

19 June 2015 (No. of pages: 13)

Japanese report: 19 Jun 2015

# Japan's Economy: Monthly Review

## *Assessing the Recovery of the Nikkei Average to the 20,000 Yen Level*

Japan's economy is expected to continue its gradual recovery

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### Summary

- **Is This Time Different?:** The Nikkei stock average recovered to its previous high, passing the 20,000 yen barrier in the closing price on April 22, 2015. From a macro-economic viewpoint, how should we interpret the recent stock price highs? The type of overheating experienced in the housing and real estate markets during the bubble era have not been observed, and *the three excesses* which were the source of Japan's long-term stagnation in the past are now judged to have been resolved. The current Japanese economy is moving toward the perfect opportunity to completely shed itself of the Lost Decades, leaving behind the negative legacy of the past. On the other hand, we want to reconfirm the importance of the tasks which have been set before the Japanese economy and which have been put in perspective by this new growth phase in the stock market. These are (1) bringing an end to deflation, and (2) implementing a bold growth strategy.
- **Main economic scenario for Japan:** In light of the 2<sup>nd</sup> preliminary Jan-Mar 2015 GDP release (Cabinet Office), we have revised our economic growth outlook. We now forecast real GDP growth of +2.0% in comparison with the previous year for FY15 (+1.7% in the previous forecast) and +1.9% in comparison with the previous year for FY16 (+1.8% in the previous forecast). We expect Japan's economy to gradually recover due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) The gradual firming up of exports centering on the US.
- **Four risk factors facing Japan's economy:** Risks factors for the Japanese economy are: (1) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market due to loss of fiscal discipline, (2) The danger of China's economic bubble collapsing, (3) tumult in the economies of emerging nations in response to the US exit strategy, and (4) a worldwide decline in stock values due to geopolitical risk.

## 1. Is This Time Different?

### *Nikkei stock average recovers – passes the 20,000 yen barrier*

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

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

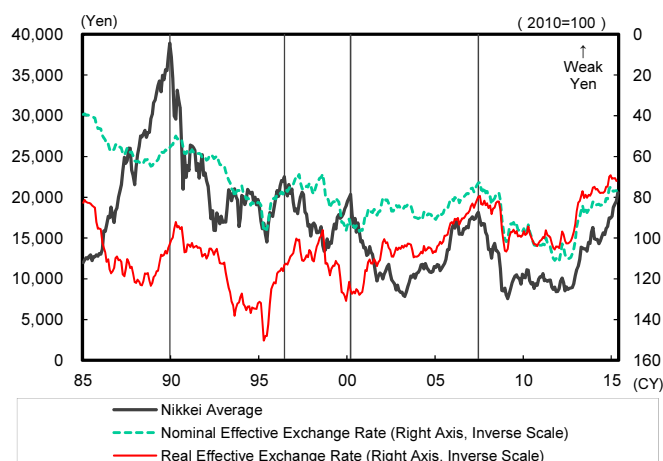
But should we be thinking along the same lines now? The Abenomics effect has gotten Japan's economy moving toward its hoped for revitalization, while corporate finances improve and earning capacity strengthens. This question as to whether the recent rally in stock prices is different from last time is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

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

## The Nikkei Stock Average and the Effective Exchange Rate

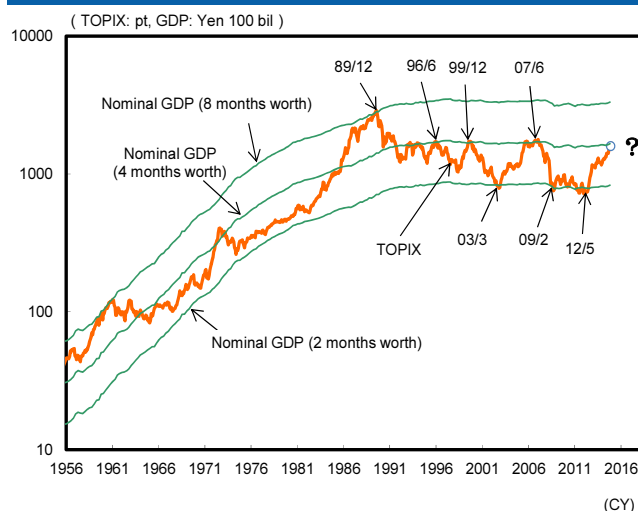
Chart 1



Source: The Nikkei, the Bank of Japan; compiled by DIR.  
 Note: Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.

