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FY2017, FY2018 Economic Outlook

- While the global economy is following a gradual expansion, keep a close eye upon US policy agenda and geopolitical risks -

May 19, 2017

Mizuho Research Institute

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Key points of our forecast

- The global economy is forecast to follow an expansion path in 2017 and 2018, driven by the recovery of the US economy and upturn of commodity-producing economies.
- Even though the US economy showed signs of moderation, the global economy is generally following a recovery track driven by factors such as the upturn of the Chinese economy.
- The US economy is forecast to return to an expansion path from the Apr-Jun quarter of 2017. While tax cuts and infrastructure investment will serve as underpinnings for the US economy, its actual implementation is expected to be postponed to 2018. Keep a close eye upon developments regarding the "Russiagate" scandal.
- Turning to China, we forecast an economic slowdown due to policy measures to curb housing purchases and the full-fledged adjustments in sectors saddled with excessive production capacity. Even so, the overall economic slowdown will most likely be mild due to fiscal support such as infrastructure investment.
- Geopolitical risks such as the situation surrounding North Korea will linger. As far as conditions do not spiral out to extreme cases such as military clashes, the impact of the "North Korea risk" upon the real economy should be benign. Even so, note that the financial market turmoil may have a negative impact upon economic conditions.
- The US Federal Reserve Board (FRB) is expected to raise interest rates at a gradual pace and start to scale down its reinvestment policy from 2018. Although the rise of US long-term interest rates should remain moderate, currency weakening and the rise of rate hike pressures are sources of concern for some emerging market (EM) countries.
- The Japanese economy will pick up in FY2017. In addition to the recovery of overseas economies, the increase of capital investment related to the 2020 Tokyo Olympic Games and rise of productivity will serve as positive factors. In FY2018, the Japanese economy will continue to grow due to the strength of domestic demand, despite the slowdown of external demand.
- Japan's core inflation rate will rise temporarily to the 1%-level. However, the improvement of the underlying trend in inflation excluding the impact of energy prices will remain moderate. The Bank of Japan (BOJ) will most likely keep monetary policy on hold while gradually reducing the amount of government bond purchases.

I. General Overview

The global economy will gradually expand

(1) Overview of the global economy: the global economy is projected to expand in 2017 and 2018

- Although growth in the forecast area is likely to expand towards 2018, keep a close eye upon US policy and Chinese economic trends.
  - US growth has been downwardly revised in view of recent economic trends and the lag in the US policy impact. In contrast, the growth rates for the Eurozone and Asia have been revised upward.

[Outlook on the global economy]

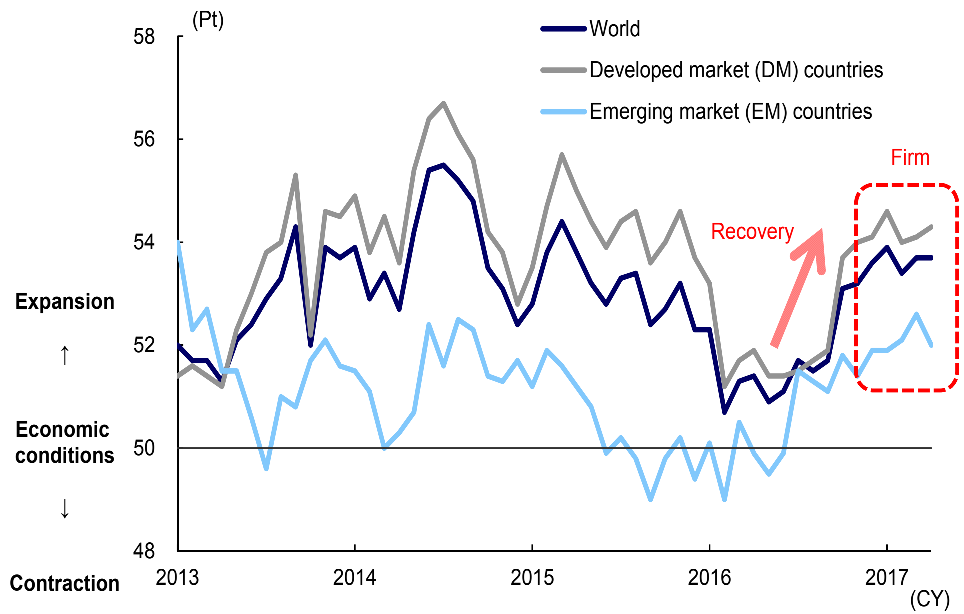
Calendar year	2014 (Actual)	2015 (Actual)	2016 (Actual)	2017 (Forecast)	2018 (Forecast) (Y-o-y % change)	2017 (Forecast in Mar)	2018 (Forecast in Mar) (Y-o-y % change)	2017 (Breadth of change from Mar)	2018 (Breadth of change from Mar) (% point)
Total of forecast area	3.6	3.4	3.4	3.7	3.8	3.7	3.8	-	-
Japan, US, Eurozone	1.6	2.2	1.6	1.9	1.9	1.9	1.9	-	-
US	2.4	2.6	1.6	2.1	2.2	2.3	2.3	-0.2	-0.1
Eurozone	1.2	2.0	1.8	1.7	1.7	1.6	1.6	0.1	0.1
Japan	0.3	1.1	1.0	1.5	1.4	1.3	1.4	0.2	-
Asia	6.3	6.2	6.1	6.1	6.1	6.0	6.1	0.1	-
China	7.3	6.9	6.7	6.6	6.4	6.5	6.4	0.1	-
NIEs	3.5	2.0	2.3	2.5	2.5	2.3	2.6	0.2	-0.1
ASEAN5	4.6	4.8	4.9	4.9	5.0	4.9	5.0	-	-
India	6.9	7.5	7.5	7.4	7.5	7.4	7.5	-	-
Australia	2.8	2.4	2.4	2.3	2.8	2.3	2.8	-	-
Brazil	0.5	-3.8	-3.6	0.6	2.0	0.6	2.0	-	-
Mexico	2.3	2.6	2.3	1.8	2.1				
Russia	0.7	-2.8	-0.2	1.0	1.5	1.0	1.5	-	-
Japan (FY)	-0.5	1.2	1.3	1.5	1.3	1.4	1.3	0.1	-
Crude oil price (WTI, USD/bbl)	93	49	43	53	55	57	65	-4	-10

Note: The total of the forecast area is calculated upon the 2015 GDP share (PPP) by the IMF.
Sources: Made by MHRI based upon releases by the International Monetary Fund (IMF) and statistics of relevant countries and regions.

(2) Overview of the global economy: the recovery trend continues

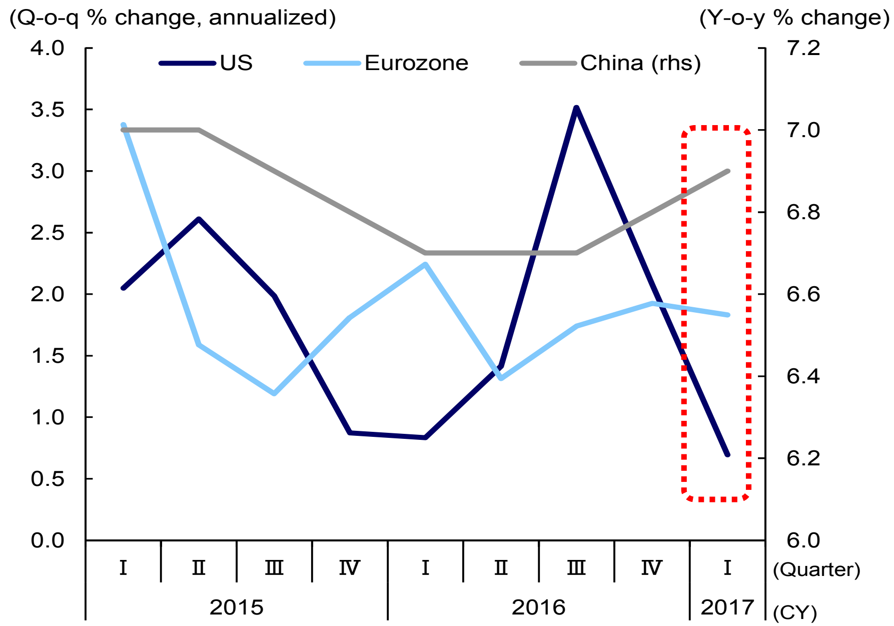
- Although a soft patch was evident in the US, the global economy has generally maintained a recovery trend since the second half of 2016.
  - Business sentiment is firm on a global scale. Purchasing manager indices (PMI) exceed 50 for both developed market (DM) countries and emerging market (EM) countries, and remain above 50.
  - The rate of growth in real GDP (Jan-Mar quarter of 2017) has plummeted in the US, but there was a slight y-o-y increase in China. Europe maintained a level on a par with last year.
  - However, the US slowdown is attributed to temporary factors such as the warm winter. Viewed overall, the global economy is recovering.

[Global Synthetic PMI]



Source: Made by MHRI based upon Markit

[Quarterly GDP growth rate for Japan, the US and China]

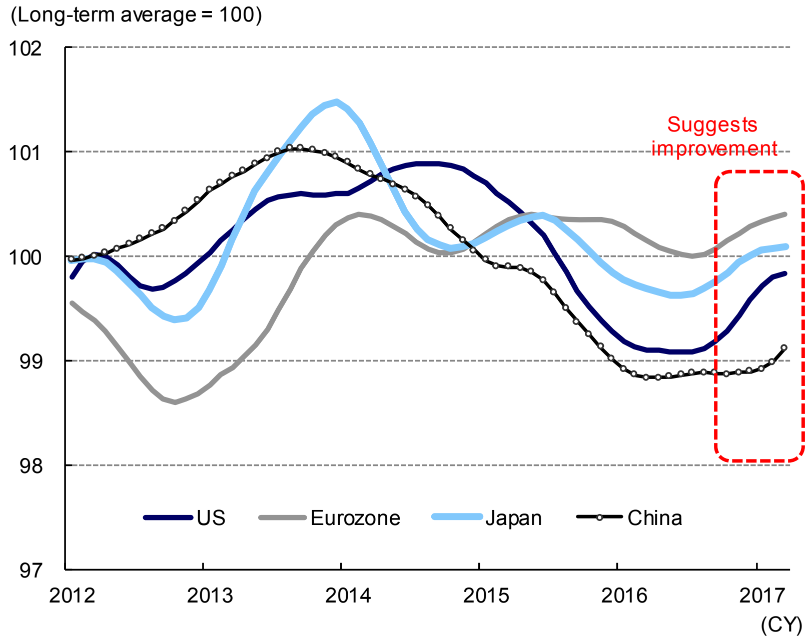


Source: Made by MHRI based upon each country's statistics

Leading indicators suggest ongoing improvement. Risks are subsiding

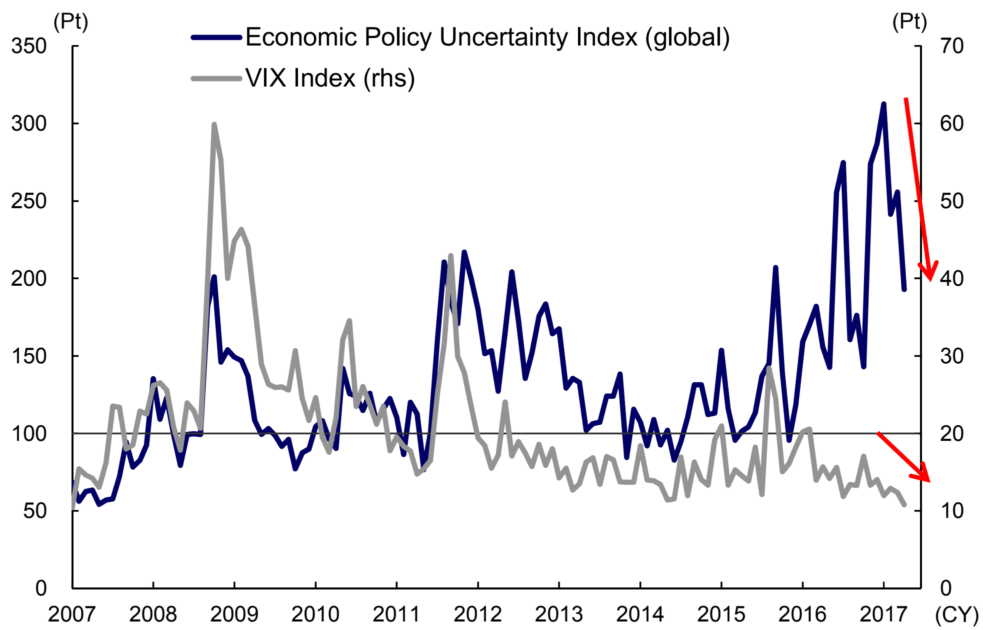
- ❑ While we forecast ongoing expansion of the global economy, there are also disruptive factors such as US policy, Chinese economic trends and geopolitical risks.
  - Leading indicators of major countries suggest ongoing improvement in the economy. Progress of US policy agenda and the sustainability of China's economic recovery hold the key.
  - Risk indicators for the economy and financial markets such as the Economic Policy Uncertainty Index and the VIX Index are subsiding. However, caution is needed with respect to the rise of geopolitical risks such as developments in Syria and North Korea. Risk-averse trends in the financial markets could also have a negative impact on the global economy.

