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Japan's Economy: Monthly Review

International Policy Coordination is Key: Looking toward G7 Summit Japan

Downside risk grows for the Japanese economy due to external factors

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Summary

- **Downside risk grows for the Japanese economy due to external factors:** In light of the 2nd preliminary Oct-Dec 2015 GDP release (Cabinet Office) we have revised our economic growth outlook. We now forecast real GDP growth of +0.7% in comparison with the previous year for FY15 (+0.7% in the previous forecast), +0.9% in comparison with the previous year for FY16 (+0.9% in the previous forecast), and -0.1% in comparison with the previous year for FY17 (-0.1% in the previous forecast). Japan's economy has remained in a lull, but we expect it to move toward a gradual recovery due to the following domestic factors: (1) Inventory adjustment is progressing, (2) The price of crude oil remains low, (3) Real wages are on the increase, and (4) The government's supplementary budget has taken shape. However, caution is needed regarding downside risk in the overseas economy, especially that of China.

- **International policy coordination is key – looking toward G7 Summit Japan:** Looking at the world economy in light of long-term cycles, it becomes clear that the current sense of stagnation in the world economy has its origin in fiscal and monetary restraint policies of the advanced nations despite the fact that at the time these policies were initiated, private sector demand was gradually recovering in those countries. The key to stopping the declines in the world economy and financial markets is international policy coordination between the advanced nations, China, and so on, which now brings the upcoming G7 summit in Japan into focus. With the economies of the emerging nations and resource-rich countries in a continuing slowdown, the world must leave behind its dependence on the emerging nations to drive economic growth, and instead, the advanced nations need to step up to the plate and take up the role of leading world economic growth. Meanwhile, though the advanced nations are left with limited room to move in the area of monetary policy, there is still some leeway for aggressive fiscal policy actions, while China should initiate practical means of avoiding further depreciation of the renminbi by adopting capital regulations.

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Economic Research

1. Downside Risk Grows for Japan's Economy Due to External Factors

Downside risk grows for the Japanese economy due to external factors

In light of the 2nd preliminary Oct-Dec 2015 GDP release (Cabinet Office) we have revised our economic growth outlook. We now forecast real GDP growth of +0.7% in comparison with the previous year for FY15 (+0.7% in the previous forecast), +0.9% in comparison with the previous year for FY16 (+0.9% in the previous forecast), and -0.1% in comparison with the previous year for FY17 (-0.1% in the previous forecast). Japan's economy has remained in a lull, but we expect it to move toward a gradual recovery due to the following domestic factors: (1) Inventory adjustment is progressing, (2) The price of crude oil remains low, (3) Real wages are on the increase, and (4) The government's supplementary budget has taken shape. However, caution is needed regarding downside risk in the overseas economy, especially that of China.

Real GDP growth rate for Oct-Dec 2015 declines by -1.1% q/q annualized (-0.3% q/q)

The real GDP growth rate for Oct-Dec 2015 (2nd preliminary est) was revised upwards slightly to -1.1% q/q annualized (-0.3% q/q) in comparison to the 1st preliminary report (-1.4% q/q annualized and -0.4% q/q). Results also exceeded market consensus due to the upward revision of capex, which was expected to be revised downwards on the 1st preliminary report, and the upward revision of inventory investment, which was seen marking time on the 1st preliminary report. All in all, these results were unsurprising, as the upward revision from the 1st preliminary results was only slight, and results were generally in accordance with market consensus. Moreover, results confirmed our previous opinion that Japan's economy was in a lull during the fourth quarter. As for the future of Japan's economy, the focus is on the G7 summit to be held in Japan on May 26-27. Hopes are that the advanced nations will implement coordinated fiscal policies. There is also the question of whether or not China comes up with a full-fledged policy to bolster its economy.

Small upward revision for capex and inventory investment in contrast to previous outlook

Performance by demand component in light of upward revisions from the 1st preliminary results shows personal consumption and public investment with downward revisions, but inventory investment and capex were revised upwards slightly, helping to increase overall results.

Capex was revised upwards to +1.5% q/q in comparison to +1.4% on the 1st preliminary report due to the results of corporate statistics. Inventory investment's contribution to overall results was revised slightly upwards from -0.1% pt q/q on the 1st preliminary report to -0.0% pt on the 2nd preliminary, while also exceeding market consensus at -0.1%. Looking at inventory investment by category, out of the four categories of investment work-in-process and raw materials were revised upwards, while finished goods inventory and distribution inventory were flat. The contribution of personal consumption was expected to remain flat in comparison to the 1st preliminary report, but then fell slightly in terms of rate of change. Public investment was revised downwards due mainly to the reflection of basic statistics from December. However, this was pretty much within the range of expectations.

As for other components, housing investment and imports were flat in comparison to the 1st preliminary report, while government consumption and exports were revised upwards. However, overall GDP results were not influenced much by this.

Trends by demand component: Major components show weak performance across the board with the exception of capex

Looking at trends in demand components on the Oct-Dec 2015 period results (2nd preliminary report), we see personal consumption suffering a decline for the first time in two quarters at -0.9% q/q (-0.8%

on the 1st preliminary). This was due to the improvement in the employment and income environments, with real compensation of employees maintaining a firm undertone, and contributing to overall results. Meanwhile, households continue to tighten their budgets, dragging down overall results, with seasonal goods, including winter clothing, heating equipment, and energy, all performing poorly.

Housing investment declined for the first time in four quarters at -1.2% (also -1.2% on the 1st preliminary). New housing starts, a leading indicator for housing investment as a portion of GDP, have been weak since sometime around the middle of 2015. Housing investment and housing starts are recorded on a progressive basis, hence there is a lag in their performance, but it appears that this area has shifted into a declining trend.

Capex rose by +1.5% q/q (+1.4% on the 1st preliminary), its second consecutive quarter of growth, in a continuation of its comeback. This was made possible by historic highs in corporate earnings, which encouraged replacement investment.

Private sector inventory was down for the second consecutive quarter at -0.0% pt (-0.1% pt on the 1st preliminary) contributing to this period's decline in real GDP. It seems reasonable to deduce that this shows the pace of growth in inventories to be slowing down.

Public investment declined for the first time in two quarters at -3.4% q/q (-2.7% on the 1st preliminary). Without the effects of economic policy as there was in the past, public investment, one of the leading economic indicators, has also fallen into decline.

Meanwhile, exports were also down for the first time in two quarters at -0.8% q/q (-0.9% on the 1st preliminary). The increase in foreigners visiting Japan has led to an increase in exports of services. Meanwhile, with the slowdown in the economies of the emerging nations, especially China, goods, according to foreign trade statistics, continue to be weak, bringing down overall performance. Imports also declined for the first time in two quarters at -1.4% (also -1.4% on the 1st preliminary). Since the decline in imports was larger than that of exports, the contribution of overseas demand (net exports) was up by +0.1% pt (also up +0.1% pt on the 1st preliminary).

With no clearly driving force, Japan's economy faces risk of possible downturn

There is no major change in our main scenario as expressed in the 1st preliminary report. The future of Japan's economy will be assisted by a number of positive factors, including improved employment and income environments, which should encourage a recovery in personal consumption. However, due to the absence of a clearly driving force, Japan's economy faces risk of a possible downturn in the future. Especially notable are the downturn in the Chinese economy, turmoil in the global financial markets in response the US exit strategy, and a strong yen / weak stock market situation brought on by risk-off behavior of investors. These factors require caution. The focus for the time being is expected to be on the G7 summit to be held in Japan on May 26-27. Hopes are that the advanced nations will implement coordinated fiscal policies. There is also the question of whether or not China comes up with a full-fledged policy to bolster its economy. We also note that GDP statistics do not make adjustments for leap year, hence the Jan-Mar 2016 period figures could be on the strong side due to the extra day in comparison to February of the previous year.

