased 2.2%, the third quarterly advance in a row, accompanying firm domestic demand. As a result, foreign demand (net exports) posted the first negative contribution to GDP growth in three quarters (–0.5 points).

The GDP deflator declined 0.1% q/q, the first slide in two quarters, and declined 0.3% y/y, the 16th consecutive quarterly slide. The domestic demand deflator increased q/q for the first time in two quarters (+0.2%), reflecting q/q gains in personal consumption, housing investment, capex, and public investment deflators. Meanwhile, the import deflator increased q/q (+2.2%), reflecting higher commodity prices. (The former pushes up the GDP deflator, while the latter pulls it down, and the

former effect was offset by the latter.) Nominal GDP increased (+0.4% q/q; annualized at +1.6%) for the fourth consecutive quarter.

Main scenario: Japan's economy to continue growing

After hitting bottom in November 2012, Japan's economy has entered a recovery phase. We believe it will continue to expand steadily supported by (1) increases in exports based on the backs of the US economic recovery, (2) ongoing depreciation of the yen and the rise in stock prices supported by the BOJ's monetary easing, and (3) economic stimulus measures to offset the effects of the consumption tax hike.

In terms of GDP demand components, personal consumption has been the driving force behind the economic recovery. Although the Jul-Sep quarter saw a slowdown in the growing pace, it is very likely to be temporary and is expected to continue growing as the income environment improves. It is also highly likely that personal consumption will gain momentum toward end-FY13 and boost the economic growth rate as demand escalates in advance of the consumption tax hike scheduled in April 2014. Although exports turned downward in Jul-Sep 2013, we believe they will return to a growth path in view of the improvement in competitiveness ensuing from yen's depreciation to date and the expansion of foreign economies, mainly the US. Corporate earnings are also likely to improve further reflecting higher exports and firm domestic demand and we anticipate that capex will continue to grow.

Why are wages stagnant in Japan?

The need to increase wages has become a leading political issue in Japan. In this report, we provide a multifaceted examination of the reasons for the stagnation of wages in Japan and present our outlook for their future direction.

First, an international comparison of real wages demonstrates that wages are stagnating in Japan not because labor's share is low, but because there are issues involving labor productivity and corporate competitiveness. Thus the key is to increase labor productivity and improve corporate competitiveness by strengthening the third arrow of Abenomics (growth strategy) in order to raise real wages in Japan.

Second, a simulation of the future direction of wages reveals that wages are likely to gradually trend upward as the economy undergoes a cyclical recovery. It is also highly likely that regular payments will continue to grow at the macro level given an improvement in the supply-demand balance for labor. However, the increase in per-employee wages will be limited if it is based solely on a cyclical economic recovery. For wages to exceed their former peak, it will be crucial for the government to (1) strengthen the third arrow of Abenomics (structural reform of non-manufacturing and medical and nursing care sectors) and to (2) address the problems associated with non-regular employment. Companies will also need to accelerate the pace of wage increases as much as possible to avoid the "fallacy of composition".

Will a virtuous circle actually take hold as intended by the government?

First, from a wage perspective, an increase in wages will have a positive impact on non-manufacturing sector. In particular, higher contractual cash earnings will invigorate personal consumption, centering on durable goods. However for the virtuous circle to be sustained, a key issue will be whether or not the increase in wages can be passed through to output prices. Second, from a capex perspective, a tax cut for capital investments could invoke more such investments in the future. However, given Japan's sluggish capacity utilization rate, the ability of capex to recover will likely to be weak. The moderate downtrend of capex's production inducement coefficient in recent years is also a matter of concern. The capex trend is greatly influenced by growth expectations. Hence, increasing the growth expectations of companies through measures such as cutting the corporation tax and drastic

deregulation is the true path towards the recovery of capex. Finally, we examine the effects of corporation tax cut and present a quantitative simulation of economic trends.

Four risk factors: Examination of the world economic cycle

Risks that will need to be kept in mind regarding the Japanese economy are: (1) turbulence in emerging economies, (2) China's shadow banking problem, (3) a reigniting of the European sovereign debt crisis, and (4) a surge in crude oil prices stemming from geopolitical risk. Of these four risks, it is worth underscoring that the first is closely related to the second and third.

Examining the world economic cycle, advanced economies led by the US drove emerging economies in the past. However, a decoupling has currently taken place—advanced economies are performing well but emerging economies are stagnating. We believe that this decoupling is occurring for three reasons: (1) the dwindling in the amount of loans from European financial institutions to emerging economies in light of the European debt crisis, (2) the sluggishness of the Chinese economy, and (3) concerns that money will be taken out of emerging economies based on worries that the Fed will implement exit measures from a quantitative easing. In the final analysis, we anticipate that the collapse of emerging economies will be avoided as the US economy continues to expand. Nevertheless, the state and the future direction of the Chinese economy will continue to require close monitoring.

BOJ monetary policy

The BOJ is likely to purchase additional risk assets (ETFs and other assets) in Apr-Jun 2014 and beyond in part to mitigate the adverse impact of a higher consumption tax rate.

1. Why Are Wages Stagnant in Japan?

Increasing wages a leading political issue

The need to increase wages has become a leading political issue in Japan. In this report, we provide a multifaceted examination of the reasons why wages have stagnated in Japan and present our outlook going forward.

First, an international comparison of real wages discloses that wages are stagnating in Japan not because of labor's share being low but because of issues related to labor productivity and the competitiveness of companies. Thus, a key issue will be increasing labor productivity and improving the competitiveness of companies by strengthening the third arrow or priority area of Abenomics (growth strategies) with the view to raising real wages in Japan.

Second, a simulation of the future direction of wages reveals that wages are likely to gradually trend upward as the economy undergoes a cyclical recovery. It is also highly likely that regular payments will continue to grow at the macro level given an improvement in the supply-demand balance for labor. However, the increase in per-employee wages will be limited if it is based solely on a cyclical economic recovery. For wages to exceed their former peak, it will be crucial for the government to (1) strengthen the third arrow of Abenomics (structural reform of non-manufacturing and medical and nursing care sectors) and to (2) address the problems associated with non-regular employment. Companies will also need to accelerate the pace of wage increases as much as possible to avoid the "fallacy of composition".

1.1 International comparison of real wages: Key will be strengthening the third arrow of Abenomics (growth strategy)

Main reasons for the sluggish growth of real hourly wages are the lack of labor productivity growth and corporate competitiveness

First, we examine the reasons for the sluggish growth of wages in Japan by comparing wages internationally. Chart 1 portrays the changes in real hourly wages of major nations according to (1) labor productivity (2) "GDP deflator/CPI", and (3) labor's share.

By comparing the growths of real wages between 2000 and 2009 for Japan, the US, and Germany, we find that only in Japan has real wages fallen. Compared to the US and Germany, factors for the sluggish growth of real wages in Japan are the lack of labor productivity growth and the sizable decline in "GDP deflator/CPI". By comparison, downward pressure (degree of contribution) on real wages stemming from labor's share is largely the same for all three nations. Thus, it is difficult to say that the decline in labor's share is the main reason for the sluggish growth of real wages in Japan.

Labor productivity can be broken down into real GDP and total labor hours. While there is no significant difference in total labor hours between the three nations, a decisive factor for Japan has been the sluggish growth of real GDP. An examination of the components of real GDP reveals that the contributions of fixed capital formation and total factor productivity are relatively small for Japan compared to other nations.

A factor analysis of "GDP deflator/CPI" indicates that the terms of trade and the domestic demand deflator are making negative contributions. Even in periods when import prices were rising, Japanese companies did not pass through the cost increase to the price of export goods in order to maintain competitiveness. As a result, the terms of trade worsened and became a downward pressure on the GDP deflator.

Breakdown of Real Hourly Wages — Chart 1

Annual growth (CY00-09 avg; %)	Japan	US	Germany
Real hourly wages	-0.5	1.3	0.2
Labor productivity	0.7	2.0	1.2
GDP deflator / CPI	-1.0	-0.3	-0.7
Labor's share	-0.3	-0.4	-0.3

Real hourly wages, labor productivity, and labor's share defined as follows:
  Real hourly wages = nominal employee compensation / (no. of employees x hours worked) / CPI.
  Labor productivity = real GDP / (no. of employees x hours worked).
  Labor's share = nominal employee compensation / nominal GDP.

Thus, real hourly wages are expressed as:
  Real hourly wages = labor productivity x GDP deflator / CPI x labor's share.

Then, % change ($\triangle \ln$) is expressed as:
  $\triangle \ln$ (real hourly wages) = $\triangle \ln$ (labor productivity) + $\triangle \ln$ (GDP deflator / CPI) + $\triangle \ln$ (labor's share)
  $\triangle \ln$ (labor's share) = $\triangle \ln$ (real GDP) - $\triangle \ln$ (no. of employees) - $\triangle \ln$ (hours worked)
  $\triangle \ln$ (labor' share) = $\triangle \ln$ (nominal employee compensation) - $\triangle \ln$ (nominal GDP)

| Annual growth (CY00-09 avg)	Japan	US	Germany
Labor productivity (%)	0.7	2.0	1.2
Real GDP (%)	0.5	1.8	0.9
Contribution of hours worked (% pt)	-0.4	-0.2	-0.3
Contribution of labour composition change (% pt)	0.3	0.3	0.1
Contribution of capital services	0.5	1.1	0.8
Contribution of ICT capital services (% pt)	0.3	-	0.3
Contribution of non-ICT capital services (% pt)	0.3	-	0.5
Contribution of TFP (% pt)	0.1	0.3	0.3
Total hours worked (%) Plus-minus reversed	0.2	0.2	0.3
No. of employees (%) Plus-minus reversed	-0.3	-0.1	-0.3
Hours worked (%) Plus-minus reversed	0.5	0.3	0.7

Annual change (CY00-09 avg)	Japan	US	Germany
GDP deflator / CPI (%)	-1.0	-0.3	-0.7
GDP deflator (%)	-1.2	2.2	0.9
Contribution of terms of trade (% pt)	-0.3	-0.0	0.0
Contribution of domestic demand deflator (% pt)	-0.8	2.3	1.0
Contribution of import deflator (% pt)	-0.0	-0.1	0.0
Contribution of other items (% pt)	-0.0	-0.0	-0.0
CPI (%) Plus-minus reversed	0.3	-2.5	-1.6

Annual change (CY00-09 avg)	Japan	US	Germany
Labor's share (%)	-0.3	-0.4	-0.3
Nominal employee compensation (%)	-1.0	3.6	1.4
Nominal GDP (%) Plus-minus reversed	0.7	-4.0	-1.7

Source: Cabinet Office, US Bureau of Economic Analysis, Bundesbank, EU KLEMS; compiled by DIR.
Note: TFP=total factor productivity.

Labor's share is not particularly low in Japan

As noted above, an international comparison reveals that labor's share is not particularly low in Japan. Chart 2 portrays the long-term trend of labor's share (employee compensation against national income) for Japan and other nations. The chart reveals that labor's share has increased notably around 1970 in Japan and that its current level is not necessarily low in international comparison. Because of the downward rigidity of wages, labor's share generally declines during economic expansions and increases during recessions. After 1990, labor's share in Japan surged temporarily during the economic downturn following the collapse of the Japanese asset bubble and after the Lehman crisis, but declined in subsequent periods of economic expansion. In all, labor's share is not on a downward trend. The sluggish growth of employee income is not a problem of distribution, but of a lack of growth.

(%)
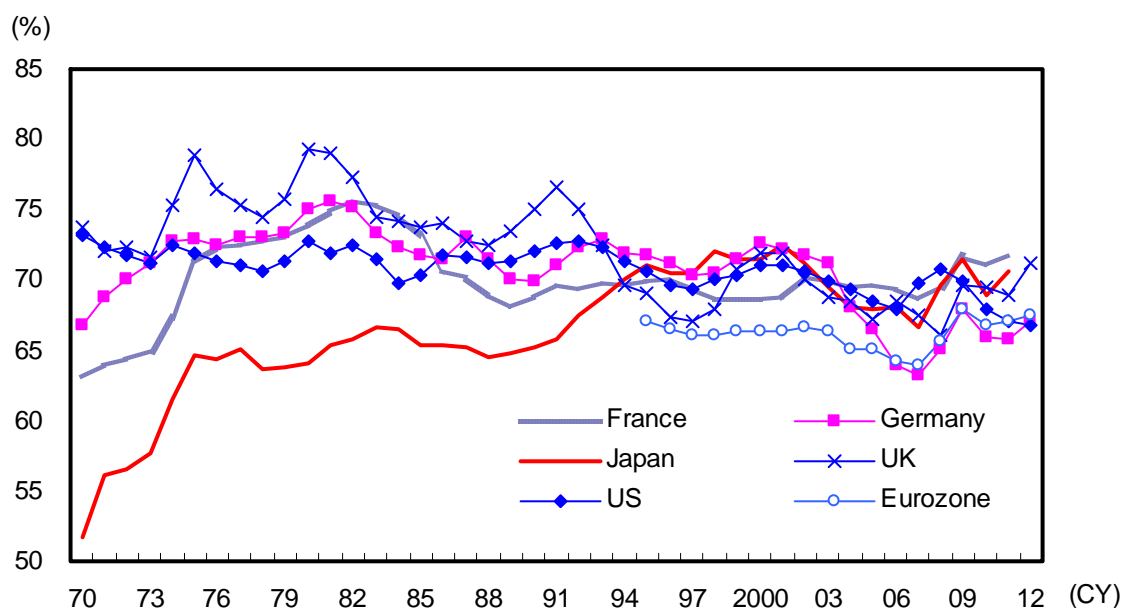
Source: OECD; compiled by DIR.

1.2 Will wages increase in Japan going forward?

1.2.1 Simulation of wage trend

Employment and income environments improve in the following order: (1) overtime pay (2) bonuses (3) number of employees

Chart 3 shows the order in which employment and income environments improve. An examination of past economic recoveries reveals the following pattern:

First, overtime pay increases as overtime hours increase. Next, an increase in sales contributes to an improvement in corporate earnings and contributes to higher bonuses. Finally, as the supply-demand balance for labor tightens, the number of employees increases. Meanwhile, as illustrated by the trend of number of employees by industry in Chart 4, the number of employees in manufacturing sector increases first, followed by that in non-manufacturing sector with a slight lag.

Overtime hours have been on a rise in 2013 and the increase in overtime pay is supporting the income environment. In addition, bonuses are increasing according to a *Keidanren* survey released on 13 November 2013, underscored by the prospect that winter bonuses of large corporations will grow by 5.8% y/y. The number of employees has already turned upward and the pace of increase is expected to increase going forward. Hence, the cyclical improvement of the employment and income environments will become a factor supporting Japan's economy and the lives of ordinary people.

Channel from Employment to Income   Chart 3
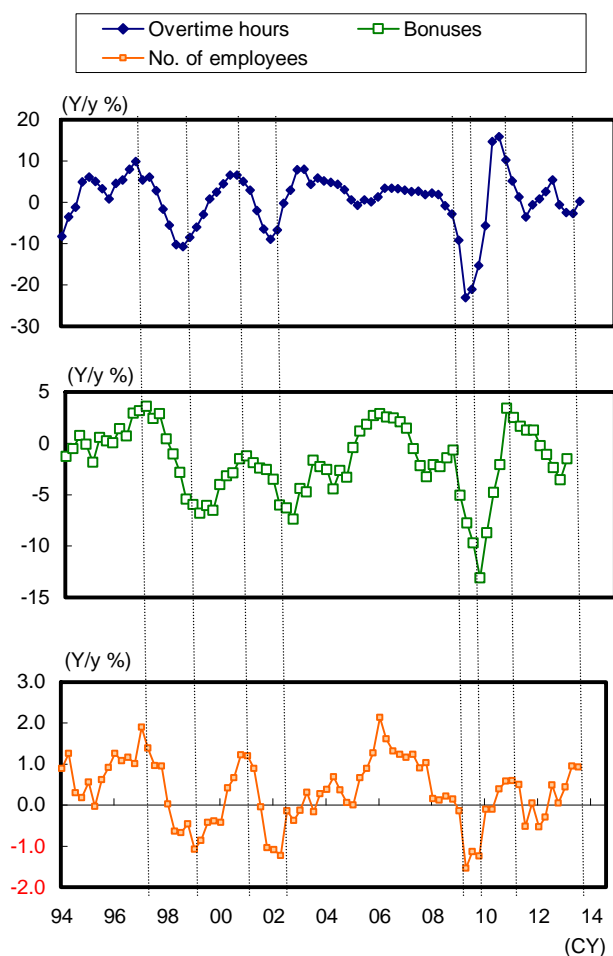
Source: Ministry of Health, Labour and Welfare, Ministry of Internal
        Affairs and Communications (MIC); compiled by DIR.
Notes: 1) Overtime hours=five-quarter central moving average.
       2) No. of employees based on *Labour Force Survey* (MIC).

No. of Employees   Chart 4
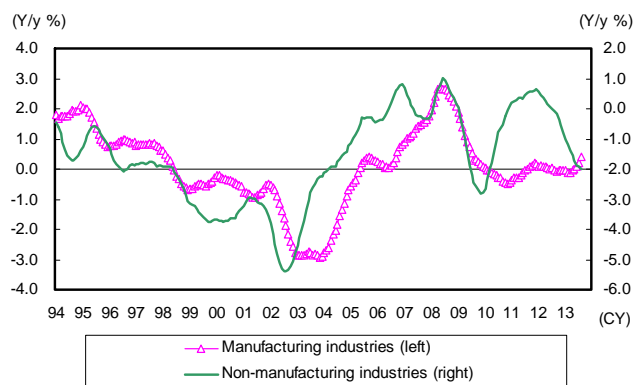
Source: Ministry of Health, Labour and Welfare; compiled by DIR.

The main reason for the faltering income in Japan is the decline of bonuses

Based on the pattern shown above, we now examine the future direction of wages. While overtime payments and bonuses are currently improving, is it reasonable to think that per capita total cash earnings will actually improve in earnest? When considering the future income environment, it is helpful to examine the factors behind the decrease in income that encumbered Japan in past years.

Chart 5 shows the trend of total cash earnings in Japan. When examined by component, three features stand out: (1) regular payments have gradually fallen since 1997, (2) declines in bonuses have placed significant downward pressure on total cash earnings, and (3) overtime payments fluctuate along with business cycles. Total cash earnings have declined by about Y550,000 from their peak in 1997 of Y4.84 million, to Y4.3 million in 2012. About 80% of this decline can be explained by the decline in bonuses and about 20% from the decrease in regular payments.

Breakdown of Total Cash Earnings   **Chart 5**
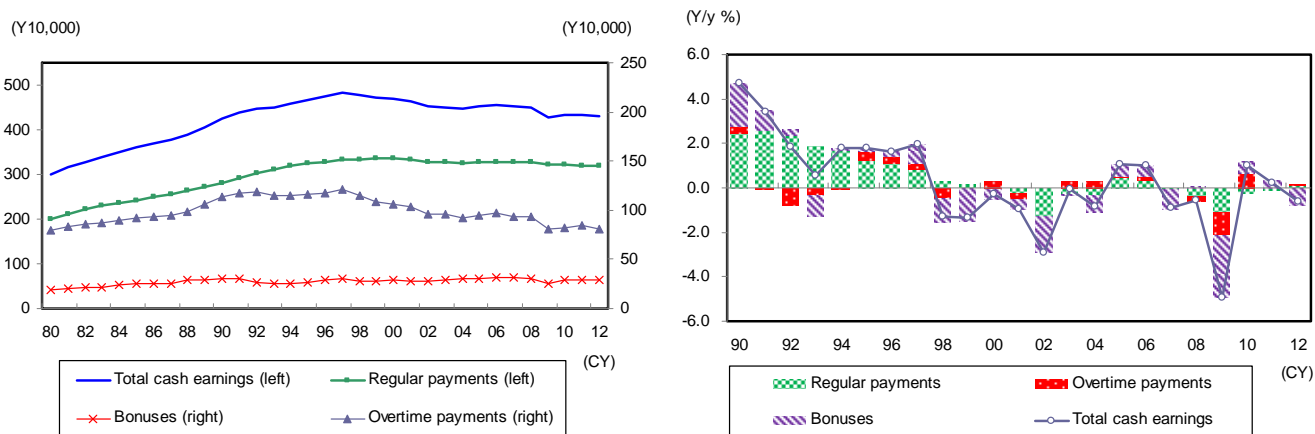
Source: Ministry of Health, Labour and Welfare; compiled by DIR.

Cyclical fluctuations a major aspect of overtime payments and bonuses

We now examine in detail overtime payments and bonuses. Chart 6 illustrates trend of overtime payments and industrial production. We can see in the chart that overtime payments closely track the fluctuations in production. Chart 7 portrays the trends of bonuses and recurring profit (recurring profit portrayed one-year previous), which affirms that bonuses move after corporate performance begin to improve with a slight lag.

As noted above, the trends of overtime payments and bonuses are heavily influenced by business cycles. When the economy enters a recovery phase, production increases and corporate earnings improve. As a result, overtime payments rise around the same time as production, and bonuses increase with a slight lag.

Overtime Payments and Industrial Production   **Chart 6**
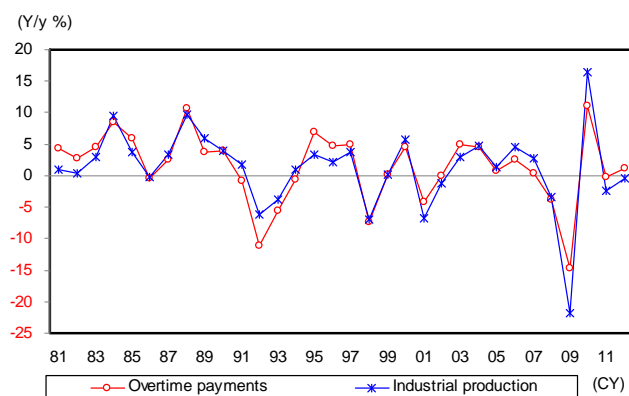
Source: Ministry of Health, Labour and Welfare, Ministry of Economy, Trade and Industry; compiled by DIR.