[OECD Leading Indicators]



Source: Made by MHRI based upon OECD

[Economic Policy Uncertainty Index and the VIX Index]



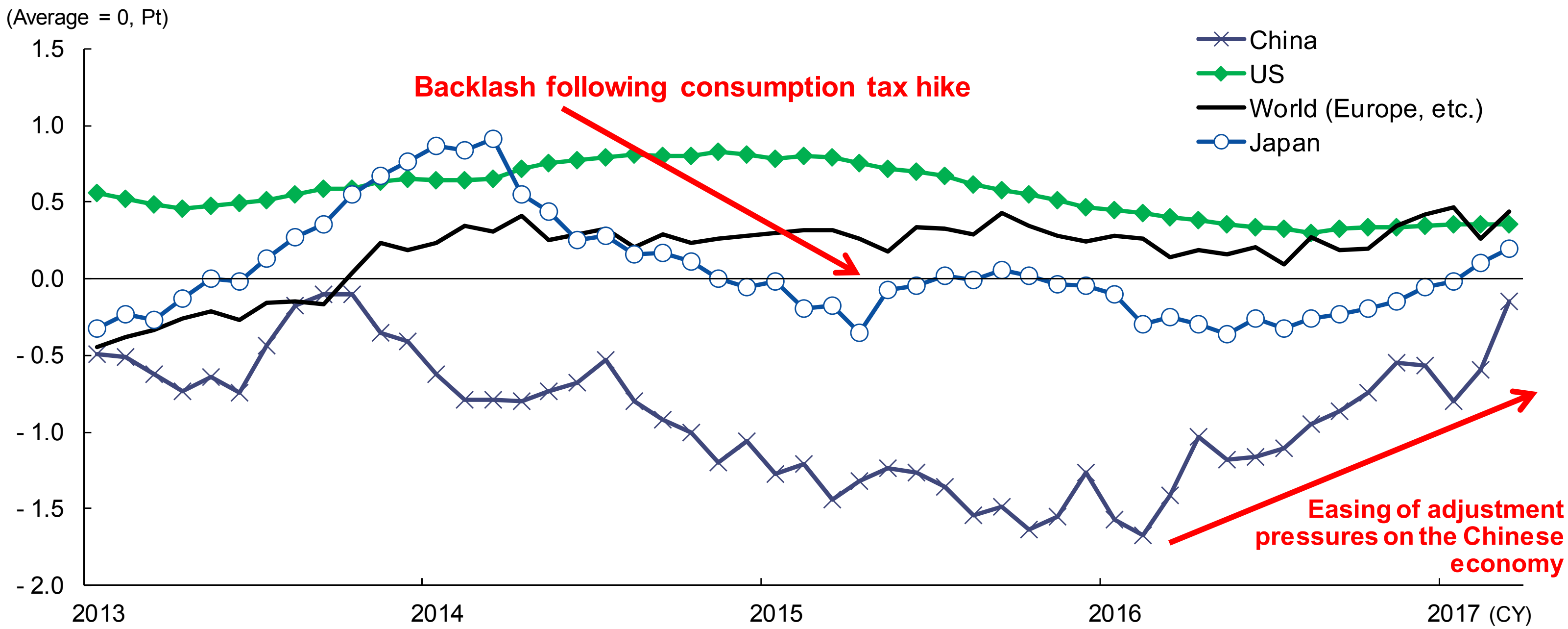
Note: VIX Index is the S&P500 option implied volatility index.
Source: Made by MHRI based upon Economic Policy Uncertainty, Bloomberg

Quantitative verification of recovery factors (1): improvements in Japan, the US, China and the World (Europe, etc.)

- Economic indices for Japan, the US, China and the World (Europe, etc.) (MHRI calculations*) have all improved.
  - The US has recovered quickly from the financial crisis, and economic indices are moving in positive territory. The world economy has been improving since about 2014 due to the recovery in Europe. The Chinese economy has been picking up since mid-2016 after deteriorating from about 2014. The Japanese economy deteriorated due to the impact of the consumption tax hike in FY2014 and slumped until the first half of 2016, but subsequently recovered from the second half of 2016.

  * Extracting a common movement for the real economy from many economic indices (also refer to the notes to the Chart)

[Economic indices for Japan, the US, China and the World (Europe, etc.)]



Note: 1. 12
the long-term trend.
2. Calculated using the factor model. The number of indices used in the calculation were 124 for Japan, 56 for the US, 27 for China, and 24 for the world (Europe, etc.). Japan used all 4 factors other than economic factors. The US, China and the world (Europe, etc.) only used economic factors.

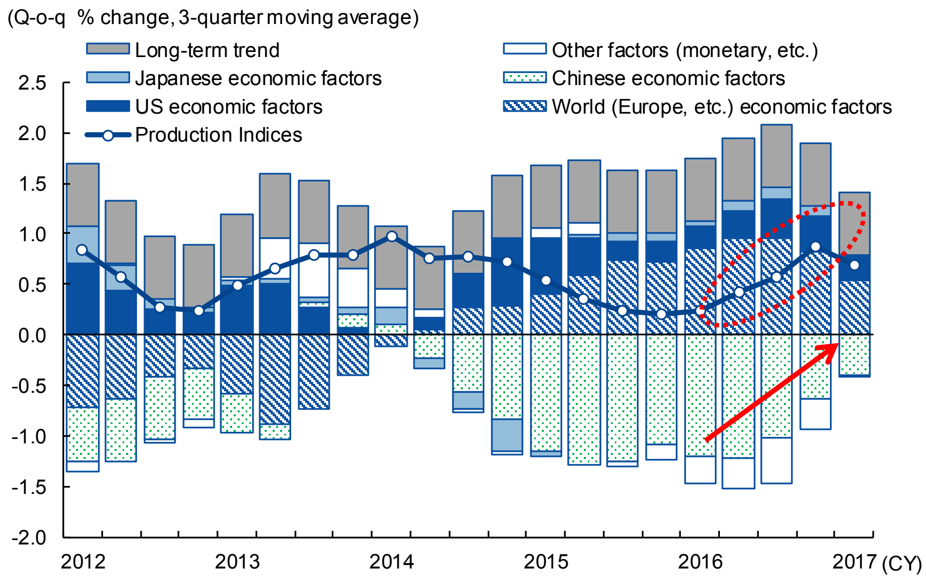
Source: Made by MHRI based upon OECD, INDB, etc.

Quantitative verification of recovery factors (2): Chinese economic recovery and improvements in the IT cycle contribute to the production recovery

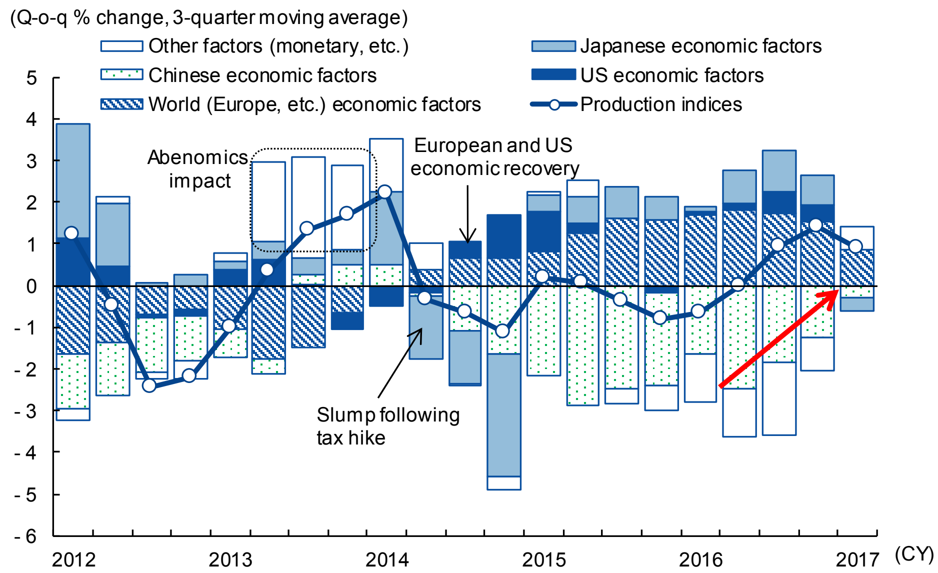
- ❑ Since the second half of 2016, downward pressures stemming from adjustments in the Chinese economy have eased considerably, contributing to the recovery in production in Japan and the world.
  - ✓ Furthermore, the IT cycle and expectations toward US President Trump have also been recent positive factors.
- ❑ We believe the current recovery momentum will continue throughout 2017. However, the key to the economic recovery from 2018 will depend on whether or not the Trump administration can implement its economic policies.

[Level of decomposition by industrial production factor (model-based analysis, world and Japan)]

[World production indices]



[Japanese production indices]



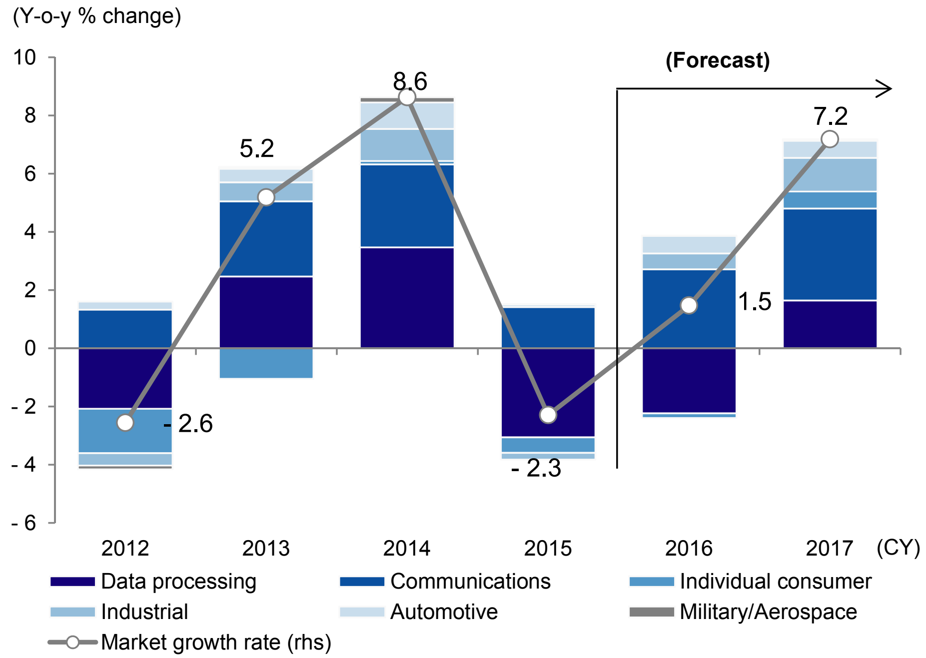
Note: 1. 3-quarter backward moving average.
2. Contribution decomposition of the structural shock of each factor for y-o-y change in production using the dynamic factor model (hybrid model with FAVAR) including world (Europe, etc.) economic factors, US economic factors, Chinese economic factors, Japanese economic factors, and other factors.
3. World production is based upon the CPB *World Trade Monitor*. Japanese production is based upon the Ministry of Economy, Trade and Industry *Indices of Industrial Production*.

