

FY2014, FY2015, FY2016 Economic Outlook

- The Japanese and US economies should gather pace despite the slow recovery of the global economy -

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Mizuho Research Institute

Key points of our forecast

- Despite the slowdown of emerging economies and slump among commodity-exporting economies, the recovery of the developed economies will serve to underpin the global economy.
- The price of crude oil has been falling sharply since mid-2014. While this will serve to push up the economies of crude oil importing countries, it is a risk factor for the global economy in ways such as the destabilization of the commodity-exporting countries and rise of credit risks.
- The price fall of crude oil is a factor which may lead to global disinflation and monetary easing. Given the impact of quantitative monetary easing in Japan and Europe, interest rates will tend to come under downward pressures across the world.
- The Japanese economy will be boosted by the “Triple Merits” of (1) a weak yen and stock market rise, (2) fiscal policy, and (3) crude oil price falls. In FY2016, the addition of the last-minute rush of demand prior to the consumption tax hike should keep the economy growing around 2%.
- Wage growth in real terms should climb into positive territory in Japan. However, the Bank of Japan (BOJ) may implement further monetary easing measures during 2015 due to expectations that inflation will fall far below the BOJ’s target due to the fall of crude oil prices.
- Among the risk factors are the downturn of the Chinese and eurozone economies, the outflow of funds from the emerging countries and financial market turmoil accompanying the fall of crude oil prices and US interest rate hike, geopolitical risks and the formation of bubbles due to a prolonged state of monetary easing.

Overview – downside risks will linger despite the gradual expansion of the global economy

- We expect the global economy (the weighted average of countries and regions included in MHRI's forecast) to keep growing at more or less the same pace for four consecutive years in 2015 (+3.3%). In 2016, the pace of global economic growth should rise to +3.6%, given the gradual expansion of the developed economies and alleviation of the downward pressures upon commodity-exporting economies due to the fall of crude oil prices.
- Even though the fall of crude oil prices is a supporting factor for the global economy, this will be offset by the slump among emerging countries and commodity-exporting countries. Furthermore, the impact of the financial market turmoil and rise of credit risks must be watched closely.
- The US economy should keep growing around +3% and Japan is forecast to keep growing around +2% given the benefits of a weaker yen and cheaper crude oil, and the last-minute rush of demand prior to the consumption tax hike in FY2016. Although the eurozone economy should return to a gradual growth track on the back of monetary easing and cheap crude oil, the recovery will remain generally tepid.
- The emerging economies will continue to lack power as an engine of global economic growth. In addition to the ongoing stagnation of the Chinese economy, the economies of Russia and Brazil will dip into negative territory in 2015.
- Although our main scenario outlook is a gradual recovery of the global economy, downside risks will linger regarding the eurozone and emerging economies such as China. It will be necessary to keep a close eye upon the possibility of a global economic slowdown including the adverse impact of crude oil price falls and the Greek debt crisis.

The global economy should gradually expand in 2016

[Outlook on the global economy]

Calendar year	(Y-o-y % change)					(Y-o-y % change)		(% point)	
	2012 (Actual)	2013 (Actual)	2014 (Forecast)	2015 (Forecast)	2016 (Forecast)	2014 (December forecast)	2015	2014 (breadth of revision from Dec)	2015
Total of forecast area	3.3	3.3	3.3	3.3	3.6	3.2	3.5	0.1	-0.2
Japan, US, Eurozone	1.1	1.1	1.5	2.2	2.2	1.4	2.1	0.1	0.1
US	2.3	2.2	2.4	3.1	2.8	2.2	2.9	0.2	0.2
Eurozone	-0.7	-0.5	0.9	1.3	1.5	0.8	1.2	0.1	0.1
Japan	1.8	1.6	0.0	1.2	2.0	0.2	1.7	-0.2	-0.5
Asia	6.2	6.1	6.0	6.0	5.9	6.0	6.0	—	—
China	7.7	7.7	7.4	7.1	6.8	7.4	7.2	—	-0.1
NIEs	2.2	2.9	3.2	3.1	3.1	3.2	3.2	—	-0.1
ASEAN5	6.1	5.1	4.6	5.1	4.9	4.6	5.1	—	—
India (FY2004 basis)	4.8	4.7	5.2	5.6	5.9	5.2	5.4	—	0.2
(Ref: FY2011 basis)	N.A.	N.A.	7.2	7.6	7.9	N.A.	N.A.	N.A.	N.A.
Australia	3.7	2.0	2.7	2.3	2.7	2.7	2.3	—	—
Brazil	1.0	2.5	0.0	-0.3	1.0	0.1	0.8	-0.1	-1.1
Russia	3.4	1.3	0.6	-4.5	0.5	0.3	0.1	0.3	-4.6
Japan (FY)	1.0	2.1	-0.9	2.1	1.9	-0.6	2.4	-0.3	-0.3
Crude oil price (WTI, USD/bbl)	94	98	93	54	63	93	61	—	-7

Note: The total of the forecast area is calculated upon the 2012 GDP share (PPP) by the IMF.
Sources: International Monetary Fund (IMF), MHRI.

The Japanese economy – expansion on the tailwinds of the “Triple Merits”

- Japan’s economic growth rose into positive territory for the first time in three quarters in the Oct-Dec quarter of 2014, given the mild recovery of personal consumption and expansion of exports. The economy should maintain its gradual recovery in the Jan-Mar quarter of 2015. Even so, growth turned out to be negative (-0.9%) in FY2014 due to the slump in the first half of the fiscal year.
- In FY2015, personal consumption should follow firm footing, given tailwinds provided by the wage hikes in the *shunto* labor-management wage negotiations amid the improvement of labor market conditions. The recovery of exports and increase of capital investment will continue under the “Triple Merits” of ① the yen depreciation/stock market rise accompanying the additional monetary easing by the Bank of Japan (BOJ), ② fiscal policy measures such as emergency economic stimulus measures, and ③ sharp fall of crude oil prices, leading to the expansion of the economy. FY2015 growth forecast: +2.1%.
- In FY2016, a last-minute demand prior to the consumption tax hike (in April 2017) will emerge in the second half of the fiscal year. The rise of personal consumption and housing investment should lead to strong growth for two years in a row (FY2016: +1.9%).
- Given the sharp fall of crude oil prices, the core CPI (excluding the impact of the consumption tax hike) will fall into negative territory toward the middle of FY2015. The inflation target of “2% in two years” will most likely prove difficult to achieve. Even so, the underlying inflation rate excluding the impact of volatile items such as energy will improve steadily amid the rise of wages.

The Japanese economy: economic recovery underpinned by the “Triple Merits”. The economy will accelerate due to a last-minute rush of demand in the second half of FY2016

[Outlook on the Japanese economy]

		2013	2014	2015	2016	2014		2015				2016				2017
		FY				Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar
GDP (real)	Q-o-q % ch	2.1	-0.9	2.1	1.9	-0.6	0.6	0.6	0.6	0.7	0.5	0.4	0.4	0.6	0.4	0.6
	Q-o-q % ch p.a.	--	--	--	--	-2.3	2.2	2.5	2.5	2.7	2.1	1.4	1.6	2.4	1.7	2.5
Domestic demand	Q-o-q % ch	2.5	-1.4	1.8	1.8	-0.6	0.3	0.6	0.6	0.6	0.5	0.3	0.3	0.5	0.5	0.9
Private sector demand	Q-o-q % ch	2.3	-2.0	2.4	2.2	-1.0	0.4	1.0	0.8	0.7	0.6	0.4	0.4	0.6	0.5	1.1
Personal consumption	Q-o-q % ch	2.5	-3.0	1.9	1.8	0.3	0.3	0.6	0.6	0.5	0.4	0.3	0.2	0.4	0.6	1.7
Housing investment	Q-o-q % ch	9.3	-11.9	2.9	5.9	-7.0	-1.2	1.9	1.8	1.8	1.0	0.6	0.4	4.4	0.8	1.2
Capital investment	Q-o-q % ch	4.0	0.1	3.2	3.3	-0.1	0.1	1.7	0.7	0.7	0.9	0.8	0.7	0.8	1.0	0.9
Inventory investment	Q-o-q contribution, % pt	-0.5	0.6	0.2	-0.0	-0.7	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	-0.1	-0.3
Public sector demand	Q-o-q % ch	3.2	0.6	-0.0	0.5	0.6	0.1	-0.5	-0.1	0.3	0.2	0.0	0.1	0.2	0.2	0.2
Government consumption	Q-o-q % ch	1.6	0.4	1.0	1.0	0.2	0.1	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3
Public investment	Q-o-q % ch	10.3	1.6	-4.2	-1.6	2.1	0.6	-3.9	-1.9	0.1	0.0	-0.9	-0.8	-0.3	-0.0	0.1
External demand	Q-o-q contribution, % pt	-0.4	0.6	0.3	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	-0.0	-0.3
Exports	Q-o-q % ch	4.7	7.1	6.1	6.3	1.5	2.7	1.0	1.3	1.4	1.5	1.5	1.5	1.6	1.7	1.7
Imports	Q-o-q % ch	6.7	2.9	4.1	5.5	1.0	1.3	0.8	0.9	1.0	1.1	1.2	1.1	1.2	1.8	3.0
GDP (nominal)	Q-o-q % ch	1.8	1.5	2.9	1.8	-0.9	1.1	1.6	0.5	0.3	0.8	0.4	-0.2	0.8	0.9	0.7
GDP deflator	Y-o-y % ch	-0.3	2.4	0.8	-0.2	2.0	2.3	3.2	1.2	1.2	0.8	-0.1	-0.8	-0.2	0.1	0.2
Domestic demand deflator	Y-o-y % ch	0.4	2.0	-0.4	0.6	2.3	2.0	1.1	-0.4	-0.6	-0.4	-0.0	0.2	0.6	0.8	0.8

Notes: Figures in the shaded areas are forecasts.