Bonuses and Corporate Earnings   **Chart 7**
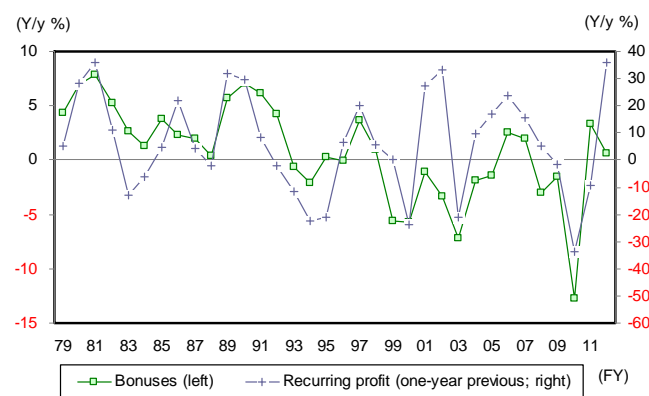
Source: Ministry of Health, Labour and Welfare, Ministry of Finance; compiled by DIR.

Macro-based regular payments likely to increase as the supply-demand balance for labor tightens

Next, we turn our attention to regular payments. While overtime payments and bonuses are closely linked to business cycles, regular payments show a close relationship to the supply-demand balance for labor. Chart 8 portrays the relationship between regular payments and the unemployment rate. We can see in the chart that macro-based regular payments (regular payments multiplied by the number of

employees) tend to rise in periods when the unemployment rate falls (the supply-demand balance for labor tightens) and decline in periods when the unemployment rate increases.

Currently, the unemployment rate continues to decline and the increase in the number of employees is boosting macro-based regular payments. Since the unemployment rate is expected to fall further, the likelihood is high that macro-based regular payments will continue to rise.

Macro-based Regular Payments* and Unemployment Rate — Chart 8
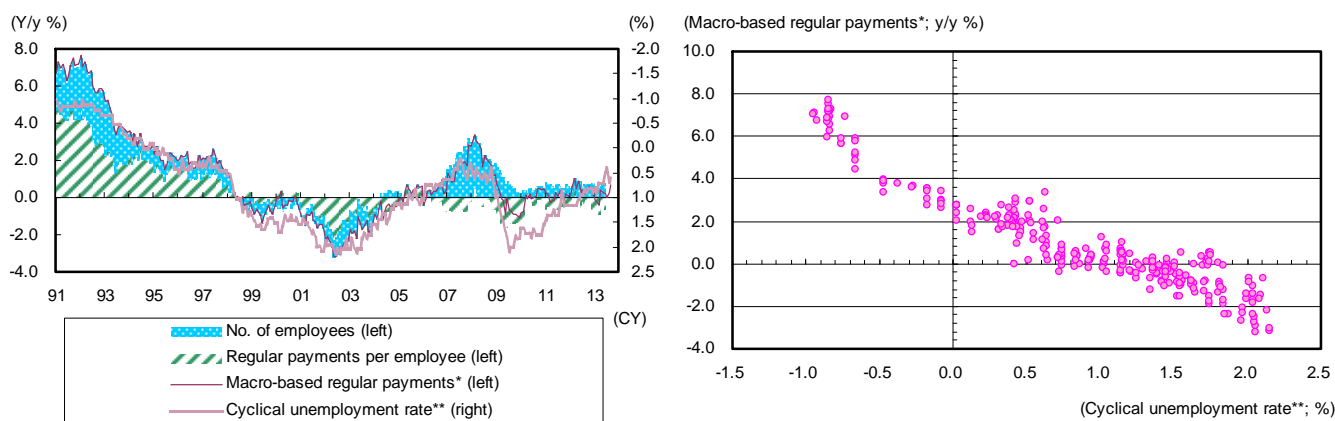
Source: Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare; compiled by DIR.
*Regular payments x no. of employees.
**Unemployment rate - structural unemployment; the latter estimated by DIR.

Will per-employee regular payments increase?

While regular payments are expected to continue increasing at the macro level, what is the outlook for regular payments on a per-employee basis? To determine the future direction of per-employee regular payments, it is useful to examine the past trend of regular payments by industry.

Non-manufacturing sector is the main culprit for the sluggish growth of regular payments

Chart 9 illustrates the trend of regular payments in the manufacturing and non-manufacturing sectors. Comparing the two graphs on the left side, we can see that while regular payments have gradually increased in the manufacturing sector, they have continued to fall in the non-manufacturing sector. In other words, non-manufacturing sector is the main culprit for the sluggish growth of regular payments in Japan.

Decline in regular payments in non-manufacturing sector results from the decrease in income for regular workers and the increase in the part-time worker ratio

To further examine factors behind the decline in regular payments in the non-manufacturing sector, the lower right graph in Chart 9 breaks it down into (1) regular payments paid to regular workers, (2) regular payments paid to part-time workers, and (3) the part-time worker ratio. Regular payments have trended downward since 1998 in the non-manufacturing sector, and the chart confirms that this decline comes largely from an increase in the part-time worker ratio.

There is also a large difference between regular payments paid to regular workers in manufacturing sector versus those in the non-manufacturing sector. With the exception of 2002 and 2009, payments have not fallen in the manufacturing sector. In contrast, setting aside 2005, payments have fallen in the non-manufacturing sector since 2001. The decline in regular payments in the non-manufacturing sector

is the consequence of an increase in the part-time worker ratio and a decrease in the earnings of regular workers.

Regular Payments by Job Status (Manufacturing)

Breakdown of Regular Payments (Manufacturing)

Regular Payments by Job Status (Non-manufacturing)

Breakdown of Regular Payments (Non-manufacturing)

Source: Ministry of Health, Labour and Welfare; compiled by DIR.
Note: Establishments with five or more regular employees.

Reasons why the part-time ratio has risen and the earnings of regular workers have fallen in the non-manufacturing sector

What explains the increase in the part-time ratio and the decline in the earnings of regular workers in the non-manufacturing sector? The deciding factor is the increase in the number of employees in the healthcare and social welfare services industries.

A rise in the part-time worker ratio and a decline in earnings of regular workers have concurrently taken place in the healthcare and social welfare services industries

When we look closely at the employment structure of these industries, we find that the part-time worker ratio has gone up and regular payments paid to regular workers have continued to decline. These only take place in the service sector, mostly in healthcare and social welfare services.

The increase in the part-time worker ratio in the healthcare and social welfare services industries, where the number of employees is rapidly growing, contributes to an increase in the part-time worker ratio for the non-manufacturing sector as a whole. Similarly, if the regular payments paid to regular workers decline in industries where the number of employees is rising, the regular payments paid to regular workers will decline for the entire non-manufacturing sector.

No. of Employees
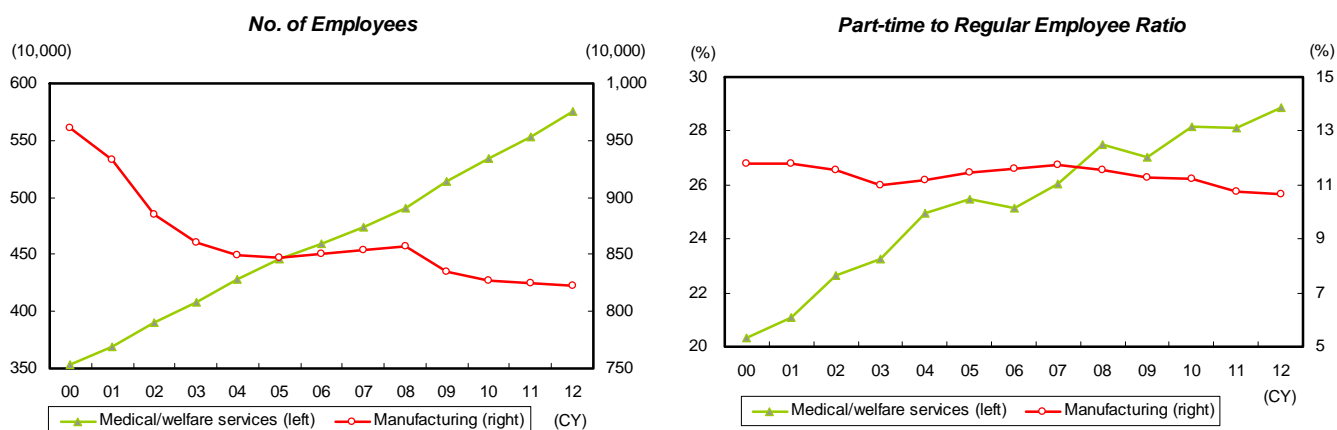
Part-time to Regular Employee Ratio

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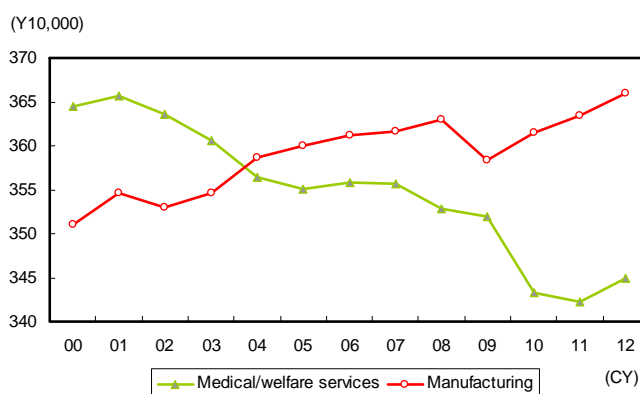
Source: Ministry of Health, Labour and Welfare; compiled by DIR.

Toward a steady wage increase

As we have discussed above, overtime payments and bonuses are expected to increase cyclically along with the expansion of the economy, while macro-based regular payments are expected to increase gradually as the supply-demand balance for labor tightens. However, in order for per-employee regular payments to steadily increase, we must overcome structural issues that are placing a downward pressure on regular payments. Specifically, we should look further into measures (1) reducing the part-time worker ratio and (2) increasing labor productivity in the services sector, especially in the healthcare and social welfare services industries where the number of employees is growing.
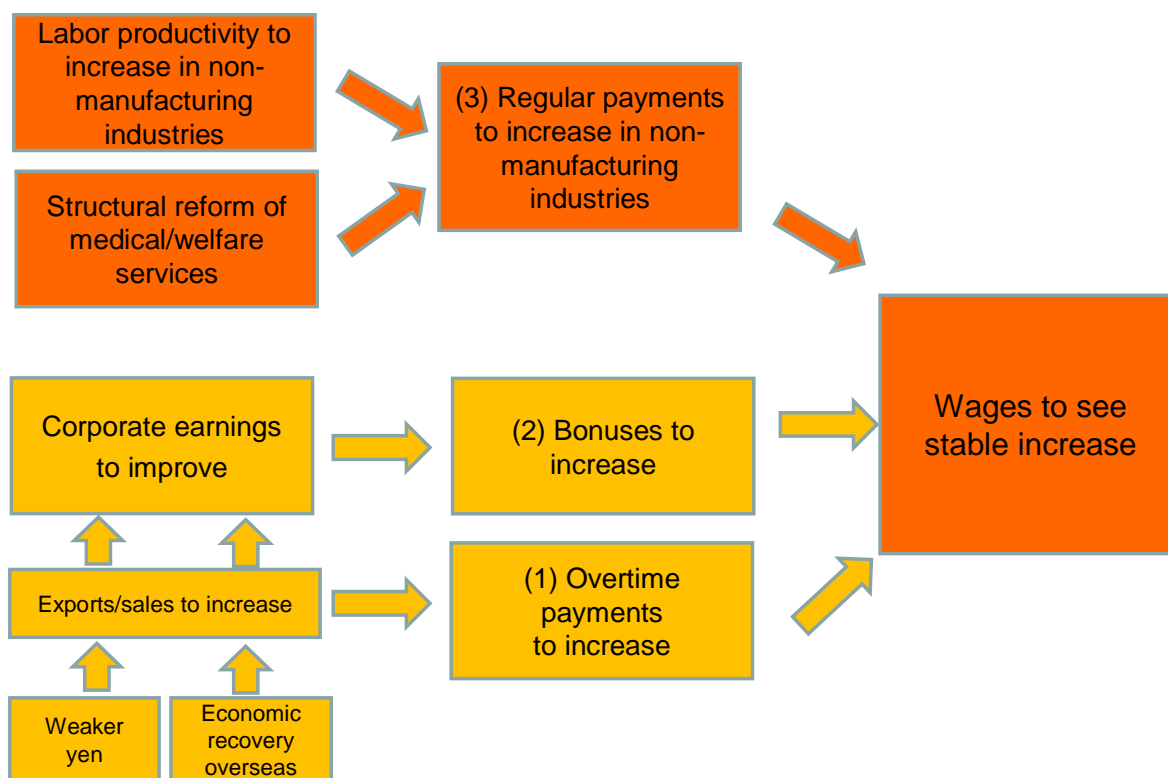
Source: Compiled by DIR.

Unless regular payments increase, per-employee wages will not reach their former peak

Even if overtime payments and bonuses increase cyclically, without structural reforms and deregulation, per-employee regular payments will not turn upward. In such a scenario, a sustained increase in wages will be difficult to achieve. The reasons are as follows:

First, the increase in overtime payments comes from an increase in overtime hours. Since companies cannot force employees to work excessive overtime hours, once overtime hours increase by a certain amount, companies begin to consider hiring more employees. Historical data shows that fewer companies feel that the number of employees they have is excessive once overtime hours are over 150 hours per year. Thus, should overtime hours reach such a level, companies will respond not only by extending working hours but by hiring more workers. Therefore it is unlikely that per-employee overtime pay will continue to rise.

Second, it is likely that the increase in bonuses will eventually reach a ceiling. When we examine a time series to ascertain the level bonuses reach relative to regular payments, even when the economy was growing firmly in the 1980s, total annual bonuses trended at a level corresponding to about 4.5 months of regular payments. Hence even if bonuses rebound, they are highly likely to hit a ceiling at around 4.5 months of regular payments.

Finally, Chart 13 presents the results of simulating per-employee wages for the case where regular payments increase and the case where they are flat. In the case where regular payments increase, per-employee wages will easily exceed their former peak. In contrast, per-employee wages will hit a ceiling at a level Y150,000 less than their former peak in the case where regular payments are flat. Thus, the increase in regular payments is indispensable for the stable growth of per-employee wages.

(Y10,000)   (Y10,000)

Case of regular payments
increasing: Y518.4

Y483.8

Y335.3

Case of regular payments
stagnating: Y467.5

Y120.9

Y31.4

80 82 84 86 88 90 92 94 96 98 00 02 04 06 08 10 12 14 16 18 20

— Total cash payments (left)   ■ Regular payments (left)
—×— Overtime payments (right)   ▲ Bonuses (right)
                                                                    (CY)
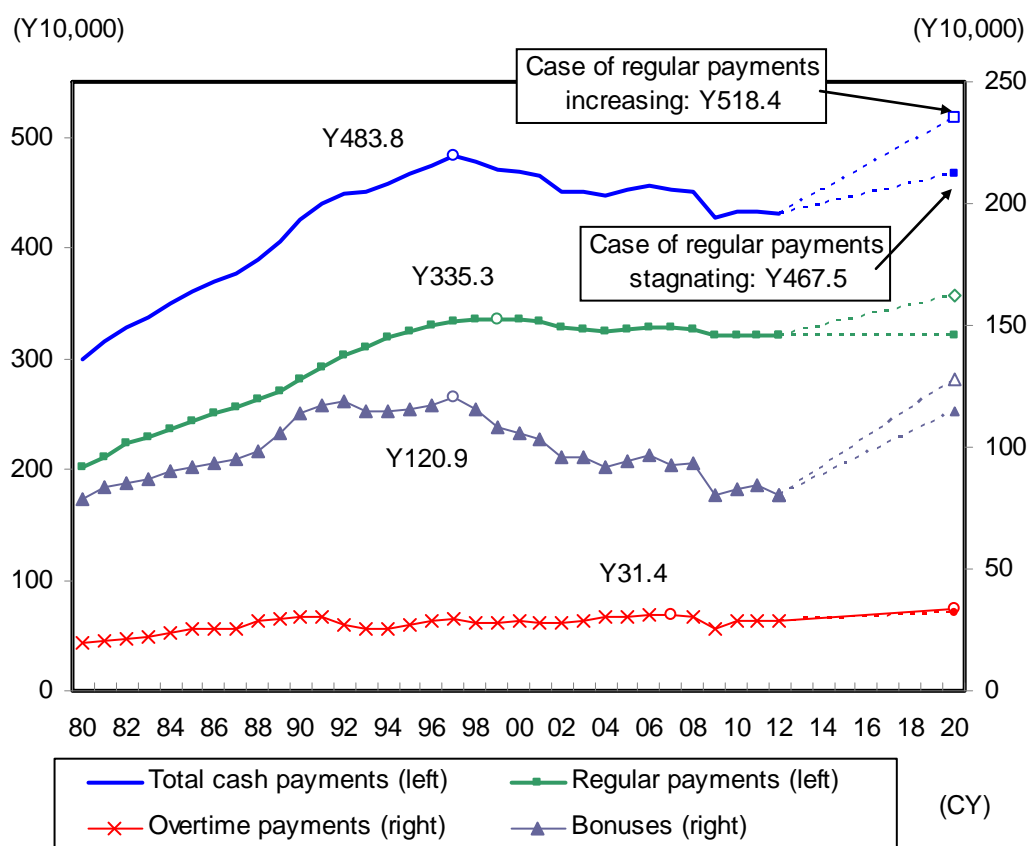
Source: Ministry of Health, Labour and Welfare; compiled by DIR.
Notes: 1) Hollow circles in the past denote record highs.
       2) Hollow marks at end-simulation period indicate cases where regular payments assumed to increase, while solid marks indicate
          those where regular payments assumed to decline.

1.2.2 Measures needed for wage growth

The government should strengthen the third arrow of Abenomics (structural reform of the non-manufacturing sector and the areas of medical and nursing care)

According to the above simulation, the future direction of wages indicates that they are likely to trend gradually upward as the economy undergoes a cyclical recovery. It is also highly likely that regular payments will continue to grow at the macro level, given the improvement in the supply-demand balance for labor. However, the increase in per-employee wages will be limited if it is based solely on the cyclical economic recovery. In order for per-employee wages to exceed their former peak, it will be indispensable for the government to (1) strengthen the third arrow of Abenomics (structural reform of the non-manufacturing sector and the areas of medical and nursing care) and to (2) address the problems associated with non-regular employment in order to increase per-employee regular payments.

The key is improving the labor productivity of the non-manufacturing sector

To increase regular payments, it is important to aggressively engage in structural reforms and deregulation to improve labor productivity and corporate competitiveness. A major reason why deflation has persisted in Japan is the low labor productivity of the non-manufacturing sector. This is the consequence of a low capital-labor ratio, mainly on IT-related investments. The capital-labor ratio has been slow to increase for the non-manufacturing sector compared to the manufacturing sector and total factor productivity (a measure of technological progress) remains stagnant for the non-manufacturing sector.

An important issue going forward will be raising the labor productivity of the non-manufacturing sector, such as by increasing the capital-labor ratio centering on IT-related investments. Specifically, it will be worth considering policy incentives to promote IT-related investments in such sector. What will prove to be key are measures that will encourage the revival of companies through fostering entrepreneurs, developing domestic industrial sites through the promotion of the Trans-Pacific Partnership, and by reforming the labor market.

The medical and nursing care area has been a major reason for the sluggish growth of per-employee regular payments. What is desirable are concrete measures to increase the labor productivity involving drastic deregulation such as allowing a wider range of entities to operate special nursing homes for the elderly, eliminating the ban on "mixed medical treatments" (combining medical procedures that are covered with public health insurance with those that are not), and allowing public companies to enter the healthcare sector.

Three points regarding employment policies

Three points deserve attention regarding employment policies:

First, what needs to be recognized is that employment is essentially a form of secondary demand. The guiding principle to follow is the idea that the best employment policy is to steadily expand Japan's economy.

Second, building on this guiding principle, what should be placed at the core of employment measures are active ones that center on job training (active employment measures) rather than those that relieve pain after the fact (passive employment measures). The crux of employment policies should be in increasing the "employability" of workers.

Third, an urgent issue that needs addressing is the elimination of unfair segregation between regular and non-regular workers. The quintessential principle is "the same pay for the same work." Should attempts be made to forcibly convert non-regular workers into regular workers, it would result in an outflow of jobs overseas and risk placing non-regular workers in a more difficult situation. In legislative terms, a temporary agency law should be passed and the legal status of non-regular workers should be clarified in the main body of such law.

Policies are sought that will support a transfer of income from the corporate to household sector

An examination of the historical record discloses the existence in Japan of a cycle where an increase in sales is followed by higher wages and higher prices. In other words, wages rise about six to 12 months after sales increase, followed by a rise in CPI after another six months. Some concern, however, is raised by sales losing some of its leading characteristic since the 2000s with the advancement of globalization.

What is needed in policy terms going forward is a strengthening of the transmission mechanism that enables higher sales to lead to wage increases. The Abe administration is planning to give tax breaks to companies that increase the compensation of workers. While this policy can be commended to a certain degree, to strengthen the transfer of income from the corporate to household sector, a broader approach should be taken that could be possibly called a reversed "Akkoord van Wassenaar 1982" where higher wages are achieved by government, business, and labor sharing the burden.

Companies should accelerate the increase in base pay as much as possible

In addition to policy measures, companies should accelerate the pace of wage increase as much as possible to avoid the "fallacy of composition" coming into play. In particular, getting companies to increase base pay across-the board will be extremely important.

