Japan's Economic Outlook No. 187

Towards Phase II of Abenomics
What Will Happen when the US Devises an Exit
Strategy?

Japan to see real GDP growth of +0.8% in FY15 and +1.5% in FY16, with nominal GDP growth of +2.2% in FY15 and +2.1% in FY16.

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Main Points

■ **Japan's economy may have entered a recession:** In light of the 1st preliminary Jul-Sep 2015 GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +0.8% in comparison with the previous year for FY15 (+1.0% in the previous forecast) and +1.5% in comparison with the previous year for FY16 (+1.7% in the previous forecast). Japan's economy may have entered a recession, but we expect it to move toward a gradual recovery during the year 2016 due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) A gradual comeback in exports centering on the US.

■ **Towards Phase II of Abenomics:** In this report we examine what has been referred to as the new third arrow of Abenomics, or the "Redistribution Policy." Considering Japan's difficult fiscal situation, shifting government expenditure from the elderly to the younger generation would help to realize improvement in Japan's total fertility rate and increase labor productivity, while at the same time attaining sustained economic growth. A viewpoint encompassing all of these factors is considered essential. However, the overall scale of the country's social security system must be downsized and a recovery attained in the balance of benefits and burdens. At the same time, carrying out clear and detailed system design and relieving the anxieties of citizens regarding the future is key. Meanwhile, regarding the supplementary budget, which is expected to be argued up until the end of 2015, it is crucial that a highly effective redistribution policy be devised. From this viewpoint, an income redistribution policy directed toward low

Economic Research

income people with a strong propensity to consume and households with a large number of children regardless of income bracket would be effective.

- **What will happen when the US devises an exit strategy?:** With the current slowdown in the economies of emerging nations, especially that of China, possibilities are that the global economy could enter a period of serious stock price lows and worldwide production declines. In producing this forecast, based on the assumption that the US will sooner or later come out with an exit strategy, we provide a detailed analysis of the merkmal (judgment criteria) determining whether or not the world economy will plunge into a period of falling stock prices and production declines, as well as the major leading indicators which suggest future trends. At the same time we examine the characteristics of periods in the past when the global economy has experienced major declines in stock prices and production. Our basic scenario sees the Fed raising interest rates at a pace matching the current economic and business environment. We assume that the financial markets and the real economy will not be shaken overly much. However, we also believe that trends in the Fed's monetary policy should also be watched very carefully on into the future.

- **Japan's main economic scenario – Moving towards a moderate recovery:** Judging from the performance of major demand components in the GDP statistics, there is a possibility that Japan's economy has officially fallen into a recession. However, examination of three major judgment criteria ("merkmal") suggests that Japan's economy is still in a temporary lull. In either case, the adjustment phase in Japan's economy is expected to be both short-term and fairly minor. We see Japan moving toward a moderate recovery during the year 2016.

- **Risk factors facing Japan's economy:** Risk factors for the Japanese economy are: (1) The downward swing of China's economy, (2) Tumult in the economies of emerging nations in response to the US exit strategy, (3) A worldwide decline in stock values due to geopolitical risk, (4) The worsening of the Eurozone economy, and (5) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market due to loss of fiscal discipline. Our outlook for China's economy is optimistic in the short-term and pessimistic in the mid to long-term. Looking at China's economic situation in a somewhat reductive way, the fact is that China's government holds treasury funds totaling between 600 to 800 tril yen with which it is standing up to over 1 quadrillion yen in excessive lending and over 400 tril yen in excess capital stock. China is expected to be able to avoid the bottom falling out of its economy for a little while, but in the mid to long-term, there is risk of a massive capital stock adjustment.

- **BOJ's monetary policy:** We expect additional monetary easing measures by the BOJ to be shelved until spring 2016 or later. The BOJ is expected to choose the timing for additional monetary easing measures carefully, keeping a close watch on world economic trends and Japan's political calendar.

Our assumptions
- Public works spending is expected to decline by -0.7% in FY15, and -3.5% in FY16. An additional consumption tax hike is planned for April 2017.

- Average exchange rate of Y122.6/$ in FY15 and Y125.0/$ in FY16.

- US real GDP growth of +2.4% in CY15 and +2.6% in CY16.

Main Economic Indicators and Real GDP Components

Japan's Economic Outlook No. 187

	FY14	FY15 (Estimate)	FY16 (Estimate)	CY14	CY15 (Estimate)	CY16 (Estimate)
Main economic indicators						
Nominal GDP (y/y %)	1.6	2.2	2.1	1.6	2.7	1.5
Real GDP (chained [2005]; y/y %)	-0.9	0.8	1.5	-0.1	0.5	1.0
Domestic demand (contribution, % pt)	-1.5	0.7	1.4	-0.1	0.2	1.0
Foreign demand (contribution, % pt)	0.6	0.1	0.1	0.0	0.4	0.0
GDP deflator (y/y %)	2.5	1.4	0.5	1.7	2.1	0.5
Index of All-industry Activity (y/y %)*	-1.1	1.1	2.1	0.1	0.7	1.5
Index of Industrial Production (y/y %)	-0.5	-0.3	3.6	2.1	-0.7	2.2
Index of Tertiary Industry Activity (y/y %)	-1.1	1.2	1.7	-0.4	0.9	1.1
Corporate Goods Price Index (y/y %)	2.8	-2.1	0.7	3.2	-1.9	0.4
Consumer Price Index (excl. fresh food; y/y %)	2.8	0.2	1.0	2.6	0.5	0.8
Unemployment rate (%)	3.6	3.3	3.2	3.6	3.4	3.2
Government bond yield (10 year; %)	0.46	0.35	0.35	0.53	0.35	0.34
Money stock; M2 (end-period; y/y %)	3.3	3.7	4.0	3.4	3.7	3.9
Balance of payments						
Trade balance (Y tril)	-6.6	-0.7	-1.0	-10.4	-0.5	-0.6
Current balance ($100 mil)	722	1,434	1,452	250	1,399	1,469
Current balance (Y tril)	7.9	17.8	18.4	2.6	17.0	18.4
(% of nominal GDP)	1.6	3.5	3.6	0.5	3.4	3.6
Real GDP components						
(Chained [2005]; y/y % ; figures in parentheses: contribution, % pt)						
Private final consumption	-3.1 (-1.9)	0.5 (0.3)	1.4 (0.8)	-1.3 (-0.8)	-0.6 (-0.4)	0.9 (0.5)
Private housing investment	-11.6 (-0.4)	4.4 (0.1)	6.8 (0.2)	-5.1 (-0.2)	-1.7 (-0.1)	6.6 (0.2)
Private fixed investment	0.5 (0.1)	0.1 (0.0)	4.7 (0.6)	4.0 (0.5)	-0.0 (-0.0)	2.7 (0.4)
Government final consumption	0.4 (0.1)	1.5 (0.3)	1.3 (0.3)	0.2 (0.0)	1.4 (0.3)	1.4 (0.3)
Public fixed investment	2.0 (0.1)	-1.7 (-0.1)	-4.8 (-0.2)	3.8 (0.2)	-0.5 (-0.0)	-5.3 (-0.3)
Exports of goods and services	7.9 (1.3)	1.4 (0.2)	5.5 (1.0)	8.4 (1.4)	3.2 (0.6)	4.1 (0.7)
Imports of goods and services	3.6 (-0.7)	1.1 (-0.2)	5.4 (-0.8)	7.4 (-1.4)	0.9 (-0.2)	3.8 (-0.7)
Major assumptions:						
1. World economy						
Economic growth of major trading partners	3.4	2.8	3.2	3.3	3.0	3.1
Crude oil price (WTI futures; $/bbl)	80.5	47.5	44.3	92.9	48.9	43.8
2. US economy						
US real GDP (chained [2009]; y/y %)	2.7	2.4	2.6	2.4	2.4	2.6
US Consumer Price Index (y/y %)	1.3	0.7	2.0	1.6	0.2	2.0
3. Japanese economy						
Nominal public fixed investment (y/y %)	5.1	-0.7	-3.5	6.8	0.9	-4.1
Exchange rate (Y/$)	109.9	122.6	125.0	105.8	121.1	125.0
(Y/€)	138.4	133.4	130.0	140.3	134.0	130.0
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 187)		Previous outlook (Outlook186 update)		Difference between previous and current outlooks	
	FY15	FY16	FY15	FY16	FY15	FY16
Main economic indicators						
Nominal GDP (y/y %)	2.2	2.1	2.4	2.2	-0.1	-0.2
Real GDP (chained [2005]; y/y %)	0.8	1.5	1.0	1.7	-0.2	-0.2
Domestic demand (contribution, % pt)	0.7	1.4	0.9	1.6	-0.3	-0.2
Foreign demand (contribution, % pt)	0.1	0.1	-0.1	0.1	0.2	-0.0
GDP deflator (y/y %)	1.4	0.5	1.4	0.5	0.1	0.0
Index of All-industry Activity (y/y %)*	1.1	2.1	0.2	2.1	0.9	0.0
Index of Industrial Production (y/y %)	-0.3	3.6	0.2	3.8	-0.4	-0.2
Index of Tertiary Industry Activity (y/y %)	1.2	1.7	0.5	1.7	0.8	-0.0
Corporate Goods Price Index (y/y %)	-2.1	0.7	-1.7	0.4	-0.4	0.3
Consumer Price Index (excl. fresh food; y/y %)	0.2	1.0	0.0	0.8	0.1	0.2
Unemployment rate (%)	3.3	3.2	3.3	3.2	0.0	0.0
Government bond yield (10 year; %)	0.35	0.35	0.43	0.55	-0.08	-0.20
Money stock; M2 (end-period; y/y %)	3.7	4.0	3.6	4.0	0.2	-0.0
Balance of payments						
Trade balance (Y tril)	-0.7	-1.0	-0.9	-1.1	0.2	0.1
Current balance ($100 mil)	1,434	1,452	1,432	1,508	2	-56
Current balance (Y tril)	17.8	18.4	17.3	18.1	0.5	0.3
(% of nominal GDP)	3.5	3.6	3.4	3.5	0.1	0.1
Real GDP components (chained [2005]; y/y %)						
Private final consumption	0.5	1.4	0.1	1.3	0.5	0.1
Private housing investment	4.4	6.8	4.5	7.0	-0.1	-0.2
Private fixed investment	0.1	4.7	2.9	5.5	-2.7	-0.9
Government final consumption	1.5	1.3	1.3	1.3	0.3	0.0
Public fixed investment	-1.7	-4.8	-3.6	-5.3	1.9	0.5
Exports of goods and services	1.4	5.5	-0.9	4.8	2.4	0.6
Imports of goods and services	1.1	5.4	-0.5	4.6	1.6	0.8
Major assumptions:						
1. World economy						
Economic growth of major trading partners	2.8	3.2	3.4	3.6	-0.5	-0.3
Crude oil price (WTI futures; $/bbl)	47.5	44.3	49.4	45.5	-1.8	-1.2
2. US economy						
US real GDP (chained [2009]; y/y %)	2.4	2.6	2.7	2.8	-0.3	-0.2
US Consumer Price Index (y/y %)	0.7	2.0	0.6	1.9	0.0	0.1
3. Japanese economy						
Nominal public fixed investment (y/y %)	-0.7	-3.5	-2.9	-4.1	2.2	0.6
Exchange rate (Y/$)	122.6	125.0	120.9	120.0	1.7	5.0
(Y/€)	133.4	130.0	135.3	135.0	-1.9	-5.0
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.00	0.00

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

Contents

Summary

Japan's economy may have entered a recession

In light of the 1st preliminary Jul-Sep 2015 GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +0.8% in comparison with the previous year for FY15 (+1.0% in the previous forecast) and +1.5% in comparison with the previous year for FY16 (+1.7% in the previous forecast). Japan's economy may have entered a recession, but we expect it to move toward a gradual recovery during the year 2016 due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) A gradual comeback in exports centering on the US.

Real GDP growth rate for Jul-Sep 2015 declines by -0.8% q/q annualized (-0.2% q/q)

The real GDP growth rate for Jul-Sep 2015 (1st preliminary est) declined by -0.8% q/q annualized (-0.2% q/q). Meanwhile, market consensus was down by -0.2% q/q annualized (-0.1% q/q). This is the second consecutive quarter for real GDP to record negative growth. Personal consumption and exports achieved growth, but a decline in capex spending and major inventory adjustments brought downward pressure on overall results. If we were to apply the overseas standard whereby two consecutive quarters of negative growth means the economy is in a recession, these results would suggest that this may be what has occurred. However, the main reason for the negative growth was inventory adjustment and the extent of the decline was not great. Considering this fact, while at the same time judging the tone of Japan' s economy by averaging out the level of real GDP, we do not think that it has in reality buckled under.

Looking at the details of the Jul-Sep period real GDP results, expectations will likely be raised in the market for an FY2015 supplementary budget. Currently, two factors are expected to carry a fair amount of weight in the mid-term in regards to elements included in the supplementary budget. These are TPP related issues and realization of the government program "Promoting Dynamic Engagement of All Citizens." The issue to watch for is whether or not policy is implemented to stimulate private sector demand which has been a bit on the dull side recently.

Decline in capex and major inventory adjustment push down overall results

Performance by demand component in the Jul-Sep 2015 results shows personal consumption up by +0.5% q/q, the first time it has achieved growth in two quarters. However, it did not recover the same amount of ground it lost in the Apr-Jun decline (-0.6%). Hence recovery in personal consumption lacks real punch. When all is averaged out, personal consumption appears to be continuing to mark time. While improvements in the employment and income environment and the increase in real compensation of employees brought a positive contribution to GDP, the increasing tendency of households to economize due to price hikes of foodstuffs appears to have weighed down overall results. Looking at performance of specific items in personal consumption, we see that there was a rebound from the downtrend of the Apr-Jun period which was a plus to all four major items in goods and services. Durables (+1.4%) and semi-durables (+2.6%) achieved growth for the first time in two quarters. Automobile sales moved toward a comeback from the April tax increase on light vehicles, while sales of fall clothing items were good as temperatures began to drop. Both of these developments were a plus to overall performance. Meanwhile, non-durables grew for the first time in two quarters though just a small amount at +0.2%. Services grew for the fourth consecutive quarter at +0.4% adding another plus, and continue to be favorable.

Housing investment grew for the third consecutive quarter at +1.9%. Looking at the trend in new housing starts, a leading indicator for housing investment as a portion of GDP, the employment and income environment affecting households is improving, while interest on housing loans is at a low, helping housing starts to continue a gradual comeback. Housing investment and housing starts are

recorded on a progressive basis, hence there is a lag in their performance, but with that in mind, the growth trend is expected to continue.

Capex was down by -1.3% q/q, its second consecutive quarter of decline, apparently taking a breather from its recent growth trend. Meanwhile, according to surveys including the BOJ Tankan and a survey run by the Development Bank of Japan, corporations are showing a forward-looking stance toward capex, though GDP results contrasted with these findings. Looking at the trend in total supply of capital goods and shipment of capital goods, coincident indicators for capex, we see that electrical power and transport related areas rebounded after the declines of the last period, making positive contributions to overall results, but manufacturing equipment and facilities, as well as the business related areas brought a negative contribution.

Private sector inventory was down for the first time in three quarters, with increase in stock down -0.5% pt in comparison with the previous period, contributing greatly to this period's decline in real GDP. Regarding the Apr-Jun period GDP statistics, DIR indicated that inventory adjustment would be a factor of concern in the future, and it appears that this became manifest during the Jul-Sep period, with inventories continuing to mount due to weak final demand. All items in this area brought a negative contribution to GDP, with distribution inventory especially negative.

Public investment suffered a decline for the first time in two quarters at -0.3% q/q. Without the effects of economic policy as there was in the past, public investment, one of the leading economic indicators, was weak. It appears that public investment, which lags behind the leading indicators, has now shifted into the negative region.

Meanwhile, exports achieved growth for the first time in two quarters at +2.6% q/q. With the slowdown in the economies of the emerging nations, especially China, goods, according to foreign trade statistics, continue to be weak. The overseas corporate sector is especially weak and prices of natural resources are low, bringing sluggish performance in capital goods and materials. However, exports on an SNA basis (national accounts of Japan) are not nearly as bad as they look in the trade statistics, and the increase in foreigners visiting Japan has led to an increase in exports of services, bringing a positive contribution to GDP. Imports also grew for the first time in two quarters at +1.7%. Since growth in exports was larger than that of imports, the contribution of overseas demand (net exports) was close to zero, but exports did contribute +0.1%.

The GDP deflator grew for the fourth consecutive quarter at +0.2% q/q. Growth was slightly less than the previous quarter (+0.3%), but shows a low but steady undertone. The domestic demand deflator was up for the second consecutive quarter at +0.2%, while the export deflator was down, causing a drag on overall results. In y/y terms the GDP deflator was up by +2.0%, its seventh consecutive quarter of growth. The growth rate also grew in comparison to that of the previous period. Meanwhile, nominal GDP was up a small amount for the fourth consecutive quarter at +0.1% q/q annualized (+0.0% q/q).

Japan's economy expected to gradually make a comeback

Our basic economic scenario sees Japan's economy gradually making a comeback from its temporary lull as the effects of the overseas economic slowdown ease up and personal consumption recovers backed by a good employment environment and improving incomes.

Personal consumption is expected to continue its recovery due to the above factors, and move toward a comeback despite occasional ups and downs. Nominal wages according to the monthly labour survey continue to be weak due to a changeover in sampling. However, considering the trend in this year's pay scale increase after the annual spring labor offensive, as well as trends in bonuses according to survey findings, the real situation with wages appears to be maintaining a stronger undertone than it

appears when looking at the statistics. In addition, wages of part-time workers are also continuing to grow due to the positive employment environment and the increase in minimum wage. Meanwhile, disposable income of pensioners is growing somewhat, due to the increase in the pension revision rate. A number of factors are expected to provide support for personal consumption, including the upward pressure real wages are getting from the decline in the growth rate of the consumer price index and the continued increase in the number of employees.

Housing investment is expected to maintain a firm undertone with improvements in the employment and income environment and low interest on housing loans. In addition, households considering purchase of a new house should gradually increase as we move into the year 2016 in anticipation of a second consumption tax hike. However, considering the sluggishness in housing starts, a leading indicator, the tempo of growth is expected to be gradual. A note of caution is required in regard to the recent scandal regarding the falsification of condominium construction data and where this might lead. If the problem persists for the long-term, suspicions regarding the safety of newly built condominiums could become acute, and consumers could delay purchasing. Looking back to the year 2005 when it was found that seismic strength of buildings had been falsified, a situation which led to the revision of the Building Standards Law in 2007, steep declines in housing investment due to this kind of problem remain fresh in memory.

Public investment is gradually shedding the effects of economic policy which provided support in the past, and is expected to continue to decline. Contracts and orders received, which provide the leading indicators for this area, are already showing signs of peaking out. The general tone in this area is expected to continue in that vein.

Meanwhile, exports are expected to continue a moderate recovery while experiencing both strong and weak points as the effects of the slowdown in overseas economies eases up. A firm undertone continues in US economic expansion centering on the household sector, bringing expectations for a recovery in Japanese exports centering on durables. As for the EU, the economy is expected to move gradually toward a comeback due to the effects of the collapse of crude oil prices and additional monetary easing on the part of the ECB. The ECB is expected to implement additional monetary measures in December. Exports to the EU, which had been weak during summer, are expected to gradually recover to a growth trend. As for the Asian economy, China's real economy has hit bottom due to the lowering of the reserve deposit rate and interest cuts, and effects are gradually being seen in personal consumption. There is a good possibility that declines in consumption can be avoided with positive effects in purchasing of consumer goods.

As for capex, a gradual recovery is seen despite ups and downs due to record-setting corporate earnings. According to surveys measuring capex investment plans such as the BOJ Tankan, there is a forward-looking stance in regard to capex spending. Replacement investment, labor saving, and energy saving appear to be promising. However, statistics seem to see current business sentiment as being stronger than it actually is, and caution is urged regarding risk of a downtrend in the future. The possibility that corporations delaying capex spending, especially in manufacturing, may increase in the future due to the slowdown in emerging nation economies centering on China, weakness in the corporate sectors of overseas economies leading to stagnation for exports, and the slow pace of recovery in personal consumption. In addition, machinery orders, one of the leading indicators, have been weak. Hence we suggest vigilance in this area.

Towards Phase II of Abenomics

In this report we examine what has been referred to as the new third arrow of Abenomics, or the "Redistribution Policy." Considering Japan's difficult fiscal situation, shifting government expenditure from the elderly to the younger generation would help to realize improvement in Japan's total fertility rate and increase labor productivity, while at the same time attaining sustained economic growth. A

viewpoint encompassing all of these factors is considered essential. However, the overall scale of the country's social security system must be downsized and a recovery attained in the balance of benefits and burdens. At the same time, carrying out clear and detailed system design and relieving the anxieties of citizens regarding the future is key. Meanwhile, regarding the supplementary budget, which is expected to be argued up until the end of 2015, it is crucial that a highly effective redistribution policy be devised. From this viewpoint, an income redistribution policy directed toward low income people with a strong propensity to consume and households with a large number of children regardless of income bracket would be effective.

What will happen when the US devises an exit strategy?: Examining risk of downward swing for global economy

With the current slowdown in the economies of emerging nations, especially that of China, possibilities are that the global economy could enter a period of serious stock price lows and worldwide production declines. In producing this forecast, based on the assumption that the US will sooner or later come out with an exit strategy, we provide a detailed analysis of the merkmal (judgment criteria) determining whether or not the world economy will plunge into a period of falling stock prices and production declines, as well as the major leading indicators which suggest future trends. At the same time we examine the characteristics of periods in the past when the global economy has experienced major declines in stock prices and production. Our basic scenario sees the Fed raising interest rates at a pace matching the current economic and business environment. We assume that the financial markets and the real economy will not be shaken overly much. However, we also believe that trends in the Fed's monetary policy should also be watched very carefully on into the future.

Japan's main economic scenario: Moving towards a moderate recovery in 2016

Judging from the performance of major demand components in the GDP statistics, there is a possibility that Japan's economy has officially fallen into a recession. However, examination of three major judgment criteria ("merkmal") suggests that Japan's economy is still in a temporary lull. In either case, the adjustment phase in Japan's economy is expected to be both short-term and fairly minor. We see Japan moving toward a moderate recovery during the year 2016.

Risk factors facing Japan's economy: Focus on Chinese Economy

Risk factors for the Japanese economy are: (1) The downward swing of China's economy, (2) Tumult in the economies of emerging nations in response to the US exit strategy, (3) A worldwide decline in stock values due to geopolitical risk, (4) The worsening of the Eurozone economy, and (5) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market due to loss of fiscal discipline.

Our outlook focuses especially on the risk which China's economy presents for Japan, and we look closely at the trends in that economy, presenting a close analysis. Our outlook for China's economy is optimistic in the short-term and pessimistic in the mid to long-term. Looking at China's economic situation in a somewhat reductive way, the fact is that China's government holds treasury funds totaling between 600 to 800 tril yen with which it is standing up to over 1 quadrillion yen in excessive lending and over 400 tril yen in excess capital stock. China is expected to be able to avoid the bottom falling out of its economy for a little while, but in the mid to long-term, there is risk of a massive capital stock adjustment.

BOJ's monetary policy

We expect additional monetary easing measures by the BOJ to be shelved until spring 2016 or later. The BOJ is expected to choose the timing for additional monetary easing measures carefully, keeping a close watch on world economic trends and Japan's political calendar.
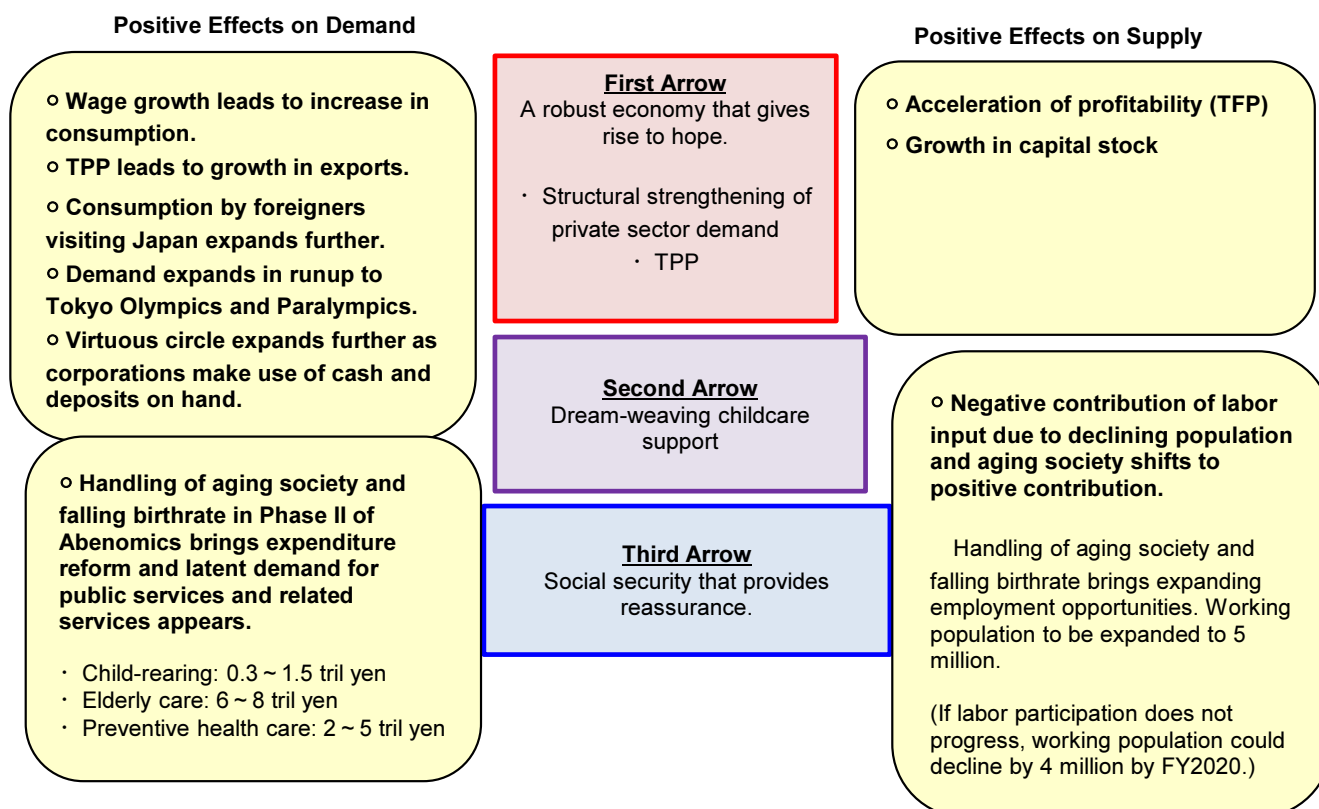
1. Towards Phase II of Abenomics

1.1 Three Arrows Shift from Growth to Fiscal Redistribution

In a press conference held on September 24th Prime Minister Abe announced a new "third arrow" to replace the original one. The new *third arrow* targets the following: (1) Nominal GDP targeted at 600 tril yen – "A robust economy that gives rise to hope," (2) A birthrate of 1.8 – "Dream-weaving childcare support," and (3) "Zero turnover rate in employment at elderly care facilities – "Social security that provides reassurance." The "new three arrows" provides a growth strategy while adding the focus of fiscal redistribution to the *second* and *third arrows*. By coming out with this *new third arrow*, Prime Minister Abe makes as his main target the development of a society in which all citizens can participate – "A society in which all citizens are dynamically engaged."

In order to make this new motto a reality, the government must carry out fundamental reforms of the social security system through which Japan's most difficult problem – an aging society accompanied by a falling birthrate – must be tackled, in addition to devising a scheme by which it can accelerate its growth strategy at the center of the original *three arrows* plan. Japan's government has continually increased the level of social security available as the population has increasingly aged over the years, rather than to ask citizens to take on their fair share for this service. Since the 1990s, social security expenses have steadily increased, while the balance of government debt has literally snowballed. Hence in implementing the *new third arrow*, it will be difficult for the government to increase social security any more than it already has been increased. The government is now faced with the difficult problem of designing a social security program which can continue to bring Japan's citizens a sense of security on into the future.

