Daiwa Institute of Research

10 September 2015 (No. of pages: 51)

Japanese report: 21 Aug 2015

Japan's Economic Outlook No. 186

What Will Happen if China's Economic Bubble Bursts?

Japan's economy has entered a temporary lull, but according to our outlook, will avoid recession.

Japan to see real GDP growth of +1.1% in FY15 and +1.9% in FY16, with nominal GDP growth of +2.6% in FY15 and +2.5% in FY16.

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Main Points

- **Japan's economy enters a temporary lull:** In light of the 1st preliminary Apr-Jun 2015 GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +1.1% in comparison with the previous year for FY15 (+2.0% in the previous forecast) and +1.9% in comparison with the previous year for FY16 (+1.9% in the previous forecast). Japan's economy has entered a temporary lull, but we expect it to avoid falling into recession 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.

- **What will happen if China's economic bubble bursts?:** In this report we examine the multiple dimensions of the consequences, as well as their magnitude, if China's economic bubble bursts. This is the key element of our report. According to our main economic scenario, the chances that China's economy could become mired in crisis are limited. Even if the amount of uncollectible loans held by China's banks were to suddenly surge in the future, it would be a bit hasty to assume that there would necessarily be an immediate fiscal crisis, though it cannot be denied that there is always the possibility that both China's economy and the global financial markets could be thrown into turmoil. What is more frightening is the risk of a major capital stock adjustment. According to a DIR simulation, if a capital stock adjustment were to occur, China's potential growth rate would at best fall to around 4%, while real economic growth would hover at around zero. A more serious meltdown would see China's

potential growth rate falling to as little as 1.6%, with real economic growth bringing in significantly negative numbers. Furthermore, we are of the opinion that China's devaluation of the renminbi will have little effect, as it is merely a drop in the bucket.

- **Japan's main economic scenario – the economy will shake off the temporary lull and enter a moderate economic growth phase:** The major focal point for Japan's economy in the near future is the question of whether the current situation is merely a temporary lull, or whether Japan will become mired in a recession. Judging from the performance of major demand components according to GDP statistics, there is some risk of the economy falling into recession. However, examination of three major judgment criteria ("merkmal") suggests that Japan's economy will be able to avoid a recession and head toward a moderate economic growth phase.

- **Is the US economy going to be okay?:** We expect the weakness in the corporate sector of US economy to be set off by the household sector and that the US economy will be able to avoid falling into a lull, instead moving toward a substantial recovery. Considering the maturation of the economy, we expect the US to experience a sustained economic expansion.

- **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 places emphasis on China's business cycle, a question of the greatest concern at this time for those involved in the financial markets, and we provide an in-depth analysis of the situation. We believe that the bottom falling out of China's economy can be avoided for some time. China does not have a truly Capitalist system. Hence the problem can probably be delayed for the next year or two. Moreover, personal consumption in China is determined by real estate prices rather than stock prices, and real estate prices have recently begun to show signs of bottoming out. The other factor here is that the main driver of the world's economy remains the US, so even if China's economy slows down a bit, the negative influence on Japan's economy is fairly limited.

- **BOJ's monetary policy:** We expect additional monetary easing measures by the BOJ to be shelved until spring 2016 or later. It should be noted that the financial markets are now leaning more strongly toward the opinion that the BOJ will not carry out additional monetary easing measures.

Our assumptions

- Public works spending is expected to decline by -2.8% in FY15, and -4.2% in FY16. An additional consumption tax hike is planned for April 2017.

- Average exchange rate of Y123.7/$ in FY15 and Y125.0/$ in FY16.

- US real GDP growth of +2.3% in CY15 and +2.8% in CY16.

Main Economic Indicators and Real GDP Components

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	FY14	FY15 (Estimate)	FY16 (Estimate)	CY14	CY15 (Estimate)	CY16 (Estimate)
Main economic indicators						
Nominal GDP (y/y %)	1.6	2.6	2.5	1.6	2.9	2.1
Real GDP (chained [2005]; y/y %)	-0.9	1.1	1.9	-0.1	0.7	1.6
Domestic demand (contribution, % pt)	-1.5	1.1	1.7	-0.1	0.4	1.4
Foreign demand (contribution, % pt)	0.6	-0.0	0.2	0.0	0.3	0.1
GDP deflator (y/y %)	2.5	1.4	0.6	1.7	2.2	0.5
Index of All-industry Activity (y/y %)*	-1.5	0.4	2.4	-0.3	-0.1	1.6
Index of Industrial Production (y/y %)	-0.5	0.7	5.0	2.1	-0.1	3.6
Index of Tertiary Industry Activity (y/y %)	-1.7	0.6	1.8	-0.8	0.2	1.1
Corporate Goods Price Index (y/y %)	2.8	-1.5	0.8	3.2	-1.5	0.8
Consumer Price Index (excl. fresh food; y/y %)	2.8	0.0	0.8	2.6	0.5	0.6
Unemployment rate (%)	3.6	3.3	3.2	3.6	3.4	3.2
Government bond yield (10 year; %)	0.46	0.44	0.55	0.53	0.41	0.52
Money stock; M2 (end-period; y/y %)	3.3	3.6	4.0	3.4	3.6	3.9
Balance of payments						
Trade balance (Y tril)	-6.5	-0.8	-0.6	-10.4	-0.7	-0.3
Current balance ($100 mil)	684	1,414	1,492	250	1,370	1,508
Current balance (Y tril)	7.8	17.5	18.6	2.6	16.8	18.8
(% of nominal GDP)	1.6	3.5	3.6	0.5	3.3	3.7
Real GDP components						
(Chained [2005]; y/y %; figures in parentheses: contribution, % pt)						
Private final consumption	-3.1 (-1.9)	0.2 (0.1)	1.4 (0.8)	-1.3 (-0.8)	-0.9 (-0.5)	0.9 (0.5)
Private housing investment	-11.7 (-0.4)	4.5 (0.1)	7.0 (0.2)	-5.1 (-0.2)	-1.6 (-0.1)	6.8 (0.2)
Private fixed investment	0.5 (0.1)	4.0 (0.5)	5.5 (0.8)	3.9 (0.5)	2.5 (0.4)	4.8 (0.7)
Government final consumption	0.4 (0.1)	1.3 (0.3)	1.3 (0.3)	0.2 (0.0)	1.2 (0.3)	1.3 (0.3)
Public fixed investment	2.0 (0.1)	-3.5 (-0.2)	-5.4 (-0.2)	3.8 (0.2)	-1.6 (-0.1)	-6.6 (-0.3)
Exports of goods and services	7.9 (1.3)	0.1 (0.0)	5.5 (0.9)	8.4 (1.4)	2.1 (0.4)	3.8 (0.7)
Imports of goods and services	3.6 (-0.7)	0.3 (-0.0)	4.8 (-0.7)	7.4 (-1.4)	0.4 (-0.1)	2.9 (-0.6)
Major assumptions:						
1. World economy						
Economic growth of major trading partners	3.4	3.2	3.6	3.3	3.2	3.5
Crude oil price (WTI futures; $/bbl)	80.5	49.3	49.0	92.9	49.7	48.3
2. US economy						
US real GDP (chained [2009]; y/y %)	2.7	2.3	2.8	2.4	2.3	2.8
US Consumer Price Index (y/y %)	1.3	0.7	2.0	1.6	0.2	2.0
3. Japanese economy						
Nominal public fixed investment (y/y %)	5.1	-2.8	-4.2	6.8	-0.4	-5.5
Exchange rate (Y/$)	109.9	123.7	125.0	105.8	122.3	125.0
(Y/€)	138.4	137.7	140.0	140.3	135.8	140.0
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 186)		Previous outlook (Outlook185 update)		Difference between previous and current outlooks	
	FY15	FY16	FY15	FY16	FY15	FY16
Main economic indicators						
Nominal GDP (y/y %)	2.6	2.5	3.0	2.3	-0.4	0.2
Real GDP (chained [2005]; y/y %)	1.1	1.9	2.0	1.9	-0.8	0.0
Domestic demand (contribution, % pt)	1.1	1.7	1.5	1.7	-0.4	0.0
Foreign demand (contribution, % pt)	-0.0	0.2	0.6	0.2	-0.6	0.0
GDP deflator (y/y %)	1.4	0.6	1.0	0.4	0.5	0.2
Index of All-industry Activity (y/y %)*	0.4	2.4	1.5	2.4	-1.1	0.0
Index of Industrial Production (y/y %)	0.7	5.0	1.0	4.7	-0.3	0.3
Index of Tertiary Industry Activity (y/y %)	0.6	1.8	2.1	1.9	-1.5	-0.1
Corporate Goods Price Index (y/y %)	-1.5	0.8	-1.3	0.9	-0.1	-0.2
Consumer Price Index (excl. fresh food; y/y %)	0.0	0.8	0.4	1.1	-0.3	-0.3
Unemployment rate (%)	3.3	3.2	3.3	3.1	-0.0	0.0
Government bond yield (10 year; %)	0.44	0.55	0.47	0.70	-0.03	-0.16
Money stock; M2 (end-period; y/y %)	3.6	4.0	3.4	4.0	0.2	-0.0
Balance of payments						
Trade balance (Y tril)	-0.8	-0.6	0.1	0.1	-0.9	-0.7
Current balance ($100 mil)	1,414	1,492	1,370	1,435	45	57
Current balance (Y tril)	17.5	18.6	17.0	17.9	0.5	0.7
(% 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	0.2	1.4	1.6	1.5	-1.4	-0.1
Private housing investment	4.5	7.0	1.7	5.9	2.9	1.1
Private fixed investment	4.0	5.5	4.9	5.5	-0.9	0.0
Government final consumption	1.3	1.3	0.8	1.0	0.5	0.3
Public fixed investment	-3.5	-5.4	-5.8	-4.9	2.3	-0.5
Exports of goods and services	0.1	5.5	8.0	5.7	-7.9	-0.2
Imports of goods and services	0.3	4.8	5.3	5.3	-5.0	-0.4
Major assumptions:						
1. World economy						
Economic growth of major trading partners	3.2	3.6	3.2	3.5	0.0	0.0
Crude oil price (WTI futures; $/bbl)	49.3	49.0	59.9	63.8	-10.6	-14.8
2. US economy						
US real GDP (chained [2009]; y/y %)	2.3	2.8	2.2	2.7	0.1	0.1
US Consumer Price Index (y/y %)	0.7	2.0	1.1	1.7	-0.4	0.3
3. Japanese economy						
Nominal public fixed investment (y/y %)	-2.8	-4.2	-5.1	-3.7	2.3	-0.5
Exchange rate (Y/$)	123.7	125.0	124.2	125.0	-0.4	0.0
(Y/€)	137.7	140.0	137.3	138.0	0.4	2.0
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.00	0.00

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

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Summary

Japan's economy enters a temporary lull

In light of the 1st preliminary Apr-Jun 2015 GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +1.1% in comparison with the previous year for FY15 (+2.0% in the previous forecast) and +1.9% in comparison with the previous year for FY16 (+1.9% in the previous forecast). Japan's economy has entered a temporary lull, but we expect it to avoid falling into recession 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 the Apr-Jun 2015 period declined by -1.6% q/q annualized (-0.4% q/q)

The real GDP growth rate for Apr-Jun 2015 (1st preliminary est) declined by -1.6% q/q annualized (-0.4% q/q). Meanwhile, market consensus was down by -1.8% q/q annualized (-0.5% q/q).This is the first time in three quarters for real GDP to experience a decline. The decline was due to weak results for exports and personal consumption, and considering the extent to which the real GDP growth rate fell, it is likely that Japan's economy is now marking time, and has entered a temporary lull.

Exports and personal consumption are conspicuously weak

Performance by demand component in the Apr-Jun 2015 results shows personal consumption down -0.8% q/q, its first decline in four quarters. While the household employment and income environments continue to improve, there were several factors weighing heavily on personal consumption. These were (1) Real employee compensation fell for the first time in two quarters by -0.2% q/q, (2) Automobile sales were weak, centering on light vehicles, (3) Poor weather conditions brought downward pressure on economy, and (4) Households tended to watch their budgets due to the increase in prices for foodstuffs. Looking at personal consumption by category, we see that consumption was weak overall, with negative numbers in all goods and services. As for durables, household electronics marked time, while automobiles continued their decline, bringing negative results for the first time in three quarters at -2.2% q/q. Semi-durables were down considerably by -3.9% due to the effect of poor weather conditions on summer sale, while non-durables were also down for the first time in four quarters by -0.6%. Services suffered a small decline at -0.1%, but performance was actually somewhat on the high side in comparison with recent figures. Hence services are seen as maintaining a firm undertone.

Housing investment grew for the second 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 effects of the reactionary decline after last year's consumption tax increase appear to be gradually easing up, and the employment and income environment affecting households is improving, while interest on housing loans is at a low. These factors have helped housing starts make a gradual comeback since the Oct-Dec period of 2014. Housing investment and housing starts are recorded on a progressive basis, hence there is a lag in their performance, so it is only recently that housing investment hit bottom with a shift into the current growth trend.

Capex was down a small amount by -0.1% q/q for the first time in three quarters, apparently taking a short break from the recent growth trend. However, the sense of overcapacity is easing up amongst corporations and is being replaced by a sense of under-capacity. Improvements can be seen in corporate earnings due to the weak yen, especially in the area of major manufacturers, hence the positive environment for capex continues. In addition, considering the fact that capex is experiencing moderate growth on the whole and that there is a firm undertone in corporate plans for capex spending according to the BOJ Tankan, these results should not be taken in an overly negative light.

Public investment grew for the first time in two quarters by +2.6% q/q. Results for the period were favorable, but the effects of having front-loaded the FY2013 supplementary budget and the FY2014 budget are gradually running out, leaving public investment, one of the leading economic indicators, weak. This means that additional economic measures will be needed in the future.

Exports suffered a decline for the first time in six quarters at -4.4% q/q. A decline in exports to both the US and Asia are seen as having contributed to downward pressure on performance. Exports to the US are seen as having been effected by the drop in exports of capital goods affected by weak capital spending in addition to what was likely a rebound effect from the previous period's strong performance. As for exports to Asia, results reflect the overall decrease in transactions with the entire region, which has been influenced by China's economic slowdown. Imports have also slowed down due to the decline in domestic demand (-2.6% q/q) for the first time in four quarters. The major contributor to downward pressure on exports which has expanded during this period is overseas demand (net exports), falling for the second consecutive quarter by -0.3%.

Japan's economy expected to gradually make a comeback, avoiding adverse situations

Our basic economic scenario sees Japan's economy gradually making a comeback, avoiding any truly adverse situations. We expect real GDP to improve with personal consumption and exports moving into a growth trend, and capex to gradually make a comeback. We expect the economy to return to a positive growth trend in the Jul-Sep 2015 period. However, there is a certain amount of risk that real GDP could move into a downtrend for the time being. We suggest keeping an eye on the trend in inventory adjustment. As for exports, be on the lookout for the following: there remains some risk that US capital spending could continue its downtrend due to weak corporate earnings, while the slowdown in the Chinese economy could continue unabated for some time.

As for personal consumption, the positive environment for households in the areas of employment and income is expected to gradually lead to a recovery of the growth trend. Nominal wages and income are gaining support from positive factors including the following: (1) According to a survey carried out by the Japanese Trade Union Confederation, this year's pay scale increase is +0.69% y/y, (2) The FY2015 pension revision rate is +0.9% y/y (it was -0.7% in FY2014), and (3) Summer bonuses are expected to increase for the third consecutive year due to improvements in corporate business performance. This is expected to begin showing up in increases in household disposable income and promises to become a factor in increasing personal consumption a little further up the road. Meanwhile, the price of crude oil, which has experienced steep declines since the summer of 2014 is expected to continue at a low. There tends to be a time lag in the effects of this phenomenon, meaning that the consumer price will see downward pressure and real household wages will get a boost. However, considering the weak performance of personal consumption this period, chances are that households will be budgeting more carefully in response to the rush to raise prices of foodstuffs. Weakening consumer confidence is something which must be watched over carefully on into the future.

Housing investment is expected to be free of the effects of the reactionary decline after the increase in consumption tax last year, and backed by improvements in the employment and income environment, is expected to move toward a moderate recovery now that housing starts, a leading indicator, are clearly making a comeback.

As for exports, growth is seen gradually increasing centering on the advanced countries, and a shift to a growth trend is expected. However, both the US economy, and China's economy are becoming increasingly uncertain. There is some risk here that the recovery in exports could begin dragging its feet. The US economy experienced a major slowdown during the Jan-Mar 2015 period due to special factors, but is expected to make a comeback in the Apr-Jun 2015 period and to continue favorably in the future. The recovery in the US economy is expected to help not only Japan's exports to the US, but exports of Japanese intermediate goods to Asia since the US is the location of final demand for many

goods. Europe's economy is expected to move gradually toward a comeback due to the effects of additional monetary easing on the part of the ECB, and so Japan's exports are seen continuing favorably. As for China, whose economy has experienced slower growth recently, positive factors are now developing including the People's Bank of China showing stronger interest in monetary easing, and bringing expectations that moderate growth can be maintained on into the future and that the economy's back will not be broken due to recent developments. However, risk remains that US capital spending could remain in a downtrend due to weakening corporate earnings, and the possibility that the slowdown in the Chinese economy could continue unabated are factors which must be continually watched over with care in the future.

As for capex, a moderately paced comeback is expected despite fluctuations. Machinery orders, another leading indicator, are expected to continue in a growth trend, while the BOJ Tankan indicates that capex activities are reflecting a steady undertone. Both non-manufacturing, which has reflected a growing sense of deficiency in capex for some time now, and the manufacturing sector will continue to be relieved of any sense of surplus in capex, and this should encourage more capex related demand in the future. Meanwhile, as the yen continues to be weak, some manufacturers appear to be increasing the percentage of their domestic production, while improvements in corporate earnings due to the major decline in the price of crude oil should also become a factor encouraging an increase in capex spending. However, considerable downtrends being experienced in personal consumption and exports could, if they continue, could bring cuts in industrial production and capacity utilization. If this occurs, it would throw a shadow over hoped for recovery in capex spending. We suggest vigilance in this area.

What will happen if China's economic bubble bursts?

In this report we examine the multiple dimensions of the consequences, as well as their magnitude, if China's economic bubble bursts. This is the key element of our report. According to our main economic scenario, the chances that China's economy could become mired in crisis are limited. Even if the amount of uncollectible loans held by China's banks were to suddenly surge in the future, it would be a bit hasty to assume that there would necessarily be an immediate fiscal crisis, though it cannot be denied that there is always the possibility that both China's economy and the global financial markets could be thrown into turmoil. What is more frightening is the risk of a major capital stock adjustment. According to a DIR simulation, if a capital stock adjustment were to occur, China's potential growth rate would at best fall to around 4%, while real economic growth would hover at around zero. A more serious meltdown would see China's potential growth rate falling to as little as 1.6%, with real economic growth bringing in significantly negative numbers. Furthermore, we are of the opinion that China's devaluation of the renminbi will have little effect, as it is merely a drop in the bucket.

Japan's main economic scenario – the economy will shake off the temporary lull and enter a moderate economic growth phase

The major focal point for Japan's economy in the near future is the question of whether the current situation is merely a temporary lull, or whether Japan will become mired in a recession. Judging from the performance of major demand components according to GDP statistics, there is some risk of the economy falling into recession. However, examination of three major judgment criteria ("merkmal") suggests that Japan's economy will be able to avoid a recession and head toward a moderate economic growth phase.

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We expect the weakness in the corporate sector of US economy to be set off by the household sector and that the US economy will be able to avoid falling into a lull, instead moving toward a substantial recovery. Considering the maturation of the economy, we expect the US to experience a sustained economic expansion.

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BOJ's monetary policy

We expect additional monetary easing measures by the BOJ to be shelved until spring 2016 or later. It should be noted that the financial markets are now leaning more strongly toward the opinion that the BOJ will not carry out additional monetary easing measures.

1. What Will Happen if China's Economic Bubble Bursts?

What would the magnitude of the problem be if China's economic bubble bursts?