## TOPIX and Nominal GDP

Chart 2



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

### *The three excesses which have plagued corporations: then and now*

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

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

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

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

## Housing and Real Estate

Chart 3



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

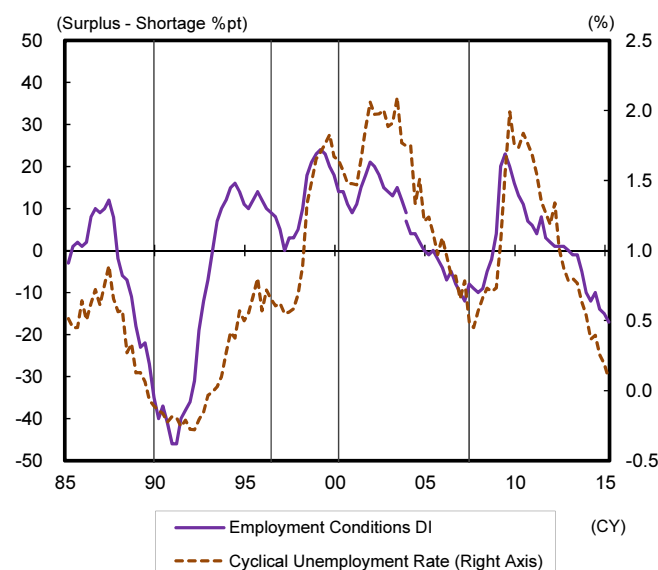
Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.

2) Real estate prices according to Indices of Urban Land Prices, housing rentals according to CPI.

3) Number of households according to linear interpolation of data. Years with no data available (2014 on) are assumed to be flat.

## The Employment Situation

Chart 4



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

Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.

2) Employment Conditions DI includes corporations of all sizes and all industries, cyclical unemployment rate estimated by DIR.

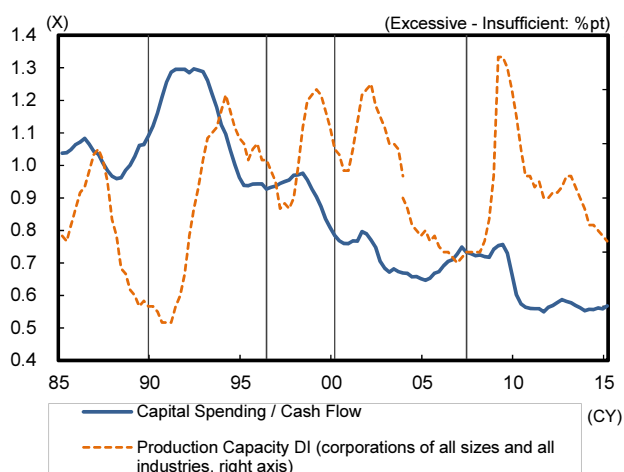
Next is the question of capex. The ratio of capital spending to cash flow has declined significantly, hovering at a low level in recent years (Chart 5). This indicates that corporations are holding down capital spending relative to the profits they have been bringing in, and that they retain a cautious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

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

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

## Capital Spending Conditions

Chart 5



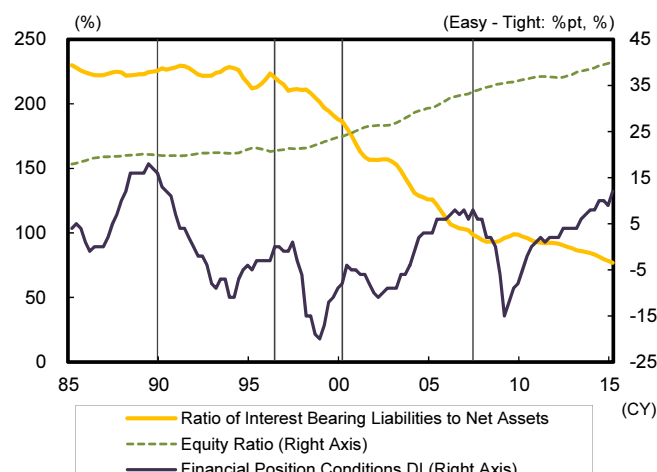
Source: The Nikkei, Ministry of Finance, Bank of Japan; compiled by DIR.

Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.

2) Capital spending to cash flow uses the four quarter moving average value. Corporations of all sizes and all industries (excluding finance and insurance).

## Condition of Liabilities

Chart 6



Source: The Nikkei, Ministry of Finance, Bank of Japan; compiled by DIR.

Notes: 1) Vertical lines represent peaks in the Nikkei average (month end) in December 1989, June 1996, March 2000, and June 2007.

2) Ratio of interest bearing liabilities and equity ratio use the four quarter moving average value. Corporations of all sizes and all industries (excluding finance and insurance).  
3) Financial position conditions DI includes corporations of all sizes and all industries.

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

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

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

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

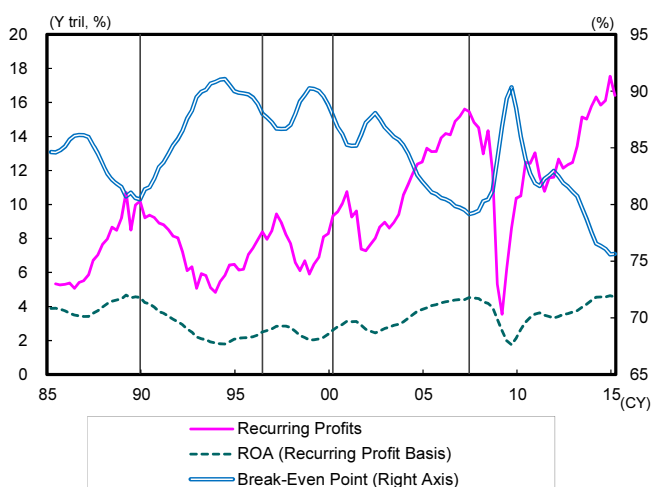
In closing I would like to touch upon some future issues. First of all, though Japan's economy may no longer be in a deflationary situation in the sense of the continuous decline in prices, it has yet to bring an end completely to deflation. When it comes to the stock market there's an old saying that you should buy during an inflationary period and sell when there's deflation. If Japan's economy runs into another deflationary period stock prices will likely fall. Bringing an end to deflation for good is an important task not only for the revitalization of Japan's economy overall, but for long-term growth in stock prices as well.

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

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

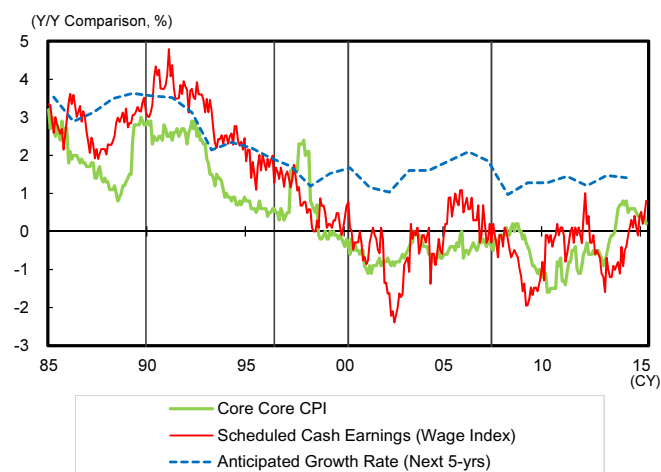
The above considerations should reconfirm the importance of the tasks which have already been set before the Japanese economy for some years now and which have been put in perspective by the growth in the stock market. These are (1) bringing an end to deflation, and (2) implementing a bold growth strategy.