Personal consumption is expected to mark time. As for the question of income, real wages according to the monthly labour survey continue to be weak since summer of 2015 due to a changeover in sampling, but it appears that it has recently been moving toward a comeback. Real employee compensation (real wages x employment) in the macro sense is maintaining a strong undertone due to the growth trend in employment. Meanwhile, the positive employment environment and the raising of the minimum wage are expected to bring a gradual increase in part-timer pay. The effect of a slower growth rate in the

consumer price index promises to continue pushing up real wages, and this should be a factor in providing underlying support for personal consumption. Meanwhile, factors to keep in mind are the pension revision rate which was raised in Fiscal 2015 for the first time in sixteen years, and which the government has decided to leave unchanged in Fiscal 2016, as well as the spring labor offensive in 2016, which may very possibly bring a smaller wage revision rate than in 2015 (final tally results +2.20%).

Looking at the trend in new housing starts, a leading indicator for housing investment, it appears that performance continues to be weak. Housing starts are weighted down by an increase in construction costs and sales prices, as well as the scandal regarding the falsification of condominium construction data which surfaced late n 2015. However, improvements in the employment and income environment, along with the historic lows in interest on housing loans, and then beyond the year 2016, the expected further increase in consumption tax in April 2017, are expected to work together in encouraging a gradual increase in the number of households considering purchase of a new home. Housing starts should soon return to a growth trend. Housing investment is expected to recover to a growth trend in the future, though there is expected to be a time lag between the expected increase in housing starts and the subsequent recovery in housing investment.

As for capex, the gradual recovery is seen continuing due to record-setting corporate earnings, which are encouraging replacement investment. According to surveys measuring capex investment plans such as the BOJ Tankan, there is a forward-looking stance in regard to capex spending, especially in the non-manufacturing industries. Replacement investment, labor saving, and energy saving appear to be promising. However, statistics seem to see current business sentiment in the manufacturing industries as being stronger than it actually is, and caution is urged regarding risk of a downtrend in the future. The slowdown in emerging nation economies centering on China, weakness in the corporate sectors of overseas economies leading to stagnation for exports, and the slow pace of recovery in personal consumption means that corporations delaying capex spending may increase in the future, especially amongst manufacturers.

Public investment is gradually shedding the effects of economic policy which provided support in the past, and is expected to continue its gradual decline. Contracts and orders received, which provide the leading indicators for this area, are showing signs of weakening. The general tone in this area is expected to continue in that vein. However, if the FY2015 supplementary budget and the FY2016 budget are implemented in advance, public investment is expected to gradually end its declining trend starting in the latter part of FY2016 and beyond.

Meanwhile, exports are expected to make a gradual comeback while experiencing both strong and weak points with the US and European economies showing a firm undertone and exports of services recording favorable performance. However, overseas economies show a growing risk of a downturn, with the worldwide industrial sector in the doldrums due to the rapid decline in the price of resources and excess production capacity. Overseas shipments of electronic parts and devices for smartphones are expected to suffer a temporary decline. Considering this fact, the expected shift back into a growth trend for exports of goods will likely have to wait until sometime after spring. A firm undertone continues in US economic expansion centering on the household sector, bringing expectations for a recovery in Japanese exports centering on durables. As for the EU, the economy is expected to move gradually toward a comeback due to the effects of the collapse of crude oil prices and additional monetary easing on the part of the ECB. Exports to the EU are expected to gradually recover to a growth trend. As for the Asian economy, electronic parts and devices for smartphones as mentioned above, as well as iron & steel and materials are expected to be a drag on performance due to China's excess production capacity. Asian exports are expected to continue on the weak side. As for China, whose economic slowdown continues, monetary easing and promotion of automobile sales are helping to lift the real economy, and the effects are beginning to show up in personal consumption and the

service sector. There is a good possibility that declines in consumption can be avoided in the area of consumer goods.

2. International Policy Coordination is Key: Looking toward G7 Summit Japan

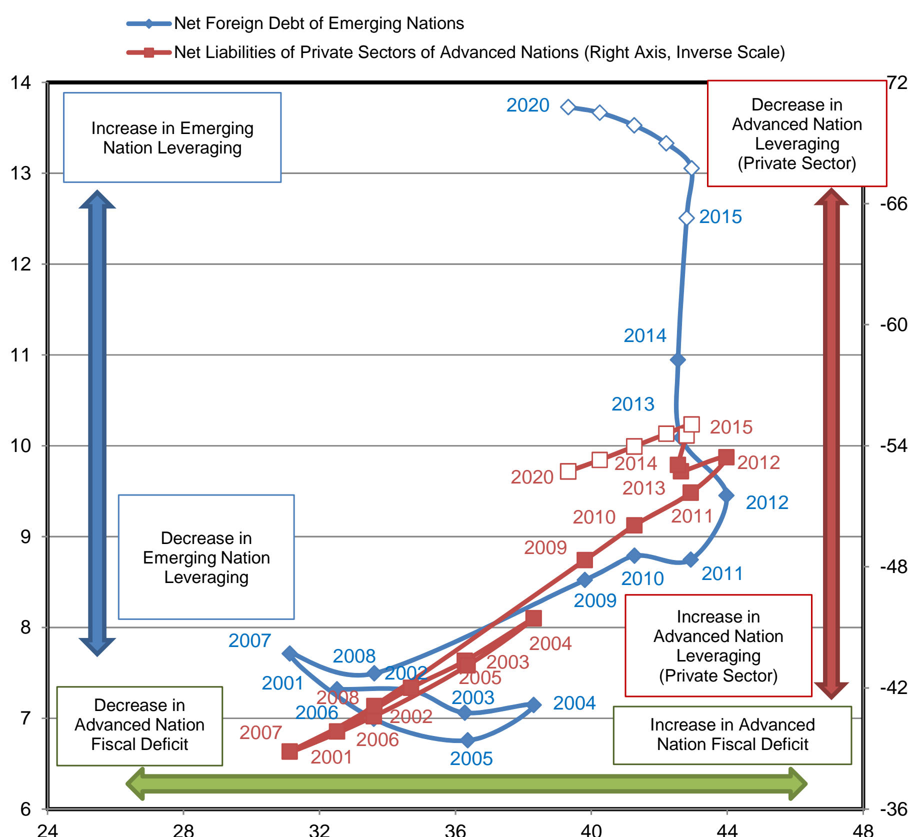
2.1 The Importance of International Cooperation for Economic Growth

Was fiscal and monetary restraint in the advanced nations premature?

As is indicated in the turmoil in the global financial markets, there is a growing sense that the worldwide economy is moving toward stagnation. Until recently, the trend in the world economy seemed to be a structure in which a favorable US economy would generate demand and then Europe would follow, reaping the benefits of a weak Euro. However, fears of a US economic slowdown began to grow toward the end of last year, and it seemed that the world economy would no longer depend on US strength to pull them along. This is the root of the growing sense of world stagnation.

What will it take for the world economy to recover and return to growth? In this chapter we examine this question in hopes of gaining some answers. Chart 1 is our attempt to get a handle on the structural nature of the current situation. We breakdown the world economy into three major categories – Governments of Advanced Nations, Private Sectors of Advanced Nations, and Emerging Nations. The right axis of the chart represents Net Liabilities of Advanced Nations (Private Sector) / World GDP (%) Inverse Scale, while the horizontal axis represents Net Liabilities of Advanced Nations (Government) / World GDP (%), with the left axis representing Net Liabilities of Emerging Nations / World GDP (%).

Current State of World Economy: Advanced Nations (Govt./Pvt. Sector) and Leveraging of Emerging Nation Debt **Chart 1**



Source: IMF; compiled by DIR.
Notes: 1) All indices are a proportion of world GDP (%). Figures after the year 2015 are IMF estimates (see white squares).
2) The right axis represents Net Liabilities of Advanced Nations (Private Sector) / World GDP (%) Inverse Scale, while the horizontal axis represents Net Liabilities of Advanced Nations (Government) / World GDP (%), with the left axis representing Net Liabilities of Emerging Nations / World GDP (%).