In this chapter, we examine trends in China's economy. It is not an overstatement to point out that this is of the utmost concern for those involved in the global financial markets. Our focus is primarily on the structural aspects of China's economy, and we attempt here to provide a broad-ranging evaluation of the current situation, including the question of what the consequences, as well as their magnitude, might be if China's economic bubble bursts.

1.1 Evaluating the Seriousness of China's Uncollectible Loans

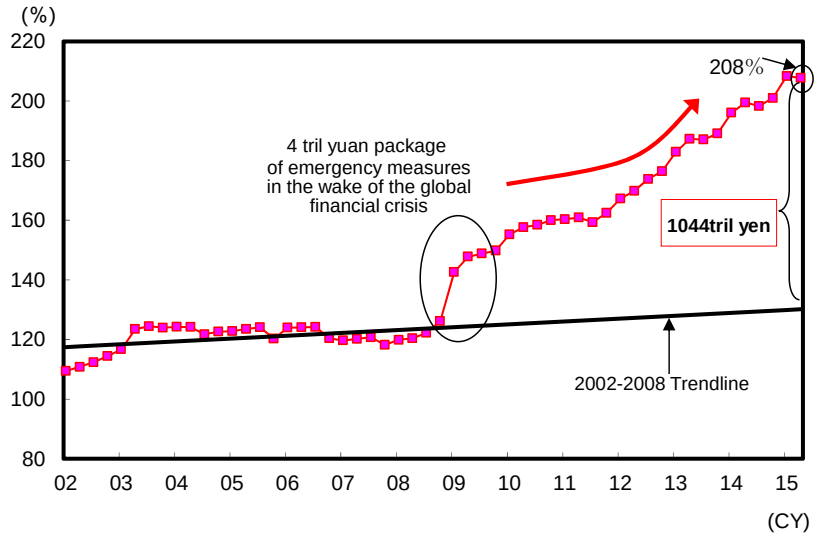
In comparison with past trends, excessive lending in China could be as much as 1,044 tril yen

Currently, excessive lending on the part of both legitimate banks and shadow banking is seen as a problem in China in the wake of its response to the global financial crisis in 2008. This is considered to be one of the biggest risks at this time for both the world economy and Japan. Fears regarding the possibility that China's economic bubble could burst at any time have been rapidly increasing.

Chart 1 provides an estimate of bank financing and other forms of procuring capital indicated by total social financing in China as a proportion of China's nominal GDP. Such financing reached 208% of nominal GDP as of the end of June 2015. Comparing current levels to past trends, we estimate excessive lending in China to be around 1,044 tril yen.

The global financial markets are increasingly nervous about the possible risk scenarios, including (1) China drawing down its foreign currency reserves (around $3.7 tril as of end June 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 in Comparison to Nominal GDP **Chart 1**



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

How would the world economy be affected if China's bank loans become uncollectible?

In this section we consider the effects of certain percentages of China's bank financing becoming uncollectible. Chart 2 shows three scenarios in which various percentages of China's bank financing

becomes uncollectible. We look at the extent to which such an occurrence would be influential by comparing with various economic indices. The levels are (1) 5%, (2) 10%, and (3) 20%.[1]

First we look at a comparison of uncollectible bank loans to foreign currency reserves, as well as the ratio of outstanding obligations to nominal GDP, and the extent to which these ratios have deteriorated at this time. Hypothetically speaking, if an especially large amount in bank loans were to become uncollectible, we do not think that a major crisis would occur. Concretely speaking, the existence of a large amount in uncollectible loans could be sufficiently handled by various policy measures, including drawing down foreign currency reserves, capital infusion through the issuance of special government bonds, or the establishment of a body for the purchase of non-performing loans (similar to the former AMC).[2]

Next, we look at flows, assuming that uncollectible bank loans could be disposed of in the course of about five years. If 5% of bank loans became uncollectible, neither the government expenditure ratio to cover the amount of default nor the fiscal balance to nominal GDP ratio would deteriorate to the extent that it would be a major problem. However, it is important to note here that as the ratio of uncollectible loans grows, the government's fiscal health on a flows basis can rapidly deteriorate. But even if this is the case, the fiscal balance to nominal GDP ratio would only drop by around -5.5%pt, and therefore damage done to government finances would not be fatal.

Based on these arguments, a significant increase in uncollectible loans due to the collapse of China's economic bubble might cause some turmoil in China's economy and the global financial markets, but it would not necessarily lead immediately to a fiscal crisis for China.

Effects of a Percentage of Bank Loans Becoming Uncollectible **Chart 2**

	Percentage of Uncollectible Loans	5%	10%	20%
Stock	Amount Uncollectible (Yuan tril) Total	4.4	8.8	17.6
	Amount Uncollectible/Total Foreign Currency Reserves (x)	0.2	0.4	0.8
	Extent of Deterioration of Outstanding Obligations/Nominal GDP (%pt)	6.9%pt	13.8%pt	27.6%pt
Case in which uncollectible bank loans are disposed of in five years				
Flow	Amount Uncollectible (Yuan tril) Total	0.9	1.8	3.5
	Amount Uncollectible/Govt. Expenditure (%)	4.7%	9.3%	18.7%
	Extent of Deterioration of Fiscal Balance/Nominal GDP (%pt)	-1.4%pt	-2.8%pt	-5.5%pt

Source: IMF, People's Bank of China, National Bureau of Statistics of China, and China National Administration of Foreign Exchange; compiled by DIR.

Notes: 1) The most recent value of the ratio of outstanding obligations to nominal GDP is 32.5%. the ratio of fiscal balance to nominal GDP is in the red at 1.8%.
2) Figures for the amount in bank loans from 2015 2Q, total foreign currency reserves from June 2015, and data on nominal GDP and amounts of revenue and expenditure are from 2014.
3) As for effects on outstanding obligations and fiscal balance, it is assumed that outstanding obligations will increase as a result of using government expenditure to cover losses associated with uncollectible loans. Meanwhile, the nominal GDP (the denominator) was calculated by fixing it at 2014.

[1] The latest figures for China's non-performing loan ratio show it at 1.5% (2015 2Q). If China's economic bubble bursts, the NPL ratio will rise sharply, and there will also be risk of considerable growth in uncollectible bank loans. Looking at past trends, we see that China's NPL ratio was around 10% during the year 2000. Between the middle of the 1990s and the beginning of the 2000s, the NPL ratio was over 20%. Meanwhile, looking at the Eurozone, we see that non-performing loans to Greece rose to over 20% at the four major European banks as of the end of 2014.

[2] In the past, China has handled its non-performing loans in the following ways: (1) Issuance of long-term special government bonds by the China Finance Department and application of capital procured to bank capital, (2) Establishment of a government run asset management company (AMC), which would then purchase non-performing loans from banks, and (3) Draw down foreign currency reserves and use funds to infuse banks with more capital.

An international comparison shows that China still has a large margin for mid to long-term public spending

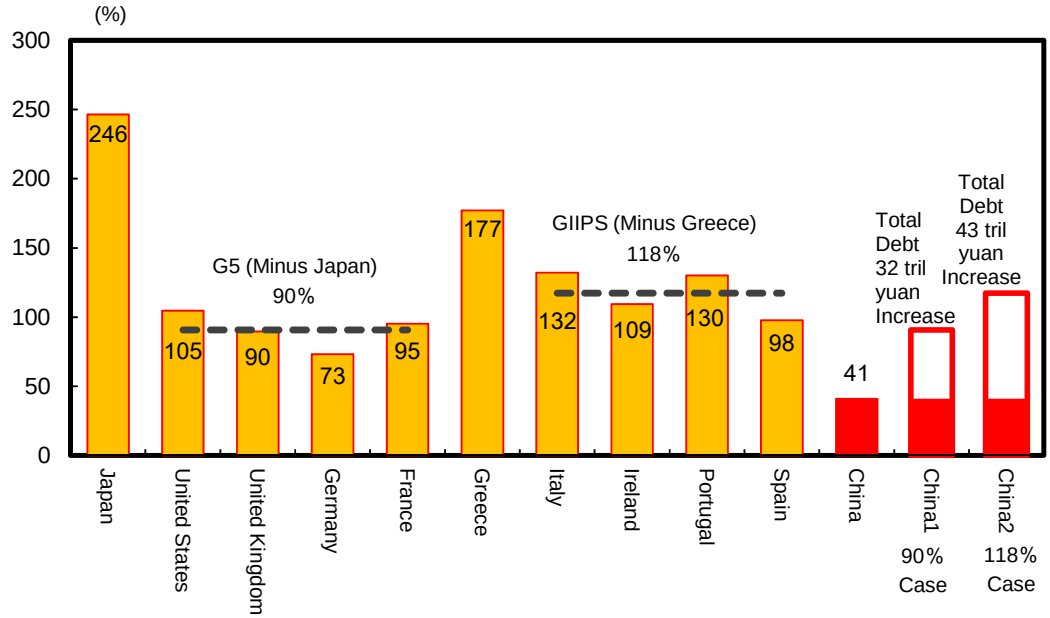
Lastly, we consider the margin available to China for mid to long-term public spending by making a comparison between China's debt situation and that of the G5 and GIIPS nations.[3]

According to data from the IMF's calculation of 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 3). 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 exceeds the amount in uncollectible loans of 17.6 trillion yuan, which corresponds to the 20% case in uncollectible bank loans discussed earlier in this report (see Chart 2). This means that in an international comparison, China has a large margin for mid to long-term public spending.

Of course, if China's economic bubble bursts, uncollectible bank loans will increase sharply, as well as the government's outstanding obligations. But before it reaches a general government debt-to-GDP ratio of 90%, or around the same amount as the G5 nations (except for Japan), China is still likely to be faced with the threat of a financial collapse. In addition, developing a market to absorb the huge amount of government bonds which would likely be issued in association with ballooning government expenditures would also be an issue. That said, China may manage to prevent its economic bubble from bursting and instead encourage growth in its economy and help to develop a healthy financial market. If this is the case, it is just as easy to imagine that China's government debt-to-GDP ratio will eventually reach the level of the G5 nations (with the exception of Japan).

General Government Debt-to-GDP Ratio (2014) **Chart 3**



Source: IMF; compiled by DIR.

[3] It should be noted that the arguments in this section do not take into consideration measures such as drawing down foreign currency reserves or the purchase of non-performing loans.

1.2 China's Devaluation of the Renminbi Will Have Little Effect

Devaluation of the renminbi will have a limited effect in stimulating the economy

On August 11, 2015, the People's Bank of China suddenly took the bold step of devaluating the renminbi. Further devaluations were carried out on the 12th and the 13th. The general view is that the devaluation was for the purpose of stimulating China's exports, and has increased fears that China's economy has deteriorated more than had been expected.

It is our view that the devaluation of the renminbi will have limited effect in stimulating the economy and is merely a drop in the bucket when it comes to what is really required to make improvements. As is shown in Chart 4, even a 5% devaluation of the renminbi in relation to the dollar would improve real GDP only by a miniscule 0.4%pt.

Devaluation of the renminbi expected to be gradual

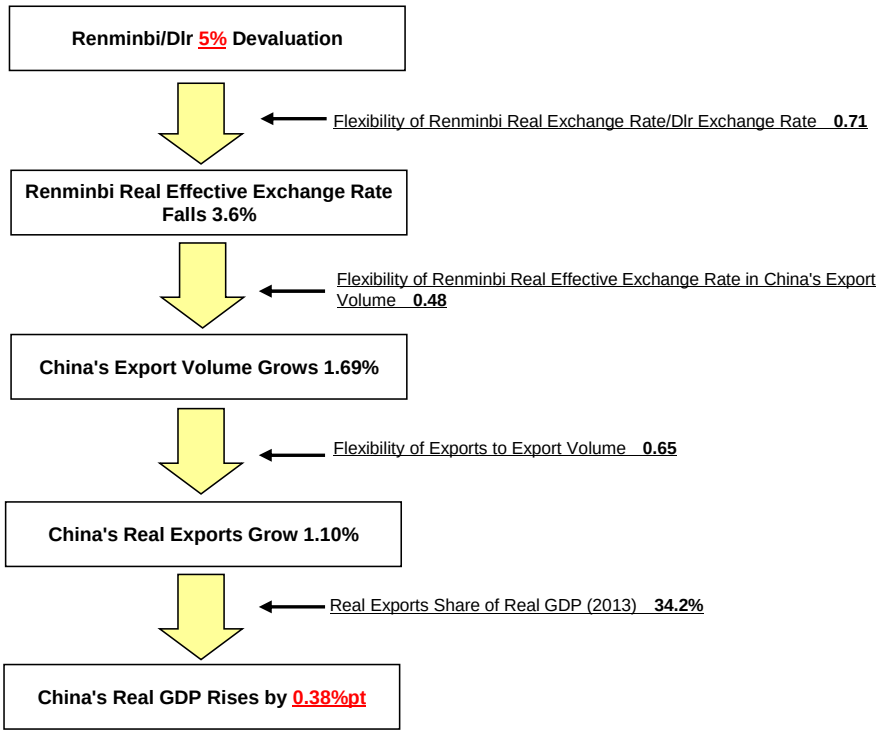
The devaluation of the renminbi will likely be gradual. This is because there are two powerful side effects of doing so.

First, there is the risk that it will encourage the flight of capital to locations outside China. During the middle of the 2000s when the value of the renminbi was on the rise, there was no capital flight, because it was possible to earn income from investments as well as foreign exchange profits. However, now that the renminbi has been devalued, capital will increasingly move elsewhere in search of hot money if the weak yuan trend is seen continuing. In the worst case scenario, China could even face the danger of a currency crisis.

The second side effect is the intensification of trade friction between China and the US. There have been repeated criticisms of China in the US Congress, claiming that the yuan has been pegged at a level well below its true value. If devaluation of the renminbi continues in the future, criticisms from the US Congress will likely grow stronger, with accusations that China is artificially inducing a weak yuan as a means of unfairly giving its own export driven corporations preferential treatment.

For this reason we believe the devaluation of the renminbi will be a gradual one, and that as a result, it will likely have a limited effect in stimulating China's economy.

Effects of Devaluation of the Renminbi on China's Economy **Chart 4**



Source: Haver Analytics, BIS, OECD, China Customs General Administration, United Nations Statistics; compiled by DIR.

1.3 Serious Structural Problems in China's Economy

The evolutionary path of China's economy

In this section we examine some serious structural problems in China's economy.

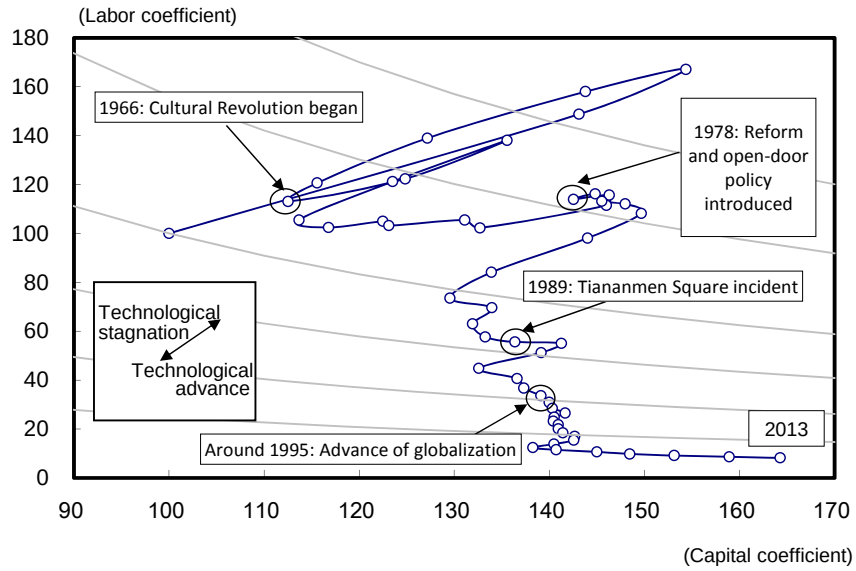
First of all, looking at China's economy from a macro perspective, let us consider the route that China's economy took in developing into its current state. Chart 5 traces the route that China's economic development has taken since 1960. The vertical axis represents the labor coefficient (= labor input / real GDP), while the horizontal axis indicates the capital coefficient (= real capital stock / real GDP). The labor coefficient and the capital coefficient provide a measure of the efficiency of capital and labor – two essential factors for economic growth. As for the labor coefficient, the higher the value shown in the chart rises (in the upward direction of the graph) the more labor efficiency deteriorates. Meanwhile, the more the value for the capital coefficient rises, moving further toward the right of the graph, the more the efficiency of capital is shown to be deteriorating. Conversely, the more the value decreases, moving to the left side of the graph, the more capital efficiency is shown to be improving.

When capital and labor are improving, this means that technical progress is occurring in the economy of the country being observed. Measuring the long-term movement of the capital and labor coefficients provides a quantitative look at the path of economic development a particular country has taken.

The curved lines running from upper left to lower right of the graph are called isoquant curves. Their significance is (1) Movement along an isoquant curve indicates China's technical level in the macro sense, (2) The further to the lower left the curves shift, moving closer to the source, the more China's technical level improves, and (3) Conversely, the more the curves shift to the upper right, moving farther away from the source, the more China's technical level falls behind.

Chart 5 indicates that China's economy has improved in its technical level in the macro perspective since 1978 when the reform and opening-up policy was initiated. The main reason for this improvement was a decline in the labor coefficient (meaning improvement in labor efficiency). However, it is important to note that in recent years, China's technical level in the macro perspective has clearly stagnated. Dark clouds have begun to gather over the future of China's economy as an excess in capital stock accumulates.

Changes in China's Labor Coefficient and Capital Coefficient **Chart 5**



Source: CEIC, World Bank; compiled by DIR.
Note: Labor coefficient = labor / real GDP. Capital coefficient = real capital stock / real GDP. Both are indexed so that 60 years = 100.

Risk of large-scale capital stock adjustment in China's future requires caution

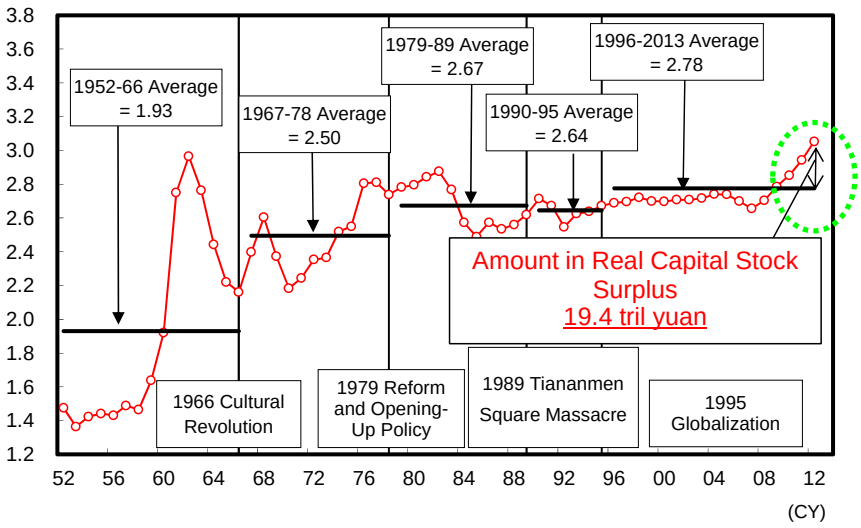
The sense of surplus in China's supply capacity has been indicated previously. This produces the risk of a large-scale capital stock adjustment occurring in the future.

Chart 6 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).

Since China is a socialist market economy, they could delay having to deal directly with the problem of capital stock surplus for 1-2 years through fiscal and financial policy. However, there is serious risk of a large-scale capital stock adjustment occurring in the mid to long-term (around 3-5 years).

Changes in China's Capital Coefficient **Chart 6**



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.

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

Even in an optimum scenario China's economic growth rate would fall to around zero

Lastly, we take a quantitative look at the potential magnitude of the collapse of China's economic bubble to ensure that we can get a good grasp of the future risk scenario. If a surplus capital stock adjustment were to actually occur, what is the risk for China and how far would its economy fall?