**Corporate Earnings Situation** **Chart 7**



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

**Prices, Wages, and Anticipated Growth Rate** **Chart 8**



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

## 2. Main Economic Scenario for Japan

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

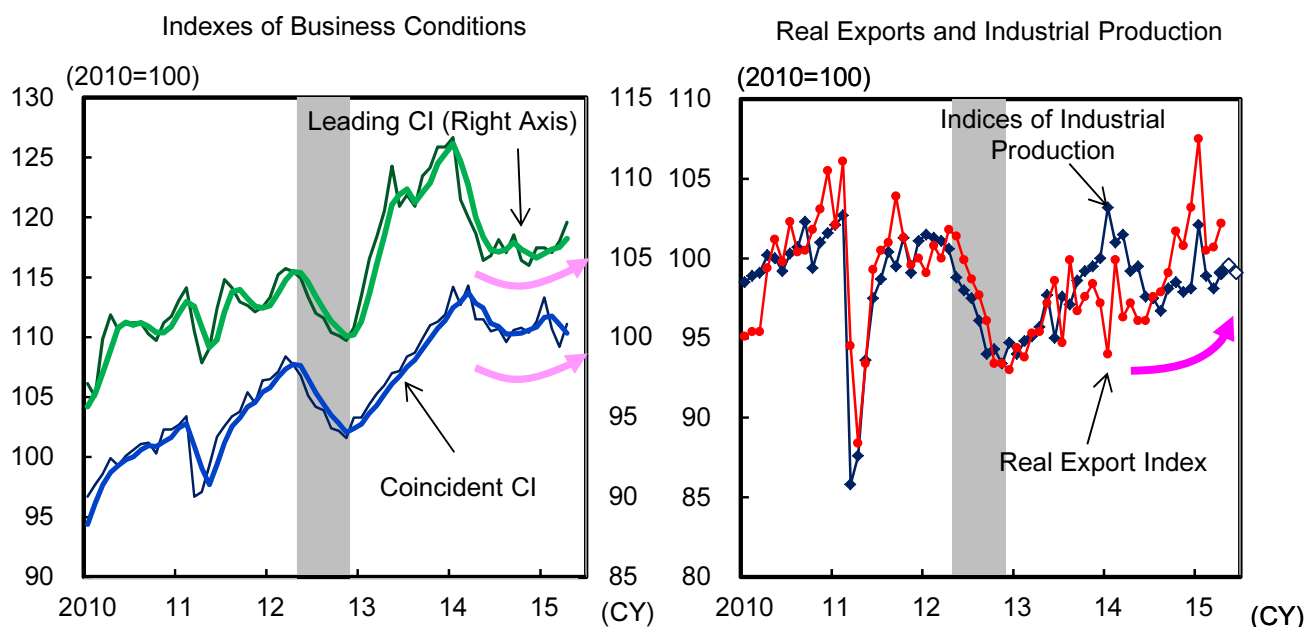
Japan's economy is seen as having entered a recession since peaking in January 2014. However, the downtrend appears to have ended fairly quickly. We expect Japan's economy to gradually recover due to the following factors: (1) Continuation of the virtuous circle brought on by Abenomics, and (2) The gradual firming up of exports centering on the US, which should bring a moderate recovery.

Real GDP registered negative growth for two quarters in a row beginning in the Apr-Jun 2014 period. The coincident index of business conditions peaked in January 2014 and then entered a downward trend. However, the GDP shifted back into the positive range for two consecutive quarters starting in the Oct-Dec 2014 period. The coincident index had also been deteriorating, but began heading toward a comeback after bottoming out in August. With its peak in January 2014, it appears that the economy may have fallen into a recession, but ended in around August, making it a fairly short one. The economy began expanding again in around September and beyond. (See Chart 9.) Most recently, the coincident index has experienced some wide fluctuations, but the Ministry of Economy, Trade and Industry's production forecast survey for April was positive, hence our outlook for Japan's economy sees a trend toward gradual recovery.

Behind the return to economic expansion was the gradual comeback exhibited by personal consumption, which experienced a steep downturn due to the reactionary decline occurring after the increase in the consumption tax. Personal consumption gained support from the steady undertone of the employment and income environment. Meanwhile, the progressively weakening yen also brought upward pressure, along with continuing improvement in corporate earnings and a steady undertone for demand from the corporate sector including capex spending. In addition, real exports, which had been sluggish ever since the economic expansion phase at the end of the year 2012, are now in a growth trend.