Using the chart we take a look back at major cycles in the world economy. First we follow the steps through one large economic cycle: (1) The economy worsens in the private sectors of advanced nations (the focus shifts to the top of the right axis), then (2) Governments of advanced nations shoulder the burden (producing a shift to the right side of the horizontal axis), and capital inflow is encouraged by monetary easing measures. This stimulates demand in the emerging nations (a shift to the top of the left axis). As a result, (3) Private sectors of advanced nations recover to a sufficient degree (shift to the lower end of the right axis), and inflation is gradually generated (in some extreme cases an economic bubble occurs). Then the advanced nations move into an adjustment phase and we're back at step (1), the top of the right axis.

The world economy has made its way through long-term cycles like this one any number of times until reaching the present situation. Here it becomes clear that the current sense of stagnation in the world economy has its origin in fiscal and monetary restraint policies of the advanced nations despite the fact that at the time these policies were initiated, private sector demand was gradually recovering in those countries. Then the emerging nations came in to fill the gap in demand. However, as will be explained in more detail in a later section, it is difficult to expect that the emerging nations can produce any more demand than they already have in the midst of capital outflows triggered by the US raising its interest rate. As is shown in Chart 1 (see the white squares after the year 2015), the IMF has announced publicly that emerging nation leveraging will support world demand in the future. However, we believe that this is an overly optimistic outlook.

Issues requiring attention at the G7 summit in Ise-Shima, Japan

The key to stopping the declines in the world economy and financial markets is international policy coordination between the advanced nations, China, and so on, which now brings the upcoming G7 summit in Japan into focus. With the economies of the emerging nations and resource-rich countries in a continuing slowdown, the world must leave behind its dependence on the emerging nations to drive economic growth, and instead, the advanced nations need to step up to the plate and take up the role of leading world economic growth. Meanwhile, though the advanced nations are left with limited room to move in the area of monetary policy, there is still some leeway for aggressive fiscal policy actions, while China should initiate practical means of avoiding further depreciation of the renminbi by adopting capital regulations.

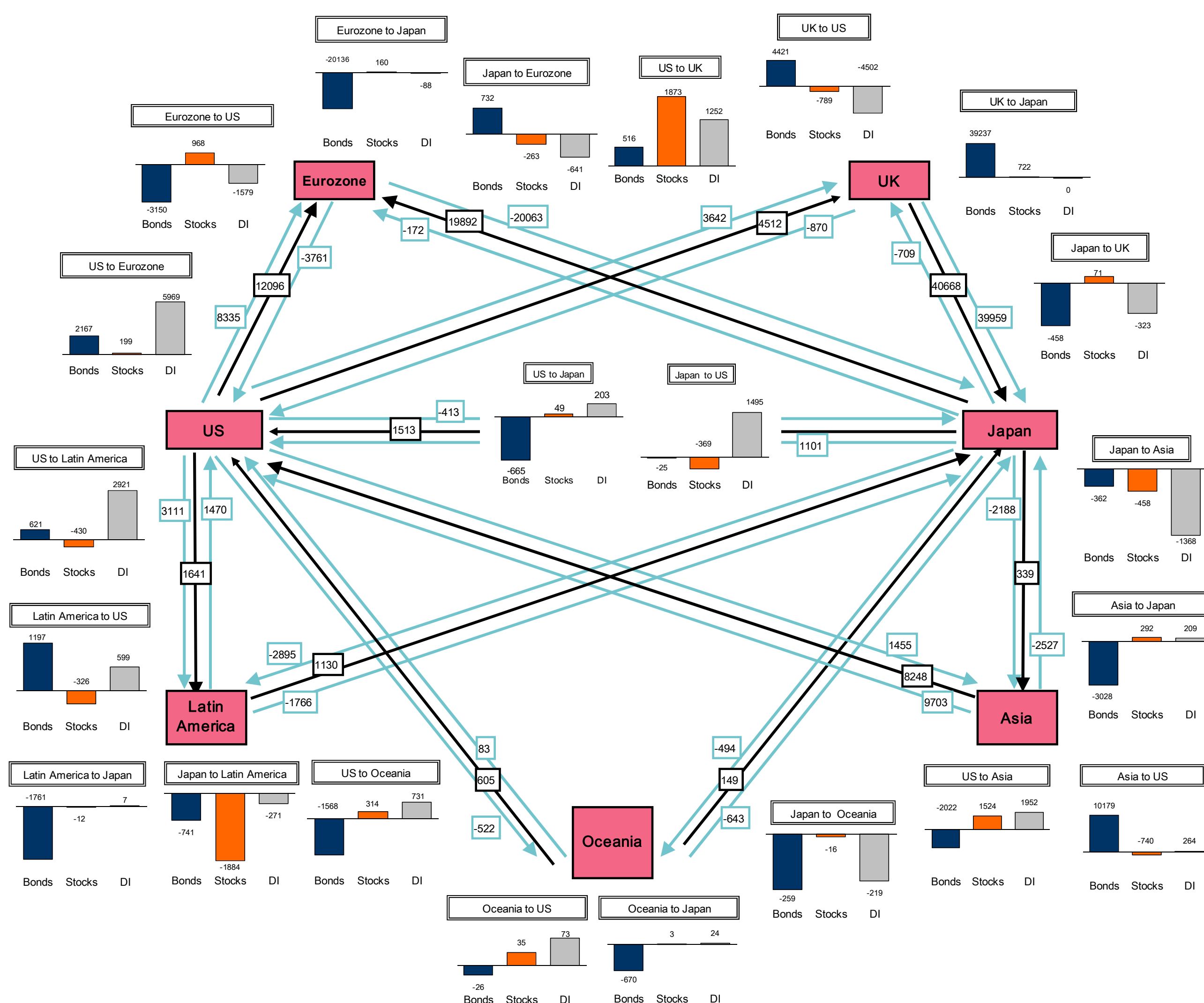
The cornerstone of international policy coordination is the implementation of proactive fiscal policies as well as curbing overly quick monetary restraint. The increase of US long-term interest due to the raising of policy interest has not only caused the US economy to slow down, it also has the effect of causing interest rates in other countries to grow due to international interest arbitrage terms. Chart 2 illustrates the flow of worldwide investment capital. The US procures capital from outside the country in the form of selling bonds, and then supplies capital to the rest of the world in the form of equity. In other words, international credit creation takes place with the US as its axis. When US interest rates rise within the context of this international credit creation structure, the desired rate of return on investment capital which the US invests in the rest of the world increases, and interest rates go up all over the world. As a result, fear begins to rise that this will begin to push down the world economy.

The strong dollar which accompanies the increase in interest rates primarily affects the distribution of income through changes in export competitiveness. In other words, it is simply a spillover effect of demand shifting from the US to overseas. For countries which tend to procure capital in dollars, mainly the emerging nations, this is a negative factor. Emerging nations which have pegged their own currency to the dollar may be forced to raise their interest rates as a means of protecting their currency. In the worst case scenario, some countries could be forced to use up all of their foreign currency reserves triggering a currency crisis. Looking back into history shows us that this has occurred before.

Estimates using the world economic model

Based on the above considerations, we built a world economic model for this outlook (See Chart 3) The area marked (1) in the chart indicates what might occur if the US raises its interest rate too quickly. This could actually cause a slowdown in the world economy. On the other hand, the section of the chart marked (2) indicates that if the Fed raises rates at a pace which is neutral to the economy, negative effects on Japan's economy would be limited.

Global Money Flow (2014) **Chart 2**



Source: US Dept. of Treasury, US Dept. of Commerce, Ministry of Finance; compiled by DIR.
Note: Unit: 100 mil dlrs, annualized rate. Data for Eurozone to Japan includes EU (25 countries) and UK. Asia does not include Japan. Latin America includes the Caribbean. Data for US-Oceania includes only Australia.

Simulation Results Using World Economic Model | **Chart 3**

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

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

2.2 Verifying the World Economic Model with Focus on the Fed

World economy shaky in response to the Fed's exit strategy

The Fed embarked on the raising of interest rates in December 2015, ahead of other major advanced nations. Behind the move was the favorable domestic economy, especially in the area of personal consumption, as well as an improved employment environment. The recent interest rate hike is a step in the direction of normalizing monetary policy for the Fed and is considered to be a sign of major progress. On the other hand, steps taken up to this point in the Fed's exit strategy have triggered fluctuations in the economies of the emerging nations, setting off turmoil in the global financial markets in turn. At this point in time, clouds are rapidly gathering on the horizon of the world economy. We recommend that people be wary of the storm up ahead.