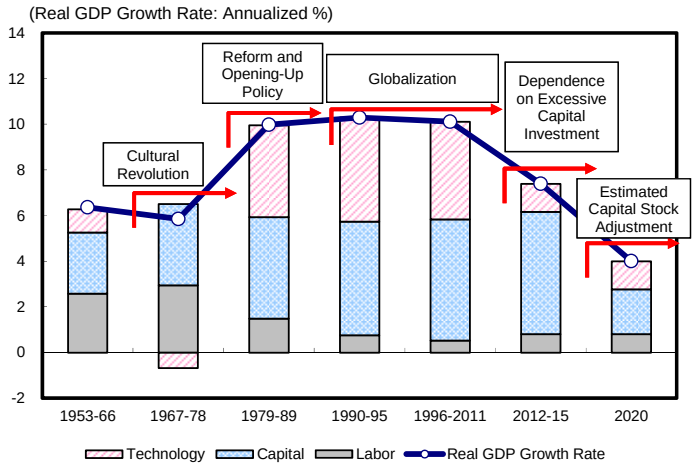
Chart 7 shows a factor analysis of China's potential growth rate. The data here suggests that (1) China's economy has gradually matured in recent years, and this has slowed progress in technological advancement, (2) Despite this fact, it has continued to depend on the accumulation of capital mainly from public spending to maintain a high economic growth rate, and (3) As a result, this has done more harm than good to technological advancement. Between the years 2012-15 China's economy declined, yet still was able to maintain a high growth rate of over 7%. However, 5%pt of the growth rate was due to the increase in capital stock. Labor input and total factor productivity contributed only 2%pt.

The major decline in the rate of contribution from total factor productivity is especially noteworthy, as it had maintained an annualized rate of 5% for thirty years straight since the introduction of the reform and opening-up policy and on through the era of rapid globalization.

According to a DIR simulation, if a capital stock adjustment were to occur under such circumstances, China's potential growth rate would fall to around 4% at best. This adjustment process is shown in the bottom left Chart 7. As far as can be determined from the capital stock circulation diagram, capital spending at the level seen in 2014 should not have been allowable without an expected growth rate of over 10%. Hence if adjustment progresses to the point where the potential growth rate is only 4%, the situation for capital spending will continue to be harsh. If the adjustment process lasts from the year 2016 to 2020, capital spending will likely continue in negative numbers on a y/y basis. If this scenario becomes a reality, the real economic growth rate will hover at around zero as is shown in the lower right portion of Chart 7.

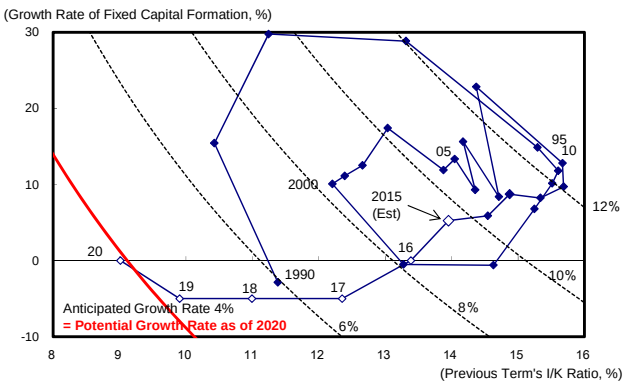
Simulation: China's Economy (Capital Stock Adjustment Scenario) **Chart 7**

Factor Analysis of Potential Growth Rate



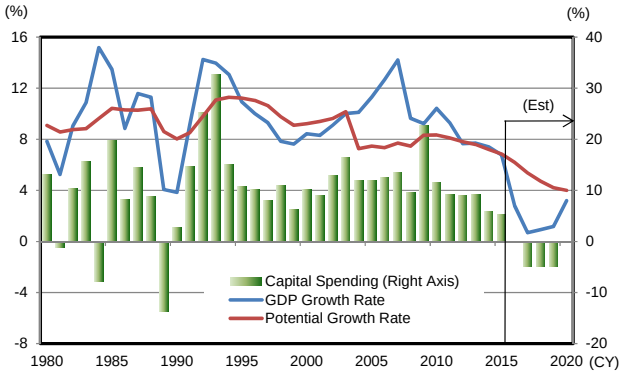
Source: CEIC, World Bank; compiled by DIR.
Note: Major events: 1966 – The Cultural Revolution, 1978 - Reform and Opening-Up Policy, 1989 – Tiananmen Square Massacre

Capital Stock Circulation



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

Economic Growth Rate



Source: CEIC, World Bank; compiled by DIR.

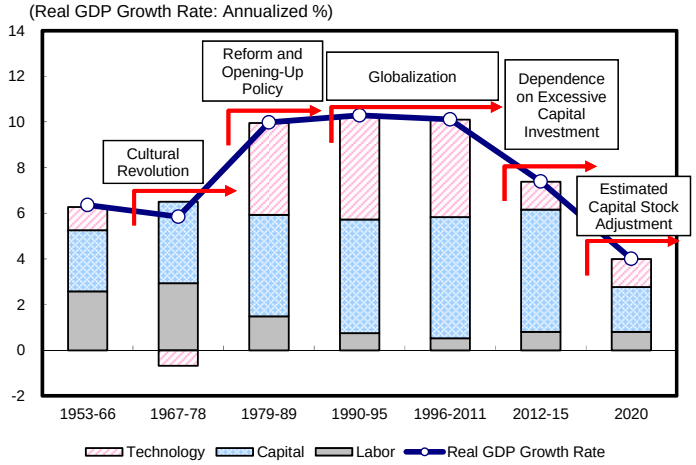
Meltdown scenario: World economy sent into a tailspin

We have already stressed that the scenario discussed in the previous section is the optimum or best-case scenario. What is just as likely or possibly more likely to occur is the following. If the expected growth rate declines and the progress of the capital stock adjustment causes the bad debt problem to become even more serious, the economy could spiral out of control, lapsing further into a meltdown situation. Of all the possible risk scenarios the meltdown scenario is, realistically speaking, the most likely to occur. It is actually a more realistic outcome than the capital stock adjustment scenario.

The point at which the capital stock adjustment is expected to hit bottom is at a much lower point than in the previously discussed capital stock adjustment scenario (see Chart 8). As shown in the bottom right portion of this chart, the actual economic growth rate will continue to register considerably negative performance. If China's economy, the second largest in the world, twice the size of Japan's, were to lapse into a meltdown situation such as this one, the effect would more than likely send the world economy into a tailspin. Its impact could be the worst the world has ever seen.

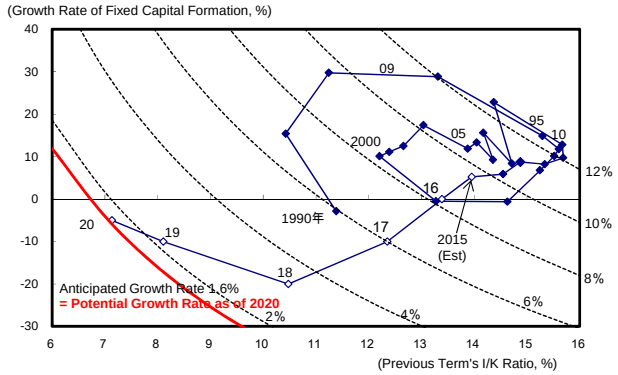
Simulation: China's Economy (Meltdown Scenario) **Chart 8**

Factor Analysis of Potential Growth Rate



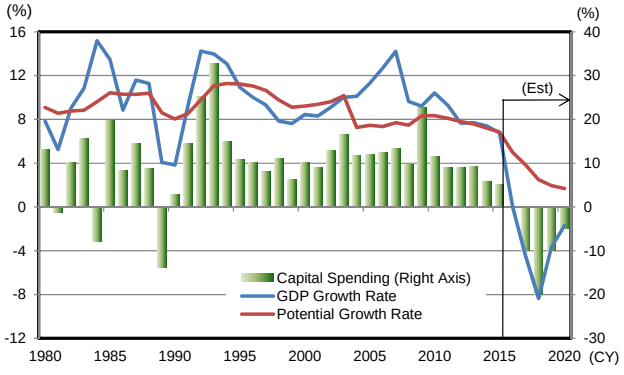
Source: CEIC, World Bank; compiled by DIR.
Note: Major events: 1966 – The Cultural Revolution, 1978 - Reform and Opening-Up Policy, 1989 – Tiananmen Square Massacre

Capital Stock Circulation



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

Economic Growth Rate



Source: CEIC, World Bank; compiled by DIR.

2. Japan's Main Economic Scenario – Economy to Shake Off Temporary Lull and Enter a Moderate Growth Phase

2.1 Japan's Economy Enters Temporary Lull

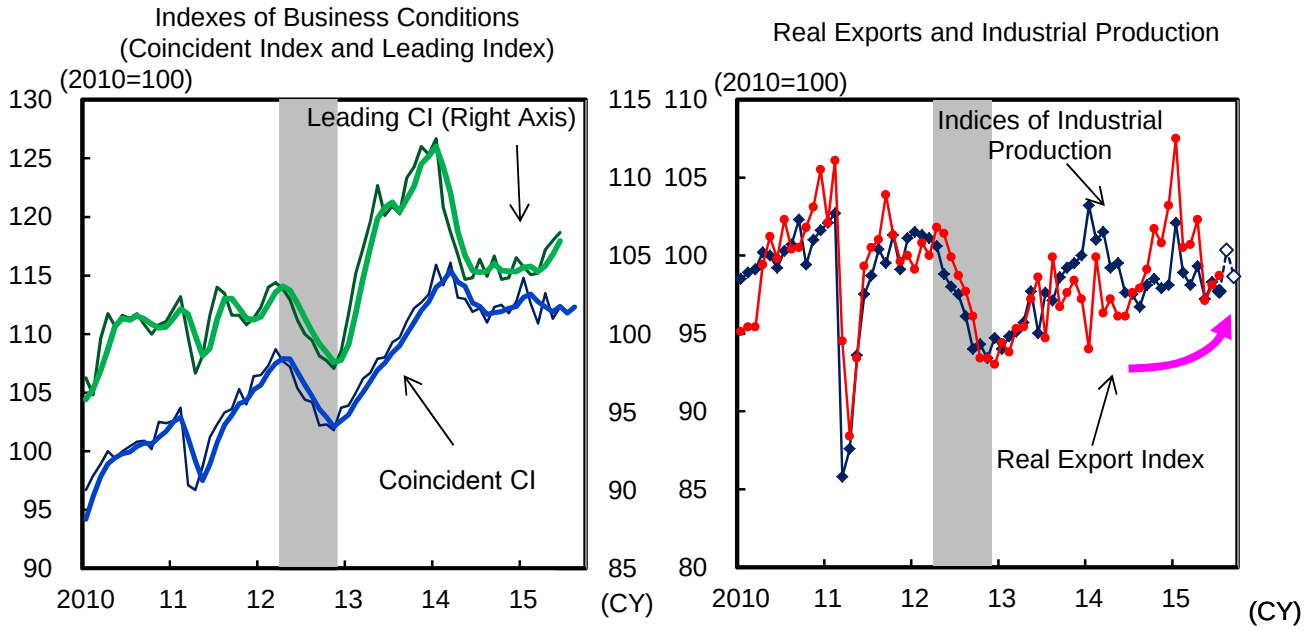
Index of business conditions indicates that Japan's economy has entered a temporary lull

There has been a growing sense of uncertainty of late regarding the Japanese economy. The Cabinet Office revised its view of the economy downward in May 2015, saying that the assessment of the coincident index is weakening. Those involved with the financial markets have even begun saying that there are possibilities the economy could be about to enter a period of recession.

In this chapter we provide an overview of the recent economic climate, and consider whether there is a possibility that Japan's economy might enter a recessionary period. Our conclusion in this chapter is that we expect that Japan's economy will be able to avoid a recession and head toward a moderate economic growth phase. There will be some hint of a slowdown during the Jul-Sep period due to inventory adjustment as the accumulation of inventories puts a damper on production. However, during the Oct-Dec period and beyond, there is a good chance that the economy will achieve a full-fledged recovery, focused mostly on domestic demand. The overseas economy is a major risk factor, but exports to the US are expected to make a comeback, allowing exports to avoid falling through the floor. However, as was argued in the previous chapter, fears are rising that China's economy will be taking a further downturn, hence caution is advised.

Chart 9 shows Japan's index of business conditions as well as the trend in real exports and industrial production. A turning point came in the index of business conditions after January 2015 when the coincident indicators associated with production and shipping became depressed. Meanwhile, leading indicators such as household related indices and the financial markets showed marked improvement, while on the other hand, indices associated with the inventory rate were deteriorating. Behind this was likely the influence of the lack of dynamism in domestic demand, and the rapid decline in real exports. The main reasons for the downturn in exports were a decline in demand for iron and steel in Asia due mainly to the slow economy in China, sluggish capital spending in the US, and in relation to this tendency, a sharp downturn in exports of general machinery to that country.

Japan's Coincident & Leading Indicators, Real Exports, and Industrial Production **Chart 9**



Source: Cabinet Office, Bank of Japan, Ministry of Economy, Trade and Industry; compiled by DIR.
Note: Shaded areas represent recessionary periods. Thick lines denoting the index of business conditions based on the 3-month moving average. The most recent two months of industrial production is based on METI's Production Forecast Survey.

2.2 Shrinking Trade Volume Suggests Maturation of World Economy

Declining worldwide trade volume is a drag on Japan's economy

Here we would like to point out that the recent slowdown in exports is influenced to a certain extent by the fact that the world economy is maturing.

Chart 10 shows the relationship between the maturation of the world economy and the economic slowdown (we use historical trends in the US to examine the relation to economic slowdowns). We divide global GDP into the household sector (personal consumption) and the corporate sector (gross capital formation), and measure the degree of maturation by looking at the difference between the growth rates of the household and corporate sectors.

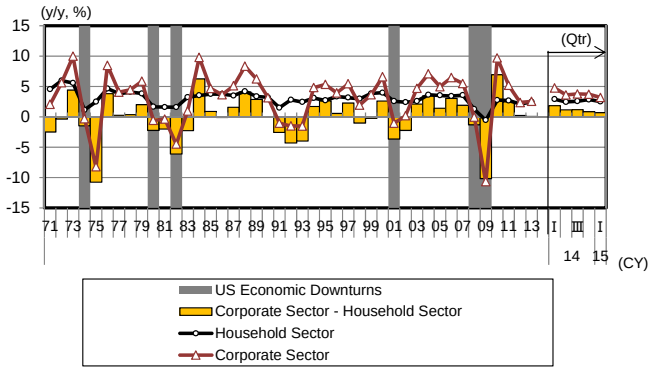
The chart indicates that at the beginning of an economic recovery, activity in the corporate sector tends to heat up ahead of the household sector, then, as the economic environment matures, the increase in corporate earnings is reflected in wages, after which the household sector is activated.

Chart 11 shows changes in maturation of the world economy and trade volume. This chart indicates that these two data sets tend to move in parallel. In other words, as the world economy matures, the corporate sector experiences a relative slowdown, causing worldwide trade volume to become sluggish.

Next we use quarterly data to measure the degree of maturation in the recent world economy. At this time, the degree of increase in the corporate sector (gross capital formation) – household sector (personal consumption) is contracting, and it is believed that this tendency is contributing to the decline in worldwide trade volume. In conclusion, the recent downturn in exports experienced in Japan is likely being influenced to at least some extent by one negative factor, that of the maturation of the world economy.

Relationship Between Maturation of World Economy and Economic Slowdown

Chart 10

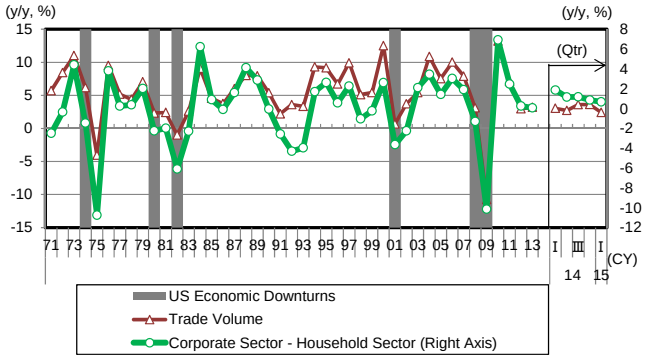


Source: World Bank, U.S. Department of Commerce, Haver Analytics; compiled by DIR

Notes: 1) The household sector consists of personal consumption, and the corporate sector consists of gross capital formation.
2) Annual data is from the World Bank. Quarterly data is calculated using the growth rates of the corporate and household sectors of various countries. Hence the association is not especially precise.

Relationship Between Maturation of World Economy and Trade Volume

Chart 11



Source: World Bank, U.S. Department of Commerce, Haver Analytics; compiled by DIR

Notes: 1) The household sector consists of personal consumption, and the corporate sector consists of gross capital formation.
2) Annual data is from the World Bank. Quarterly data is calculated using the growth rates of the corporate and household sectors of various countries. Hence the association is not especially precise.

2.3 Will Japan's Economy Remain in a Lull or Lapse into recession?

2.3.1 Looking at historic GDP statistics, there is some risk of a recession

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

The big question regarding the future of Japan's economy is whether the current situation is merely a temporary lull, or whether it will lapse into recession.

Chart 12 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.

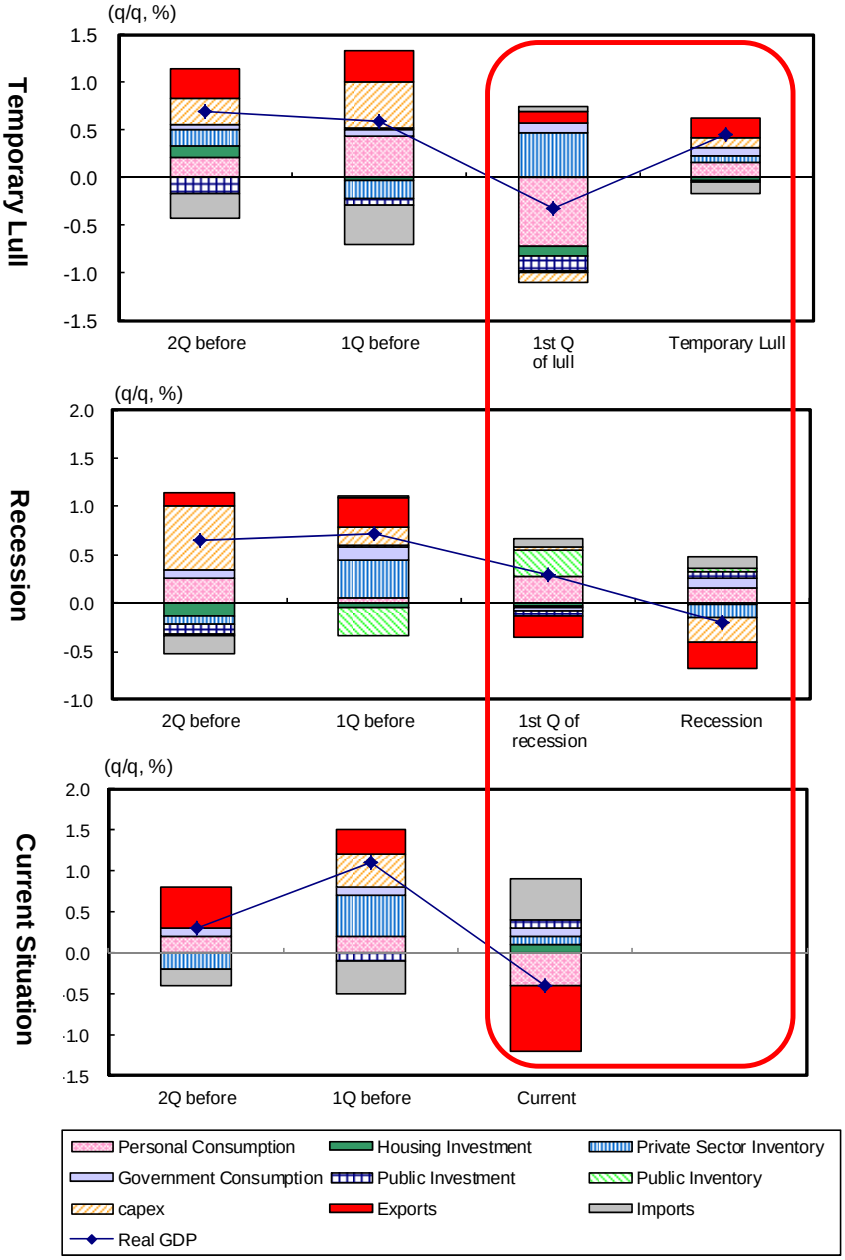
Judging from these two tendencies, Japan's economy shows risk of lapsing into a recession.