Coincident & Leading Indicators, Real Exports, and Industrial Production

Chart 9



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

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

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

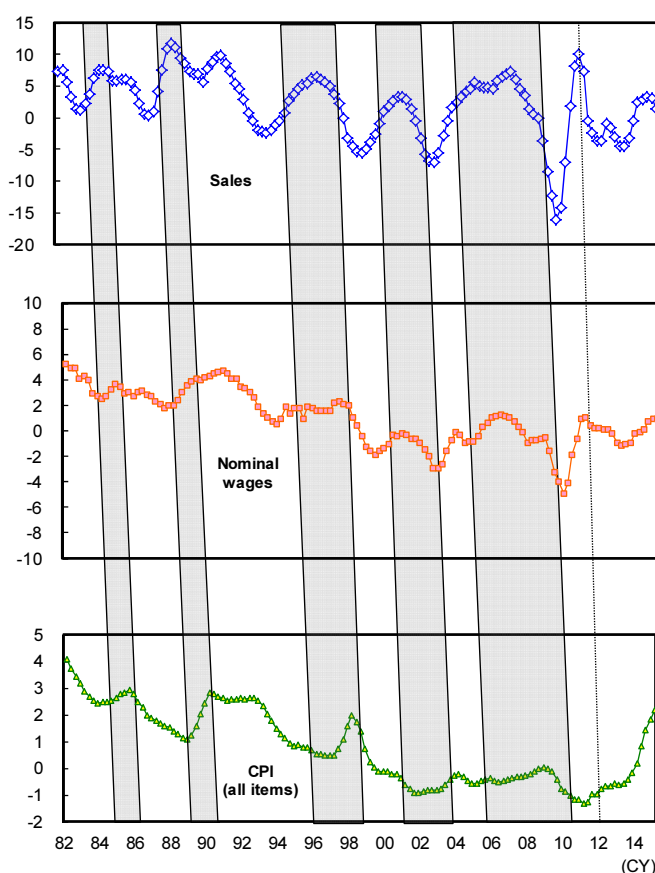
Japan's economy is expected to be supported by the virtuous circle brought on by Abenomics.

Criticisms have been voiced by the opposition parties and the mass media claiming that employee compensation has failed to increase despite the progress of inflation, and that Abenomics will only cause the people more pain. However, as is shown in Chart 10, historical data reveals that there is a recurring economic cycle in Japan moving from sales growth to wage growth and then to price increases. In other words, wage hikes in Japan tend to occur six months to a year after growth in sales, and then another six months later the consumer price index tends to rise.

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

In actual fact, the corporate sector has been favorable recently, and as the employment and income environment improves, the personal sector is gradually improving also. The wage increase rate after the 2014 annual spring labor offensive was +2.2%, the highest it has been for the past fifteen years. The wage increase rate is expected to exceed that of the previous year in 2015 as well. Hence, looking at the big picture, we can see that the first buds of the virtuous circle as envisioned by Abenomics (production → income → consumption) have already sprouted.