Source: Made by MHRI based upon OECD, INDB, CPB, etc.

Semi-conductor industry: global semi-conductor shipments recovering (Mizuho Bank, Industry Research Department)

- Global semi-conductor shipments are forecast to reach $364.1 billion (+7.2% y-o-y) in 2017.
  - Apart from the expectations for increased production of major applications such as mobile telephones and flat-screen TVs, attributed to the recovery in EM economies, we also forecast an ongoing increase in the number of semi-conductors installed in cars and industrial equipment, etc.

[Global semi-conductor market (value of shipments)]



Note: Forecasts by Mizuho Bank, Industry Research Department I
Source: Made by Mizuho Bank, Industry Research Department based upon various materials

[Global semi-conductor market (growth rate by application)]

Classification	Main applications	2010-15 CAGR	2016 (Y-o-y)	2017 (Y-o-y)
Data processing	PC, tablets, office equipment, servers	-0.0%	-6.0%	+4.8%
Communications	Mobile telephone, base station LAN, modem, router	+7.4%	+8.5%	+9.2%
Individual consumer	TV, DVD, game consoles, wearable devices, etc.	-5.8%	-1.4%	+5.5%
Industrial	Manufacturing systems, medical equipment, security, energy management, etc.	+3.9%	+5.7%	+11.7%
Automotive	Cars	+6.5%	+6.7%	+6.1%
Military/ Aerospace	Aircraft, drones, radars, missiles, spacecraft related systems, etc.	+1.0%	+0.3%	+4.9%
Total		+2.1%	+1.5%	+7.2%

Note: Forecasts by Mizuho Bank, Industry Research Department
Source: Made by Mizuho Bank, Industry Research Department based upon various materials

(3) US policy: progress in regulation and trade areas, but health care (replacement), tax cuts and infrastructure have stalled

Campaign Pledge		Degree of progress - ●: Accomplished, ▲: Aborted after execution, ×: Not yet started/ withdrawn	
① Tax system reforms (Large-scale tax cuts)		×	White House Tax Plan (April 26) is virtually the same as the campaign pledge
② Energy self-sufficiency		●	Proceeding with pipeline construction, revising water quality regulations and measures to combat global warming, etc.
③ Transport, infrastructure		×	Blank slate. Separated from tax reforms, to be funded by higher gasoline tax (May 1)
④ Strengthen defence and security		●	To be dealt with using Presidential executive order, also increase FY2017 budget
⑤ Regulatory reform		●	Freeze new regulations, revising domestic manufacturers and environment regulations, etc.
⑥ Financial services reform		●	Ordered regulatory review amid (February 3), referred to consideration of the restoration of Glass-Steagall Act (May 1)
⑦ Repeal and replacement of Obamacare		▲	Derailed between the issue regarding the uninsured and financial assistance
⑧ Trade reforms	Renegotiate NAFTA	●	Prioritizing renegotiation without withdrawal (April 26), but could also withdraw if negotiations break down
	Withdraw from TPP	●	Announced immediately after inauguration (January 23). Japan-US Economic Dialog (February 10)
	Recognize China as a currency manipulating country	×	Shelved due to North Korea issue. US-Chinese leaders agree to set a 100 day plan (April 7)
	Investigate unfairness of trade counterpart countries	●	Commenced investigation of trade deficit (March 31)
⑨ Reform immigration system		▲	Execution of travel ban to the US suspended; Congress rejects budget allocation to build a border wall

Note: Apart from the above 9 areas, there were a total of 12 areas of campaign pledges including “educational reform” and “veteran affairs reforms” and “respect for the US Constitution”. In terms of “respect for the constitution”, Gorsuch has been confirmed as a supreme court judge.
The 12 areas of campaign pledges are referred to in the One Think Tank Report, *The Trump Administration – What is the US trying to do and how should Japan react?* (January 23) (available in Japanese)

Source: Made by MHRI

The largest number of executive orders and legislations since H.W. Bush, but the biggest delay in personnel appointments

- Lowest approval rating 3-months after inauguration since President Eisenhower in 1953. The first time a President's approval rating has dipped below 50%.
  - The risk scenario of the Trump administration's involvement in the so-called "Russia-gate scandal" leading to impeachment cannot be ruled out altogether. Future developments need to be closely monitored.

[Comparison of the performance and approval ratings in the first 100 days of office]

		H.W. Bush	Clinton	W. Bush	Obama	Trump	Rank
No. of executive orders		11	13	11	19	30	#1
No. of legislations		18	16	7	14	28	#1
No. of personnel appointments	Withdrawn	1	2	0	3	3	#1
	Confirmed	50	49	35	69	27	#5
	Pending	44	125	50	118	41	#5
Approval rating (%)		56	55	62	65	41	#5

Note: Personnel refers to the 556 important posts that require senate confirmation
Source: Made by MHRI based upon The American Presidency Project, govtrack.us, Partnership for Public Service

US: tax cut proposal remains the same as campaign pledges, but legislation likely to be delayed to the end of the year

- The essentials of tax reforms (April 26) are virtually the same as the campaign pledges. The arguments in the Republican proposal that have arisen since the beginning of the year have been returned to a blank slate.

[Essentials of the Trump Administration's Tax Reforms]

Target	❑ To create economic growth and millions of jobs ❑ Simplify the tax system ❑ Cut taxes on households, particularly middle-income families ❑ To cut the highest corporate tax rate in the world to the lowest in the world
Reforms for individuals	❑ Cut taxes on households, particularly middle-income families • Reduce the 7 tax brackets to 3: 10%, 25% and 35% • Double the standard deductions • Cut taxes on cost of child and dependent care ❑ Simplification • Eliminate tax exemptions that mainly benefit high-income individuals (* including the elimination of state and local tax exemptions) • Protect deductions for mortgage interest and charitable contributions (*including retirement fund accounts) • Repeal the Alternative Minimum Tax (AMT) • Repeal the inheritance tax ❑ Repeal the 3.8% Obamacare tax (tax on investment income)
Reforms for companies	❑ Lower business tax from 35% to 15% (* on so-called pass-through businesses) ❑ Switch from a global income tax to a territorial tax system to equalize the competitiveness of US companies ❑ One-time tax on overseas profits ❑ Streamline tax deductions

Note: * refers to additional comments made at press conferences
Source: Made by MHRI based upon US White House

US: $5.5 trillion in tax cuts over 10 years based on tax reform outline. Key issues such as the period of tax cuts and budget impact remain unresolved

- Infrastructure investment is being discussed separately from tax reforms. Gasoline tax could also be one source of revenue (according to comments from President Trump and the US Treasury Secretary on May 1)

[Fiscal cost of tax system reforms (provisional figure, 10 years)]

Personal income tax	($ billion)
Reduce and flatten tax rate (10%, 25% and 35%) and repeal AMT	-2,314
Double standard deductions	-1,361
Repeal 3.8% Obamacare tax	-192
Repeal inheritance tax	-200
Abolish various exemptions (excluding mortgages, donations and retirement)	2,351
Reduce tax rate on pass-through businesses (15%)	-1,500
Business tax	
Reduce tax rate (15%) and repeal AMT	-2,364
Switch to territorial tax	-39
Cut repatriation tax (assume 10%)	148
Total	**-5,471**

Note: "-" denotes factors with a negative impact on the fiscal balance. There has been no comment in relation to child-care deductions "endorsed" by President Trump's daughter, Ivanka.
Source: Made by MHRI based upon US White House, TPC, CRFB

[Related issues]

① Permanent tax cuts or obstructing the filibuster?

- Effective corporate tax cuts are permanent tax cuts → does not use fiscal reconciliation process, which raises concerns that it may face a filibuster in the Senate
- Cannot be permanent tax cuts if using the fiscal reconciliation process

② Impact on the budget

- Substantial reduction in expenditure (non-defence spending) → Opposition from the Democrats
- Maintain or increase spending (non-defence spending) → Opposition from conservative Republicans

Note: "Permanent" tax cuts that would see tax cuts for an initial period of about 10 years followed by a period of tax hikes, while not impossible are unlikely to be realized.
Source: Made by MHRI

US: change in fiscal stimulus outlook. Tax cuts and infrastructure investment postponed until 2018

❑ Since it is unlikely that President Trump's proposal - which would create a large deficit - will be passed as it is, we have not changed our assumptions on the to scale of tax cuts and infrastructure investment.

[Current state and assumptions on fiscal policy in MHRI's Outlook]

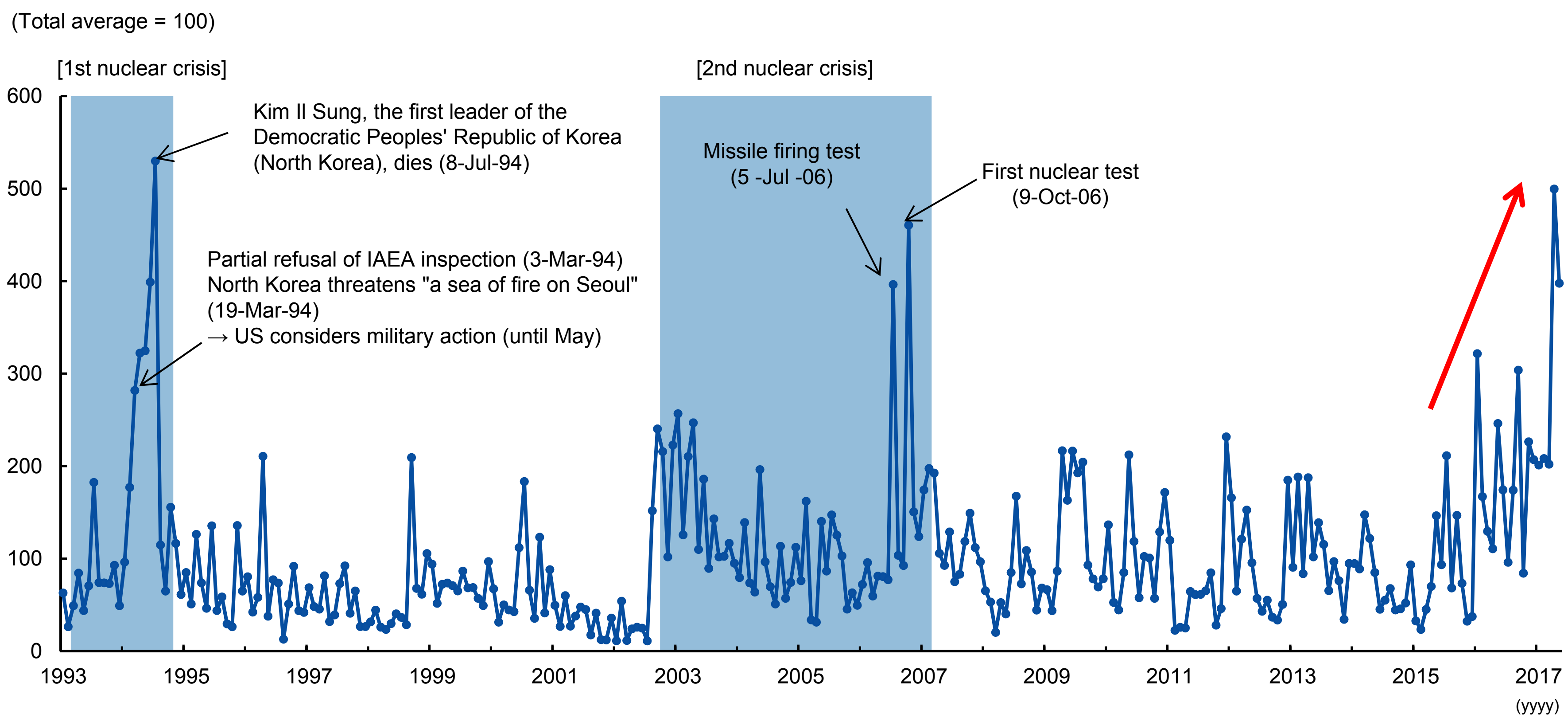
		Current state	Assumptions (→ changes)
FY2018 budget		▪ FY2017 budget finally passed	▪ From October, to operate on a provisional budget for the rest of the year ▪ Respond by increasing the debt ceiling/ adopting exemptions to regulations ▪ US Congress to spurn President Trump's "reckless" demands to build a border wall and substantially cut non-defence spending, etc.
Debt ceiling problem		▪ The deadline for making do is about autumn (October – November)	
Tax system reforms		▪ Outline released, virtually in line with election campaign promises	▪ Passage and implementation in the summer of 2017 → Passage is delayed with tax cuts commencing from the beginning of 2018
	For individuals	▪ Highest tax rate of 35%, etc.	▪ 2% point cut in the rate of income tax on general households (→ no change)
	For corporations	▪ 15% tax rate, etc.	▪ Marginal corporate tax rate cut by 10% points (→ no change)
Infrastructure investment		▪ Virtually nothing has been decided	▪ Implement in 2017 Q4 → Implement in 2018 Q3. The budget, debt ceiling, tax system reforms to take priority in Congress deliberations during 2017. Infrastructure investment deliberations to take place in 2018 H1, with implementation delayed to 2018 H2 ▪ $550 billion over 10 years (→ no change)