In this section we consider how the government should approach fiscal redistribution from the viewpoint of cost effectiveness despite the limited margin available for further expansion of social security. Policy moving toward the design of a sustainable social security system is expected to be discussed in the Diet at the end of the year. We also hope that they discuss the effectiveness of coming out with a supplementary budget.

Phase II of Abenomics: Effects on Supply and Demand — **Chart 1**

Positive Effects on Demand

○ **Wage growth leads to increase in consumption.**
○ **TPP leads to growth in exports.**
○ **Consumption by foreigners visiting Japan expands further.**
○ **Demand expands in runup to Tokyo Olympics and Paralympics.**
○ **Virtuous circle expands further as corporations make use of cash and deposits on hand.**

○ **Handling of aging society and falling birthrate in Phase II of Abenomics brings expenditure reform and latent demand for public services and related services appears.**

· Child-rearing: 0.3 ~ 1.5 tril yen
· Elderly care: 6 ~ 8 tril yen
· Preventive health care: 2 ~ 5 tril yen

First Arrow
A robust economy that gives rise to hope.

· Structural strengthening of private sector demand
· TPP

Second Arrow
Dream-weaving childcare support

Third Arrow
Social security that provides reassurance.

Positive Effects on Supply

○ **Acceleration of profitability (TFP)**
○ **Growth in capital stock**

○ **Negative contribution of labor input due to declining population and aging society shifts to positive contribution.**

Handling of aging society and falling birthrate brings expanding employment opportunities. Working population to be expanded to 5 million.

(If labor participation does not progress, working population could decline by 4 million by FY2020.)

Source: 17th Council on Economic and Fiscal Policy (Nov. 4, 2015); compiled by DIR.

Weak yen brought on by Abenomics has pushed recurring profits up by 4.3 tril yen, but benefit structure is biased

Before presenting concrete arguments we evaluate the effects that Abenomics has had on Japan's economy. Since the Abe administration entered office the yen has grown progressively weak. This has been highly beneficial to the corporate sector overall, but the fact is that a major bias has developed in terms of distribution of this new wealth.
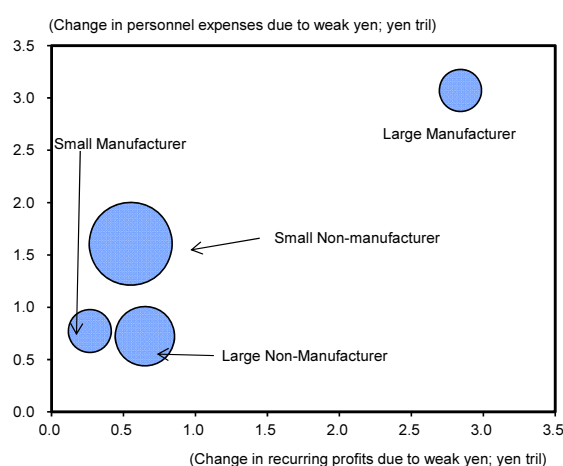
Chart 2 and Chart 3 illustrate the influence which the weak yen has had on the corporate sector since December 2012 when the Abe administration entered office. During the period lasting from Jan-Mar 2013 to Oct-Dec 2014, recurring profit of corporations was pushed up by 4.3 tril yen, while personnel expenses increased by around 6.2 tril yen and capex was pushed up by 1.1 tril yen.

What we would like to point out here is that the effect of the weak yen in pushing up profits differs greatly depending on the scale of the industry or corporation. The direct effect of the cheap yen was mostly in the form of growth in export value. Hence major corporations in the manufacturing industry with a high ratio of exports received the greatest benefits. On the other hand, the progressively weak yen has made import prices grow, causing corporate costs to grow as well. Hence non-manufacturing corporations whose inputs in imported goods are many, especially raw materials and fuel, downward pressure on earnings increased. Even so, the assumption is that there is a ripple effect between industries and corporations such that expansion of earnings centering on major manufacturers due to the direct effect of the cheap yen still benefits non-manufacturing corporations and small business. Though it is difficult to claim that the weak yen has benefited all corporations, the theory of "direct effect + ripple effect" tells us that the cheap yen's effect of pushing up profits has been larger than the negative effects.

However, the benefits of the weak yen are definitely concentrated in major corporations in the manufacturing industry who reap great benefits from growth in exports. The effect of pushing up personnel expenses is also most significant for large corporations in the manufacturing industry. On the other hand, a greater number of workers are concentrated in non-manufacturing and small businesses, whose benefits from the cheap yen tend to be relatively small. Another point which should be kept in mind is that when looked at in terms of personnel expense per employee, the gap clearly widens between industries and corporations of different sizes.

While recognizing the success of the original three arrows of Abenomics in realizing a cheap yen which then led to improvements in corporate earnings, Phase II of Abenomics needs to make corrections by redistributing some of the benefits heretofore reaped mostly by large corporations in the manufacturing industry to small businesses and non-manufacturing corporations. In this sense, the *new three arrows* of Abenomics is correct in adopting a stance which gives some attention to the question of fiscal redistribution.

Effects of Cheap Yen Brought on by Abenomics and Number of Employees by Scale of Business
Chart 2

(Change in personnel expenses due to weak yen; yen tril)

Small Manufacturer
Small Non-manufacturer
Large Non-Manufacturer
Large Manufacturer

(Change in recurring profits due to weak yen; yen tril)

Source: Ministry of Finance, BOJ, METI, Ministry of Internal Affairs and Communications, and Cabinet Office; compiled by DIR
Note: Cumulative value of effects between Jan-Mar, 2013 and Oct-Dec, 2014. Size of circles represents size of sector as of Oct-Dec, 2014 period.

Calculating the Effects of Cheap Yen Brought on by Abenomics on the Corporate Sector
Chart 3

		All Business Sizes / All Industries								
			Manufacturing			Non-Manufacturing			Large Corporations	Small Businesses
				Large Corporations	Small Businesses		Large Corporations	Small Businesses		
Recurring Profits	Amount Change (Yen Bil)	4,303	3,105	2,840	265	1,198	648	550	3,488	815
	Share of Recurring Profits (%)	3.4	6.7	7.2	3.7	1.5	1.3	2.0	3.9	2.3
Direct Effects	Amount Change (Yen Bil)	-1,284	1,306	1,418	-112	-2,591	-2,025	-565	-607	-677
	Share of Recurring Profits (%)	-1.0	2.8	3.6	-1.6	-3.3	-4.0	-2.0	-0.7	-1.9
Ripple Effect	Amount Change (Yen Bil)	5,588	1,799	1,422	377	3,789	2,674	1,115	4,095	1,492
	Share of Recurring Profits (%)	4.4	3.9	3.6	5.2	4.8	5.2	4.0	4.5	4.2
Personnel Expenses	Amount Change (Yen Bil)	6,175	3,844	3,072	772	2,331	724	1,607	3,796	2,379
	Share of Personnel Expenses (%)	1.9	3.7	4.7	2.0	1.0	0.8	1.2	2.4	1.4
capex	Amount Change (Yen Bil)	1,118	779	697	81	339	197	142	894	224
	Share of capex (%)	1.6	3.2	3.6	1.5	0.7	0.6	1.0	1.7	1.2

Source: Ministry of Finance, BOJ, METI, Ministry of Internal Affairs and Communications, and Cabinet Office; compiled by DIR
Notes: 1) Calculated values found using a macro model. Cumulative value of effects between Jan-Mar, 2013 and Oct-Dec, 2014.
2) Direct effect is the total of increase in exports and increase in import price due to weak yen. Ripple effect is the effect of increase in transactions between corporations including increase in final demand associated with weak yen and price pass-through.
3) Influence of personnel expenses and capex use constant and hypothetical calculated values for labor's relative share and capex/cash flow ratio.

1.1.1 Japan's Fiscal Expenditure Biased towards the Elderly

Substance of Japan's fiscal expenditure similar to weaker members of Eurozone

Considering the tight fiscal situation Japan is in, what kind of redistribution policy should it implement from the viewpoint of cost effectiveness?

The ratio of Japan's government debt to nominal GDP stands out in comparison to the other advanced nations. It is impossible to go on increasing expenditure forever. It follows that in putting together a redistribution policy the balance of fiscal revenue and expenditure must be given careful consideration. It goes without saying that Japan must select the most cost effective policy direction possible.

First, let us compare Japan's fiscal expenditure with that of other countries. Chart 4 shows a comparison of the ratio of Japan's expenditure on the elderly to nominal GDP and the ratio of Japan's expenditure on families to nominal GDP with that of other OECD member countries. Expenditure on the elderly consists of cash payments in the form of pensions and home nursing care, as well as benefits in kind. Expenditure on families consists of cash payments in the form of child allowances, childcare and employment before education, as well as benefits in kind. If a country's result is

positioned below the 45 degree line in the lower right, that means that their expenditure on the elderly is larger than expenditure on families, and that expenditure on the elderly is relatively generous.

The only OECD member country located above the 45 degree line in the upper left is Iceland. All others tend to be located somewhere below the 45 degree line in the lower right. Most advanced nations are now in the process of developing an aging society and have no other choice but to offer various services in the form of social security programs to the elderly. Japan is also located below the 45 degree line in the lower right, but compared to other OECD member countries, does not offer much in services for families. It is immediately evident that social security services for the elderly are especially generous. Another point of interest here is that clustered around Japan in the same part of the chart are Portugal, Italy, Greece, and Spain – all countries which in comparison to the rest of the Eurozone tend to have low economic growth rates, and who have unstable fiscal situations. These countries as well as Japan are plagued with low economic growth rates and unstable fiscal situations, and one of the factors in creating this situation is that fiscal expenditure tends towards caring for the elderly rather than families – in other words investment in the future of the country is lacking. Another factor is the preference for a society with "high welfare benefits and low financial burden."

Countries whose fiscal expenditure for the young is more generous also tend to have a high fertility rate

Next we take a look at the ratio of expenditure on families to expenditure on the elderly in OECD member countries and the relationship of this ratio to total fertility rate. Chart 5 indicates that the higher the ratio of expenditure on families in comparison to expenditure on the elderly, the higher the total fertility rate tends to be. Japan's family expenditure to elderly expenditure ratio is the second lowest amongst 34 OECD member countries trailing after Turkey. Total fertility rate is also amongst the lowest. In comparison, Iceland and Ireland both have relatively high ratios of family expenditure and their total fertility rates are also on the high side. These findings infer that one of the factors is that areas of everyday life, such as child-rearing and educational expenses which tend to cause anxiety are fewer when family related expenditure is generous.

The following can be concluded from this international comparison. Japan's current fiscal expenditure when compared with international data is highly biased towards the elderly. While it is not possible to do away with support for the elderly, and considering the impossibility of raising social security expenses any more than they are today, the proportion of family related expenditure should be increased by reorganizing the makeup of fiscal expenditure. This is a necessity if Japanese society is to regain its vitality.

Ratio of Elderly Expenditure and Family Related Expenditure to Nominal GDP in OECD Member Countries | Chart 4
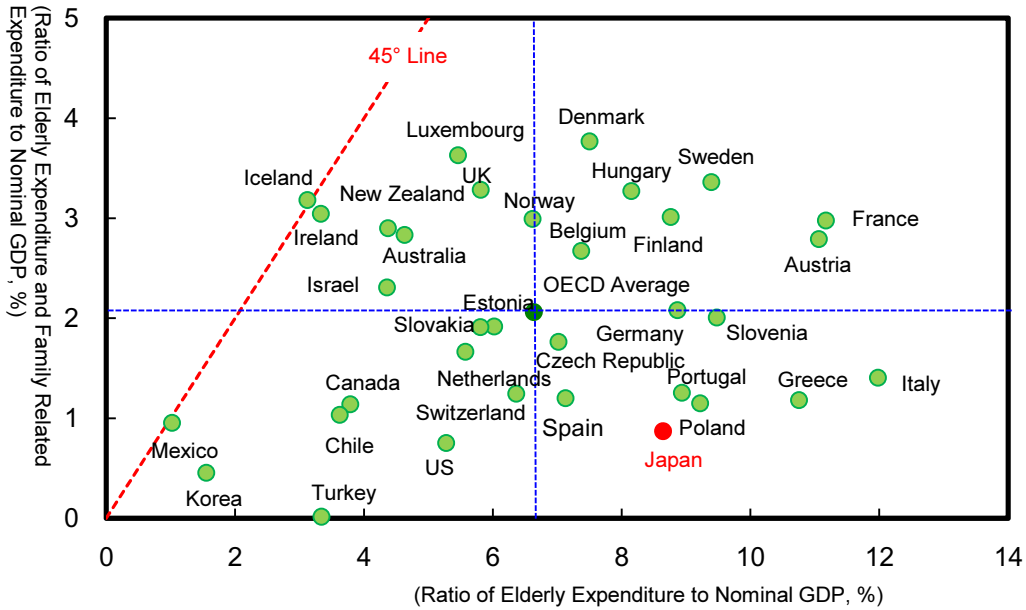
Source: OECD; compiled by DIR.
Note: Data represents the average of years 2000 to 2011.

Ratio of Family Expenditure to Elderly Expenditure and Total Fertility Rate in OECD Member Countries | Chart 5
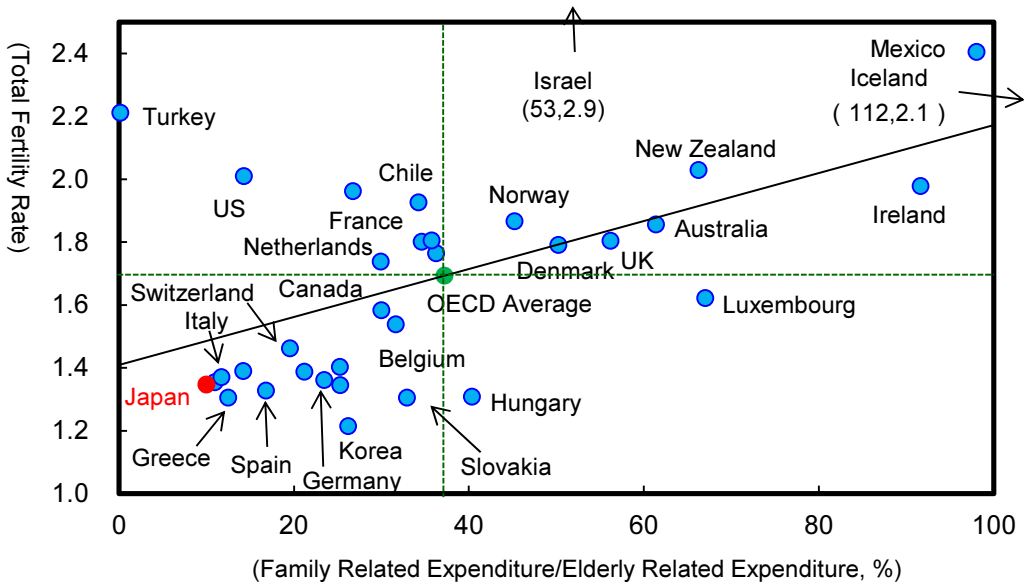
Source: OECD and World Bank; compiled by DIR.
Note: Ratio of family related expenditure to elderly expenditure utilizes data from 2000-2011, while total fertility rate is the average of years 2000-2013.

1.1.2 Building More Childcare Centers Is a Valid Countermeasure to Falling Birth Rate

Building more childcare centers is an effective means of raising the total fertility rate

Japan's total fertility rate was at 3.65 in 1950, but after many years of decline hit the lowest it had ever been at in 2005 at 1.26. Then when second-generation baby boomers reached marriage and child-bearing age, the total fertility rate rose again, only to fall for the first time in nine years to 1.42 in 2014. The long-term decline in total fertility rate is thought to be due to the development of a new trend in which more people remain unmarried, or marry at a later age, and then give birth at a later age. In order to maintain Japan's population at the current level, the total fertility rate must be raised to around 2.08. If the total fertility rate continues at a low level, Japan's population is expected to fall to the level of around 100 million by mid-century. Population decline could cause Japan to lose its social and economic vitality. Hence coming up with effective countermeasures to the falling birthrate is considered to be an urgent task.

One means of raising the total fertility rate or at least keeping it at its current level is to increase the number of childcare facilities. Chart 6 shows the relationship between the number of childcare facilities per population of 100,000 and the total fertility rate using data obtained from prefectural and city governments around Japan. A positive correlation can be confirmed according to this chart between number of childcare facilities per population of 100,000 and total fertility rate. Those prefectures and cities with a large number of childcare facilities tend to have a higher total fertility rate. According to a survey carried out by the Cabinet Office in 2014 (Survey on Attitudes toward Marriage and Family Formation), factors encouraging a positive attitude toward pregnancy and childbirth included availability of support for nursery school and childcare facilities and abundance of nursery school and childcare facilities. Both of these factors received a high rate of answers from survey participants.[1]

It follows that increasing expenditure on families, first concentrating on increasing the availability of childcare facilities and generally improving the environment for child-rearing, would be an effective means of raising the total fertility rate.

Number of Childcare Facilities per Population of 100,000 and Total Fertility Rate Chart 6
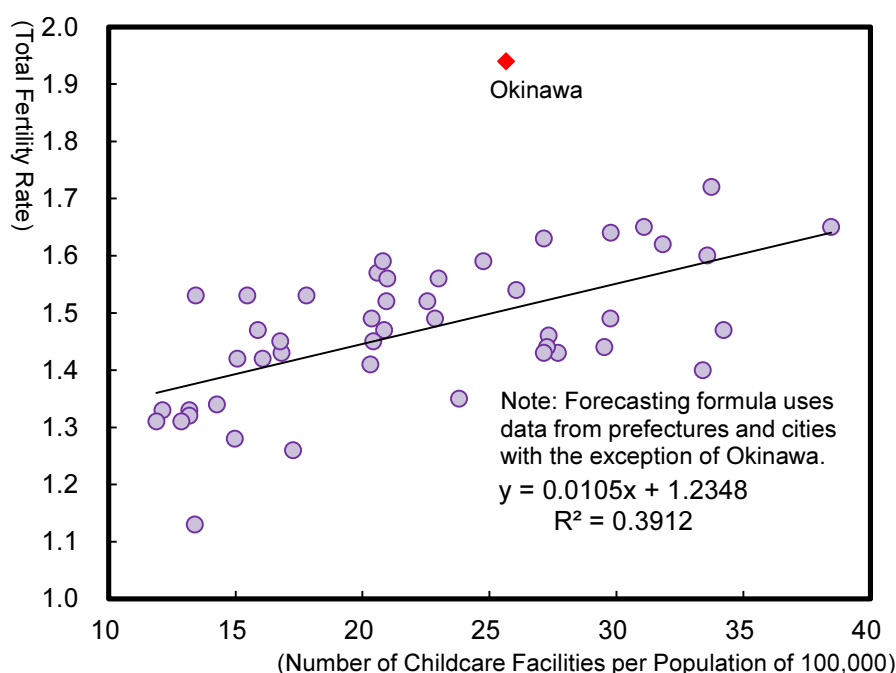
Source: Ministry of Health, Labour and Welfare; compiled by DIR.

[1] Cabinet Office 2014 Survey on Attitudes toward Marriage and Family Formation

1.1.3 The Royal Road to Improving Labor Productivity Is Education

Lightening of financial burden of education needed by households with children

Japan's working-age population, made up of persons aged 15 through 64 who support the country's production activities, peaked in 1996 and then began to decline. Total population peaked again in 2009, but has been in decline ever since. This fact has been a drag on the economy. As it faces a rapid decline in population, we believe that in order for Japan to achieve continued economic growth, it must invest more in education as a means of raising labor productivity. In other words, Japan needs a more highly trained workforce where each individual is capable of performing value-added work.
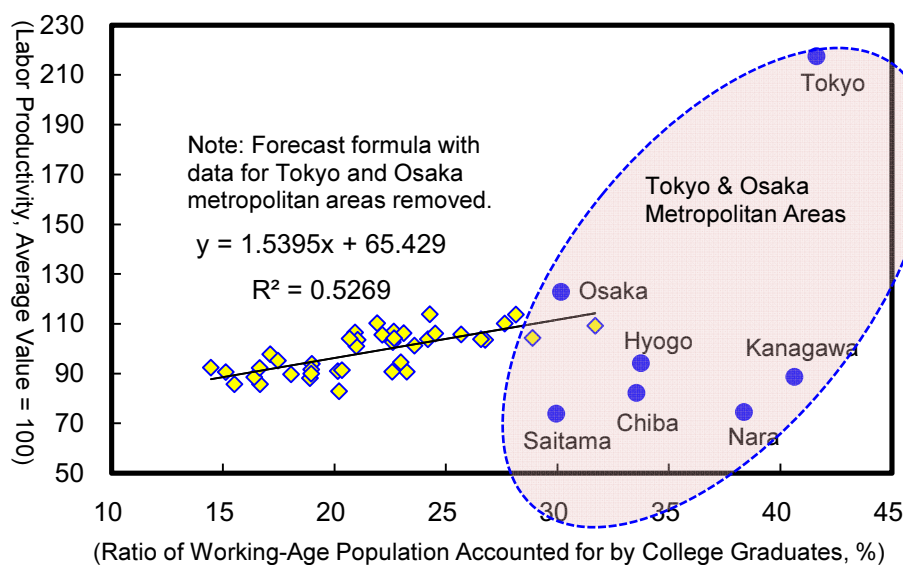
Chart 7 shows the ratio of working-age population accounted for by college graduates and its relationship to labor productivity. Statistics indicate that labor productivity is high in major cities such as Tokyo and Osaka, where large numbers of college educated workers go to work from prefectures on the periphery of those cities. In comparison, prefectures such as Saitama, Chiba and Nara tend to have lower labor productivity since college graduates leave those areas to work in the big cities. However, if we remove these major cities and their surrounding areas from the data, we can confirm a positive correlation between the ratio of working-age population accounted for by college graduates and labor productivity. This infers that growth in the ratio of college graduates in the population tends to lead to improvement in labor productivity.

However, in attempting to stimulate growth in the ratio of college graduates in the population we run up against one major barrier – that is educational expenses, especially those required for higher education. According to the Ministry of Health, Labour and Welfare, the cost of an education from nursery school through college, even if all of these schools are public ones, is around 8 mil yen on average. A survey carried out by the National Institute of Population and Security Research, asked participants the following question: "why don't you have as many children as you would ideally like to have?" The most common response to this question was, "because child-rearing and education cost too much."[2]

This suggests that if the financial burden associated with educational expenses were lightened, more young people would want to go to college and the ratio of the population accounted for by college graduates would increase. Meanwhile, if the anxiety associated with educational expenses were to be removed, thereby also removing one of the major reasons both men and women give for not wanting children, this would also contribute to the recovery of the total fertility rate.

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[2] National Institute of Population and Security Research 14th Basic Survey on Childbirth Trend.

Ratio of Working-Age Population Accounted for by College Graduates and Labor Productivity by Prefecture and City **Chart 7**

Note: Forecast formula with data for Tokyo and Osaka metropolitan areas removed.

$$y = 1.5395x + 65.429$$

$$R^2 = 0.5269$$

Tokyo & Osaka Metropolitan Areas

(Labor Productivity, Average Value = 100)

(Ratio of Working-Age Population Accounted for by College Graduates, %)

Tokyo, Osaka, Hyogo, Kanagawa, Saitama, Chiba, Nara

Source: Cabinet Office, Ministry of Internal Affairs and Communications, and Ministry of Health, Labour and Welfare; compiled by DIR.
Note: Labor productivity = Prefecture's gross production ÷ (number of employers x hours actually worked per year).

1.1.4 Fundamental Reform of Social Security System Is Needed

Anxiety regarding the future pushes savings rate up and inhibits household consumption

In the previous section we suggested that fiscal expenditure should be redistributed, shifting spending from the elderly to the younger generation. However, this would not be easy to achieve. Pushback from the elderly would be likely and the middle-aged population (those expecting to become elderly in the near future), and in some cases even younger people, would likely become anxious about the future.

In fact, it is quite possible that skepticism regarding the ability to maintain the country's pension program on into the future may already be pushing household savings up due to anxiety regarding the future. Surveys regarding the purpose of holding financial assets show that since the 1980s, the number of Japanese stating that it is to cover living expenses in old age has grown. In other words, it is possible that anxiety regarding old age causes many Japanese to cut back on consumption and increase savings instead. There is a risk that shifting fiscal distribution from the elderly to the young could merely exacerbate this trend.

In Chart 8, Japan's savings rate (based on household surveys) is shown on the vertical axis. The horizontal axis shows the percentage of persons stating that the purpose of holding financial assets is to cover living expenses in old age in reply to surveys regarding the purpose of holding financial assets. As Japan's population has progressively aged, the number of people using up their savings for the purpose of living expenses has increased, so the fact is that the savings rate has been in decline since the year 2000. However, if we look at the savings rate after removing the aging factor, the savings rate is actually growing in a way consistent with the increase in anxiety regarding the future. There are two ways to use money – either use it for consumption or put it toward savings. The growth trend in savings rate due to anxiety regarding the future means on the one hand that Japanese citizens are refraining from consuming. In other words, due to skepticism regarding the ability to maintain the country's pension program, Japanese citizens are feeling more anxious about the future and this leads to growth in the savings rate, but this may merely be provoking a decline in the Japanese economy in the form of stagnant personal consumption.
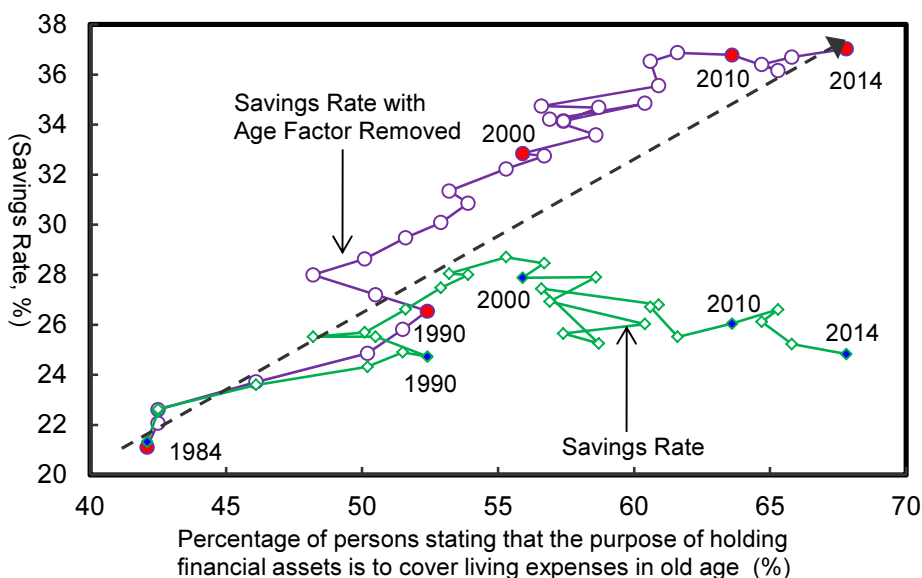
Source: Ministry of Internal Affairs and Communications, and Bank of Japan; compiled by DIR.
Note: Savings rate from household survey "Rate of Surplus". Aging factor found by estimating savings rate. The forecast formula is as follows: Savings rate = 17.97 – 0.77 x aging rate + 0.16 x anxiety regarding the future +0.01 x household assets (-2). Aging rate and household asset factors have a significance of 1%. Anxiety regarding the future has a significance of 5%. Anxiety regarding the future is the percentage of persons stating that the purpose of holding financial assets is to cover living expenses in old age in reply to surveys regarding the purpose of holding financial assets.