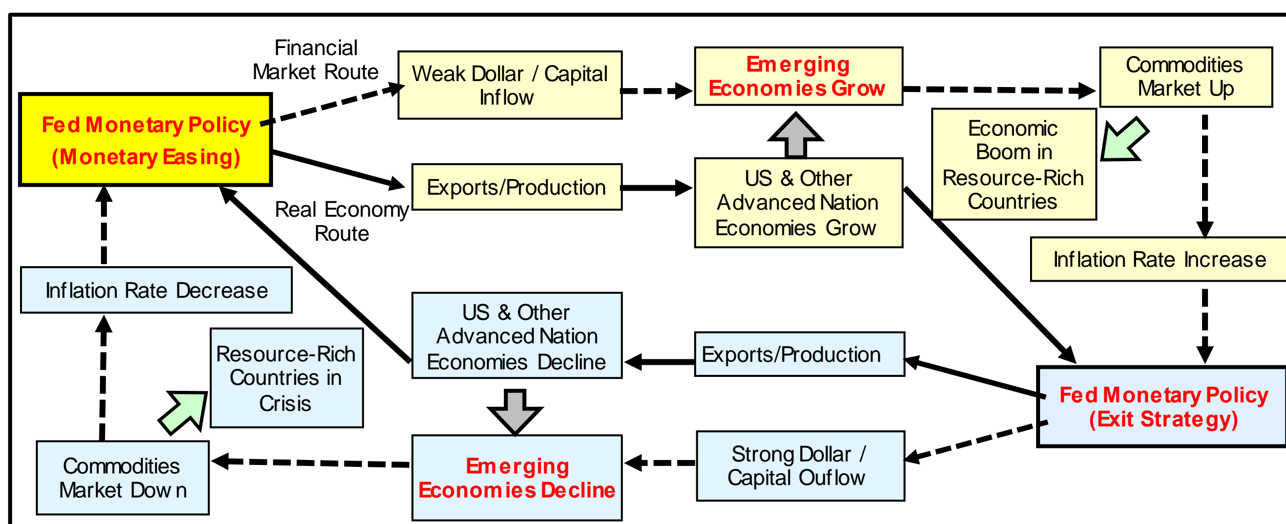
Looking back through history, we see that changes in the Fed's monetary policy have had a considerable influence on the global financial markets. A simplified illustration of this relationship is shown in Chart 4 which indicates how this has played out in the past in the form of an economic cycle. The most important aspects of this cycle are (1) The Financial Market Route, and (2) The Real Economy Route.

First we confirm the phase moving from the Fed's monetary easing up to its ultimate exit strategy from said policy. Moving along (1) The Financial Market Route, dollar depreciation progresses and the emerging nations experience capital inflow. This leads to the heating up of the emerging economies. Economic growth accelerates in the emerging nations leading to a stringent supply-demand situation. This intern triggers a rally in the international commodities market, which causes an increase in the inflation rate in countries around the world. Next, on (2) The Real Economy Route, dollar depreciation leads to an increase in exports and production expands, stimulating the US economy. This contributes positively to the economies of other advanced nations. This is later reflected in the real economy in the form of an improvement in the employment market. Then doubts arise in regard to rising inflation and the Fed embarks on an exit strategy from the initial monetary easing policy. The next phase, which

moves from the exit strategy to the next occurrence of monetary easing, is triggered by a mechanism which is the complete reverse of the one described above.

Of course, the relationship between the Fed's monetary policy and the world economy is much more complex than described here. What we have done is to take a picture of one particular aspect of the larger structure and pull that out so we can view it separately. In the chart below we have mapped out this worldwide economic cycle and based on this, attempt to identify exactly where the current world economy is located and in what kind of situation. Then we would like to consider what the future of the Fed's monetary policy might be.

World Economic Cycle with Focus on the Fed **Chart 4**



Source: Produced by DIR.

Strong dollar and capital outflow from emerging nations

In this section we confirm the current trend in capital outflow from emerging nations using the nominal effective dollar rate according to the OITP, which indicates the comprehensive dollar exchange rate in relation to emerging nation currencies.

Chart 5 shows the EMBI Global Spread, which indicates credit risk in the emerging nations, and the nominal effective dollar (OITP). The EMBI Global Spread indicates the difference between yield on government bonds in emerging nations and yield on US government bonds. When emerging nation credit risk rises or falls, and when yield on government bonds in emerging nations increases or decreases, the EMBI Global Spread widens or narrows.

The EMBI Global Spread and the OITP index are in a mutual relationship in which they influence each other. The linkage between these two indices can be confirmed. The reason for this linkage is that when the Fed raises the interest rate, dollar assets become more attractive as an investment due to the improved rate of return. Global money flow then moves from the emerging nation currencies into dollars ultimately strengthening the dollar, while at the same time causing a rise in credit risk in the emerging nations now faced with capital outflow. When the cycle reaches this point the EMBI Global Spread widens. During times such as the global economic crisis of 2008, credit risk rises in the emerging nations even faster than it does in the advanced nations. This is reflected in the EMBI Global Spread widening, while capital outflow from emerging nations increases and there is an increasingly strong dollar.

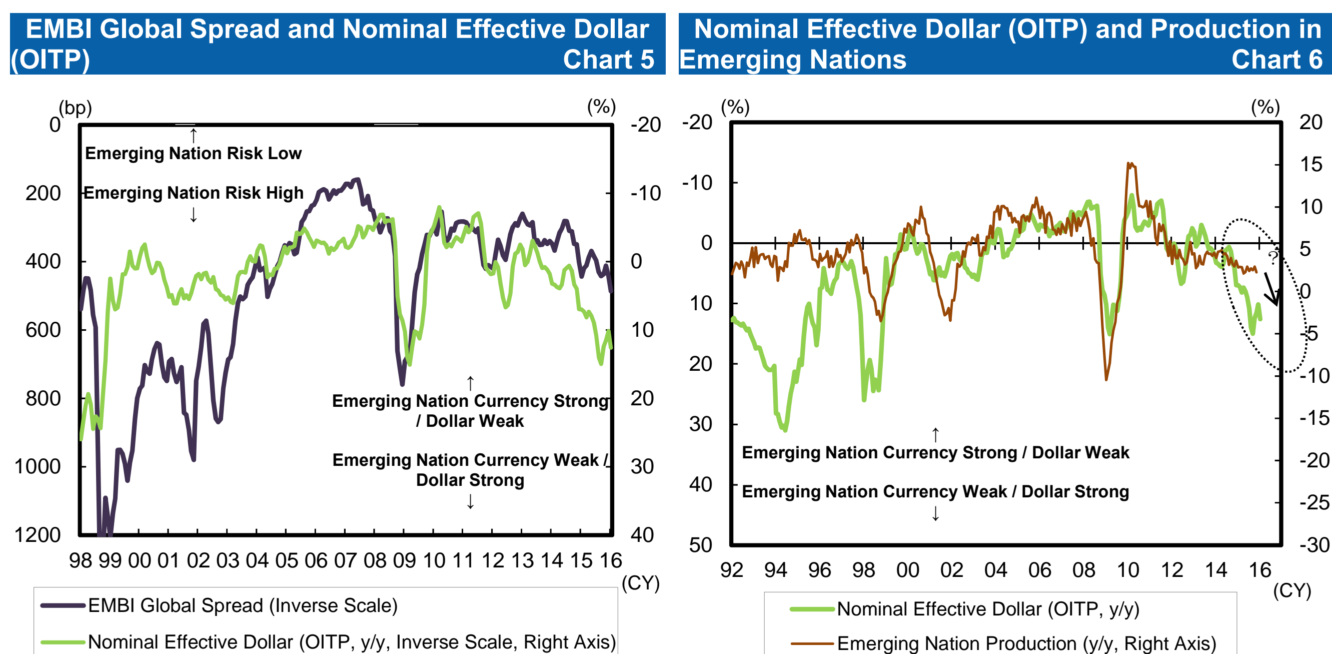
Taking a look now at the nominal effective dollar (OITP) in recent years, we see that since around May of 2013, we entered a strong dollar phase (see Chart 6). Behind this was turmoil in the global

financial markets set off by the announcement of QE3 reduction by then FRB Chairman Bernanke in May of 2013 (also referred to as the “taper tantrum”). In October 2014 the Fed’s exit strategy progressed further when the FOMC made the decision to reduce QE3 some more. During this same time the EMBI Global Spread widened and debt risk in emerging nations increased.