Source: Made by MHRI

(4) Geopolitical risks: North Korea risk index is on a par with the levels at the time of the first and second nuclear crises

- North Korea risk remains high, and is likely to weigh on the financial markets for the foreseeable future.

[North Korea risk index (calculated by MHRI)]



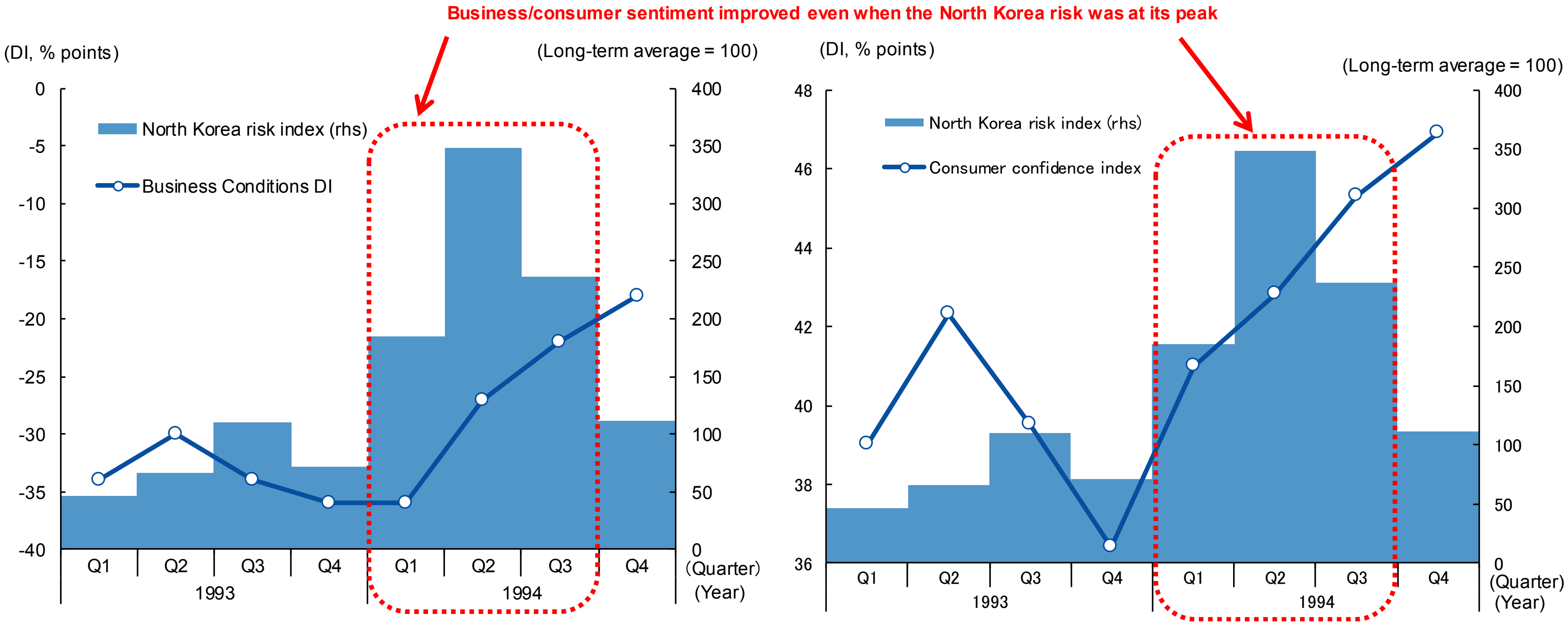
Note: 1. Taking the aggregate of the number of articles with the criteria that such articles include the Japanese language equivalents of the (1) the term “North Korea”, and (2) the term “security” or “nuclear”, and (3) the term “uncertainty” or “risk”, then standardized.
2. The articles appeared in the following media: Asahi, Sankei, Nikkei, Mainichi and Yomiuri

Source: Made by MHRI

Barring extreme circumstances, the impact on the real economy from the North Korea risk is small

- Barring extreme circumstances such as military conflict, the impact on the real economy from the North Korea risk is small.
  - Business and consumer sentiment peaked at the time of the first nuclear crisis, and recovered throughout the summer of 1994 when the North Korea risk peaked. The downward pressure on sentiment attributed to North Korea risk was minimal given the recovery in sentiment from a low in October 1993.

[North Korea risk index and business/consumer sentiment (at the time of the first nuclear crisis)]



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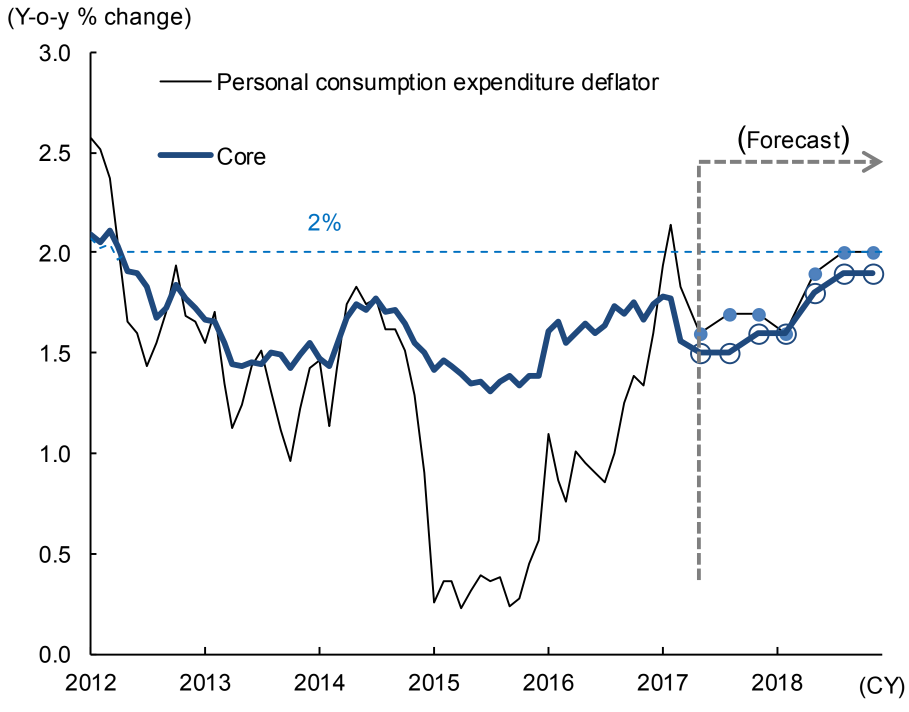
Source: Made by MHRI

(5) Monetary policy – US: continues moderate rate hikes. Partial reduction in reinvestment policy from 2018

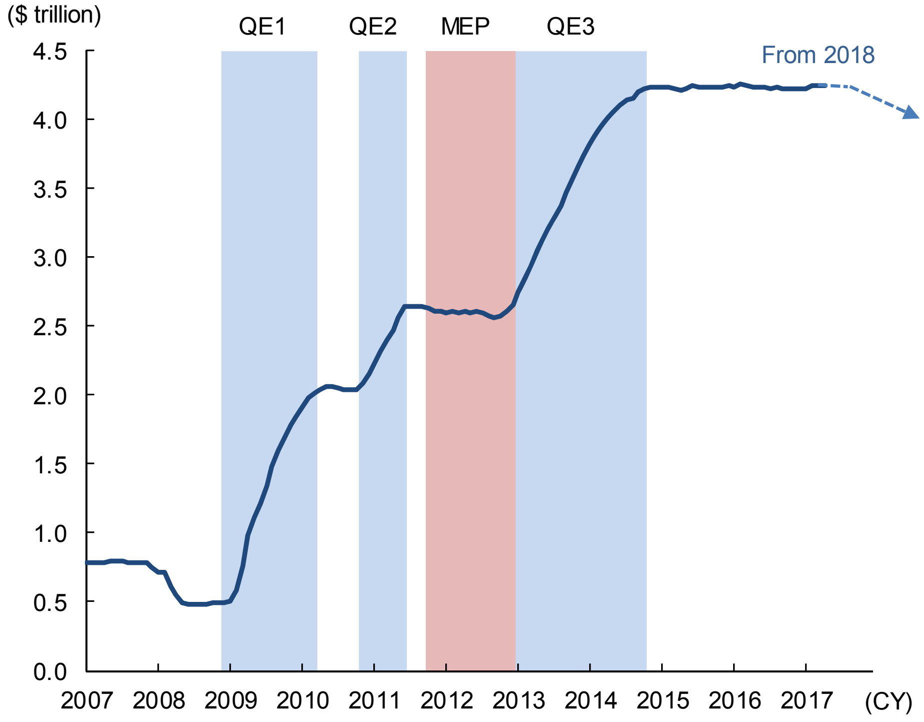
- Wage growth and inflation is moderate despite full employment. We expect the FRB to progressively unwind easing.
  - The May FOMC assessed the slowdown, particularly in consumer spending, in the Jan-Mar quarter of 2017 to be “transitory”. Steady growth in the economy could lead to an interest rate hike in June or September.
  - According to the March FOMC minutes, many FOMC participants support a review of the balance sheet policy at the end of 2017.

[Inflation rate]



Note: Core is rate of increase in the personal consumption deflator excluding energy and food.
Source: Made by MHRI based upon US Department of Commerce

[FRB balance sheet]

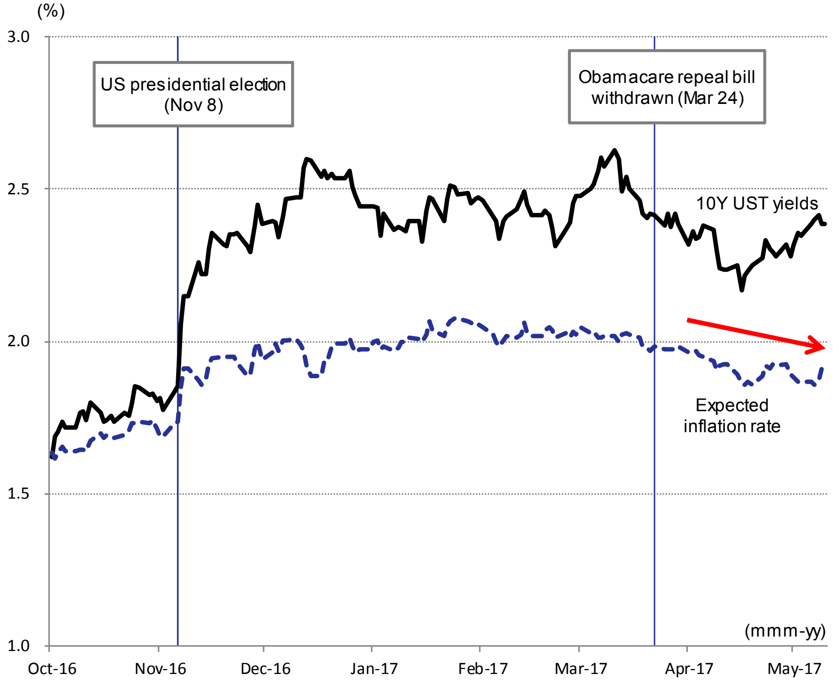


Note: QE is the purchase of UST, MEP is the combination of T-bill sales and long-term UST purchases.
Source: Made by MHRI based upon US Federal Reserve, etc.