The factor of anxiety regarding the future has pushed the savings rate up by 4% pt since 1983

Chart 9 shows estimates of Japan's savings rate (FY2005 standard SNA) based on the following factors: (1) Financial asset factor (household financial assets to GDP, lag of one period), (2) Anxiety regarding the future (percentage of savings for old age, lag of one period), and (3) Population factor (dependent population ratio, lag of one period). Results of these estimates suggest that in terms of a cumulative total since 1983, the factor of anxiety regarding the future may have pushed Japan's savings rate up by 4% pt.
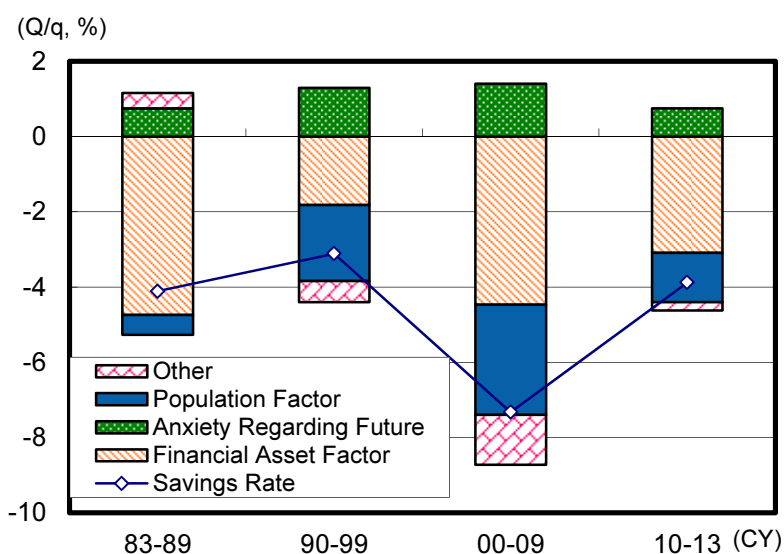
Source: Cabinet Office, Bank of Japan, Ministry of Internal Affairs and Communications, and Central Council for Financial Services Information; compiled by DIR.
Notes: 1) Financial assets factor is household financial assets as a percentage of GDP. Population factor is the dependent population ratio. Factor of anxiety regarding the future is the percentage of persons stating that the purpose of holding financial assets is to cover living expenses in old age according to a Central Council for Financial Services Information survey. Savings rate is based on FY2005 standard SNA.

Conclusion: Shift focus of fiscal expenditure from elderly to the young and implement fundamental reform of the social security system

From an international perspective Japan's fiscal expenditure is heavily biased towards assistance for the elderly. However, considering the tight fiscal situation it is not possible for Japan to increase social security spending any further. Hence redistributing expenditure so that more goes to the younger generation is suggested as a means of improving the total fertility rate and labor productivity. Taking the view of doing what is possible to achieve continued economic growth is considered to be essential.

The biggest issue facing Japan's social security system is the general feeling of distrust which citizens have come to hold about the system. In more concrete terms Japan's social security system has the following problems: (1) Citizens are worried about whether the system can continue on into the future due to the lack of balance between benefits and financial burden, and (2) How benefits are determined and distributed and to whom is unclear. Benefits often do not reach the neediest people.

From a macro perspective, Japan's social security system has oriented toward mid-range benefits with low financial burden for the individual in the past, but the current reality is that it is actually high benefits with low burden (see Chart 10). As long as there is an imbalance in benefits and burden, it will be impossible to quantitatively expand the social security system. A certain amount of downsizing is essential.

"Three in the morning, four at night"

There's an old Chinese story that goes something like this: There was once a public official who kept a monkey, which he fed once in the morning and once at night. The public official wanted to save on pet food so he fed the monkey three pieces of fruit in the morning and four at night. When the monkey became angry at this, the official said "OK, then I'll give you four in the morning and three at night." Then the monkey was pleased. Most rational citizens have become skeptical as to whether Japan's social security system can keep going. The rapid aging of Japan's society is unparalleled anywhere in the world, and yet the country goes on as if it were serving a lavish banquet. It is therefore not surprising that many citizens feel anxious and insecure.

The overall scale of the country's social security system must be downsized and the correct balance of benefits and burdens attained. At the same time, carrying out clear and detailed system design and relieving the anxieties of citizens regarding the future is key. The Abe administration needs to play a decisive role here and provide real leadership in order to attain the goal of a society in which all citizens can participate

Social Benefits and Social Transfers in Kind (per GDP, %)
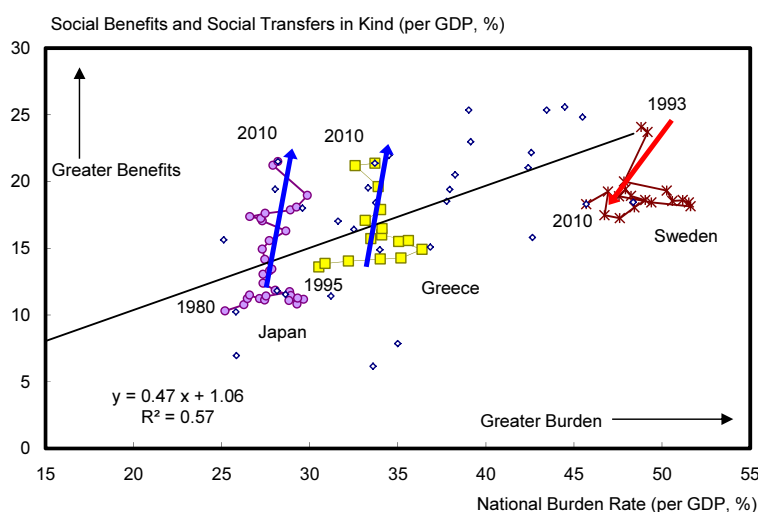
Source: OECD; compiled by DIR.
Note: Data on Japan from 1980 to 2010, Greece from 1995 to 2010, and Sweden from 1993 to 2010.

1.2 Supplementary Budget to Realize Clear and Detailed Redistribution Policy

1.2.1 Supplementary Budget Envisioned: Effectively Pushing Up Real Economy

In the previous section we focused on the mid to long-term issues of Abenomics with arguments directed mainly to the question of fiscal distribution policy. In this section we consider the FY2015 supplementary budget, which is expected to be debated in the Diet between now and the end of the year, in light of short-term economic trends. In addition to providing underlying support for Japan's economy through increased public spending, the supplementary budget is expected to echo the *new three arrows* of Abenomics by giving attention to the question of fiscal distribution policy. We will discuss the items which are likely to be included in the supplementary budget and provide an analysis of their effectiveness in pushing up the real economy, as well as considering what an effective income redistribution policy might look like and its application to short-term economic policy.

Supplementary budget estimated to raise FY2016 real GDP by +0.4% pt

We predict that a supplementary budget totaling around 3 tril yen will be put together. (Note that our economic outlook does not take into consideration the effects of the supplementary budget.) The specific contents are expected to focus on public investment and government expenditure, in other words items associated with public demand. As the TPP negotiations near a rough outline agreement fears are being raised in the agricultural sector regarding the inflow of cheap agricultural products from overseas, and in consideration of this fact, the budget is likely to include improvements in infrastructure meant to strengthen the competitiveness of Japan's agriculture. The stance toward including budgetary items working toward developing an "agriculture offensive" is likely to grow stronger. Meanwhile, large scale flooding which occurred during the summer months is likely to make natural disaster recovery an important focus in budget allocation. Finally, improving and increasing childcare centers will likely gain attention in the makeup of the budget being one of the policies emphasized in the *new three arrows*.

Other aspects of the budget are not expected to be as large as items associated with public demand, but support for households and corporations will also be included. As for corporate related items, support for farmers as a TPP countermeasure is expected, as well as budget items for the promotion of exports. Agriculture is a major vote getter during elections, so in order to resolve dissatisfaction and worry

which is likely to develop when TPP negotiations near a rough outline agreement, agricultural policy is likely to be important, attracting elements from both the areas of public demand and corporate related.

Finally, support for households currently in the child-rearing age bracket is also expected to gain a place in the budget. Hopes are for a budgeting process which is meaningful as regards items associated with realization of the second arrow in the new Abenomics, "child-rearing support which weaves together the people's dreams." As was discussed in the previous section, family related expenditure such as support for childcare centers has a positive correlation with the total fertility rate. The long-term concepts of the new Abenomics are therefore consistent with this goal.

As stated above, the budgeting process for the supplementary budget is expected to boost the new Abenomics policies. If a supplementary budget of the sort described here is actually implemented, it is expected to push up the FY2016 real GDP growth rate by around +0.4% pt. If public investment, which is seen declining according to our current outlook, instead remains level, and in addition if personal consumption is re-energized, this too will bring upward pressure on GDP.

Possible Contents of Supplementary Budget   **Chart 11**

Possible Content	Assumed Amount (Tril Yen)	Positive Effect on Real GDP Growth Rate (%)
Gross Amount (National Expenditure)	3.0	0.38
Corporate Support	0.5	0.05
Promotion of Exports of Agricultural Products		
Support for Farmers		
Support for Households	0.5	0.03
Child-Rearing Support		
Grants for Housing Acquisition and Remodeling		
Government Consumption	1.0	0.15
Training of Human Resources for Nursing Care Facilities		
Public Investment	1.0	0.15
Childcare Centers		
Disaster Recovery		
Infrastructure Upgrades in Metropolitan Areas		
Infrastructure Upgrades for Creation of Large Farms		
Others	0.0	0.00

Source: Various news sources; compiled by DIR.
Note: Real GDP estimates for FY2016.

Positive Effects of Supplementary Budget on Real GDP Growth Rate   **Chart 12**
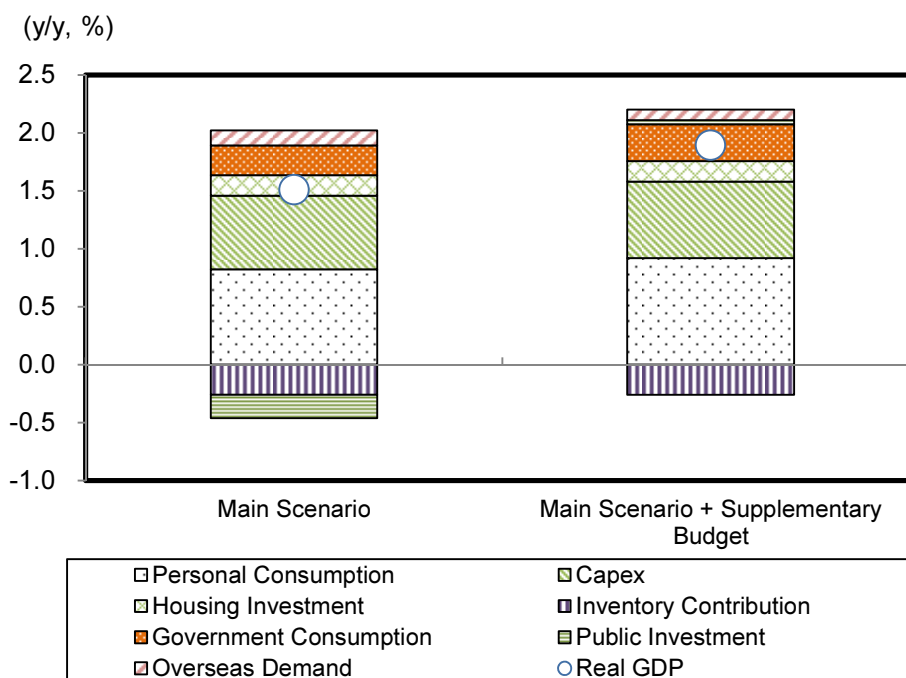
Source: Cabinet Office; compiled by DIR.
Note: Real GDP estimates for FY2016.

1.2.2 Income Redistribution Promises Revitalization of Personal Consumption

Income redistribution policy directed toward low income individuals will have major economic impact

Recently personal consumption has been showing signs of making a gradual comeback, but it has not recovered to the level it had reached prior to the increase in consumption tax. Personal consumption accounts for around 60% of Japan's GDP, and its revitalization is extremely important to Japan's economic recovery overall. In this section we consider what a highly effective fiscal distribution policy might look like in the context of the need to revitalize personal consumption.

Chart 13 shows the average propensity to consume by income bracket. Average propensity to consume is the percentage of expenditure in relation to disposable income. The higher this value is the more expenditure there is in comparison to income. As is made clear by the chart, the lower a household's income the higher the average propensity to consume. Taking this relationship as our assumption, we can deduce that income redistribution to low income individuals could easily lead to growth in personal consumption. Conversely, we can deduce that income redistribution those in the higher income bracket who have a low propensity to consume would not lead to the revitalization of personal consumption, and therefore would have a limited economic effect.

That said, low income households generally have a high Engel's coefficient, and we cannot ignore the fact that recent price hikes of foodstuffs have had an especially negative effect on them.

In light of these considerations, the policy to distribute benefits to pensioners with low income households now being considered in the supplemental budget is warranted regardless of its economic effect from the viewpoint of both upholding a minimum standard of living and correcting income disparity.

Propensity to Consume by Income Bracket (FY2015)   **Chart 13**
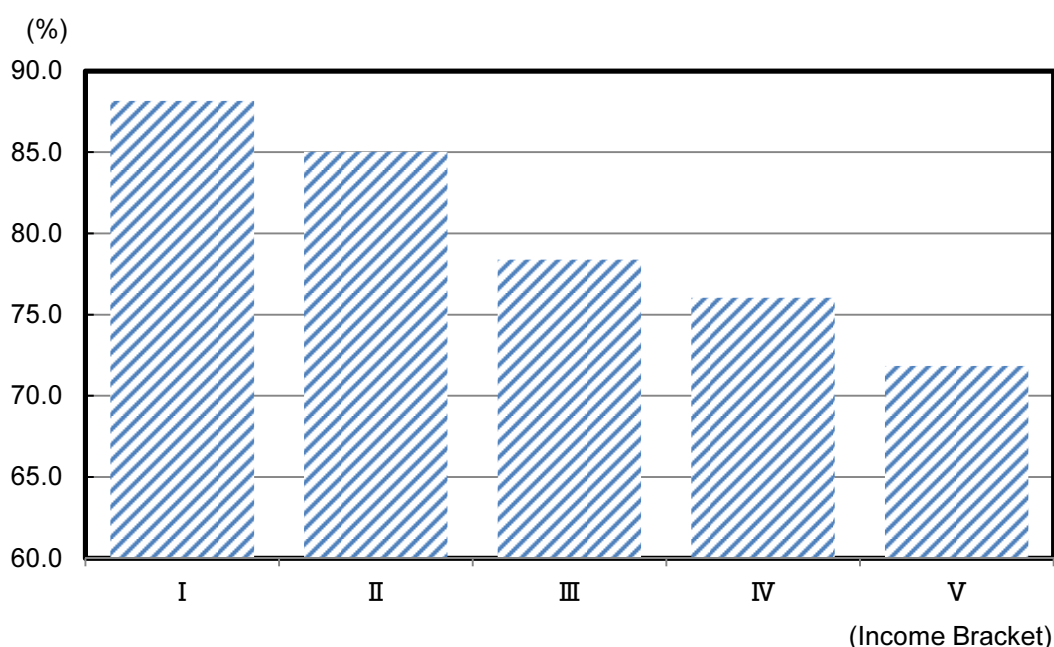
Source: Ministry of Internal Affairs and Communications; compiled by DIR.
Note: Seasonally-adjusted figures by DIR.

In considering the economic effects of benefit payments, not only income but number of children is an important point

The effect of pushing up personal consumption through fixed-sum benefit payments depends on more than income bracket.

Chart 14 examines the effects of fixed-sum benefit payments in terms of income bracket and whether or not there are children in the household. First we take a look at households without children. The general trend here is that the larger the household income, the lower is the effect of fixed-sum benefit payments on growth in consumption (the percentage of the amount of increase in household income expenditure in comparison to the amount of fixed-sum benefit payment received). This finding is consistent with the analysis of propensity to consume covered in the previous section. On the other hand, when we look at households with children, we find that there was a 30-35% increase in consumption for households in all income brackets. Even in low-income households with children we see around the same percentage of growth in expenditure. In other words, it is possible to stimulate the same amount of consumption on the part of high-income households with children by virtue of fixed-sum benefit payments as is seen in low-income households.

Chart 15 looks at change in the effect on growth in expenditure based on number of children. Here we see that the more the number of children in a household the more there is a clearly greater effect on growth in expenditure. We also understand intuitively that the household's dependency on benefit payments, as seen in the amount of expenditure, is proportional to the number of children.

For this reason, in designing an income redistribution policy, it is important to take into consideration whether or not a household has children as well as number of children in the household. In other words a finer level of distribution is required.

The above considerations tell us that building an effective fixed-sum benefit payment system it is important to keep in mind the number of children in the household. The analysis in this chapter also tells us that in comparison to other countries, Japan has a bias towards the elderly in its fiscal expenditure, and that in order to increase the total fertility rate, raising the percentage of expenditure on families is a pressing issue. Increasing the amount of fiscal expenditure going toward households with many children can not only revitalize consumption in the short-term, but also become extremely important in efforts to resolve the mid to long-term problem of an aging society accompanied by a falling birth rate.

Conclusions: A clear and detailed redistribution policy is essential

In this section, we gained a sense of what may be included in the supplementary budget and the effect it might have on improving the real economy, while at the same time discussing the form an effective income redistribution policy might take.

Considering Japan's tight fiscal situation, a clearly detailed and effective income redistribution policy is required from the viewpoint of pushing up the economy in the short-term as well as other issues. An income redistribution policy would also be effective in increasing personal consumption amongst both households in the high-income bracket with a high propensity to consume and households with many children regardless of income bracket.

Effects of Fixed-Sum Benefit Payments by Income Bracket and Whether or Not There Are Children
Chart 14

(Amount of Increase in Consumption/Benefit Payment Amount, %)

- ■ Households Without Children
- ● Households with Children
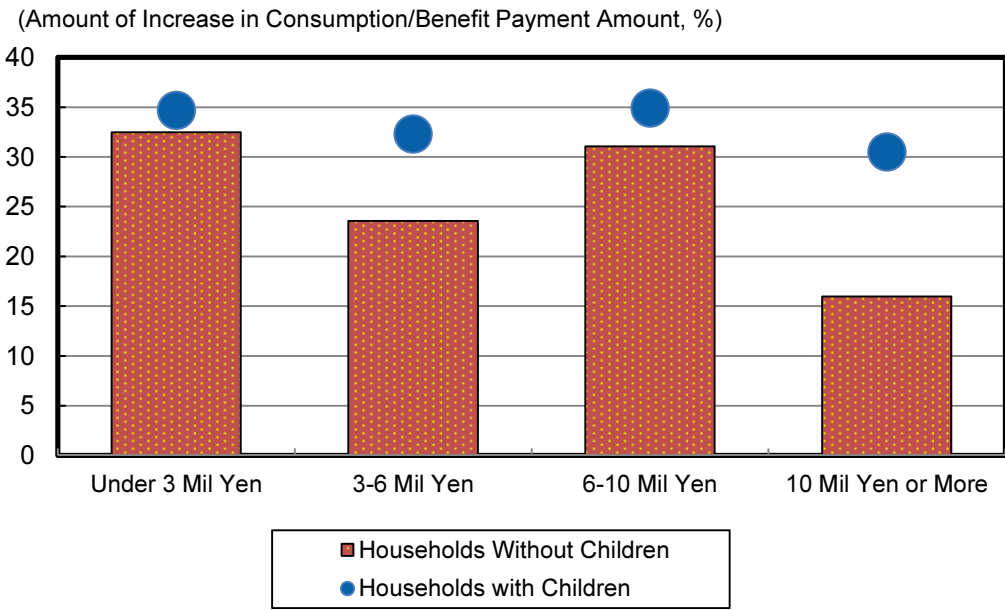
Source: Cabinet Office; compiled by DIR.
Note: The amount of growth in consumption is the total of expenditure on goods which would not have been purchased if there were no benefit payments, and growth in amount of expenditure on goods which would have been purchased even if there were no benefit payment.

Effects of Fixed-Sum Benefit Payments by Number of Children
Chart 15

(Amount of Increase in Consumption/Benefit Payment Amount, %)
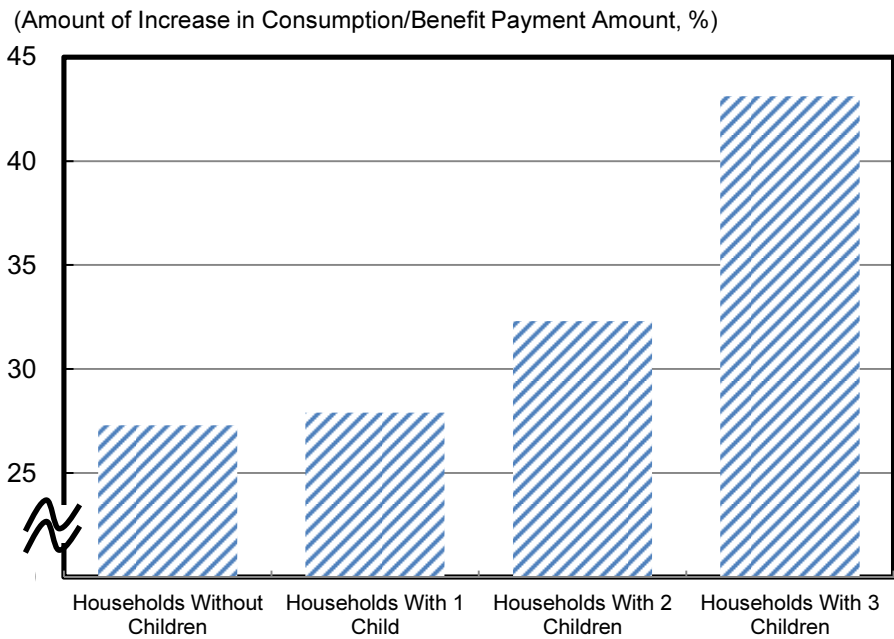
Source: Cabinet Office; compiled by DIR.

2. What Will Happen when the US Devises an Exit Strategy?: Examining Risk of Global Economic Slowdown

Global production slowdown

The global financial markets were sent into turmoil with the economic slowdown in the emerging nations, especially in China, where stock prices tumbled since June this year followed by the deprecation of the renminbi in August, shaking up the global economy. Looking at trends in world production, things had clearly stagnated after the beginning of 2015, and it is possible that the global economy may enter a serious downtrend with worldwide stock price lows and decreases in production.

In this chapter, in light of increasing possibilities that the US will sooner or later come out with an exit strategy, we provide a detailed analysis of the merkmal (judgment criteria) determining whether or not the world economy will plunge into a period of falling stock prices and production declines, as well as the major leading indicators which suggest future trends. At the same time we examine the characteristics of periods in the past when the global economy has experienced major declines in stock prices and production.

2.1 Global Economy on the Verge of its Third Serious Period of Stock Price Lows and Production Declines

Characteristics of past periods of stock price lows and production declines

Using a comparison to previous 6-month periods we categorize past world stock price and production phases as follows: since 1990 there have been two phases of serious world stock price lows and world production declines (see Chart 16). These are the collapse of the IT bubble and the economic downturn precipitated by the Lehman Brothers bankruptcy in 2008 (otherwise known as the global financial crisis of 2008). There was also the Asian currency crisis during the latter 1990s during which there were worldwide stock price lows and production declines, but it did not become as serious as these others.

Looking at recent trends, the global economy shifted to worldwide stock price lows and production declines in August 2015, and it is now on the verge of becoming the third period since the late 1990s of serious economic decline.
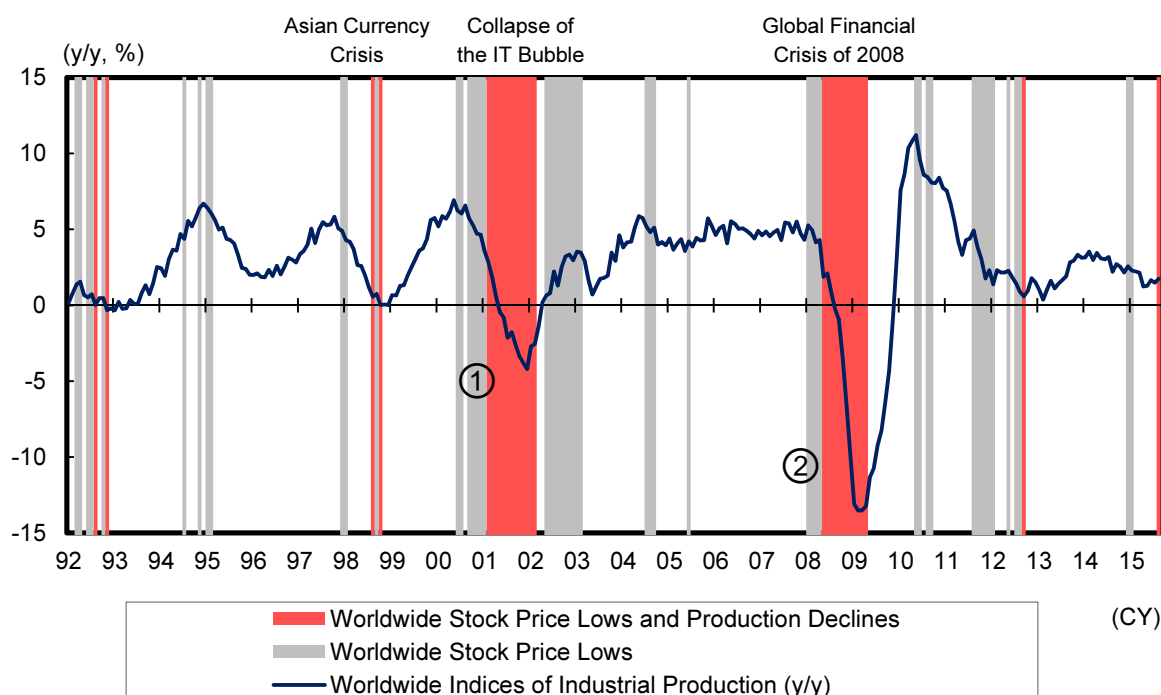
Source: Netherlands Bureau for Economic Policy Analysis, Haver Analytics; compiled by DIR.
Note: World stock price lows and production decline phases are expressed in terms of a comparison with past 6-month periods.

First we perform a factor analysis of worldwide production (y/y) by country and region in order to reveal the characteristics of each past phase.

The first characteristic is that phases of serious worldwide stock price lows and production declines associated with the collapse of the IT bubble and the global financial crisis of 2008 each had their epicenter in the US and then spread from there after the negative effects expanded, with the crisis felt mainly in the advanced nations (see Chart 17). After the Lehman Brothers bankruptcy in 2008, the financial crisis deepened in Europe. This was the major negative factor pushing down the economy of the Eurozone. Meanwhile, the emerging nations of Asia suffered only a short-term downturn, with their economies ultimately propped up by continued high growth in domestic demand. The Asian economies were ahead of the advanced nations in regaining year-to-year advances.

The second characteristic is that during the Asian currency crisis, negative effects were largely felt in the crisis epicenter, the emerging economies, and Japan. Production in Europe did not decline steeply, and US production continued its positive performance. Looking at the world economy overall, the decline in production was short-term.

Finally, the third characteristic is that when we examine changes in production after 2014, we see that the emerging economies of Asia began to gradually slow down in the spring of 2014, and then once into the following year of 2015 production in the US began to lose some of its punch. As for the US, this is probably because corporate investment in capex was stagnant due to the low price of crude oil and the strong dollar.