An examination of prior data when base pay was increased indicates that the size of the pay increase was determined with previous year's CPI growth rate in mind. Hence, from the perspective of regular payments, wages have tended to lag CPI. Given such tendencies, declines in the growth rate of the CPI have led to decreases in wages, a situation that gave way to a deflationary spiral in Japan. In contrast, in nations such as the US, wages and prices tend to change at nearly the same time, giving the strong impression that prices are determined by wages. There is a need to build a mechanism in Japan like developing a suitable labor environment so that companies can accelerate the pace of wage increase as much as possible.

Increase in CPI and Base Pay	Chart 14
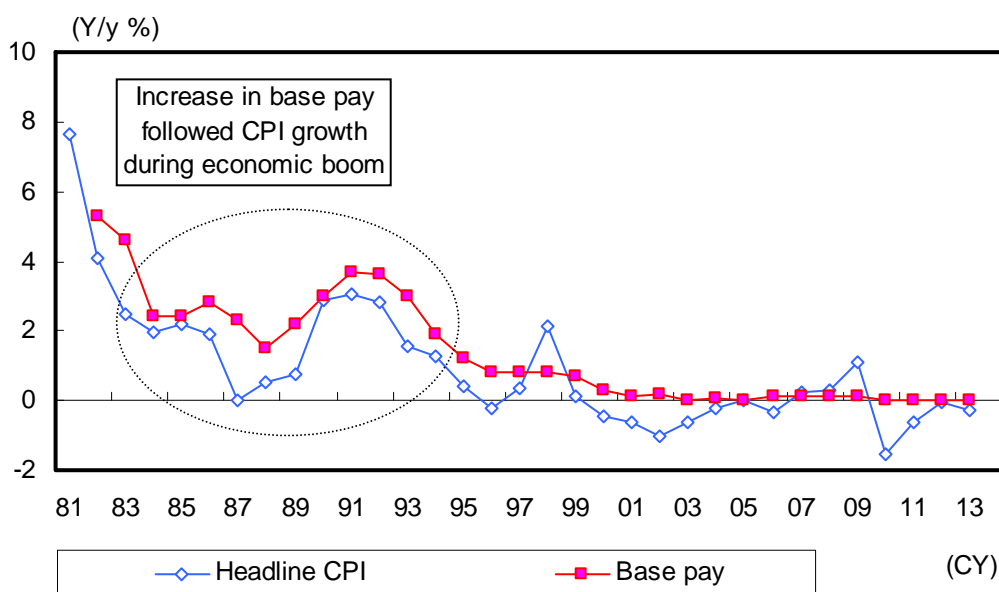
Source: Ministry of Internal Affairs and Communications, Keidanren (Japan Business Federation), Institute of Labour Administration; compiled by DIR.
Note: Increase in base pay through 1989 based on estimates by Institute of Labour Administration; that from 1990 based on survey by Keidanren.

2. Will a Virtuous Economic Circle Actually Take Hold in Japan?

Two virtuous circles

In this section we examine the question of whether a virtuous economic circle will actually take hold in Japan as intended by the government. Specifically, we analyze the wage cycle and the capex cycle.

First, from a wage perspective, an increase in wages will have a positive impact on non-manufacturing sector. In particular, higher contractual cash earnings will invigorate personal consumption, centering on durable goods. However for the virtuous circle to be sustained, a key issue will be whether or not the increase in wages can be passed through to output prices.

Second, from a capex perspective, a tax cut for capital investments could invoke more such investments in the future. However, given Japan's sluggish capacity utilization rate, the ability of capex to recover will likely to be weak. The moderate downtrend of capex's production inducement coefficient in recent years is also a matter of concern. The capex trend is greatly influenced by growth expectations. Hence, increasing the growth expectations of companies through measures such as cutting the corporation tax and drastic deregulation is the true path towards the recovery of capex.

Finally, we examine the effects of corporation tax cut and present a quantitative simulation of economic trends.

2.1 Virtuous circle stemming from higher wages

Higher household income will have a positive impact centering on non-manufacturing sector

First, we examine a virtuous circle stemming from higher wages. To achieve such a virtuous circle, it will be necessary for the improvement in corporate earnings to lead to higher wages and personal consumption and for the increase in personal consumption to further improve corporate earnings. Chart 15 presents an estimate using input-output tables (Cabinet Office) of the impact of a 2% rise in employee compensation on the output of domestic industries. Should employee compensation rise by 2% (about Y4 trillion), overall output would increase by Y3.8 trillion along with increased personal consumption. Ripple effects (increased output of raw materials and other goods from the direct effect and increased output from the higher income) would boost output by another Y1.9 trillion. Hence, output would grow by a total of Y5.7 trillion. By industry, the increase in output would be substantial for non-manufacturing sectors such as services, real estate, and wholesaling/retailing with a large share of output oriented towards personal consumption. In contrast, in the manufacturing sector where only a small share of the output goes to personal consumption, only a few industries like food products would benefit, and the impact, including ripple effects, of the higher income on output would not be that large.

(Y bil)

Direct effect: Y3.8 tril
Ripple effect: Y1.9 tril

Ripple effect

Effect on output ratio (right)

Direct effect

Source: Cabinet Office, Ministry of Internal Affairs and Communications; compiled by DIR.
Notes: 1) Direct and ripple effects mean increases in output through direct and ripple effects.
       2) Effect on output ratio = increase in output through direct and ripple effects / output when employee compensation is not raised.

Higher contractual cash earnings will invigorate personal consumption centering on durable goods

Income growth will lead to an increase in personal consumption. A question worth asking at this point is whether the impact on personal consumption would differ depending on how income increases. In other words, would an increase in basic pay have a different impact on personal consumption than an increase in one-time payments such as bonuses or an increase in the number of employees? To better understand these differences on a quantitative basis, we divided employee income into contractual cash earnings (regular payments plus overtime payments), bonuses, and the number of employees to estimate how each change would influence personal consumption (Chart 16). Our estimates show that an increase in contractual cash earnings would have the greatest effect in increasing personal consumption. If an increase in contractual cash earnings boosts total employee income by 2%, personal consumption would increase Y5.3 trillion, mainly through more consumption of durable goods and services. The effect of an increase in the number of employees would be Y1.9 trillion, less than half that of higher contractual cash earnings, and the effect of an increase in bonuses would be an even smaller, at Y0.7 trillion.

We can conclude from the above results that, in order to achieve a virtuous circle where higher wages invigorate personal consumption and improve corporate earnings, it would be more effective if the increase in wages occurs through contractual cash earnings centering on regular payments rather than through bonuses.

Increase in consumption spending (Y tril)
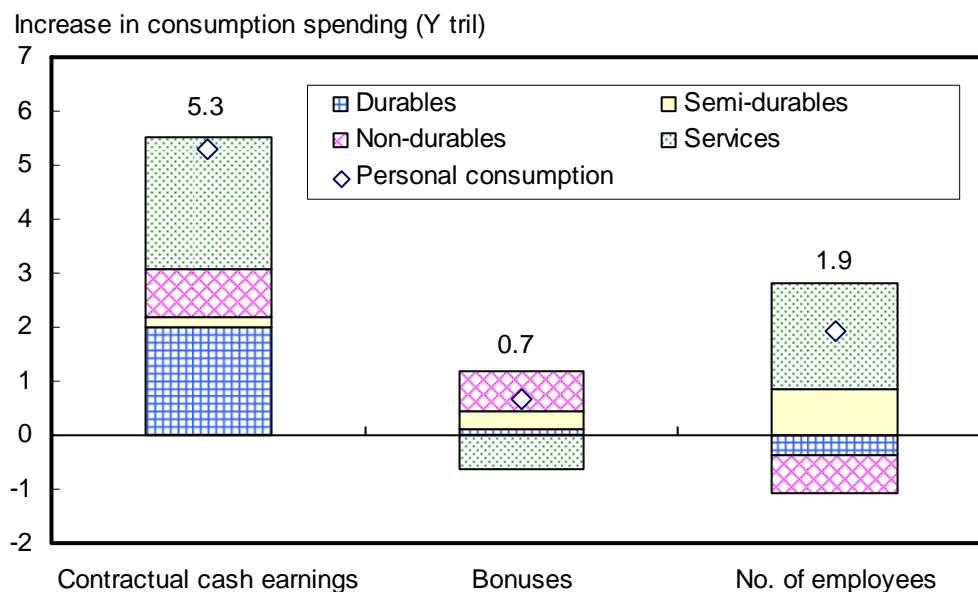
Source: Cabinet Office, Ministry of Health, Labour and Welfare, Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Employee compensation expressed as "total cash payments multiplied by no. of employees". If employee compensation rises 2%, contractual cash earnings would be up 2.4%, bonuses up 12.0%, and no. of employees up 2.0%. If this is the case, personal consumption would increase as shown in the chart. Estimation period: Jan-Mar 1994 to Apr-Jun 2013.

To overcome deflation, passing through the increase in wages to output prices will be essential

From the perspective of overcoming deflation, it will be important for the wage increase to become broadly based and for the country to return to an economy where base pay rises each year. Currently, statements regarding increasing base pay are being heard from the heads of large corporations, and the Japanese economy has finally taken the first steps toward overcoming deflation.

The key is the sentiment for increasing wages to be sustained beyond 2014. Should wages rise for only one year and decline afterwards, a virtuous circle will not be generated and deflation will return. Wage increases mean higher costs for companies and decreased earnings. If earnings do not recover, wages will stop increasing and there is even a possibility of an eventual wage cut. Hence, the condition for achieving a virtuous circle through an ongoing wage increase is for corporate earnings to improve concurrently with an increase in wages.

Wage increases are not easily passed through to output prices

Wages can be increased through a number of ways without damaging earnings. From the perspective of overcoming deflation, it is important to pass through the increase in wages to output prices. A Cabinet Office survey indicates, however, that many business executives believe it will be difficult to pass through the increase in wages to output prices.

Chart 17 depicts the results of a survey asking how much output pieces reflect cost increases and changes in wages. While 60% of companies responded that cost increases are reflected in output prices, less than 10% said that changes in wages are reflected in output prices.

Consumers must also accept higher prices

A major reason for the difficulty of reflecting changes in wages in output prices is the belief held by companies that consumers will not accept higher prices. Thus for deflation to end in Japan, it is crucial for companies to pass through, in full, the increase in wages to output prices and for consumers to accept them.

Pass-through of Higher Costs

All industries	21%	25%	14%	25%	15%
Manufacturing	20%	29%	14%	21%	16%
Non-manufacturing	22%	24%	13%	27%	14%

Pass-through rate
- □ 100% ■ 50% □ Less than 50% □ Not passed through □ Other

Pass-through of Higher Wages

All industries	4.1%	5.1%	90.9%
Manufacturing	3.3%	4.7%	92.1%
All industries	4.4%	5.2%	90.4%

Pass-through rate
- □ 100% ■ 50% □ Not passed through

Source: Cabinet Office, *Opinion Survey on Corporate Management* (available in Japanese); compiled by DIR.

2.2 Virtuous circle stemming from higher capex

Tax cut for capital investments should "prime the pump" for more investments

Next, we examine a virtuous circle stemming from higher capex. A tax cut for capital investments currently being promoted by the government can be expected to "prime the pump" for such investments to a certain degree.

The capital stock cycle portrayed in Chart 18 indicates that the adjustment of capital stock is progressing steadily in Japan. A graph with the y/y growth rate of capex plotted along the vertical axis and the ratio of capex (flow) to capital stock as of the end of the previous year plotted along the horizontal axis traces a clockwise cycle. The relationship between this clockwise cycle and the hyperbolic curve corresponding to the expected economic growth rate enables us to judge the current stage of capital expenditures.

Capital Stock Cycle — Chart 18
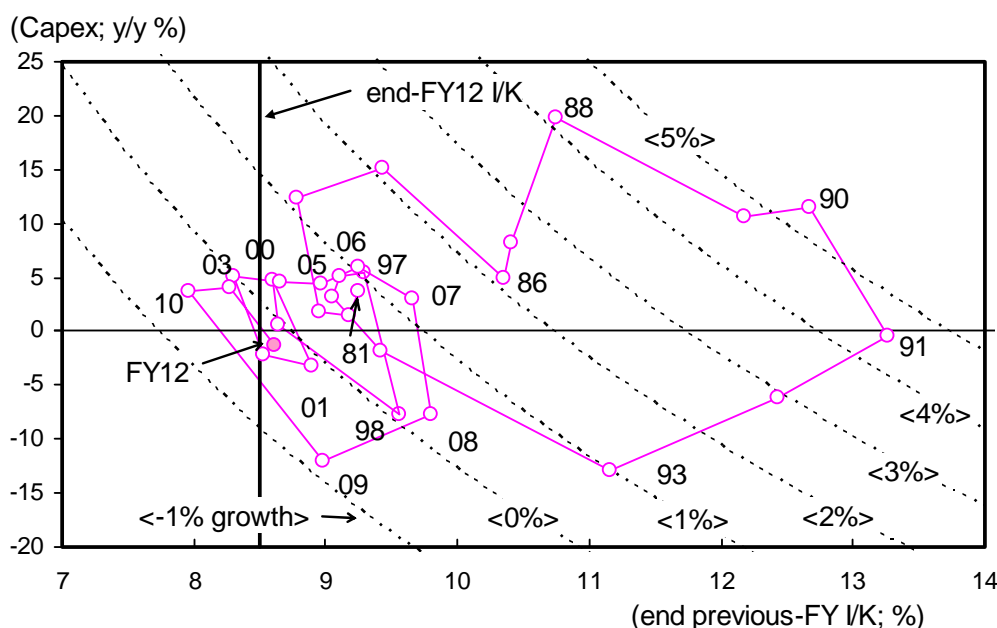
Source: Bank of Japan.

At the present moment, the adjustment of capital stock has progressed to a sufficient extent. Even if we assume 0% growth expectations, the likelihood is high that capex will increase going forward. In the *Financial Statements Statistics of Corporations by Industry* (Ministry of Finance), capex is trending at a level far below depreciation, meaning net investment is negative. There are hardly any cases in the last half century or so where net investment has been negative. This suggests the possibility that companies have overshot the mark in reducing capex.

Japan's capacity utilization rate is at a low level

Given Japan's sluggish capacity utilization rate, the ability of capex to recover will likely be weak on the whole. Chart 19 illustrates the long-term trend of the capacity utilization rate in Japan, the US, Germany, and South Korea. Focusing on Japan's utilization rate, it has trended between 80% and 95% for the most part before the Lehman crisis. With the onset of the Lehman crisis, however, Japan's capacity utilization rate receded to an unprecedented level. As the economy subsequently recovered, the capacity utilization rate has increased, but it is still trending at an extremely low level in the 70% range. The US, Germany, and South Korea also experienced plunging production and the sharp decline in the capacity utilization rate as a consequence of the Lehman crisis. A comparison of the current level of the capacity utilization rate indicates, however, that it has returned to its average level in the 2000s in the US and Germany. In the case of South Korea, while its capacity utilization rate is currently at about the same level as Japan, in historical terms it has been less than that of Japan. A comparison of the average rate and the maximum rate since 2000 for South Korea and Japan discloses that the capacity utilization rate has not retreated as far in South Korea. In the years since the Lehman crisis, companies in Japan have curtailed new capex to adjust the level of capital stock. In both historical and international terms, the capacity utilization rate remains at a very low level in Japan, and the substantial improvement of capex is still hard to foresee. Given this situation, the manufacturing sector should be able to respond to higher demand by increasing the capacity utilization rate. Hence, Japan remains at a place where increases to capex will be difficult at least for the purpose of expanding capacity.

Capacity Utilization Rate by Nation (Manufacturing) **Chart 19**
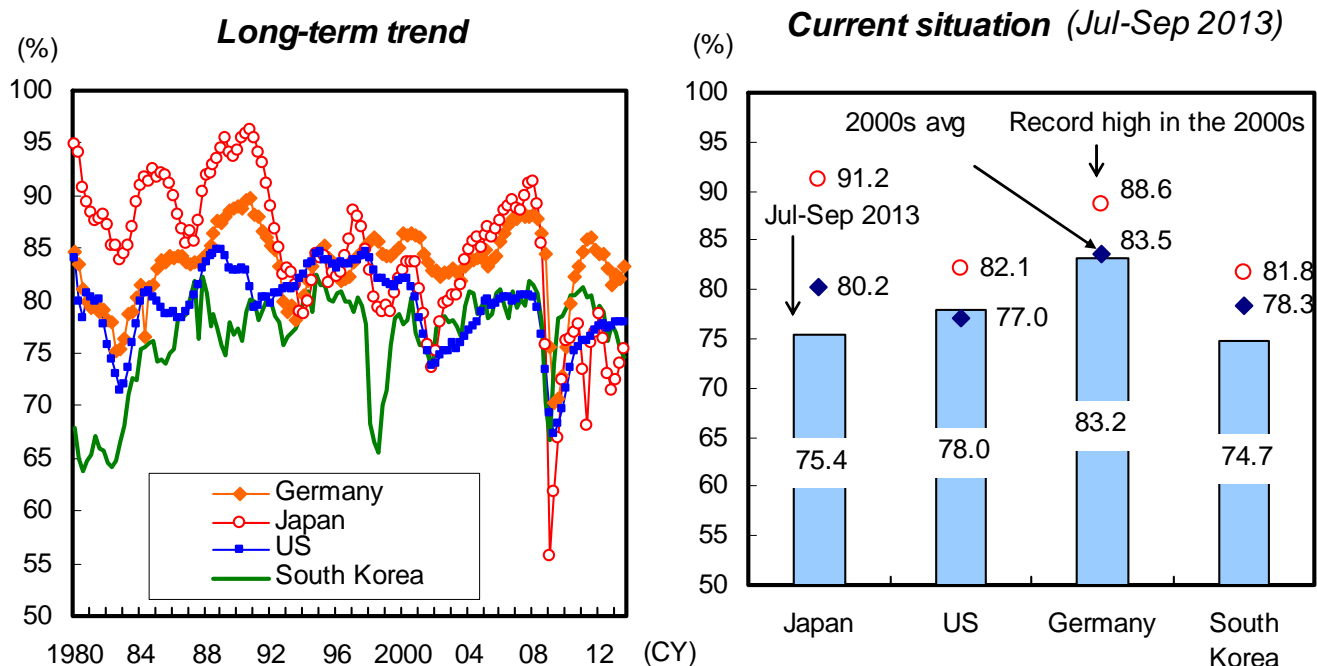
Source: Ministry of Economy, Trade and Industry, Federal Reserve Board, Ifo Institute, Statistics Korea; compiled by DIR.

Ripple effects of domestic demand on production is trending downward

The moderate downtrend of production inducement coefficient of capex in recent years is also a matter of concern. Chart 20 uses input-output tables to portray how the coefficient of demand components changed in the 2000s. First, regarding the coefficient of exports, while fluctuating year to year, it has generally trended flat. In the case of other demand components, we can see that the coefficient is trending downward for personal consumption, gross fixed capital formation (private sector), and gross fixed capital formation (public sector). This suggests that the ripple effects of domestic demand on production have diminished in the 2000s. For Japan's economy to achieve an autonomous virtuous circle, a proper functioning will be needed of the relationship where higher domestic demand leads to higher corporate earnings and where the improvement in corporate earnings gives rise to higher corporate investments and personal consumption. The ripple effects of domestic demand on the corporate sector tending to weaken is a matter that will need to be monitored with care.

Production Inducement Coefficients by GDP Demand Component **Chart 20**
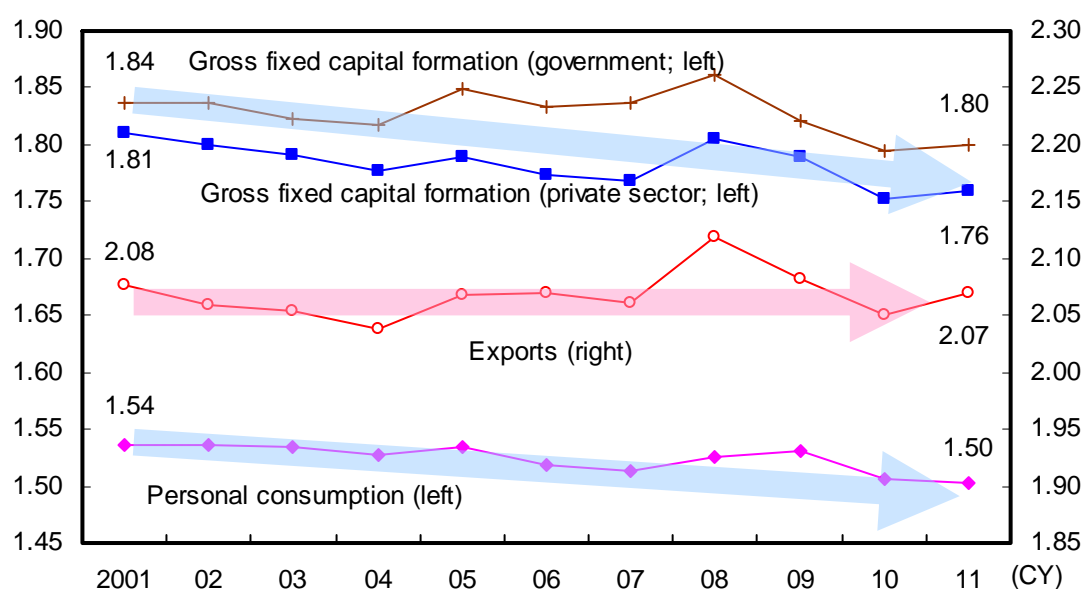
Source: Cabinet Office; compiled by DIR.

Abenomics will stimulate companies' interest in capex through two routes

The trend of capex is greatly influenced by growth expectations. Hence, increasing growth expectations of companies through such measures as corporation tax cut and drastic deregulation is the true path toward the recovery of capex.