Important to note is that capital outflows from emerging nations depressed the real economies of those countries due to the holding down of investment and declines in production. When we show the nominal effective dollar (OITP) side-by-side with changes in production in the emerging nations, we can confirm the linkage between them. Just recently production in the emerging nations has been slowing down, and capital outflow from those countries is one of the factors that can be easily pointed to. If capital outflows from emerging nations are not stopped, this could quite possibly push the real economies in those countries further downward.

EMBI Global Spread and Nominal Effective Dollar (OITP) — Chart 5

Nominal Effective Dollar (OITP) and Production in Emerging Nations — Chart 6



Source: FRB, Netherlands Bureau for Economic Policy Analysis, JP Morgan/Haver Analytics; compiled by DIR.

Source: FRB, Netherlands Bureau for Economic Policy Analysis, Haver Analytics; compiled by DIR.

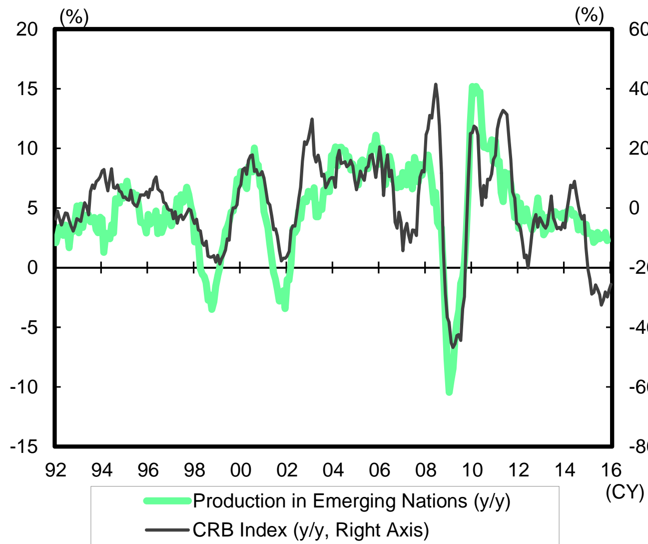
Slowdown in emerging economies encourages decline in natural resources and energy

The pace of growth in energy consumption and investment in infrastructure is higher in emerging nations than in the advanced nations. If the economies of the emerging nations worsen, worldwide demand for energy and materials for use in producing infrastructure will decline. As a result, the balance of global supply and demand for commodities will also deteriorate and cause a collapse of the international commodities market. Since the latter half of 2015, fears of a decline in demand due to the economic slowdown in the emerging nations, especially China, has become a major factor influencing the commodities market, and is encouraging a decline in natural resources and energy. The sense of uncertainty as regards the Chinese economy has increased rapidly since August of 2015 when authorities in that country devalued the renminbi, causing major waves in the international commodities market.

One can easily see the tendency towards long-term linkage between production in the emerging nations and the CRB index, the representative index of the international commodities market (see Chart 7). Currently, with production growth in the emerging nations slowing down, the CRB index has also experienced a major decline. It appears that the demand factor is working in the negative direction. Deviation between production in the emerging nations and the CRB index is due mainly to the collapse in the price of crude oil, which carries great weight in comparison to other commodities making up the composition of the CRB index. The price of crude oil is also heavily influenced by the outflow of

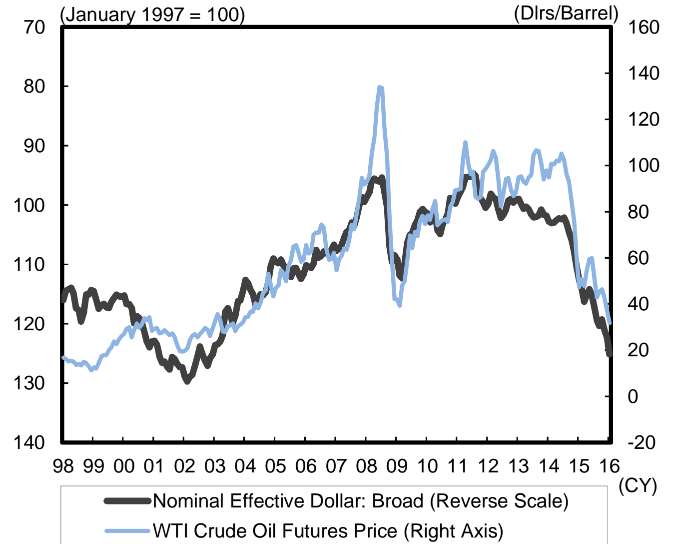
investment capital from the commodities market into dollar currency in association with the Fed's exit strategy, which has led to a stronger dollar, as well as the contraction of world liquidity (world dollars). (See Chart 8 and Chart 9)

Production in Emerging Nations and Price of Natural Resources **Chart 7**



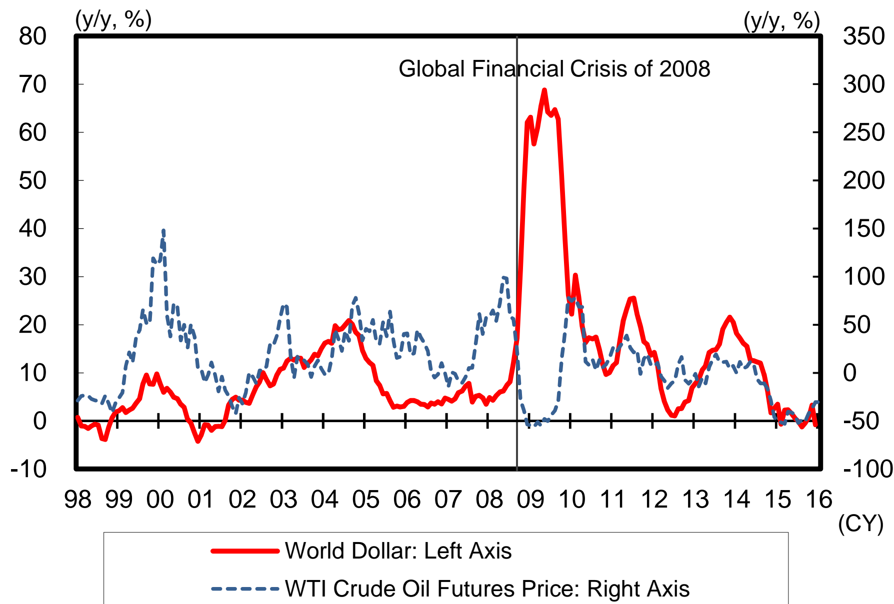
Source: Netherlands Bureau for Economic Policy Analysis, Haver Analytics; compiled by DIR.

Nominal Effective Dollar and WTI Crude Oil Futures Price **Chart 8**



Source: FRB, NYMEX, Haver Analytics; compiled by DIR.

Liquidity (World Dollars) and Price of Crude Oil **Chart 9**



Source: FRB, NYMEX, Haver Analytics; compiled by DIR.
Note: World dollars are US base money and US Treasury Securities held by overseas public institutions.