① **Collapse of the IT Bubble**

② **Financial Crisis of 2008**

Asian Currency Crisis

Since 2014
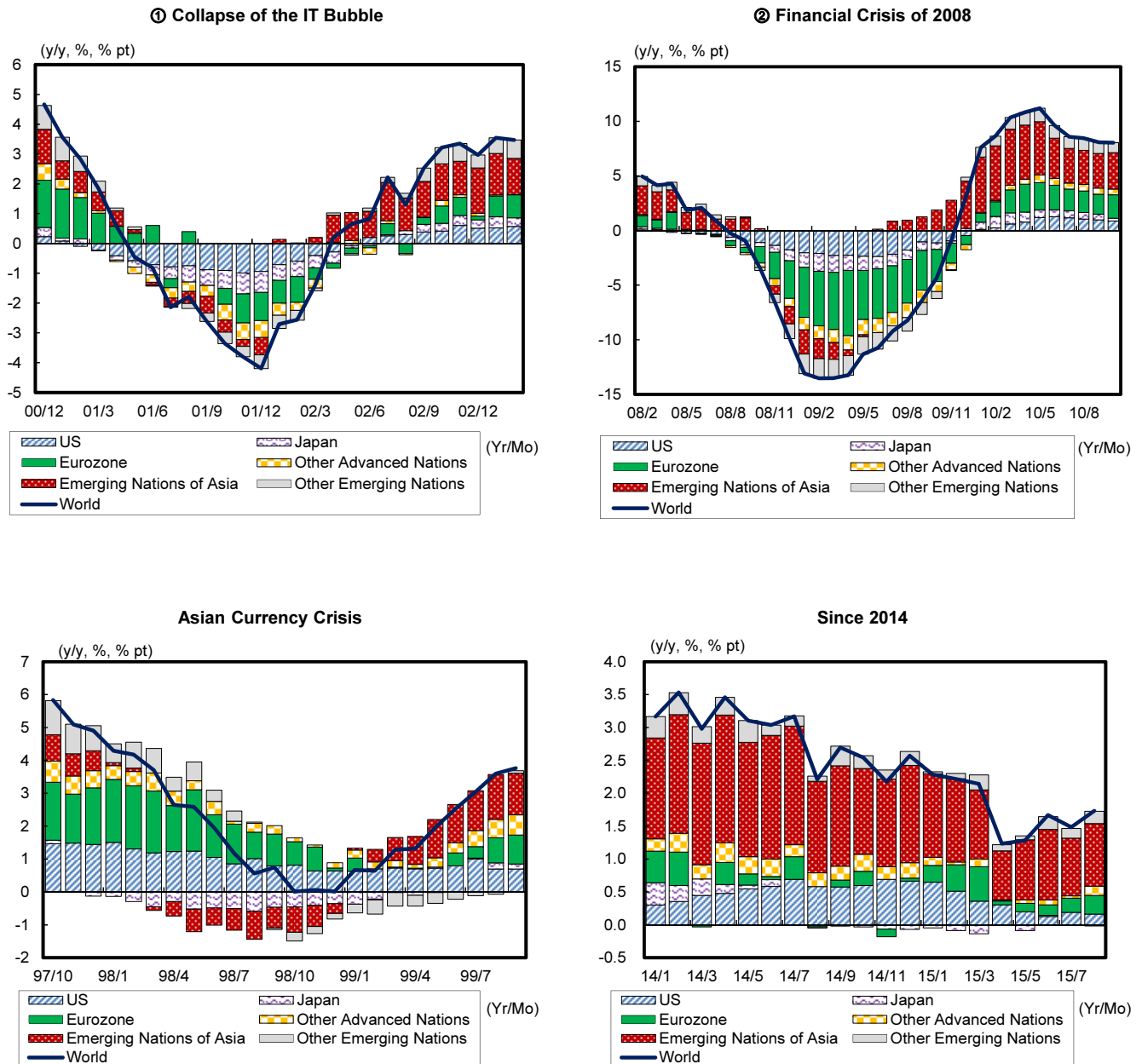
Source: Netherlands Bureau for Economic Policy Analysis; compiled by DIR.

Examining leading indices to forecast trends in world production

We looked at a wide variety of economic indices and financial data and analyzed them in order to find the leading indicators which will indicate the future of world production in putting together our forecast. Ultimately we focused on two important indices – (1) Leading Economic Index for China and (2) The US ISM Manufacturing Index.

Chart 18 shows world production and the business cycle according to each index. Cycles are shown in order of earliest to latest and numbered (1)-(4).

Looking at the chart one can observe that the leading economic index for China and the US ISM manufacturing index tend to lead world production. The number of months by which the leading economic index for China leads world production is marked with a triangle in the chart (like this ▲9). Measuring the time difference correlation between world production and the indices, we find that the

leading economic index for China is about six months ahead, while the US ISM manufacturing index tends to lead by around four months.

Recently the tone of the two leading indices for world production has been weak, and there are no signs of a reversal of this tendency. From the viewpoint of the business cycle, decline in world production is therefore expected to continue for some time.

Leading Indices for World Production: Leading Economic Index for China, and the ISM Manufacturing Index (US) **Chart 18**
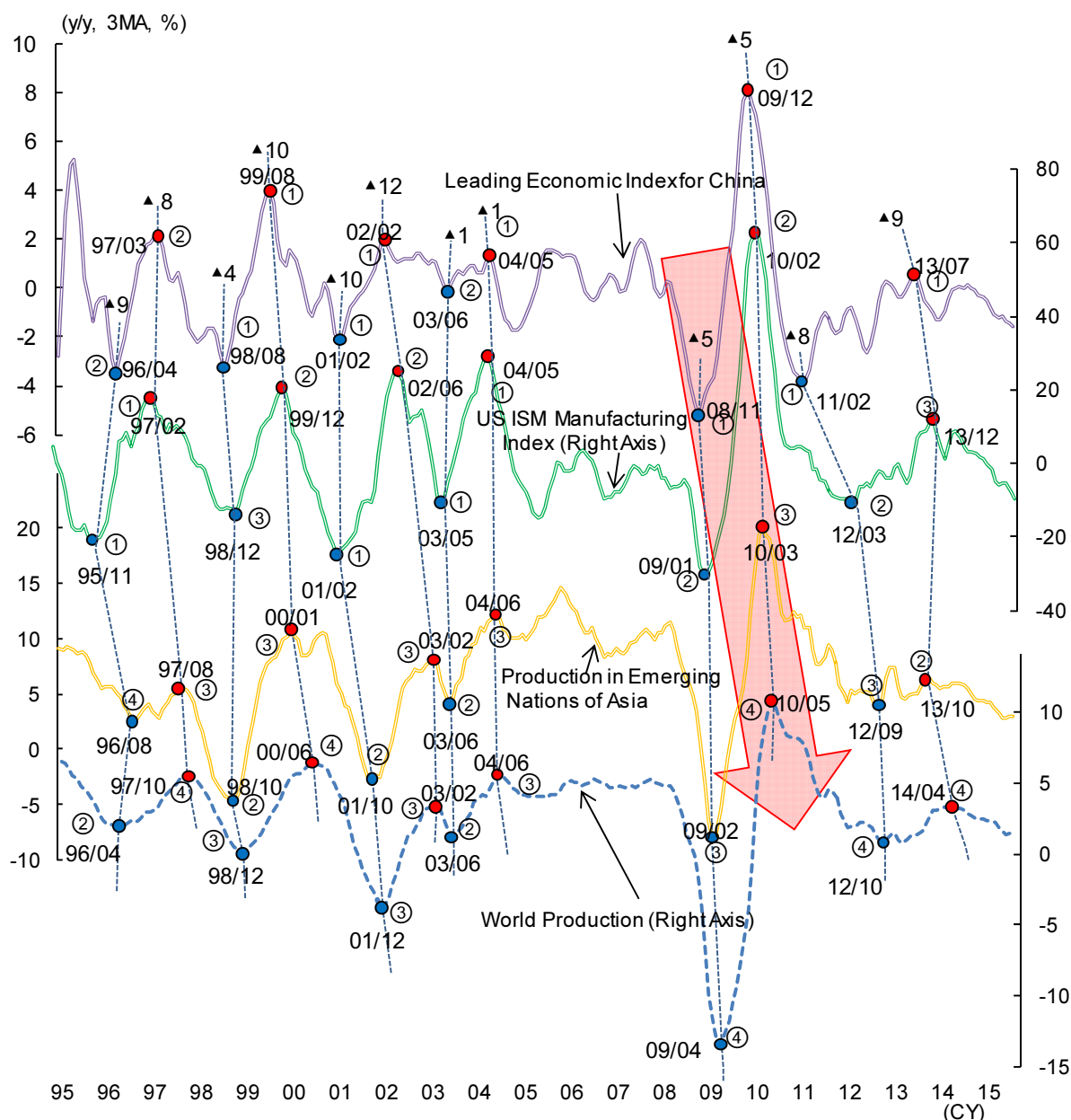
Source: Haver Analytics; compiled by DIR.

Slowdown in China's economy felt in ASEAN member countries

In order to gain a better perspective of the future of world production, considering the effects of China's economic slowdown is a key element. We must also take heed of the fact that China's economic ills have now spread to the Asian emerging economies. In this section we examine the influence of the US, Europe, and China on production trends in the four major ASEAN countries (Indonesia, Malaysia, the Philippines, and Singapore). To repeat our conclusion, when viewed

cyclically, the US, with its relatively favorable economic performance, provides a positive contribution to production in the ASEAN, while China, with its continued slowdown, brings negative influence. Chart 19 provides estimates of the extent of influence the US, the Eurozone and China have on industrial production in the four major ASEAN countries by performing a regression analysis using US real imports, and import volume in the Eurozone and China.

Looking at the chart we can infer that between 2013 and around the middle of 2014 the motivating force behind economic expansion in the four major ASEAN countries was the Chinese economy's continued high growth. However, fears of an economic slowdown in China grew during the latter half of 2014 and the extent to which China was contributing to ASEAN economic growth shrank considerably. By 2015 China's economic contribution to the ASEAN economies was in the negative numbers. It is not an overstatement to say that at this time the effects of China's economic slowdown are showing up in ASEAN industrial production.

Meanwhile, we can confirm through this analysis that growth in real imports in the US is providing underlying support for production in the four major ASEAN countries. While capex is stagnant in the US, consumption remains favorable. This indicates that growth in exports of consumer goods to the US may be providing a certain amount of underlying support for production in the four major ASEAN countries.

We predict that the US economy will achieve a steady recover in the near future and that the US economic recovery will provide underlying support for the emerging economies of Asia. As for China, the moderate economic decline continues, but we predict that it will move toward bottoming out with the help of fiscal and monetary policy.

Factor Analysis of Industrial Production in 4 Major ASEAN Countries (y/y, %)　　　　**Chart 19**
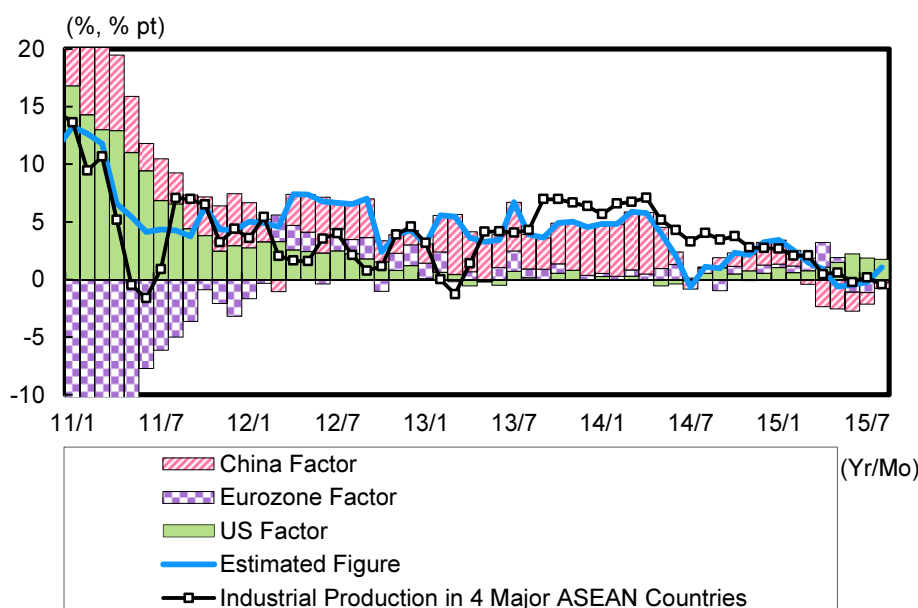
Source: Haver Analytics; compiled by DIR.
Notes: 1) The 4 major ASEAN countries are Indonesia, Malaysia, the Philippines, and Singapore. Major flooding in Thailand has caused major fluctuations in its economy, and hence it is not used as a sample here.
　　　 2) The weighted average of industrial production in the ASEAN countries was calculated using import weight, then year-to-year change (3MA) and then a rolling regression (60 months) performed using real imports in the US and import volume in the Eurozone and China.

2.2 Merkmal for Worldwide Stock Price Lows and Production Declines

An important merkmal is the status of US corporate debt

We examined stock related data from a broad range of economic entities and made comparisons of various kinds, but ultimately we have found that the most important merkmal in determining whether or not worldwide stock price lows and production declines occur is the status of US corporate debt. (For our sampling we used private sector non-financial corporations.)

As mentioned earlier in this chapter, there have been two major periods of worldwide stock price lows and production declines in the past, and each one of them had as its epicenter the United States. For this reason, structurally speaking US data should explain more to us than data from other countries. Careful scrutiny of real data also tends to lead to the same observation. In addition, since the US has been leading the world economy for some time now, it follows that if the US economy is favorable then the world economy will also manage to hold up.

Chart 20 shows what we believe to be the US data most worthy of attention – change over time in the balance of corporate debt as a proportion of GDP. Looking at the chart it is immediately evident that during the global financial crisis of 2008, households, financial institutions, and corporations showed a tendency toward an increase in balance of debt as a proportion of GDP, then once past this period the balance declined considerably. In comparison to this period, during the collapse of the IT bubble, while corporations exhibited the same pattern, households and financial institutions continued at a high level. If we consider these two phases comprehensively, the merkmal which tells us whether or not a serious period of worldwide stock price lows and production declines will occur is balance of private sector non-financial corporate debt as a proportion of GDP.

Concretely speaking, there is more risk of lapsing into a serious period of worldwide stock price lows and production declines when corporate debt is on the high side in comparison to the real economy.

Balance of Debt as a Proportion of GDP by US Economic Entity	Chart 20
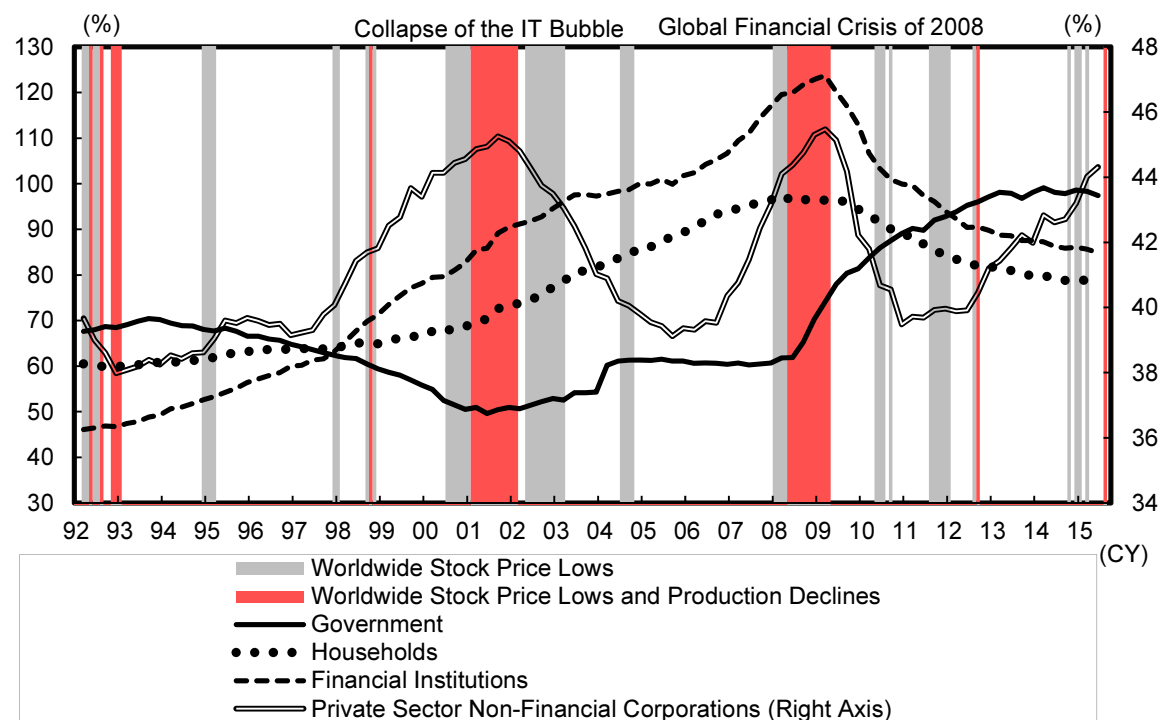
Source: FRB, BEA, Netherlands Bureau for Economic Policy Analysis, Haver Analytics; compiled by DIR.
Note: World stock price lows and production decline phases are expressed in terms of a comparison with past 6-month periods.

US corporations now on the brink of third stage of the debt cycle

In discussing US corporate debt it is useful to look at it in combination with the debt-to-equity ratio. When we line these two factors up we can observe the following sequence: (1) Increase in balance of debt as a proportion of GDP, (2) Increase in debt-to-equity ratio, and (3) Serious worldwide stock price lows and production declines (see Chart 21).

When we look at recent developments we can see that the US economy is now hovering at stage (1) in this sequence, and has not quite reached stage (2). Behind this lies the Fed's bold monetary easing, which has led to recent stock price highs in the US, and in turn has elevated the denominator of the debt/equity ratio (i.e. equity).

Now let's try doing a simulation of future prospects for the debt/equity ratio based on the historical relationship between the NY Dow Jones index and US GDP using a case where the Dow increases at the end of 2017 according to the following pattern: (1) 9,000 dlrs (down), (2) 18,000 dlrs (levels off), and (3) 22,000 dlrs (up). The only case in which the debt/equity rapidly increases is in (1). This is the same as what happened at the beginning of the global financial crisis of 2008. According to this basic scenario the economy should not lapse into a period of serious stock price lows and production declines for some time. However, once the Fed begins raising interest rates in December of 2015, if the pace of subsequent interest rate hikes and the adjustment in balance sheets is overly hasty, there is the danger that this could bring a sudden collapse in stock prices, causing the debt/equity ratio to rise. Hence caution is required.

Also worthy of note is that when we plot the relationship between balance of debt as a proportion of GDP and the debt-to-equity ratio on a scatter diagram, a large circle running clockwise appears on the graph which seems to map out the debt cycle (see Chart 22). From this we can see that the closer we get to the top left of the graph, the greater the possibility becomes that the economy could lapse into a period of serious worldwide stock price lows and production declines. We can also see from this diagram that we are now standing right on the brink of the third stage of the debt cycle.

The mechanism that emerges from this sequence of events has a cyclical structure and proceeds in the following stages: (1) During periods of economic expansion corporations step up their investment activities (debt increase) and stock prices rise, (2) Stock price adjustment ensues since stocks have gone too high, and corporate balance sheets worsen (more debt increase), (3) Adjustment of corporate balance sheets ensues as the economy slows down (debt reduction) and stock prices fall, (4) Debt reduction reaches its final stage and stock prices rebound.

Debt Situation of US Private Sector Non-Financial Corporations
Chart 21

Legend:
- Worldwide Stock Price Lows
- Worldwide Stock Price Lows and Production Declines
- Debt/Equity Ratio
- Balance of Debt as a Proportion of GDP
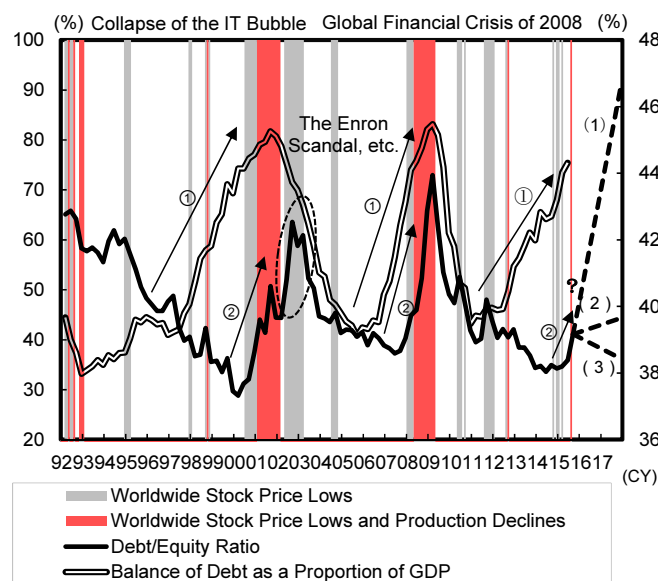
Source: FRB, BEA, Netherlands Bureau for Economic Policy Analysis, Haver Analytics, various references; compiled by DIR

Notes: 1) World stock price lows and production decline phases are expressed in terms of a comparison with past 6-month periods.

2) Future prospects for the debt/equity ratio based on case where the Dow increases at the end of 2017: (1) 9,000 dlrs (down), (2) 18,000 dlrs (levels off), and (3) 22,000 dlrs (up). Debt estimated using average growth rate of most recent year.

Debt Cycle of US Private Sector Non-Financial Corporations
Chart 22
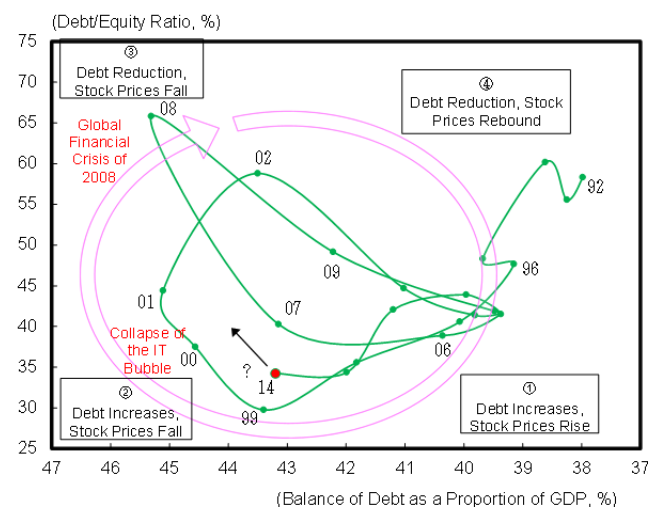
Source: FRB, Haver Analytics; compiled by DIR

Notes: 1) Balance of debt from end December of each year.

2) The debt cycle occurs in the following stages: (1) During periods of economic expansion corporations step up their investment activities (debt increase) and stock prices rise, (2) Stock price adjustment ensues since stocks have gone too high, and corporate balance sheets worsen (more debt increase), (3) Adjustment of corporate balance sheets ensues as the economy slows down (debt reduction) and stock prices fall, (4) Debt reduction reaches its final stage and stock prices rebound.

Monetary easing produces "mini-bubble" effect in credit market

In discussing the balance of US corporate debt as a proportion of GDP, it is important to consider trends in US high-yield bond spreads. Historically there is linkage between the two, and recently, high-yield bond spreads have been at a lower level compared to the balance of debt as a proportion of GDP (see Chart 23).

Behind this development is the bold monetary easing carried out by the Fed, along with the appearance of a liquidity market in which high-yield bonds have had their yields excessively suppressed. Put in another way, there is now a situation in the US credit market which could be referred to as a kind of "mini-bubble." However, when the Fed starts raising the interest rate in the near future, there may be demand for giving high-yield bonds a yield more in keeping with the corporate debt situation, and if that happens, high-yield bond spreads may also grow considerably.

Ultimately, everything depends on the Fed's finesse in managing its monetary policy

When considering the three major indices for US corporations which we have examined up to this point ((1) Balance of debt as a proportion of GDP, (2) Debt/equity ratio, and (3) High-yield bond spreads), the conclusion is that the question of whether the economy will lapse into a period of serious worldwide stock price lows and production declines depends largely on the Fed's competence in managing its monetary policy. Our basic economic scenario sees the Fed raising interest rates at a pace which is appropriate for the current economic situation, and that therefore, the financial markets and real economy will not be overly shaken up. However, we do still feel that the trend in the Fed's monetary policy should be carefully followed.

Balance of Corporate Debt as a Proportion of GDP and High-Yield Bond Spreads   **Chart 23**

Legend:
- Worldwide Stock Price Lows
- Worldwide Stock Price Lows and Production Declines
- Balance of Debt as a Proportion of GDP
- High-Yield Bond Spreads (Right Axis)
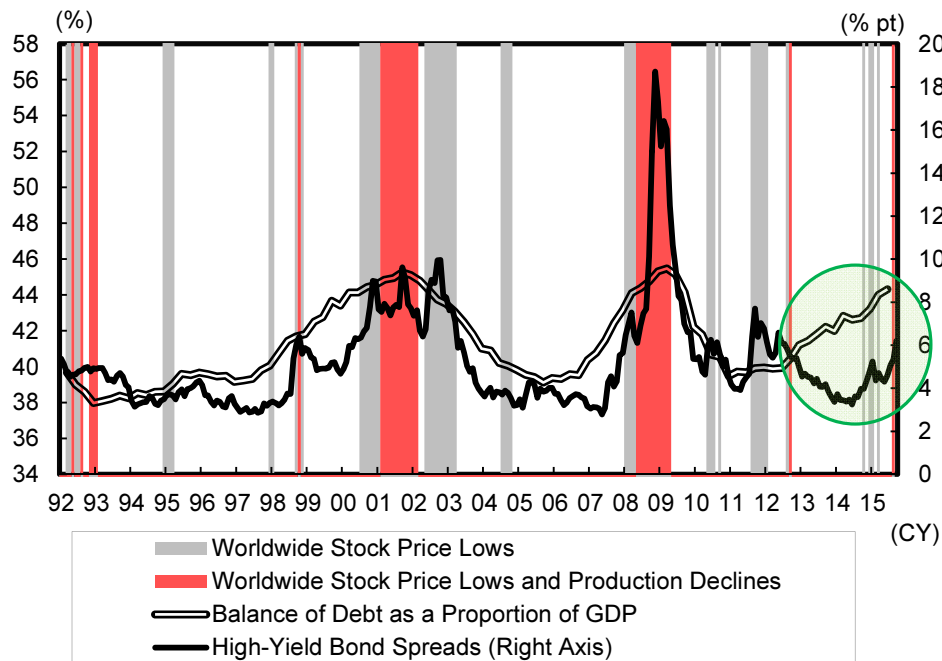
Source: FRB, Bank of America Merrill Lynch, Haver Analytics, various data sources; compiled by DIR.
Notes: 1) World stock price lows and production decline phases are expressed in terms of a comparison with past 6-month periods.
　　　2) Balance of debt from non-financial corporations.
　　　3) Information on high-yield bonds from Bank of America Merrill Lynch publication "High Yield Corporate Master II."
　　　4) High-yield bond spread = Yield on US high yield bond – US treasury 10-year bond yield.

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

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

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

First of all, the rise in the long-term interest rate in response to the hikes in the US policy rate will not only slow down the US economy, but also effect the raising of interest rates in other countries as well, due to arbitrage requirements for international interest rates. Chart 24 shows the worldwide flow of investment capital. The US procures capital from sources outside the US by selling government bonds, and supplies capital to overseas locations in the form of equity. In other words international credit creation takes place with the US as its axis. If US interest rates rise within this structure of international credit creation, the required rate of return on investment capital supplied to the world by the US will also increase. This would then cause interest rates around the world to rise. The concern is that as a result, the worldwide increase in interest would cause downward pressure on the world economy.