Overseas economic trends a major key

Another factor which can be observed in Chart 12 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, it must be said that the ultimate key to the future of Japan's economy is overseas economic trends. If overseas trading partners can avoid the bottom falling out of their economies, then Japan's exports will rise, and capex spending will be activated as a result. This could happen if inventory adjustment can avoid becoming too serious.

Comparison of Recent Economic Situation to Historic Periods of Temporary Lull and Recession (Quarterly Basis) **Chart 12**



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 to 2005 uses year 2005 as reference.

2.3.2 Our main scenario sees Japan avoiding a recession

Three major merkmal (judgment criteria) divide periods of temporary lull from periods of recession

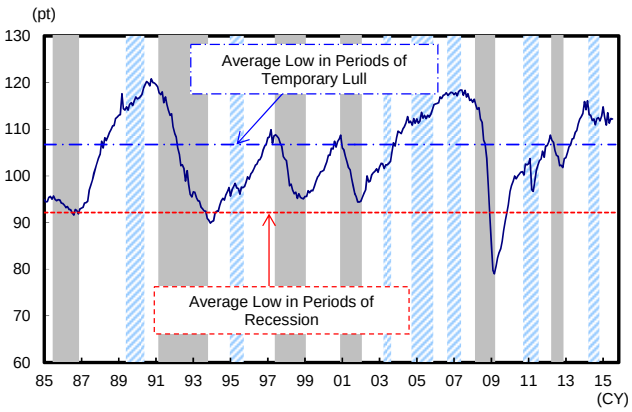
Next we examine the current condition of Japan's economy as seen in monthly statistics in order to get a better grasp of the recent economic trend. As a result of studying and comparing a broad range of economic indices and financial data occurring within Japan's historic periods of temporary lull and 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 13 (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 13 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 13, 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.

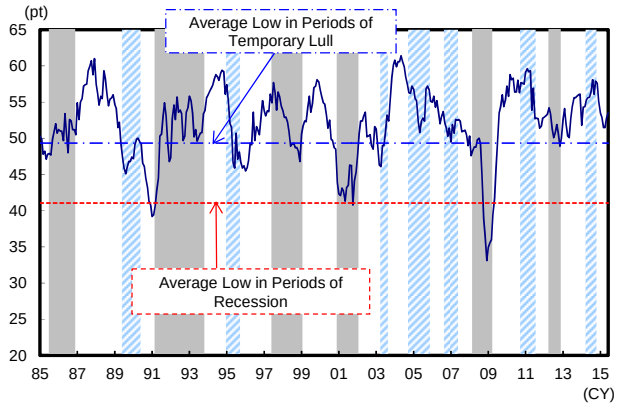
Three Merkmal (Judgment Criteria) Differentiate Periods of Temporary Lull from Periods of Recession
Chart 13

Coincident Index



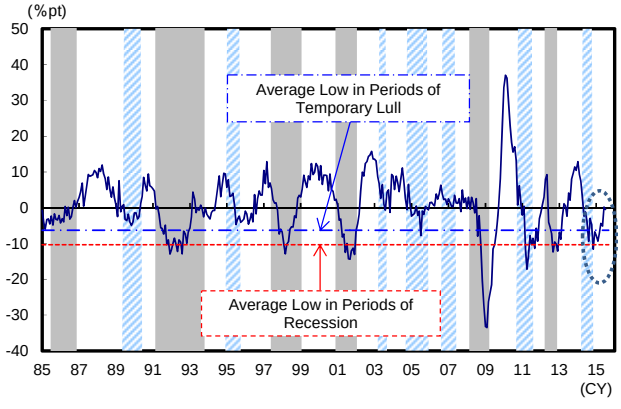
Source: Cabinet Office; compiled by DIR.
Note: Shaded areas represent periods of recession in Japan, while those with diagonal stripes represent periods of temporary lull.

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: Though there is some risk, our main scenario expects that there is a good chance Japan's economy will be able to avoid lapsing into recession

To sum up our argument, in light of data provided by three merkmal (judgment criteria) which clearly differentiate between periods of temporary lull and periods of recession, our main scenario expects that the Japanese economy will be able to avoid lapsing into recession and head toward a moderate economic growth phase. At the same time, as far as we can see by the trends in major sources of demand in Apr-Jun period 2015 GDP statistics, there is a certain amount of risk of Japan's economy entering a recession instead of a merely temporary lull, and we must remain aware of this danger.

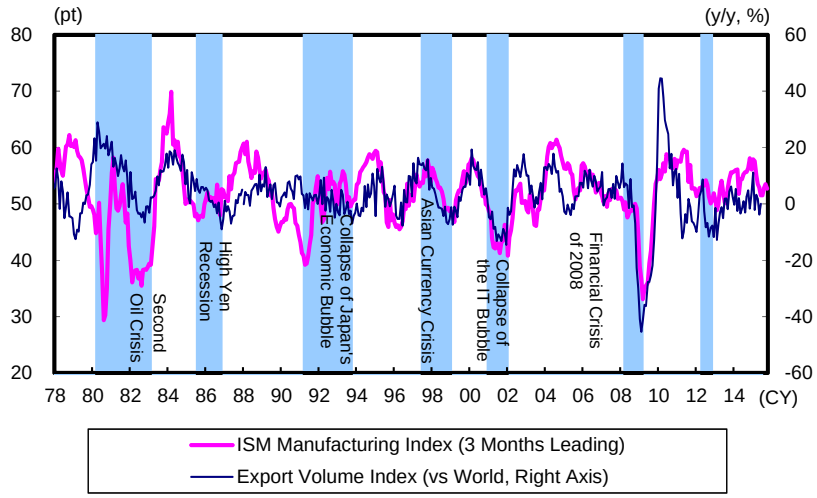
US economic trends are an important factor

Lastly, we would like to 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 14**



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.

3. Is the US Economy Going to Be Okay?

3.1 Notable Weakness in Corporate Sector

Negative influences include strong dollar and weak oil prices; notable weakness in corporate sector

As was indicated in the conclusion of the previous chapter, US economic trends hold great importance in considering the future of Japan's economy. In this chapter, we examine the current condition and future prospects of the US economy.

The US corporate sector is notably weak. In the Apr-Jun 2015 GDP statistics, capex spending is slightly down in contrast to personal consumption which has been maintaining favorable performance. GDP results were divided between personal consumption on the brighter side with the corporate sector producing darker hues. Behind these results stand two factors – the strong dollar and weak oil prices.

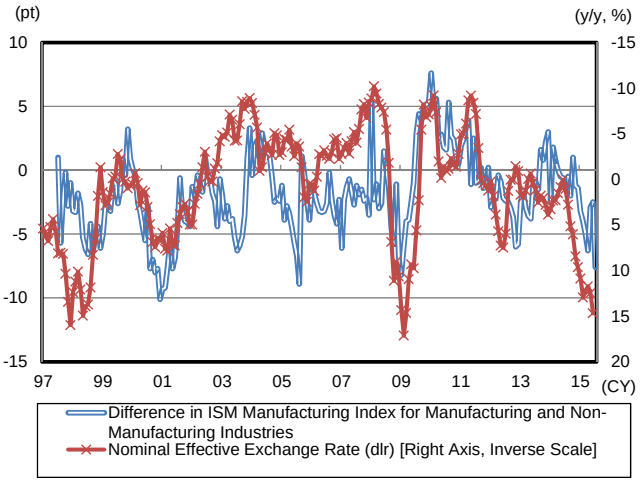
The strong dollar is what is behind the shift in economic benefits from the corporate sector to the household sector. The strong dollar has brought an increase in purchasing power for households, making it possible for them to more easily afford imported products. But at the same time, for corporations it works as a factor suppressing exports, and profits acquired by overseas subsidiaries dwindle. This works as a negative factor for corporations.

The shift in economic benefits has also occurred on the semi-macro level (see Chart 15). In evaluating the difference in business confidence between the manufacturing and non-manufacturing industries using the ISM manufacturing index, we can see that there is linkage between the data in question and the nominal effective dollar rate. In the manufacturing industry, which has a relatively high rate of dependence on exports, a strong dollar can easily erode business confidence. But the non-manufacturing industry reaps the benefits of growth in personal consumption and lower input costs associated with a strong dollar. The low price of crude oil benefits most corporations, but in mining and related sectors, this becomes a major factor pushing down corporate earnings.

Next, there is the question of the extent to which the ripple effect from the weak corporate sector might influence the household sector. The right side of Chart 15 shows changes in corporate earnings and employee compensation. Though corporate earnings lead by three months, both move for the most part in parallel. The data suggests that as a result of corporate earnings being pushed down by factors such as the strong dollar and weak crude oil prices, the negative effects could spill over into the household sector in the form of declining wages.

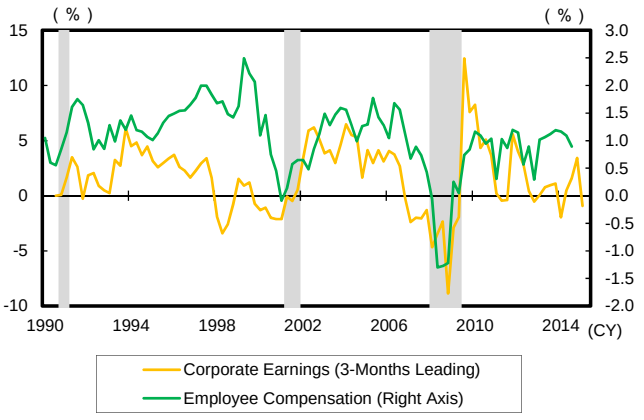
Current Condition of US Corporate Sector **Chart 15**

Difference in ISM Manufacturing Index for Manufacturing and Non-Manufacturing Industries, and Nominal Effective Exchange Rate (dlrs)



Source: Haver Analytics; compiled by DIR.

Corporate Earnings and Employee Compensation



Source: U.S. Department of Commerce; compiled by DIR.
Notes: 1) Figures for both corporate earnings and employee compensation use 3MA.
2) Figures used for corporate earnings are before tax earnings.
3) The shaded areas represent periods of recession.

3.2 Household Sector Provides Underlying Support for Economy

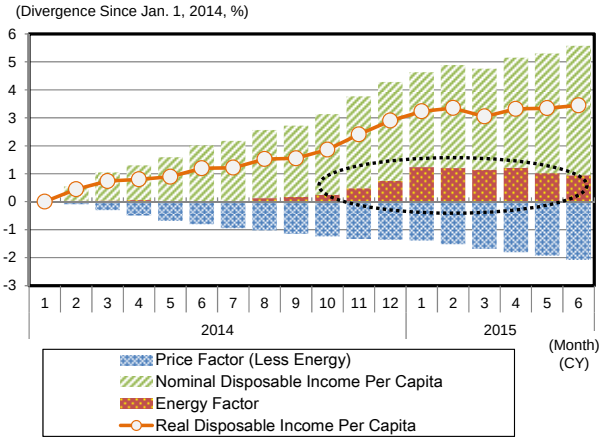
Environment now in place allowing household sector to head toward favorable recovery

In contrast to the corporate sector, the environment which will allow the US household sector to head toward a favorable recovery is already in place.

Chart 16 presents data relevant to the future of the US household sector. First we look at the income environment, which is a prerequisite for personal consumption. Here we see that there is a trend toward steady growth in real disposable income per capita. A factor analysis tells us that the collapse in energy prices is the major factor behind pushing up disposable income. Considering the fact that the price of crude oil is expected to drop even further after its recent collapse, real income can be expected to be pushed up even further by falling energy prices. These are positive ingredients for the future of personal consumption. Meanwhile, looking at long-term change in labor's relative share, we see that recently its level has fallen considerably below the trend line. This means that labor's relative share has room for potential growth in the future. Income can be expected to grow even further. Moreover, household balance sheet adjustment has already been completed, and hence the incentive to place income growth in savings is markedly less than it was just after the financial crisis of 2008. There are many positive factors working for households, and therefore the household sector is expected to become the underlying support for the US economy in the future.

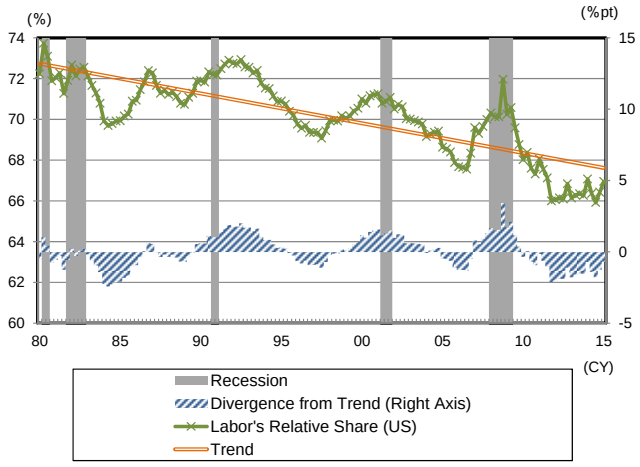
Current Condition of US Household Sector **Chart 16**

Factor Analysis of Real Disposable Income Per Capita



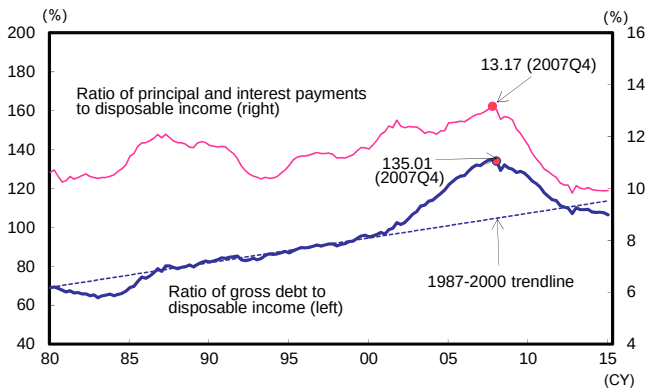
Source: Haver Analytics; compiled by DIR

Long-Term Change in Labor's Relative Share



Source: US Department of Commerce, Haver Analytics; compiled by DIR

US Household Sector Balance Sheet



Source: FRB; compiled by DIR

3.3 US Economy to Avoid Temporary Lull

US economy expected to avoid a temporary lull and head toward favorable recovery

Next we provide an overview of the US economy to sum things up.

In this section we apply the same method of analysis as was used in the previous chapter in our consideration of the Japanese economy where we looked at periods of temporary lull and periods of recession.

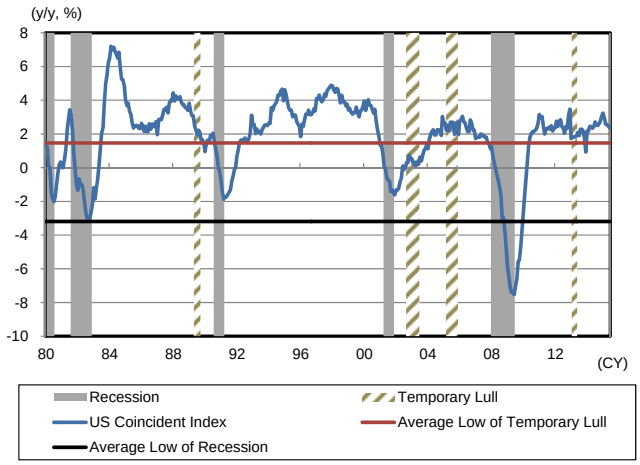
First, changes in changes in the coincident index are shown in the left side of Chart 17. In this chart we see that the recent US economy is located above the average low recorded during past periods of temporary lull. This is because the rate of growth in nonfarm payroll employment is favorable and income is growing.

The right side of Chart 17 shows changes in the inventory rate. In Japan, special factors helped in causing inventory to grow. There were also fears of inventory buildup in the US as of 2014. But in actual fact, by the end of 2014 the inventory rate was maintaining at a level above the trend line. As it turned out, the accumulation of inventory was not enough to push the economy beyond the point of a temporary lull and into a full-blown recession. Recently, inventory rate has been gradually returning to the trend line and inventory accumulation is thought to be approaching convergence.

The GDP statistics were weak during the Jan-Mar 2015 period leading to an awareness of risk amongst participants in the financial markets since a few months ago that the US economy could enter a period of temporary lull, or in the worst case, even lapse into recession. However, as becomes clear in the above analysis, the US economy is expected to avoid a temporary lull and begin heading toward a favorable recovery.

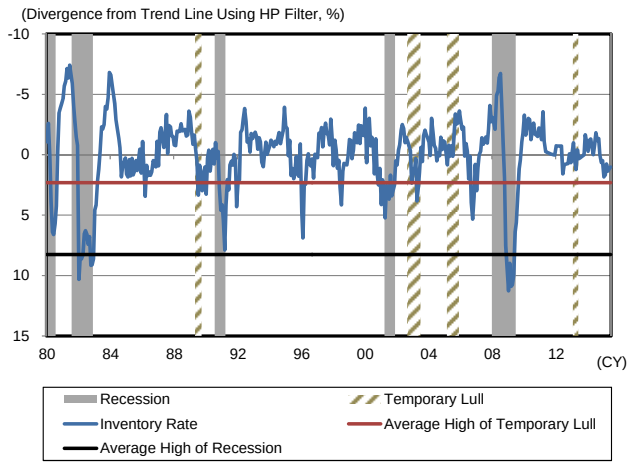
Overview of US Economy **Chart 17**

Change in Coincident Index



Source: US Department of Commerce, Haver Analytics; compiled by DIR.

Change in Inventory Rate



Source: US Department of Commerce, Haver Analytics; compiled by DIR.

3.4 US Economic Forecast in Consideration of Economic Maturation

US economy expected to achieve sustained growth even considering its maturing economy

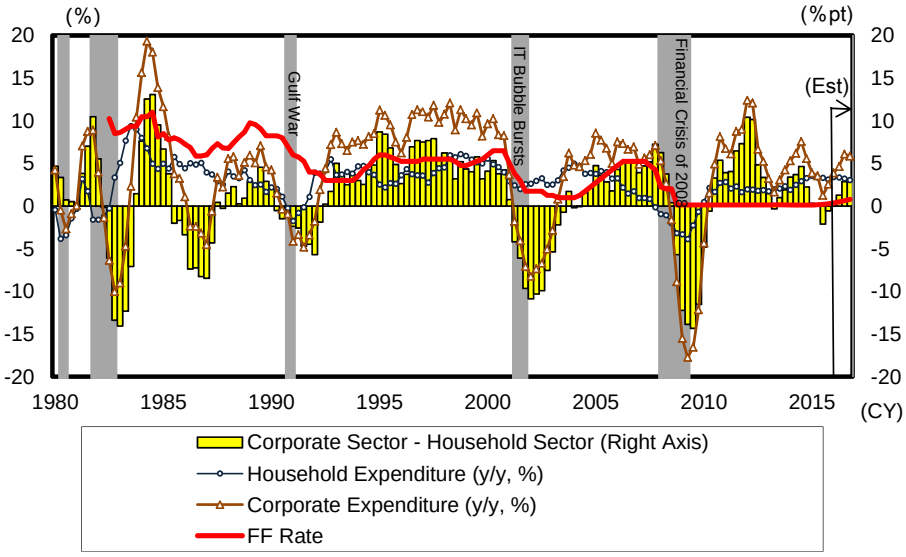
Lastly, we apply the concept of economic maturation considered in the previous chapter to the US economy, and in doing so point out how the US economy is now in a situation where we can expect it to achieve sustained growth.