Source: Made by MHRI based upon Cabinet Office, *Preliminary Quarterly Estimates of GDP*

Japan: core inflation will fall into negative territory. However, the underlying inflation rate will still be positive

[Outlook on the Japanese economy (major economic indicators)]

		2013	2014	2015	2016	2014		2015				2016				2017
		FY				Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar
Industrial production	Q-o-q % ch	3.2	-0.4	3.3	4.3	-1.9	1.7	2.2	-0.0	0.8	0.9	0.7	1.0	1.2	1.3	2.2
Ordinary profits	Y-o-y % ch	20.9	7.8	12.8	8.3	7.4	10.1	10.4	17.6	17.6	9.5	8.5	6.4	7.7	8.4	10.3
Nominal compensation of employees	Y-o-y % ch	1.0	1.8	1.7	2.1	2.4	2.2	0.5	1.6	1.8	1.9	1.4	2.1	2.0	2.3	2.1
Unemployment rate	%	3.9	3.5	3.3	3.3	3.6	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3
New housing starts	P.a., 10,000 units	98.7	88.0	91.0	95.9	86.1	88.0	89.1	90.2	91.0	91.4	91.7	96.2	96.7	97.9	92.4
Current account balance	P.a., JPY tril	0.8	7.2	15.5	13.0	2.4	11.4	12.3	14.1	14.3	20.4	13.2	11.0	12.3	18.8	10.0
Domestic corporate goods prices	Y-o-y % ch	1.9	2.7	-1.8	1.1	4.0	2.4	-0.1	-3.0	-2.3	-1.6	-0.3	0.8	1.3	1.3	1.2
Consumer prices (ex fresh food)	Y-o-y % ch	0.8	2.8	-0.1	1.3	3.2	2.7	2.2	-0.1	-0.4	-0.2	0.4	0.8	1.2	1.5	1.5
Consumer prices (ex fresh food, ex consumption tax)	Y-o-y % ch	0.8	0.9	-0.1	1.3	1.2	0.7	0.2	-0.1	-0.4	-0.2	0.4	0.8	1.2	1.5	1.5
Consumer prices (ex food (ex alcohol) and energy, ex consumption tax)	Y-o-y % ch	0.2	0.5	0.5	0.7	0.6	0.5	0.4	0.5	0.5	0.5	0.5	0.7	0.7	0.8	0.8
Uncollateralized overnight call rate	%	0.04	0~0.10	0~0.10	0~0.10	0.03	0.07	0~0.10	0~0.10	0~0.10	0~0.10	0~0.10	0~0.10	0~0.10	0~0.10	0~0.10
Yield on newly-issued 10-yr JGBs	%	0.69	0.50	0.50	0.65	0.53	0.44	0.35	0.45	0.50	0.50	0.60	0.60	0.65	0.65	0.70
Nikkei average	JPY	14,424	16,200	18,900	20,200	15,562	16,705	17,700	18,400	18,600	19,200	19,500	19,800	20,100	20,300	20,500
Exchange rate	JPY/USD	100.0	110.0	123.0	128.0	104.0	115.0	119.0	121.0	122.0	124.0	126.0	127.0	128.0	129.0	130.0
Crude oil price (WTI nearest term contract)	USD/bbl	99.0	81.0	56.0	65.0	97.0	73.0	49.0	52.0	55.0	58.0	60.0	62.0	65.0	66.0	68.0

- Notes: 1. Figures in the shaded areas are forecasts. The readings above may differ from public releases because the rates of change are calculated based upon actual results.
2. Ordinary profits are based upon the *Financial Statements Statistics of Corporations by Industry* (all industries) (ex finance & insurance, and production, transmission and distribution of electricity services).
3. Quarterly data on the unemployment rate, new housing starts and current account balance are seasonally-adjusted. The number of new housing starts are seasonally-adjusted monthly data converted into quarterly averages (annualized).
4. Of the finance-related indices, the uncollateralized overnight call rate refers to the rate at the end of term, the yield on newly-issued 10-yr JGBs refers to the average of the end-of-month rates during the relevant term, and all others are averages during the relevant terms.

Sources: Made by MHRI based upon Cabinet Office, *Preliminary Quarterly Estimates of GDP*, Ministry of Economy, Trade and Industry, *Indices of Industrial Production*, Ministry of Finance, *Financial Statements Statistics of Corporations by Industry*, Quarterly, Ministry of Internal Affairs and Communications, *Labor Force Survey*, *Consumer Price Index*, Ministry of Land, Infrastructure, Transport and Tourism, *Current Survey on Construction Statistics*, Bank of Japan, *Balance of Payments*, *Corporate Goods Price Index*, *Financial and Economic Statistics Monthly*, *Foreign Exchange Rates*, Japan Bond Trading Co., Ltd., *Latest Daily JGB Rates*, Nikkei Inc. and Bloomberg

Financial markets: gradual yen depreciation, stock market rise and low long-term interest rates

- Despite lingering concerns regarding the downturn of crude oil prices and geopolitical risks, the stock and bond markets will remain firm reflecting the monetary easing in Japan and the eurozone. The US should keep the pace of its interest rate hike gradual, with the yield on US government bonds below 3%.
- In the US, the Fed is expected to start raising interest rates in the Apr-Jun quarter of 2015. In contrast, the BOJ may implement a further bout of monetary easing in the second half of 2015 in order to meet the inflation target. Even though the yen should weaken against the dollar due to the gap in monetary policy between the US and Japan, the pace of yen weakening is expected to be moderate.
- Japanese stock are predicted to rise, reflecting expectations toward the recovery of domestic and overseas economies and the weakening of the yen.
- Turning to domestic long-term interest rates, the BOJ's massive government bond purchases is keeping the volatility of interest rates subdued, restraining the rise of interest rates for the time being. Looking forward, domestic interest rates may gradually be subject to upward pressures amid the rise of the stock market and US interest rates. Shifts in speculation on the BOJ's additional monetary easing and uncertainties regarding fiscal discipline may lead to the rise of volatility.

Financial markets: the dollar should strengthen to the JPY130-level and the Nikkei average should rise to the JPY20,000-level in the 2nd half of FY2016

[Outlook on the financial markets (February 2015)]

	2014	2015	2016	2015				2016				2017
	FY			Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar
Japan												
Uncollateralized O/N call rate (end-of period rate, %)	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1	0~0.1
Euroyen TIBOR (3-mo, %)	0.19	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Interest rate swaps (5-yr, %)	0.27	0.30	0.30	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.30
Newly-issued JGBs (10-yr, %)	0.50	0.50	0.65	0.35	0.45	0.50	0.50	0.60	0.60	0.65	0.65	0.70
Nikkei average (JPY)	16,200	18,900	20,200	17,700	18,400	18,600	19,200	19,500	19,800	20,100	20,300	20,500
US												
Federal funds rate (end-of-period rate, %)	0~0.25	0.75~1.00	2.00~2.50	0~0.25	0.25~0.50	0.25~0.50	0.50~0.75	0.75~1.00	1.00~1.25	1.25~1.50	1.50~1.75	2.00~2.50
Newly-issued government bonds (10-yr, %)	2.30	2.36	2.74	1.85	2.10	2.30	2.45	2.60	2.65	2.70	2.75	2.85
Dow Jones average (USD)	17,200	18,200	18,900	17,700	18,000	18,100	18,200	18,400	18,600	18,800	19,000	19,200
Eurozone												
ECB key policy interest rate (end-of-period rate, %)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
German government bonds (10-yr, %)	0.90	0.43	0.69	0.35	0.35	0.40	0.45	0.50	0.60	0.65	0.70	0.80
Forex												
JPY/USD exchange rate (JPY/USD)	110	123	128	119	121	122	124	126	127	128	129	130
USD/EUR exchange rate (USD/EUR)	1.27	1.07	1.03	1.14	1.09	1.08	1.05	1.04	1.04	1.03	1.02	1.02
Crude oil (WTI futures) (USD/bbl)	81	56	65	49	52	55	58	60	62	65	66	68

Notes: The shaded areas are forecasts. The forecasts are averages of the relevant periods. However, the uncollateralized overnight call rate, federal funds rate and ECB policy interest rates are end-of-period rates.

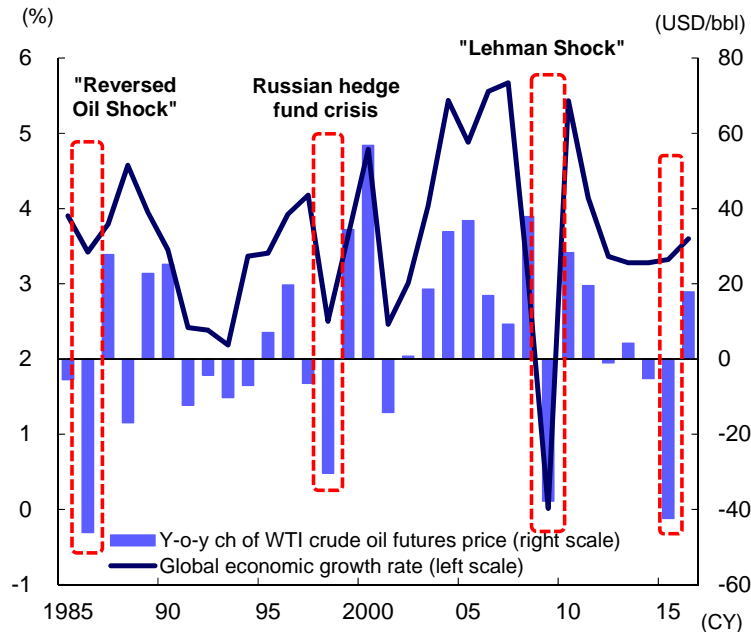
Euroyen TIBOR (360-day basis). 5-yr swaps (fixed interest rate toward 6-mo LIBOR). Forex rates are based upon New York closing rates.

Source: Made by MHRI based upon Bloomberg.

① Impact of the sharp fall of crude oil prices: similarities with the “reversed oil shock” of the 1980s

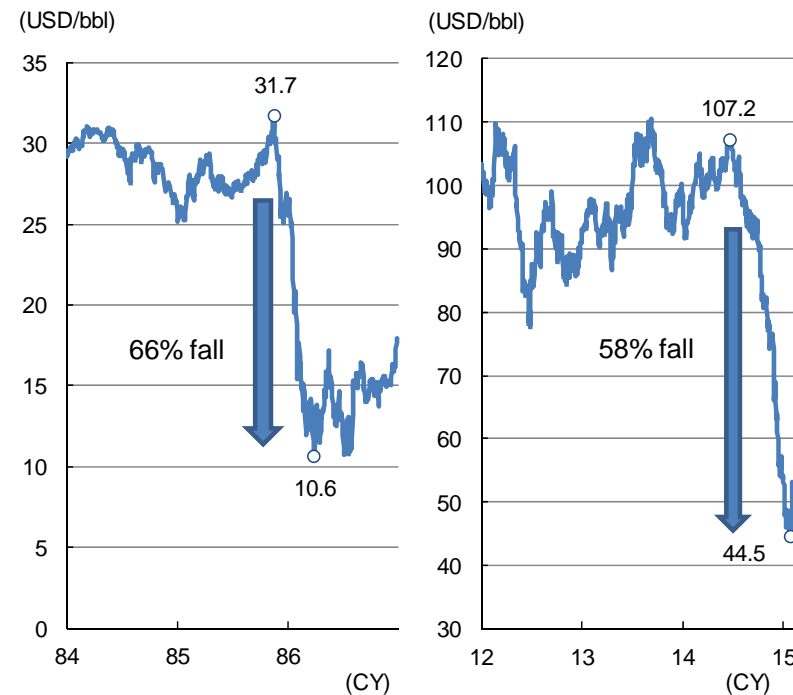
- Crude oil prices dropped rapidly from the second half of 2014 and continued to fall in 2015, falling nearly 60% from the peak in 2014.
 - The plunge of oil prices has had a significant impact comparable to the “reversed oil shock” in 1985-1986.
 - While the fall of crude oil prices will contribute to a bubble from the perspective of further monetary easing among the countries of the world, the fall of investment by oil-producing countries will serve as a drag upon the global economy.

[Global economic growth and the rise/fall of crude oil price (WTI)]



Note: Forecasts by MHRI for 2015, 2016.
Sources: Made by MHRI based upon IMF, Bloomberg.