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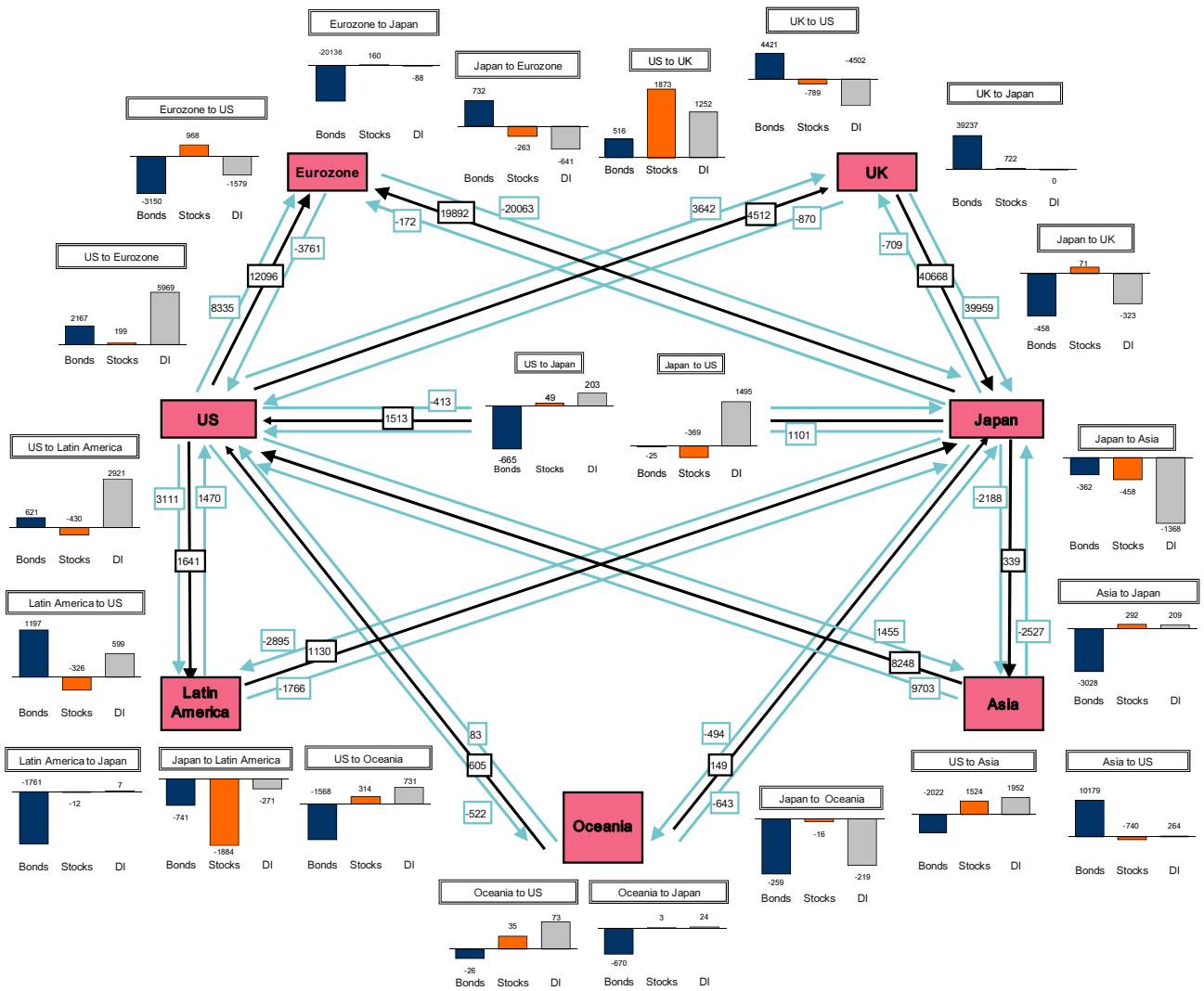
Source: US Dept. of Treasury, US Dept. of Commerce, Ministry of Finance; compiled by DIR.
Note: Unit: 100 mil dlrs, annualized rate. Data for Eurozone to Japan includes EU (25 countries) and UK. Asia does not include Japan. Latin America includes the Caribbean. Data for US-Oceania includes only Australia.

World economic model

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

An overview of the model is shown in Charts 25 and 26. The two charts show economic interdependence between the advanced nations and between advanced nations and emerging nations respectively. Our world economic model adopts two mechanisms – (1) Fluctuations in interest rates and foreign exchange rates which influence the real economy in relations between advanced nations, and (2) Fluctuations in interest rates and foreign exchange rates which result in fluctuations in foreign currency reserves and sovereign interest spreads, and in this way influence the real economy in relations between advanced nations and emerging nations.

Economic Interdependence Between the US and Europe   **Chart 25**
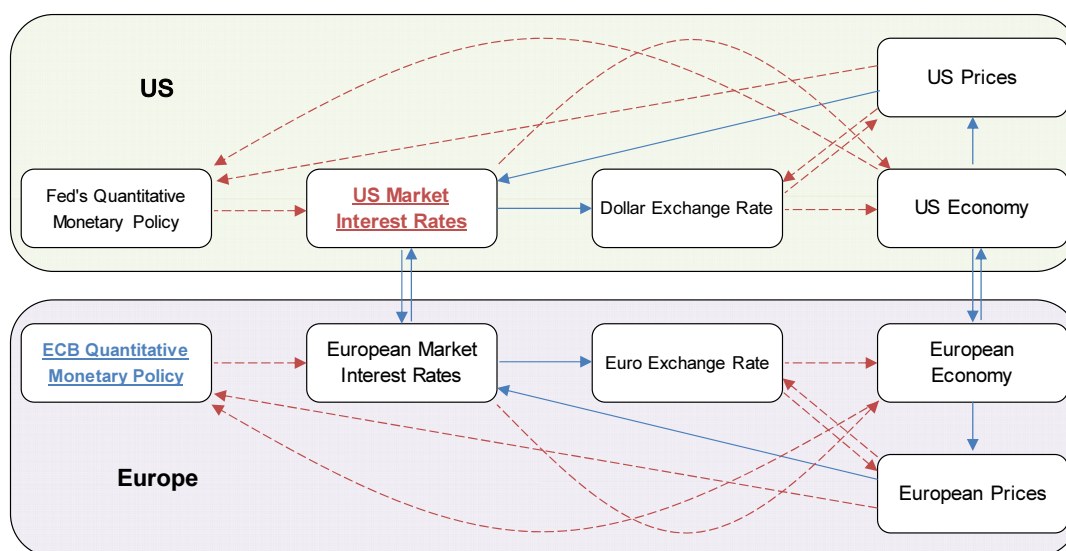
Source: Compiled by DIR
Note: Solid lines denote positive factors while dotted lines denote negative factors.

Economic Interdependence Between Advanced Nations and Emerging Nations   **Chart 26**
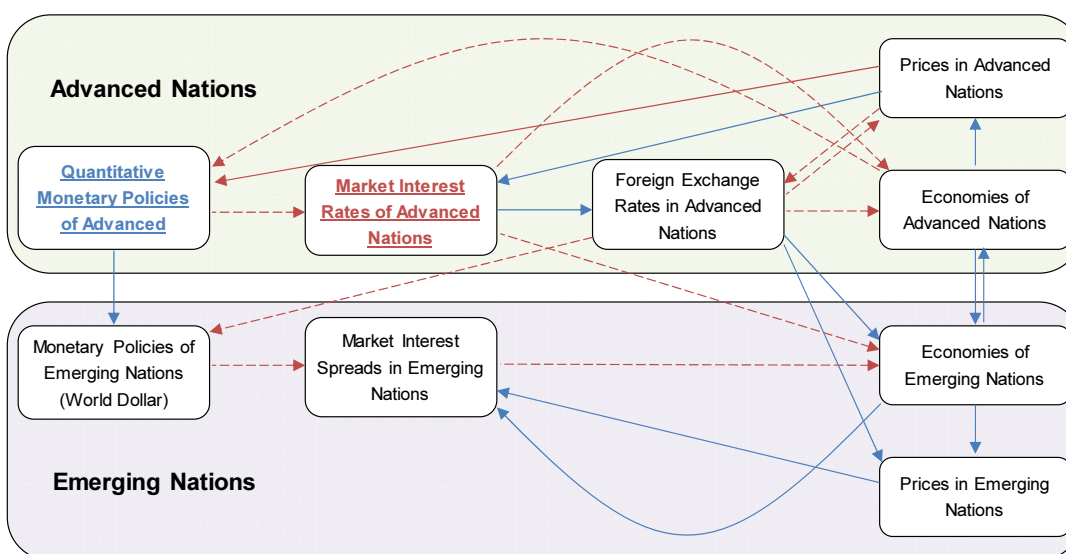
Source: Compiled by DIR
Note: Solid lines denote positive factors while dotted lines denote negative factors.

2.4 Which will be more influential? The Fed or the ECB?

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

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

Can EU quantitative easing ultimately compensate for the negative influence of the US interest rate hikes? In order to answer this question, we summed up the simulation results using our world economic model in Chart 27. The implications of these results are summed up in the following three paragraphs.

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

Secondly, the US itself will also feel some negative effects from the interest rate hikes, though the Fed's current stance is not to raise rates at such a pace that would bring negative effects on the economy. Far from it, the prerequisite to going ahead with the hikes is that it will ultimately improve the economy. For this reason, it would be more realistic to observe what happens when interest rate hikes are carried out at a neutral pace in relation to the US economy. Simulation results conforming to just this type of situation are shown in the right column of Chart 27. These values demonstrate that if the Fed's interest rate hikes can be kept to a neutral pace in relation to the US economy, there will be no negative effects. Or to put it in a different way, if the US economy performs favorably in parallel with the Fed's rate hikes, there will be no negative effects on the world economy.

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

Simulation Results Using World Economic Model   **Chart 27**

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

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

2.5 Emerging Nations No Longer Face Tail Risk

Balance sheets of emerging nations have improved considerably

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

Chart 28 depicts changes in risk resilience of emerging market nations from the year each nation experienced a financial crisis. Learning from past financial crises, these nations have amassed huge foreign currency reserves. Not only has the absolute size of such reserves increased, but the size of foreign currency reserves relative to goods and services imports (vertical axis) and that relative to short-term foreign debt (the sizes of circles) have also improved for most nations. Moreover, the debt service ratio, defined as debt service payments for external debt as a percentage share of goods and services exports, a leading indicator used to determine country risk, has fallen for the most part (conditions have improved) since the financial crisis.

Of course, this merely indicates a lowering of risk of a currency crisis occurring. The argument here does not include the question of private sector debt, which over the past several years has grown rapidly in the emerging nations. We have seen issues arise in the past, such as the "Taper Tantrum" which occurred due to the tight-money policy of the US in 2013, and it is likely that this time around there will also be a certain amount of downward pressure on the economies of the emerging nations because of changes in interest rate. Even so, this will act merely as a downside factor, and should not create anything as drastic as a currency crisis. In fact, we believe that the receding of risk is the most significant factor here.

Risk Resilience of Emerging Market Economies　　　　　　　　　　　　**Chart 28**
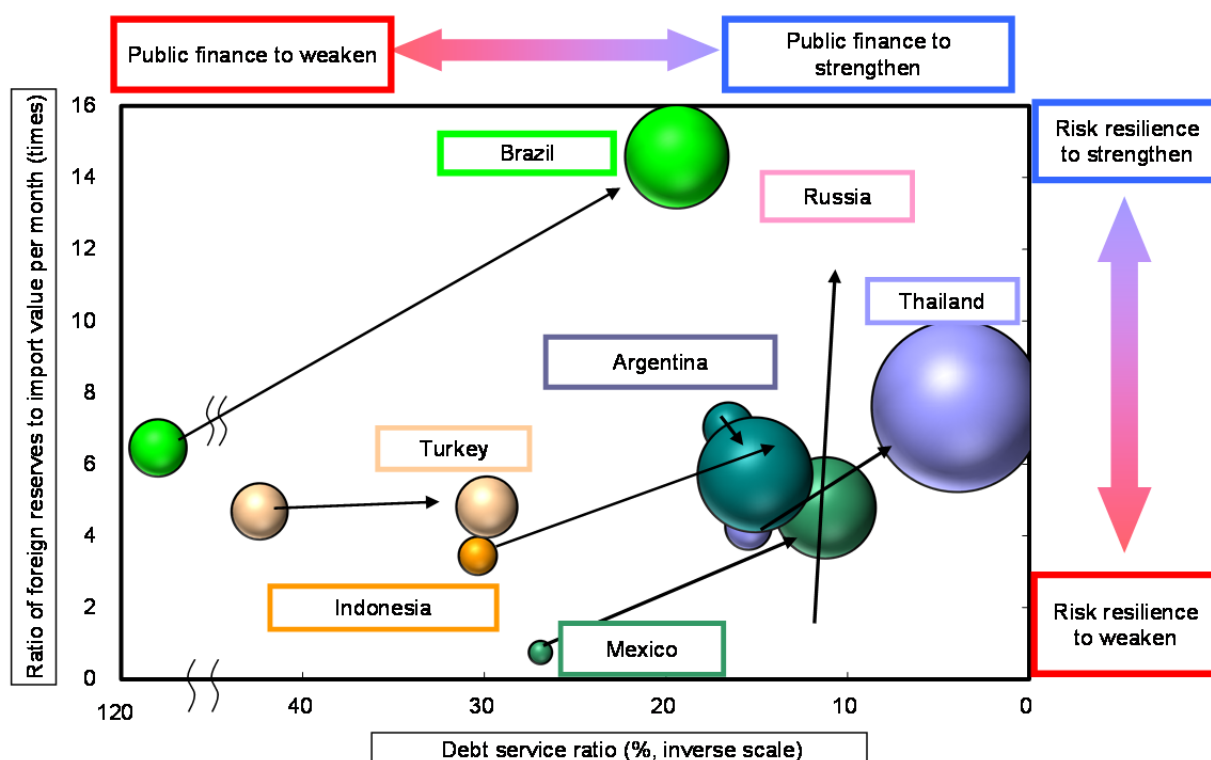
Source: Haver Analytics; compiled by DIR.
Notes: 1) Arrows denote shift of positions at critical moments to 2012.
　　　2) Year of crises defined as 1994 for Mexico, 1997 for Thailand and Indonesia, 1998 for Russia, 1999 for Brazil, 2001 for Turkey, and 2002 for Argentina.
　　　3) Size of circles shows ratio of foreign reserves to foreign debt with less than one-year maturity. The larger the circle, the greater the resilience.

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

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

In light of what has been discussed so far in this section, we now calculate the effects on Japan's economy using another model (Japan's short-term macro-economic model) (see Chart 29). The implications of these findings are explained in the following.

First of all, it is inevitable that Japan's economy will slow down as the US heads towards interest rate hikes. The column on the furthest left side of the chart shows the total effect of US interest rate hikes and ECB quantitative easing measures. According to these results we should expect Japan's real GDP to be reduced by a cumulative total of 0.18% by 2017.

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

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

However, the conclusion reached here is based on calculated values using the DIR macro model, and hence should be taken with a certain grain of salt. The important point here is the assumption that the Fed will succeed in raising interest rates – an action it is taking because of the favorable US economy, and that this will not cause turmoil in the financial markets. As has been mentioned previously in this chapter, the question of whether the negative scenario indicated by the calculated values in the DIR macro model materializes depends largely on the Fed's finesse in managing its monetary policy.

Simulation Results Using Japan Economic Model					Chart 29
		US Interest Rate Hikes + EU Quantitative Easing			US Interest Rate Hikes with Neutral Effect on Economy + EU Quantitative Easing
			US Interest Rate Hikes	EU Quantitative Easing	
Real GDP	2015	0.00%	0.00%	0.01%	0.00%
	2016	① -0.06%	-0.08%	0.05%	② -0.01%
	2017	-0.18%	-0.23%	0.09%	-0.01%
Exports	2015	0.02%	0.00%	0.07%	-0.02%
	2016	-0.36%	-0.52%	0.34%	-0.03%
	2017	-1.06%	-1.34%	0.50%	-0.05%
capex	2015	0.00%	0.00%	0.02%	0.00%
	2016	-0.09%	-0.13%	0.09%	-0.02%
	2017	-0.29%	-0.37%	0.15%	-0.05%
Nominal Effective Yen Rate	2015	0.02%	-0.07%	0.20%	0.02%
	2016	-0.71%	③ -0.92%	0.44%	-0.71%
	2017	-1.50%	-1.73%	0.48%	-1.50%

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

3. Japan's Main Economic Scenario – Moving toward Moderate Recovery in 2016

3.1 Japan's Economy Enters Technical Recession

Japan's economy is in a technical recession, but is expected to move toward recovery in 2016

With the most recent two quarters recording negative growth, Japan's economy is now in a technical recession. However, according to our main scenario, we expect it to move toward a gradual recovery during the year 2016 due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) A gradual comeback in exports centering on the US.

In this chapter, we examine the possibility that Japan's economy, now in a technical recession, may have officially entered a recession phase.[3] We also discuss the economic trends moving beyond this point. Our conclusion is that judging from the performance of major demand components in the GDP statistics, there is a possibility that Japan's economy has officially fallen into a recession. However, examination of three major judgment criteria ("merkmal") suggests that Japan's economy is still in a temporary lull. In either case, the adjustment phase in Japan economy is expected to be both short-term and fairly minor. We see Japan moving toward a moderate recovery during the year 2016. Overseas economies present a major risk factor, but exports to the US are beginning to make a comeback, hence we expect exports to avoid falling further than previous lows. At the same time, the utmost care is still required in regard to lingering fears that China's economy will move further into a downturn.

Chart 30 shows Japan's real exports along with industrial production and inventory cycle. There are signs that real exports may be moving toward a comeback, and production, which has recently been stagnant, promises a recovery in the future. In addition, the fact that inventory adjustment has steadily progressed is also worthy of note.

Japan's Real Exports, Industrial Production, and Inventory Cycle — **Chart 30**

Real Exports and Industrial Production

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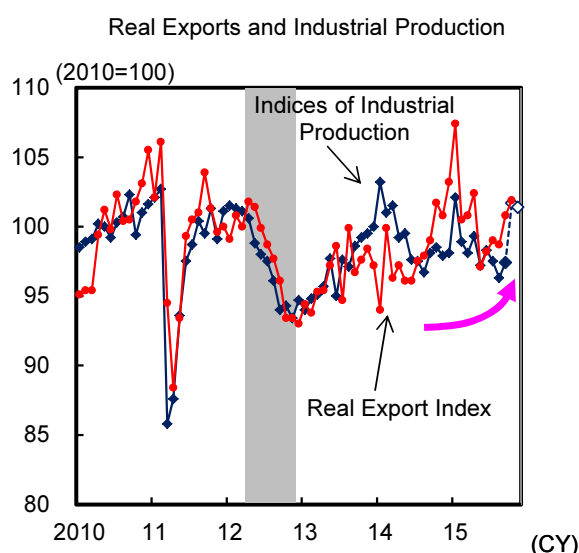
Source: Cabinet Office, Bank of Japan, and Ministry of Economy, Trade and Industry; compiled by DIR

Notes: 1) The shaded areas represent periods of economic slowdown.
2) Data for the latest two months of industrial production make use of values from METI's production forecast survey.
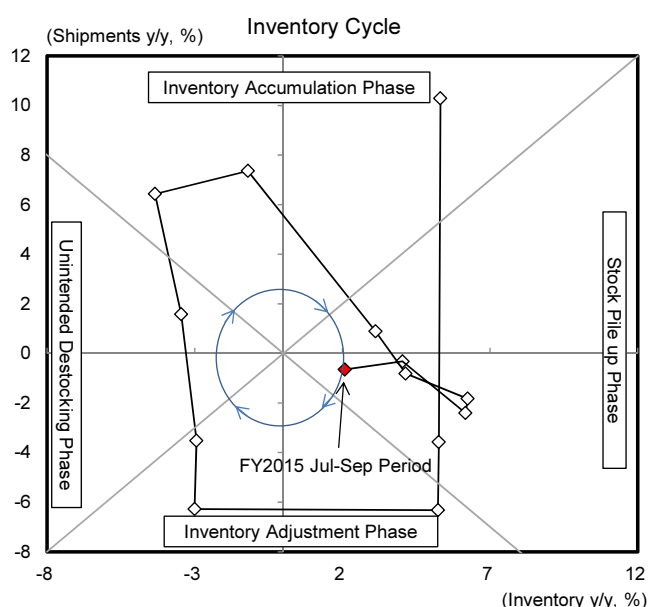
Source: Ministry of Economy, Trade and Industry; compiled by DIR

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[3] Japan's periods of economic expansion and recession discussed in the Diffusion Index Study Group and officially determined by the Economic and Social Research Institute.

Growth in real wages provides underlying support for personal consumption

Growth in real wages is expected to provide underlying support for Japan's economy through the revitalization of personal consumption.

Chart 31 indicates that real wages per capita have recently been continuing to exceed the previous year's levels. Major declines in real wages continued in FY2014 due to the effects of the increase in consumption tax, but the tax hike's effect of pushing up prices has now dissipated, while in addition, the collapse of the price of crude oil has had the effect of keeping prices down, thereby contributing significantly to bringing the level of real wages back up. In addition to the effect prices have had on pushing up real wages, supply and demand of labor has become increasingly tight, while the recent increase in pay scale has brought on a continued upward trend in nominal wages. This has caused the income environment to maintain a positive tone.

Looking at macro wages (wages per capita x number of employees), y/y growth well above the 2% level has become the norm. The number of employees has continued to grow, and macro wages have grown as a result.

When we evaluate historical data, we see that growth in regular wages has a significant effect on expenditure, especially that going toward durable goods and services. Meanwhile, growth in number of employees tends to spur consumption of services. Considering the estimated results of these factors, future personal consumption promises increasingly to encourage more consumption of services. Moreover, recovery to a growth trend in consumption of durable goods, which continued at a low after the increase in consumption tax, is promising.

Wages Per Capita and Macro Wages   **Chart 31**
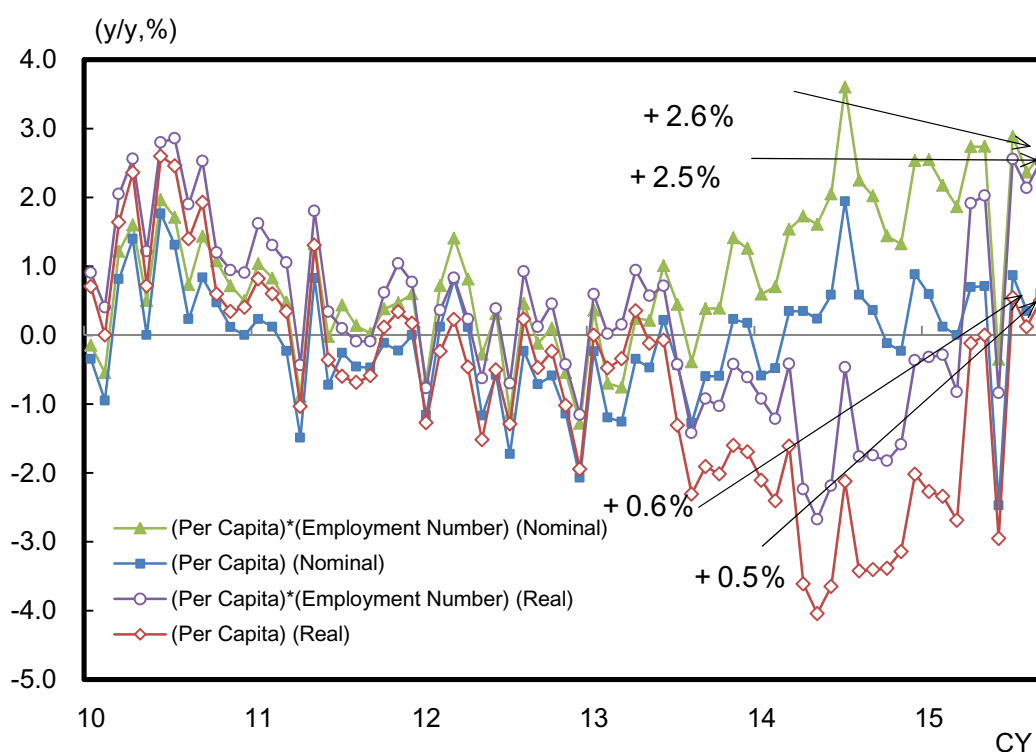
Source: Ministry of Health, Labour and Welfare; compiled by DIR.

3.2 Is Japan's Lapse into Recession Official?

3.2.1 In light of historic GDP statistics, the possibility that Japan has entered a recession phase cannot be denied

GDP statistics by source of demand suggest that a recession is possible

A major focus in arguments surrounding the future of Japan's economy is whether the current technical recession can be determined to have officially become a recession.

Chart 32 provides a comparison between average real GDP figures during periods of temporary lull and periods of recession experienced since the 1980s. There are two major points we would like to make here.

First, there is the question of what drives the economy during these periods. In the case of a temporary lull, the largest factor often seems to be a temporary adjustment in personal consumption sparked by worsening consumer confidence. Meanwhile, exports also tend to slow down during a temporary lull, though it is important to note that they still maintain a basically positive tone. In contrast, during a full-blown recession, exports tend toward negative growth.

Secondly, private sector inventory also behaves differently during periods of temporary lull and periods of recession. Looking at past averages, we see that one quarter before entering a temporary lull, private sector inventory provides a negative contribution to GDP, but then turns in the positive direction after entering a lull. Conversely, one quarter before entering a recession, private sector inventory provides a major positive contribution to GDP, but then its contribution becomes small once the economy has entered recession.

Judging from these two characteristics seen in GDP statistics by source of demand, there is some risk that Japan's economy could lapse into recession.

First, looking at GDP statistics by source of demand during the Apr-Jun 2015 period, we see that exports to Asia and the US fell sharply, bringing major downward pressure on the economy. As was mentioned earlier, a large part of this has to do with the maturation of the world economy, causing global trade volume to become sluggish.

Secondly, taking a look now at inventory trends, we see that private sector inventory contributed considerably to positive GDP statistics during the Jan-Mar period when the economy recorded high growth, but then the extent to which it contributed was much smaller during the Apr-Jun period.

Judging from these two tendencies, it is possible that Japan's economy could be judged to have now officially entered a recessionary phase. The rapid decline in exports mentioned above is especially important to consider here.

Overseas economic trends a major key

Another factor which can be observed in Chart 32 and which helps give us an idea of what the future holds for Japan's economy is change in average GDP during periods of temporary lull and periods of recession. The deciding difference between the two resides in the behavior of three sources of demand – (1) exports, (2) capex, and (3) private sector inventory. During a recession, all three of these factors tend to decline, while during a temporary lull, they perform slightly on the positive side.

Considering these factors, when we observe the current averages, the most important factors are (1) the decline in exports and (2) the decline in capex. The current situation is such that it is quite possible Japan's economy can now be determined to have entered a recession.
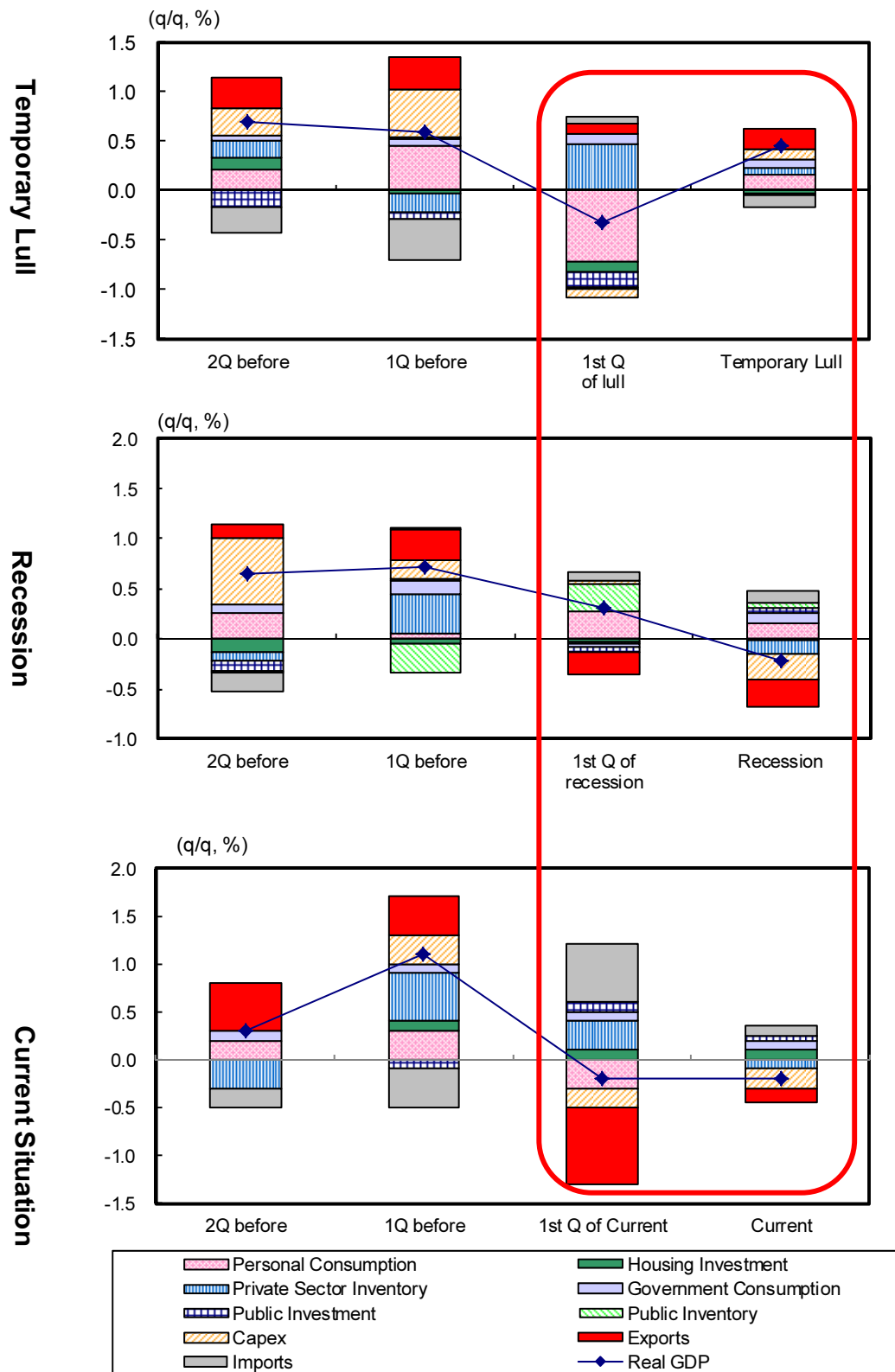
Source: Cabinet Office; compiled by DIR.
Notes: 1) Average period of temporary lull since 1980s. Periods set by DIR.
   2) Jan-Mar period of 1980 to Apr-Jun period of 1994 uses year 2000 as reference. Jul-Sep period of 1994 uses year 2005 as reference.
   3) First quarter this time is Apr-Jun period of 2015. Average this time is the average of the Apr-Jun period and Jul-Sep period of 2015.