US long-term interest rates: anticipate a moderate rise, but waning expectations for the US administration is a risk

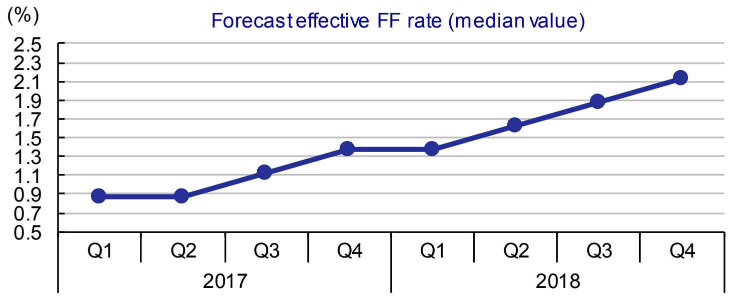
- The expected inflation rate has fallen slightly due to doubts about the feasibility of the Trump administration's policies and recent decline in the inflation rate.
- We expect a gradual rise in 10Y UST yields to high 2% levels in the second half of 2018 due to interest rate hikes and a reduction in reinvestment policies. There is risk that US yields could decline if expectations for the US administration wane due to delay in fiscal policy.
  - Given expectations of a gradual reduction of the reinvestment policy, upward pressure on US long-term yields is limited.
    - ✓ In a Primary Dealer Survey, the majority of respondents forecast a change in reinvestment policy to occur in 2018 or later.

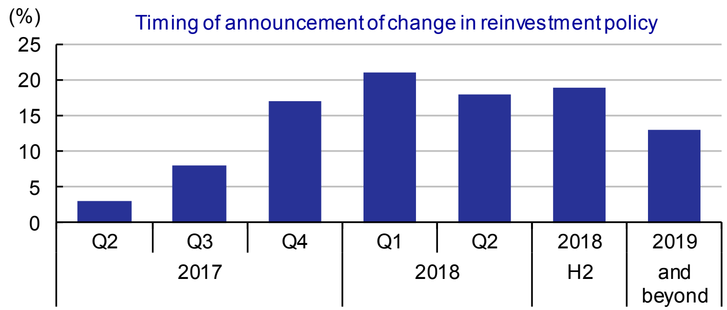
[10Y UST yields and the expected inflation rate]



Note: Expected inflation rate is the break-even inflation rate (10 years).
Source: Made by MHRI based upon Bloomberg, etc.

[Results of Primary Dealer Survey (before March 2017 FOMC)]





Source: Made by MHRI based upon Federal Reserve Bank of New York

ECB: to maintain current monetary policy framework until the end of 2017

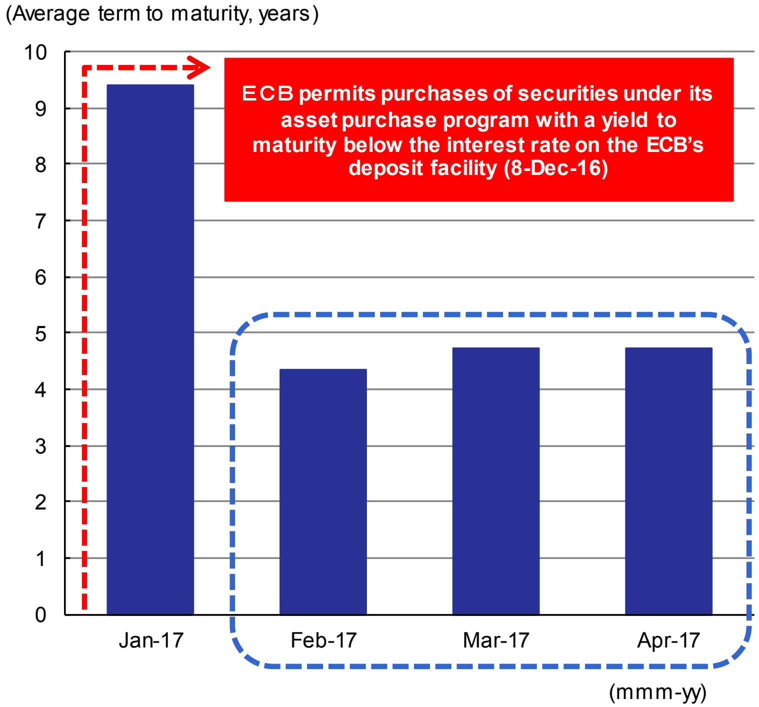
- The ECB will maintain its accommodative monetary policy framework for the rest of 2017, given the sluggish rise of prices, etc.
  - The ECB remains cautious about the outlook for prices. The exit strategy procedure of hiking interest rates after the end of asset purchases has not changed.
- However, the difficulty of maintaining asset purchases in the order of 60 billion euro per month remains difficult for Germany and others.
  - Purchases of short-term government bills appear to have increased in Germany since the ECB approved purchase of bonds at yields below the deposit rate (-0.4%).

[ECB President Draghi's comments to the Dutch parliament]

	Direction	Main comments
Price forecast	Emphasis on cautious stance	Underlying inflation pressures continue to remain subdued and have yet to show a convincing upward trend.
Economic outlook	Upward revision	The cyclical recovery of the euro area economy is becoming increasingly solid and that downside risks have further diminished.
Removing the easing bias in interest rates	Suggestion of change in interest rate guidance	Some of the elements of our forward guidance are meant to address the tail risks of... inflation behaviour (risk of a decline in prices). To the extent that the balance of risk for growth gradually improves, also the probability of these tail risks become less and less
Exit strategy policy procedures	Interest rates will be hiked after the end of the bond buying program	The ECB does not plan to change the rules of its bond buying program

Note: Extracted and abridged by the author. Sections in parentheses added by the author
Source: Made by MHRI based upon ECB

[Average term to maturity in each month for German public bond purchases]

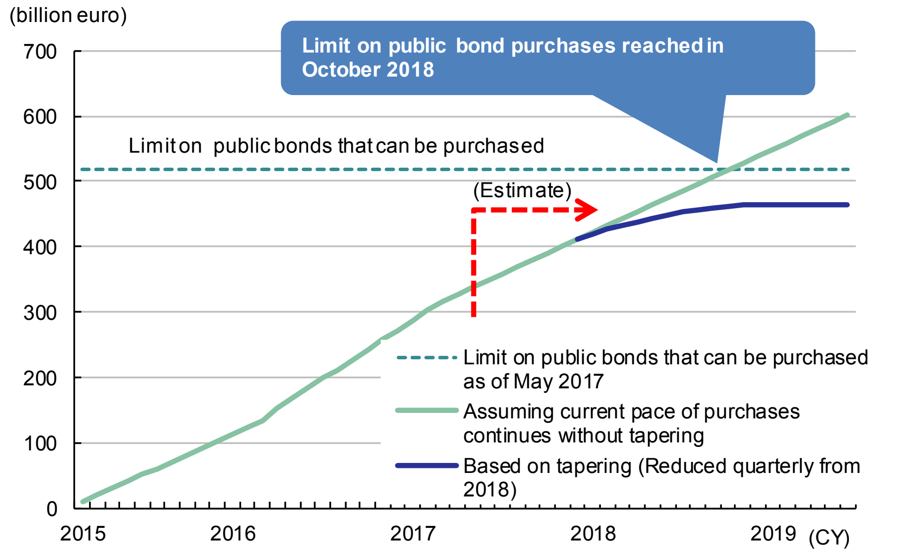


Source: Made by MHRI based upon Bloomberg

ECB: reduction of asset purchases from 2018, with interest rate hike from 2019

- We expect the ECB will reduce its current 60 billion euro in monthly asset purchases to zero during 2018.
  - If the amount is reduced by 10 to 20 billion euro each quarter, the ceiling on the purchase of German public bonds would not be reached.
  - However, the decision on the size of the reduction will also depend on the data, so there is still the risk of delay unless sluggish wages rise.
- We expect interest rate hikes to commence around mid-2019 following the end of the asset purchases. Forward guidance might also be amended during 2017 to allow for interest rate hikes.

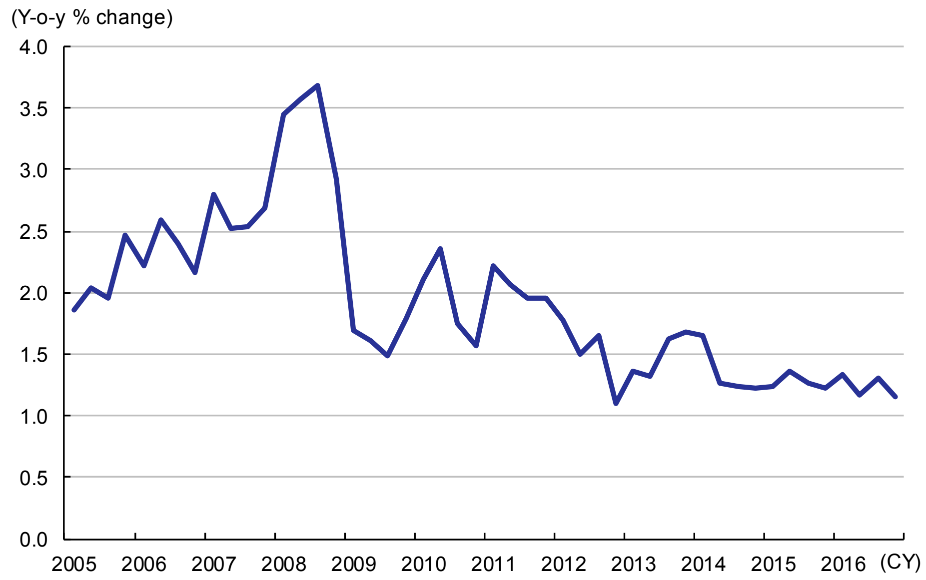
[Calculation of the period which German public bonds can be purchased]



Note: The public bonds refers to German government bonds, state bonds and government institution bonds (KFW, NRWBANK, LBANK, RENTENBANK) with terms to maturity of 1 to 30 years. Calculating the amount of bonds that can be purchased based on the price as of May 1, 2017. In the case of tapering, the amount of bonds that can be purchased is calculated on the assumption that the Public Sector Purchase Programme (PSPP) would be reduced every quarter with the purchase amount reduced to zero by the end of 2018.