Chart 18 shows the degree of maturation in the US economy. As was explained in earlier in this report in discussions regarding the maturation of the world economy, the corporate sector tends to take the lead in the beginning stages of economic recovery, but then as the economy expands further, the household sector gradually regains its brightness. Recently, dark clouds were seen to be gathering over the corporate sector due to the strong dollar and the low price of crude oil, causing it to fall temporarily into negative numbers (corporate sector – household sector). However, during the Apr-Jun period the corporate sector saw some improvement, and the graph suggests the possibility that the corporate sector may be getting back on its feet. According to DIR predictions, maturation of the US economy is expected to progress, driven somewhat by the corporate sector. The US is actually performing a bit on the weak side at this time, especially in the manufacturing industry. However, it is expected to gradually cease its decline, and the risk of a downward swing in capex in the future has been reduced.

The above analysis has major implications in forecasting future trends. As was discussed earlier in this report, the maturation of the world economy is closely connected with trade volume. Considering this factor, the US corporate sector's making a comeback suggests that exports to the US from other countries should achieve growth.

We have also discovered a certain relationality between the corporate sector and the household sector (corporate sector – household sector), and the FF rate. The FF rate is currently being held at a low level, and when the Fed begins raising interest rates in the future it should go at a somewhat slower pace than the corporate sector takes to get back on its feet. In a comparison with the real economy, placing the bank rate at a low level will provide underlying support to the US economy.

Maturation of US Economy **Chart 18**



Source: US Department of Commerce, Haver Analytics; compiled by DIR.
Notes: 1) Corporate sector expenditure: real capex spending, household sector expenditure: real personal consumption + real housing investment.
2) Shaded areas represent periods of recession in the US.
3) Predicted values produced by DIR.

4. Risk Factors Facing Japan's Economy: Focus on China's Business Cycle

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.

Our outlook places emphasis on China's business cycle, a question of great concern at this time for those involved in the financial markets, and we provide an in-depth analysis of the situation.

4.1 China's Economy Expected to See Downward Pressure Due to Policy

China's economic background

There seems to be no end in sight for China's economic slowdown. Looking at China's business cycle signal index, 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 (see Chart 19). The Li Keqiang index is also continuing its overall downward trend.[4] The central bank (The People's Bank) has initiated policies to shore up the economy as in past incidents of economic decline. This includes strengthening monetary easing measures. However, there are no signs of China's economy attaining any degree of levity (Chart 20).

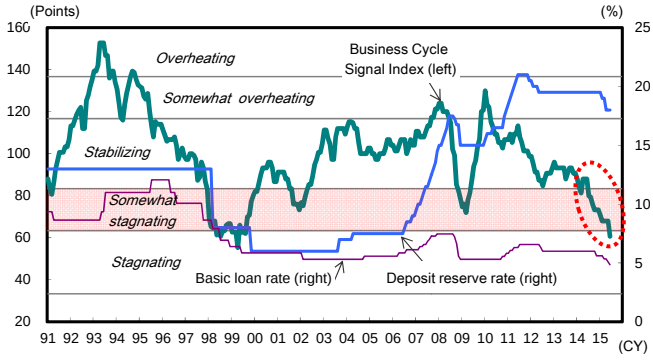
Now let us examine China's economic slowdown by breaking down the two indices mentioned above (see Chart 21-24). First of all, corporate activity is notably weak in both indices. Considering factors which have caused fluctuations in the business cycle signal index since the financial crisis of 2008, one risk that we should be aware of is the possibility that wages may be suppressed due to the weakness of corporate activity. Meanwhile, the charts indicate that during China's economic comeback after the global financial crisis, the financial area (business cycle signal index) and medium to long-term loans (Li Keqiang index) both contributed considerably in the positive direction. This is thought to be due to bold monetary easing measures on the part of The People's Bank and large scale economic stimulus measures initiated by the Chinese government. Based on the above, the most essential key to grasping the future of China's economy is the degree to which policies meant to shore up the economy are set in motion.

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.

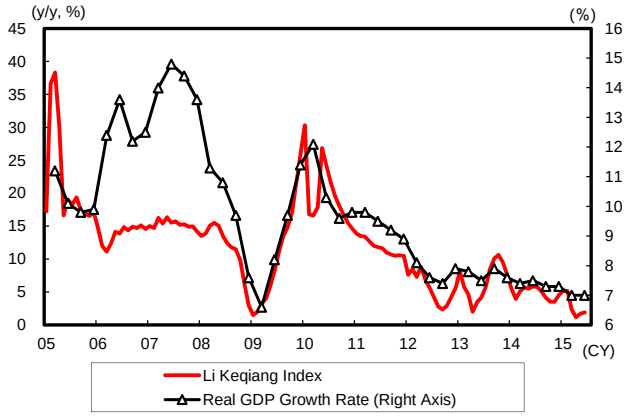
[4] The Li Keqiang index was created by Premier Li Keqiang when he was Party Committee Secretary. It focuses on three indicators – electrical power consumption, railway cargo volume, and medium to long-term bank loans. When using this index to view China's overall economy, it is necessary to take the information with a certain grain of salt. One thing to be aware of is that the index does not include any indicators measuring the corporate sector.

China's Business Cycle Signal Index
Chart 19



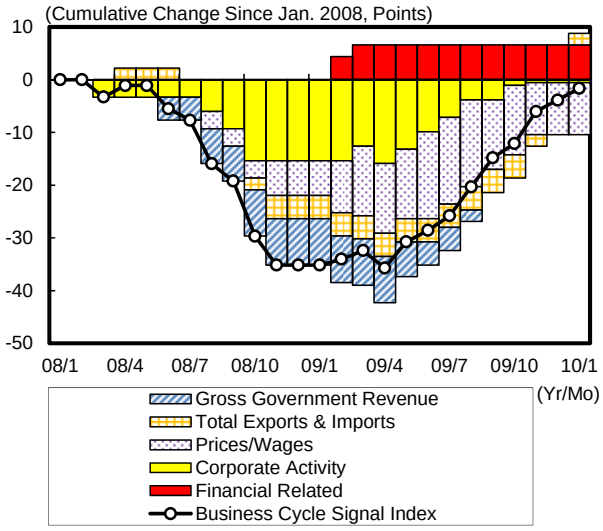
Source: National Bureau of Statistics of China, People's Bank of China, CEIC; compiled by DIR

The Li Keqiang Index and Real GDP Growth Rate
Chart 20



Source: CEIC, Haver Analytics; compiled by DIR

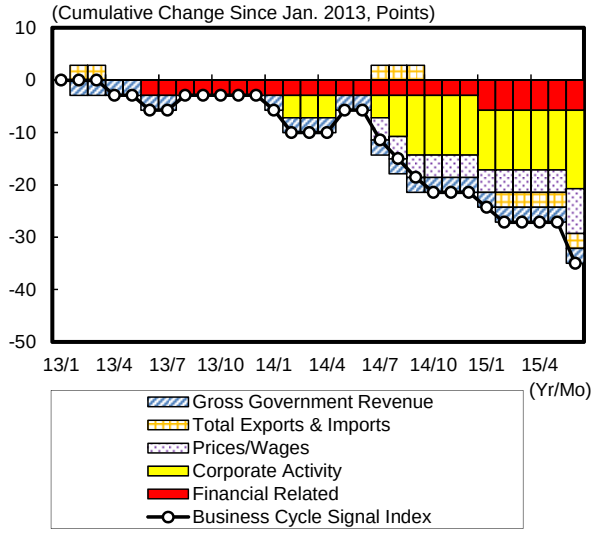
Business Cycle Signal Index Contribution Breakdown after the Global Financial Crisis
Chart 21



Source: China Economic Monitoring and Analysis Center; compiled by DIR

Note: Financial related includes loans by financial institutions and M2. Corporate activity includes industrial production, fixed asset investment, total retail sales, and gross profit of manufacturing industry. Prices & wages includes CPI and disposable income per capita.

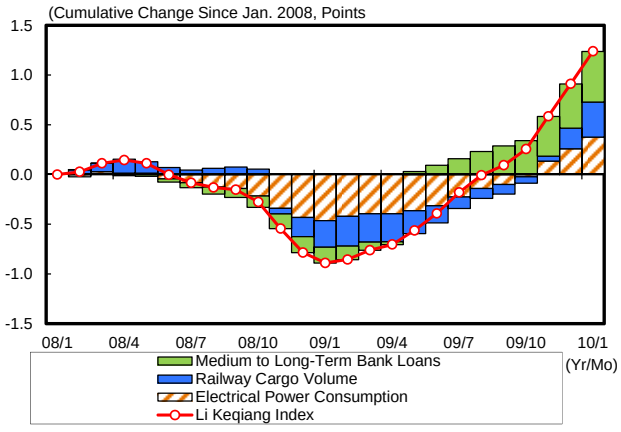
Business Cycle Signal Index Contribution Breakdown During Current Economic Slowdown
Chart 22



Source: China Economic Monitoring and Analysis Center; compiled by DIR

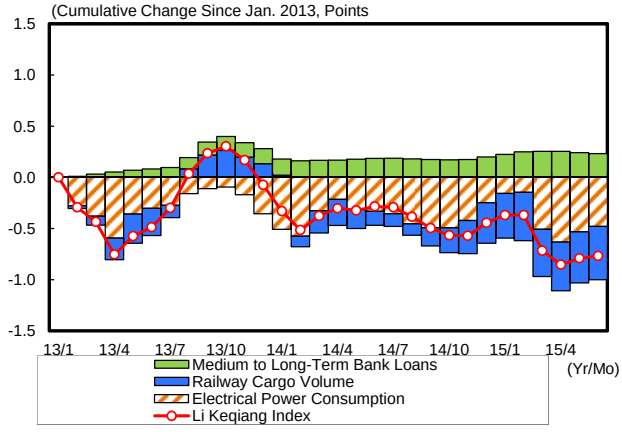
Note: Financial related includes loans by financial institutions and M2. Corporate activity includes industrial production, fixed asset investment, total retail sales, and gross profit of manufacturing industry. Prices & wages includes CPI and disposable income per capita.

Li Keqiang Index Contribution Breakdown after the Global Financial Crisis
Chart 23



Source: CEIC; compiled by DIR

Li Keqiang Index Contribution Breakdown During Current Economic Slowdown
Chart 24



Source: CEIC; compiled by DIR

4.2 How to Interpret Fluctuations in Chinese Stock and Real Estate Prices

Chinese tourist buying sprees vs Japanese exports to China

The Japanese government has set a target of attracting 20 million foreign tourists to Japan by the year 2020, and the number of foreign tourists travelling to Japan annually has indeed been on the increase in recent years. The number of tourists arriving in Japan totaled 4,760,000 in the year 2000 and rose considerably to 13,410,000 in 2014. During the first half of 2015 the number of tourists arriving in Japan reached 9,140,000, an increase of +46.0% in comparison with the same period of the previous year, bringing the government's 2020 target within range with the possibility of reaching that target ahead of schedule.

The main reason for the rapid increase in the number of foreign tourists is the surge in visitors from China. The number of tourists visiting Japan from China during the first half of the current year has more than doubled the number visiting during the same period of the previous year – up 2.2x to 2,180,000. Chinese tourists account for 24% of the total number of foreign tourists coming to Japan. Moreover, consumer spending per capita greatly exceeds that of tourists from other countries. This vigorous consumption phenomenon has attracted the attention of the media, which has referred to it as a buying spree. On the other hand, the recent plunge in stock prices on the Chinese mainland, coupled with the devaluation of the renminbi, has fanned fears of a decline in Chinese tourists. In light of these developments, we consider the degree of economic influence carried by the buying spree of Chinese tourists by comparing the phenomenon with Japanese exports to China.

Chart 25 shows Japan's export value and tourist expenditure by foreign tourists. During the Apr-Jun period of 2015, tourist expenditure by foreign tourists was 888.7 billion yen, and of this, Chinese tourists accounted for 358.1 billion yen, or 40% of the total. During the same period, Japan's exports to China totaled 3.3 trillion yen, or 9.3 times the amount of tourist expenditure. In other words, if Japan's exports to China were to decline by 10%, it would immediately wipe out whatever gains might have been made from the buying spree. It is quite clear that the influence of exports to China is overwhelmingly more influential on Japan's economy than tourist expenditure by Chinese tourists.

Chart 26 shows a quantitative analysis of the effects of China's economic slowdown on Japan's economy assuming declines occurring in the following areas: (1) Exports to China, (2) Tourists from China, and (3) Sales of Japanese subsidiaries in China.[5] If Japan's exports to China were to decline for a period of six months (a decline of 10%), Japan's nominal GDP would decline by 522 billion yen. On the other hand, if the number of tourists from China were to decline by 30% for a period of a year (tourism actually did decline by 26% in comparison with the previous year in 2011 after the Great East Japan Earthquake), Japan's nominal GDP would decline by 66.3 billion yen. This is fairly minor compared to the kind of influence a decline in exports would have. The above analysis suggests that the influence of exports to China on Japan's economy is much larger than that of Chinese tourists.

[5] Results are influenced by the assumptions, hence should be taken with a certain grain of salt.

Japan's Export Value and Tourist Expenditure of Foreign Tourists Visiting Japan

Chart 25

Japan's Export Value	2015 Apr-Jun Period		2014 Calendar Year	
	World	China	World	China
A	18,796,233	3,341,520	73,093,028	13,381,487
Tourist Expenditure by Tourists Visiting Japan	**2015 Apr-Jun Period**		**2014 Calendar Year**	
	Overall	China	Overall	China
B	888,682	358,125	2,027,788	558,339
A/B (X)	21.2	9.3	36.0	24.0

Source: Ministry of Finance, Japan Tourism Agency; compiled by DIR.
Note: Export value and tourist expenditure expressed in units of one million yen.

Influence of China's Economic Slowdown on Japan's Economy

Chart 26

Exports to China		Chinese Tourists Visiting Japan		Japanese Subsidiaries in China	
Annual Export Value Approx. 13 Tril Yen		Number of Visitors Annually Approx. 1,410,000		Annual Sales Approx. 44 Tril Yen	
→ 6-Month Decline	Domestic Production -1.5 Tril Yen GDP -522 Bil Yen	→ 1 Yr 30% Decline	Domestic Production -130 Bil Yen GDP -66.3 Bil Yen	→ 1 Yr 10% Decrease	Sales -4.4 Tril Yen Recurring Profits -213.7 Bil Yen

Source: Ministry of Finance, Ministry of Internal Affairs and Communications, Ministry of Economy, Trade and Industry, Japan National Tourist Organization; compiled by DIR.
Note: Influence of exports assumes exports to China decline by 10% for a period of six months starting in July 2015. Japanese subsidiaries in China uses March 2014 term industry total. Includes sales other than local.

Do stock prices determine China's personal consumption, or do home prices?

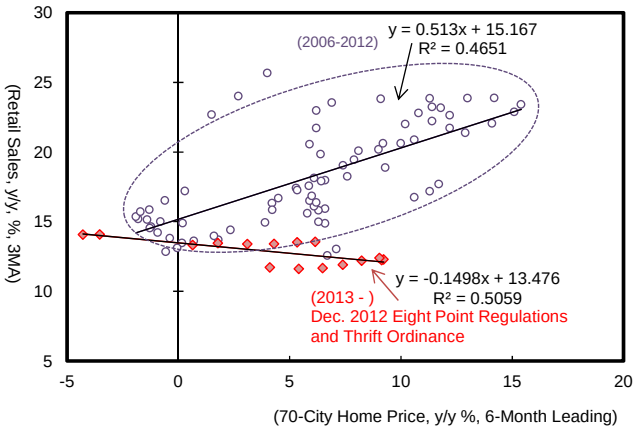
In the first place, just how much do fluctuations in stock prices and real estate prices in China influence the real economy? Generally speaking, when asset prices of stocks and real estate held by households increase, we normally expect the asset or wealth effect to occur in the form of more active personal consumption. However, looking at recent movements on the Shanghai Composite Index, after hitting its high of the year in June 2015, in only a month's time it had plunged by 35%. This has led to the spread of fears that the collapse of China's stock prices will bring on a negative wealth effect and in turn cause personal consumption in China to decline. The memory remains fresh of the major turbulence on the world financial markets that this caused. The ratio of personal consumption as a part of China's nominal GDP was just under 40% in 2014. While this is lower than the US at approximately 70% and Japan at around 60%, it is still the second largest demand category in China's GDP after gross fixed capital formation, and has a major impact on the economy overall. For this reason it is likely that China's economy would slow further if household consumer expenditure were to decline.

So can a significant correlation actually be observed between China's stock prices, real estate prices, and personal consumption? Charts 27 and 28 show the housing price index in 70 major Chinese cities and the Shanghai Composite Index, as well as year-to-year change in retail sales in the form of scatter diagrams. At the end of the year 2012, the Chinese government announced its Eight Point Regulations and Thrift Ordinance. Then, beginning in 2013 personal consumption went into a major downward swing. Hence, our analysis is divided into two different periods: (1) 2006-2012 and (2) 2013 and beyond.

As for home prices, during the 2006-2012 period before the Thrift Ordinance went into effect, there was a positive correlation with retail sales. In other words, when home prices rose or fell, retail sales also grew or declined. In contrast, no clear correlation between stock prices and retail prices can be confirmed during either of the two periods. This analysis demonstrates that in China, personal consumption is more than likely regulated by home prices, not by stock prices.

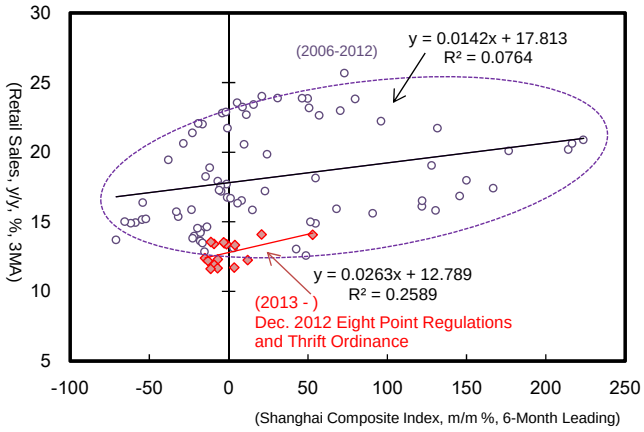
Of course, some attention must also be paid to the question of whether the sudden plunge in Chinese stock prices causes the deterioration of consumer confidence, thereby influencing a negative trend in China's personal consumption. However, if home prices hit bottom without China's stock prices dropping further, the negative influence on the real economy is expected to be limited.

Housing Price Index in 70 Chinese Cities and Retail Sales
Chart 27



Source: Compiled by DIR from various sources.

China's Shanghai Composite Index and Retail Sales
Chart 28



Source: Compiled by DIR from various sources.

China's home prices show signs of temporarily hitting bottom. However, there is still room for considerable adjustment in the mid to long-term

As we have seen up to now, the collapse of home prices has the effect of pushing down China's personal consumption more than does the sharp decline in stock prices, and should therefore be paid close attention to, as it is a risk factor in depressing the overall economy. In regard to China's representative housing price index, the Sales Prices of Residential Buildings in 70 Medium and Large-Sized Cities Index, this allows us to confirm the rise and fall (in m/m terms) of housing price indices in various cities in China. Here we can see that the number of cities showing declines in the housing price index were on the increase after the beginning of 2014. Then in September of that same year, 69 of the total 70 cities on the index were experiencing declines in home prices (Chart 29). However, the Chinese government, fearing a downturn in the real estate market, decided to loosen lending standards for housing loans in September and October of 2014. Then in November, the government instigated an interest rate reduction for the first time in two years and four months, continuing its stimulation measures aimed at housing demand. As a result, China's housing price index has recently been showing signs of bottoming out.

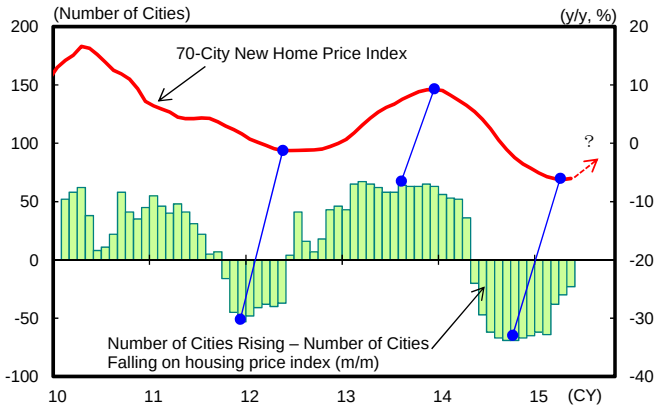
We should also note here that the leading index of the 70-City New Home Price Index (y/y change) is now moving upward. The "number of cities rising – number of cities falling" category under the Respective City Price Index (m/m change) of China's 70-City New Home Price Index tends to lead the 70-City 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.