3.2.2 Japan's Economic Adjustment Should be Short-Term and Mild

Three major merkmal (judgment criteria) differentiating periods of temporary lull from periods of recession suggest that Japan is still in a temporary lull

Next we examine the current condition of Japan's economy as seen in monthly statistics in order to get a better grasp of the recent economic trend. As a result of studying and comparing a broad range of economic indices and financial data occurring within Japan's historic periods of temporary lull and recession, we have identified three indices which act as merkmal (judgment criteria), and which provide a means of differentiating between these two types of periods. These are (1) The coincident index, (2) The ISM manufacturing index, and (3) The shipment-inventory balance.

Chart 33 (top) shows changes in the coincident index. Recently the index has been maintaining a higher level than its average low during past periods of temporary lull. This tells us that there is no need for pessimism in regard to the recent economic situation. The lower left portion of Chart 33 shows changes in the ISM manufacturing index (an index used in the US to measure business confidence in the manufacturing industry). Here too we have reached similar conclusions. In other words, trends in overseas economies, which have great influence on Japan's economy, do not show the kind of weakness that would be required to push the Japanese economy into recession. In addition, looking at the bottom right portion of Chart 33, which shows the shipment-inventory balance, a leading indicator of production, we see that this index also has been maintaining a higher level than its average low during past periods of temporary lull. We can also see that industrial inventories have been trending upwards of late, but this is due largely to special factors, mainly the revision of the ministerial ordinance and notification regarding the off-road law, which has led to the tendency to keep a certain portion of machinery in storage after its production. As a result, inventory levels have increased, though most of it is not "unintentional", in other words it is not due to slow business. Inventory other than that falling under the above category is actually beginning to decline. Hence there is no need for undue anxiety as regards inventory adjustment.

Coincident Index
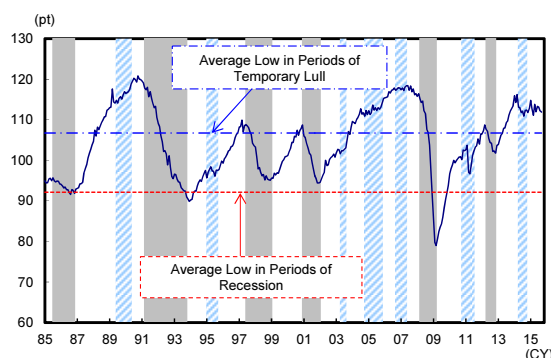
Source: Cabinet Office; compiled by DIR.
Note: Shaded areas represent periods of recession in Japan, while those with
diagonal stripes represent periods of temporary lull.

ISM Manufacturing Index
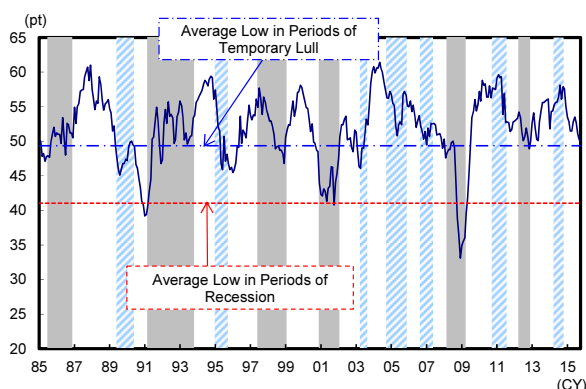
Source: Cabinet Office, Haver Analysis; compiled by DIR.
Note: Shaded areas represent periods of recession in Japan,
while those with diagonal stripes represent periods of
temporary lull.

Shipment-Inventory Index (Less Construction Machinery)
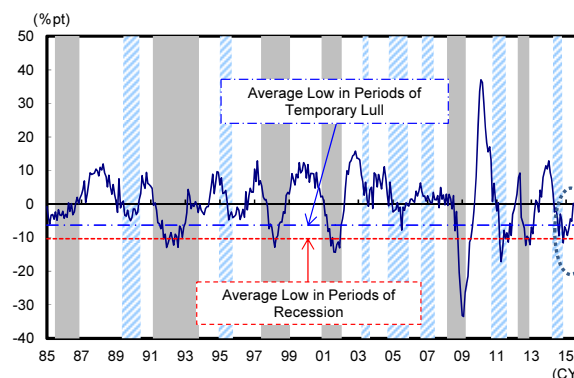
Source: Cabinet Office, Ministry of Economy, Trade and Industry;
compiled by DIR.
Notes: 1) Shaded areas represent periods of recession in Japan,
while those with diagonal stripes represent periods of
temporary lull.
2) Shipment-Inventory Balance = Y/y Comparison of
Shipments – Previous Year's Inventory Level.

Conclusion: Even if Japan's economy is judged to be officially in recession, adjustment should be short-term and mild

To sum up our argument, though Japan's economy may be judged to be officially in recession based on trends in the major demand components in GDP statistics, three important merkmal suggest that it is still in a temporary lull, leaving us with mixed results. Furthermore, even if Japan's economy is judged to be officially in recession, we believe that adjustment will be short-term and mild based on the following positive factors. (1) Real exports are heading toward a comeback, (2) Production is heading for recovery, (3) Inventory adjustment has progressed, and (4) Real wages have grown. Our main scenario expects that the Japanese economy will gradually head toward recovery during the year 2016.

US economic trends are an important factor

Lastly, we would like to again emphasize the importance of US economic trends in forecasting the future of Japan's economy. Japan's exports are closely linked to business sentiment in the US corporate sector.

Chart 14 shows changes in the ISM manufacturing index (an index used in the US to measure business confidence in the manufacturing industry) and Japan's export volume index. Both reveal a high rate of linkage, and the chart confirms that US manufacturing getting back on its feet is what holds the key to the future of Japan's exports. The US has been Japan's biggest trading partner for a long time now, and it goes without saying that the US economy continues to have great influence on the Japanese economy through export business. But US influence doesn't stop there. It also comes in the form of exports of intermediate goods to countries other than the US. This is why Japan's export volume to the rest of the world tends to follow behind business sentiment in the US.

The ISM manufacturing index declined rapidly toward the end of 2014, then lagging somewhat behind this index, Japan's exports declined sharply. However, the ISM manufacturing index has recently managed a slight rebound. It is still just the beginning, but in light of the historic relationship of this index with Japan's economic performance, prospects are good that Japan's export volume will gradually return to a growth trend in the future.

Relationship Between the ISM Manufacturing Index and Japan's Export Volume Index   Chart 34
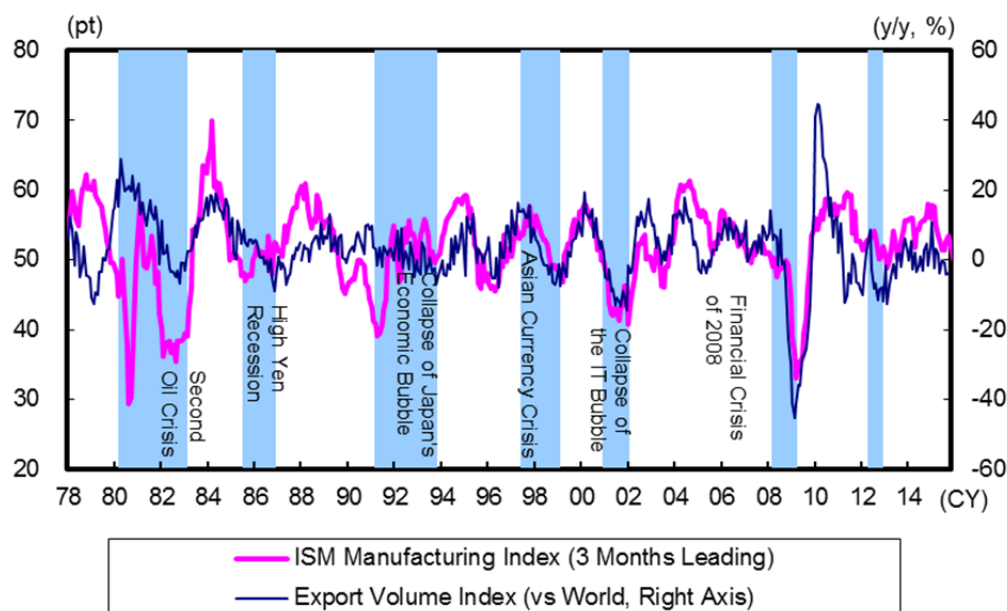
Source: ISM, Ministry of Finance, Bank of Japan, Cabinet Office; compiled by DIR.
Notes: 1) Figures prior to 1987 represent year-to-year difference in real exports (export value/export price).
2) The shaded areas represent periods of recession.

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

Five risks facing Japan's economy

Risk factors for the Japanese economy are: (1) The downward swing of China's economy, (2) Tumult in the economies of emerging nations in response to the US exit strategy, (3) A worldwide decline in stock values due to geopolitical risk, (4) Trends in the Eurozone economy, and (5) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market due to loss of fiscal discipline.

In this chapter we place focus on the risk factor which is of the utmost concern for those involved in the financial markets, and we provide an in-depth analysis of the situation. Our outlook for China's economy is optimistic in the short-term and pessimistic in the mid to long-term. Looking at China's economic situation in a somewhat reductive way, the fact is that China's government holds treasury funds totaling between 600 to 800 tril yen with which it is standing up to over 1 quadrillion yen in excessive lending and over 400 tril yen in excess capital stock. China is expected to be able to avoid the bottom falling out of its economy for a little while, but in the mid to long-term, there is risk of a massive capital stock adjustment.

4.1 Overview of Problems that China's Economy Faces

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

Since the summer of 2015 fears have grown rapidly regarding the imminent collapse of China's economic bubble. China's sudden step towards devaluation of the renminbi triggered a seismic event in the global financial markets. How are we to understand the risks now facing the Chinese economy? (More detail on this subject can be found in *Japan's Economic Outlook No. 186 Update (Summary)*, September 8, 2015, by Mitsumaru Kumagai.)

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

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

In this section we discuss China's two huge excesses. The first financial excess is excessive lending. Excessive lending in China is estimated at a total of 1,000 tril yen (see Chart 35). If a certain percentage of this amount becomes irrecoverable, it would mean hundreds of trillions of yen in non-performing loans. When Japan's economic bubble burst it carried non-performing loans totaling 100 tril yen. Considering this fact, it is not an overstatement to call this the biggest economic bubble in history.

The global financial markets are increasingly nervous about the possible risk scenarios, including (1) China drawing down its foreign currency reserves (around $3.5 tril as of end October 2015) 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 35**

(%)

4 tril yuan package
of emergency measures
in the wake of the global
financial crisis

208%

1044tril yen

2002-2008 Trendline

02 03 04 05 06 07 08 09 10 11 12 13 14 15

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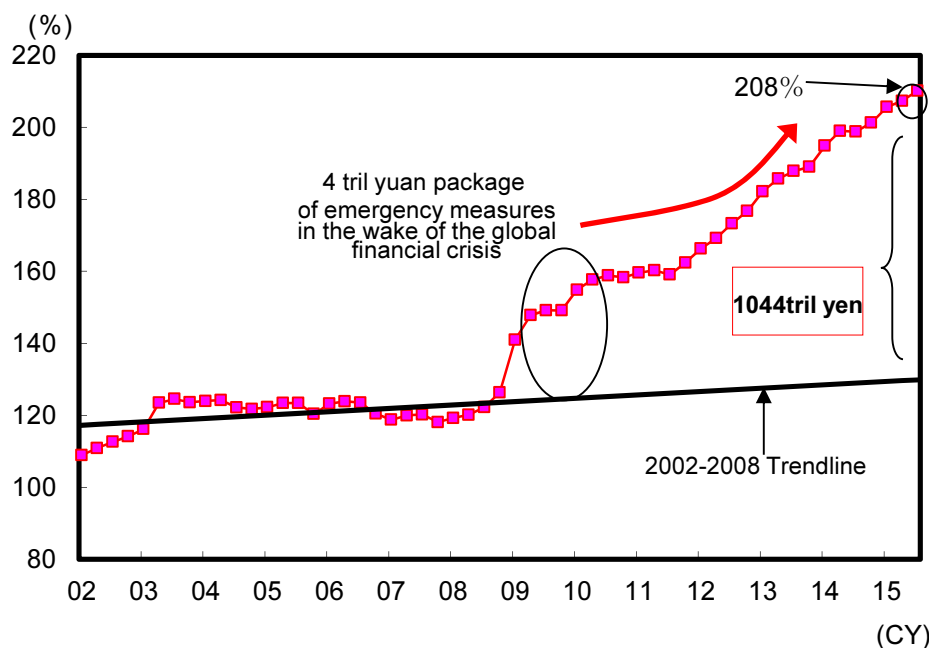
Source: People's Bank of China, National Bureau of Statistics of China; compiled by DIR.

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

China's excesses: (2) Excess capital stock totaling over 400 tril yen

China's second excess is in the area of surplus factories and machinery, in other words excess capital stock. The gross amount in capital stock is estimated at over 400 tril yen. China now stands at a major crossroads in its economic growth model, which until now was a hand-to-mouth approach to managing an economy, focusing on attracting foreign investment and using that to increase capital stock which would stimulate growth.

Chart 36 shows long-term change in China's capital coefficient (= real capital stock / real GDP). This chart indicates that China's policies for handling the aftermath of the financial crisis of 2008 led to the carrying out of large-scale capital investment, and we see that in recent years, the capital coefficient has been on the rise. Recently, the coefficient has moved further upwards on the chart, diverging markedly from the trend of the past twenty years. It appears that the sense of overcapacity is increasing.

Using the rate of divergence from past trends in the capital coefficient, we can calculate the amount of surplus in real capital stock. This shows us that as of the year 2013, China held a surplus of 19.4 trillion yuan in capital stock (about 12% of real capital stock).

1952-66 Average = 1.93

1967-78 Average = 2.50

1979-89 Average = 2.67

1990-95 Average = 2.64

1996-2013 Average = 2.78

Amount in Real Capital Stock Surplus
19.4 tril yuan

1966 Cultural Revolution

1979 Reform and Opening-Up Policy

1989 Tiananmen Square Massacre

1995 Globalization

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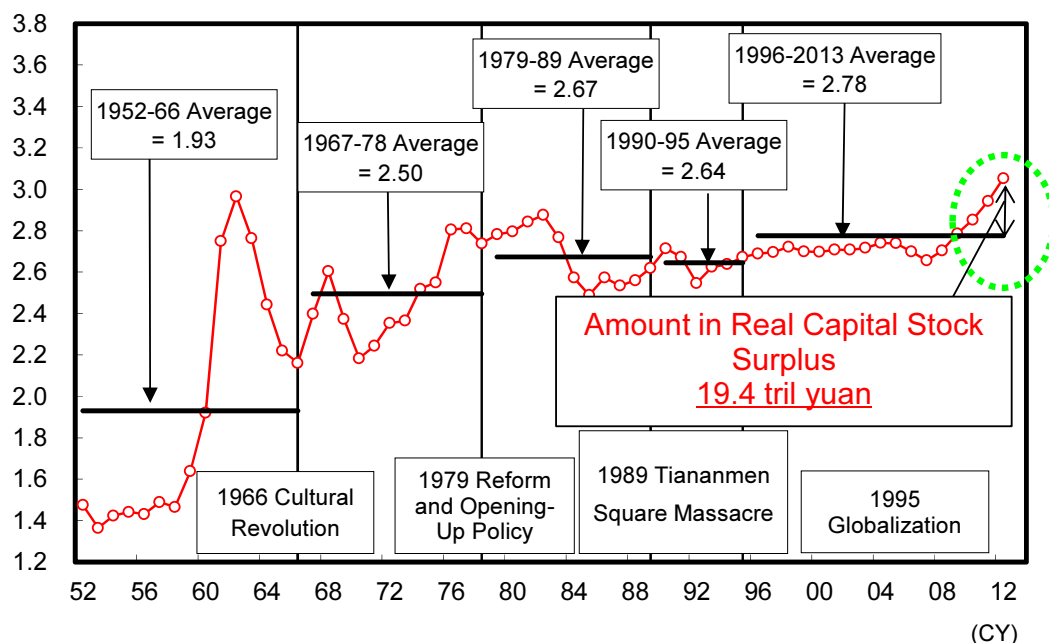
Source: National Bureau of Statistics of China, CEIC, Haver Analytics, World Bank; compiled by DIR.
Notes: 1) Capital coefficient = real capital stock / real GDP
       2) Figures from the year 2010 are used for both real capital stock and real GDP.

Room for around 600-800 tril yen in public spending

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

According to data from the IMF on general government debt-to-GDP ratio in 2014, the G5 nations (except for Japan) had an average value of 90%, while the GIIPS nations (except for Greece) had an average value of 118%. In comparison to these figures, China's is relatively low 41% (see Chart 37). Moreover, in comparison to Japan, whose fiscal condition is the worst amongst the major industrialized nations at 246%, China weighs in at only one sixth that amount.

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

Problems facing China's economy: the big picture

To explain the situation which China's economy now faces in as simple terms as possible, it holds over 1,000 tril yen in excessive lending and over 400 tril yen in excess capital stock in relation to which the Chinese government has funds of around 600-800 tril yen in its treasury.

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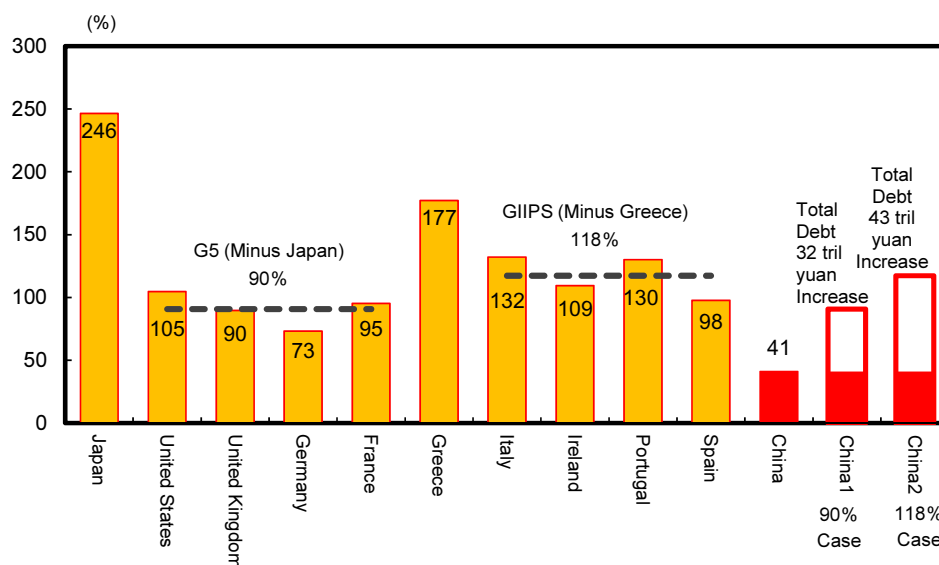
Source: IMF; compiled by DIR.

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

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

Here we take a quantitative look at the potential magnitude of the collapse of China's economic bubble assuming it occurs. According to our simulation, a meltdown scenario caused by surplus capital stock adjustment would cause China's potential growth to fall to 1.6%, while the real economic growth rate would be in the negative numbers (See Chart 38).

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

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

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

Factor Analysis of Potential Growth Rate

(Real GDP Growth Rate: Annual Rate %)
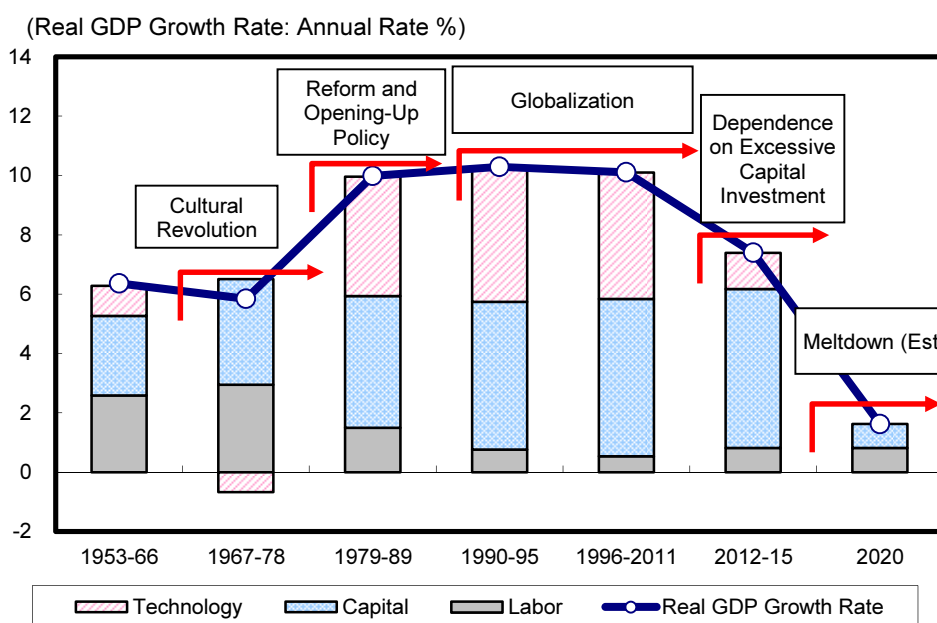
Source: CEIC, World Bank; compiled by DIR.
Note: Major events: 1966 – The Cultural Revolution, 1978 - Reform and
Opening-Up Policy, 1989 – Tiananmen Square Massacre

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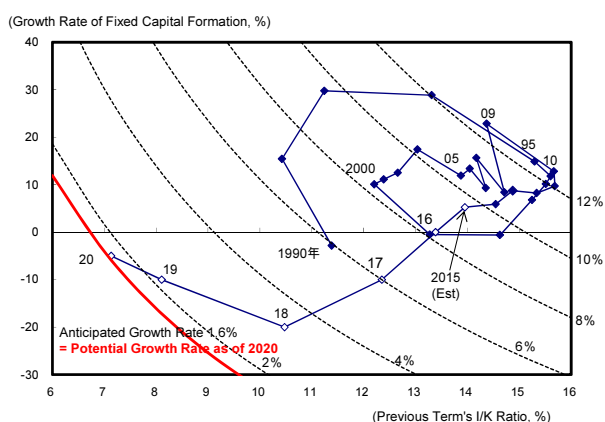
Source: National Bureau of Statistics of China, Haver Analytics,
World Bank; compiled by DIR.

Economic Growth Rate
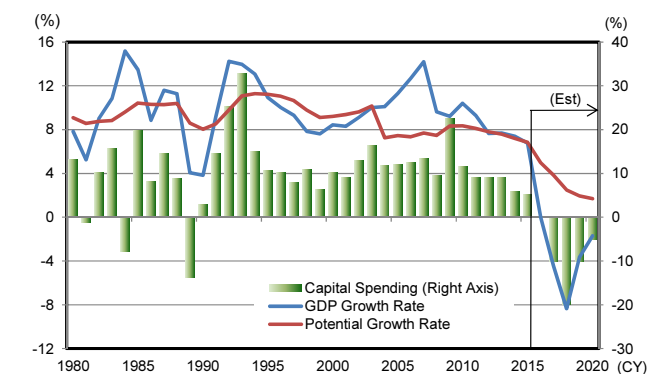
Source: CEIC, World Bank; compiled by DIR.

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

China's business cycle signal index sees economy bottoming out

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

Looking at China's business cycle signal index (see Chart 39), we see that the economy began strengthening its downward trend after the beginning of 2014, then entered the zone indicating economic decline (33.33-63.33) in June 2015 when it hit 60.7 on the scale. However, with the help of recent fiscal and monetary measures, the index now shows that China's economy is bottoming out.

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

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

China's Business Cycle Signal Index	Chart 39
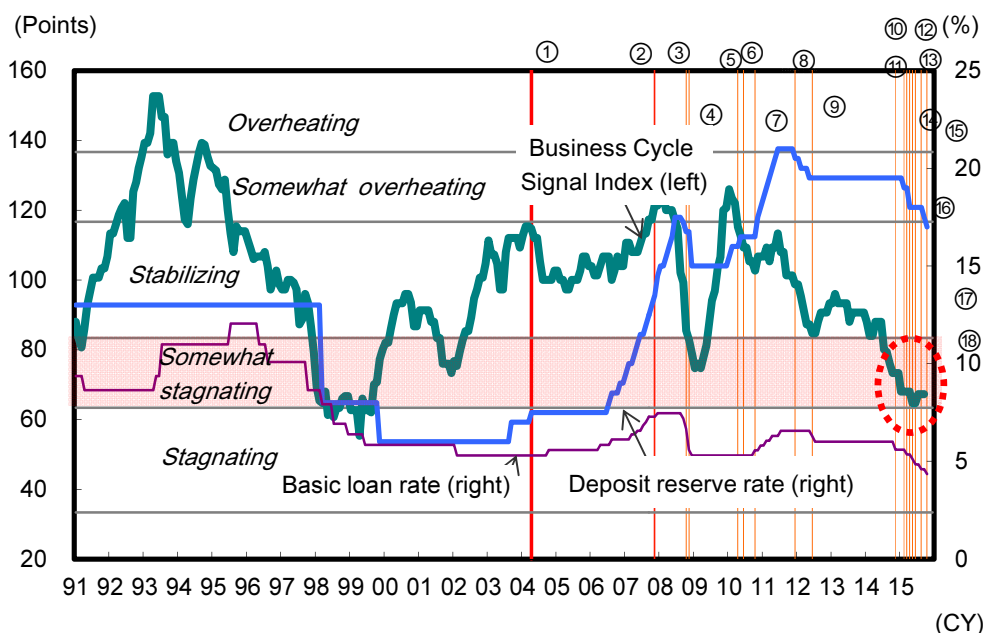

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1. Apr 2004: Restrictions on aggregate loans strengthened
2. Oct 2007: Restrictions on aggregate loans strengthened
3. Oct 2008: Restrictions on aggregate loans eased
4. Nov 2008: Stimulus package of 4 tril yuan announced
5. Apr 2010: Real estate regulations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

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

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

We should also note here that the leading index of the 70-City New Home Price Index (y/y change) is now moving upward (Chart 40). The "number of cities rising – number of cities falling" category under the Respective City Price Index (m/m change) of China's 70-City New Home Price Index tends to lead the 70-City New Home Price Index by six months. Taking a look at changes in the "number of cities rising – number of cities falling" category, we see that it has been gradually rising after having

hit bottom in September of 2014, and has picked up the pace of growth since March 2015. For this reason, signs of the decline coming to an end have been seen since the beginning of 2015 in the 70-City New Home Price Index, and possibilities are now good that the index may begin to gradually move upward in the future.