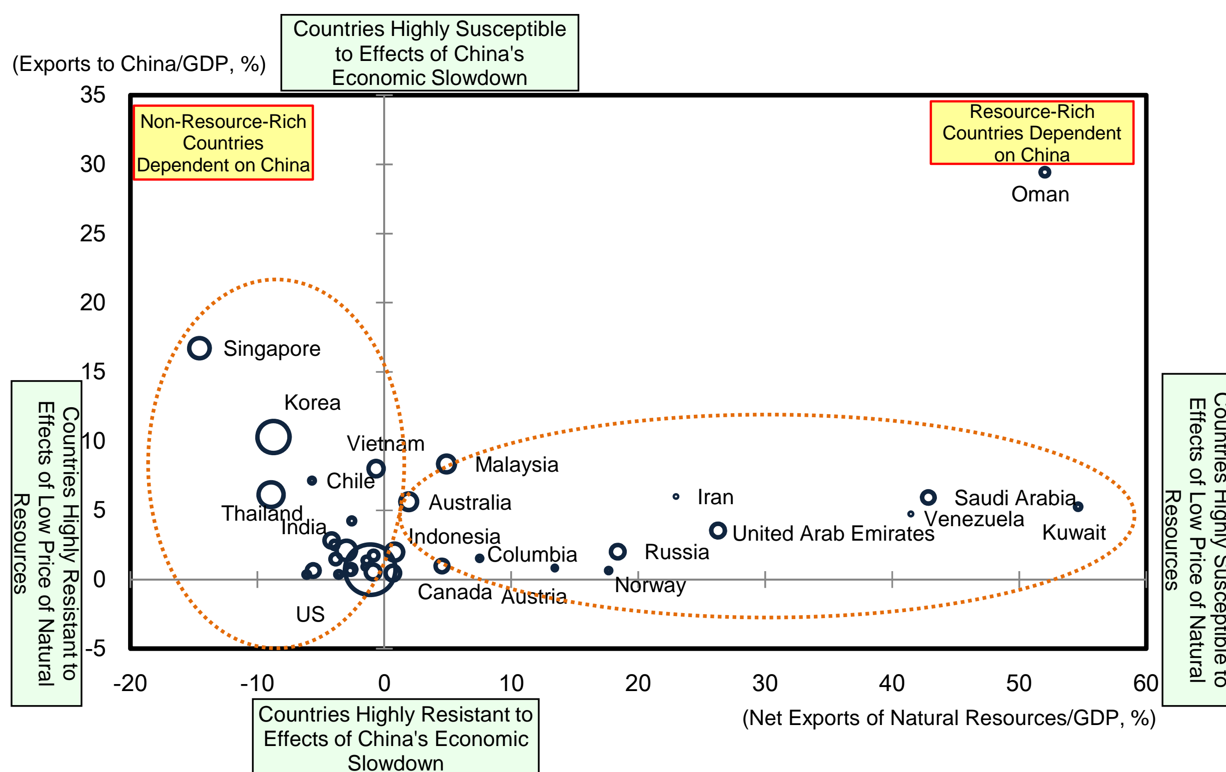
Countries most influenced by China's economic slowdown and collapse in price of natural resources

Until now our focus has been on the US and its centrality to the world economic cycle, and the slowdown in the economies of emerging nations, first and foremost amongst them China, as well as the sudden collapse of the international commodities market. Now we take a look at which countries expect to be most influenced by these two factors. In this section we look at Japan's major trading partners to see where they stand.

Chart 10 places major countries of the world into two categories: (1) China's Economy and (2) Price of Natural Resources. The horizontal axis represents the ratio of nominal GDP to net exports of mineral fuels such as crude oil. This acts as an index for measuring the degree of influence fluctuations in the price of natural resources and energy have on a country's domestic economy. Meanwhile, the vertical axis represents the ratio of nominal GDP to exports to China for each of the countries taken as samples in the chart. This indicates the degree of influence on the domestic economies of each of the sample countries that fluctuations in China's economy has through the decline of exports. The further to the right of the chart a country is positioned the more its dependence on net exports of natural resources. The domestic economies of these countries are easily pushed downwards by a falling international commodities market. Meanwhile, the higher on the chart a country is positioned the more its dependence on exports to China. These countries are highly susceptible to negative influence arising from China's economic slowdown. The sizes of the circles shown in the chart are in direct proportion to the amount that Japan exports to those countries.

Countries most influenced by the deterioration of the international commodities market are of course the resource-rich countries led by the Middle Eastern countries. These countries are all represented by smaller circles in the chart. In other words, they are not major trading partners of Japan where Japan sends the most exports. On the other hand, there are many countries in Asia greatly influenced by China's economic slowdown, and amongst them are included some countries which are also important as destinations for Japan's exports. Here again, you see by the size of the circles how major of a trade partner to Japan these countries are. One of the things Japan has to watch out for considering the current state of the world economy is the possibility of its real economy being affected via its exports to certain areas. In other words, Japan should limit its exposure to these situations. There is of course more danger associated with China's economic slowdown than there is with the collapse of the price of crude oil. Additionally, we would like to shift our attention to the US economy where approximately 70% of GDP is accounted for by personal consumption. The US is in a more or less neutral position to both problems associated with the price of natural resources and China's economic problems. It is not an overstatement to say that the question of where the world economy is headed in the future depends on how the US economy fares.

Countries of the World Most Susceptible to China's Economic Slowdown and the Collapse in the Price of Natural Resources **Chart 10**



Source: IMF, The United Nations, and the Ministry of Finance; compiled by DIR.
Notes: 1) Net exports of natural resources from Saudi Arabia and Venezuela make use of figures from 2013, while figures for Iran are from 2011. All others use figures from the year 2014.
2) The sizes of circles in the chart are directly proportional to the amount of exports Japan ships to those countries.

Conditions under which the Fed should consider a pause in rate hikes

In this section we probe more deeply into the current phase in the world economic cycle by way of examining the trend in the US economy. First, we take a look at the US ISM Business Confidence Index and changes in the FF rate as shown in Chart 11. The ISM Business Confidence Index provides a highly accurate means of looking into the future of the US economy. It is also an important index in predicting what future US monetary policy might be. The US went through three phases during the latter part of the 1990s in which it cut interest rates. We can see by the chart that the Fed made the decision to cut interest rates during these times when both the manufacturing and the non-manufacturing industries had worsened significantly. Taking a look at the current situation we see that now also both the manufacturing and the non-manufacturing industries are in a declining trend. We are actually in a phase similar to those in the past when interest rates have been cut.

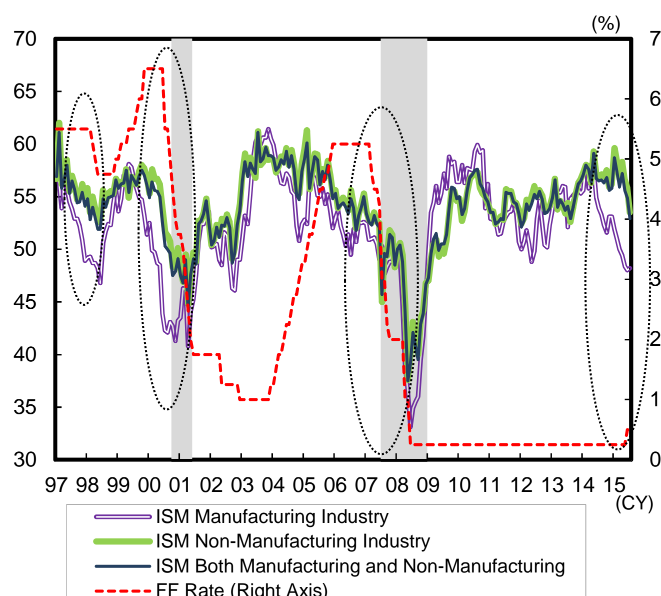
In examining the US business cycle we see that it is now in a maturation process. Let us consider the future of the FF rate in light of this fact. When US economic growth approaches maturation and heads toward the end point of its business cycle, growth in household expenditure (including personal consumption and housing investment) slows down. Then corporate sector expenditure (such as capex) rapidly deteriorates, leading the economy into a recession phase. These cycles are repeated over and over again. (See Chart 12) There is a relationship between the business cycle and the FF rate. Interest rate hikes occur when corporate sector expenditure minus household sector expenditure is in a growth phase, then interest rate cuts are implemented when corporate sector expenditure minus household sector is in a decline.