Chart 21 compares the ratio of capex to cash flow and real growth expectations. We can ascertain from the chart that real growth expectations lead capex. This indicates that companies consider the economic outlook (real growth expectations) when making decisions about capex. Thus, if the economic outlook of the corporate sector improves, companies can be expected to invest actively in production facilities.

This brings us to consider the correlation between real growth expectations of the corporate sector and the growth rate of nominal and real GDP. This correlation is shown in Chart 22, where we learn that real growth expectations are correlated more highly with nominal GDP than real GDP. Generally speaking, nominal GDP is said to be closer than real GDP to the sentiment on the economy held by

business executives. The possibility is suggested that the corporate sector places more importance on nominal GDP than on real GDP in considering the economic outlook (real growth expectations).

Given the relationship described above, it is reasonable to think that the decrease in capex in Japan is largely the outcome of the lackluster growth of nominal GDP ensuing from prolonged deflation, which in turn reduced growth expectations of the corporate sector.

The economic policies currently being pursued by the Abe administration have the potential of stimulating corporate interest in capex by increasing real growth expectations through two routes. First, if Japan is able to surmount a prolonged period of deflation through bold monetary easing, the growth rate of nominal GDP can be expected to rise. Then, with the pickup of nominal GDP, real growth expectations of companies should improve. Second, if the third arrow of Abenomics (growth strategies) can be strengthened through the corporation tax cut and drastic deregulation, this will directly increase real growth expectations of the corporate sector.

Capex-Cash Flow Ratio and Growth Expectations* (all industries; %) Chart 21	Relationship between Growth Expectations* and GDP Growth Chart 22

Source: Ministry of Finance, Cabinet Office; compiled by DIR.
*Outlook for the next five years for real demand.

Source: Cabinet Office; compiled by DIR.
Note: Estimation period=FY1981-2012.
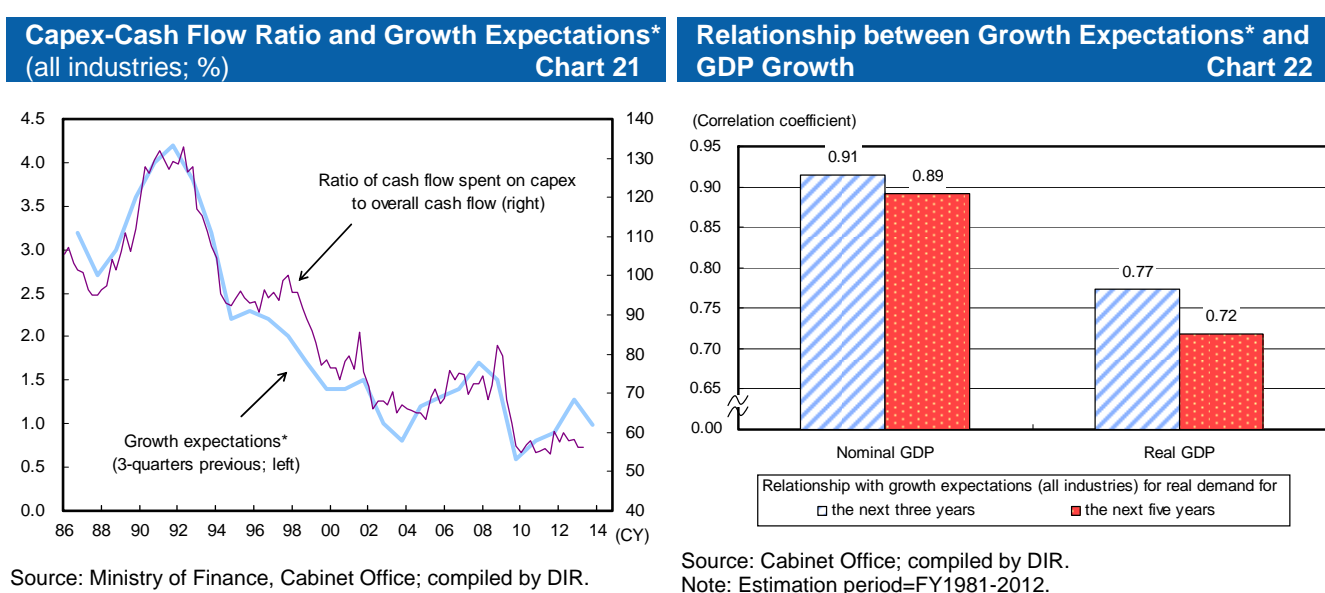
2.3 What will be effects of corporation tax cut?

Quantitative analysis of effects of corporation tax cut

The Abe administration is placing expectations on corporation tax cut as a means of setting off a virtuous circle in Japan's economy. Based on the above analysis, we now present a quantitative analysis of effects of corporation tax cut.

First, the corporation tax cut will increase the after-tax profits and corporate cash flows. Also, since it will lower the cost of capital, companies will adopt a more positive stance toward capex.

In addition, since the corporation tax cut will improve the domestic business environment, a certain proportion of ongoing transfer of business operations overseas is likely to be brought back to Japan. The expansion of domestic production and exports rather than overseas production will be a factor that further pushes up capex. Should the domestic activity of manufacturers gain momentum, positive effects can be expected to spread to the production of parts and other intermediate goods and to a broad range of industries such as the transportation industry.

When we estimate the effect of higher production, exports, and capex on the economy, reducing the corporation tax rate by 10 percentage points (about Y4 trillion) would boost domestic production by around Y7.3 trillion. Also, employee income would rise as corporations return some of the increase in cash flow to workers and as the number of employees increases accompanying higher domestic production. As a result, personal consumption would become energized, and the economy would expand further.

While there is much uncertainty about effects of corporation tax cut, such as the degree to which companies would return to employees the increase in cash flow, there can be no doubt that its impact would be considerable.

Effects of Corporation Tax Cut   **Chart 23**
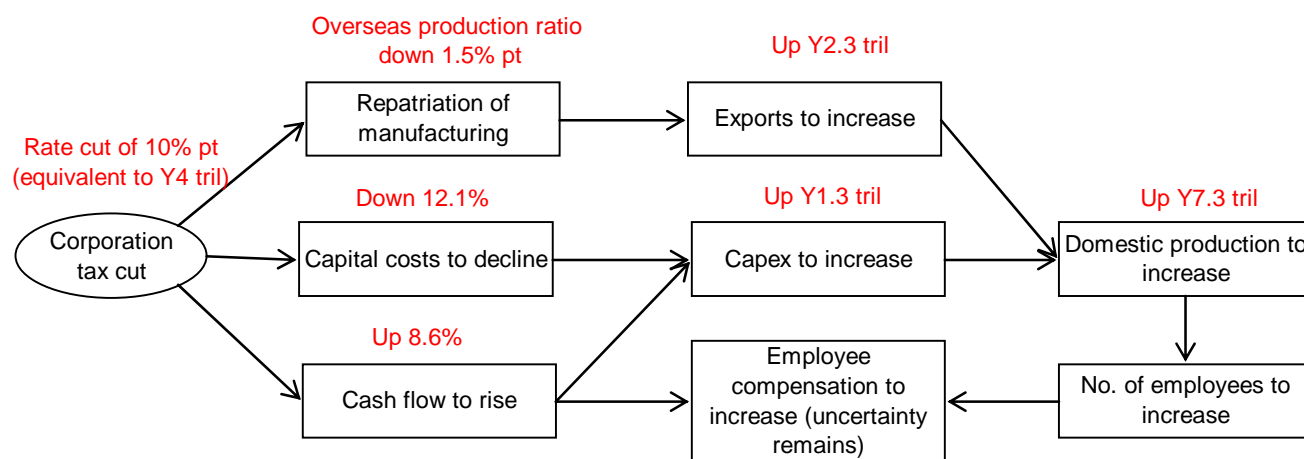
Source: Compiled by DIR.

Impact of corporation tax cut on capex

Avg reduction in effective corporation tax	5% pt	10% pt
(a) Change in capital costs (%)	-6.5	-12.1
Effect of (a) on capex (%)	0.7	1.4
(b) Change in cash flow (%)	4.3	8.6
Effect of (b) on capex (%)	0.3	0.6
Aggregate impact on capex (%)	1.0	2.0

Source: Cabinet Office, Ministry of Finance, Bank of Japan; compiled by DIR.
Note: Estimation result of capex function as follows:
Log(IP) = 10.77 + 0.07log(RCF) - 0.01DI - 0.11log(CC), and Adj-R = 0.74, where significance of all variables is 1%, IP is real capex, RCF (real cash flow) = (recurring profit x (1 − effective corporation tax rate) + depreciation) / capex deflator, DI is production capacity DI (all companies, all industries), and CC stands for capital costs.

Impact of corporation tax cut on exports and production

Avg reduction in effective corporation tax	5% pt	10% pt
Change in overseas production ratio	-0.8% pt	-1.5% pt
Increase in exports	Y1.2 tril	Y2.3 tril
Increase in domestic production	Y2.3 tril	Y4.7 tril

Source: Ministry of Economy, Trade and Industry, Ministry of Finance, Institute for Fiscal Studies, Haver Analytics; compiled by DIR.
Notes:1) Estimation equation for overseas production ratio as follows:

$$\log(\text{Overseas production ratio})$$
$$= 3.29 + 0.0029\, EATR + 0.066 \log(DEMAND) + 0.11 \log(NEER)$$

Where, overseas production ratio = sales of companies incorporated abroad / (sales of companies incorporated abroad + export value) x 100, EATR = effective average corporation tax rate in Japan − effective average corporation tax rate abroad, DEMAND = sales of companies incorporated abroad + export value, NEER=nominal effective exchange rate. Significance of all variables is 1%.
2) Sales of companies incorporated in and export value to the US, UK, Belgium, France, Germany, Italy, Netherlands, Canada, Spain, and Australia based on panel estimation using fixed effect model. Estimation period: CY1990-2005; NEER one-quarter posterior.

Supplement: Simulation of Economic Trends

Will a virtuous circle actually take hold in Japan's economy?

To summarize our analysis of a virtuous circle in this section, we now present a simulation of economic trends. Chart 24 provides a quantitative simulation of Japan's economy for the case of a virtual circle taking hold and the case where it does not do so.

In the case where a virtuous circle is achieved, wages would rise on a sustained basis through the increase in base pay, and Japan would be able to surmount deflation. Also, through such effects as corporation tax cut, domestic corporate activity would gain momentum and capex would rise. Should special economic zones that are currently being considered bear fruit and should Japan gain competitiveness as a site of businesses, manufacturing operations that have moved overseas would begin to return to Japan. Furthermore, labor productivity would increase reflecting higher capex and the expansion of demand. With the rise of labor productivity, real wages would also increase and personal consumption would be greatly invigorated. Under such assumptions, Japan's potential growth rate would dramatically increase. We estimate that real GDP would be augmented by around Y25 trillion in 2020, compared to the case where a virtuous circle is not achieved.

GDP Outlook: Virtuous Circle Attained vs. Not Attained Scenario	Chart 24
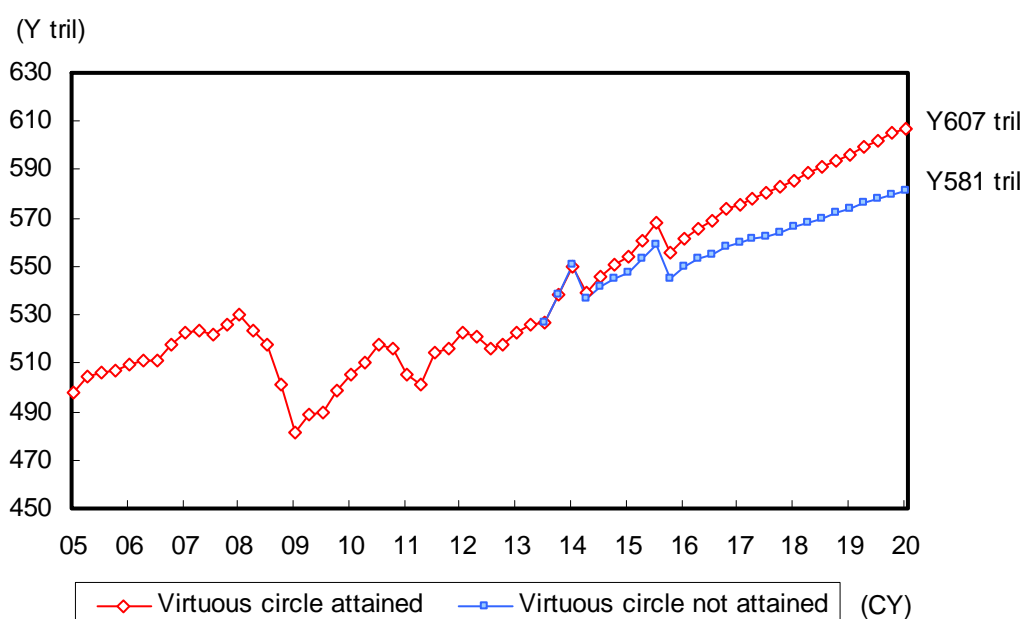
Source: Cabinet Office; compiled by DIR.

Assumptions for virtuous circle attained scenario

	Virtuous circle attained scenario	Virtuous circle not attained scenario
Wages	Increase in base pay occurs, pushing up wages	Increase in base pay doesn't occur and real wages decline reflecting consumption tax
Corporation tax	Corporation tax is cut	No corporation tax cut
Capex	Capex increases reflecting improvement in corporate earnings and corporation tax cut	Capex doesn't increase even if corporate earnings increase
Manufacturing	Repatriation of manufacturing occurs	Overseas manufacturing not reduced

Source: Compiled by DIR.

3. Main Scenario for Japan's Economy

Abenomics represents an appropriate set of economic policies in accord with global standards

In this section, we examine our main scenario for Japan's economy in light of the discussion of the previous sections. After hitting bottom in November 2012, Japan's economy has entered a recovery phase. We believe it will continue to expand steadily. Economic policies of the Abe administration (so-called "Abenomics") represent an appropriate set of policies with the potential of jump-starting the revival of the Japanese economy, and monetary policies in particular are yielding marked results. We anticipate that the economy will continue to expand, supported by (1) increases in exports based on the recovery of the US economy, (2) the ongoing depreciation of the yen and the ascent of stock prices accompanying the BOJ's monetary easing, and (3) the effect of economic stimulus measures accompanying the increase of the consumption tax.

Corporate sector rebounds

Supported in part by Abenomics, Japan's economy is on a path toward recovery. An examination of the current economic environment reveals that major economic indicators of the corporate sector have clearly turned upward.

First, as indicated in Chart 25, the diffusion index for overseas supply and demand conditions for products (large manufacturers) in the BOJ Tankan survey of corporate sentiment, which displays a close relationship with Japan's export volume index, is improving.

Second, Japan's economy has rebounded sharply in terms of the inventory cycle. As shown in Chart 26, where the y/y change in shipments is plotted along the vertical axis and inventories along the horizontal axis, the y/y change in shipments has turned positive.

In view of such data, it is reasonable to conclude that the environment for Japan's corporate sector is steadily improving.

Overseas Supply and Demand Conditions vs. Export Volume — **Chart 25**
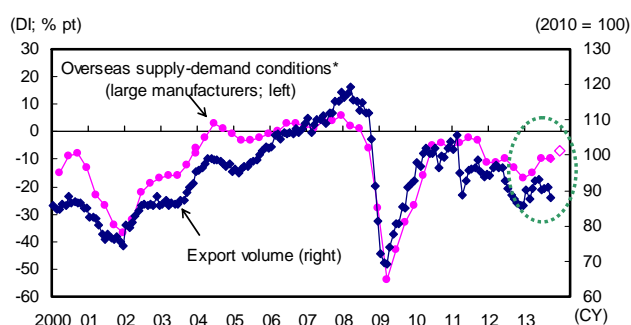
Source: Bank of Japan, Cabinet Office; compiled by DIR.
*BOJ Tankan survey of corporate sentiment; "excess demand" minus "excess supply"; latest quarter=forecast.

Inventory-shipment Cycle — **Chart 26**
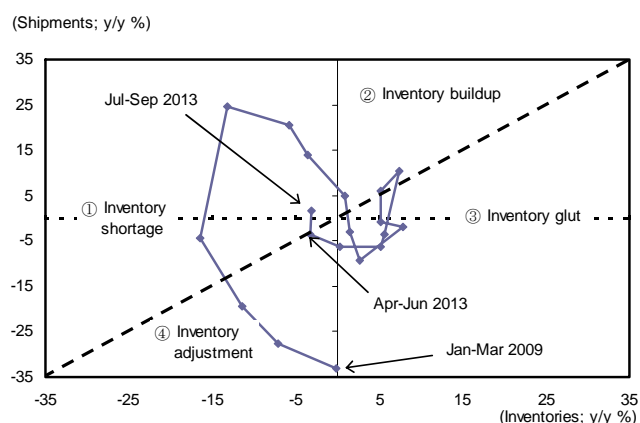
Source: Ministry of Economy, Trade, and Industry; compiled by DIR.

Foreign economies to recover centering on the US

The greatest factor that will support Japan's economy going forward is the prospect that foreign economies will recover centering on the US. Chart 27 portrays the trend of Japanese exports by trading

partner. OECD Composite Leading Indicators (CLIs) for respective partners tend to lead the volume of Japanese exports to the corresponding region by two to three months. OECD CLIs of the US and Europe are currently bottoming out, a positive development for Japan.

Regarding the direction of the world economy, which forms the premise of our current forecast, we assume that (1) the US economy will steadily recover and drive the growth of the world economy, (2) Eurozone economies will stagnate from the sovereign debt crisis while having put the worst behind, and (3) China's economy will avoid a bottom deepening, supported for the time being by the effects of fiscal and monetary measures.

Japan's Exports by Trading Partner	Chart 27

US Economy and Japan's Exports *(y/y %)*

Asian Economy and Japan's Exports *(y/y %)*

EU Economy and Japan's Exports *(y/y %)*

Chinese Economy and Japan's Exports *(y/y %)*

*China, India, Indonesia, Japan, and Korea.
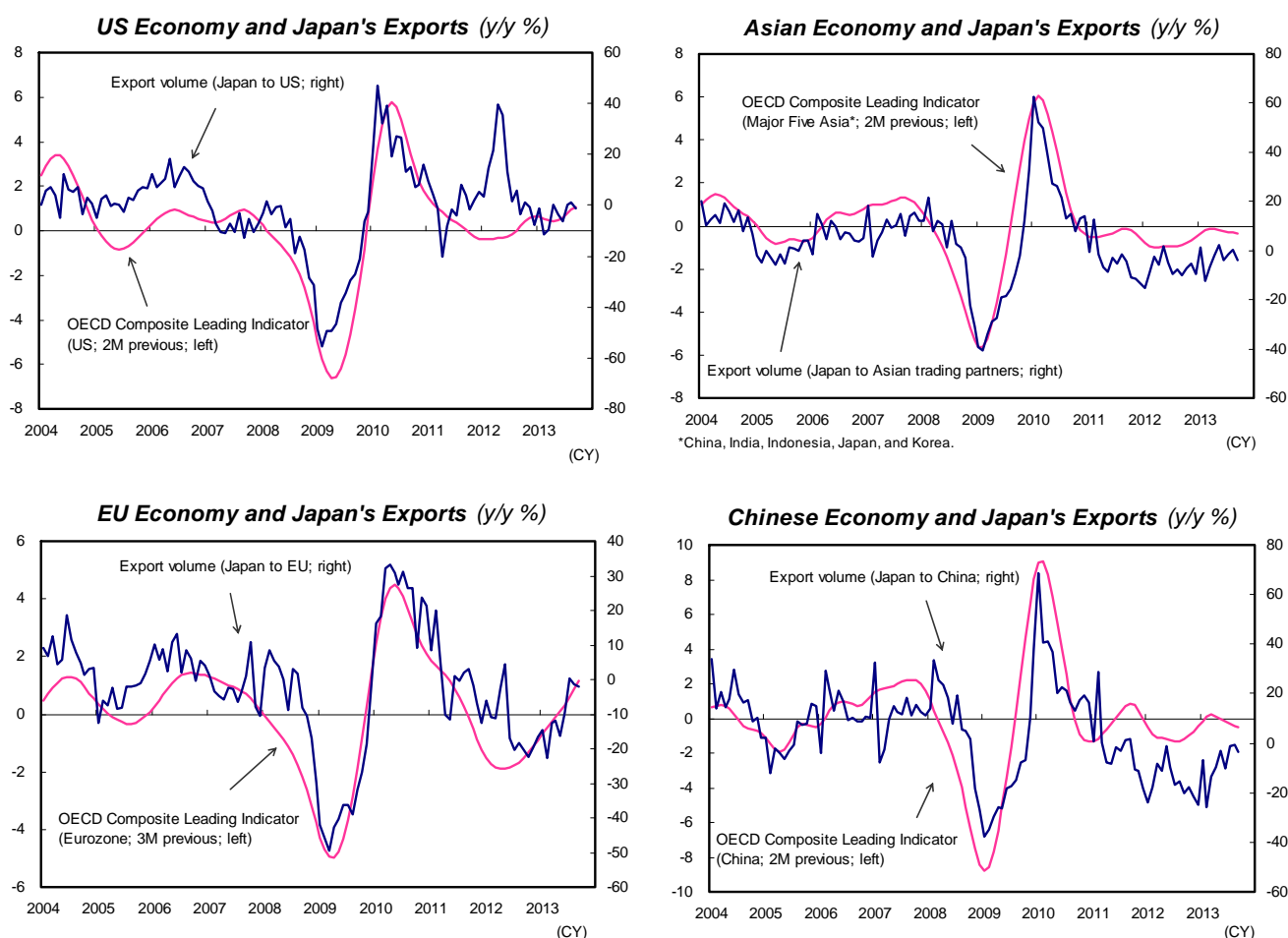
Source: OECD, Ministry of Finance; compiled by DIR.

Personal consumption, while slowing, will trend firmly overall

Next, we turn to the personal sector. Real personal consumption (GDP basis) grew 0.1% q/q in Jul-Sep 2013, marking a fourth consecutive quarterly gain.