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

China's 70-City New Home Price Index　　　　　　　　　　　　　　　　　　　　　**Chart 40**
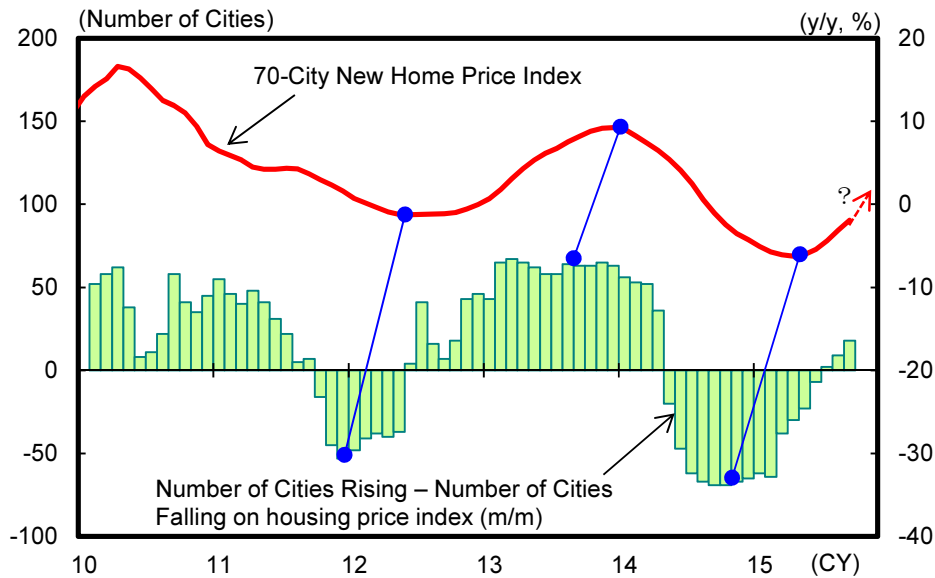
Source: National Bureau of Statistics of China; compiled by DIR.
Note: The 70-City New Home Price Index is the simple average value of home prices in 70 cities.

5. Supplement: Alternative scenarios

Here, we estimate likely economic effects from changes in our assumptions. The assumptions and effects of alternative scenarios are shown in the two charts below. The charts below show the effects on real GDP based on the assumptions used in our standard scenario, as well as cases in which one of the four risk scenarios covered earlier in this report actually occurs. We assume alternative scenarios might emerge from Jan-Mar 2016.

Standard and Alternate Scenario Assumptions

	Standard scenario	Alternate scenario (in each quarter in both years)
Case 1: Forex rate	Y122.6/$ in FY15 and Y125.0/$ in FY16	Y10 appreciation against $
Case 2: Crude oil prices (WTI futures)	$47.5/bbl in FY15 and $44.3/bbl in FY16	20% rise per qtr
Case 3: World GDP	+3.0% y/y in CY15 and +3.1% y/y in CY16	1% contraction in world GDP level
Case 4: Long-term interest rate	0.35% in FY15 and 0.35% in FY16	1% pt rise

Source: Compiled by DIR.

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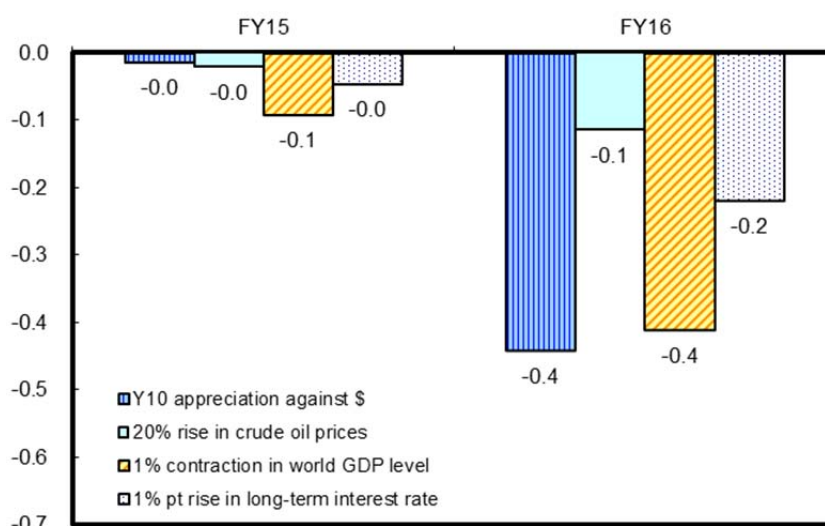
Source: Compiled by DIR.

5.1 Yen appreciation

Appreciation of the yen could result in a decline in exports via weakened price competitiveness, which in turn would curb the production of export industries (electrical machinery, transportation equipment) and operations of related non-manufacturing industries (transportation, electric utilities, commerce), resulting in lower sales and profits, reducing cash flow, and worsening expectations of economic growth. Thus, capex would be restricted. Meanwhile, lower import prices (reflecting a stronger yen) would reduce general domestic prices, meaning lower prices of corporate and consumer goods. Thus, although the real purchasing power of households would increase, a stronger yen could adversely affect consumption because the decline in corporate profits could impact households through deterioration in the employment and income environment. However, considering the long time lag before effects on consumption are felt, the likely impact within our simulation period would be minimal. If the yen appreciates as indicated in our alternative scenario, real GDP level is forecast to shrink 0.0% and 0.4% in FY15 and FY16, respectively, compared to our standard scenario.

5.2 Surge in crude oil prices

If crude oil prices rise by 20% above our standard scenario, real GDP level is forecast to shrink 0.0% in FY15 and 0.1% again in FY16 compared to our standard scenario.

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

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

5.3 Contraction of world GDP

If world demand (GDP) contracts by 1% from our standard scenario, Japan's real GDP level would shrink 0.1% in FY15 and 0.4% in FY16 compared to our standard scenario.

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

5.4 Higher interest rates

If long-term interest rates rise 1 point above our standard scenario, real GDP level would contract 0.0% in FY15 and 0.2% again in FY16 compared to our standard scenario. Increased fund-raising costs due to higher interest rates would curb capex and housing investment. Such an adverse impact would accelerate once it took hold.

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

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

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

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

Simulation Results								Chart 42
	Standard Scenario		Case 1				Case 2			
			Y10 appreciation against $				20% rise in crude oil prices			
	FY15	FY16	FY15		FY16		FY15		FY16	
Nominal GDP (Y/y %)	2.2	2.1	2.1	(-0.1)	1.4	(-0.8)	2.1	(-0.1)	1.6	(-0.6)
Real GDP (Chained [2005]; y/y %)	**0.8**	**1.5**	**0.8**	**(-0.0)**	**1.1**	**(-0.4)**	**0.8**	**(-0.0)**	**1.4**	**(-0.1)**
GDP deflator (Y/y %)	1.4	0.5	1.3	(-0.1)	0.3	(-0.4)	1.3	(-0.1)	0.2	(-0.5)
All-industry Activity Index (Y/y %)	1.1	2.1	1.0	(-0.1)	1.6	(-0.6)	1.1	(-0.0)	2.0	(-0.1)
Industrial Production Index (Y/y %)	-0.3	3.6	-0.7	(-0.4)	2.0	(-2.0)	-0.3	(-0.0)	3.4	(-0.2)
Tertiary Industry Activity Index (Y/y %)	1.2	1.7	1.1	(-0.1)	1.3	(-0.4)	1.2	(-0.0)	1.6	(-0.1)
Corporate Goods Price Index (Y/y %)	-2.1	0.7	-2.4	(-0.3)	-0.3	(-1.3)	-1.9	(0.2)	1.2	(0.7)
Consumer Price Index (Y/y %)	0.2	1.0	0.1	(-0.1)	0.8	(-0.2)	0.2	(0.0)	1.1	(0.2)
Unemployment rate (%)	3.3	3.2	3.3	(-0.0)	3.2	(0.0)	3.3	(0.0)	3.2	(-0.0)
Trade balance (Y tril)	-0.7	-1.0	-0.6	(0.0)	-0.8	(0.2)	-1.3	(-0.6)	-3.5	(-2.5)
Current balance (US$100 mil)	1,434	1,452	1,575	(141)	1,431	(-21)	1,385	(-49)	1,268	(-183)
Current balance (Y tril)	17.8	18.4	18.0	(0.2)	16.7	(-1.7)	17.2	(-0.6)	16.1	(-2.3)
Real GDP components (Chained [2005]; y/y %)										
Private consumption	0.5	1.4	0.5	(0.0)	1.3	(-0.1)	0.5	(-0.0)	1.3	(-0.2)
Private housing investment	4.4	6.8	4.4	(-0.0)	6.5	(-0.3)	4.4	(-0.0)	6.4	(-0.4)
Private non-housing investment	0.1	4.7	0.1	(-0.1)	3.1	(-1.5)	0.0	(-0.1)	4.2	(-0.5)
Government final consumption	1.5	1.3	1.5	(0.0)	1.4	(0.1)	1.5	(-0.0)	1.3	(-0.0)
Public fixed investment	-1.7	-4.8	-1.5	(0.2)	-4.4	(0.6)	-1.7	(-0.0)	-4.9	(-0.2)
Exports of goods and services	1.4	5.5	1.3	(-0.1)	4.8	(-0.7)	1.4	(-0.0)	5.4	(-0.1)
Imports of goods and services	1.1	5.4	1.1	(-0.1)	5.4	(-0.1)	1.0	(-0.1)	4.9	(-0.6)

| | Case 3 | | | | Case 4 | | | | (Reference) Y5 depreciation and | | | |
	1% contraction of World GDP				1% pt rise in 10-yr JGB yield				20% rise in crude oil prices			
	FY15		FY16		FY15		FY16		FY15		FY16	
Nominal GDP (Y/y %)	2.1	(-0.1)	1.7	(-0.4)	2.2	(-0.0)	1.9	(-0.2)	2.1	(-0.1)	1.9	(-0.2)
Real GDP (Chained [2005]; y/y %)	**0.7**	**(-0.1)**	**1.2**	**(-0.4)**	**0.7**	**(-0.0)**	**1.3**	**(-0.2)**	**0.8**	**(-0.0)**	**1.6**	**(0.1)**
GDP deflator (Y/y %)	1.4	(-0.0)	0.5	(-0.0)	1.4	(0.0)	0.5	(0.0)	1.4	(-0.1)	0.3	(-0.3)
All-industry Activity Index (Y/y %)	1.1	(-0.1)	1.9	(-0.3)	1.1	(-0.0)	2.0	(-0.1)	1.2	(0.0)	2.2	(0.2)
Industrial Production Index (Y/y %)	-0.6	(-0.3)	2.8	(-1.1)	-0.4	(-0.1)	3.3	(-0.4)	-0.1	(0.2)	4.2	(0.8)
Tertiary Industry Activity Index (Y/y %)	1.2	(-0.0)	1.6	(-0.1)	1.2	(-0.0)	1.6	(-0.1)	1.2	(0.0)	1.7	(0.1)
Corporate Goods Price Index (Y/y %)	-2.1	(-0.0)	0.6	(-0.1)	-2.1	(0.0)	0.7	(-0.0)	-1.8	(0.3)	1.7	(1.4)
Consumer Price Index (Y/y %)	0.2	(-0.0)	0.9	(-0.0)	0.2	(0.0)	1.0	(-0.0)	0.2	(0.1)	1.2	(0.3)
Unemployment rate (%)	3.3	(-0.0)	3.2	(0.0)	3.3	(0.0)	3.2	(0.0)	3.3	(0.0)	3.2	(-0.0)
Trade balance (Y tril)	-0.9	(-0.2)	-1.7	(-0.6)	-0.6	(0.1)	-0.4	(0.6)	-1.3	(-0.7)	-3.6	(-2.6)
Current balance (US$100 mil)	1,409	(-25)	1,362	(-90)	1,438	(5)	1,266	(-186)	1,314	(-120)	1,279	(-173)
Current balance (Y tril)	17.5	(-0.3)	17.3	(-1.1)	17.9	(0.1)	16.0	(-2.3)	17.1	(-0.7)	16.9	(-1.4)
Real GDP components (Chained [2005]; y/y %)												
Private consumption	0.5	(-0.0)	1.4	(-0.1)	0.5	(-0.0)	1.4	(-0.0)	0.5	(-0.0)	1.3	(-0.1)
Private housing investment	4.4	(-0.0)	6.6	(-0.2)	4.3	(-0.1)	6.1	(-0.8)	4.4	(0.0)	6.6	(-0.2)
Private non-housing investment	0.2	(0.0)	4.2	(-0.4)	-0.1	(-0.3)	3.4	(-1.5)	0.1	(-0.1)	5.0	(0.2)
Government final consumption	1.5	(0.0)	1.3	(0.0)	1.5	(0.0)	1.3	(0.0)	1.5	(-0.0)	1.2	(-0.1)
Public fixed investment	-1.7	(0.0)	-4.8	(0.0)	-1.7	(-0.0)	-4.8	(0.0)	-1.8	(-0.1)	-5.2	(-0.5)
Exports of goods and services	0.9	(-0.6)	4.1	(-1.8)	1.4	(-0.0)	5.5	(-0.0)	1.5	(0.0)	5.7	(0.3)
Imports of goods and services	1.1	(-0.1)	5.1	(-0.3)	1.1	(-0.1)	4.9	(-0.6)	1.1	(-0.1)	4.9	(-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.

6. Quarterly Forecast Tables

1.1 Selected Economic Indicators

	2013			2014				2015	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2013	2014	2013	2014
Nominal GDP (SAAR; Y tril)	479.3	482.4	481.7	487.5	488.0	485.7	489.0	499.7	483.1	490.8	480.1	487.6
Q/q %	0.3	0.6	-0.1	1.2	0.1	-0.5	0.7	2.2				
Q/q %, SAAR	1.3	2.6	-0.6	4.9	0.5	-1.9	2.7	9.0				
Y/y %	0.8	1.9	2.0	2.5	1.8	0.6	1.4	2.6	1.8	1.6	1.0	1.6
Real GDP (chained [2005]; SAAR; Y tril)	527.0	530.3	529.0	535.1	524.5	523.1	524.7	530.6	530.6	525.9	527.5	527.0
Q/q %	0.6	0.6	-0.2	1.2	-2.0	-0.3	0.3	1.1				
Q/q %, SAAR	2.3	2.5	-0.9	4.7	-7.7	-1.1	1.2	4.6				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.9	-0.8	2.1	-0.9	1.6	-0.1
Contribution to GDP growth (% pt)												
Domestic demand	0.6	1.0	0.3	1.4	-2.9	-0.3	-0.0	1.2	2.6	-1.5	1.9	-0.1
Foreign demand	0.0	-0.4	-0.5	-0.2	0.9	0.1	0.3	0.0	-0.5	0.6	-0.3	0.0
GDP deflator (y/y %)	-0.6	-0.3	-0.3	0.1	2.1	2.1	2.3	3.5	-0.3	2.5	-0.6	1.7
Index of All-Industry Activity (2010=100)	101.8	102.4	102.8	104.1	101.1	101.1	101.7	102.8	102.8	101.7	101.9	102.0
Q/q %; y/y %	1.1	0.6	0.4	1.3	-2.9	0.0	0.6	1.1	2.2	-1.1	1.0	0.1
Index of Industrial Production (2010=100)	96.1	97.8	99.6	101.9	98.8	97.4	98.2	99.7	98.9	98.5	97.0	99.0
Q/q %; y/y %	1.6	1.7	1.8	2.3	-3.1	-1.3	0.8	1.6	3.3	-0.5	-0.8	2.1
Index of Tertiary Industry Activity (2005=100)	102.8	102.9	102.9	104.1	101.2	101.7	102.2	103.3	103.2	102.1	102.7	102.3
Q/q %; y/y %	0.5	0.2	-0.0	1.2	-2.8	0.5	0.6	1.1	1.2	-1.1	0.8	-0.4
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	101.6	102.4	102.6	102.9	106.0	106.5	105.1	103.4	102.4	105.3	101.9	105.1
Y/y %	0.6	2.2	2.5	2.0	4.4	4.0	2.5	0.5	1.8	2.8	1.3	3.2
CPI (excl. fresh food; 2010=100)	99.9	100.3	100.7	100.6	103.3	103.5	103.4	102.7	100.4	103.2	100.1	102.7
Y/y %	0.0	0.7	1.1	1.3	3.3	3.2	2.7	2.1	0.8	2.8	0.4	2.6
Unemployment rate (%)	4.0	4.0	3.9	3.6	3.6	3.6	3.5	3.5	3.9	3.6	4.0	3.6
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Government bond yield (10 year; %)	0.77	0.73	0.64	0.61	0.59	0.52	0.40	0.34	0.69	0.46	0.70	0.53
Money stock; M2 (y/y %)	3.5	3.8	4.2	3.9	3.2	3.0	3.5	3.5	3.9	3.3	3.6	3.4
Trade balance (SAAR; Y tril)	-6.0	-9.3	-11.7	-15.8	-8.4	-10.6	-7.4	0.3	-11.0	-6.6	-8.8	-10.4
Current balance (SAAR; $100 mil)	967	315	-96	-518	313	193	931	1,299	147	722	403	250
Current balance (SAAR; Y tril)	9.6	3.1	-1.0	-5.3	3.2	2.0	10.7	15.5	1.5	7.9	3.9	2.6
(% of nominal GDP)	2.0	0.6	-0.2	-1.1	0.7	0.4	2.2	3.1	0.3	1.6	0.8	0.5
Exchange rate (Y/$)	98.8	98.9	100.4	102.8	102.1	103.9	114.5	119.1	100.2	109.9	97.6	105.8
(Y/Euro)	129.6	130.7	139.9	140.3	139.5	137.8	143.8	132.6	135.1	138.4	130.6	140.3

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

1.2 Selected Economic Indicators

	2015 4-6	7-9	2016 10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	2016 (E)	CY 2015 (E)	2016 (E)
Nominal GDP (SAAR; Y tril)	500.5	500.6	501.7	503.6	506.4	510.0	513.3	517.6	501.7	512.0	500.8	508.5
Q/q %	0.2	0.0	0.2	0.4	0.5	0.7	0.7	0.8				
Q/q %, SAAR	0.6	0.1	0.9	1.6	2.2	2.9	2.7	3.4				
Y/y %	2.5	3.1	2.7	0.7	1.2	1.9	2.3	2.8	2.2	2.1	2.7	1.5
Real GDP (chained [2005]; SAAR; Y tril)	529.8	528.7	529.7	531.4	533.6	536.4	538.9	542.5	530.0	538.0	529.8	535.2
Q/q %	-0.2	-0.2	0.2	0.3	0.4	0.5	0.5	0.7				
Q/q %, SAAR	-0.7	-0.8	0.7	1.3	1.6	2.1	1.9	2.7				
Y/y %	1.0	1.0	1.0	0.1	0.7	1.5	1.7	2.1	0.8	1.5	0.5	1.0
Contribution to GDP growth (% pt)												
Domestic demand	0.0	-0.3	0.2	0.3	0.3	0.5	0.4	0.9	0.7	1.4	0.2	1.0
Foreign demand	-0.2	0.1	0.0	0.0	0.1	0.0	0.0	-0.2	0.1	0.1	0.4	0.0
GDP deflator (y/y %)	1.5	2.0	1.6	0.6	0.5	0.4	0.6	0.7	1.4	0.5	2.1	0.5
Index of All-Industry Activity (2010=100)	102.5	102.5	103.0	103.4	103.9	104.5	105.1	106.6	102.9	105.0	102.7	104.2
Q/q %; y/y %	-0.3	0.0	0.5	0.3	0.5	0.5	0.6	1.4	1.1	2.1	0.7	1.5
Index of Industrial Production (2010=100)	98.3	97.1	98.6	99.0	100.0	101.1	102.3	103.8	98.2	101.8	98.4	100.5
Q/q %; y/y %	-1.4	-1.2	1.6	0.4	1.0	1.0	1.2	1.5	-0.3	3.6	-0.7	2.2
Index of Tertiary Industry Activity (2005=100)	103.1	103.2	103.4	103.7	104.2	104.6	105.0	106.5	103.3	105.1	103.2	104.4
Q/q %; y/y %	-0.2	0.1	0.2	0.3	0.4	0.4	0.4	1.4	1.2	1.7	0.9	1.1
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	103.7	102.7	102.7	103.1	103.4	103.6	103.9	104.1	103.0	103.8	103.1	103.5
Y/y %	-2.2	-3.6	-2.3	-0.3	-0.3	0.9	1.1	1.0	-2.1	0.7	-1.9	0.4
CPI (excl. fresh food; 2010=100)	103.4	103.4	103.5	103.3	103.9	104.4	104.7	104.6	103.4	104.4	103.2	104.1
Y/y %	0.1	-0.1	0.1	0.6	0.5	0.9	1.2	1.3	0.2	1.0	0.5	0.8
Unemployment rate (%)	3.3	3.4	3.3	3.3	3.2	3.2	3.2	3.1	3.3	3.2	3.4	3.2
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Government bond yield (10 year; %)	0.40	0.38	0.31	0.32	0.33	0.34	0.36	0.37	0.35	0.35	0.35	0.34
Money stock; M2 (y/y %)	3.9	4.0	3.5	3.6	3.8	3.9	4.2	4.1	3.7	4.0	3.7	3.9
Trade balance (SAAR; Y tril)	-0.9	-0.7	-0.7	-0.5	-0.6	-0.7	-0.8	-2.1	-0.7	-1.0	-0.5	-0.6
Current balance (SAAR; $100 mil)	1390	1441	1465	1440	1468	1480	1487	1372	1434	1452	1399	1469
Current balance (SAAR; Y tril)	16.9	17.6	17.9	18.0	18.3	18.5	18.6	17.1	17.8	18.4	17.0	18.4
(% of nominal GDP)	3.4	3.5	3.6	3.6	3.6	3.6	3.6	3.3	3.5	3.6	3.4	3.6
Exchange rate (Y/$)	121.4	122.2	121.9	125.0	125.0	125.0	125.0	125.0	122.6	125.0	121.1	125.0
(Y/Euro)	135.0	135.6	132.9	130.0	130.0	130.0	130.0	130.0	133.4	130.0	134.0	130.0

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

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

	2013 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	2014	CY 2013	2014
Gross domestic expenditure	527.0	530.3	529.0	535.1	524.5	523.1	524.7	530.6	530.6	525.9	527.5	527.0
Q/q %, SAAR	2.3	2.5	-0.9	4.7	-7.7	-1.1	1.2	4.6				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-0.9	-0.8	2.1	-0.9	1.6	-0.1
Domestic demand	518.0	522.9	524.1	531.5	516.1	514.7	514.8	520.5	524.5	516.7	519.9	519.4
Q/q %, SAAR	2.5	3.8	1.0	5.8	-11.1	-1.1	0.0	4.5				
Y/y %	1.5	2.2	2.7	3.6	-0.4	-1.7	-1.9	-2.0	2.5	-1.5	1.9	-0.1
Private demand	394.4	398.2	399.2	407.0	391.5	389.2	389.1	394.8	400.0	391.3	395.9	394.2
Q/q %, SAAR	2.1	3.9	1.0	8.1	-14.5	-2.2	-0.2	6.0				
Y/y %	1.2	1.8	2.3	4.3	-0.7	-2.4	-2.7	-2.9	2.4	-2.2	1.6	-0.4
Final consumption	315.1	315.9	315.3	322.0	305.9	306.6	307.7	309.1	317.2	307.4	314.6	310.6
Q/q %, SAAR	3.8	1.1	-0.8	8.8	-18.5	0.9	1.4	1.7				
Y/y %	1.9	2.3	2.3	3.4	-2.9	-3.0	-2.4	-4.0	2.5	-3.1	2.1	-1.3
Residential investment	14.2	14.8	15.2	15.6	13.9	13.0	12.9	13.1	15.0	13.2	14.5	13.8
Q/q %, SAAR	7.3	18.4	12.0	9.0	-35.9	-24.5	-2.7	8.1				
Y/y %	6.6	8.3	10.2	11.9	-2.0	-12.4	-15.5	-15.4	9.3	-11.6	8.8	-5.1
Non-residential investment	69.6	70.2	71.1	74.5	71.2	71.4	71.4	73.1	71.5	71.9	69.5	72.2
Q/q %, SAAR	12.1	3.7	5.6	20.4	-16.6	1.0	0.0	10.1				
Y/y %	-0.2	1.2	3.0	10.8	2.4	1.4	0.2	-1.4	4.0	0.5	0.4	4.0
Change in inventories	-4.4	-2.7	-2.5	-5.0	0.4	-1.8	-3.0	-0.6	-3.7	-1.3	-2.7	-2.4
Public demand	123.6	124.7	124.9	124.5	124.6	125.5	125.7	125.7	124.5	125.4	124.0	125.2
Q/q %, SAAR	3.6	3.5	0.7	-1.2	0.4	2.7	0.8	-0.0				
Y/y %	2.7	3.8	4.2	1.6	0.6	0.7	0.8	0.8	3.1	0.7	2.9	0.9
Government final consumption	102.1	102.1	102.2	102.0	102.1	102.4	102.7	103.0	102.2	102.6	102.1	102.3
Q/q %, SAAR	1.7	0.0	0.3	-0.8	0.2	1.4	1.1	1.1				
Y/y %	2.6	2.0	1.5	0.2	-0.0	0.2	0.5	0.9	1.6	0.4	1.9	0.2
Fixed investment	21.5	22.6	22.6	22.5	22.5	22.9	23.0	22.7	22.4	22.8	22.0	22.8
Q/q %, SAAR	11.2	22.3	0.9	-2.9	1.5	7.0	0.8	-5.2				
Y/y %	3.6	14.1	16.1	6.6	4.4	2.0	2.3	0.1	10.3	2.0	8.0	3.8
Change in inventories	-0.0	-0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	-0.0	0.0
Net exports of goods and services	9.6	7.9	5.7	6.0	9.8	10.3	12.2	12.5	7.3	11.2	8.1	9.6
Exports of goods and services	84.0	83.8	83.6	88.6	88.9	90.4	93.0	94.8	85.0	91.8	83.2	90.2
Q/q %, SAAR	13.8	-1.3	-0.5	25.7	1.7	6.5	12.0	8.0				
Y/y %	-0.6	2.6	6.8	9.1	5.7	7.7	11.3	7.2	4.4	7.9	1.2	8.4
Imports of goods and services	74.5	75.8	77.9	82.6	79.2	80.0	80.7	82.2	77.8	80.6	75.1	80.6
Q/q %, SAAR	13.4	7.6	11.5	26.1	-15.6	4.4	3.5	7.8				
Y/y %	0.5	2.9	8.9	14.8	6.0	5.3	3.8	-0.2	6.7	3.6	3.1	7.4