[Comparison of the price of crude oil (current trends and the “reversed oil shock”)]

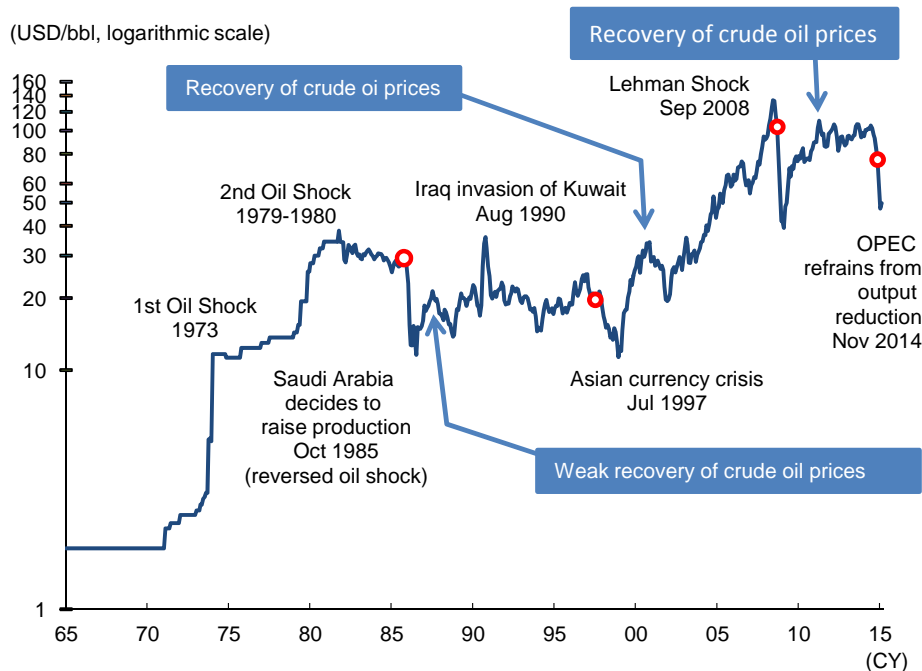


Note: WTI crude oil futures.
Source: Made by MHRI based upon Bloomberg.

Sharp fall of crude oil prices due to supply-side shocks: prices crawled during the 1985-1986 “reversed oil shock”

- The price of crude oil fell by more than half from the level in June 2014. Since the 1970s, there were three instances in which the price of crude oil fell sharply.
 - The “reversed oil shock” (1985-1986) and the “Asian currency crisis” (1997-1998) were similar to the current plunge where crude oil price fell sharply due to a supply glut.
 - During the “Lehman shock” (2008-2009), crude oil prices toppled due to demand-side shocks.
- Note the low price level of crude oil after the “reversed oil shock”, which is similar to the current price fall of crude oil.
 - In the case of the “reversed oil shock”, market trends did not return to levels before the plunge even after the ensuing rebound.

[Crude oil price trends]



Note: End-of-month price of Arabian Light up to February 1983. From March 1983, the monthly average of WTI.

Source: Made by MHRI based upon Bloomberg.

[Comparison of crude oil price falls in the past]

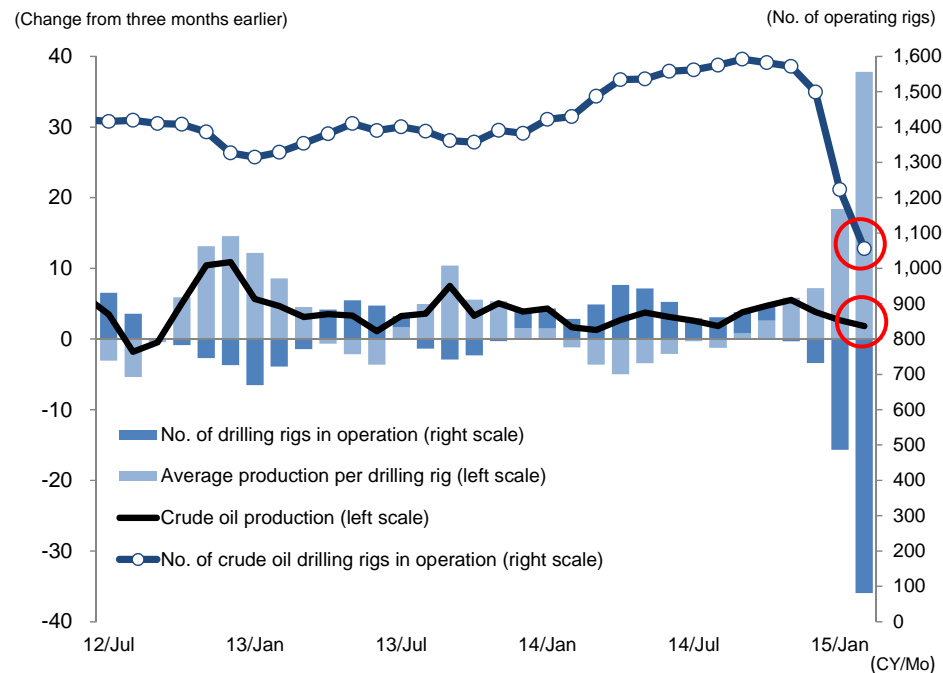
	Change of supply-demand	Conditions just before the plunge	Output adjustment	Price trends
Reversed oil shock	Supply shock (Saudi Arabia's abandonment of output cuts)	Oil price pinned high (2 nd Oil Shock)	Output continued to fall below the demand trend even from the following year	Oil prices continued to trend low even after the rebound
Asian Currency Crisis	Supply shock (OPEC's continuation of production hike during the currency crisis)	Gradual rise of oil price	Sharp output adjustment in the following year	Recovery after output adjustment
Post-Lehman Shock	Demand shock (Recession)	Surge of oil price	Output continued to fall below the demand trend even after the output adjustment in the following year	Recovery Contribution by geopolitical and financial market factors
Current crude oil plunge	Supply shock Production hike of shale oil	Oil price pinned high (geopolitical and financial market factors)	The rise of output may be curbed even after the output adjustment	Price levels may not return to levels before the plunge

Source: Made by MHRI.

Crude oil prices are forecast to remain around the upper half of the USD60-level

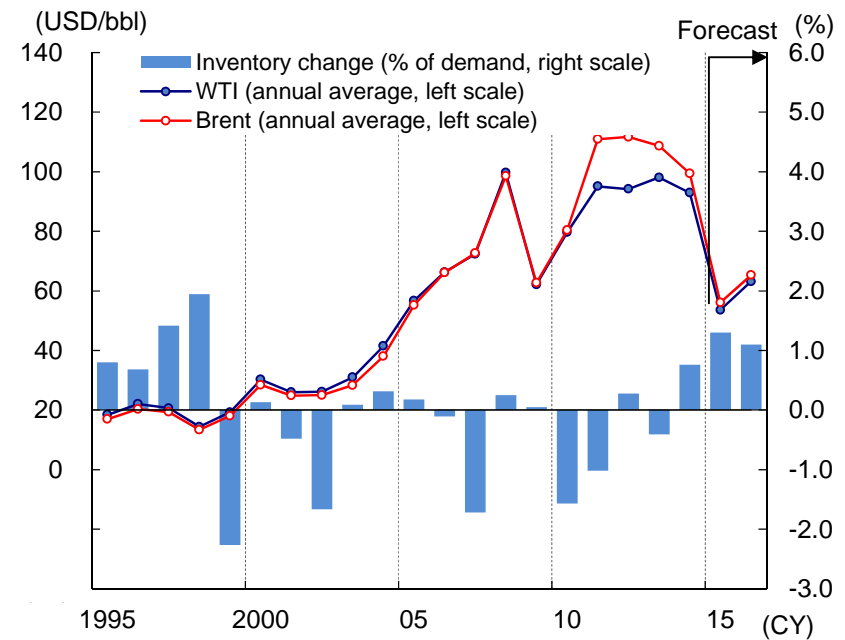
- US shale oil – holding the key to crude oil market trends – may fall into a prolonged period of output adjustment.
 - Although the number of operating crude oil drilling rigs fell sharply, it has not yet reached the point of a downturn in US crude oil production.
 - This suggests that output may have been declining already in many of the suspended rigs.
- Given the slack in demand-supply of crude oil, the market is not expected to rebound much even after the fall subsides.
 - The supply glut should continue in 2015-2016. It will take time for US crude oil inventories to decline significantly from their high levels.

[US crude oil production]



Sources: Made by MHRI based upon IMF, Bloomberg.

[Crude oil market forecast]



Note: Forecast by MHRI.

Sources: Made by MHRI based upon Bloomberg.

The global economy: the fall of crude oil prices will serve as underpinnings of the global economy as a whole

- The fall of crude oil prices will serve as a supporting factor for the global economy mainly among the developed economies. Annual income transfers from oil-exporting countries to oil-importing countries total USD815.0 billion.
- Even though the fall of crude oil prices should serve as a driver to some extent for oil-importing countries through the improvement of terms of trade, it will serve as a drag upon growth for oil-exporting countries.

[The impact of the fall of crude oil prices upon countries and regions of the world]