Examining consumption expenditures more closely, while expenditures on durable goods and semi-durable goods increased, those on non-durable goods and services fell. As a whole, personal consumption grew gently. Meanwhile, consumer confidence has weakened after boosting the personal consumption to date, but personal consumption maintained positive growth. Thus, it is reasonable to say that personal consumption was firm for the most part.

Currently, automobile sales are trending firmly and are supporting personal consumption. Since automobiles have long service lives and high unit prices, related sales are likely to accelerate toward end-FY13 in advance of the consumption tax hike. With the ascent of stock market in abeyance, it appears that personal spending on financial services has declined.

Higher income will support consumption going forward

Real employee compensation (GDP basis) fell 0.6% q/q in Jul-Sep 2013, declining for the first time in three quarters. While the increase in number of employees made a positive contribution, the decrease in per-employee wages made a negative contribution. The number of employees is predicted to continue rising as the economy recovers. Also, with the tightening of the supply-demand balance for labor, per-employee wages are anticipated to turn gradually upward. Thus, it is reasonable to think that personal consumption will be supported by the improvement of the income environment. Moreover, the probability is high that personal consumption will gain momentum toward end-FY13 and greatly boost the economic growth rate as demand escalates in advance of the consumption tax hike to occur in April 2014.

Personal Consumption Recovering   **Chart 28**
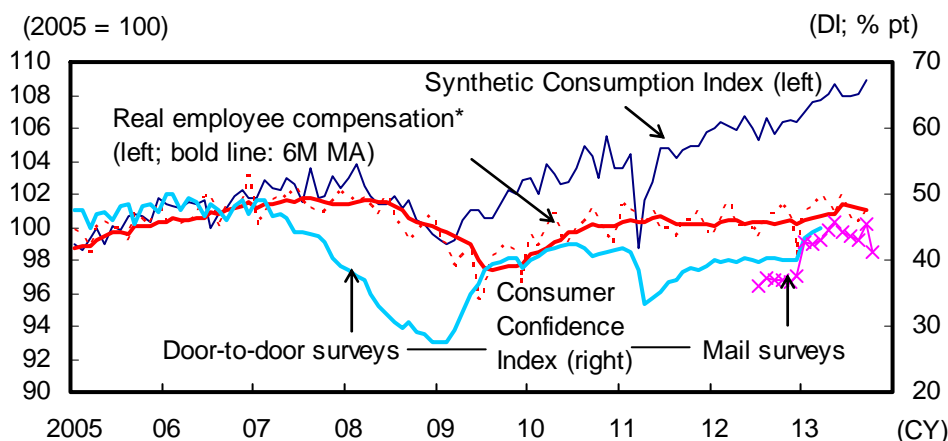
Source: Cabinet Office, Ministry of Internal Affairs and Communications, Ministry of Health, Labour and Welfare; compiled by DIR.
*No. of employees (excl. agriculture, forestry) x total cash earnings / personal consumption deflator; personal consumption deflator estimated based on CPI (excl. imputed rents).

Consumption tax hike to boost GDP by 0.51% in FY13 and to reduce by GDP 0.77% in FY14

In ascertaining the future direction of Japan's economy, an accurate appraisal of the impact of a higher consumption tax will be extremely important. We have factored in the consumption tax hike to 8% in April 2014 and to 10% in October 2015 as scheduled.

Impact on consumption

Higher consumption tax rate will impact personal consumption in two ways: (1) a surge in demand followed by a reactionary plunge and (2) a decrease in real income. While there is no way to avoid the worsening of personal consumption due to the decline in real income, the likelihood is high that the adoption of measures alleviating impacts of the consumption tax hike will restrain the demand surge and the subsequent plunge accompanying the consumption tax hike to some extent.

In relation to automobiles, (1) a new round of eco-car subsidies starting in April 2014 with higher refunds and the reduction of the automobile acquisition tax are being considered, and (2) a

considerable portion of potential demand has already been satisfied through automobile purchases in the previous round of eco-car subsidies. Hence, the demand surge in advance of the consumption tax hike should be small compared to the past occasion.

Impact on housing investment

When the consumption tax rate was raised in April 1997, housing investment saw an excessive acceleration of demand and a sharp downward reaction. To curtail such sharp fluctuations, measures are expected to be taken to mitigate similar fluctuations in relation to the tax hike scheduled in April 2014, such as increasing tax deductions for home loans and creating new subsidies for home purchases. Such mitigation efforts should help to greatly reduce the demand surge compared to the tax hike in 1997. These mitigation measures, however, will not affect the construction of housing for rent, and some demand acceleration is thought to be occurring.

Impact on GDP

Considering the impact on personal consumption, housing investment, and associated production and capex as a whole, the consumption tax hike is likely to boost GDP by 0.51% in FY13 and to reduce it by 0.77% in FY14.

Impact of Consumption Tax Hike on the Economy	Chart 29

GDP level: Consumption tax hiked vs. not hiked

Source: Compiled by DIR.
*Simulation results based on DIR short-term macroeconomic model, which does not necessarily conform to standard figures in *Japan's Economic Outlook* No. 179.
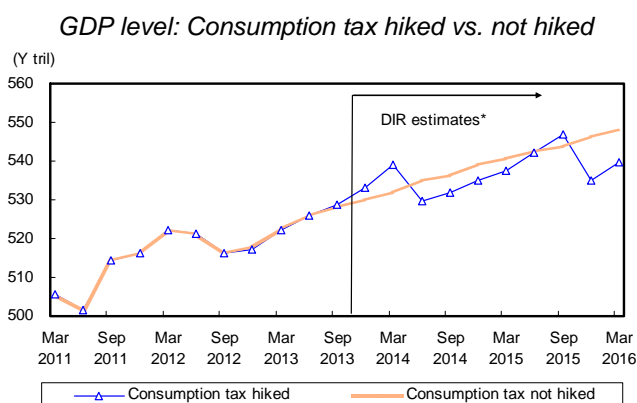
Change in level and growth due to consumption tax hike

	Change in level (%)			
	FY13	FY14	FY15	FY16
Real GDP	0.51	-0.77	-0.76	-0.98
Real personal consumption	0.54	-1.41	-1.28	-1.38
Real housing investment	5.03	1.77	-5.88	-9.12
	Change in growth rate (% pt)			
	FY13	FY14	FY15	FY16
Real GDP	0.55	-1.29	0.01	-0.22
Real personal consumption	0.55	-1.95	0.13	-0.10
Real housing investment	5.25	-3.19	-7.54	-3.47

Source: Compiled by DIR.
*DIR estimates based on DIR short-term macroeconomic model.

4. Four Risks Facing Japan's Economy

In this section, we examine four risks facing Japan's economy. Risks that will need to be kept in mind regarding the Japanese economy are: (1) turbulence in emerging economies, (2) China's shadow banking problem, (3) a reignition of the European sovereign debt crisis, and (4) a surge in crude oil prices stemming from geopolitical risk. It is worth noting that the first is closely related to the second and third. Of these four risks, it is worth underscoring that the first and the second are of crucial importance, and we will analyze them more closely in the paragraphs below.

Risk 1: Turbulence in emerging economies

First, to examine turbulence in emerging economies, we analyze the world economic cycle. In the past, advanced economies led by the US drove emerging economies. However, a decoupling is currently occurring—advanced economies are performing well but emerging economies are stagnating. We believe that this decoupling is occurring for three reasons: (1) the dwindling amount of loans from European financial institutions to emerging economies in light of the European debt crisis, (2) the sluggishness of the Chinese economy, and (3) concerns that money will be taken out of emerging economies based on worries that the Fed will adopt a hasty exit from quantitative easing. We anticipate that a further deterioration of emerging economies will be avoided as the US economy continues to expand. Nevertheless, we think the state and the future direction of the Chinese economy will continue to require close monitoring.

Current situation of the world economy: Is a new decoupling occurring?

Chart 30 illustrates the trend of the composite leading indicator (CLI) for OECD member nations and for six non-OECD nations (Brazil, China, India, Indonesia, Russia, and South Africa). The former represents the business cycle of advanced economies and the latter of emerging economies.

Composite Leading Indicator (CLI): OECD vs. Non-OECD Member Economies   **Chart 30**
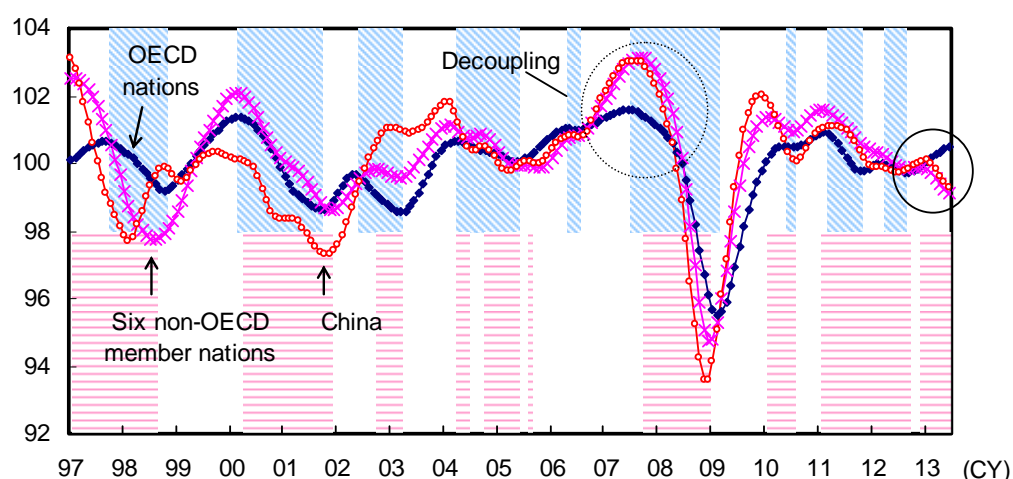
Source: OECD; compiled by DIR.
Notes: 1) Non-OECD member economies: Brazil, China, India, Indonesia, Russia, and South Africa.
    2) Blue shaded areas in upper half of graph denote periods when CLI declined m/m for OECD nations; pink shaded areas in lower half denote periods when CLI declined m/m for six non-OECD economies.

The chart tells us that the business cycles of advanced economies and emerging economies have more or less been in sync. The upper portions of shaded areas are periods when the CLI of OECD member nations declined m/m, and the lower portions are periods when the CLI of non-OECD nations declined.

The chart reveals that there are hardly any periods when only advanced economies or emerging economies deteriorated. However, if we look at the current situation, the CLI of advanced economies has turned upward, but emerging economies' CLI has continued to decline since the start of 2011. In the mid-2000s, a decoupling theory came to prominence in the midst of a boom in emerging economies. It argued that emerging economies would continue to expand even if advanced economies stagnate. Currently, a decoupling in the opposite direction of that of the 2000s is occurring, where advanced economies expand as emerging economies contract.

In this context, we should not overlook the clear deceleration of the Chinese economy. After peaking in 2009, China's CLI has continued to slow. Since China's economy is quite large compared to other emerging economies, it is reasonable to think that the slowing of Chinese economy is responsible for a considerable portion of the slowing of emerging economies as measured by CLI.

Possibility of a serious crisis in emerging economies is limited

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

Risk Resilience of Emerging Market Economies   **Chart 31**
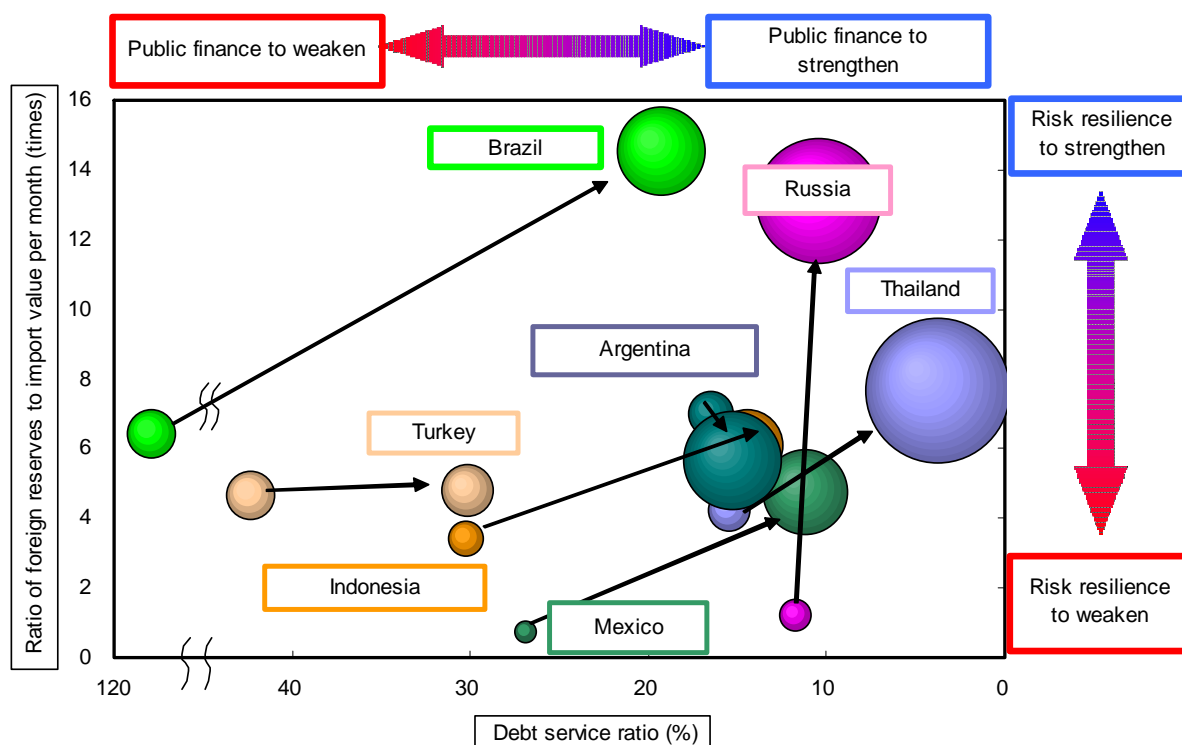
Source: Haver Analytics; compiled by DIR.
Notes: 1) Arrows denote shift of positions at critical moments to 2012.
      2) Year of crises defined as 1994 for Mexico, 1997 for Thailand and Indonesia, 1998 for Russia, 1999 for Brazil, 2001 for Turkey, and 2002 for Argentina.
      3) Size of circles shows ratio of foreign reserves to foreign debt with less than one-year maturity. The larger the circle, the greater the resilience.

Risk 2: China's shadow banking problem

Risk 2-a: China's shadow banking problem extremely serious

Excessive lending has become a problem in China in the wake of its response to the global financial crisis in 2008. Chart 32 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 192% of nominal GDP at end-September 2013. Comparing current levels to the long-term trend, we estimate excessive lending in China to be around Y580 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 $3.5 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 32**
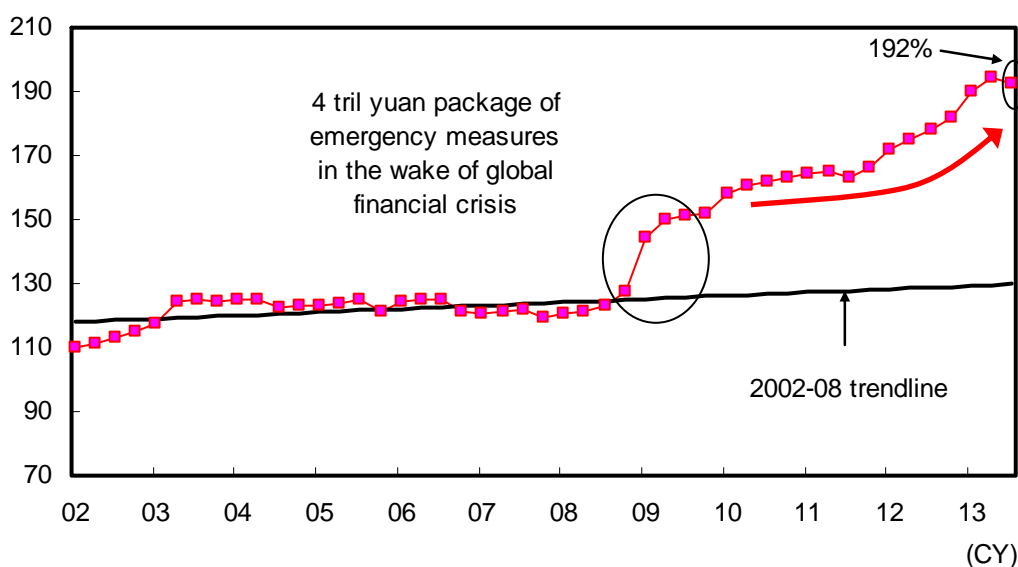
Source: People's Bank of China, National Bureau of Statistics of China; compiled by DIR.
Assumption: Outstanding balance of total social financing as of end-Mar 2002 to be 1.1 times bank lending.

Risk 2-b: Impact on the world economy of the collapse of China's debt bubble should not be overstated

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 33 presents the Business Cycle Signal Index for China. According to this index, we can confirm that China's economy has slowed significantly. After peaking at 123.3 in February 2010, the index has fallen to the lower bound of the zone signaling stability, between 83.33 and 116.66. Similar to previous instances when the economy has slowed to this extent, the likelihood is high that authorities will respond with some form of a stimulus measure and that the collapse of China's economy will be avoided one way or another.

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

China being a socialist market economy rather than a pure capitalist economy may also be a factor supporting the economy for the time being. During the change in political leadership that occurs once a decade, it is natural for leaders to want to circumvent a rapid deceleration of the economy as much as

possible. Politically speaking, collective leadership and a policy of gradualism could also be factors that preclude a short-term relapse of the Chinese economy. In fact, there are growing views that the lower limit for the growth rate of real GDP in China is currently around 7% based on comments such as those recently made by Premier Li Keqiang.

China: Business Cycle Signal Index — **Chart 33**
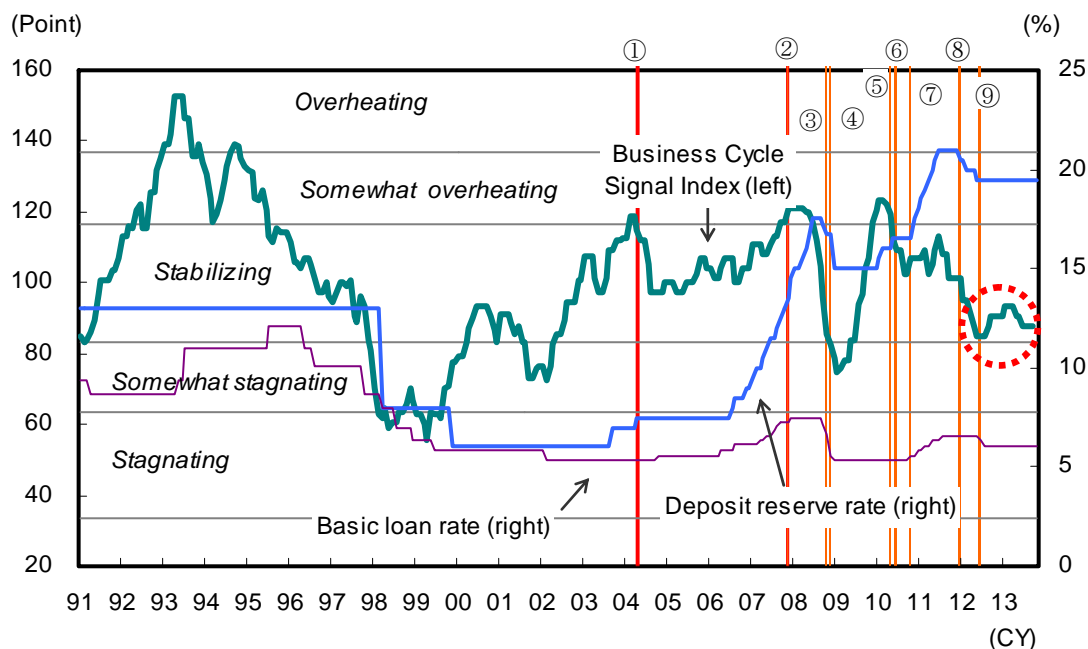
Source: National Bureau of Statistics of China, People's Bank of China, CEIC Data; compiled by DIR.

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

No change to the importance of the US for the world economy

We believe that the US will remain the main engine of the world economy, a point that is worth mentioning. As indicated in Chart 34, US retail sales slightly lead global industrial production. In other words, of the sources for final demand, the US still plays the largest role. Chart 35 compares the shares of exports from Japan by trading partner on a value-added basis and on a dollar basis. Comparing the US and China, the share of exports shipped to China is larger on a dollar basis than that to the US, but exports to the US is larger on a value-added basis. This is extremely interesting since it suggests that there exists a trade structure where intermediate goods are exported from Japan to China and other Asian trading partners, assembled into finished goods and re-exported to European nations and the US, the sources of final demand.

World Industrial Production and US Retail Sales
Chart 34
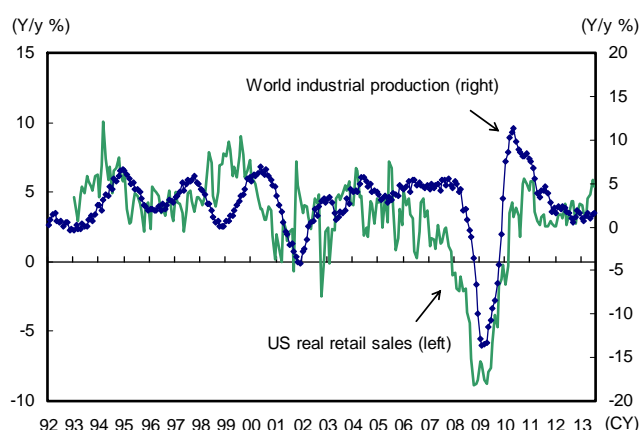
Source: Netherlands Bureau for Economic Policy Analysis, US Bureau of Economic Analysis; compiled by DIR.