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

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

	2015 4-6	7-9	2016 10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
Gross domestic expenditure	529.8	528.7	529.7	531.4	533.6	536.4	538.9	542.5	530.0	538.0	529.8	535.2
Q/q %, SAAR	-0.7	-0.8	0.7	1.3	1.6	2.1	1.9	2.7				
Y/y %	1.0	1.0	1.0	0.1	0.7	1.5	1.7	2.1	0.8	1.5	0.5	1.0
Domestic demand	520.4	519.1	519.9	521.6	523.4	526.0	528.3	533.0	520.3	527.9	520.1	524.8
Q/q %, SAAR	-0.0	-1.0	0.6	1.2	1.4	2.0	1.8	3.6				
Y/y %	0.8	0.8	1.0	0.1	0.6	1.4	1.5	2.3	0.7	1.5	0.1	0.9
Private demand	393.7	392.1	393.6	395.4	397.0	399.3	401.4	405.9	393.7	401.0	393.7	398.2
Q/q %, SAAR	-1.1	-1.6	1.5	1.8	1.7	2.4	2.2	4.5				
Y/y %	0.6	0.6	1.2	0.1	0.8	1.9	1.9	2.9	0.6	1.9	-0.1	1.2
Final consumption	307.3	308.9	309.7	310.5	310.9	311.8	313.1	317.8	309.1	313.4	308.7	311.6
Q/q %, SAAR	-2.3	2.1	1.0	1.0	0.6	1.1	1.7	6.1				
Y/y %	0.4	0.7	0.6	0.4	1.2	1.0	1.1	2.4	0.5	1.4	-0.6	0.9
Residential investment	13.5	13.7	14.0	14.0	14.2	14.7	14.9	15.1	13.8	14.7	13.6	14.5
Q/q %, SAAR	10.1	8.0	7.1	2.4	5.3	13.4	7.0	4.5				
Y/y %	-3.3	5.7	8.4	6.8	5.7	7.0	6.9	7.5	4.4	6.8	-1.7	6.6
Non-residential investment	72.3	71.3	71.8	72.7	73.7	74.7	75.7	77.0	72.0	75.4	72.2	74.1
Q/q %, SAAR	-4.8	-5.0	2.4	5.3	5.5	5.6	5.7	7.0				
Y/y %	1.4	-0.3	0.6	-0.8	2.0	4.8	5.5	6.0	0.1	4.7	-0.0	2.7
Change in inventories	0.7	-1.8	-1.8	-1.8	-1.8	-1.8	-2.3	-4.0	-1.1	-2.5	-0.8	-1.9
Public demand	126.7	127.0	126.4	126.2	126.4	126.7	126.9	127.1	126.5	126.8	126.4	126.6
Q/q %, SAAR	3.4	0.7	-1.9	-0.6	0.7	0.8	0.8	0.8				
Y/y %	1.6	1.3	0.4	0.3	0.1	-0.2	0.3	0.7	0.9	0.2	1.0	0.1
Government final consumption	103.6	104.0	104.2	104.6	104.9	105.3	105.6	106.0	104.1	105.5	103.7	105.1
Q/q %, SAAR	2.6	1.2	1.0	1.4	1.4	1.4	1.4	1.4				
Y/y %	1.6	1.5	1.5	1.5	1.2	1.3	1.4	1.4	1.5	1.3	1.4	1.4
Fixed investment	23.1	23.1	22.2	21.7	21.5	21.4	21.3	21.2	22.4	21.3	22.7	21.5
Q/q %, SAAR	8.6	-1.3	-14.2	-9.4	-2.6	-2.0	-2.1	-2.1				
Y/y %	2.2	0.8	-3.7	-4.1	-6.8	-7.3	-3.9	-2.4	-1.7	-4.8	-0.5	-5.3
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	10.8	11.8	11.9	12.0	12.3	12.6	12.7	11.6	11.6	12.3	11.7	12.4
Exports of goods and services	90.7	93.1	93.9	94.9	96.2	97.5	98.9	100.3	93.1	98.2	93.1	96.9
Q/q %, SAAR	-16.1	10.9	3.6	4.5	5.3	5.6	5.7	5.9				
Y/y %	1.8	2.9	1.0	0.1	6.2	4.8	5.3	5.7	1.4	5.5	3.2	4.1
Imports of goods and services	79.9	81.3	82.0	82.9	83.8	84.9	86.2	88.7	81.5	85.9	81.3	84.4
Q/q %, SAAR	-10.8	7.1	3.6	4.5	4.5	5.3	5.9	12.1				
Y/y %	0.8	1.4	1.5	0.7	5.0	4.6	5.1	7.0	1.1	5.4	0.9	3.8

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

3.1 Nominal Gross Domestic Expenditure (Y tril)

	2013 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	2014	CY 2013	2014
Gross domestic expenditure	479.3	482.4	481.7	487.5	488.0	485.7	489.0	499.7	483.1	490.8	480.1	487.6
Q/q %, SAAR	1.3	2.6	-0.6	4.9	0.5	-1.9	2.7	9.0				
Y/y %	0.8	1.9	2.0	2.5	1.8	0.6	1.4	2.6	1.8	1.6	1.0	1.6
Domestic demand	490.4	496.4	499.8	508.1	501.6	500.2	500.9	505.4	499.0	502.2	493.8	502.8
Q/q %, SAAR	1.1	4.9	2.8	6.8	-5.0	-1.0	0.6	3.6				
Y/y %	1.2	2.8	3.4	4.4	2.2	0.7	0.2	-0.5	2.9	0.6	1.9	1.8
Private demand	369.4	374.1	377.2	384.9	376.5	373.8	374.3	378.4	376.7	375.9	372.0	377.4
Q/q %, SAAR	1.3	5.2	3.4	8.4	-8.5	-2.8	0.6	4.4				
Y/y %	0.7	2.3	3.0	5.1	2.0	-0.2	-0.9	-1.6	2.8	-0.2	1.6	1.4
Final consumption	293.1	294.7	295.7	302.4	292.2	293.0	294.3	294.1	296.6	293.4	293.5	295.5
Q/q %, SAAR	3.2	2.2	1.3	9.4	-12.8	1.2	1.7	-0.2				
Y/y %	1.2	2.7	2.9	4.2	-0.3	-0.7	-0.5	-2.7	2.7	-1.0	1.9	0.7
Residential investment	14.9	15.6	16.2	16.6	15.3	14.2	14.1	14.5	15.9	14.5	15.3	15.0
Q/q %, SAAR	11.7	20.8	17.2	10.0	-28.3	-25.6	-2.0	9.4				
Y/y %	8.9	11.6	13.9	15.0	2.8	-9.0	-13.0	-12.9	12.5	-8.5	11.3	-1.8
Non-residential investment	66.0	66.8	67.9	71.2	68.4	68.7	69.1	70.8	68.2	69.4	66.0	69.4
Q/q %, SAAR	12.9	4.9	6.7	21.0	-14.9	2.2	1.8	10.6				
Y/y %	0.2	2.3	4.3	11.7	3.6	2.6	1.6	-0.1	4.9	1.8	1.2	5.1
Change in inventories	-4.6	-3.0	-2.6	-5.2	0.6	-2.2	-3.1	-1.0	-3.9	-1.5	-2.8	-2.5
Public demand	121.0	122.3	122.6	123.2	125.1	126.5	126.6	127.0	122.4	126.3	121.7	125.4
Q/q %, SAAR	0.6	4.1	0.9	2.0	6.4	4.5	0.5	1.1				
Y/y %	2.8	4.3	4.3	2.1	2.9	3.6	3.3	3.0	3.3	3.2	3.0	3.0
Government final consumption	98.7	98.7	98.5	99.2	100.7	101.3	101.6	102.2	98.8	101.5	98.8	100.7
Q/q %, SAAR	-2.3	0.2	-0.8	2.8	6.0	2.6	1.1	2.4				
Y/y %	2.5	1.9	1.0	0.0	2.1	2.7	3.0	3.1	1.3	2.7	1.7	2.0
Fixed investment	22.3	23.7	24.0	23.9	24.3	24.9	25.0	24.7	23.6	24.8	23.0	24.6
Q/q %, SAAR	11.1	25.9	5.2	-1.5	7.9	10.7	0.4	-4.9				
Y/y %	4.5	16.0	18.8	8.7	8.3	5.9	5.0	2.6	12.4	5.1	9.5	6.8
Change in inventories	0.0	-0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.1	-0.0	0.1
Net exports of goods and services	-11.1	-14.0	-18.1	-20.6	-13.5	-14.5	-11.9	-5.7	-15.9	-11.4	-13.6	-15.2
Exports of goods and services	78.2	78.9	79.1	83.4	83.9	86.5	91.4	91.1	80.0	88.3	77.5	86.4
Q/q %, SAAR	25.1	3.8	1.0	23.5	2.4	13.2	24.5	-1.2				
Y/y %	8.5	14.1	17.8	13.2	6.6	9.6	16.2	9.3	13.3	10.4	10.8	11.4
Imports of goods and services	89.2	92.9	97.2	104.0	97.4	101.0	103.3	96.8	95.9	99.7	91.2	101.5
Q/q %, SAAR	20.3	17.4	19.8	31.2	-23.1	15.8	9.3	-22.9				
Y/y %	10.3	17.9	24.5	22.2	8.6	8.7	6.9	-7.1	18.8	3.9	15.2	11.4

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

3.2 Nominal Gross Domestic Expenditure (Y tril)

	2015 4-6	7-9	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
Gross domestic expenditure	500.5	500.6	501.7	503.6	506.4	510.0	513.3	517.6	501.7	512.0	500.8	508.5
Q/q %, SAAR	0.6	0.1	0.9	1.6	2.2	2.9	2.7	3.4				
Y/y %	2.5	3.1	2.7	0.7	1.2	1.9	2.3	2.8	2.2	2.1	2.7	1.5
Domestic demand	505.9	505.3	506.6	508.8	511.5	515.3	518.9	524.9	506.6	517.8	505.9	513.6
Q/q %, SAAR	0.4	-0.4	1.0	1.7	2.2	3.0	2.8	4.7				
Y/y %	0.8	1.0	1.1	0.6	1.2	2.0	2.3	3.3	0.9	2.2	0.6	1.5
Private demand	378.7	377.6	379.4	381.6	384.0	387.3	390.5	396.1	379.4	389.6	378.6	385.8
Q/q %, SAAR	0.3	-1.2	1.9	2.4	2.5	3.5	3.3	5.8				
Y/y %	0.6	0.9	1.4	0.8	1.3	2.6	2.8	4.0	0.9	2.7	0.3	1.9
Final consumption	293.1	294.6	295.7	296.7	297.7	299.2	301.2	306.5	295.0	301.2	294.4	298.7
Q/q %, SAAR	-1.3	2.1	1.4	1.4	1.3	2.1	2.7	7.2				
Y/y %	0.3	0.5	0.5	0.9	1.6	1.6	1.9	3.3	0.5	2.1	-0.4	1.5
Residential investment	14.8	15.1	15.4	15.5	15.7	16.3	16.6	16.9	15.2	16.4	14.9	16.0
Q/q %, SAAR	8.8	8.0	8.2	3.5	6.5	15.1	8.5	6.0				
Y/y %	-3.4	6.0	8.7	7.0	6.5	8.2	8.3	9.0	4.6	8.0	-0.8	7.5
Non-residential investment	70.2	69.5	70.0	71.0	72.2	73.4	74.7	76.2	70.2	74.2	70.1	72.7
Q/q %, SAAR	-3.7	-3.9	2.8	6.1	6.7	6.9	7.2	8.6				
Y/y %	2.6	0.9	1.4	0.1	2.9	5.7	6.7	7.4	1.2	5.8	1.1	3.6
Change in inventories	0.6	-1.6	-1.6	-1.6	-1.6	-1.6	-2.0	-3.5	-0.9	-2.1	-0.8	-1.7
Public demand	127.2	127.7	127.2	127.2	127.5	128.0	128.4	128.8	127.2	128.2	127.2	127.8
Q/q %, SAAR	0.6	1.9	-1.6	-0.2	1.2	1.3	1.3	1.3				
Y/y %	1.5	1.1	0.4	0.1	0.7	0.1	0.8	1.2	0.7	0.7	1.5	0.4
Government final consumption	102.0	102.5	102.9	103.3	103.8	104.2	104.7	105.2	102.7	104.5	102.4	104.0
Q/q %, SAAR	-0.9	2.2	1.4	1.8	1.8	1.8	1.8	1.8				
Y/y %	1.2	1.2	1.3	1.0	1.8	1.6	1.7	1.8	1.2	1.7	1.7	1.6
Fixed investment	25.2	25.2	24.4	23.8	23.8	23.7	23.7	23.6	24.6	23.7	24.8	23.8
Q/q %, SAAR	8.6	1.3	-13.2	-8.3	-1.3	-0.7	-0.7	-0.7				
Y/y %	3.3	1.5	-2.7	-2.9	-5.5	-6.1	-2.6	-1.0	-0.7	-3.5	0.9	-4.1
Change in inventories	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0
Net exports of goods and services	-5.4	-4.8	-5.0	-5.1	-5.2	-5.3	-5.6	-7.3	-5.1	-5.8	-5.2	-5.3
Exports of goods and services	88.6	90.3	91.2	92.2	93.4	94.6	96.0	97.3	90.5	95.3	90.2	94.0
Q/q %, SAAR	-10.8	8.3	3.6	4.5	5.3	5.6	5.7	5.9				
Y/y %	4.9	4.7	-0.6	1.1	5.7	4.6	5.4	5.6	2.4	5.3	4.5	4.2
Imports of goods and services	93.9	95.1	96.1	97.3	98.5	99.9	101.5	104.6	95.6	101.1	95.4	99.3
Q/q %, SAAR	-11.3	5.1	4.2	5.1	5.1	5.9	6.5	12.7				
Y/y %	-3.8	-5.9	-7.2	0.6	5.0	5.1	5.8	7.5	-4.2	5.8	-6.0	4.1

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

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

	2013 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	FY 2014	CY 2013	CY 2014
Gross domestic expenditure	91.0	91.0	91.1	91.1	93.0	92.9	93.2	94.2	91.0	93.3	91.0	92.5
Q/q %, SAAR	-0.2	0.0	0.1	0.0	2.1	-0.2	0.4	1.0				
Y/y %	-0.6	-0.3	-0.3	0.1	2.1	2.1	2.3	3.5	-0.3	2.5	-0.6	1.7
Private final consumption	93.0	93.3	93.8	93.9	95.5	95.6	95.6	95.2	93.5	95.5	93.3	95.1
Q/q %, SAAR	-0.2	0.3	0.5	0.1	1.7	0.1	0.1	-0.5				
Y/y %	-0.7	0.3	0.5	0.8	2.7	2.4	2.0	1.3	0.2	2.1	-0.3	2.0
Private residential investment	104.9	105.5	106.7	106.9	109.9	109.5	109.7	110.1	106.0	109.8	105.3	108.9
Q/q %, SAAR	1.0	0.5	1.1	0.2	2.9	-0.4	0.2	0.3				
Y/y %	2.1	3.0	3.4	2.9	4.8	3.9	2.9	2.9	2.9	3.6	2.3	3.5
Private non-residential investment	94.9	95.2	95.4	95.5	96.0	96.3	96.7	96.8	95.3	96.5	95.0	96.1
Q/q %, SAAR	0.2	0.3	0.3	0.1	0.5	0.3	0.4	0.1				
Y/y %	0.4	1.2	1.2	0.9	1.2	1.2	1.4	1.3	0.9	1.3	0.7	1.1
Government final consumption	96.6	96.7	96.4	97.3	98.7	99.0	99.0	99.3	96.7	98.9	96.7	98.4
Q/q %, SAAR	-1.0	0.0	-0.3	0.9	1.4	0.3	0.0	0.3				
Y/y %	-0.1	-0.1	-0.5	-0.2	2.1	2.5	2.5	2.1	-0.2	2.3	-0.2	1.7
Public fixed investment	104.0	104.8	105.9	106.2	107.9	108.8	108.7	108.8	105.4	108.6	104.8	107.8
Q/q %, SAAR	-0.0	0.7	1.0	0.3	1.5	0.8	-0.1	0.1				
Y/y %	0.9	1.7	2.3	2.0	3.8	3.8	2.6	2.4	1.8	3.0	1.3	2.9
Exports of goods and services	93.0	94.2	94.6	94.2	94.3	95.8	98.3	96.2	94.1	96.2	93.2	95.8
Q/q %, SAAR	2.4	1.3	0.4	-0.4	0.2	1.5	2.7	-2.2				
Y/y %	9.1	11.1	10.3	3.7	0.9	1.8	4.5	2.0	8.5	2.3	9.5	2.7
Imports of goods and services	119.8	122.5	124.7	125.9	123.1	126.3	128.0	117.7	123.3	123.7	121.4	126.0
Q/q %, SAAR	1.5	2.2	1.8	1.0	-2.3	2.6	1.4	-8.0				
Y/y %	9.8	14.6	14.3	6.4	2.4	3.3	3.0	-6.9	11.3	0.3	11.7	3.7

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

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

	2015 4-6	7-9	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
Gross domestic expenditure	94.5	94.7	94.7	94.8	94.9	95.1	95.3	95.4	94.7	95.2	94.5	95.0
Q/q %, SAAR	0.3	0.2	0.0	0.1	0.1	0.2	0.2	0.2				
Y/y %	1.5	2.0	1.6	0.6	0.5	0.4	0.6	0.7	1.4	0.5	2.1	0.5
Private final consumption	95.4	95.4	95.5	95.6	95.7	96.0	96.2	96.4	95.5	96.1	95.3	95.9
Q/q %, SAAR	0.2	0.0	0.1	0.1	0.2	0.2	0.2	0.2				
Y/y %	-0.1	-0.2	-0.2	0.4	0.4	0.6	0.8	0.9	-0.0	0.7	0.2	0.6
Private residential investment	109.8	109.8	110.0	110.3	110.6	111.0	111.4	111.8	110.0	111.2	109.9	110.9
Q/q %, SAAR	-0.3	0.0	0.2	0.3	0.3	0.4	0.4	0.4				
Y/y %	-0.1	0.3	0.3	0.2	0.8	1.1	1.3	1.4	0.2	1.1	0.9	0.9
Private non-residential investment	97.1	97.4	97.5	97.7	98.0	98.3	98.6	99.0	97.4	98.5	97.2	98.1
Q/q %, SAAR	0.3	0.3	0.1	0.2	0.3	0.3	0.3	0.4				
Y/y %	1.2	1.2	0.8	0.9	0.9	0.9	1.1	1.3	1.0	1.1	1.1	1.0
Government final consumption	98.4	98.6	98.7	98.8	98.9	99.0	99.1	99.2	98.6	99.0	98.7	98.9
Q/q %, SAAR	-0.9	0.2	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	-0.3	-0.3	-0.2	-0.5	0.6	0.4	0.4	0.4	-0.3	0.4	0.3	0.2
Public fixed investment	108.8	109.5	109.8	110.1	110.5	110.8	111.2	111.6	109.7	111.1	109.3	110.7
Q/q %, SAAR	0.0	0.7	0.3	0.3	0.3	0.3	0.3	0.4				
Y/y %	1.0	0.7	1.0	1.2	1.5	1.2	1.3	1.4	1.0	1.3	1.3	1.3
Exports of goods and services	97.7	97.1	97.1	97.1	97.1	97.1	97.1	97.1	97.2	97.1	96.9	97.1
Q/q %, SAAR	1.5	-0.6	0.0	-0.0	0.0	-0.0	0.0	0.0				
Y/y %	3.1	1.7	-1.5	1.0	-0.4	-0.2	0.1	-0.0	1.0	-0.1	1.2	0.1
Imports of goods and services	117.6	117.0	117.2	117.3	117.5	117.7	117.8	118.0	117.3	117.7	117.3	117.6
Q/q %, SAAR	-0.1	-0.5	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	-4.6	-7.2	-8.6	-0.1	0.0	0.5	0.7	0.5	-5.2	0.4	-6.9	0.3

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

5.1 Contribution to Real GDP Growth by Component

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

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

5.2 Contribution to Real GDP Growth by Component

	2015 4-6	7-9	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
1) Q/q %												
GDP growth rate	-0.2	-0.2	0.2	0.3	0.4	0.5	0.5	0.7	0.8	1.5	0.5	1.0
Domestic demand	0.0	-0.3	0.2	0.3	0.3	0.5	0.4	0.9	0.7	1.4	0.2	1.0
Private demand	-0.2	-0.3	0.3	0.3	0.3	0.4	0.4	0.8	0.5	1.4	-0.1	1.0
Private consumption	-0.3	0.3	0.1	0.1	0.1	0.2	0.2	0.9	0.3	0.8	-0.4	0.5
Residential investment	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	-0.1	0.2
Private fixed investment	-0.2	-0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.6	-0.0	0.4
Change in private inventories	0.3	-0.5	0.0	0.0	0.0	0.0	-0.1	-0.3	0.0	-0.3	0.3	-0.2
Public demand	0.2	0.0	-0.1	-0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.0
Government final consumption	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3
Public fixed investment	0.1	-0.0	-0.2	-0.1	-0.0	-0.0	-0.0	-0.0	-0.1	-0.2	-0.0	-0.3
Change in public inventories	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0
Net exports of goods and services	-0.2	0.1	0.0	0.0	0.1	0.0	0.0	-0.2	0.1	0.1	0.4	0.0
Exports of goods and services	-0.8	0.5	0.2	0.2	0.2	0.2	0.3	0.3	0.2	1.0	0.6	0.7
Imports of goods and services	0.6	-0.4	-0.1	-0.2	-0.2	-0.2	-0.2	-0.5	-0.2	-0.8	-0.2	-0.7
2) Y/y %												
GDP growth rate	1.0	1.0	1.0	0.1	0.7	1.5	1.7	2.1	0.8	1.5	0.5	1.0
Domestic demand	0.8	0.8	1.0	0.1	0.6	1.4	1.5	2.3	0.7	1.4	0.2	1.0
Private demand	0.5	0.5	0.9	0.0	0.6	1.4	1.4	2.1	0.5	1.4	-0.1	1.0
Private consumption	0.2	0.4	0.4	0.3	0.7	0.6	0.7	1.4	0.3	0.8	-0.4	0.5
Residential investment	-0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	-0.1	0.2
Private fixed investment	0.2	-0.0	0.1	-0.1	0.3	0.6	0.7	0.9	0.0	0.6	-0.0	0.4
Change in private inventories	0.1	-0.0	0.3	-0.2	-0.5	0.0	-0.1	-0.4	0.0	-0.3	0.3	-0.2
Public demand	0.4	0.3	0.1	0.1	0.0	-0.0	0.1	0.2	0.2	0.1	0.3	0.0
Government final consumption	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Public fixed investment	0.1	0.0	-0.2	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1	-0.2	-0.0	-0.3
Change in public inventories	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	0.0	0.0
Net exports of goods and services	0.1	0.2	-0.1	-0.1	0.3	0.1	0.1	-0.1	0.1	0.1	0.4	0.0
Exports of goods and services	0.3	0.5	0.2	0.0	1.1	0.8	0.9	1.0	0.2	1.0	0.6	0.7
Imports of goods and services	-0.2	-0.3	-0.2	-0.1	-0.8	-0.7	-0.8	-1.1	-0.2	-0.8	-0.2	-0.7

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

6.1 Major Assumptions

	2013 4-6	7-9	10-12	2014 1-3	4-6	7-9	10-12	2015 1-3	FY 2013	FY 2014	CY 2013	CY 2014
1) World economy												
Economic growth of major trading partners												
Y/y %	2.8	3.1	3.4	3.2	3.3	3.5	3.2	3.3	3.1	3.4	3.0	3.3
Crude oil price (WTI futures; $/bbl)	94.2	105.8	97.6	98.6	103.0	97.2	73.2	48.6	99.1	80.5	98.0	92.9
Y/y %	0.9	14.8	10.6	4.5	9.4	-8.1	-25.0	-50.7	7.6	-18.7	4.1	-5.2
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	15,500	15,614	15,762	15,725	15,902	16,069	16,151	16,177	15,650	16,075	15,583	15,962
Q/q %, SAAR	1.1	3.0	3.8	-0.9	4.6	4.3	2.1	0.6				
Y/y %	0.9	1.5	2.5	1.7	2.6	2.9	2.5	2.9	1.7	2.7	1.5	2.4
Consumer Price Index												
(1982-84 avg=100)	232.1	233.4	234.2	235.4	236.8	237.5	237.0	235.2	233.8	236.7	233.0	236.7
Q/q %, SAAR	-0.1	2.3	1.4	2.1	2.4	1.2	-0.9	-3.1				
Y/y %	1.4	1.6	1.2	1.4	2.1	1.8	1.2	-0.1	1.4	1.3	1.5	1.6
Producer Price Index												
(Final demand; 2009.Nov=100)	108.7	109.3	109.7	110.3	110.9	111.3	111.1	109.7	109.5	110.8	109.2	110.9
Q/q %, SAAR	-0.1	2.2	1.3	2.3	2.2	1.2	-0.6	-4.8				
Y/y %	1.2	1.6	1.2	1.3	1.9	1.8	1.2	-0.5	1.3	1.1	1.4	1.6
FF rate (%)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
(Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	2.00	2.71	2.75	2.76	2.62	2.50	2.28	1.97	2.55	2.34	2.35	2.54
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	98.7	98.7	98.5	99.2	100.7	101.3	101.6	102.2	98.8	101.5	98.8	100.7
Q/q %, SAAR	-2.3	0.2	-0.8	2.8	6.0	2.6	1.1	2.4				
Y/y %	2.5	1.9	1.0	0.0	2.1	2.7	3.0	3.1	1.3	2.7	1.7	2.0
Nominal public fixed investment												
Y tril; SAAR	22.3	23.7	24.0	23.9	24.3	24.9	25.0	24.7	23.6	24.8	23.0	24.6
Q/q %, SAAR	11.1	25.9	5.2	-1.5	7.9	10.7	0.4	-4.9				
Y/y %	4.5	16.0	18.8	8.7	8.3	5.9	5.0	2.6	12.4	5.1	9.5	6.8
Exchange rate (Y/$)	98.8	98.9	100.4	102.8	102.1	103.9	114.5	119.1	100.2	109.9	97.6	105.8
(Y/€)	129.6	130.7	139.9	140.3	139.5	137.8	143.8	132.6	135.1	138.4	130.6	140.3
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Source: Compiled by DIR.
Notes: 1) Japanese consumption tax hike expected in April 2017.
2) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.

6.2 Major Assumptions

	2015 4-6	7-9	10-12 (E)	2016 1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	2017 1-3 (E)	FY 2015 (E)	FY 2016 (E)	CY 2015 (E)	CY 2016 (E)
1) World economy												
Economic growth of major trading partners												
Y/y %	3.1	2.7	2.7	2.9	3.1	3.2	3.3	3.3	2.8	3.2	3.0	3.1
Crude oil price (WTI futures; $/bbl)	57.8	46.5	42.7	43.2	43.6	44.1	44.5	45.0	47.5	44.3	48.9	43.8
Y/y %	-43.9	-52.2	-41.7	-11.2	-24.6	-5.2	4.3	4.3	-40.9	-6.8	-47.4	-10.3
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	16,334	16,394	16,498	16,608	16,712	16,819	16,938	17,058	16,459	16,882	16,351	16,769
Q/q %, SAAR	3.9	1.5	2.6	2.7	2.5	2.6	2.9	2.9				
Y/y %	2.7	2.0	2.1	2.7	2.3	2.6	2.7	2.7	2.4	2.6	2.4	2.6
Consumer Price Index												
(1982-84 avg=100)	236.9	237.9	238.6	239.7	241.2	242.7	243.8	244.8	238.3	243.1	237.1	241.8
Q/q %, SAAR	3.0	1.6	1.2	1.9	2.5	2.5	1.8	1.7				
Y/y %	-0.0	0.1	0.7	1.9	1.8	2.0	2.2	2.1	0.7	2.0	0.2	2.0
Producer Price Index												
(Final demand; 2009.Nov=100)	110.0	110.3	110.3	110.8	111.4	112.0	112.4	112.8	110.3	112.1	110.1	111.6
Q/q %, SAAR	1.1	1.0	0.0	1.7	2.2	2.2	1.6	1.5				
Y/y %	-0.8	-0.9	-0.7	0.9	1.2	1.5	1.9	1.9	-0.4	1.6	-0.7	1.4
FF rate (%)	0.25	0.25	0.50	0.75	1.00	1.25	1.50	1.75	0.75	1.75	0.50	1.50
(Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	2.17	2.22	2.27	2.58	2.76	2.91	3.12	3.31	2.31	3.03	2.16	2.84
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	102.0	102.5	102.9	103.3	103.8	104.2	104.7	105.2	102.7	104.5	102.4	104.0
Q/q %, SAAR	-0.9	2.2	1.4	1.8	1.8	1.8	1.8	1.8				
Y/y %	1.2	1.2	1.3	1.0	1.8	1.6	1.7	1.8	1.2	1.7	1.7	1.6
Nominal public fixed investment												
Y tril; SAAR	25.2	25.2	24.4	23.8	23.8	23.7	23.7	23.6	24.6	23.7	24.8	23.8
Q/q %, SAAR	8.6	1.3	-13.2	-8.3	-1.3	-0.7	-0.7	-0.7				
Y/y %	3.3	1.5	-2.7	-2.9	-5.5	-6.1	-2.6	-1.0	-0.7	-3.5	0.9	-4.1
Exchange rate (Y/$)	121.4	122.2	121.9	125.0	125.0	125.0	125.0	125.0	122.6	125.0	121.1	125.0
(Y/€)	135.0	135.6	132.9	130.0	130.0	130.0	130.0	130.0	133.4	130.0	134.0	130.0
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Source: Compiled by DIR.
Notes: 1) Japanese consumption tax hike expected in April 2017.
2) Due to rounding, figures may differ from those released by the government.
E: DIR estimate.