Source: Made by MHRI based upon Bloomberg

[Rate of increase in per person employee remuneration in the Eurozone]

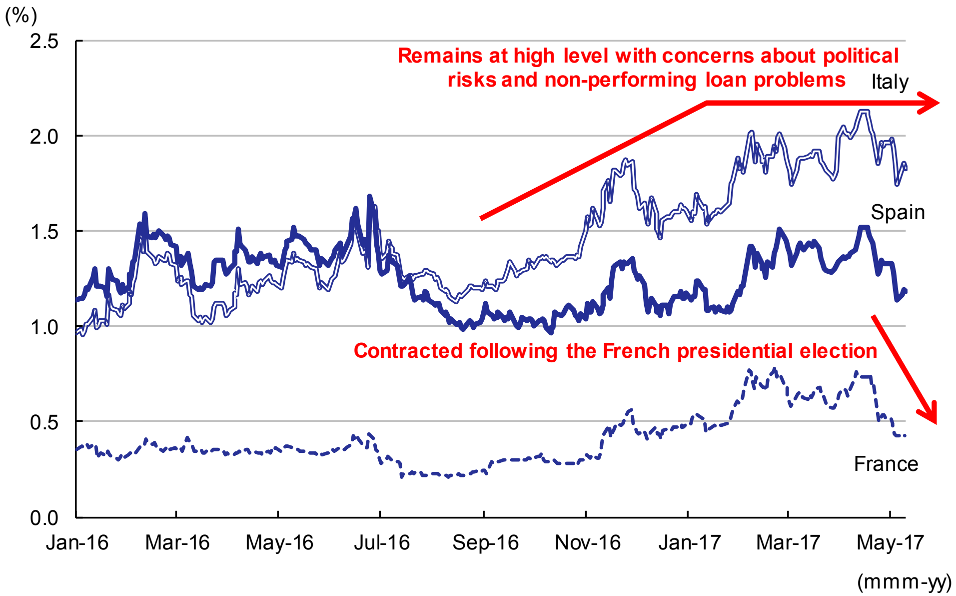


Source: Made by MHRI based upon ECB

European long-term yields: although concerns have eased, conditions remain unfavorable for German yields to rise higher

- ❑ Concerns have eased on the back of the expected outcome for the French presidential election, and the spread between French and German 10Y government bond yields has contracted.
  - ▪ Italian and Spanish government bond spreads against German government bonds have also contracted, yet Italian bond spreads remain high due to concerns about political risk and the non-performing loan problems of banks.
- ❑ Despite a slight easing of concerns regarding European politics, there is still uncertainty. 10Y German government bond yields remain at low 0% levels.
  - ▪ Conditions remain unfavorable for 10Y German government bond yields to rise, given a slight decline of the expected inflation rate and the likelihood that the ECB will maintain its accommodative monetary policy framework.

[Spread between 10Y European and German government bond yields]



Note: 10Y government bond yields of each European country minus 10Y German government bond yields
Source: Made by MHRI based upon Bloomberg, etc.

[10Y German government bond yields and the expected inflation rate]

Note: Expected inflation rate is the 5-year forward 5-year inflation swap forward rate
Source: Made by MHRI based upon Bloomberg

BOJ: policy to remain unchanged. Amending the interest rate target could be considered when interest rates rise

- Monetary policy is to be left unchanged over the near term. The BOJ is focused on overseas conditions and the price trends due to the improvement in the demand and supply gap. The BOJ assessment is that 'momentum' towards the price target is being maintained. However, the timing to achieve the price stability target could be postponed further.
  - Amendment to the target for 10Y JGB yields could be considered in the event of (1) a rise of Japanese yields accompanying the rise of overseas yields, and (2) the decline of financial intermediary functions.
  - The amount of outright purchases will be reduced, particularly in the short-term zone. The 80 trillion yen target will be revised in the second half of 2017.
- 10Y JGB yields are at 0 to 0.1% due to the BOJ's yield curve control policy.

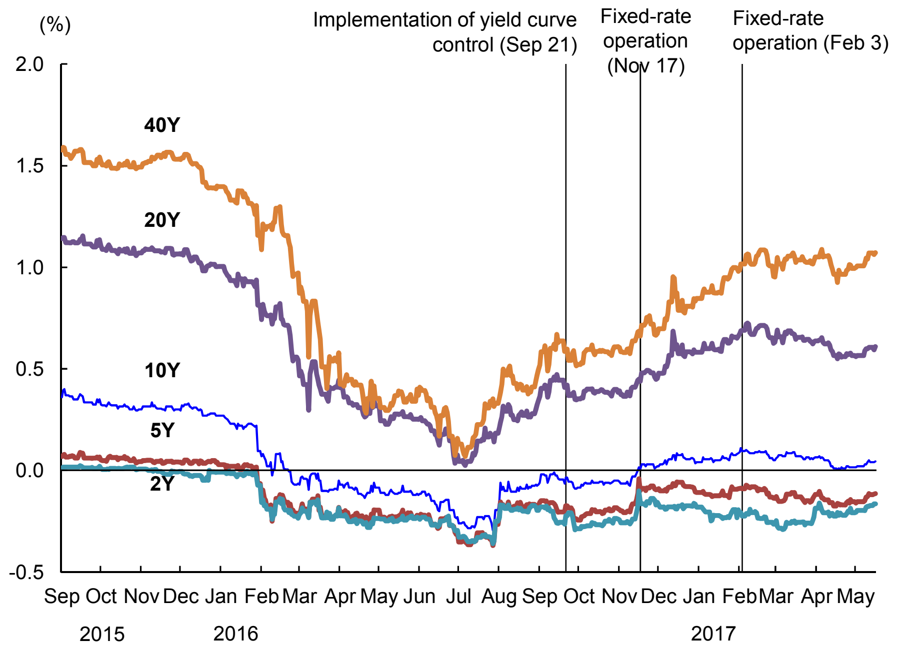
[*Outlook for Economic Activity and Prices* (April 2017)]

(Y-o-y % change)

	Real GDP	GPI (All items ex. Food)	Excluding the impact of consumption tax hikes
FY2016	+1.4 to +1.4 (+1.4)	-0.3	
Forecast made in January 2017	+1.2 to +1.5 (+1.4)	-0.2 to-0.1 (-0.2)	
FY2017	+1.4 to +1.6 (+1.6)	+0.6 to +1.6 (+1.4)	
Forecast made in January 2017	+1.3 to +1.6 (+1.5)	+0.8 to +1.6 (+1.5)	
FY2018	+1.1 to +1.3 (+1.3)	+0.8 to +1.9 (+1.7)	
Forecast made in January 2017	+1.0 to +1.2 (+1.1)	+0.9 to +1.9 (+1.7)	
FY2019	+0.6 to +0.7 (+0.7)	+1.4 to +2.5 (+2.4)	+0.9 to +2.0 (+1.9)

Note: Forecasts of the Majority of Policy Board Members. Figures in parentheses indicate the median of the Policy Board members' forecasts (point estimates)
Source: Made by MHRI based upon Bank of Japan materials

[JGB yields]

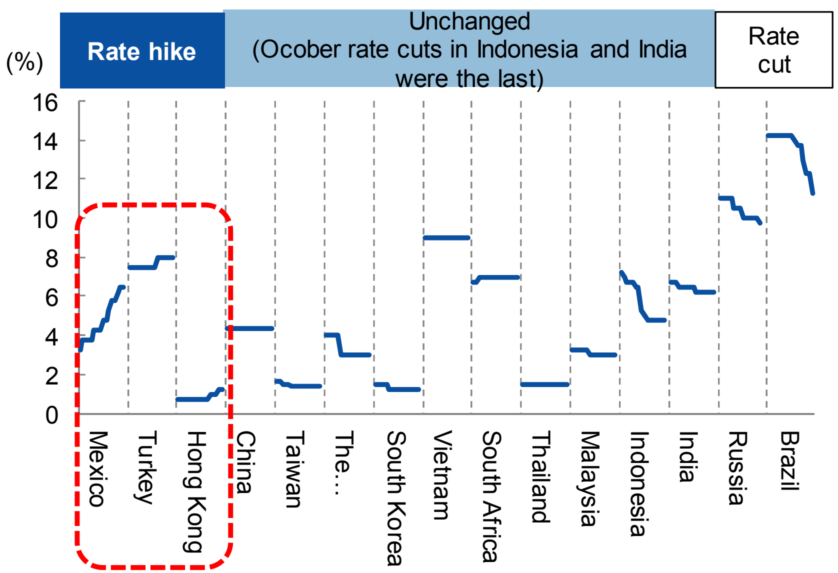


Source: Made by MHRI based upon Bloomberg

Emerging Market Countries: upward pressure on interest rates is intensifying in some countries

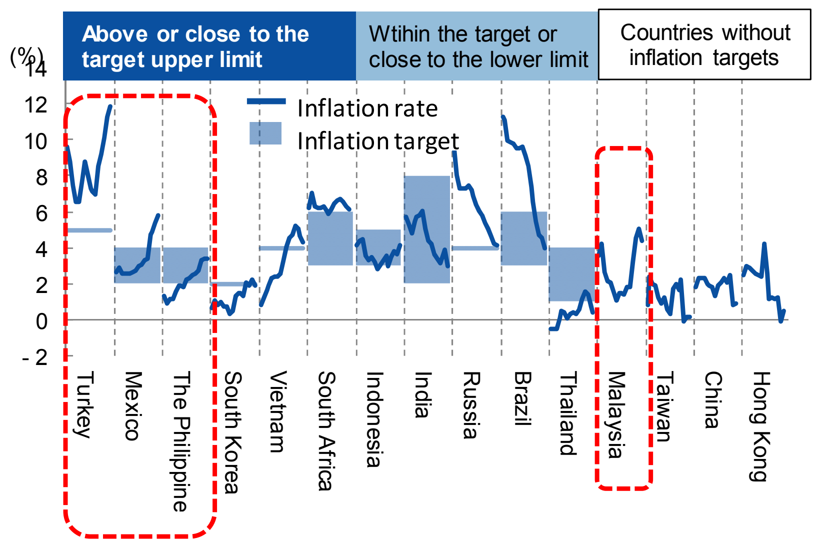
- At present, the US is hiking interest rates, while Mexico, Turkey and Hong Kong are hiking interest rates, Asian countries are generally leaving rates unchanged, and Brazil and Russia are cutting rates.
- Given the price trends, it is becoming increasingly likely that Malaysia and the Philippines could hike interest rates in addition to Mexico and Turkey.
  - There has been upward pressure on prices due to factors such as weak currencies (Mexico, Turkey and Malaysia) and firm domestic demand (the Philippines).
    - ✓ There has also been a pronounced increase in Vietnam's inflation rate. However, this should subside since it is attributed to the rise of education costs and public utilities charges such as medical care.
- Since Hong Kong maintains its dollar peg, interest rates will continue to rise in line with US rate hikes.

[Policy interest rates (January 2016 to April 2017)]



Source: Made by MHRI based upon Bloomberg

[Inflation rate (January 2016 to April 2017)]

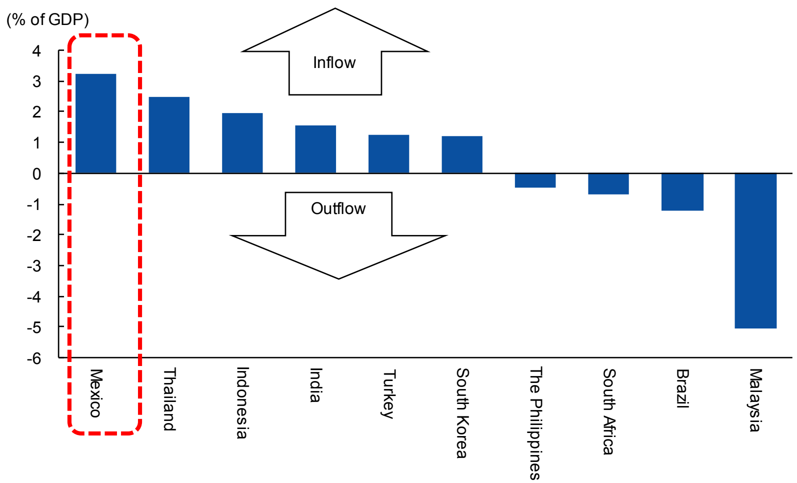


Source: Made by MHRI based upon CEIC

Emerging Market Countries: countries with debt problems are vulnerable to interest rate hikes

- In addition to price trends, Mexico could hike rates in order to defend its currency.
  - Mexico has seen an inflow of funds since the beginning of the year and is susceptible to an outflow of foreign capital triggered by factors such as US interest rate hikes.
- Of those countries which are highly likely to hike interest rates, Hong Kong, Turkey and Malaysia have much higher debt problems than other emerging market countries, and are thus more vulnerable to the rise of interest rates.
  - Hong Kong has noticeable corporate and household debt, Turkey has pronounced corporate debt, and Malaysia has pronounced household debt. The rise of interest rates would have a negative impact on these sectors that are encumbered with debt.
  - China also has a large excessive debt problem, particularly in the corporate sector. Although the possibility of a policy interest rate hike is not imminent, it is a risk factor.