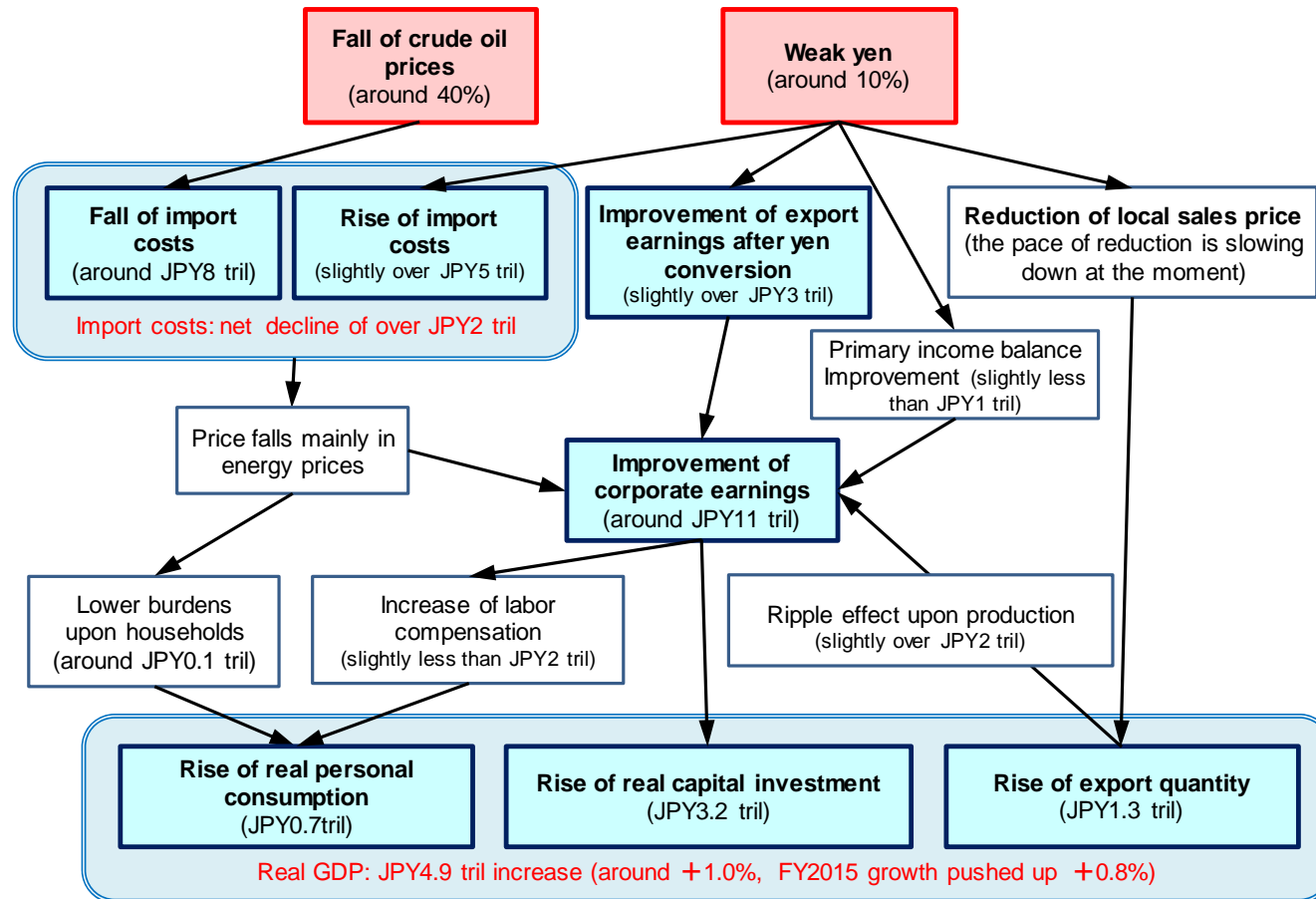
	Major impact of the fall of crude oil prices	Impact of the fall of crude oil prices upon the trade balance (as a % of nominal GDP)	Impact of the fall of crude oil prices upon 2015 GDP	
US	It will stimulate domestic demand such as the increase of personal consumption	+0.6%	+0.1%pt	
Eurozone	It will increase eurozone personal consumption due to the rise of disposable income. Capital investment will increase due to an accommodative monetary policy, increase of consumption and improvement of trade terms	+1.1%	+0.3%pt	
Japan	Capital investment will increase via the rise of corporate earnings due to the improvement of trade terms	+2.0%	+0.5%pt	
China	Being a net importer of crude oil, corporate earnings are expected to rise due to the improvement of trade terms. However, investment is not expected to rise much due to the capacity glut in energy-intensive industrial sectors which would benefit from the fall of oil prices. Likewise, while personal consumption is expected to increase due to the rise of disposable income, the increase will be likely be limited.	+1.3%	/	
India	India's current account will improve since India is a net importer of crude oil. However, there is not much incentive to invest due to its low capacity utilization rate. Since the weight of fuel in CPI is less than 10%, it will only have a limited impact upon the improvement of household real purchasing power	+2.6%		
Asia (ex China, India)	Since the NIEs are net importers of crude oil, the fall of oil prices will have a positive effect due to the improvement of trade terms and the expansion of leeway for monetary easing. However, in view of the economic conditions of each of the countries, it is unlikely that the trade gains will ripple through to investment and consumption any time soon. In the ASEAN5, it is a boon for Thailand, the Philippines and Indonesia which are importers of crude oil, but a bane for Malaysia whose trade surplus is made up largely of natural gas and has a large percentage of oil-related revenues in its budget revenues. For Vietnam, it will have a positive effect upon consumption and investment, but would have a negative effect due to the fall of oil-related revenues. All together, it will have a slightly positive effect upon the ASEAN5 as a whole.	+2.4%		
Brazil	It will contribute to the improvement of the trade balance since Brazil has a deficit in its energy balance including petroleum products such as gasoline. However, it will only have a limited impact upon prices due to energy price controls. Amid the state-owned oil corporation corruption scandals, there are moves to cut investment for crude oil development.	+0.4%		
Russia	Since petroleum/natural gas is Russia's major export item, it will have a significantly large impact upon the economy through the deterioration of trade terms. However, its impact upon the earnings of export-oriented companies and fiscal revenue will be limited due to the fall of the ruble.	-0.6%		
World	Income transfers from oil producing countries to crude oil importing countries will total approximately USD815 billion (1.4% of nominal GDP)			+0.1%pt

Notes: Fluctuations of crude oil prices are calculated on the basis of the changes between the MHIRI *Economic Outlook* in September 2014 and February 2015. The impact of the fall of crude oil prices upon the trade balance is calculated upon consideration of forex fluctuations. In the impact of the fall of crude oil prices upon global GDP, the impacts upon the US, Japan and the eurozone are based upon estimates by MHIRI. The rest are based upon IMF, *World Economic Outlook, October 2013*.

Sources: Made by MHIRI based upon releases by the UN, IMF and relevant countries and regions.

Japan: the fall of crude oil prices and the weaker yen will cut the trade deficit by half and push up real GDP by approximately 1%

[Major effect of the fall of crude oil prices and the weak yen upon the Japanese economy]



Notes: 1. The numerical values in the chart above refer to the positive effect upon the economy in FY2015. Fluctuations of crude oil prices are calculated on the basis of the changes between the MHIRI *Economic Outlook* in September 2014 and February 2015. Note that the estimates may differ from the actual outcome since they are based upon average household and corporate behavior in the past.

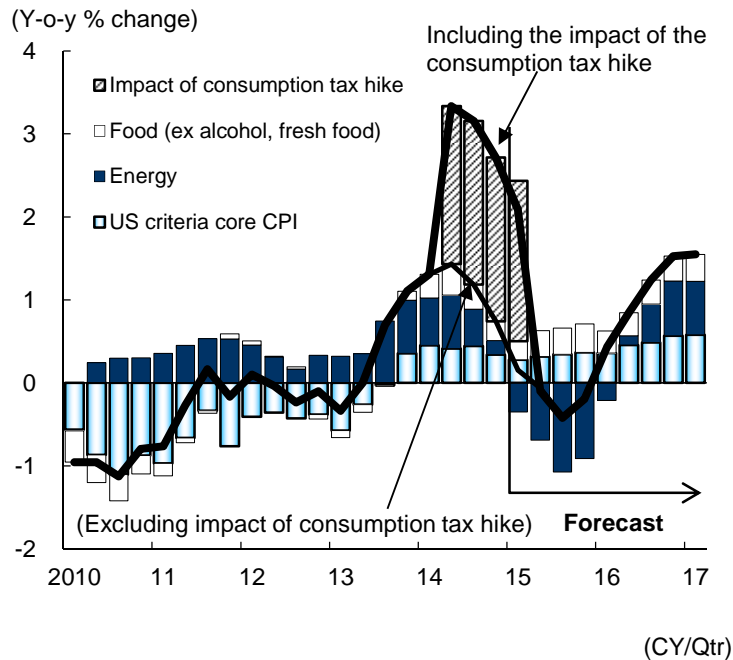
2. The arrows in the chart above do not necessarily cover all the channels of the ripple effect.

Sources: Made by MHIRI based upon releases by the Cabinet Office, Ministry of Finance, and others.

Japan: the core CPI will dip into negative territory due to the fall of crude oil prices and rise above 1% from then onward

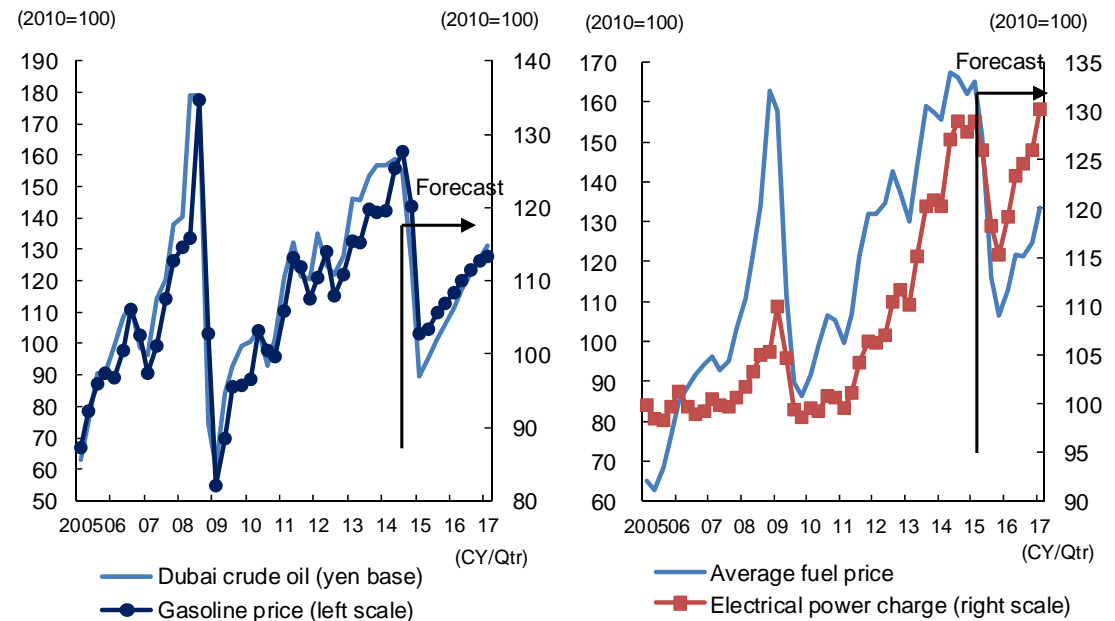
- The core CPI (y-o-y change) will dip into negative territory around spring-autumn of 2015 due to the fall of energy prices.
- On the other hand, from the second half of FY2015, energy prices will start to rise at a faster pace again as the US-criteria core CPI follows firm footing, and rise above 1% in the second half of the forecast horizon.

[CPI (ex fresh food)]



Note: The breakdown is based upon the CPI excluding the impact of the consumption tax hike.
 Sources: Made by MHRI based upon Ministry of Internal Affairs and Communications *Consumer Price Index*.

[Price of gasoline and electrical power charge]

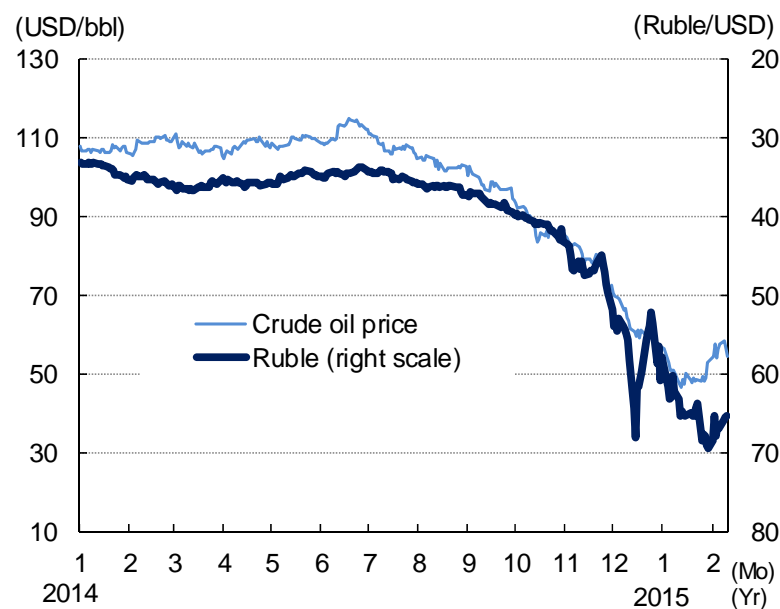


Note: The gasoline price is assumed to move in tandem with the price of Dubai crude oil and electrical power charges are assumed to move in tandem with the average price of fuel. The average fuel price is calculated using the coefficients of each of the electrical power companies on the basis of (1) the price of Dubai crude oil (MHRI forecasts from the Jan-Mar qtr of 2015), (2) the price of LNG (moving in tandem with the price of crude oil 4 months before), (3) price of coal (assumed to be flat from the Jan-Mar qtr of 2015).
 Sources: Made by MHRI based upon Ministry of Internal Affairs and Communications, *Consumer Price Index*.