Just recently the US household sector appeared to be about to peak out. Then corporate sector expenditure deteriorated significantly in response to the strong dollar and the collapse in the price of

crude oil. After the Jul-Sep period of 2015, corporate sector expenditure minus household sector expenditure was in the negative numbers. Considering the fact that risk of the corporate sector moving further downward in the near future is increasing, as well as the relationship between maturation of the business cycle and the FF rate, it is possible that we are actually nearing a phase in which the FF rate will be cut.

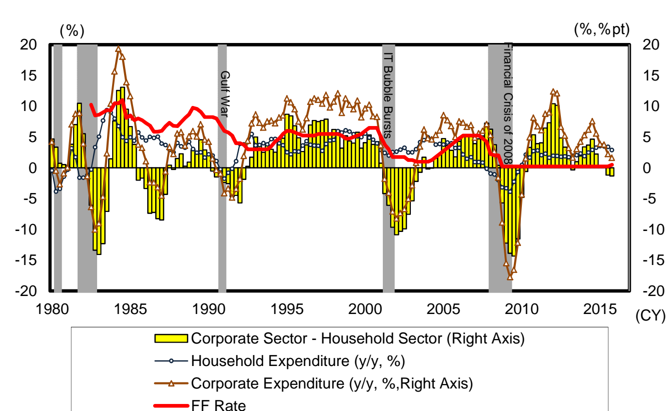
From the viewpoint of the ISM Business Confidence Index and maturation of the business cycle, we believe that the interest rate hike schedule of around four times per year expected by the FOMC participants is too fast. Our opinion is that the Fed will consider taking the approach of taking a pause in rate hikes. If the US economy slows down any more than it has at this point, it may be necessary to cut the interest rate.

US Corporate Sentiment and the FF Rate Chart 11



Source: US ISM Index, Haver Analytics; compiled by DIR.
Note: The shaded areas represent periods of US recession.

Changes in US Household Sector and Corporate Sector Expenditure Chart 12



Source: Haver Analytics; compiled by DIR.
Notes: 1) Corporate sector expenditure is real capital expenditure; household sector expenditure consists of real personal consumption and real housing investment.
2) The shaded areas represent periods of US recession.

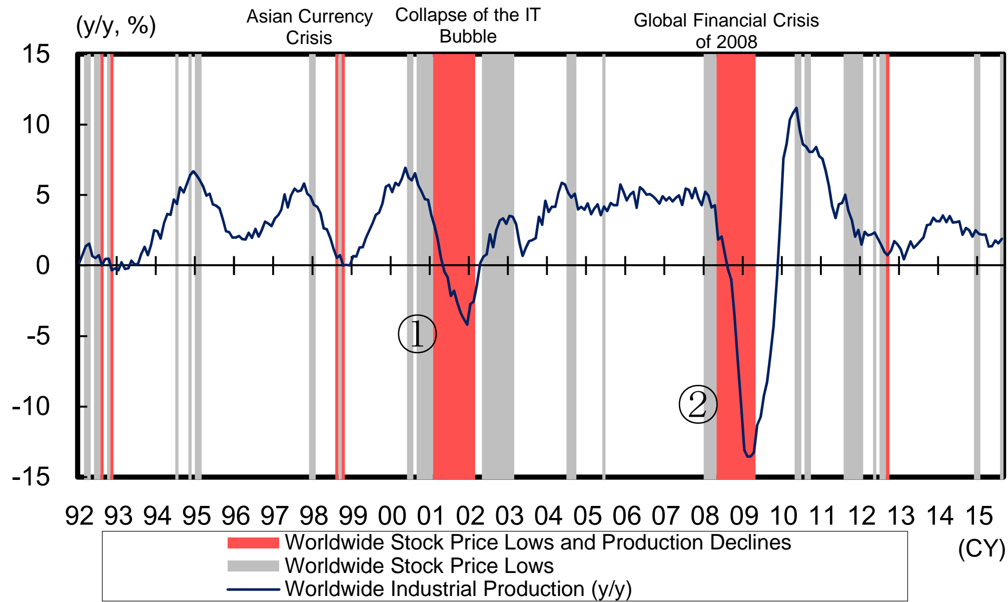
2.3 Global Economy on the Verge of its Third Serious Period of Stock Price Lows and Production Declines

Characteristics of past periods of stock price lows and production declines

Using a comparison to previous 6-month periods we categorize past world stock price and production phases as follows: since 1990s there have been two phases of serious world stock price lows and world production declines (see Chart 13). These are the collapse of the IT bubble and the economic downturn precipitated by the Lehman Brothers bankruptcy in 2008 (otherwise known as the global financial crisis of 2008). There was also the Asian currency crisis during the latter 1990s during which there were worldwide stock price lows and production declines, but it did not become as serious as these others.

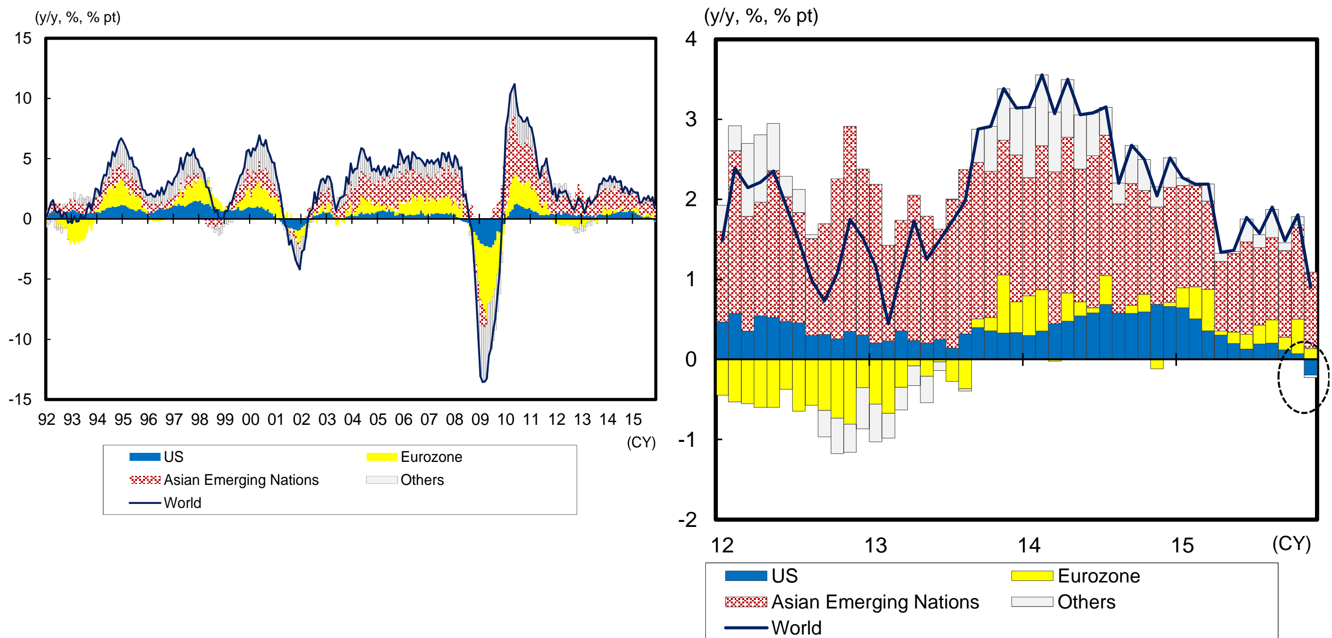
Looking at recent trends, the global economy is now in a full-fledged slowdown due to weak performance of the corporate sector worldwide. Looking at a breakdown of factors at play by region of the world, the shift of the US economy to negative numbers in November of 2015 is something a development which requires caution (see Chart 14). The world economy is now on the verge of entering its third period since the late 1990s of serious stock price lows and production declines.

Past Phases of Worldwide Stock Price Lows & Production Declines, and Current Trend in Worldwide Production Chart 13



Source: Netherlands Bureau for Economic Policy Analysis, Haver Analytics; compiled by DIR.
Note: World stock price lows and production decline phases are expressed in terms of a comparison with past 6-month periods.