On the other hand, China's home prices still retain the sense of being somewhat on the high side in contrast to the annual income of the average household. Hence there is a risk that housing prices could still experience a major adjustment in the mid to long-term. Chart 30 shows a comparison of the Home Price to Income Ratio in Japan and China. This chart tells us two things: (1) China's Home Price to Income Ratio is higher than Japan's, and at this time is on the high side, and (2) The adjustment in housing prices in China is still insufficient and is continuing on a high level.

To summarize the above, China's personal consumption is regulated by real estate prices rather than stock prices, but there are signs that real estate prices may be on the way to bottoming out. However,

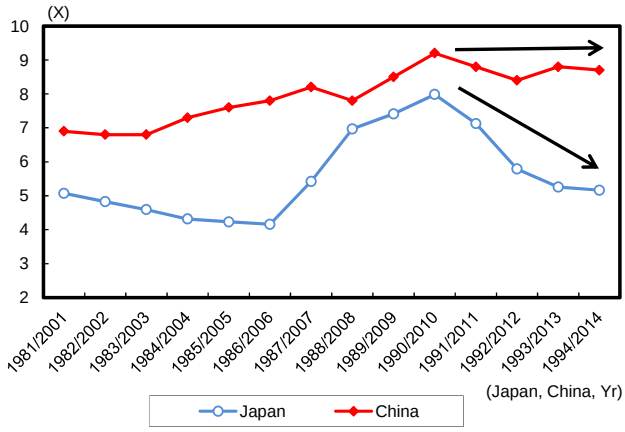
though it seems promising that China's real estate prices may be making a comeback due to the effects of short-term policy measures, housing prices are still on the high side in the mid to long-term view, and with accumulating inventory, there is still risk of an unavoidable, major adjustment.

China's 70-City New Home Price Index **Chart 29**



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.

Home Price to Income Ratio in Japan and China **Chart 30**



Source: Ministry of Land, Infrastructure, Transport and Tourism, Shanghai E-House Real Estate Institute; compiled by DIR.
Notes: 1) Home Price to Income Ratio = home price/annual income.
2) Price used for Japan's home price is the price of condominiums in the Tokyo Metropolitan Area. Price used for China is the home price in an urban area.

4.3 How Is China's Slowdown Influencing Japan's Economy?

US still leading world economy

Lastly, we examine the influence that the Chinese economy's slowdown might have on Japan's economy. The question of how one country's economy influences another's is most easily understood through a consideration of trade. If one country's imports increase, this means that another country's exports increase. In other words, the extent to which one country's real economy influences the world economy can be said to be determined by imports.

Another important point is the question of what determines imports. Are imported goods used as is through domestic demand (consumption, investment), or are they in turn exported? On the other hand, said imported goods may be made use of as a factor in production, in other words as intermediate input. Meanwhile, the question of how much demand there will be for said imported goods as a factor in production depends ultimately on how much demand there is for finished products. The simple way to express this relationship is that imports are determined by domestic demand and exports.

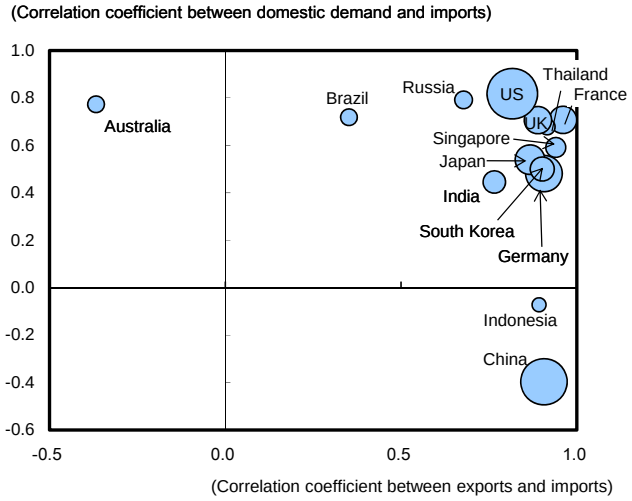
Chart 31 shows the relationship between imports and domestic demand in the world's major industrialized nations, as well as the relationship between imports and exports. The horizontal axis represents the correlation coefficient of exports and imports. The further one progresses to the right on this axis, the stronger the linkage is between exports and imports. The vertical axis represents the correlation coefficient of domestic demand and imports. The higher one moves on the vertical axis the stronger the linkage is between domestic demand and imports. Meanwhile, the size of the circles plotted on the diagram indicates the share of the world's entire imports held by a particular country. Most of the world's major industrialized nations appear in the upper right hand corner of the chart, indicating that there is a considerable degree of linkage between imports and exports, as well as between imports and domestic demand. The one exception here is China, which appears in the lower right hand corner of the chart. What this suggests is that although there is a linkage between imports and exports in China, there seems to be little relation at all between domestic demand and imports.

Fears regarding the worsening economic situation in China are currently on the rise, but even if China's economy worsens a bit more, assuming that the cause of said worsening is a decline in personal consumption and investment (in other words domestic demand) then the extent to which this would influence China's imports – in other words the extent to which it would influence the world economy is thought to be minimal.

The other factor here is that the main driver of the world's economy remains the US, not China. Chart 32 indicates that US retail sales moderately lead world industrial production. In other words, the US occupies the leading role in the world's regions of final demand.

The Relationship Between Domestic Demand, Exports and Imports in the World's Major Industrialized Nations

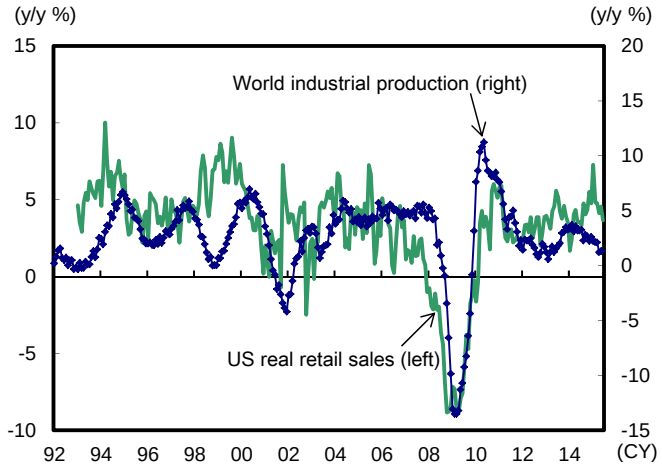
Chart 31



Source: United Nations, IMF; compiled by DIR
Notes: 1) The size of the circles appearing in the diagram indicates share of world imports.
2) Correlation coefficients are from years 2000 to 2013. Figures for share of imports are from the year 2014.

World Industrial Production and US Retail Sales

Chart 32



Source: Dutch Bureau for Economic Policy, BEA; compiled by DIR

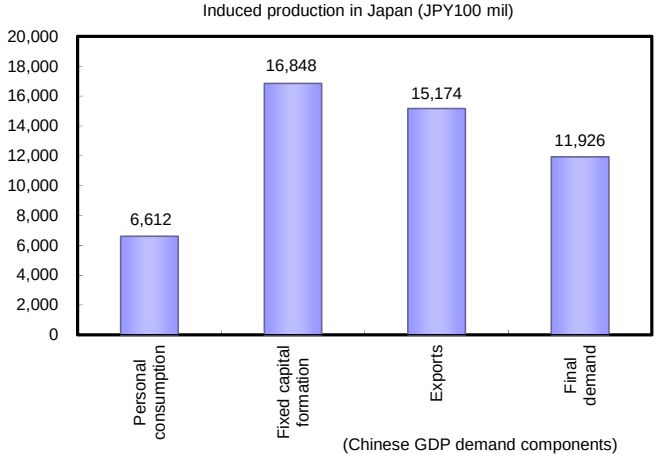
How will China's economic slowdown influence Japan's economy and international trade?

As China's economic slowdown continues, the sense of anticipation increases in regard to the exercise of economic stimulus measures. Here we examine the influence of China's fiscal actions (public spending) and consumption stimulus measures on Japan's domestic production based on METI's Japan-China Input-Output Table.[6] Charts 33 and 34 show the expansion of China's public investment and consumption stimulus measures, and the amount Japan's production would grow if China's fixed capital formation and private sector consumer expenditure were to grow by one trillion yuan. Our main conclusions are as follows: (1) If China's fixed capital formation and private sector consumer expenditure were to grow by one trillion yuan, Japan's domestic production would grow by 661.2 billion yen in reaction to the former, and 1 trillion, 684.8 billion yen in response to the latter, (2) If China's fixed capital formation were to grow, this would lead primarily to growth in production of general machinery, iron & steel, non-ferrous metals, fabricated metals, and chemicals, and (3) Most of Japan's industries are located in the lower right of the above mentioned chart rather than at the 45 degree line. Hence China's increased public investment should be more influential than consumption stimulus measures.

[6] The latest Japan-China Input-Output Table covers data as of the year 2007. Hence a certain grain of salt should be taken regarding to results of this analysis.

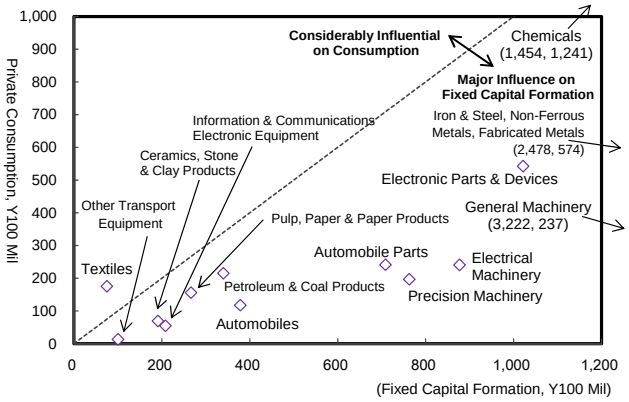
But before this we should pay attention to the fact that China's dependence on Japan's exports of final goods is on the rise, and the influence of China's private consumption may be increasing in turn. Charts 35 and 36 show changes in the export ratio of Japan's intermediate goods and final goods to the US and China. It is already well-known that exports of intermediate goods to China, the world's factory, are becoming more important. However, in viewing these charts we should be aware that the ratio of exports of final goods to China is also growing.

Influence on Japan's Production if Each of China's Demand Categories were to Grow by 1 Trillion Yuan Chart 33



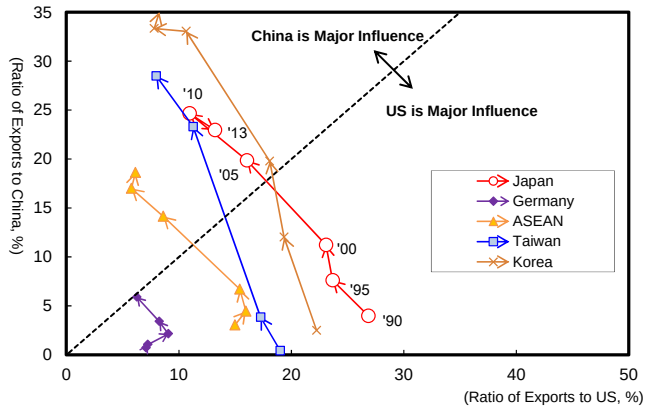
Source: Ministry of Economy, Trade and Industry (2007 Japan-China Input-Output Table) covering 30 industrial sectors; compiled by DIR.
Note: 1 renminbi = 20 yen.

Influence on Japan's Production by Industry if Each of China's Demand Categories were to Grow by 1 Trillion Yuan Chart 34



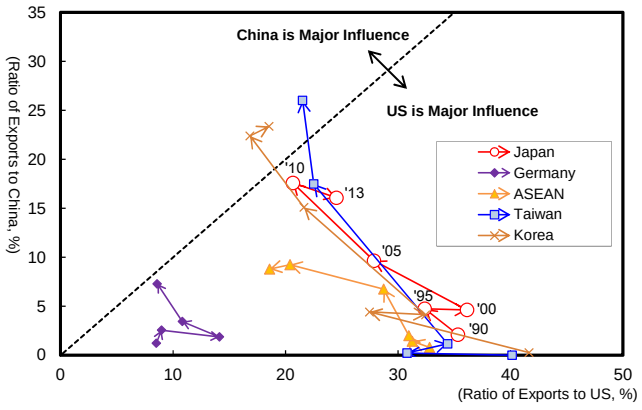
Source: Ministry of Economy, Trade and Industry (2007 Japan-China Input-Output Table) covering 30 industrial sectors; compiled by DIR.
Note: 1 renminbi = 20 yen.

Change in Ratio of Export Value of Intermediate Goods from Various Countries to US and China Chart 35



Source: RIETI-TID; compiled by DIR.

Change in Ratio of Export Value of Final Goods from Various Countries to US and China Chart 36



Source: RIETI-TID; compiled by DIR.

5. Supplement: Alternative scenarios

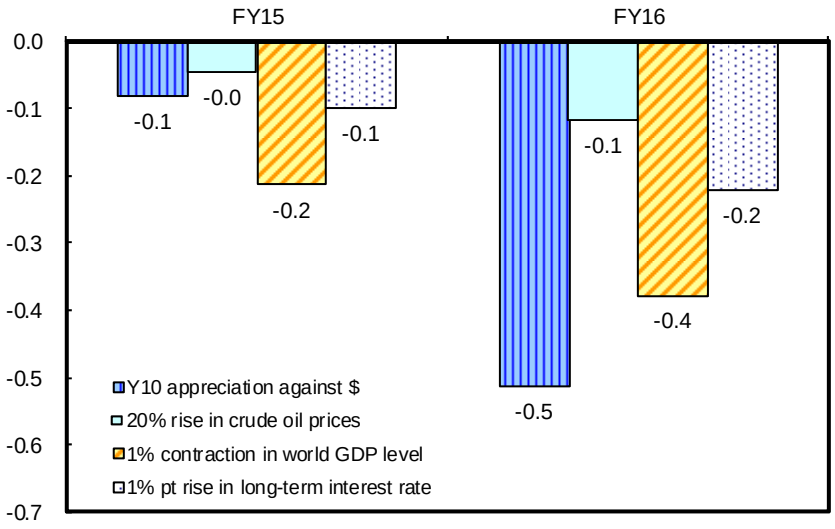
Here, we estimate likely economic effects from changes in our assumptions. The assumptions and effects of alternative scenarios are shown in the two charts below. The charts below show the effects on real GDP based on the assumptions used in our standard scenario, as well as cases in which one of the four risk scenarios covered earlier in this report actually occurs. We assume alternative scenarios might emerge from Oct-Dec 2015.

Standard and Alternate Scenario Assumptions

	Standard scenario		Alternate scenario (in each quarter in both years)
Case 1: Forex rate	Y123.7/$ in FY15 and Y125.0/$ in FY16		Y10 appreciation against $
Case 2: Crude oil prices (WTI futures)	$49.3/bbl in FY15 and 49.0/bbl in FY16		20% rise per qtr
Case 3: World GDP	+3.2% y/y in CY15 and +3.5% y/y in CY16		1% contraction in world GDP level
Case 4: Long-term interest rate	0.44% in FY15 and 0.55% in FY16		1% pt rise

Source: Compiled by DIR.

Effects on Real GDP (% change from standard scenario) **Chart 37**



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 0.1% and 0.5% 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 0.2% 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 0.1% 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 38

	Standard Scenario		Case 1 Y10 appreciation against $				Case 2 20% rise in crude oil prices			
	FY15	FY16	FY15		FY16		FY15		FY16	
Nominal GDP (Y/y %)	2.6	2.5	2.3	(-0.3)	1.9	(-0.8)	2.3	(-0.3)	2.2	(-0.6)
Real GDP (Chained [2005]; y/y %)	**1.1**	**1.9**	**1.1**	**(-0.1)**	**1.4**	**(-0.5)**	**1.1**	**(-0.0)**	**1.8**	**(-0.1)**
GDP deflator (Y/y %)	1.4	0.6	1.2	(-0.2)	0.5	(-0.3)	1.2	(-0.2)	0.4	(-0.5)
All-industry Activity Index (Y/y %)	0.4	2.4	0.2	(-0.3)	2.1	(-0.6)	0.4	(-0.1)	2.3	(-0.1)
Industrial Production Index (Y/y %)	0.7	5.0	-0.2	(-0.9)	3.8	(-2.0)	0.6	(-0.1)	4.9	(-0.2)
Tertiary Industry Activity Index (Y/y %)	0.6	1.8	0.5	(-0.2)	1.6	(-0.4)	0.6	(-0.1)	1.7	(-0.1)
Corporate Goods Price Index (Y/y %)	-1.5	0.8	-2.1	(-0.7)	0.1	(-1.3)	-1.1	(0.3)	1.1	(0.7)
Consumer Price Index (Y/y %)	0.0	0.8	-0.1	(-0.1)	0.6	(-0.2)	0.1	(0.1)	0.9	(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)	-0.8	-0.6	-0.7	(0.1)	-0.6	(0.0)	-2.0	(-1.2)	-3.1	(-2.5)
Current balance (US$100 mil)	1,414	1,492	1,566	(152)	1,401	(-91)	1,322	(-92)	1,310	(-182)
Current balance (Y tril)	17.5	18.6	17.8	(0.3)	16.1	(-2.5)	16.4	(-1.2)	16.4	(-2.3)
Real GDP components (Chained [2005]; y/y %)										
Private consumption	0.2	1.4	0.2	(-0.0)	1.3	(-0.1)	0.2	(-0.1)	1.3	(-0.2)
Private housing investment	4.5	7.0	4.4	(-0.1)	6.6	(-0.4)	4.4	(-0.1)	6.6	(-0.4)
Private non-housing investment	4.0	5.5	3.6	(-0.3)	4.2	(-1.6)	3.7	(-0.2)	5.2	(-0.6)
Government final consumption	1.3	1.3	1.3	(0.0)	1.5	(0.2)	1.3	(-0.0)	1.3	(-0.0)
Public fixed investment	-3.5	-5.4	-3.2	(0.3)	-5.1	(0.6)	-3.6	(-0.1)	-5.5	(-0.2)
Exports of goods and services	0.1	5.5	-0.2	(-0.2)	4.8	(-0.9)	0.0	(-0.1)	5.4	(-0.1)
Imports of goods and services	0.3	4.8	0.1	(-0.2)	5.2	(0.1)	0.1	(-0.2)	4.5	(-0.6)