**Sales, Wages, and Prices (y/y %)** **Chart 10**



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

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

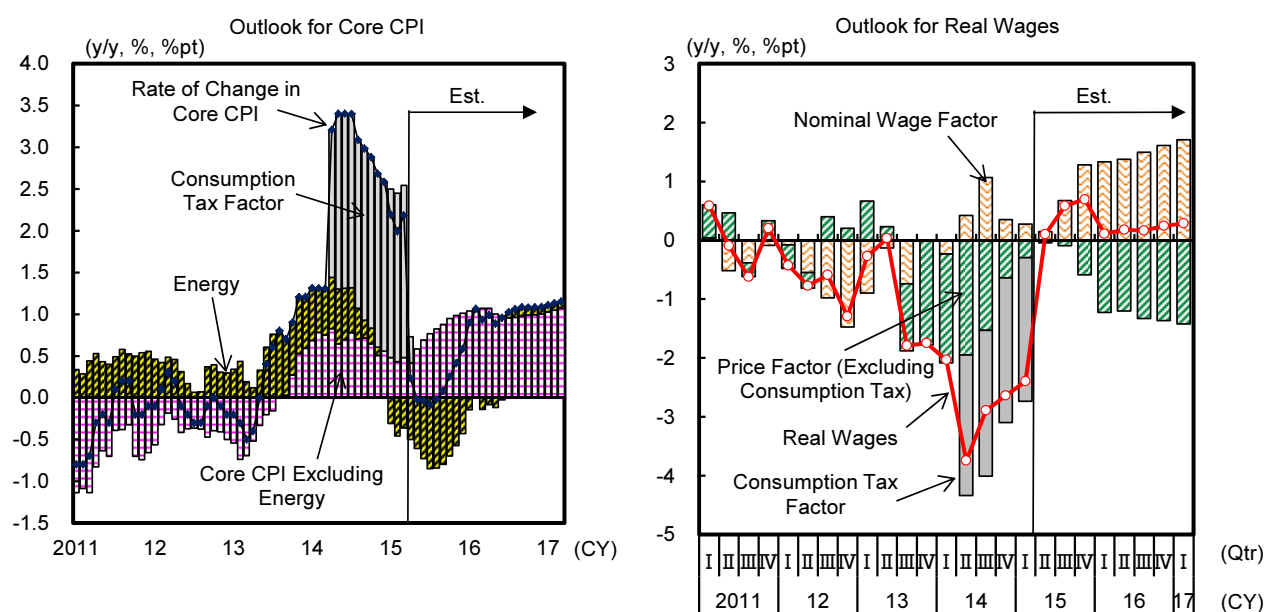
2) Shaded bars denote periods when sales were on uptrend. Bars tilted in order to show roughly 6-month lag from sales graph to nominal wages graph and from there to CPI graph, respectively.



### *Collapse of energy prices a factor in pushing up real wages*

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

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

**Outlook for Core CPI and Real Wages**
**Chart 11**


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

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

Estimates obtained using the DIR macroeconomic model in order to get a better idea of the effects that cheap crude oil will have on the Japanese economy (see Chart 12). According to the results of the simulation, the price of crude oil declined from its price of \$105/bbl as of June 2014, thereby boosting real GDP levels between FY2014 and FY2016 by the following amounts: +0.19% in FY2014, +0.52% in FY2015, and +0.42% in FY2016. Meanwhile, effects on the growth rate in real GDP were +0.19%pt, +0.34%pt, and -0.10%pt respectively.

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

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

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

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

**Effect of the Collapse in the Price of Crude Oil on Japan's Economy** **Chart 12**

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

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

Source: Compiled by DIR.

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

2) WTI = Difference from \$105 Scenario assumes most recent WTI peak of June 2014 and beyond to be flat at \$105/bbl.

WTI = Difference from \$70 Scenario assumes the 2014 and 2015 Jan-Mar period and beyond to be flat at \$70/bbl.

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

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

Firstly, though the ratio of overseas capex fluctuates up and down in the short-term, in the long-term it is continuing its upward trend (see Chart 13). Looking a little closer at this phenomenon, we see that structurally speaking Japan's inflation rate is lower than it is overseas, and this inflation differential factor brings a negative contribution to the relationship. The overseas market has a more rapid growth rate than does Japan's domestic market, and this factor works toward continued growth in the overseas capex ratio (see Chart 14). Meanwhile, the nominal effective exchange rate also accompanies these fluctuations, and in the long run contributes to pushing up the ratio of overseas capex when in a strong yen trend.