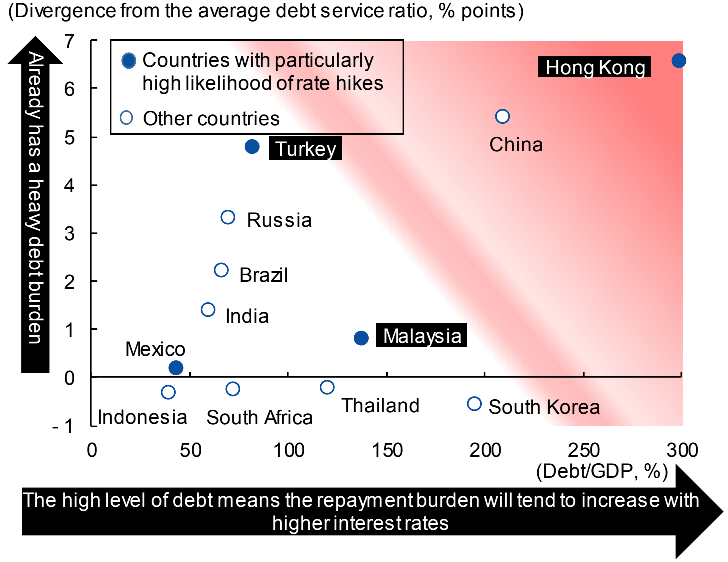
[Capital flows (cumulative since the beginning of 2017)]



Note: Foreign investment in domestic equities and bonds (but only investment in equities for the Philippines and bonds for Malaysia).The cash flows to emerging market countries that had experienced outflows since the US presidential election turned to cash inflows in January 2017 based on available data up until March (annualized).

Source: Made by MHRI based upon IIF and IMF

[Debt repayment burden (as at September 2016)]



Note: The debt service ratio (the ratio of outstanding principal and interest to nominal GDP) refers to private-sector non-financial institutions.

Source: Made by MHRI based upon BIS

II. The Japanese Economy

Economic recovery in FY2017

The Japanese economy: the economy is recovering, reflecting the overseas economic expansion and solid domestic demand

- The *First Preliminary Quarterly Estimates of GDP* (“*1st QE*”) for the Jan-Mar quarter of 2017 revealed that the Japanese economy recorded growth in positive territory for the fifth consecutive quarter for the first time in 11 years. In addition to the continuation of the export recovery, the upturn of personal consumption and factors such as the commencement of construction of the Tokyo Olympic Village served to push up growth.
- The Japanese economy will pick up in FY2017. The recovery of overseas economies, the improvement of the domestic inventory cycle, the rise of capital investment related to the 2020 Tokyo Olympic Games and productivity improvement, and the implementation of public investment accompanying Japan’s economic stimulus measures will serve to push up growth. Even though the rise of energy prices will serve as downward pressures upon personal consumption, the Japanese economy will continue to maintain healthy growth due to the recovery of durable goods consumption and the easing of households’ thrift-consciousness. The pace of economic growth in FY2017 is forecast to rise to +1.5% from the previous fiscal year (+1.3%).
- In FY2018, the Japanese economy will continue to grow above its potential rate of growth due to the steady rise of domestic demand despite a slowdown of external demand. In particular, the improvement of real wages will serve as tailwinds upon personal consumption. In FY2018, the economy is projected to grow +1.3%.
- Despite the alleviation of uncertainties regarding political and economic developments overseas, they still pose significant downside risks. Keep a close eye upon the Trump administration’s policy developments and China’s economic policy management.
- The core inflation rate will rise temporarily to the 1%-level, given a faster year-on-year rise of energy prices. On the other hand, the improvement of the underlying trend in inflation excluding the impact of energy prices will remain mild.

Japan: forecast on growth remains unchanged for FY2017 (+1.5%) and FY2018 (+1.3%)

- We have revised upward our forecast on growth for FY2017 to +1.5% (0.1% point upward revision from March forecast).
  - The upward revision is attributed to factors such as the recovery in overseas economies, improvement in the domestic inventory cycle, increase in investment related to the 2020 Tokyo Olympic Games and productivity improvements, and full-fledged progress in economic stimulus measures. Although the uncertainties about overseas political and economic conditions are easing, they remain high, and present risk of a downturn.
- Forecast growth for FY2018 remains unchanged from our March forecast at +1.3%. Even though external demand will slow down, domestic demand will remain on solid footing.

[Outlook on the Japanese economy]

		2015	2016	2017	2018	2016		2017				2018				2019
		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	1.2	1.3	1.5	1.3	0.2	0.3	0.5	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3
	Q-o-q % ch p.a.	--	--	--	--	1.0	1.4	2.2	1.7	1.1	1.1	1.6	1.4	1.3	1.3	1.3
Domestic demand	Q-o-q % ch	1.1	0.5	1.1	1.3	-0.1	-0.0	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.4
Private sector demand	Q-o-q % ch	1.1	0.8	1.1	1.3	-0.1	0.1	0.5	0.4	0.2	0.2	0.3	0.3	0.4	0.5	0.4
Personal consumption	Q-o-q % ch	0.5	0.6	0.9	1.0	0.4	0.0	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3
Housing investment	Q-o-q % ch	2.8	6.5	-0.3	-2.2	2.7	0.4	0.7	0.1	-0.9	-1.3	-1.6	-0.2	-0.5	0.7	0.2
Capital investment	Q-o-q % ch	0.6	2.3	3.4	2.2	-0.2	1.9	0.2	0.9	1.0	0.8	0.6	0.5	0.4	0.3	0.3
Inventory investment	Q-o-q contribution, % pt	0.4	-0.3	-0.2	0.1	-0.4	-0.2	0.1	0.0	-0.1	-0.1	0.1	-0.0	0.1	0.1	0.1
Public sector demand	Q-o-q % ch	1.2	-0.1	1.1	1.3	-0.1	-0.5	0.1	0.5	0.6	0.4	0.4	0.3	0.3	0.3	0.3
Government consumption	Q-o-q % ch	2.1	0.6	1.0	1.3	0.2	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Public investment	Q-o-q % ch	-1.9	-3.2	2.0	1.6	-1.3	-3.0	-0.1	1.4	1.9	0.8	0.6	0.2	0.3	0.1	-0.0
External demand	Q-o-q contribution, % pt	0.1	0.8	0.4	0.0	0.4	0.4	0.1	0.0	-0.0	0.0	0.1	0.0	-0.0	-0.1	-0.0
Exports	Q-o-q % ch	0.7	3.1	4.9	1.8	1.9	3.4	2.1	0.5	0.4	0.3	0.6	0.5	0.5	0.2	0.2
Imports	Q-o-q % ch	0.2	-1.4	2.6	1.7	-0.2	1.3	1.4	0.5	0.4	0.3	0.2	0.3	0.7	0.9	0.4
GDP (nominal)	Q-o-q % ch	2.7	1.2	1.9	1.9	0.1	0.4	-0.0	1.3	0.4	0.3	-0.3	1.3	0.6	0.4	-0.5
GDP deflator	Y-o-y % ch	1.5	-0.2	0.4	0.5	-0.1	-0.0	-0.8	0.2	0.5	0.4	0.4	0.4	0.6	0.6	0.5
Domestic demand deflator	Y-o-y % ch	0.0	-0.4	0.7	0.6	-0.8	-0.3	0.1	0.5	0.8	0.6	0.8	0.7	0.7	0.5	0.4

Notes: Figures in the shaded areas are forecasts
Source: Made by MHRI based upon Cabinet Office, *Preliminary Quarterly Estimates of GDP*

Japan: even though the core inflation rate will rise temporarily to around 1%, the underlying trend of inflation will likely remain at the 0%-level

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

		2015	2016	2017	2018	2016		2017				2018				2019
		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	-0.9	1.1	4.1	1.7	1.6	1.8	0.2	2.0	0.2	0.6	0.5	0.5	0.4	0.3	0.2
Ordinary profits (Lower line: excludes impact of special factors)	Y-o-y % ch	3.5	6.1 (3.4)	4.1 (6.9)	3.1	11.5 (-5.8)	16.9	9.6	10.5	-4.5 (8.0)	5.2	4.4	3.1	3.2	3.3	2.5
Nominal compensation of employees	Y-o-y % ch	1.5	1.9	1.8	2.3	2.3	2.2	0.8	1.8	1.9	2.0	1.5	2.4	2.3	2.5	2.1
Unemployment rate	%	3.3	3.0	2.9	2.8	3.0	3.1	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8
New housing starts	P.a., 10,000 units	92.1	97.4	93.7	92.7	98.0	95.3	97.5	94.6	94.1	93.5	92.8	91.5	91.6	93.3	94.7
Current account balance	P.a., JPY tril	17.9	20.2	22.0	23.3	19.4	20.6	21.0	22.3	19.6	21.6	23.5	23.0	21.6	23.9	24.0
Domestic corporate goods prices	Y-o-y % ch	-3.3	-2.3	1.9	1.0	-3.8	-2.1	1.0	2.1	2.4	2.0	1.2	1.4	1.3	0.8	0.4
Consumer prices (ex fresh food)	Y-o-y % ch	-0.0	-0.2	0.8	0.7	-0.5	-0.3	0.2	0.5	0.9	1.1	1.0	0.9	0.8	0.6	0.4
Consumer prices (ex fresh food and energy)	Y-o-y % ch	0.9	0.3	0.4	0.5	0.4	0.2	0.1	0.2	0.3	0.5	0.6	0.6	0.6	0.5	0.5
Consumer prices (ex food (ex alcohol) and energy)	Y-o-y % ch	0.5	0.2	0.1	0.3	0.2	0.1	-0.1	-0.2	-0.0	0.1	0.2	0.3	0.4	0.4	0.4
Uncollateralized overnight call rate	%	-0.00	-0.06	-0.05	-0.05	-0.06	-0.06	-0.06	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
Yield on newly-issued 10-yr JGBs	%	0.29	-0.05	0.05	0.05	-0.13	-0.01	0.07	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Nikkei average	JPY	18,841	17,520	20,100	20,900	16,497	17,933	19,241	19,400	19,900	20,400	20,700	21,000	21,300	20,800	20,500
Exchange rate	JPY/USD	120	108	115	117	102	110	114	112	114	116	117	118	118	116	115
Crude oil price (WTI nearest term contract)	USD/bbl	45	48	53	55	45	49	52	50	54	55	55	56	55	54	53

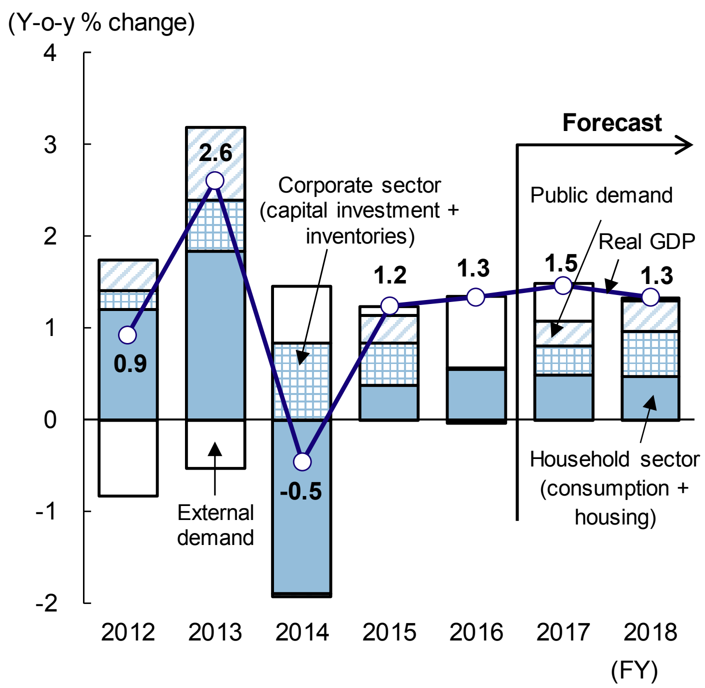
Notes: 1. Figures in the shaded areas are forecasts. The readings above may differ from public releases because the rates of change are calculated by MHRI.
2. Ordinary profits are based upon the *Financial Statements Statistics of Corporations by Industry* (all industries basis) (ex finance & insurance).
3. Quarterly data on the unemployment rate, new housing starts and current account balance are seasonally-adjusted.
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, *Labour 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.