Russia: the impact of the fall of crude oil prices upon the real economy is inevitable – economic growth in 2015 will fall deep into negative territory

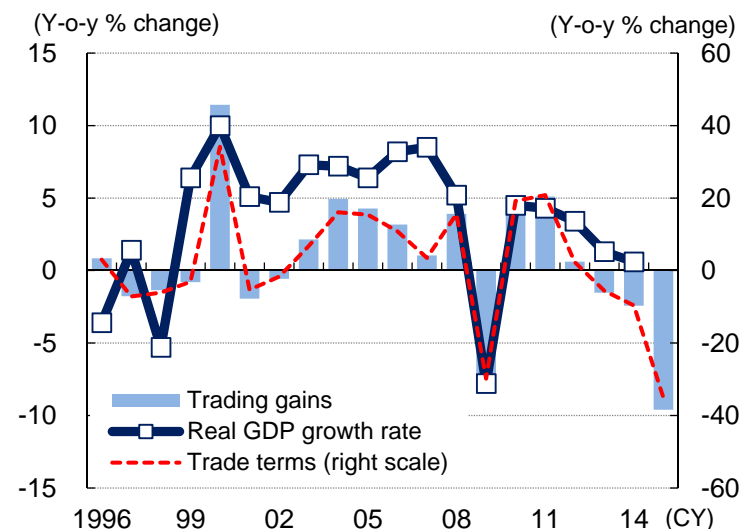
- The ruble fell sharply, reflecting oil price falls and sanctions by the US and Europe.
 - Russia's interest rate is still high (Jan 30th: → 15.0%) despite the Bank of Russia's interest rate cut subsequent to its emergency interest rate hike (Dec 16th: 10.5% → 17.0%) in response to the plunge of the ruble.
- The impact of the fall of crude oil prices upon the real economy is inevitable.
 - Russia thus far has relied upon the following growth mechanism: rise of crude oil prices → improvement of trade terms → increase of trading gains → rise of demand for domestic goods.
 - The current plunge of oil prices has set off a reverse cycle. The size of the trading losses in 2015 may surpass the losses in 2009 after the Lehman shock.

[The ruble exchange rate and the price of crude oil]



Note: Crude oil price refers to Brent crude oil price.
Sources: Made by MHRI based upon Bloomberg.

[Russia: trading gains and real GDP]



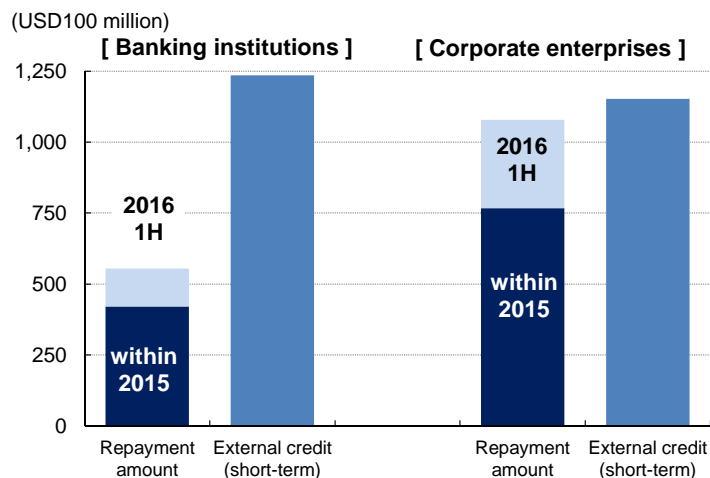
Note: Forecasts for 2014-2015. As in Japan, trading gains (% of previous year GDP) are calculated on the basis of the weighted harmonic average of export import prices as the common deflator.

Source: Made by MHRI based upon Bank of Russia, Rosstat, Bloomberg.

Russia: what are the risks of default due to the plunge of the ruble?

- Russia's outstanding external debt totals USD730 billion, of which approximately 90% (USD660 billion) is private-sector debt.
 - BIS-reporting banking institutions have total outstanding loans of USD210 billion to Russia. The breakdown by geographic region is as follows: Europe (75%), US (13%), Japan (9%).
- The default risks from a macro and short-term perspective are limited, in view of the abundance of both private-sector credit and foreign reserves of the Bank of Russia.
 - Repayment of private-sector external debt scheduled during 2015: USD120 billion. Private-sector external credit (short-term): USD240 billion.
 - The Bank of Russia has foreign currency reserves totaling USD330 billion (as of the end of 2014). In addition, note that measures to avoid default (such as support for the repayment of external debt) are progressing.
- However, the risks of private-sector default may rise due to a further fall of crude oil prices, tightening of sanctions by Europe and the US and downgrade of credit ratings.

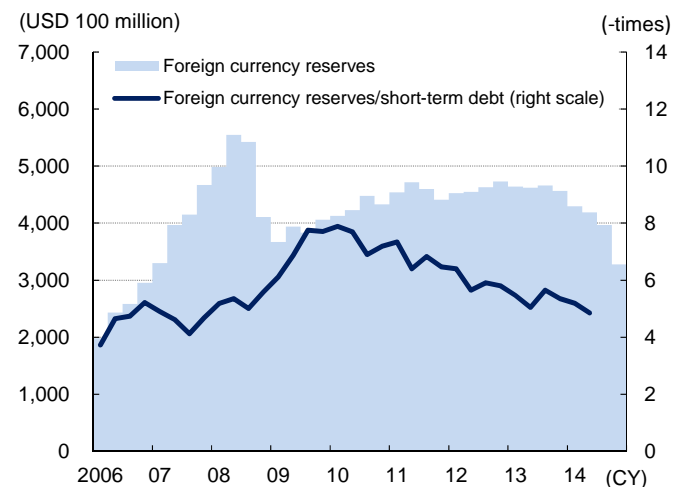
[Debt repayment and external credit of the private sector]



Note: The amount of debt repayment refers to the total of principal and interest. The outstanding amount of external credit is as of the end of June 2014.

Source: Made by MHRI based upon Bank of Russia.

[Foreign currency reserves]



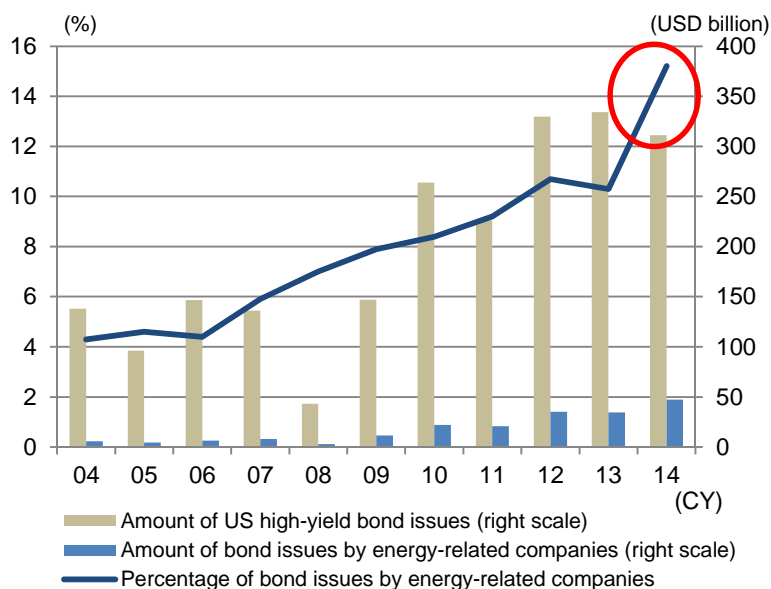
Note: Foreign currency reserves do not include gold and SDR. Short-term debt refers to short-term outstanding external debt of Russia as a whole.

Source: Made by MHRI based upon Bank of Russia.

US: deterioration of the funding environment for energy-related companies due to the fall of crude oil prices

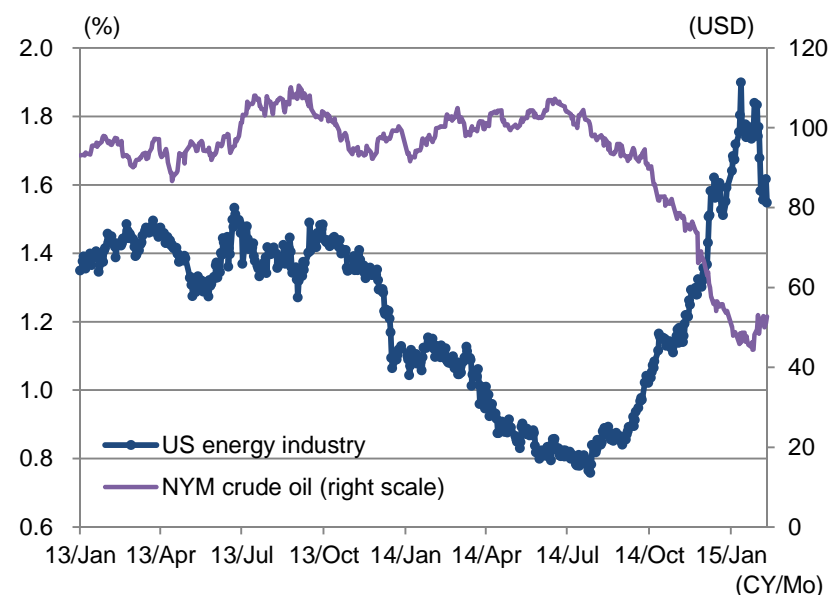
- The funding environment is souring for US energy-related companies which are increasingly dependent upon the market.
 - Even though issues of high-yield bonds by energy-related companies are on the rise, the credit spread is subject to upward pressures due to the fall of oil prices.
 - Costs for exploration, exploitation and asset acquisition are being reduced, reflecting the fall of crude oil prices. Looking forward, we expect a significant reduction of investment for crude oil development.

[Issuance of high yield bonds by energy-related companies]



Note: Up to December 2014.
Sources: Made by MHRI based upon Barclays, SIFMA.

[Spreads on corporate bonds of energy-related companies]