	Case 3 1% contraction of World GDP				Case 4 1% pt rise in 10-yr JGB yield				(Reference) Y5 depreciation and 20% rise in crude oil prices			
	FY15		FY16		FY15		FY16		FY15		FY16	
Nominal GDP (Y/y %)	2.4	(-0.2)	2.3	(-0.4)	2.5	(-0.1)	2.4	(-0.2)	2.4	(-0.1)	2.5	(-0.2)
Real GDP (Chained [2005]; y/y %)	**0.9**	**(-0.2)**	**1.7**	**(-0.4)**	**1.0**	**(-0.1)**	**1.7**	**(-0.2)**	**1.1**	**(-0.0)**	**2.0**	**(0.1)**
GDP deflator (Y/y %)	1.4	(-0.0)	0.6	(-0.0)	1.4	(0.0)	0.6	(0.0)	1.3	(-0.1)	0.4	(-0.3)
All-industry Activity Index (Y/y %)	0.3	(-0.1)	2.3	(-0.2)	0.4	(-0.1)	2.4	(-0.1)	0.5	(0.1)	2.5	(0.2)
Industrial Production Index (Y/y %)	0.0	(-0.6)	4.7	(-0.9)	0.5	(-0.2)	4.8	(-0.4)	1.0	(0.3)	5.5	(0.8)
Tertiary Industry Activity Index (Y/y %)	0.6	(-0.0)	1.8	(-0.1)	0.6	(-0.0)	1.8	(-0.1)	0.7	(0.0)	1.9	(0.1)
Corporate Goods Price Index (Y/y %)	-1.5	(-0.0)	0.7	(-0.1)	-1.5	(0.0)	0.8	(-0.0)	-0.8	(0.7)	1.5	(1.4)
Consumer Price Index (Y/y %)	0.0	(-0.0)	0.7	(-0.0)	0.0	(0.0)	0.8	(-0.0)	0.2	(0.1)	0.9	(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)	-1.3	(-0.5)	-1.1	(-0.4)	-0.6	(0.2)	-0.0	(0.6)	-2.0	(-1.3)	-3.1	(-2.5)
Current balance (US$100 mil)	1,362	(-52)	1,410	(-82)	1,427	(13)	1,184	(-307)	1,246	(-168)	1,355	(-137)
Current balance (Y tril)	16.8	(-0.7)	17.6	(-1.0)	17.7	(0.2)	14.8	(-3.8)	16.2	(-1.3)	17.6	(-1.0)
Real GDP components (Chained [2005]; y/y %)												
Private consumption	0.2	(-0.0)	1.4	(-0.1)	0.2	(-0.0)	1.4	(-0.0)	0.2	(-0.1)	1.4	(-0.1)
Private housing investment	4.5	(-0.0)	6.7	(-0.3)	4.2	(-0.3)	6.5	(-0.7)	4.5	(-0.0)	6.8	(-0.2)
Private non-housing investment	3.9	(-0.1)	5.1	(-0.5)	3.3	(-0.6)	4.5	(-1.6)	3.9	(-0.1)	5.8	(0.2)
Government final consumption	1.3	(0.0)	1.3	(0.0)	1.3	(0.0)	1.3	(0.0)	1.3	(-0.0)	1.2	(-0.1)
Public fixed investment	-3.5	(0.0)	-5.4	(0.0)	-3.5	(-0.0)	-5.4	(0.0)	-3.7	(-0.2)	-5.7	(-0.5)
Exports of goods and services	-1.2	(-1.2)	5.1	(-1.6)	0.1	(-0.0)	5.5	(-0.0)	0.1	(0.1)	5.8	(0.3)
Imports of goods and services	0.1	(-0.2)	4.8	(-0.3)	0.1	(-0.2)	4.4	(-0.6)	0.2	(-0.1)	4.3	(-0.7)

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)	479.8	482.0	481.6	487.5	488.5	485.2	489.1	499.7	483.1	490.8	480.1	487.6
Q/q %	0.4	0.5	-0.1	1.2	0.2	-0.7	0.8	2.2				
Q/q %, SAAR	1.7	1.9	-0.4	5.0	0.8	-2.6	3.2	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	530.2	529.1	535.0	524.6	522.9	524.7	530.5	530.6	525.9	527.5	526.9
Q/q %	0.6	0.6	-0.2	1.1	-1.9	-0.3	0.3	1.1				
Q/q %, SAAR	2.4	2.4	-0.8	4.5	-7.5	-1.3	1.4	4.5				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-1.0	-0.8	2.1	-0.9	1.6	-0.1
Contribution to GDP growth (% pt)												
Domestic demand	0.7	0.9	0.3	1.4	-2.8	-0.4	0.0	1.2	2.6	-1.5	1.9	-0.1
Foreign demand	-0.1	-0.3	-0.5	-0.2	0.9	0.1	0.3	-0.1	-0.5	0.6	-0.3	0.0
GDP deflator (y/y %)	-0.6	-0.3	-0.3	0.1	2.2	2.1	2.4	3.5	-0.3	2.5	-0.6	1.7
Index of All-Industry Activity (2005=100)	97.1	97.6	97.9	99.3	95.7	96.1	97.1	97.4	98.0	96.6	97.3	97.0
Q/q %; y/y %	0.6	0.5	0.3	1.4	-3.7	0.4	1.1	0.3	1.9	-1.5	0.8	-0.3
Index of Industrial Production (2010=100)	96.1	97.8	99.6	101.9	98.8	97.4	98.2	99.7	98.9	98.5	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)	100.1	100.2	100.0	101.6	97.6	98.3	99.3	99.9	100.5	98.8	100.0	99.2
Q/q %; y/y %	0.4	0.0	-0.2	1.6	-3.9	0.7	1.0	0.7	1.3	-1.7	0.7	-0.8
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	101.6	102.4	102.6	102.9	106.0	106.5	105.1	103.3	102.4	105.3	101.9	105.1
Y/y %	0.6	2.2	2.5	2.0	4.4	4.0	2.5	0.5	1.8	2.8	1.3	3.2
CPI (excl. fresh food; 2010=100)	99.9	100.3	100.7	100.6	103.3	103.5	103.4	102.7	100.4	103.2	100.1	102.7
Y/y %	0.0	0.7	1.1	1.3	3.3	3.2	2.7	2.1	0.8	2.8	0.4	2.6
Unemployment rate (%)	4.0	4.0	3.9	3.6	3.6	3.6	3.5	3.5	3.9	3.6	4.0	3.6
Call rate (end-period; %)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Government bond yield (10 year; %)	0.77	0.73	0.64	0.61	0.59	0.52	0.40	0.34	0.69	0.46	0.70	0.53
Money stock; M2 (y/y %)	3.5	3.8	4.2	3.9	3.2	3.0	3.5	3.5	3.9	3.3	3.6	3.4
Trade balance (SAAR; Y tril)	-6.0	-9.3	-11.7	-15.8	-8.4	-10.6	-7.4	0.3	-11.0	-6.5	-8.8	-10.4
Current balance (SAAR; $100 mil)	967	315	-96	-518	313	193	931	1,299	147	684	403	250
Current balance (SAAR; Y tril)	9.6	3.1	-1.0	-5.3	3.2	2.0	10.7	15.5	1.5	7.8	3.9	2.6
(% of nominal GDP)	2.0	0.6	-0.2	-1.1	0.7	0.4	2.2	3.1	0.3	1.6	0.8	0.5
Exchange rate (Y/$)	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			2016				2017	FY		CY	
	4-6	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
Nominal GDP (SAAR; Y tril)	499.8	502.0	504.6	507.1	509.9	513.6	517.4	523.1	503.5	516.2	501.8	512.2
Q/q %	0.0	0.4	0.5	0.5	0.6	0.7	0.7	1.1				
Q/q %, SAAR	0.1	1.7	2.1	2.0	2.2	2.9	3.0	4.5				
Y/y %	2.2	3.5	3.3	1.4	2.1	2.3	2.5	3.2	2.6	2.5	2.9	2.1
Real GDP (chained [2005]; SAAR; Y tril)	528.4	530.3	532.8	535.1	537.3	540.1	542.7	546.4	531.9	541.8	530.7	539.0
Q/q %	-0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.7				
Q/q %, SAAR	-1.6	1.5	1.9	1.7	1.7	2.1	1.9	2.7				
Y/y %	0.7	1.5	1.6	0.8	1.7	1.8	1.8	2.1	1.1	1.9	0.7	1.6
Contribution to GDP growth (% pt)												
Domestic demand	-0.1	0.4	0.3	0.3	0.4	0.5	0.4	0.9	1.1	1.7	0.4	1.4
Foreign demand	-0.3	0.0	0.2	0.1	0.1	0.0	0.0	-0.2	-0.0	0.2	0.3	0.1
GDP deflator (y/y %)	1.6	2.0	1.6	0.6	0.4	0.5	0.6	1.0	1.4	0.6	2.2	0.5
Index of All-Industry Activity (2005=100)	96.5	96.7	97.1	97.6	98.2	98.8	99.4	101.0	97.0	99.4	96.9	98.5
Q/q %; y/y %	-0.9	0.2	0.5	0.5	0.6	0.6	0.7	1.5	0.4	2.4	-0.1	1.6
Index of Industrial Production (2010=100)	98.3	98.5	99.5	100.6	101.8	103.2	104.8	107.0	99.2	104.1	98.9	102.5
Q/q %; y/y %	-1.4	0.2	1.1	1.1	1.2	1.4	1.6	2.2	0.7	5.0	-0.1	3.6
Index of Tertiary Industry Activity (2005=100)	99.0	99.2	99.5	99.9	100.3	100.7	101.2	102.6	99.4	101.2	99.4	100.5
Q/q %; y/y %	-0.9	0.2	0.3	0.4	0.4	0.4	0.4	1.4	0.6	1.8	0.2	1.1
Corporate Goods Price Index components (2010=100)												
Domestic Company Goods Price Index	103.7	103.4	103.7	104.1	104.3	104.5	104.6	104.7	103.7	104.5	103.5	104.4
Y/y %	-2.2	-3.0	-1.3	0.7	0.6	1.1	0.8	0.6	-1.5	0.8	-1.5	0.8
CPI (excl. fresh food; 2010=100)	103.4	103.3	103.3	103.1	103.7	104.0	104.3	104.2	103.3	104.0	103.2	103.8
Y/y %	0.1	-0.2	-0.1	0.4	0.4	0.7	1.0	1.1	0.0	0.8	0.5	0.6
Unemployment rate (%)	3.3	3.3	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	0.44	0.46	0.47	0.50	0.53	0.56	0.60	0.44	0.55	0.41	0.52
Money stock; M2 (y/y %)	3.9	3.4	3.5	3.6	3.8	3.9	4.2	4.1	3.6	4.0	3.6	3.9
Trade balance (SAAR; Y tril)	-1.0	-1.3	-0.6	-0.1	-0.2	-0.3	-0.4	-1.7	-0.8	-0.6	-0.7	-0.3
Current balance (SAAR; $100 mil)	1388	1356	1436	1477	1506	1519	1528	1415	1414	1492	1370	1508
Current balance (SAAR; Y tril)	16.8	16.8	18.0	18.5	18.8	19.0	19.1	17.7	17.5	18.6	16.8	18.8
(% of nominal GDP)	3.4	3.3	3.6	3.6	3.7	3.7	3.7	3.4	3.5	3.6	3.3	3.7
Exchange rate (Y/$)	121.4	123.6	125.0	125.0	125.0	125.0	125.0	125.0	123.7	125.0	122.3	125.0
(Y/Euro)	135.0	135.7	140.0	140.0	140.0	140.0	140.0	140.0	137.7	140.0	135.8	140.0

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

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

	2013			2014				2015	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2013	2014	2013	2014
Gross domestic expenditure	527.0	530.2	529.1	535.0	524.6	522.9	524.7	530.5	530.6	525.9	527.5	526.9
Q/q %, SAAR	2.4	2.4	-0.8	4.5	-7.5	-1.3	1.4	4.5				
Y/y %	1.4	2.2	2.3	2.4	-0.4	-1.4	-1.0	-0.8	2.1	-0.9	1.6	-0.1
Domestic demand	518.2	522.7	524.1	531.4	516.4	514.4	514.7	520.4	524.5	516.7	519.9	519.4
Q/q %, SAAR	2.7	3.5	1.1	5.7	-10.9	-1.5	0.2	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	394.6	398.1	399.2	406.9	391.7	389.0	389.0	394.7	400.0	391.2	395.9	394.2
Q/q %, SAAR	2.4	3.6	1.1	8.0	-14.2	-2.7	-0.1	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	316.1	315.3	321.8	305.9	306.8	307.8	308.8	317.2	307.4	314.6	310.6
Q/q %, SAAR	4.0	1.3	-0.9	8.5	-18.4	1.2	1.2	1.4				
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	14.1	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	6.1	20.0	12.3	8.4	-36.9	-22.9	-2.4	7.0				
Y/y %	6.6	8.3	10.2	11.9	-2.0	-12.4	-15.5	-15.4	9.3	-11.7	8.8	-5.1
Non-residential investment	69.5	70.1	71.1	74.7	71.2	71.2	71.4	73.4	71.5	71.9	69.5	72.2
Q/q %, SAAR	11.4	3.0	6.2	21.6	-17.3	-0.2	0.9	11.7				
Y/y %	-0.2	1.2	3.0	10.8	2.4	1.4	0.2	-1.4	4.0	0.5	0.4	3.9
Change in inventories	-4.1	-2.8	-2.5	-5.1	0.7	-2.0	-3.0	-0.6	-3.7	-1.3	-2.7	-2.4
Public demand	123.6	124.6	124.9	124.5	124.7	125.4	125.7	125.7	124.5	125.4	124.0	125.2
Q/q %, SAAR	3.8	3.2	0.9	-1.2	0.5	2.2	1.1	0.1				
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	102.2	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	1.9	-0.1	0.4	-0.9	0.5	1.1	1.3	1.0				
Y/y %	2.6	2.0	1.5	0.2	-0.0	0.2	0.5	1.0	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	11.0	22.3	1.2	-2.7	0.9	7.1	1.1	-4.7				
Y/y %	3.6	14.1	16.1	6.6	4.4	2.0	2.3	0.2	10.3	2.0	8.0	3.8
Change in inventories	0.0	-0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	-0.0	0.0
Net exports of goods and services	9.5	8.0	5.8	5.9	9.6	10.5	12.3	12.4	7.3	11.2	8.1	9.6
Exports of goods and services	84.0	83.8	83.7	88.4	88.9	90.5	93.0	94.6	85.0	91.8	83.2	90.2
Q/q %, SAAR	14.2	-0.9	-0.7	24.6	2.3	7.3	11.6	6.7				
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	74.6	75.8	77.9	82.5	79.3	80.0	80.7	82.1	77.8	80.6	75.1	80.6
Q/q %, SAAR	14.4	7.0	11.3	25.6	-14.6	3.7	3.4	7.4				
Y/y %	0.5	2.9	8.9	14.8	6.0	5.2	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	2016						2017	FY		CY	
	4-6	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
Gross domestic expenditure	528.4	530.3	532.8	535.1	537.3	540.1	542.7	546.4	531.9	541.8	530.7	539.0
Q/q %, SAAR	-1.6	1.5	1.9	1.7	1.7	2.1	1.9	2.7				
Y/y %	0.7	1.5	1.6	0.8	1.7	1.8	1.8	2.1	1.1	1.9	0.7	1.6
Domestic demand	519.6	521.5	523.0	524.8	526.7	529.3	531.7	536.5	522.3	531.3	521.2	528.2
Q/q %, SAAR	-0.6	1.5	1.1	1.4	1.4	2.0	1.8	3.6				
Y/y %	0.6	1.4	1.6	0.8	1.4	1.5	1.6	2.3	1.1	1.7	0.4	1.3
Private demand	392.9	395.2	397.3	399.3	400.9	403.3	405.5	410.0	396.4	405.1	395.2	402.3
Q/q %, SAAR	-1.7	2.3	2.1	2.0	1.7	2.4	2.2	4.5				
Y/y %	0.3	1.6	2.1	1.2	2.0	2.0	2.0	2.9	1.3	2.2	0.3	1.8
Final consumption	306.5	307.6	308.5	309.4	309.9	310.8	312.1	316.8	308.1	312.5	307.9	310.6
Q/q %, SAAR	-3.0	1.4	1.2	1.2	0.6	1.1	1.7	6.1				
Y/y %	0.2	0.3	0.2	0.2	1.1	1.0	1.2	2.4	0.2	1.4	-0.9	0.9
Residential investment	13.4	13.7	14.0	14.1	14.2	14.7	15.0	15.1	13.8	14.8	13.6	14.5
Q/q %, SAAR	8.0	11.2	7.1	2.4	5.3	13.4	7.0	4.5				
Y/y %	-3.3	5.9	8.4	7.0	6.4	7.0	6.9	7.5	4.5	7.0	-1.6	6.8
Non-residential investment	73.3	74.1	75.1	76.0	77.1	78.1	79.2	80.6	74.7	78.9	74.0	77.5
Q/q %, SAAR	-0.3	4.6	5.1	5.3	5.5	5.6	5.7	7.0				
Y/y %	2.8	4.3	5.3	3.5	5.2	5.3	5.5	6.0	4.0	5.5	2.5	4.8
Change in inventories	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.8	-2.5	-0.2	-0.9	-0.3	-0.4
Public demand	126.7	126.3	125.7	125.5	125.7	126.0	126.2	126.5	125.9	126.1	126.0	125.9
Q/q %, SAAR	3.1	-1.2	-1.9	-0.6	0.7	0.8	0.8	0.8				
Y/y %	1.5	0.7	-0.2	-0.3	-0.3	-0.2	0.3	0.7	0.4	0.1	0.7	-0.1
Government final consumption	103.4	103.8	104.0	104.4	104.7	105.1	105.4	105.8	103.9	105.3	103.6	104.9
Q/q %, SAAR	1.7	1.4	1.0	1.4	1.4	1.4	1.4	1.4				
Y/y %	1.3	1.4	1.3	1.4	1.3	1.3	1.4	1.4	1.3	1.3	1.2	1.3
Fixed investment	23.3	22.5	21.7	21.1	21.0	20.9	20.8	20.7	22.0	20.8	22.4	21.0
Q/q %, SAAR	10.7	-12.2	-14.5	-9.6	-2.6	-2.0	-2.1	-2.1				
Y/y %	3.0	-1.8	-6.0	-6.5	-9.7	-7.2	-4.0	-2.4	-3.5	-5.4	-1.6	-6.6
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	10.3	10.4	11.4	11.9	12.2	12.4	12.6	11.5	11.0	12.2	11.2	12.3
Exports of goods and services	90.4	91.0	92.4	93.7	94.9	96.2	97.5	98.9	91.8	96.9	92.1	95.6
Q/q %, SAAR	-16.5	2.8	6.1	5.7	5.3	5.6	5.7	5.9				
Y/y %	1.5	0.7	-0.8	-1.0	5.1	5.6	5.6	5.7	0.1	5.5	2.1	3.8
Imports of goods and services	80.0	80.6	81.0	81.8	82.7	83.7	85.0	87.4	80.8	84.7	80.9	83.3
Q/q %, SAAR	-9.8	2.6	2.0	4.1	4.5	5.3	5.9	12.1				
Y/y %	0.7	0.8	0.2	-0.6	3.4	3.9	5.0	7.0	0.3	4.8	0.4	2.9