Factor Analysis of World Production by Region Chart 14



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

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

In discussing US corporate debt it is useful to look at it in combination with the debt-to-equity ratio. When we line these two factors up we can observe the following sequence: (1) Increase in balance of debt as a proportion of GDP, (2) Increase in debt-to-equity ratio, and (3) Serious worldwide stock price lows and production declines (see Chart 15).

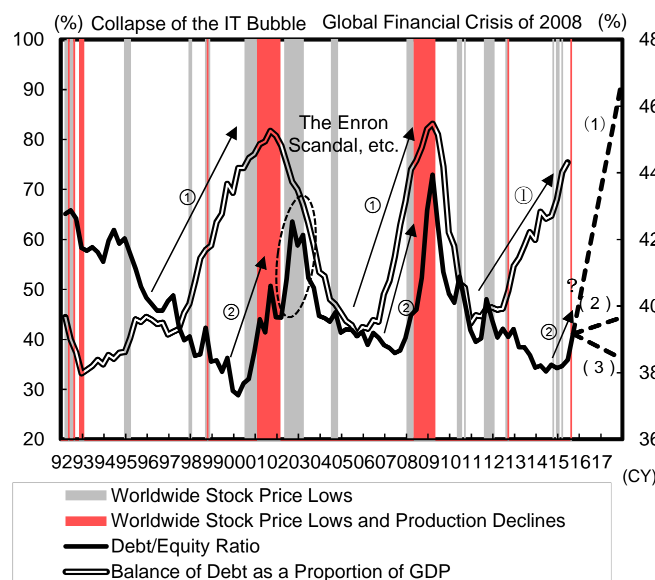
When we look at recent developments we can see that the US economy is now hovering at stage (1) in this sequence, and has not quite reached stage (2). Behind this lies the Fed's bold monetary easing, which has led to recent stock price highs in the US, and in turn has elevated the denominator of the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

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

Also worthy of note is that when we plot the relationship between balance of debt as a proportion of GDP and the debt-to-equity ratio on a scatter diagram, a large circle running clockwise appears on the graph which seems to map out the debt cycle (see Chart 16). From this we can see that the closer we get to the top left of the graph, the greater the possibility becomes that the economy could lapse into a period of serious worldwide stock price lows and production declines. We can also see from this diagram that we are now standing right on the brink of the third stage of the debt cycle.

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

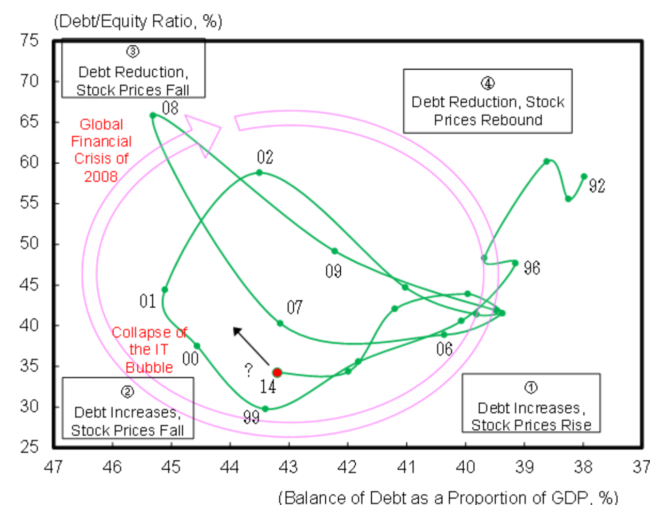
Debt Situation of US Private Sector Non-Financial Corporations
Chart 15



Source: FRB, BEA, Netherlands Bureau for Economic Policy Analysis, Haver Analytics, various references; compiled by DIR.

Notes: 1) World stock price lows and production decline phases are expressed in terms of a comparison with past 6-month periods.
2) Future prospects for the debt/equity ratio based on case where the Dow increases at the end of 2017: (1) 9,000 dlrs (down), (2) 18,000 dlrs, and (3) 22,000 dlrs (up). Debt estimated using average growth rate of most recent year.

Debt Cycle of US Private Sector Non-Financial Corporations
Chart 16



Source: FRB, Haver Analytics; compiled by DIR.

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

Credit market becoming increasingly nervous in response to the Fed's exit strategy

In discussing the balance of US corporate debt as a proportion of GDP, it is important to consider trends in US high-yield bond spreads. Historically there is linkage between the two, and recently, high-yield bond spreads have been at a lower level compared to the balance of debt as a proportion of GDP (see Chart 17).

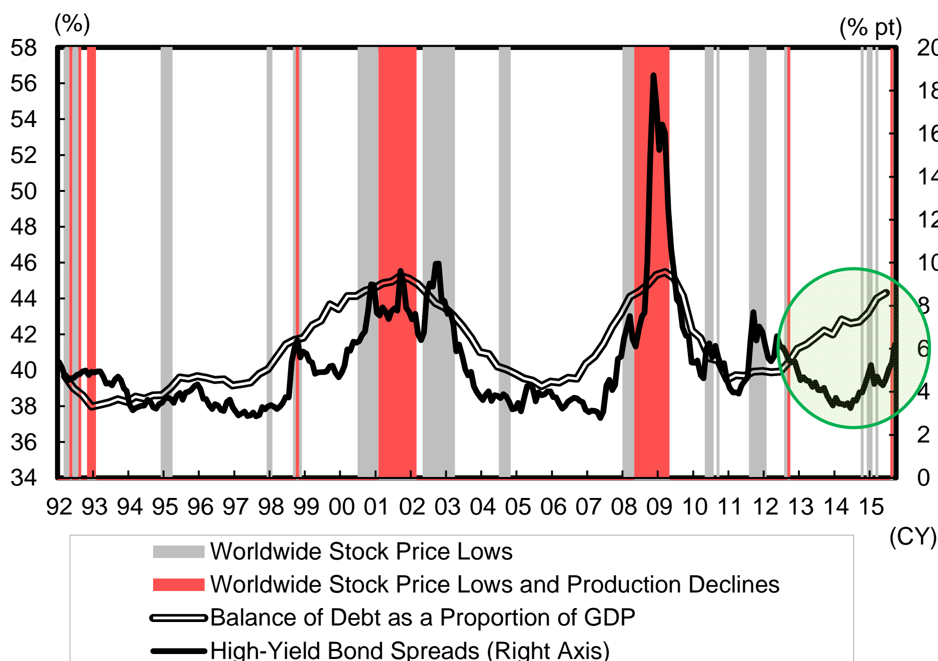
Behind this development is the bold monetary easing carried out by the Fed, along with the appearance of a liquidity market in which high-yield bonds have had their yields excessively suppressed. Put in another way, there is now a situation in the US credit market which could be referred to as a kind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

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

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

down any more than it already has. If the Fed makes the wrong move, there is the risk that it could trigger the third most serious period of stock price lows and production declines for the global economy. We therefore believe that the trend in the Fed's monetary policy should be carefully followed.

Balance of Corporate Debt as a Proportion of GDP and High-Yield Bond Spreads — Chart 17



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

Economic Indicators and Interest Rates — Chart 18

Indicator	2015	2016				2017	FY14	FY15	FY16	FY17
	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar				
	Actual	DIR estimates					Actual	DIR estimates		
Real GDP										
Q/q %, annualized	-1.1	0.5	1.0	1.2	1.5	2.7				
Y/y %	0.7	-0.1	0.4	0.4	1.1	1.6	-1.0	0.7	0.9	-0.1
Current account balance SAAR (Y tril)	19.6	19.8	20.0	19.8	20.1	19.3	7.9	17.7	19.7	22.1
Unemployment rate (%)	3.3	3.2	3.2	3.2	3.2	3.1	3.5	3.3	3.2	3.1
CPI (excl. fresh foods; 2010 prices; y/y %)	0.0	-0.1	-0.3	-0.0	0.3	0.8	2.8	-0.0	0.2	2.0
10-year JGB yield (period average; %)	0.29	0.01	0.00	-0.05	-0.05	-0.10	0.46	0.27	-0.05	-0.10

Source: compiled by DIR.
Note: Estimates taken from DIR's *Japan's Economic Outlook No.188 Update.*