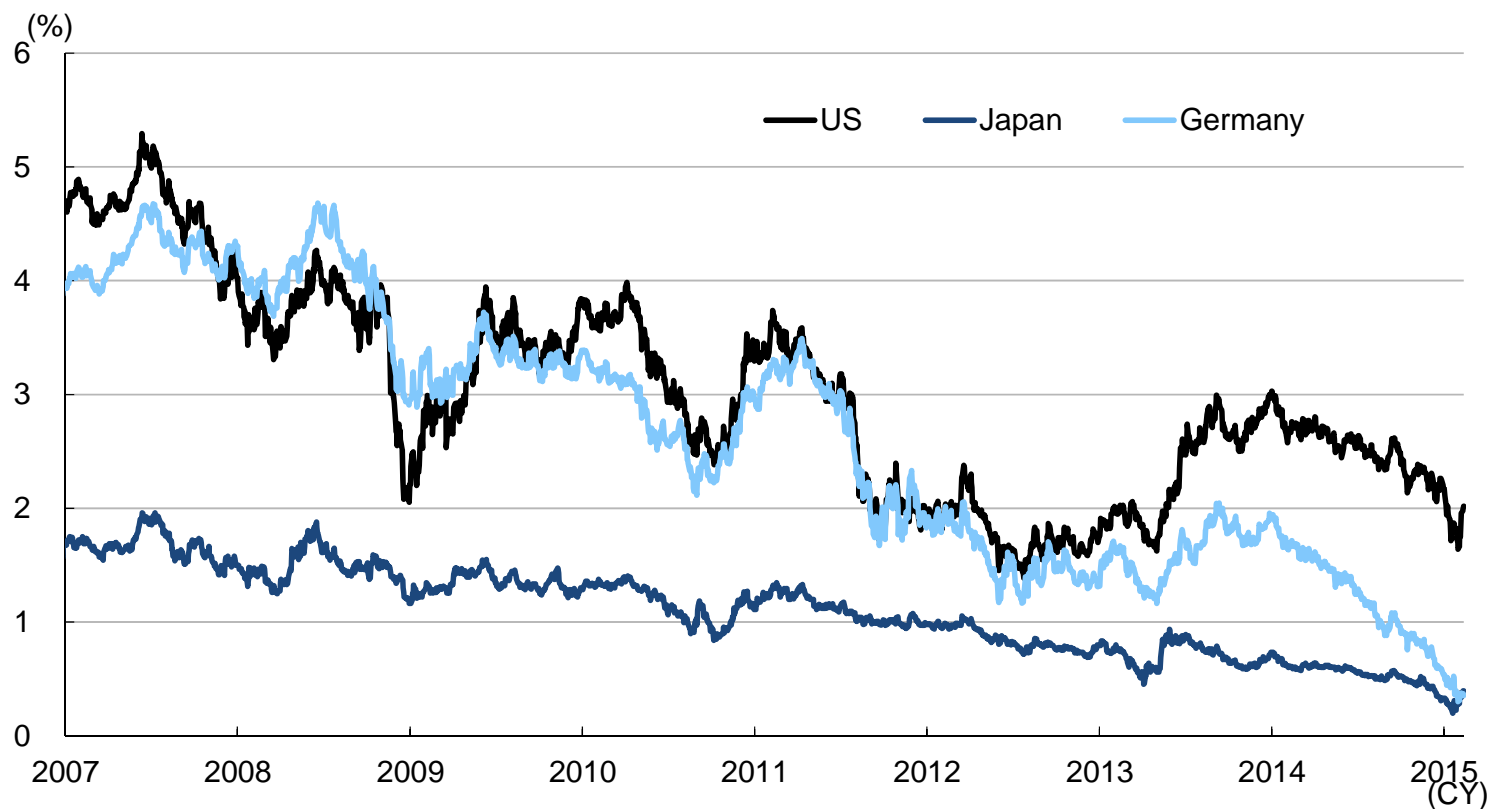


Note: BBB-grade, 5-yr, spread with US government bonds.
Sources: Made by MHRI based upon Bloomberg.

② Global decline of interest rates: interest rates are falling around the world

- Long-term interest rates are falling sharply in Japan, the US and Germany reflecting the fall of crude oil prices and quantitative monetary easing by the Bank of Japan and ECB.

[Long-term interest rate trends]



Sources: Made by MHRI based upon Bloomberg.

Government bond rates are “submerged underwater”

○ Bond yields are submerged below zero due to extraordinary monetary easing, mainly among the European countries.

- Investors are driven to investment in: ① long-term zones, ② overseas bonds which are not yet submerged underwater, and ③ risk assets other than interest-bearing assets.

[Global interest rates are submerged under water]

	1Y	2Y	3Y	4Y	5Y	6Y	7Y	8Y	9Y	10Y	11Y	12Y	13Y	14Y	15Y	20Y	30Y	40Y
Switzerland	-0.91	-0.93	-0.83	-0.63	-0.45	-0.37	-0.22	-0.15	-0.02	0.02	0.04	0.07	0.15	0.23	0.31	0.46	0.55	0.59
Denmark	-0.79	-1.00	-0.82	-0.65	-0.47	-0.20	-0.14	-0.07	0.02	0.11	0.13	0.16	0.19	0.21	0.24	0.38	0.65	
Germany	-0.19	-0.22	-0.19	-0.17	-0.07	-0.04	0.04	0.13	0.23	0.32	0.36	0.39	0.43	0.47	0.51	0.69	0.89	
Sweden	-0.20	-0.30	-0.15	-0.08	0.00	0.11	0.22	0.40	0.47	0.54	0.57	0.61	0.65	0.69	0.72	0.91		
Finland	-0.17	-0.17	-0.11	-0.05	0.01	0.02	0.11	0.25	0.30	0.39	0.44	0.49	0.54	0.59	0.64	0.72	0.87	
Netherlands	-0.18	-0.14	-0.10	-0.06	-0.01	0.03	0.12	0.23	0.32	0.40	0.43	0.46	0.50	0.53	0.57	0.71	0.94	
Austria	-0.12	-0.15	-0.13	-0.07	-0.01	0.05	0.12	0.24	0.32	0.42	0.43	0.45	0.46	0.48	0.50	0.65	0.95	
France	-0.12	-0.11	-0.10	-0.03	0.05	0.18	0.30	0.43	0.53	0.64	0.71	0.77	0.83	0.90	0.96	1.11	1.34	
Belgium	-0.13	-0.10	-0.05	0.01	0.07	0.16	0.31	0.43	0.54	0.65	0.68	0.71	0.73	0.76	0.79	1.10	1.30	
Japan	0.01	0.05	0.06	0.09	0.12	0.12	0.19	0.25	0.33	0.40	0.46	0.53	0.59	0.66	0.72	1.20	1.42	1.51
Ireland	0.01	0.07	0.13	0.22	0.49	0.54	0.73	0.89	1.03	1.21	1.27	1.34	1.41	1.48	1.55	1.71	2.02	
Italy	0.21	0.34	0.48	0.62	0.78	0.97	1.24	1.38	1.48	1.65	1.75	1.84	1.94	2.03	2.13	2.43	2.66	
Spain	0.16	0.25	0.47	0.64	0.89	1.03	1.22	1.40	1.51	1.62	1.71	1.81	1.90	1.99	2.08	2.27	2.64	
Israel	0.18	0.17	0.47	0.72	0.80	0.95	1.19	1.42	1.66	1.82	1.95	2.07	2.12	2.17	2.22	2.47	2.97	
Norway	0.81	0.75	0.70	0.72	0.74	0.82	0.91	1.02	1.14	1.23								
UK	0.29	0.39	0.64	0.88	1.08	1.20	1.31	1.48	1.57	1.66	1.74	1.81	1.89	1.96	2.03	2.22	2.40	2.35
Canada	0.46	0.42	0.41	0.54	0.70	0.86	1.02	1.16	1.27	1.40	1.45	1.51	1.57	1.62	1.68	1.97	2.04	
US	0.22	0.62	1.02	1.25	1.49	1.65	1.80	1.86	1.92	1.98	2.01	2.04	2.07	2.10	2.13	2.28	2.58	
Portugal	0.15	0.28	0.74	1.23	1.45	1.74	1.90	2.09	2.29	2.47	2.57	2.68	2.79	2.90	3.00	3.27	3.47	
China	3.17	3.17	3.23	3.30	3.35	3.38	3.40	3.44	3.45	3.44	3.47	3.49	3.52	3.54	3.57			
South Africa	6.17	6.26	6.59	6.81	6.96	7.09	7.20	7.31	7.44	7.57	7.67	7.77	7.87	7.98	8.03	8.15	8.27	
Indonesia	6.68	7.15	7.08	7.21	7.34	7.37	7.45	7.47	7.46	7.53	7.53	7.56	7.58	7.63	7.68	7.80	7.95	
Turkey	8.65	8.06	7.53	7.69	7.86	7.76	7.66	7.64	7.70	7.54								
India	8.02	7.86	7.77	7.77	7.74	7.78	7.77	7.82	7.82	7.74	7.78	7.68	7.80	7.76	7.82	7.73	7.72	
Brazil	13.21	13.11	12.89	12.78	12.71	12.65	12.61	12.57	12.57	12.56								
Russia	12.88	13.55	13.74	13.54	13.35	13.11	12.88	12.65	12.41	12.18	12.07	11.96	11.84	11.73	11.62	11.31		
Greece			18.04	16.49	14.94	13.96	12.97	11.99	11.00	10.02	10.08	10.14	10.20	10.27	10.33	9.38	8.45	

	Below 0%
	More than 0% up to 0.5%
	More than 0.5% up to 1.0%
	More than 1.0%

Note: As of February 12, 2015.

Sources: Made by MHRI based upon Bloomberg.

Accommodative monetary policy is restraining the rise of government bond yields

- Monetary policy is turning accommodative around the world as prices hover low due to the fall of crude oil prices.
 - As shown by the ECB's quantitative monetary easing, more countries are shifting their monetary policy stance to accommodative mode or reinforcing their monetary easing measures in a bid to lift the economy or avoid falling into deflation.
- In addition to the Bank of Japan (BOJ) and the ECB, many countries (mainly of Europe and the US) are predicted to follow a monetary easing path.
 - However, Indonesia and Malaysia may take a monetary tightening stance due to concerns regarding the weakening of their currencies accompanying interest rate hikes by the US.

[Outlook on monetary policy around the world]

Country	Current state	Outlook	
China	Accommodative	Accommodative	↘
South Korea	Accommodative	Accommodative	↘
Taiwan	Slightly accommodative	Unchanged	→
Hong Kong	Accommodative due to its peg to the US dollar	Rise of interest rates since they are interlocked with US interest rates because of the same reason	↗
Singapore	Ease tightening	Maintenance of status quo	→
Indonesia	Tight	Tight	↗
Thailand	Accommodative	Accommodative	↘
Malaysia	Tight	Tight	↗
Philippines	Tight	Tight	↗
Vietnam	Accommodative	Accommodative. Gradual departure from easing stance after US interest rate hike	↘
India	Accommodative	Accommodative	↘

Country	Current state	Outlook	
Japan	Accommodative	Possibility of further easing	↘
ECB	Accommodative	Accommodative	↘
Brazil	Tight	After additional interest rate hike, monetary policy will remain unchanged in the second half of 2015	↗
Russia	Tight	Accommodative	↘
Australia	Accommodative	Accommodative	↘
Switzerland	Accommodative	Accommodative	↘
Denmark	Accommodative	Accommodative	↘
Norway	Accommodative	Accommodative	↘
Sweden	Accommodative	Accommodative	↘

Source: Made by MHRI.

Expansion of central bank government bond holdings

- The ECB and BOJ are increasing their purchases of government bonds through monetary easing measures.
 - The percentage of government bond holdings in the 25 yr-or-longer zone is the highest with respect to the FRB. In contrast, the BOJ is buying government bonds mainly in the short- and medium-term zones.

[Government bond holdings and acquisitions by central banks]

Government bond holdings by central banks as a percentage of outstanding government bond issues (stock) (Note 1) (%)

Remaining period		FRB	ECB (Germany)	BOJ
Longer than 1 year and up to 5 years (Note 2)	End of 2014	21	0	29
	End of 2015 forecast	20	13	45
	End of 2016 forecast	19	24	57
Longer than 5 years and up to 10 years	End of 2014	27	0	32
	End of 2015 forecast	27	14	42
	End of 2016 forecast	26	26	50
Longer than 10 years and up to 25 years	End of 2014	38	0	13
	End of 2015 forecast	35	13	19
	End of 2016 forecast	32	26	24
Longer than 25 years	End of 2014	47	0	13
	End of 2015 forecast	43	12	26
	End of 2016 forecast	39	19	35
Total	End of 2014	26	0	25
	End of 2015 forecast	25	13(6)	36
	End of 2016 forecast	24	25(12)	45

Government bond purchases by central banks as a percentage of annual gross government bond issues (flow) (Note 1) (%)

Remaining period		ECB (Germany)	BOJ	FRB
Longer than 1 year and up to 5 years (Note 2)	2014	0	67	7
	2015 forecast	89	102	
	2016 forecast	92	102	
Longer than 5 years and up to 10 years	2014	0	125	37
	2015 forecast	126	113	
	2016 forecast	98	113	
Longer than 10 years and up to 25 years	2014	0	83	No issues (amount of purchase: USD39bn)
	2015 forecast	48	83	
	2016 forecast	39	83	
Longer than 25 years	2014	0	25	73
	2015 forecast	102	62	
	2016 forecast	125	62	
Total	2014	0	80	24
	2015 forecast	87	98	
	2016 forecast	75	98	

Notes: 1. The total excludes short-term government bonds. For Germany, bonds longer than 2 years and up to 5 years.