Export of Goods from Japan by Destination
Chart 35
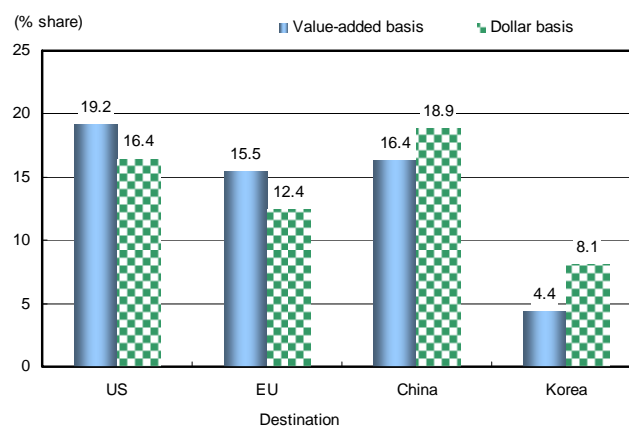
Source: OECD, Haver Analytics; compiled by DIR.
Note: Export of goods in 2009.

Slowing of China's economy will have only a limited impact on the world economy

Of the routes through which the economy of one nation influences that of another, the route through trade is the easiest to understand. If one nation's imports increase, this means that there is an equal amount of increase in the exports of others. In other words, imports determine the degree to which the real economy of a nation influences the world economy. What then determines imports? Imports can go towards satisfying domestic demand (consumption and investment), can be re-exported, or can become intermediate goods as a factor of production. The demand for intermediate goods will in the end depend on the demand for the final goods that are produced. Thus, imports are determined by domestic demand and exports.

Given the argument above, Chart 36 illustrates the relationship between imports and domestic demand and that between imports and exports for major nations. The horizontal axis shows the correlation coefficient between exports and imports, with the right-hand side indicating a higher correlation between exports and imports. The vertical axis shows the correlation coefficient between domestic demand and imports, with the upper-hand-side indicating a higher correlation between domestic demand and imports. The sizes of the circles indicate the percentage share of a nation's imports against imports as a whole. The chart reveals that a majority of major nations are positioned to the upper right, confirming that imports are correlated to a certain degree with both exports and domestic demand. China, however, is different. It is in the lower right-hand, suggesting that while its imports and exports are correlated, the correlation between domestic demand and imports is minimal. Recently, the problem of shadow banking in China has raised concerns that its economy will falter. If the Chinese economy rapidly deteriorate, as long as the deterioration comes from the contraction of domestic demand such as personal consumption and investments, the impact on Chinese imports and in turn the world economy should be minimal.

Domestic Demand vs. Exports and Imports — Chart 36

(Correlation coefficient between domestic demand and imports)
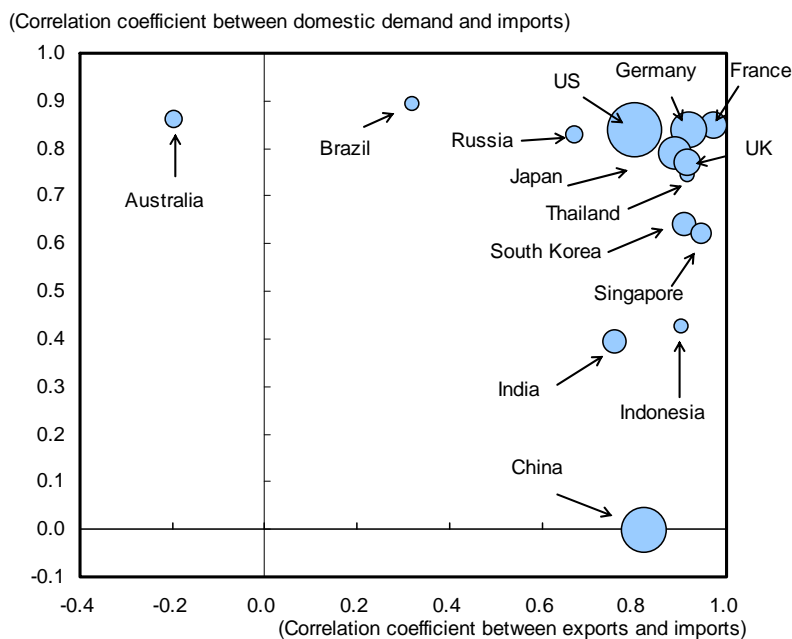
Source: UN, IMF; compiled by DIR.
Notes: 1) Size of circles denotes world import share.
2) Correlation coefficients and import shares are for 2000-11 and 2012, respectively.

US retail sales found to have causality in relation to Chinese exports, Chinese imports, and Japanese exports

To supplement the discussion above, Chart 37 illustrates a Granger causality test using a five-variable vector autoregression model with the variables being (1) US retail sales, (2) Chinese exports, (3) Chinese imports, (4) Chinese fixed investments, and (5) Japanese exports. Granger causality is set to be established when variable X is viewed as Granger-causing Y while past information about variable X is useful in improving the prediction of variable Y.

As indicated in Chart 37, when the global economy is viewed in broad terms, US retail sales are found to have causality in relation to Chinese exports, Chinese imports, and Japanese exports. In contrast, Chinese fixed investments were not found to have any significant causality in relation to Chinese imports or Japanese exports in statistical terms.

Granger Causality Test on Economic Activity in the US, China, and Japan — Chart 37
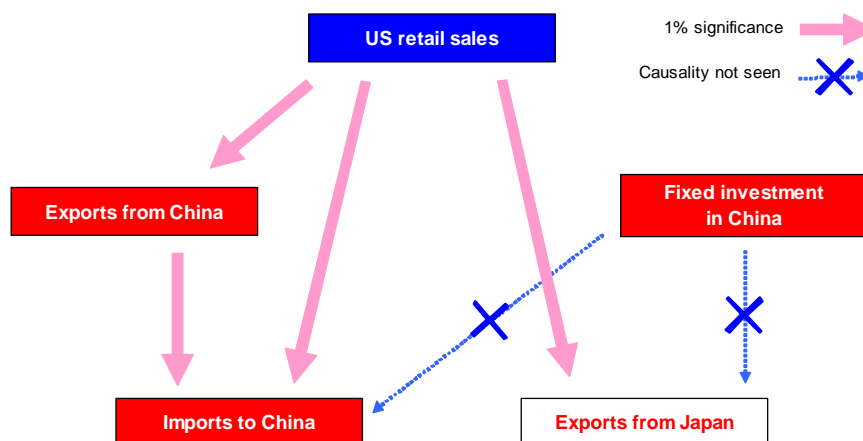
Source: Haver Analytics, Ministry of Finance; compiled by DIR.
Estimation period: Jul 2001 to May 2013.

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 Jan-Mar 2014.

Standard and Alternative Scenario Assumptions		Chart 38
	Standard scenario	Alternative scenario (in each quarter in both years)
Case 1: Forex rate	Y99.4/$ in FY13 and Y100.0/$ in FY14	Y10 appreciation against $
Case 2: Crude oil prices (WTI futures)	$100.0/bbl in both FY13 and FY14	$50/bbl rise
Case 3: World GDP	+2.9% y/y in CY13 and +3.7% y/y in CY14	1% contraction in world GDP level
Case 4: Long-term interest rate	0.76% in FY13 and 0.93% in FY14	1% pt rise

Source: Compiled by DIR.

Effects on Real GDP (% change from standard scenario)　　　　　　　　　　　　　**Chart 39**
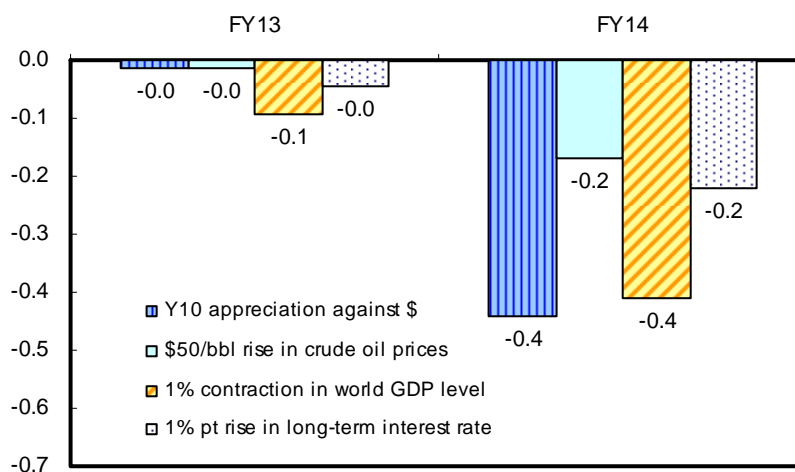
Source: Compiled by DIR.

Case 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 0.01% and 0.4% in FY13 and FY14, respectively, compared to our standard scenario.

Case 2: Surge in crude oil prices

If crude oil prices rise by $50/bbl above our standard scenario, real GDP level is forecast to shrink 0.01% and 0.2% in FY13 and FY14, respectively, 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.

Case 3: Contraction of world GDP

If world demand (GDP) contracts 1% from our standard scenario, Japan's real GDP level would shrink 0.1% and 0.4% in FY13 and FY14, respectively, 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.

Case 4: Higher interest rates

If long-term interest rates rise 1 point above our standard scenario, real GDP level would contract 0.04% and 0.2% in FY13 and FY14, respectively, 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. Consequently, higher interest rates would likely mean an increase in household income, which in turn would increase household consumption, assuming the propensity to consume remains unchanged.

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 40

	Standard Scenario		Case 1 — Y10 appreciation against $				Case 2 — $50/bbl rise in crude oil prices			
	FY13	FY14	FY13		FY14		FY13		FY14	
Nominal GDP (Y/y %)	2.4	2.5	2.3	(-0.1)	1.8	(-0.8)	2.3	(-0.1)	2.3	(-0.3)
Real GDP (Chained [2005]; y/y %)	**2.6**	**1.0**	**2.6**	**(-0.0)**	**0.5**	**(-0.4)**	**2.6**	**(-0.0)**	**0.8**	**(-0.2)**
GDP deflator (Y/y %)	-0.2	1.5	-0.3	(-0.1)	1.3	(-0.4)	-0.2	(-0.1)	1.5	(-0.1)
All-industry Activity Index (Y/y %)	2.0	2.3	1.8	(-0.1)	1.8	(-0.6)	2.0	(0.0)	2.3	(0.0)
Industrial Production Index (Y/y %)	3.3	5.2	2.9	(-0.4)	3.5	(-2.0)	3.3	(-0.0)	4.9	(-0.2)
Tertiary Industry Activity Index (Y/y %)	1.6	1.6	1.5	(-0.1)	1.2	(-0.4)	1.6	(0.0)	1.6	(0.1)
Corporate Goods Price Index (Y/y %)	1.8	3.8	1.5	(-0.3)	2.7	(-1.3)	2.1	(0.3)	4.4	(0.9)
Consumer Price Index (Y/y %)	0.6	2.9	0.6	(-0.1)	2.7	(-0.2)	0.7	(0.0)	3.0	(0.2)
Unemployment rate (%)	4.0	3.8	4.0	(-0.0)	3.8	(0.0)	4.0	(-0.0)	3.9	(0.0)
Trade balance (Y tril)	-10.3	-8.5	-9.9	(0.4)	-8.0	(0.4)	-11.8	(-1.5)	-10.2	(-1.7)
Current balance (US$100 mil)	411	771	589	(178)	736	(-35)	329	(-82)	674	(-97)
Current balance (Y tril)	4.1	7.7	5.3	(1.2)	6.6	(-1.1)	3.3	(-0.8)	6.7	(-1.0)
Real GDP components (Chained [2005]; y/y %)										
Private consumption	2.1	-0.5	2.1	(0.0)	-0.6	(-0.1)	2.0	(-0.0)	-0.5	(-0.0)
Private housing investment	8.3	-2.6	8.2	(-0.0)	-2.9	(-0.3)	8.3	(0.0)	-2.9	(-0.3)
Private non-housing investment	1.1	4.8	1.1	(-0.1)	3.3	(-1.5)	1.2	(0.1)	4.0	(-0.7)
Government final consumption	1.7	1.1	1.7	(0.0)	1.2	(0.1)	1.7	(-0.0)	1.0	(-0.0)
Public fixed investment	14.5	-5.8	14.7	(0.2)	-5.3	(0.6)	14.4	(-0.1)	-6.1	(-0.4)
Exports of goods and services	4.1	7.3	4.0	(-0.1)	6.7	(-0.7)	4.1	(-0.0)	7.0	(-0.3)
Imports of goods and services	4.4	3.8	4.3	(-0.1)	3.8	(-0.1)	4.3	(-0.1)	3.3	(-0.6)

	Case 3 — 1% contraction of World GDP				Case 4 — 1% pt rise in 10-yr JGB yield				(Reference) Y5 depreciation and $50/bbl rise in crude oil prices			
	FY13		FY14		FY13		FY14		FY13		FY14	
Nominal GDP (Y/y %)	2.3	(-0.1)	2.2	(-0.4)	2.4	(-0.0)	2.3	(-0.2)	2.4	(-0.0)	2.6	(0.1)
Real GDP (Chained [2005]; y/y %)	**2.5**	**(-0.1)**	**0.6**	**(-0.4)**	**2.5**	**(-0.0)**	**0.8**	**(-0.2)**	**2.6**	**(-0.0)**	**1.0**	**(0.1)**
GDP deflator (Y/y %)	-0.2	(-0.0)	1.5	(-0.0)	-0.2	(0.0)	1.5	(0.0)	-0.2	(-0.0)	1.6	(0.0)
All-industry Activity Index (Y/y %)	1.9	(-0.1)	2.1	(-0.3)	1.9	(-0.0)	2.2	(-0.1)	2.0	(0.1)	2.5	(0.3)
Industrial Production Index (Y/y %)	3.0	(-0.3)	4.3	(-1.1)	3.2	(-0.1)	4.8	(-0.4)	3.5	(0.2)	5.8	(0.7)
Tertiary Industry Activity Index (Y/y %)	1.5	(-0.0)	1.5	(-0.1)	1.5	(-0.0)	1.5	(-0.1)	1.6	(0.1)	1.8	(0.3)
Corporate Goods Price Index (Y/y %)	1.8	(-0.0)	3.7	(-0.1)	1.8	(0.0)	3.7	(-0.0)	2.2	(0.4)	4.9	(1.6)
Consumer Price Index (Y/y %)	0.6	(-0.0)	2.8	(-0.0)	0.6	(0.0)	2.9	(-0.0)	0.7	(0.1)	3.1	(0.3)
Unemployment rate (%)	4.0	(-0.0)	3.8	(0.0)	4.0	(0.0)	3.8	(0.0)	4.0	(-0.0)	3.8	(0.0)
Trade balance (Y tril)	-10.8	(-0.4)	-8.8	(-0.3)	-10.2	(0.2)	-7.8	(0.6)	-12.0	(-1.7)	-10.4	(-1.9)
Current balance (US$100 mil)	419	(8)	745	(-26)	488	(77)	530	(-241)	240	(-171)	692	(-79)
Current balance (Y tril)	4.1	(0.1)	7.5	(-0.3)	4.8	(0.8)	5.3	(-2.4)	2.7	(-1.4)	7.3	(-0.4)
Real GDP components (Chained [2005]; y/y %)												
Private consumption	2.1	(-0.0)	-0.6	(-0.1)	2.1	(-0.0)	-0.6	(-0.0)	2.0	(-0.0)	-0.5	(0.0)
Private housing investment	8.2	(-0.0)	-2.8	(-0.2)	8.1	(-0.1)	-3.2	(-0.8)	8.3	(0.0)	-2.7	(-0.1)
Private non-housing investment	1.1	(0.0)	4.3	(-0.4)	0.9	(-0.3)	3.5	(-1.5)	1.2	(0.1)	4.8	(0.0)
Government final consumption	1.7	(0.0)	1.1	(0.0)	1.7	(0.0)	1.1	(0.0)	1.7	(-0.0)	1.0	(-0.1)
Public fixed investment	14.5	(0.0)	-5.8	(0.0)	14.5	(-0.0)	-5.8	(0.0)	14.3	(-0.2)	-6.3	(-0.8)
Exports of goods and services	3.5	(-0.6)	6.0	(-1.8)	4.1	(-0.0)	7.3	(-0.0)	4.1	(0.0)	7.3	(0.1)
Imports of goods and services	4.3	(-0.1)	3.6	(-0.3)	4.3	(-0.1)	3.3	(-0.6)	4.4	(-0.0)	3.3	(-0.5)

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

Quarterly Forecast Tables

1.1 Selected Economic Indicators

	2011 4-6	7-9	10-12	2012 1-3	4-6	7-9	10-12	2013 1-3	FY 2011	FY 2012	CY 2011	CY 2012
Nominal GDP (SAAR; Y tril)	463.8	473.9	474.6	480.6	477.5	471.9	472.7	476.0	473.3	474.6	470.6	475.6
Q/q %	-1.5	2.2	0.1	1.3	-0.7	-1.2	0.2	0.7				
Q/q %, SAAR	-5.8	9.1	0.6	5.2	-2.6	-4.6	0.7	2.8				
Y/y %	-3.7	-2.5	-1.7	2.3	2.8	-0.5	-0.4	-0.8	-1.4	0.3	-2.5	1.1
Real GDP (chained [2005]; SAAR; Y tril)	501.7	514.6	515.9	522.3	521.3	516.4	517.2	522.7	513.7	519.6	509.4	519.3
Q/q %	-0.8	2.6	0.3	1.2	-0.2	-0.9	0.1	1.1				
Q/q %, SAAR	-3.0	10.7	1.0	5.1	-0.8	-3.7	0.6	4.3				
Y/y %	-1.5	-0.6	-0.2	3.4	3.8	0.3	0.3	0.3	0.3	1.2	-0.6	1.9
Contribution to GDP growth (% pt)												
Domestic demand	0.3	1.6	1.0	1.2	0.1	-0.4	0.3	0.7	1.3	2.0	0.3	2.8
Foreign demand	-1.1	0.9	-0.8	0.1	-0.3	-0.5	-0.1	0.4	-1.0	-0.8	-0.9	-0.9
GDP deflator (y/y %)	-2.1	-1.9	-1.5	-1.0	-1.0	-0.8	-0.7	-1.1	-1.7	-0.9	-1.9	-0.9
Index of All-Industry Activity (2005=100)	94.2	96.2	96.7	96.8	96.6	96.2	96.1	96.1	96.1	96.2	95.4	96.5
Q/q %; y/y %	-1.0	2.2	0.6	0.1	-0.2	-0.4	-0.0	-0.0	0.2	0.2	-0.5	1.2
Index of Industrial Production (2010=100)	92.9	99.5	100.5	101.3	99.1	95.9	94.1	94.7	98.7	95.8	97.2	97.8
Q/q %; y/y %	-4.1	7.1	1.0	0.8	-2.1	-3.3	-1.8	0.6	-0.7	-3.0	-2.8	0.6
Index of Tertiary Industry Activity (2005=100)	97.0	98.5	99.0	99.0	99.0	99.0	99.3	99.5	98.5	99.2	97.9	99.3
Q/q %; y/y %	-0.5	1.5	0.5	0.0	0.0	0.0	0.3	0.2	0.7	0.8	0.0	1.4
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	102.0	102.1	101.0	101.2	100.9	100.2	100.1	100.9	101.6	100.5	101.5	100.6
Y/y %	1.8	2.1	1.1	0.3	-1.0	-1.9	-1.0	-0.3	1.3	-1.0	1.5	-0.9
CPI (excl. fresh food; 2010=100)	100.0	99.9	99.7	99.6	99.9	99.6	99.6	99.3	99.8	99.6	99.8	99.7
Y/y %	-0.3	0.2	-0.2	0.1	-0.0	-0.2	-0.1	-0.3	-0.0	-0.2	-0.3	-0.1
Unemployment rate (%)	4.7	4.5	4.5	4.5	4.4	4.3	4.2	4.2	4.5	4.3	4.6	4.4
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; %)	1.16	1.04	1.03	0.97	0.85	0.78	0.76	0.66	1.05	0.76	0.98	0.80
Money stock; M2 (y/y %)	2.8	2.8	3.0	3.0	2.4	2.4	2.3	2.9	2.9	2.5	2.7	2.5
Trade balance (SAAR; Y tril)	-5.0	-1.3	-3.9	-4.3	-4.4	-6.6	-6.4	-10.1	-3.5	-6.9	-1.6	-5.8
Current balance (SAAR; $100 mil)	864	1,240	938	825	767	497	532	339	964	524	1,197	605
Current balance (SAAR; Y tril)	7.1	9.6	7.3	6.5	6.1	3.9	4.3	3.1	7.6	4.4	9.6	4.8
(% of nominal GDP)	1.5	2.0	1.5	1.4	1.3	0.8	0.9	0.7	1.6	0.9	2.0	1.1
Exchange rate (Y/$)	81.7	77.8	77.3	79.3	80.1	78.6	81.2	92.3	79.0	83.1	79.8	79.8
(Y/Euro)	118.3	108.7	104.9	106.3	101.2	98.2	108.2	122.0	109.6	107.4	111.4	103.5