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			2014				2015	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2013	2014	2013	2014
Gross domestic expenditure	479.8	482.0	481.6	487.5	488.5	485.2	489.1	499.7	483.1	490.8	480.1	487.6
Q/q %, SAAR	1.7	1.9	-0.4	5.0	0.8	-2.6	3.2	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	490.7	496.1	499.7	508.0	501.9	499.9	500.9	505.3	499.0	502.1	493.8	502.8
Q/q %, SAAR	1.4	4.5	2.9	6.8	-4.7	-1.6	0.8	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	369.6	373.9	377.2	384.8	376.8	373.6	374.3	378.3	376.7	375.8	372.0	377.4
Q/q %, SAAR	1.6	4.8	3.5	8.3	-8.1	-3.4	0.8	4.3				
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	294.8	295.7	302.2	292.2	293.1	294.3	293.9	296.5	293.4	293.5	295.5
Q/q %, SAAR	3.3	2.3	1.3	9.1	-12.6	1.3	1.6	-0.6				
Y/y %	1.2	2.7	2.9	4.2	-0.3	-0.7	-0.5	-2.8	2.7	-1.1	1.9	0.7
Residential investment	14.9	15.6	16.3	16.6	15.3	14.2	14.2	14.5	15.9	14.5	15.3	15.0
Q/q %, SAAR	11.1	21.8	17.6	9.4	-28.9	-24.6	-1.6	8.4				
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	66.6	67.8	71.3	68.4	68.5	69.0	71.0	68.2	69.4	66.0	69.4
Q/q %, SAAR	12.2	4.0	7.3	22.4	-15.5	0.7	2.8	12.2				
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	-4.4	-3.1	-2.6	-5.4	0.9	-2.3	-3.2	-1.1	-3.9	-1.4	-2.8	-2.5
Public demand	121.1	122.2	122.5	123.2	125.2	126.3	126.6	127.0	122.4	126.3	121.7	125.4
Q/q %, SAAR	0.7	3.6	1.1	2.2	6.6	3.7	0.9	1.5				
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	99.3	100.8	101.2	101.6	102.2	98.8	101.5	98.8	100.7
Q/q %, SAAR	-2.2	-0.2	-0.7	3.0	6.2	1.9	1.4	2.5				
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	23.6	23.9	23.9	24.3	24.9	25.0	24.7	23.6	24.8	23.0	24.6
Q/q %, SAAR	11.1	25.5	5.4	-1.2	7.8	9.9	0.8	-4.3				
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	0.1	0.0	0.1	0.0	0.1	-0.0	0.1
Net exports of goods and services	-10.9	-14.1	-18.2	-20.5	-13.5	-14.6	-11.8	-5.6	-15.9	-11.4	-13.6	-15.2
Exports of goods and services	78.4	78.8	79.0	83.5	83.9	86.5	91.5	91.1	80.0	88.3	77.5	86.4
Q/q %, SAAR	26.2	2.3	1.0	24.5	2.1	12.8	25.6	-1.7				
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	101.1	103.3	96.7	95.9	99.7	91.2	101.5
Q/q %, SAAR	20.2	17.6	19.7	31.0	-23.0	16.1	9.2	-23.2				
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			2016				2017	FY		CY	
	4-6	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
Gross domestic expenditure	499.8	502.0	504.6	507.1	509.9	513.6	517.4	523.1	503.5	516.2	501.8	512.2
Q/q %, SAAR	0.1	1.7	2.1	2.0	2.2	2.9	3.0	4.5				
Y/y %	2.2	3.5	3.3	1.4	2.1	2.3	2.5	3.2	2.6	2.5	2.9	2.1
Domestic demand	505.5	507.9	509.8	512.1	514.9	518.7	522.8	530.2	508.8	521.8	507.1	517.2
Q/q %, SAAR	0.1	1.9	1.5	1.9	2.2	3.0	3.2	5.8				
Y/y %	0.6	1.6	1.7	1.4	1.9	2.2	2.4	3.7	1.3	2.6	0.9	2.0
Private demand	378.3	380.9	383.4	385.8	388.2	391.6	395.2	402.2	382.3	394.5	380.4	390.2
Q/q %, SAAR	-0.0	2.9	2.6	2.5	2.5	3.5	3.8	7.3				
Y/y %	0.4	2.0	2.4	2.1	2.5	2.8	3.0	4.5	1.7	3.2	0.8	2.6
Final consumption	292.4	293.8	294.9	296.1	297.1	298.7	300.7	305.9	294.4	300.6	293.8	298.2
Q/q %, SAAR	-2.0	1.9	1.6	1.6	1.3	2.1	2.7	7.2				
Y/y %	0.0	0.3	0.2	0.8	1.6	1.6	1.9	3.3	0.3	2.1	-0.6	1.5
Residential investment	14.7	15.1	15.4	15.6	15.8	16.4	16.7	17.0	15.2	16.5	15.0	16.1
Q/q %, SAAR	7.5	12.1	8.2	3.5	6.5	15.1	8.5	6.0				
Y/y %	-3.5	6.5	9.1	7.7	7.5	8.2	8.3	9.0	5.0	8.3	-0.5	7.9
Non-residential investment	71.2	72.0	73.0	74.1	75.3	76.6	77.9	79.5	72.7	77.5	71.8	75.9
Q/q %, SAAR	0.8	5.1	5.5	6.1	6.7	6.9	7.2	8.6				
Y/y %	3.9	5.3	5.9	4.2	5.9	6.2	6.7	7.4	4.8	6.6	3.5	5.7
Change in inventories	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.1	-0.2	0.0	-0.1	-0.2	-0.0
Public demand	127.2	126.9	126.4	126.3	126.7	127.1	127.5	127.9	126.5	127.3	126.7	126.9
Q/q %, SAAR	0.6	-1.0	-1.6	-0.2	1.2	1.3	1.3	1.3				
Y/y %	1.4	0.4	-0.3	-0.7	0.2	0.2	0.8	1.2	0.2	0.6	1.1	0.1
Government final consumption	101.8	102.3	102.6	103.1	103.5	104.0	104.4	104.9	102.4	104.2	102.2	103.7
Q/q %, SAAR	-1.7	1.8	1.4	1.8	1.8	1.8	1.8	1.8				
Y/y %	1.0	0.9	1.1	0.8	1.7	1.7	1.7	1.8	0.9	1.7	1.5	1.5
Fixed investment	25.4	24.6	23.7	23.2	23.1	23.1	23.1	23.0	24.1	23.1	24.5	23.1
Q/q %, SAAR	11.5	-11.5	-13.6	-8.5	-1.4	-0.7	-0.7	-0.7				
Y/y %	4.0	-1.4	-5.3	-5.6	-8.7	-6.1	-2.7	-1.1	-2.8	-4.2	-0.4	-5.5
Change in inventories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Net exports of goods and services	-5.7	-5.9	-5.2	-5.0	-5.0	-5.1	-5.4	-7.1	-5.4	-5.7	-5.6	-5.1
Exports of goods and services	88.1	88.8	90.1	91.3	92.5	93.8	95.1	96.5	89.5	94.5	89.5	93.2
Q/q %, SAAR	-12.5	2.8	6.1	5.7	5.3	5.6	5.7	5.9				
Y/y %	4.7	2.7	-1.7	0.2	5.2	5.6	5.7	5.6	1.4	5.5	3.6	4.1
Imports of goods and services	93.8	94.6	95.3	96.3	97.5	98.9	100.5	103.6	94.9	100.1	95.0	98.3
Q/q %, SAAR	-11.6	3.6	2.6	4.6	5.1	5.9	6.5	12.7				
Y/y %	-3.9	-6.3	-8.1	-0.4	4.1	4.5	5.7	7.5	-4.8	5.5	-6.4	3.5

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

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

	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
Gross domestic expenditure	91.0	90.9	91.0	91.1	93.1	92.8	93.2	94.2	91.0	93.3	91.0	92.5
Q/q %, SAAR	-0.2	-0.1	0.1	0.1	2.2	-0.3	0.4	1.1				
Y/y %	-0.6	-0.3	-0.3	0.1	2.2	2.1	2.4	3.5	-0.3	2.5	-0.6	1.7
Private final consumption	93.0	93.3	93.8	93.9	95.5	95.5	95.6	95.2	93.5	95.5	93.3	95.1
Q/q %, SAAR	-0.2	0.2	0.6	0.1	1.7	0.0	0.1	-0.5				
Y/y %	-0.7	0.3	0.5	0.8	2.7	2.4	2.0	1.3	0.2	2.1	-0.3	2.0
Private residential investment	105.0	105.4	106.6	106.9	110.1	109.5	109.7	110.1	106.0	109.8	105.3	108.9
Q/q %, SAAR	1.1	0.4	1.2	0.2	3.0	-0.5	0.2	0.3				
Y/y %	2.1	3.0	3.4	2.9	4.9	3.9	2.9	2.9	2.9	3.6	2.3	3.5
Private non-residential investment	94.9	95.1	95.4	95.5	96.1	96.3	96.7	96.8	95.3	96.5	95.0	96.1
Q/q %, SAAR	0.2	0.2	0.3	0.2	0.6	0.2	0.5	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	96.6	96.4	97.3	98.7	98.9	98.9	99.3	96.7	98.9	96.7	98.4
Q/q %, SAAR	-1.0	-0.0	-0.3	1.0	1.4	0.2	0.0	0.4				
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	104.1	104.7	105.8	106.2	108.0	108.7	108.6	108.8	105.4	108.6	104.8	107.8
Q/q %, SAAR	0.0	0.6	1.0	0.4	1.7	0.6	-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	93.3	94.0	94.4	94.4	94.4	95.5	98.4	96.4	94.1	96.2	93.2	95.7
Q/q %, SAAR	2.5	0.8	0.4	-0.0	-0.0	1.2	3.0	-2.0				
Y/y %	9.1	11.1	10.3	3.7	0.9	1.8	4.4	2.0	8.5	2.3	9.5	2.7
Imports of goods and services	119.7	122.5	124.8	126.0	122.8	126.4	128.1	117.8	123.3	123.7	121.4	126.0
Q/q %, SAAR	1.2	2.4	1.8	1.0	-2.5	2.9	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	2016						2017	FY		CY	
	4-6	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
Gross domestic expenditure	94.6	94.6	94.7	94.8	94.9	95.1	95.3	95.7	94.7	95.3	94.5	95.0
Q/q %, SAAR	0.4	0.1	0.1	0.1	0.1	0.2	0.3	0.4				
Y/y %	1.6	2.0	1.6	0.6	0.4	0.5	0.6	1.0	1.4	0.6	2.2	0.5
Private final consumption	95.4	95.5	95.6	95.7	95.9	96.1	96.3	96.6	95.6	96.2	95.4	96.0
Q/q %, SAAR	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2				
Y/y %	-0.1	-0.0	-0.0	0.6	0.5	0.6	0.8	0.9	0.1	0.7	0.3	0.6
Private residential investment	110.0	110.2	110.4	110.7	111.0	111.4	111.8	112.2	110.3	111.6	110.2	111.3
Q/q %, SAAR	-0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4				
Y/y %	-0.1	0.6	0.7	0.6	1.0	1.2	1.3	1.4	0.5	1.2	1.1	1.0
Private non-residential investment	97.1	97.2	97.3	97.5	97.7	98.0	98.4	98.7	97.3	98.3	97.1	97.9
Q/q %, SAAR	0.3	0.1	0.1	0.2	0.3	0.3	0.3	0.4				
Y/y %	1.1	0.9	0.6	0.7	0.7	0.9	1.1	1.3	0.8	1.0	1.0	0.8
Government final consumption	98.5	98.6	98.7	98.8	98.9	99.0	99.1	99.2	98.5	98.9	98.7	98.9
Q/q %, SAAR	-0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	-0.3	-0.4	-0.2	-0.6	0.4	0.4	0.4	0.4	-0.4	0.4	0.3	0.2
Public fixed investment	108.9	109.2	109.5	109.8	110.1	110.5	110.9	111.3	109.4	110.8	109.1	110.4
Q/q %, SAAR	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4				
Y/y %	1.0	0.4	0.8	0.9	1.0	1.3	1.3	1.4	0.8	1.3	1.2	1.1
Exports of goods and services	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.2	97.5
Q/q %, SAAR	1.2	-0.0	0.0	0.0	0.0	0.0	-0.0	0.0				
Y/y %	3.1	2.0	-1.0	1.3	0.1	0.0	0.1	-0.0	1.3	0.0	1.5	0.4
Imports of goods and services	117.2	117.5	117.6	117.8	118.0	118.1	118.3	118.5	117.5	118.2	117.4	118.1
Q/q %, SAAR	-0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1				
Y/y %	-4.7	-7.1	-8.3	0.2	0.7	0.6	0.7	0.5	-5.0	0.6	-6.8	0.5

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

5.1 Contribution to Real GDP Growth by Component

	2013			2014				2015	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2013	2014	2013	2014
1) Q/q %												
GDP growth rate	0.6	0.6	-0.2	1.1	-1.9	-0.3	0.3	1.1	2.1	-0.9	1.6	-0.1
Domestic demand	0.7	0.9	0.3	1.4	-2.8	-0.4	0.0	1.2	2.6	-1.5	1.9	-0.1
Private demand	0.4	0.7	0.2	1.5	-2.8	-0.6	-0.0	1.2	1.8	-1.7	1.2	-0.3
Private consumption	0.6	0.2	-0.1	1.2	-3.1	0.2	0.2	0.2	1.5	-1.9	1.3	-0.8
Residential investment	0.0	0.1	0.1	0.1	-0.4	-0.2	-0.0	0.0	0.3	-0.4	0.3	-0.2
Private fixed investment	0.4	0.1	0.2	0.7	-0.7	-0.0	0.0	0.4	0.5	0.1	0.1	0.5
Change in private inventories	-0.6	0.3	0.1	-0.6	1.2	-0.6	-0.2	0.5	-0.5	0.5	-0.4	0.1
Public demand	0.2	0.2	0.1	-0.1	0.0	0.1	0.1	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	-0.1	-0.3	-0.5	-0.2	0.9	0.1	0.3	-0.1	-0.5	0.6	-0.3	0.0
Exports of goods and services	0.5	-0.0	-0.0	0.9	0.1	0.3	0.5	0.3	0.7	1.3	0.2	1.4
Imports of goods and services	-0.6	-0.3	-0.5	-1.2	0.8	-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	-1.0	-0.8	2.1	-0.9	1.6	-0.1
Domestic demand	1.5	2.3	2.8	3.6	-0.2	-1.7	-1.9	-2.0	2.6	-1.5	1.9	-0.1
Private demand	0.9	1.4	1.8	3.2	-0.4	-1.9	-2.2	-2.2	1.8	-1.7	1.2	-0.3
Private consumption	1.1	1.4	1.4	2.0	-1.8	-1.9	-1.5	-2.5	1.5	-1.9	1.3	-0.8
Residential investment	0.2	0.3	0.3	0.4	-0.1	-0.4	-0.5	-0.5	0.3	-0.4	0.3	-0.2
Private fixed investment	-0.0	0.2	0.4	1.7	0.3	0.2	0.0	-0.2	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	1.0	-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	1.2	-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			2016				2017	FY		CY	
	4-6	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
1) Q/q %												
GDP growth rate	-0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.7	1.1	1.9	0.7	1.6
Domestic demand	-0.1	0.4	0.3	0.3	0.4	0.5	0.4	0.9	1.1	1.7	0.4	1.4
Private demand	-0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.8	1.0	1.6	0.3	1.5
Private consumption	-0.4	0.2	0.2	0.2	0.1	0.2	0.2	0.9	0.1	0.8	-0.5	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	-0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.8	0.4	0.7
Change in private inventories	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	0.2	-0.1	0.4	-0.0
Public demand	0.2	-0.1	-0.1	-0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	-0.1
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	-0.1	-0.2	-0.1	-0.0	-0.0	-0.0	-0.0	-0.2	-0.2	-0.1	-0.3
Change in public inventories	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0
Net exports of goods and services	-0.3	0.0	0.2	0.1	0.1	0.0	0.0	-0.2	-0.0	0.2	0.3	0.1
Exports of goods and services	-0.8	0.1	0.3	0.2	0.2	0.2	0.2	0.3	0.0	0.9	0.4	0.7
Imports of goods and services	0.5	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.5	-0.0	-0.7	-0.1	-0.6
2) Y/y %												
GDP growth rate	0.7	1.5	1.6	0.8	1.7	1.8	1.8	2.1	1.1	1.9	0.7	1.6
Domestic demand	0.6	1.4	1.5	0.8	1.4	1.5	1.5	2.3	1.1	1.7	0.4	1.4
Private demand	0.2	1.2	1.6	0.9	1.5	1.5	1.5	2.1	1.0	1.6	0.3	1.5
Private consumption	0.1	0.2	0.1	0.1	0.7	0.6	0.7	1.4	0.1	0.8	-0.5	0.5
Residential investment	-0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	-0.1	0.2
Private fixed investment	0.4	0.6	0.7	0.6	0.7	0.7	0.7	1.0	0.5	0.8	0.4	0.7
Change in private inventories	-0.2	0.3	0.6	0.1	-0.0	0.0	-0.1	-0.4	0.2	-0.1	0.4	-0.0
Public demand	0.4	0.2	-0.1	-0.1	-0.1	-0.0	0.1	0.2	0.1	0.0	0.2	-0.1
Government final consumption	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Public fixed investment	0.1	-0.1	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	-0.2	-0.2	-0.1	-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	-0.0	-0.2	-0.1	0.4	0.4	0.2	-0.1	-0.0	0.2	0.3	0.1
Exports of goods and services	0.3	0.1	-0.1	-0.2	0.9	1.0	1.0	1.0	0.0	0.9	0.4	0.7
Imports of goods and services	-0.2	-0.1	-0.0	0.1	-0.5	-0.6	-0.8	-1.1	-0.0	-0.7	-0.1	-0.6

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

6.1 Major Assumptions

	2013			2014				2015	FY		CY	
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	2013	2014	2013	2014
1) World economy												
Economic growth of major trading partners												
Y/y %	2.8	3.0	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												
(Finished goods; 1982=100)	195.7	196.8	197.6	199.6	201.3	201.5	198.9	193.1	197.4	198.8	196.6	200.4
Q/q %, SAAR	-1.4	2.2	1.6	4.2	3.4	0.5	-5.1	-11.2				
Y/y %	1.5	1.2	0.8	1.6	2.8	2.5	0.8	-3.2	1.3	0.7	1.2	1.9
FF rate (%)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
(Target rate for the forecast period, end-period)												
Government bond yield (10 year; %)	2.00	2.71	2.75	2.76	2.62	2.50	2.28	1.97	2.55	2.34	2.35	2.54
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	98.7	98.7	98.5	99.3	100.8	101.2	101.6	102.2	98.8	101.5	98.8	100.7
Q/q %, SAAR	-2.2	-0.2	-0.7	3.0	6.2	1.9	1.4	2.5				
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	23.6	23.9	23.9	24.3	24.9	25.0	24.7	23.6	24.8	23.0	24.6
Q/q %, SAAR	11.1	25.5	5.4	-1.2	7.8	9.9	0.8	-4.3				
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			2016				2017	FY		CY	
	4-6	7-9 (E)	10-12 (E)	1-3 (E)	4-6 (E)	7-9 (E)	10-12 (E)	1-3 (E)	2015 (E)	2016 (E)	2015 (E)	2016 (E)
1) World economy												
Economic growth of major trading partners												
Y/y %	3.2	3.0	3.2	3.5	3.6	3.6	3.6	3.5	3.2	3.6	3.2	3.5
Crude oil price (WTI futures; $/bbl)	57.8	45.8	46.5	47.2	47.9	48.6	49.3	50.0	49.3	49.0	49.7	48.3
Y/y %	-43.9	-52.9	-36.5	-2.8	-17.1	6.1	6.0	5.9	-38.7	-0.8	-46.5	-2.9
2) US economy												
Real GDP (chained [2009]; $ bil; SAAR)	16,270	16,381	16,511	16,634	16,742	16,854	16,969	17,080	16,449	16,911	16,335	16,800
Q/q %, SAAR	2.3	2.8	3.2	3.0	2.6	2.7	2.8	2.6				
Y/y %	2.3	1.9	2.2	2.8	2.9	2.9	2.8	2.7	2.3	2.8	2.3	2.8
Consumer Price Index												
(1982-84 avg=100)	236.9	238.1	238.7	239.8	241.2	242.7	244.0	244.9	238.4	243.2	237.2	241.9
Q/q %, SAAR	3.0	2.0	1.0	1.9	2.4	2.5	2.0	1.6				
Y/y %	-0.0	0.2	0.7	2.0	1.8	1.9	2.2	2.1	0.7	2.0	0.2	2.0
Producer Price Index												
(Finished goods; 1982=100)	194.8	198.8	198.9	198.9	199.3	202.9	202.7	201.5	197.9	201.7	196.4	201.0
Q/q %, SAAR	3.7	8.3	0.3	-0.0	0.8	7.4	-0.4	-2.3				
Y/y %	-3.3	-1.4	0.0	3.0	2.3	2.1	1.9	1.3	-0.5	1.9	-2.0	2.3
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	2.38	2.46	2.68	2.86	3.02	3.23	3.44	2.42	3.14	2.24	2.95
3) Japanese economy												
Nominal government final consumption												
Y tril; SAAR	101.8	102.3	102.6	103.1	103.5	104.0	104.4	104.9	102.4	104.2	102.2	103.7
Q/q %, SAAR	-1.7	1.8	1.4	1.8	1.8	1.8	1.8	1.8				
Y/y %	1.0	0.9	1.1	0.8	1.7	1.7	1.7	1.8	0.9	1.7	1.5	1.5
Nominal public fixed investment												
Y tril; SAAR	25.4	24.6	23.7	23.2	23.1	23.1	23.1	23.0	24.1	23.1	24.5	23.1
Q/q %, SAAR	11.5	-11.5	-13.6	-8.5	-1.4	-0.7	-0.7	-0.7				
Y/y %	4.0	-1.4	-5.3	-5.6	-8.7	-6.1	-2.7	-1.1	-2.8	-4.2	-0.4	-5.5
Exchange rate (Y/$)	121.4	123.6	125.0	125.0	125.0	125.0	125.0	125.0	123.7	125.0	122.3	125.0
(Y/€)	135.0	135.7	140.0	140.0	140.0	140.0	140.0	140.0	137.7	140.0	135.8	140.0
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.