2. For Germany, bonds longer than 2 years and up to 5 years. The numerical values in parentheses refer to the percentage in the eurozone as a whole.

Sources: Made by MHRI based upon releases by the BOJ, FRB, ECB.

Notes: 1. The total excludes short-term government bonds. 2013 with respect to the FRB. For the BOJ, the estimates are based upon the median of the purchase range.

2. For Germany, bonds longer than 2 years and up to 5 years.

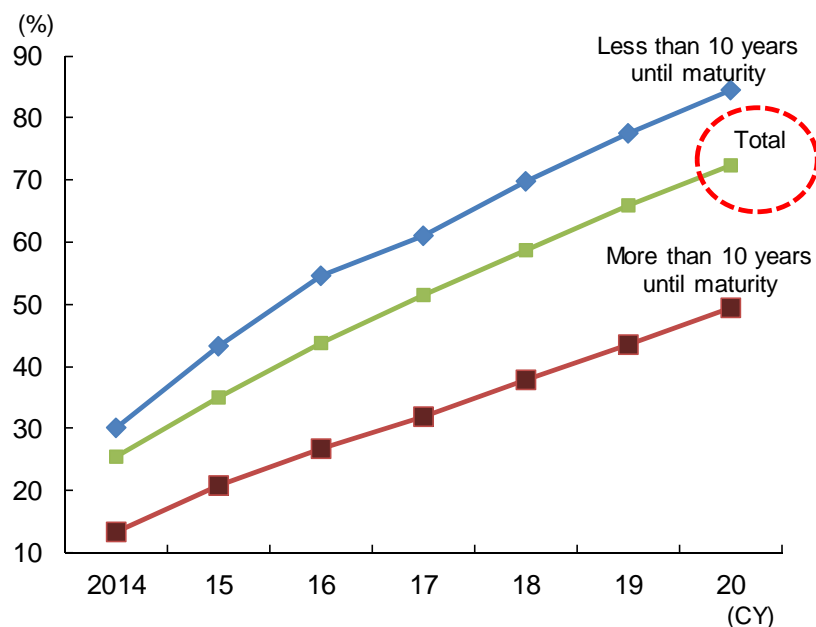
The amount of government bond purchases are converted into annualized rates.

Sources: Made by MHRI based upon releases by the BOJ, FRB, ECB.

BOJ monetary policy: the government bond market is continuing to tighten due to QQE

- In the event the BOJ continues to purchase JGBs at the current pace, the percentage of JGBs held by the BOJ in outstanding JGB issues may reach the 70%-level in 2020.
 - The percentage of the BOJ's holdings of bonds with less than 10 years until maturity will reach over 80% in 2020.
- In view of demand for collateral by financial institutions, JGB purchases may reach the limit in the second half of the 2010s.
 - The private sector's holdings of outstanding JGBs with maturities less than 10 years will decrease to JPY90 trillion by the end of 2020. Holdings of outstanding JGS with maturities longer than 1 year and less than five years would be zero.

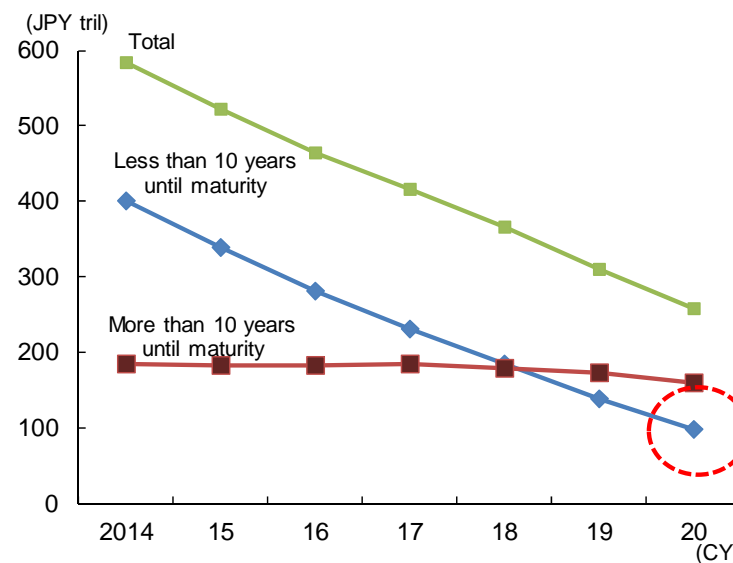
[Percentage of BOJ JGB-holdings in outstanding issues of JGBs]



Note: Based upon the assumption that the BOJ will purchase government bonds at the rate of increase of JPY80 trillion per year. The amount of purchases (by maturities) are assumptions based upon the actual results in Jan 2015. The amount of government bond purchases are based upon FY2015 JGB Issuance Plan.

Source: Made by MHRI.

[Outstanding JGB-holdings by private sector investors other than the BOJ]



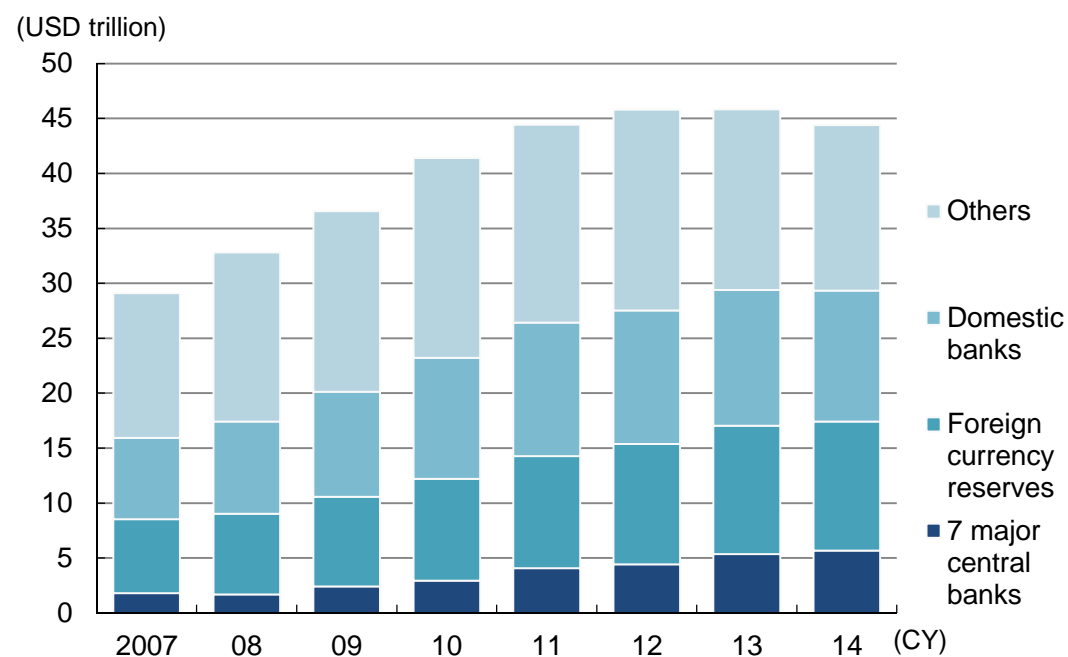
Note: Based upon the assumption that the BOJ will purchase government bonds at the rate of increase of JPY80 trillion per year. The amount of purchases (by maturities) are assumptions based upon the actual results in Jan 2015. The amount of government bond purchases are based upon FY2015 JGB Issuance Plan.

Source: Made by MHRI.

Fall of interest rates 1: central banks erode the government bond market

- Even though outstanding government debt remained unchanged, government bond holdings by the seven major central banks and foreign reserves of the world increased by USD3 trillion (2011~2014). The decline of government bonds available for investment by private sector companies including banking institutions is serving as one of the supply-side factors that are pushing down interest rates.

[Breakdown of holders of outstanding government debt of the 7 major countries/regions]



Change (USD trillion)	2007-11	2011-14
Total	15.3	0.0
7 major central banks	2.3	1.6
Foreign currency reserves	3.5	1.5
Domestic banks	4.7	-0.2
Others	4.8	-2.9

Note: "Total" refers to the total gross general government debt outstanding of the eurozone, Australia, Canada, Japan, UK, Switzerland and the US.

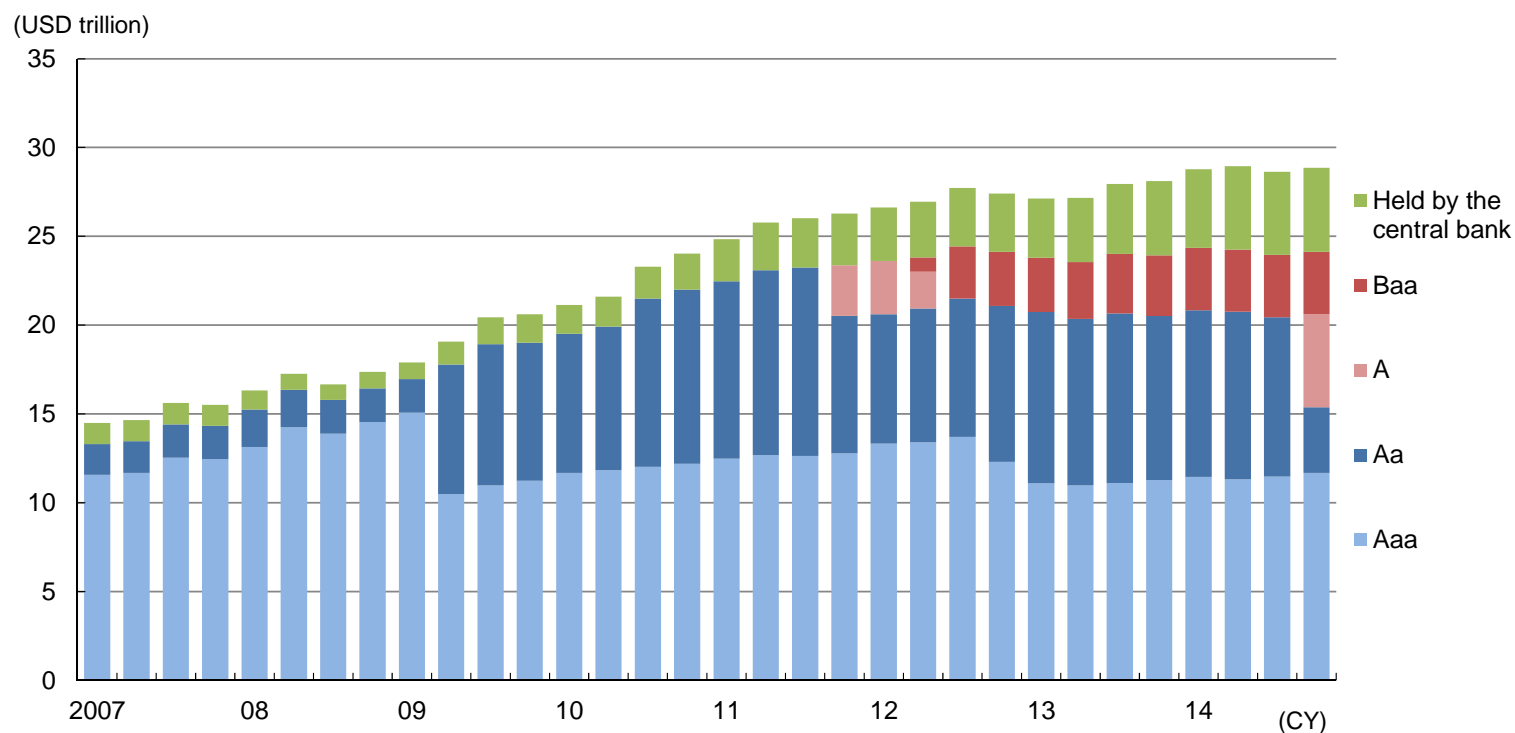
"Foreign currency reserves" refer to the total of the entire world. "7 major central banks" refers to gross central government credit held by the central banks of the regions and countries set forth above. However, the BOE is set forth on a net basis. The ECB refers to gross general government credit.