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

	2013 4-6	7-9	10-12 (E)	2014 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2015 1-3 (E)	FY 2013 (E)	FY 2014 (E)	CY 2013 (E)	CY 2014 (E)
Nominal GDP (SAAR; Y tril)	481.1	483.0	487.9	493.2	492.2	496.1	500.3	505.0	486.1	498.4	482.0	495.4
Q/q %	1.1	0.4	1.0	1.1	-0.2	0.8	0.8	0.9				
Q/q %, SAAR	4.3	1.6	4.1	4.4	-0.8	3.2	3.4	3.9				
Y/y %	0.6	2.4	3.2	3.5	2.4	2.7	2.6	2.4	2.4	2.5	1.3	2.8
Real GDP (chained [2005]; SAAR; Y tril)	527.6	530.1	534.5	540.0	532.4	536.2	539.9	543.6	533.0	538.2	528.8	537.2
Q/q %	0.9	0.5	0.8	1.0	-1.4	0.7	0.7	0.7				
Q/q %, SAAR	3.8	1.9	3.4	4.2	-5.5	2.9	2.7	2.8				
Y/y %	1.1	2.7	3.3	3.2	1.0	1.2	1.0	0.7	2.6	1.0	1.8	1.6
Contribution to GDP growth (% pt)												
Domestic demand	0.8	0.9	0.8	1.0	-1.8	0.5	0.4	0.4	2.6	0.3	2.0	1.5
Foreign demand	0.1	-0.5	-0.0	-0.0	0.3	0.2	0.2	0.2	0.0	0.6	-0.2	0.1
GDP deflator (y/y %)	-0.5	-0.3	-0.1	0.3	1.4	1.5	1.5	1.7	-0.2	1.5	-0.5	1.2
Index of All-Industry Activity (2005=100)	97.1	97.3	98.3	99.8	99.2	100.0	100.7	101.5	98.1	100.3	97.3	100.0
Q/q %; y/y %	1.0	0.2	1.1	1.5	-0.6	0.7	0.7	0.9	2.0	2.3	0.8	2.8
Index of Industrial Production (2010=100)	96.1	97.7	100.0	102.7	101.8	103.5	104.9	106.9	99.0	104.1	97.3	103.4
Q/q %; y/y %	1.5	1.7	2.3	2.7	-0.9	1.6	1.4	1.9	3.3	5.2	-0.5	6.3
Index of Tertiary Industry Activity (2005=100)	100.2	100.0	100.8	102.0	101.5	102.0	102.6	103.2	100.7	102.3	100.3	102.2
Q/q %; y/y %	0.6	-0.1	0.8	1.2	-0.5	0.5	0.6	0.6	1.6	1.6	1.1	1.9
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	101.6	102.4	102.6	102.7	105.8	106.0	106.3	106.6	102.3	106.2	101.9	105.2
Y/y %	0.6	2.2	2.5	1.8	4.2	3.5	3.6	3.8	1.8	3.8	1.3	3.3
CPI (excl. fresh food; 2010=100)	99.9	100.3	100.4	100.2	102.9	103.1	103.2	103.2	100.2	103.1	100.0	102.3
Y/y %	0.0	0.7	0.8	0.9	2.9	2.8	2.8	3.0	0.6	2.9	0.3	2.4
Unemployment rate (%)	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	4.0	3.8	4.1	3.9
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	0.75	0.79	0.85	0.91	0.97	1.00	0.76	0.93	0.73	0.88
Money stock; M2 (y/y %)	3.5	3.8	3.8	3.8	3.9	4.0	4.1	4.1	3.7	4.0	3.5	4.0
Trade balance (SAAR; Y tril)	-7.4	-11.3	-11.2	-11.4	-10.3	-9.2	-7.8	-6.6	-10.3	-8.5	-10.0	-9.7
Current balance (SAAR; $100 mil)	906	227	232	280	474	658	870	1,081	411	771	426	571
Current balance (SAAR; Y tril)	8.9	2.2	2.3	2.8	4.7	6.6	8.7	10.8	4.1	7.7	4.2	5.7
(% of nominal GDP)	1.9	0.5	0.5	0.6	1.0	1.3	1.7	2.1	0.8	1.5	0.9	1.2
Exchange rate (Y/$)	98.8	98.9	100.0	100.0	100.0	100.0	100.0	100.0	99.4	100.0	97.5	100.0
(Y/Euro)	129.6	130.7	135.0	135.0	135.0	135.0	135.0	135.0	132.6	135.0	129.3	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)

	2011 4-6	7-9	10-12	2012 1-3	4-6	7-9	10-12	2013 1-3	FY 2011	2012	CY 2011	2012
Gross domestic expenditure	501.7	514.6	515.9	522.3	521.3	516.4	517.2	522.7	513.7	519.6	509.4	519.3
Q/q %, SAAR	-3.0	10.7	1.0	5.1	-0.8	-3.7	0.6	4.3				
Y/y %	-1.5	-0.6	-0.2	3.4	3.8	0.3	0.3	0.3	0.3	1.2	-0.6	1.9
Domestic demand	491.9	499.9	505.2	510.8	511.4	509.3	510.8	514.2	502.1	511.5	496.8	510.6
Q/q %, SAAR	1.3	6.7	4.4	4.5	0.4	-1.6	1.1	2.7				
Y/y %	-0.2	0.1	1.1	4.3	3.8	1.9	1.2	0.7	1.3	1.9	0.3	2.8
Private demand	373.0	381.0	386.6	389.0	388.3	385.5	385.6	388.4	382.5	386.9	378.1	387.1
Q/q %, SAAR	1.1	8.9	6.0	2.4	-0.7	-2.9	0.1	2.9				
Y/y %	-0.5	-0.0	1.6	4.8	4.0	1.2	-0.2	-0.2	1.5	1.1	0.5	2.4
Final consumption	299.7	304.3	306.0	308.8	309.1	308.2	309.5	312.0	304.7	309.7	301.8	308.8
Q/q %, SAAR	3.7	6.3	2.3	3.6	0.4	-1.1	1.6	3.3				
Y/y %	0.5	0.5	1.2	4.0	3.1	1.3	1.0	1.1	1.6	1.6	0.4	2.3
Residential investment	12.7	13.2	13.1	12.9	13.3	13.4	13.9	14.2	13.0	13.7	13.0	13.4
Q/q %, SAAR	-7.9	19.3	-4.3	-5.1	11.4	4.3	13.3	9.4				
Y/y %	3.5	8.2	3.3	-0.1	4.7	1.5	5.8	9.4	3.7	5.3	5.5	3.0
Non-residential investment	64.3	65.3	70.8	69.1	68.7	66.4	65.6	65.7	67.4	66.5	66.2	67.5
Q/q %, SAAR	-2.0	6.6	37.7	-9.2	-2.4	-12.4	-4.7	0.2				
Y/y %	-0.4	-0.2	9.9	6.8	7.0	1.5	-7.2	-5.0	4.1	-1.3	3.3	2.0
Change in inventories	-3.7	-1.9	-3.3	-1.8	-2.8	-2.6	-3.4	-3.5	-2.6	-3.0	-2.9	-2.7
Public demand	118.9	118.8	118.6	121.9	123.1	123.9	125.2	125.8	119.6	124.6	118.7	123.5
Q/q %, SAAR	1.9	-0.1	-0.8	11.4	4.2	2.5	4.3	1.9				
Y/y %	0.9	0.4	-0.6	2.9	3.4	4.3	5.7	3.4	0.9	4.2	-0.1	4.1
Government final consumption	98.5	98.8	99.1	100.6	100.7	101.1	101.7	101.7	99.3	101.3	98.7	101.0
Q/q %, SAAR	1.1	1.0	1.1	6.4	0.3	1.7	2.5	0.1				
Y/y %	1.3	1.1	0.9	2.3	2.2	2.3	2.7	1.1	1.4	2.1	1.4	2.4
Fixed investment	20.3	20.0	19.6	21.2	22.5	22.8	23.5	24.1	20.3	23.3	20.0	22.5
Q/q %, SAAR	3.8	-6.1	-8.4	38.4	26.2	4.9	13.9	10.6				
Y/y %	-2.2	-4.7	-7.5	5.0	11.2	15.0	19.6	13.1	-2.2	14.9	-7.5	12.5
Change in inventories	0.0	0.1	0.0	0.1	-0.0	0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0
Net exports of goods and services	9.8	15.1	11.1	11.9	10.5	7.4	6.3	8.6	12.0	8.2	12.9	9.0
Exports of goods and services	77.4	85.0	82.4	84.6	84.1	80.9	78.5	81.6	82.3	81.3	82.1	82.0
Q/q %, SAAR	-26.8	45.0	-11.6	11.2	-2.1	-14.5	-11.4	16.7				
Y/y %	-5.5	0.8	-2.6	0.9	9.2	-4.8	-5.0	-3.3	-1.6	-1.2	-0.4	-0.1
Imports of goods and services	67.6	69.8	71.2	72.7	73.7	73.5	72.2	73.0	70.3	73.1	69.2	73.0
Q/q %, SAAR	-2.6	13.6	8.3	8.2	5.8	-1.0	-6.7	4.2				
Y/y %	3.6	5.1	5.7	6.7	9.1	5.2	1.2	0.5	5.3	3.9	5.9	5.5
Residual	0.0	-0.4	-0.5	-0.4	-0.6	-0.3	0.1	-0.1	-0.4	-0.1	-0.3	-0.3

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)

	2013 4-6	7-9	10-12 (E)	2014 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2015 1-3 (E)	FY 2013 (E)	2014 (E)	CY 2013 (E)	2014 (E)
Gross domestic expenditure	527.6	530.1	534.5	540.0	532.4	536.2	539.9	543.6	533.0	538.2	528.8	537.2
Q/q %, SAAR	3.8	1.9	3.4	4.2	-5.5	2.9	2.7	2.8				
Y/y %	1.1	2.7	3.3	3.2	1.0	1.2	1.0	0.7	2.6	1.0	1.8	1.6
Domestic demand	518.1	522.5	526.8	532.1	523.0	525.5	527.7	530.0	525.2	526.7	520.5	527.1
Q/q %, SAAR	3.1	3.5	3.3	4.1	-6.6	1.9	1.7	1.8				
Y/y %	1.2	2.6	3.2	3.6	0.9	0.6	0.0	-0.4	2.7	0.3	1.9	1.3
Private demand	390.4	392.9	396.5	401.9	393.1	396.2	398.7	401.1	395.5	397.4	392.1	397.4
Q/q %, SAAR	2.1	2.6	3.7	5.6	-8.5	3.2	2.6	2.5				
Y/y %	0.5	1.9	2.8	3.6	0.7	0.8	0.5	-0.1	2.2	0.5	1.3	1.4
Final consumption	313.8	314.1	316.2	320.2	311.9	314.0	315.3	316.6	316.1	314.5	314.1	315.4
Q/q %, SAAR	2.3	0.4	2.7	5.1	-10.0	2.8	1.6	1.6				
Y/y %	1.6	1.9	2.2	2.6	-0.7	0.0	-0.3	-1.1	2.1	-0.5	1.7	0.4
Residential investment	14.2	14.6	15.2	15.2	14.4	14.2	14.5	14.6	14.8	14.4	14.6	14.6
Q/q %, SAAR	1.6	11.3	16.1	1.2	-19.6	-4.7	6.6	4.5				
Y/y %	7.1	8.9	9.4	7.4	1.2	-2.6	-4.6	-3.9	8.3	-2.6	8.7	0.1
Non-residential investment	66.4	66.5	67.4	68.6	68.7	69.9	71.0	72.1	67.3	70.5	66.4	69.5
Q/q %, SAAR	4.4	0.7	5.5	7.6	0.4	7.0	6.6	6.6				
Y/y %	-3.2	-0.0	2.6	4.5	3.4	5.1	5.4	5.1	1.1	4.8	-1.6	4.6
Change in inventories	-4.0	-2.3	-2.3	-2.1	-1.9	-2.0	-2.1	-2.2	-2.7	-2.0	-3.0	-2.0
Public demand	127.7	129.6	130.3	130.2	130.0	129.3	129.0	128.9	129.7	129.3	128.4	129.7
Q/q %, SAAR	6.2	6.2	2.1	-0.5	-0.6	-1.9	-1.0	-0.3				
Y/y %	3.4	4.7	4.4	3.7	1.6	-0.3	-1.2	-1.2	4.1	-0.3	4.0	1.0
Government final consumption	102.5	102.8	103.2	103.5	103.8	104.0	104.2	104.4	103.0	104.2	102.6	103.9
Q/q %, SAAR	3.0	1.1	1.6	1.2	1.2	0.8	0.8	0.8				
Y/y %	1.8	1.7	1.5	1.7	1.3	1.2	1.0	0.9	1.7	1.1	1.5	1.3
Fixed investment	25.3	26.9	27.2	26.7	26.2	25.3	24.8	24.5	26.7	25.1	25.9	25.8
Q/q %, SAAR	20.6	28.7	3.9	-6.6	-7.6	-12.1	-8.3	-5.0				
Y/y %	12.7	19.3	15.8	11.0	3.5	-6.2	-8.8	-8.4	14.5	-5.8	15.2	-0.4
Change in inventories	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Net exports of goods and services	9.8	7.6	7.8	8.0	9.5	10.9	12.3	13.7	8.3	11.6	8.5	10.2
Exports of goods and services	84.0	83.5	84.7	86.2	87.9	89.7	91.7	94.0	84.6	90.8	83.5	88.9
Q/q %, SAAR	12.2	-2.4	5.7	7.6	7.8	8.7	9.1	10.4				
Y/y %	0.0	3.0	8.0	5.5	4.5	7.5	8.2	9.1	4.1	7.3	1.9	6.4
Imports of goods and services	74.2	75.9	76.8	78.2	78.4	78.8	79.4	80.3	76.3	79.2	75.0	78.7
Q/q %, SAAR	6.8	9.2	5.3	7.4	0.8	2.4	2.6	4.9				
Y/y %	0.9	3.1	6.5	7.1	5.5	4.0	3.2	2.7	4.4	3.8	2.8	4.9
Residual	-0.3	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.5	-0.1	-0.2	-0.1

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)

	2011 4-6	7-9	10-12	2012 1-3	4-6	7-9	10-12	2013 1-3	FY 2011	FY 2012	CY 2011	CY 2012
Gross domestic expenditure	463.8	473.9	474.6	480.6	477.5	471.9	472.7	476.0	473.3	474.6	470.6	475.6
Q/q %, SAAR	-5.8	9.1	0.6	5.2	-2.6	-4.6	0.7	2.8				
Y/y %	-3.7	-2.5	-1.7	2.3	2.8	-0.5	-0.4	-0.8	-1.4	0.3	-2.5	1.1
Domestic demand	470.6	477.4	481.9	488.3	486.3	481.9	484.0	487.7	479.6	485.0	474.8	485.0
Q/q %, SAAR	0.3	5.9	3.8	5.4	-1.6	-3.6	1.8	3.1				
Y/y %	-1.0	-0.5	0.7	4.1	3.1	1.0	0.5	-0.0	0.8	1.1	-0.4	2.1
Private demand	353.3	360.1	365.4	368.1	366.2	361.3	362.3	364.8	361.8	363.6	357.9	364.4
Q/q %, SAAR	-0.1	8.0	6.0	2.9	-2.0	-5.3	1.1	2.9				
Y/y %	-1.6	-0.7	1.2	4.5	3.5	0.3	-0.8	-0.9	0.8	0.5	-0.4	1.8
Final consumption	283.0	286.7	288.2	291.3	290.5	287.7	289.7	291.7	287.3	289.9	284.8	289.7
Q/q %, SAAR	2.6	5.4	2.1	4.3	-1.1	-3.7	2.7	2.8				
Y/y %	-0.7	-0.0	0.8	3.7	2.6	0.3	0.4	0.2	0.9	0.9	-0.4	1.7
Residential investment	13.2	13.8	13.6	13.4	13.7	13.8	14.3	14.7	13.5	14.1	13.5	13.8
Q/q %, SAAR	-7.0	19.8	-5.6	-5.8	9.5	2.9	16.2	12.3				
Y/y %	4.4	9.0	3.6	-0.3	3.8	0.2	5.4	9.9	4.2	4.7	6.2	2.3
Non-residential investment	60.8	61.9	66.9	65.3	64.8	62.5	61.8	61.9	63.8	62.7	62.7	63.7
Q/q %, SAAR	-3.6	7.7	36.1	-9.2	-3.0	-13.5	-4.6	0.9				
Y/y %	-2.0	-1.3	9.1	6.4	6.9	0.7	-7.6	-5.2	3.1	-1.7	1.9	1.6
Change in inventories	-3.7	-2.3	-3.3	-1.9	-2.8	-2.8	-3.5	-3.5	-2.8	-3.1	-3.0	-2.8
Public demand	117.3	117.3	116.5	120.2	120.1	120.6	121.7	122.9	117.8	121.4	116.9	120.6
Q/q %, SAAR	1.6	-0.1	-2.7	13.4	-0.4	1.7	3.7	3.9				
Y/y %	0.5	0.3	-0.6	3.1	2.0	3.1	4.3	2.7	0.8	3.0	-0.3	3.1
Government final consumption	96.2	96.4	96.2	98.1	96.8	97.1	97.4	97.9	96.7	97.3	96.2	97.3
Q/q %, SAAR	0.3	1.0	-0.8	8.4	-5.5	1.4	1.4	1.9				
Y/y %	0.7	1.0	0.8	2.4	0.6	0.8	1.1	-0.1	1.2	0.6	1.1	1.2
Fixed investment	21.1	20.8	20.3	22.0	23.3	23.4	24.3	25.1	21.0	24.1	20.7	23.2
Q/q %, SAAR	5.9	-6.0	-9.8	39.1	26.4	2.1	14.5	14.0				
Y/y %	-1.5	-3.8	-6.7	5.3	10.9	14.0	19.3	13.3	-1.5	14.6	-6.9	12.2
Change in inventories	0.1	0.1	0.0	0.1	-0.0	0.0	0.0	-0.1	0.1	-0.0	0.0	0.0
Net exports of goods and services	-6.8	-3.5	-7.2	-7.6	-8.8	-9.9	-11.2	-11.6	-6.4	-10.4	-4.3	-9.4
Exports of goods and services	67.8	73.7	70.7	71.7	71.1	68.3	67.9	74.1	70.9	70.4	71.3	69.7
Q/q %, SAAR	-26.5	39.7	-15.6	6.1	-3.2	-15.0	-2.2	41.3				
Y/y %	-8.0	-0.4	-5.1	-2.0	5.6	-7.6	-4.2	3.7	-3.9	-0.8	-2.6	-2.2
Imports of goods and services	74.6	77.2	77.9	79.4	79.9	78.2	79.2	85.7	77.3	80.8	75.6	79.2
Q/q %, SAAR	11.0	14.6	3.7	7.5	3.0	-8.2	4.8	37.3				
Y/y %	9.7	13.6	12.1	9.5	7.2	1.2	1.5	8.2	11.2	4.5	12.1	4.7

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.

3.2 Nominal Gross Domestic Expenditure (¥ tril)

	2013 4-6	7-9	10-12 (E)	2014 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2015 1-3 (E)	FY 2013 (E)	2014 (E)	CY 2013 (E)	2014 (E)
Gross domestic expenditure	481.1	483.0	487.9	493.2	492.2	496.1	500.3	505.0	486.1	498.4	482.0	495.4
Q/q %, SAAR	4.3	1.6	4.1	4.4	-0.8	3.2	3.4	3.9				
Y/y %	0.6	2.4	3.2	3.5	2.4	2.7	2.6	2.4	2.4	2.5	1.3	2.8
Domestic demand	491.7	496.9	501.7	507.1	504.8	507.5	510.1	513.4	499.6	509.0	494.6	507.4
Q/q %, SAAR	3.3	4.3	3.9	4.4	-1.8	2.1	2.1	2.6				
Y/y %	1.0	3.2	3.7	4.2	2.6	2.1	1.5	1.3	3.0	1.9	2.0	2.6
Private demand	366.8	370.3	374.3	379.8	377.6	380.7	383.6	386.8	372.9	382.3	369.1	380.4
Q/q %, SAAR	2.2	3.8	4.4	6.0	-2.3	3.3	3.0	3.4				
Y/y %	0.1	2.5	3.3	4.2	2.9	2.8	2.4	2.1	2.5	2.5	1.3	3.1
Final consumption	293.1	294.3	296.8	300.6	298.7	300.8	302.2	304.1	296.2	301.4	294.0	300.6
Q/q %, SAAR	2.0	1.6	3.4	5.3	-2.6	2.9	1.9	2.4				
Y/y %	1.0	2.2	2.5	3.0	1.9	2.2	1.8	1.2	2.2	1.8	1.5	2.2
Residential investment	14.9	15.4	16.0	16.1	15.5	15.3	15.6	15.8	15.7	15.5	15.3	15.6
Q/q %, SAAR	6.1	14.3	16.6	1.6	-15.0	-4.3	7.0	5.1				
Y/y %	9.3	12.2	12.2	9.6	3.6	-1.0	-3.0	-2.3	10.9	-0.8	11.0	2.0
Non-residential investment	62.8	63.1	64.1	65.4	65.6	66.9	68.1	69.5	63.9	67.6	62.9	66.4
Q/q %, SAAR	5.9	1.8	6.2	8.5	1.2	8.0	7.8	8.1				
Y/y %	-2.9	0.8	3.6	5.6	4.3	6.0	6.4	6.2	1.9	5.8	-1.2	5.6
Change in inventories	-4.1	-2.6	-2.6	-2.3	-2.1	-2.2	-2.3	-2.5	-2.9	-2.3	-3.2	-2.3
Public demand	124.8	126.6	127.4	127.3	127.2	126.7	126.6	126.6	126.7	126.7	125.5	127.0
Q/q %, SAAR	6.6	5.8	2.4	-0.2	-0.3	-1.6	-0.6	0.2				
Y/y %	3.5	5.2	4.9	4.0	1.7	-0.0	-0.8	-0.9	4.4	-0.0	4.1	1.2
Government final consumption	98.4	98.6	98.9	99.3	99.7	100.0	100.3	100.6	98.8	100.1	98.5	99.8
Q/q %, SAAR	2.3	0.4	1.6	1.4	1.6	1.2	1.2	1.2				
Y/y %	1.7	1.5	1.7	1.3	1.3	1.5	1.3	1.4	1.6	1.3	1.2	1.3
Fixed investment	26.4	28.2	28.5	28.1	27.7	26.9	26.4	26.1	28.0	26.7	27.1	27.3
Q/q %, SAAR	23.8	29.1	5.1	-5.5	-6.7	-11.1	-7.0	-3.6				
Y/y %	13.6	21.2	17.9	12.6	4.5	-5.1	-7.7	-7.2	16.2	-4.7	16.5	0.8
Change in inventories	-0.0	-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	-10.6	-13.9	-13.8	-13.9	-12.6	-11.4	-9.9	-8.4	-13.1	-10.6	-12.5	-11.9
Exports of goods and services	77.6	78.2	79.7	81.5	83.5	85.7	88.1	90.9	79.3	87.0	77.4	84.7
Q/q %, SAAR	20.7	3.2	7.6	9.5	9.9	10.9	11.7	13.5				
Y/y %	9.0	14.4	17.5	9.8	7.6	9.5	10.4	11.6	12.6	9.8	11.0	9.3
Imports of goods and services	88.2	92.2	93.5	95.4	96.1	97.0	97.9	99.3	92.3	97.6	89.9	96.6
Q/q %, SAAR	12.3	19.3	5.9	8.5	2.6	4.1	3.9	5.7				
Y/y %	10.3	17.7	18.2	11.3	8.9	5.3	4.7	4.1	14.3	5.7	13.6	7.5