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

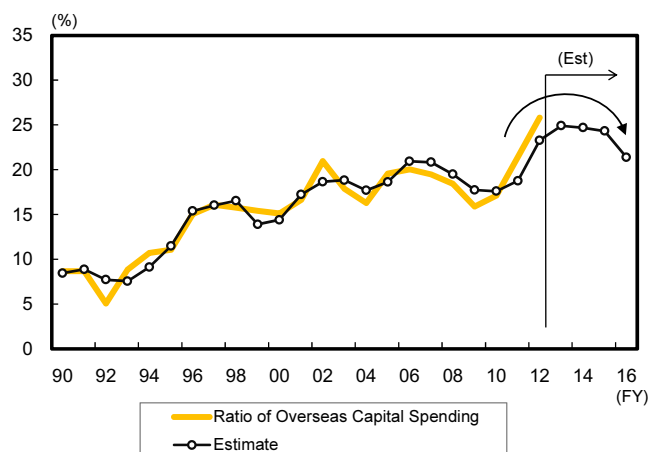
Finally, according to the IMF outlook for the world economy and the results of our estimates based on the recent nominal effective exchange rate, the ratio of overseas capex is expected to decline beginning in FY2014 and beyond due to the progressively weaker yen since the fall of 2012.

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

## Manufacturing Industry's Ratio of Overseas Capex

Chart 13



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

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

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

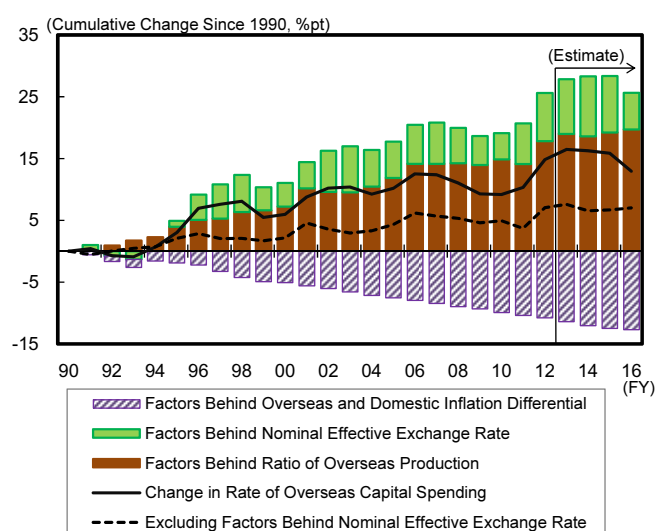
$$\text{Ratio of Overseas Capital Spending (t)} = -75.44 + 1.11 \times \text{Ratio of Overseas Production (t)} + 16.55 \times \ln(\text{Real Effective Exchange Rate}) (t-3)$$

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

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

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

Chart 14



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

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

### Four risk factors facing Japan's economy

In addition to subjects covered earlier in this report, we would also like to mention the four risk factors for the Japanese economy which it is necessary to remain aware of. These are: (1) The *Triple Weaknesses* – a weak bond market, weak yen, and weak stock market stemming from the postponement of the additional consumption tax hike, (2) The danger of China's economic bubble collapsing, (3) tumult in the economies of emerging nations in response to the US exit strategy, and (4) a worldwide decline in stock values due to geopolitical risk.

## Economic Indicators and Interest Rates

## Chart 15

Indicator	2014	2015				2016	FY13	FY14	FY15	FY16
	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar				
	Actual	DIR estimates				Actual	DIR estimates			
<b>Real GDP</b>										
Q/q %, annualized	1.2	3.9	1.6	2.4	1.8	1.7				
Y/y %	-1.0	-0.9	1.2	2.3	2.5	1.8	2.1	-0.9	2.0	1.9
<b>Current account balance</b>										
SAAR (Y tril)	10.7	14.9	16.4	16.8	17.2	17.6	1.5	7.7	17.0	17.9
<b>Unemployment rate (%)</b>	3.5	3.5	3.4	3.3	3.3	3.2	3.9	3.6	3.3	3.1
<b>CPI (excl. fresh foods; 2010 prices; y/y %)</b>	2.7	2.1	0.1	0.0	0.4	1.0	0.8	2.8	0.4	1.1
<b>Unsecured overnight call rate</b>										
(period end; %)	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
<b>10-year JGB yield</b>										
(period average; %)	0.40	0.34	0.45	0.50	0.55	0.60	0.55	0.37	0.53	0.70

Source: compiled by DIR.

Note: Estimates taken from DIR's *Japan's Economic Outlook No.185 Update*.