Source: Made by MHRI based upon IMF.

Fall of interest rates 2: tight supply-demand of safe assets due to downgrade of credit ratings of government bonds

- The tightening of the supply-demand of safe assets due to the downgrade of credit ratings of government bonds subsequent to the Lehman Shock is also serving as restraints upon the rise of interest rates.
- Investments in US treasury bonds by US banking institutions are also on the rise, reflecting the stricter financial regulatory regime.

[Outstanding government bond issues (by credit rating) and holdings by central banks of Japan, US, UK, Europe]



Note: "Europe" includes only the four countries of Germany, France, Italy and Spain.
Sources: Moody's, Eurostat, FRB, Bloomberg, MHRI.

③ The “Triple Merits”: boost real GDP by more than 1% pt

- The following “Triple Merits” will serve to lift the Japanese economy: (1) weak yen and stock market rise accompanying the additional monetary easing measures by the BOJ, (2) fiscal policy such as the emergency economic stimulus measures, and (3) sharp fall of crude oil prices.

[Impact of the “Triple Merits” (additional monetary easing, fiscal policy, lower crude oil prices) upon real GDP (trial calculation)]

	Boost to real GDP (% Pt)	
	FY2014	FY2015
Additional monetary easing (QQE2)	0.07	0.21
Boost export volume via weaker yen	0.03	0.15
Boost personal consumption through rise of stock prices (wealth effect)	0.04	0.06
Fiscal policy (economic stimulus measures, postponement of further tax hike)	0.00	0.41
Postponement of further consumption tax hike	0.00	0.18
Measures for households (stimulus for consumer spending, housing market)	0.00	0.03
Measures for businesses (subsidies for capital investment)	0.00	0.09
Public demand (government spending, public investment)	0.00	0.11
Fall of crude oil prices	0.06	0.66
Total	0.13	1.28

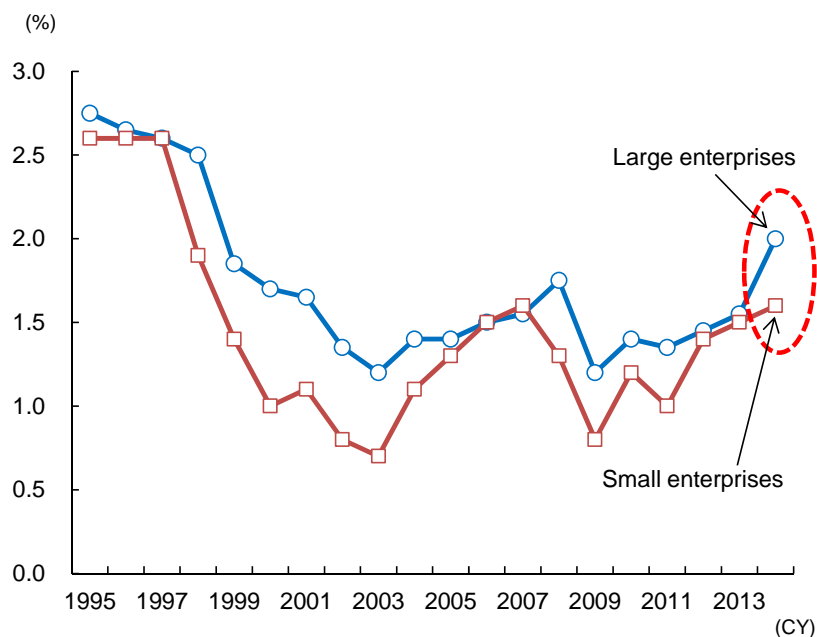
- Note: 1. The impact of additional monetary easing upon personal consumption only includes the wealth effect due to the rise of stock prices and does not include the impact through the improvement of consumer confidence. The impact of the postponement of a further tax hike are trial calculations based upon the MHRI Macromodel.
 2. The impact of the weaker yen and rise of stock prices calculates the impact of the change of the foreign exchange rate and stock prices from MHRI's Economic Outlook in September 2014 accompanying additional monetary easing (approximately 10% weakening of the yen, approximately 10% rise of stock prices).
 3. The impact of the fall of crude oil prices calculates the impact of the change of crude oil prices from the Economic Outlook in September 2014 based upon the MHRI Macromodel.

Source: Made by MHRI based upon various sources.

④ Japan's real wages: the fall of crude oil prices will boost wages of small enterprises (SEs) in 2015

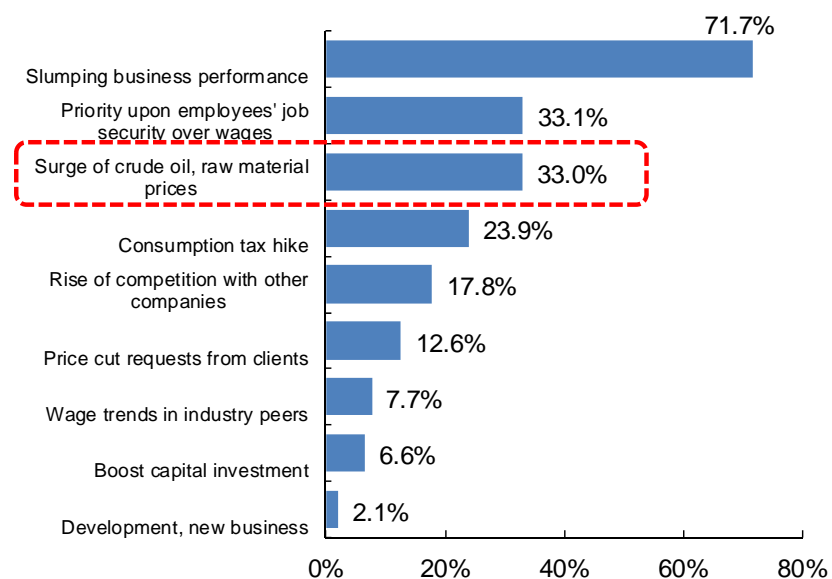
- Wage hike rates picked up in 2014 due to the revival of the “base-up” (increase of base wages). However, the pace of wage increase is slower among small enterprises (SEs) in comparison to large enterprises.
- In 2015, the economic recovery from the post-tax hike slump and improvement of earnings due to the fall of crude oil prices will serve to as tail winds upon SE wage hikes.

[Wage hike rates among small and large enterprises]



Note: Large enterprise: no. of employees 1,000 or over
 Small enterprise: no. of employees 100-299
 Source: Made by MHRI based upon releases by the Ministry of Health, Labor and Welfare.

[Reasons for not raising wages in 2014 (SEs)]

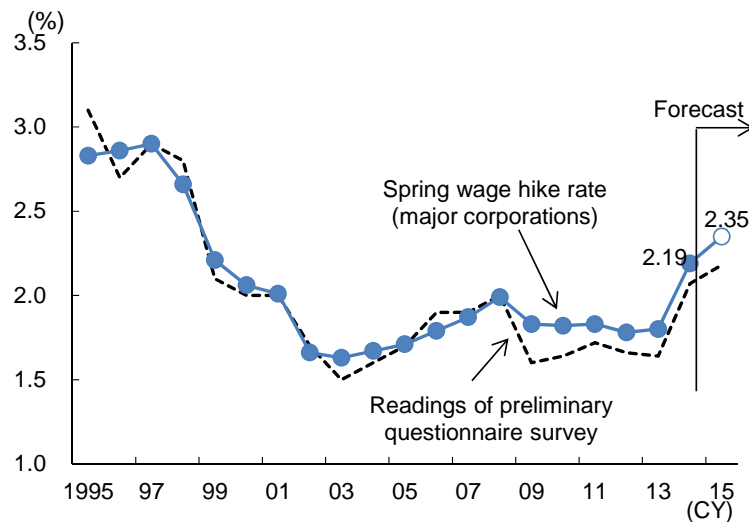


Source: Made by MHRI based upon releases by the Ministry of Economy, Trade and Industry.

Japan: real wages will improve greatly in FY2015 given the rise of wages and fall of inflation

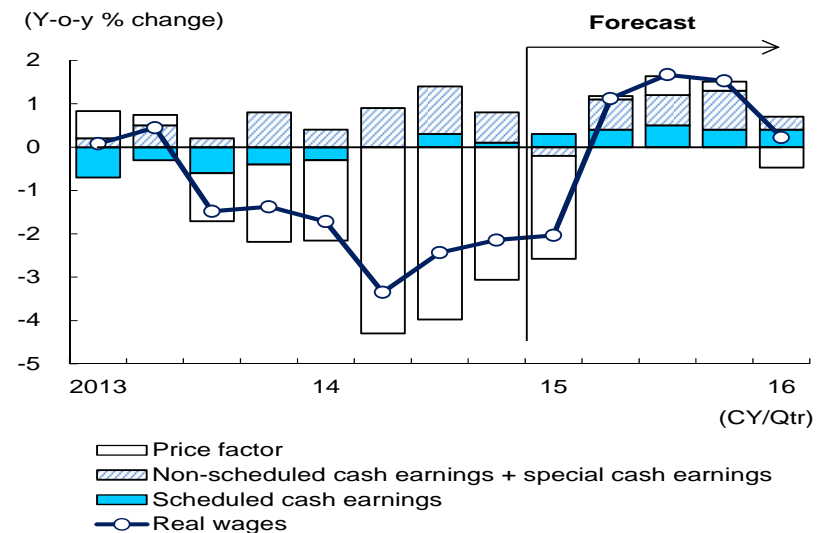
- The wage hike rate among major corporate enterprises is forecast to reach 2.35% (base-up of approximately 0.55%), surpassing the wage hike rate in 2014 (2.19%, base-up of approximately 0.39%).
 - The government's request for wage hikes and uptick of export-oriented firms' earnings should boost the rise of base wages ("base-up") among major corporations.
- The rise of real wages should turn positive on a year-on-year basis in the Apr-Jun quarter of 2015 when the impact of the rise of prices accompanying the consumption tax hike runs its course.
 - The growth of real wages in FY2015 should turn positive in the Apr-Jun quarter and rise at a faster pace over the summer. Even though the growth of real wages is expected to slow down from then onward as the fall of crude oil prices abates and the yen weakens, underlying wage growth should still continue to improve.

[Shunto wage hike rate]



Note: The reading for 2015 is based upon projections by MHRI. The results of the preliminary questionnaire survey include labor, management and experts.
 Source: Made by MHRI based upon releases by the Ministry of Health, Labor and Welfare.

[Outlook on real wages]



Note: Forecasts by MHRI from the Jan-Mar 2015.
 Source: Made by MHRI based upon Ministry of Health, Labor and Welfare, *Monthly Labor Survey*.

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