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

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

	2011 4-6	7-9	10-12	2012 1-3	4-6	7-9	10-12	2013 1-3	FY 2011	2012	CY 2011	2012
Gross domestic expenditure	92.4	92.1	92.0	92.0	91.6	91.4	91.4	91.1	92.1	91.3	92.4	91.6
Q/q %, SAAR	-0.7	-0.4	-0.1	0.0	-0.5	-0.2	0.0	-0.4				
Y/y %	-2.1	-1.9	-1.5	-1.0	-1.0	-0.8	-0.7	-1.1	-1.7	-0.9	-1.9	-0.9
Private final consumption	94.4	94.2	94.2	94.3	94.0	93.4	93.6	93.5	94.3	93.6	94.4	93.8
Q/q %, SAAR	-0.3	-0.2	-0.1	0.2	-0.4	-0.7	0.3	-0.1				
Y/y %	-1.1	-0.5	-0.5	-0.3	-0.5	-1.0	-0.6	-0.9	-0.6	-0.7	-0.8	-0.6
Private residential investment	103.8	103.9	103.6	103.4	102.9	102.6	103.2	103.9	103.7	103.1	103.7	103.0
Q/q %, SAAR	0.2	0.1	-0.4	-0.2	-0.4	-0.3	0.6	0.7				
Y/y %	0.9	0.7	0.3	-0.2	-0.8	-1.3	-0.4	0.5	0.4	-0.5	0.6	-0.7
Private non-residential investment	94.5	94.8	94.5	94.5	94.4	94.1	94.1	94.3	94.6	94.2	94.7	94.3
Q/q %, SAAR	-0.4	0.3	-0.3	0.0	-0.1	-0.3	0.0	0.2				
Y/y %	-1.6	-1.1	-0.7	-0.4	-0.1	-0.7	-0.4	-0.2	-0.9	-0.4	-1.3	-0.4
Government final consumption	97.6	97.6	97.1	97.6	96.1	96.1	95.8	96.2	97.4	96.0	97.4	96.3
Q/q %, SAAR	-0.2	0.0	-0.5	0.5	-1.5	-0.1	-0.3	0.4				
Y/y %	-0.5	-0.1	-0.1	0.1	-1.6	-1.5	-1.6	-1.2	-0.2	-1.4	-0.3	-1.1
Public fixed investment	103.9	103.9	103.6	103.7	103.7	103.0	103.2	104.0	103.7	103.5	103.7	103.4
Q/q %, SAAR	0.5	0.0	-0.4	0.1	0.0	-0.7	0.1	0.8				
Y/y %	0.7	1.0	0.8	0.3	-0.3	-0.9	-0.3	0.2	0.7	-0.3	0.6	-0.2
Exports of goods and services	87.6	86.8	85.8	84.8	84.6	84.4	86.5	90.7	86.2	86.6	86.8	85.1
Q/q %, SAAR	0.1	-0.9	-1.2	-1.2	-0.3	-0.2	2.5	4.9				
Y/y %	-2.7	-1.2	-2.5	-2.9	-3.3	-3.0	0.8	7.2	-2.3	0.4	-2.2	-2.0
Imports of goods and services	110.3	110.6	109.4	109.2	108.5	106.5	109.6	117.4	109.9	110.5	109.2	108.5
Q/q %, SAAR	3.3	0.2	-1.1	-0.1	-0.7	-1.9	2.9	7.1				
Y/y %	5.9	8.0	6.1	2.6	-1.8	-3.9	0.3	7.6	5.6	0.6	5.8	-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.

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

	2013 4-6	7-9	2014 10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2015 1-3 (E)	FY 2013 (E)	2014 (E)	CY 2013 (E)	2014 (E)
Gross domestic expenditure	91.2	91.1	91.3	91.3	92.5	92.5	92.7	92.9	91.2	92.6	91.1	92.2
Q/q %, SAAR	0.1	-0.1	0.2	0.1	1.2	0.1	0.2	0.3				
Y/y %	-0.5	-0.3	-0.1	0.3	1.4	1.5	1.5	1.7	-0.2	1.5	-0.5	1.2
Private final consumption	93.4	93.7	93.8	93.9	95.8	95.8	95.9	96.1	93.7	95.9	93.6	95.3
Q/q %, SAAR	-0.1	0.3	0.2	0.0	2.0	0.0	0.1	0.2				
Y/y %	-0.6	0.3	0.2	0.4	2.5	2.2	2.1	2.3	0.1	2.3	-0.2	1.8
Private residential investment	105.0	105.7	105.8	105.9	107.4	107.5	107.6	107.8	105.6	107.6	105.2	107.1
Q/q %, SAAR	1.1	0.7	0.1	0.1	1.4	0.1	0.1	0.1				
Y/y %	2.1	3.1	2.6	2.0	2.3	1.7	1.7	1.8	2.4	1.8	2.1	1.9
Private non-residential investment	94.6	94.9	95.0	95.2	95.4	95.7	96.0	96.3	95.0	95.9	94.7	95.6
Q/q %, SAAR	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3				
Y/y %	0.3	0.9	1.0	1.0	0.8	0.8	0.9	1.1	0.8	0.9	0.4	0.9
Government final consumption	96.0	95.9	95.9	95.9	96.0	96.1	96.2	96.3	95.9	96.1	96.0	96.0
Q/q %, SAAR	-0.2	-0.2	0.0	0.0	0.1	0.1	0.1	0.1				
Y/y %	-0.1	-0.2	0.2	-0.4	-0.0	0.2	0.3	0.5	-0.1	0.2	-0.3	0.0
Public fixed investment	104.6	104.7	105.0	105.4	105.6	105.9	106.3	106.7	105.0	106.2	104.6	105.8
Q/q %, SAAR	0.7	0.1	0.3	0.3	0.2	0.3	0.4	0.4				
Y/y %	0.8	1.6	1.8	1.4	0.9	1.2	1.2	1.3	1.4	1.2	1.1	1.2
Exports of goods and services	92.4	93.7	94.1	94.6	95.0	95.5	96.1	96.7	93.7	95.8	92.7	95.3
Q/q %, SAAR	1.8	1.4	0.4	0.4	0.5	0.5	0.6	0.7				
Y/y %	9.0	11.0	8.8	4.1	3.0	1.9	2.0	2.3	8.2	2.3	9.0	2.7
Imports of goods and services	118.9	121.5	121.7	122.0	122.6	123.1	123.4	123.7	121.0	123.2	119.9	122.7
Q/q %, SAAR	1.3	2.2	0.2	0.2	0.4	0.4	0.3	0.2				
Y/y %	9.3	14.2	11.0	3.9	3.2	1.2	1.4	1.4	9.5	1.8	10.5	2.4

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.

5.1 Contribution to Real GDP Growth by Component

	2011 4-6	7-9	10-12	2012 1-3	4-6	7-9	10-12	2013 1-3	FY 2011	FY 2012	CY 2011	CY 2012
1) Q/q %												
GDP growth rate	-0.8	2.6	0.3	1.2	-0.2	-0.9	0.1	1.1	0.3	1.2	-0.6	1.9
Domestic demand	0.3	1.6	1.0	1.2	0.1	-0.4	0.3	0.7	1.3	2.0	0.3	2.8
Private demand	0.2	1.6	1.1	0.5	-0.1	-0.5	0.0	0.6	1.1	0.9	0.3	1.8
Private consumption	0.5	0.9	0.3	0.5	0.1	-0.2	0.2	0.5	0.9	1.0	0.3	1.4
Residential investment	-0.1	0.1	-0.0	-0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1
Private fixed investment	-0.1	0.2	1.1	-0.3	-0.1	-0.4	-0.2	0.0	0.5	-0.2	0.4	0.3
Change in private inventories	-0.2	0.4	-0.3	0.3	-0.2	0.0	-0.2	-0.0	-0.5	-0.1	-0.5	0.0
Public demand	0.1	-0.0	-0.1	0.7	0.3	0.2	0.3	0.1	0.2	1.1	-0.1	1.0
Government final consumption	0.1	0.0	0.1	0.3	0.0	0.1	0.1	0.0	0.3	0.4	0.3	0.5
Public fixed investment	0.0	-0.1	-0.1	0.4	0.3	0.1	0.2	0.1	-0.1	0.7	-0.3	0.5
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	-1.1	0.9	-0.8	0.1	-0.3	-0.5	-0.1	0.4	-1.0	-0.8	-0.9	-0.9
Exports of goods and services	-1.2	1.4	-0.5	0.4	-0.1	-0.6	-0.4	0.6	-0.2	-0.2	-0.1	-0.0
Imports of goods and services	0.1	-0.5	-0.3	-0.3	-0.2	0.0	0.3	-0.2	-0.8	-0.6	-0.8	-0.9
2) Y/y %												
GDP growth rate	-1.5	-0.6	-0.2	3.4	3.8	0.3	0.3	0.3	0.3	1.2	-0.6	1.9
Domestic demand	-0.2	0.0	1.0	4.3	3.9	1.9	1.3	0.8	1.3	2.0	0.3	2.8
Private demand	-0.4	-0.0	1.2	3.5	3.1	0.9	-0.2	-0.1	1.1	0.9	0.3	1.8
Private consumption	0.3	0.3	0.7	2.4	1.9	0.8	0.6	0.7	0.9	1.0	0.3	1.4
Residential investment	0.1	0.2	0.1	-0.0	0.1	0.0	0.2	0.3	0.1	0.2	0.1	0.1
Private fixed investment	-0.1	-0.0	1.2	1.0	0.9	0.2	-0.9	-0.8	0.5	-0.2	0.4	0.3
Change in private inventories	-0.7	-0.6	-0.8	0.2	0.2	-0.1	-0.0	-0.3	-0.5	-0.1	-0.5	0.0
Public demand	0.2	0.1	-0.2	0.8	0.9	1.0	1.4	0.9	0.2	1.1	-0.1	1.0
Government final consumption	0.3	0.2	0.2	0.5	0.5	0.5	0.5	0.2	0.3	0.4	0.3	0.5
Public fixed investment	-0.1	-0.2	-0.4	0.3	0.4	0.6	0.9	0.7	-0.1	0.7	-0.3	0.5
Change in public inventories	0.0	0.1	0.0	0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	0.0	0.0
Net exports of goods and services	-1.4	-0.6	-1.2	-0.9	-0.1	-1.6	-0.9	-0.6	-1.0	-0.8	-0.9	-0.9
Exports of goods and services	-0.8	0.1	-0.4	0.1	1.3	-0.8	-0.7	-0.5	-0.2	-0.2	-0.1	-0.0
Imports of goods and services	-0.5	-0.7	-0.8	-1.1	-1.5	-0.9	-0.2	-0.1	-0.8	-0.6	-0.8	-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.

5.2 Contribution to Real GDP Growth by Component

	2013 4-6	7-9	10-12 (E)	2014 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2015 1-3 (E)	FY 2013 (E)	FY 2014 (E)	CY 2013 (E)	CY 2014 (E)
1) Q/q %												
GDP growth rate	0.9	0.5	0.8	1.0	-1.4	0.7	0.7	0.7	2.6	1.0	1.8	1.6
Domestic demand	0.8	0.9	0.8	1.0	-1.8	0.5	0.4	0.4	2.6	0.3	2.0	1.5
Private demand	0.4	0.5	0.7	1.0	-1.7	0.6	0.5	0.5	1.7	0.4	1.0	1.2
Private consumption	0.4	0.1	0.4	0.8	-1.6	0.4	0.2	0.2	1.2	-0.3	1.0	0.2
Residential investment	0.0	0.1	0.1	0.0	-0.2	-0.0	0.0	0.0	0.2	-0.1	0.3	0.0
Private fixed investment	0.1	0.0	0.2	0.2	0.0	0.2	0.2	0.2	0.1	0.6	-0.2	0.6
Change in private inventories	-0.1	0.4	0.0	0.0	0.0	-0.0	-0.0	-0.0	0.1	0.1	-0.1	0.2
Public demand	0.4	0.4	0.1	-0.0	-0.1	-0.1	-0.1	-0.0	1.0	-0.1	1.1	0.2
Government final consumption	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.3	0.3
Public fixed investment	0.2	0.4	0.1	-0.1	-0.1	-0.2	-0.1	-0.1	0.7	-0.3	0.7	-0.0
Change in public inventories	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0
Net exports of goods and services	0.1	-0.5	-0.0	-0.0	0.3	0.2	0.2	0.2	0.0	0.6	-0.2	0.1
Exports of goods and services	0.4	-0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.6	1.2	0.3	1.0
Imports of goods and services	-0.3	-0.4	-0.2	-0.3	-0.0	-0.1	-0.1	-0.2	-0.6	-0.5	-0.5	-0.9
2) Y/y %												
GDP growth rate	1.1	2.7	3.3	3.2	1.0	1.2	1.0	0.7	2.6	1.0	1.8	1.6
Domestic demand	1.3	2.7	3.4	3.8	0.9	0.5	-0.0	-0.4	2.6	0.3	2.0	1.5
Private demand	0.4	1.5	2.2	2.7	0.5	0.6	0.3	-0.1	1.7	0.4	1.0	1.2
Private consumption	1.0	1.2	1.4	1.6	-0.4	0.0	-0.2	-0.7	1.2	-0.3	1.0	0.2
Residential investment	0.2	0.3	0.3	0.2	0.0	-0.1	-0.2	-0.1	0.2	-0.1	0.3	0.0
Private fixed investment	-0.4	-0.0	0.3	0.7	0.4	0.7	0.6	0.8	0.1	0.6	-0.2	0.6
Change in private inventories	-0.4	0.1	0.2	0.2	0.5	0.0	0.0	-0.0	0.1	0.1	-0.1	0.2
Public demand	0.9	1.2	1.2	1.1	0.4	-0.1	-0.4	-0.4	1.0	-0.1	1.1	0.2
Government final consumption	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.3
Public fixed investment	0.5	0.9	0.9	0.7	0.2	-0.3	-0.6	-0.6	0.7	-0.3	0.7	-0.0
Change in public inventories	0.0	-0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	0.0	0.0
Net exports of goods and services	-0.2	-0.1	0.1	-0.4	-0.3	0.4	0.7	1.0	0.0	0.6	-0.2	0.1
Exports of goods and services	0.0	0.4	1.1	0.9	0.7	1.2	1.3	1.5	0.6	1.2	0.3	1.0
Imports of goods and services	-0.2	-0.5	-1.1	-1.3	-1.0	-0.8	-0.6	-0.5	-0.6	-0.5	-0.5	-0.9

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

6.1 Major Assumptions

	2011			2012				2013	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2011	2012	2011	2012
1) World economy												
Economic growth of major trading partners												
Y/y %	3.9	3.8	2.8	3.1	2.8	2.7	3.6	2.4	3.5	3.1	3.9	3.3
Crude oil price (WTI futures; $/bbl)	102.3	89.5	94.1	103.0	93.4	92.2	88.2	94.4	97.2	92.0	95.1	94.1
Y/y %	31.1	17.5	10.3	8.9	-8.8	3.0	-6.2	-8.4	16.4	-5.4	19.5	-1.0
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	15,011	15,062	15,242	15,382	15,428	15,534	15,540	15,584	15,174	15,521	15,052	15,471
Q/q %, SAAR	3.2	1.4	4.9	3.7	1.2	2.8	0.1	1.1				
Y/y %	1.9	1.5	2.0	3.3	2.8	3.1	2.0	1.3	2.2	2.3	1.8	2.8
Consumer Price Index												
(1982-84 avg=100)	224.6	226.2	227.0	228.3	228.8	230.0	231.3	232.1	226.5	230.6	224.9	229.6
Q/q %, SAAR	4.7	2.9	1.4	2.3	1.0	2.1	2.2	1.4				
Y/y %	3.4	3.8	3.3	2.8	1.9	1.7	1.9	1.7	3.3	1.8	3.2	2.1
Producer Price Index												
(Finished goods; 1982=100)	190.7	192.2	193.0	193.7	192.8	195.2	196.2	196.6	192.1	194.9	190.5	194.2
Q/q %, SAAR	7.3	3.1	1.7	1.6	-1.8	5.0	2.1	0.7				
Y/y %	6.9	6.9	5.4	3.4	1.1	1.5	1.7	1.5	5.6	1.4	6.0	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; %)	3.21	2.43	2.05	2.04	1.82	1.64	1.71	1.95	2.43	1.78	2.79	1.80
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	96.2	96.4	96.2	98.1	96.8	97.1	97.4	97.9	96.7	97.3	96.2	97.3
Q/q %, SAAR	0.3	1.0	-0.8	8.4	-5.5	1.4	1.4	1.9				
Y/y %	0.7	1.0	0.8	2.4	0.6	0.8	1.1	-0.1	1.2	0.6	1.1	1.2
Nominal public fixed investment												
Y tril; SAAR	21.1	20.8	20.3	22.0	23.3	23.4	24.3	25.1	21.0	24.1	20.7	23.2
Q/q %, SAAR	5.9	-6.0	-9.8	39.1	26.4	2.1	14.5	14.0				
Y/y %	-1.5	-3.8	-6.7	5.3	10.9	14.0	19.3	13.3	-1.5	14.6	-6.9	12.2
Exchange rate (Y/$)	81.7	77.8	77.3	79.3	80.1	78.6	81.2	92.3	79.0	83.1	79.8	79.8
(Y/€)	118.3	108.7	104.9	106.3	101.2	98.2	108.2	122.0	109.6	107.4	111.4	103.5
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) Consumption tax hike in April 2014 assumed for Japan.
2) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.

6.2 Major Assumptions

	2013 4-6	7-9	10-12 (E)	2014 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2015 1-3 (E)	FY 2013 (E)	FY 2014 (E)	CY 2013 (E)	CY 2014 (E)
1) World economy												
Economic growth of major trading partners												
Y/y %	2.9	2.9	3.0	3.5	3.6	3.7	3.9	4.0	3.1	3.8	2.9	3.7
Crude oil price (WTI futures; $/bbl)	94.2	105.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.6	100.0
Y/y %	0.9	14.8	13.3	6.0	6.2	-5.5	0.0	0.0	8.6	0.0	4.7	1.4
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	15,680	15,790	15,889	15,970	16,073	16,183	16,304	16,425	15,832	16,246	15,736	16,133
Q/q %, SAAR	2.5	2.8	2.5	2.1	2.6	2.8	3.0	3.0				
Y/y %	1.6	1.6	2.2	2.5	2.5	2.5	2.6	2.8	2.0	2.6	1.7	2.5
Consumer Price Index												
(1982-84 avg=100)	232.1	233.6	234.5	235.6	236.7	237.9	239.1	240.5	233.9	238.5	233.1	237.3
Q/q %, SAAR	-0.0	2.6	1.6	1.8	2.0	1.9	2.1	2.3				
Y/y %	1.4	1.6	1.4	1.5	2.0	1.8	1.9	2.1	1.5	2.0	1.5	1.8
Producer Price Index												
(Finished goods; 1982=100)	195.9	197.7	199.0	200.1	201.3	202.5	203.9	205.3	197.8	202.9	197.0	201.6
Q/q %, SAAR	-1.3	3.6	2.8	2.2	2.3	2.5	2.7	2.9				
Y/y %	1.5	1.3	1.4	1.8	2.7	2.4	2.4	2.6	1.5	2.5	1.4	2.4
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	2.65	2.70	2.98	3.14	3.28	3.43	2.51	3.21	2.33	3.03
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	98.4	98.6	98.9	99.3	99.7	100.0	100.3	100.6	98.8	100.1	98.5	99.8
Q/q %, SAAR	2.3	0.4	1.6	1.4	1.6	1.2	1.2	1.2				
Y/y %	1.7	1.5	1.7	1.3	1.3	1.5	1.3	1.4	1.6	1.3	1.2	1.3
Nominal public fixed investment												
Y tril; SAAR	26.4	28.2	28.5	28.1	27.7	26.9	26.4	26.1	28.0	26.7	27.1	27.3
Q/q %, SAAR	23.8	29.1	5.1	-5.5	-6.7	-11.1	-7.0	-3.6				
Y/y %	13.6	21.2	17.9	12.6	4.5	-5.1	-7.7	-7.2	16.2	-4.7	16.5	0.8
Exchange rate (Y/$)	98.8	98.9	100.0	100.0	100.0	100.0	100.0	100.0	99.4	100.0	97.5	100.0
(Y/€)	129.6	130.7	135.0	135.0	135.0	135.0	135.0	135.0	132.6	135.0	129.3	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) Consumption tax hike in April 2014 assumed for Japan.
2) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.