Current state and forecast: Japanese economic recovery in FY2017

- The Japanese economy is forecast to grow +1.5% in FY2017. The economy is recovering on the back of recovery in overseas economies and the progress in executing economic stimulus measures.
  - Although uncertainties regarding overseas political and economic conditions are easing, they remain high, and present risk of a downturn. Focus is gathering on matters such as policy action by the Trump administration and Chinese economic management.
- The economy is forecast to grow +1.3% in FY2018. While external demand is forecast to slow down, domestic demand should remain firm, keeping the rate of growth above its potential rate of growth.

[Decomposition of the rate of growth in real GDP]



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

[Japan: Key points in the economic outlook]

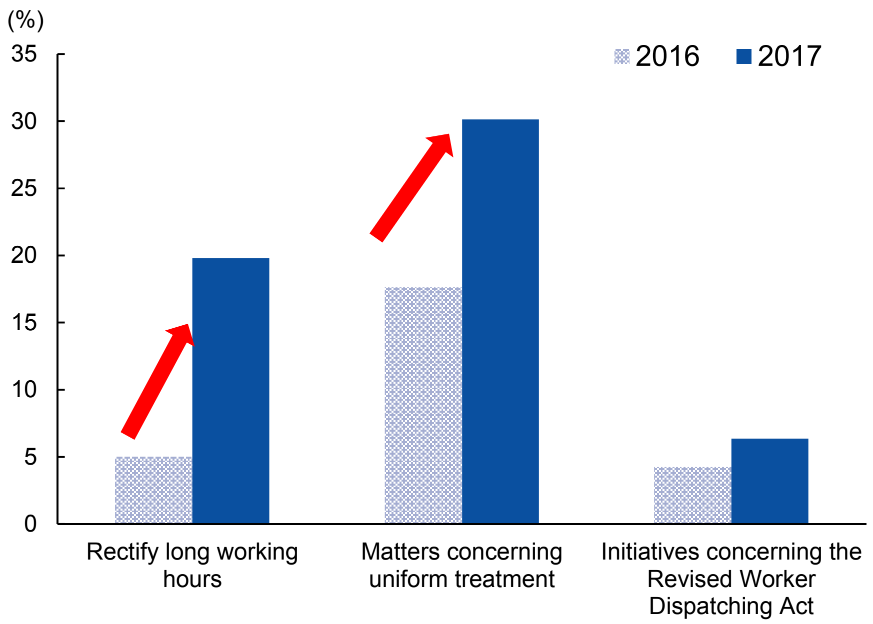
Key points	Overview
How long will the export demand last? (refer to entire overview)	Exports are recovering in FY2017 due to factors such as the Chinese economic recovery and improvement in the IT cycle. Although likely to slow once entering FY2018, the US Trump Administration will implement economic policies, so we expect the moderate recovery in exports to continue.
How will the labor shortage change Japanese corporate behavior?	Japanese companies will face higher labor costs due to factors such as working-style reforms in response to labor shortages. However, it will be hard to pass on increased labor costs to sales prices, so higher labor costs will be addressed by increasing productivity by deploying AI and robots.
How strong is the recovery in personal consumption?	Service consumption and durable goods are recovering, but the recovery in non-durable goods is weak. The rise in energy prices will also weigh on personal consumption in FY2017. However, the improvement in rate of wage hikes due to the previous year's rise of prices and the end of the round of increases in pension premiums will be positive factors in FY2018.
How far will prices rise?	Higher energy prices will push up core CPI in FY2017 H2. Even so, the underlying trend of inflation (ex energy) will be moderate. The boost to CPI from the "rise of prices in spring" will be limited.

Source: Made by MHRI

Labor shortage: the tight labor market is fostering working-style reforms and shift towards regular employment

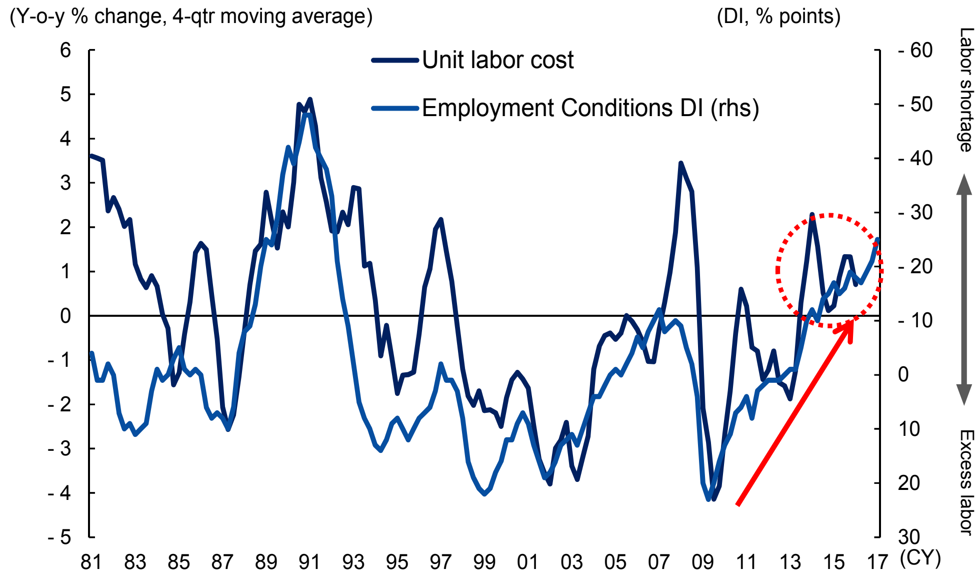
- Progress is being made in working-style reforms and a shift towards regular employment in response to the tight labor market.
  - The March unemployment rate dropped to 2.8% for the first time since June 1994. The March job openings-to-applicants ratio improved to 1.45, the highest level since November 1990.
  - In the 2017 spring wage negotiations, progress was made in working-style reforms such as addressing the long working hours and equal treatment of regular and irregular employees.
- Initiatives such as working-style reforms appear to be putting upward pressure upon companies in terms of labor costs.
  - Unit labor costs (labor cost per unit of production) are also rising along with the growing sense of a labor shortage.

[Corporate initiatives concerning labor conditions]



Source: Made by MHRI based upon Japanese Trade Union Confederation (JTUC-Rengo),, *2017 spring labor offensive and various year round (from September 2016) initiative concerning labor conditions (March 31, 2017)* (in Japanese)

[Unit labor cost and Employment Conditions DI]



Note: Unit labor cost = employee remuneration /real GDP. The chart shows a one year lag in the y-o-y 4-qtr moving average.

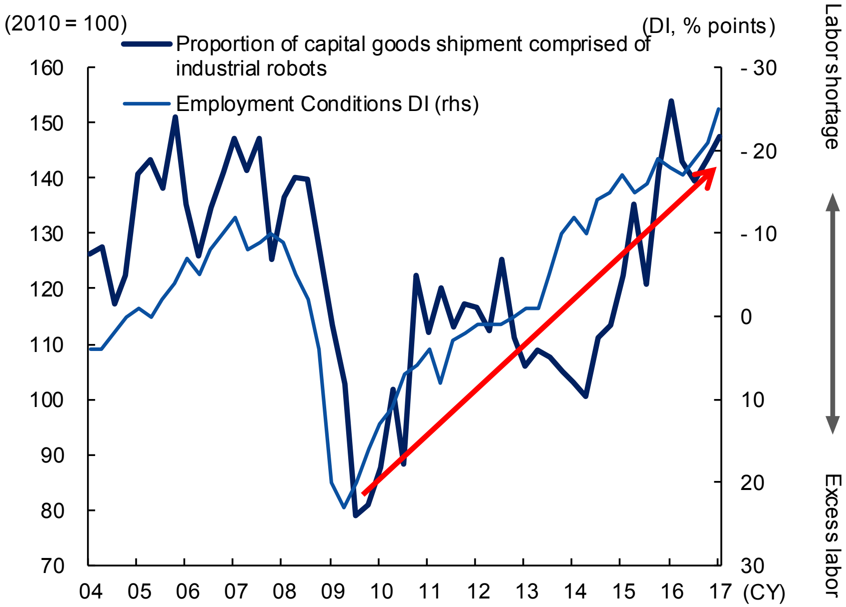
Source: Made by MHRI based upon Cabinet Office, *National Accounts*, BOJ, *Short-Term Economic Survey of Enterprises in Japan (Tankan)*

MIZUHO

Labor shortage: active investment to boost productivity to deal with increased labor costs

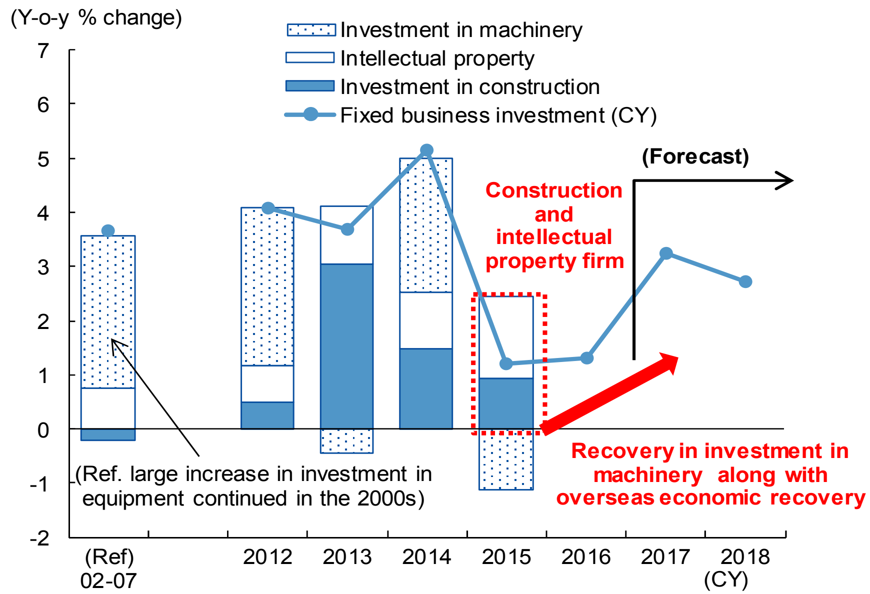
- There is active investment in areas such as automation to boost productivity in order to address the rise of labor costs.
- In addition to strong fixed business investment in FY2017 and FY2018 due to factors such as construction investment related to the 2020 Tokyo Olympic Games and commercial & physical distribution facilities and R&D investment, the recovery of investment in machinery accompanying the recover of exports and the aforementioned investment in automation has contributed to the increase, leading to our view that investment will continue to increase.
  - However, a surge in machinery investment (investment to increase capacity) as witnessed during the period of economic recovery in the 2000s (driven by the Chinese economy) is unlikely.

[Shipment ratio for industrial robots and Employment Conditions DI]



Note: Employment Conditions DI is for all enterprises (all industries).
Source: Made by MHRI based upon Japan Robot Association, *Statistics for the Robot Industry in Japan: orders, production and shipments*, BOJ, *Short-Term Economic Survey of Enterprises in Japan (Tankan)*

[Forecast on fixed business investment (CY base)]

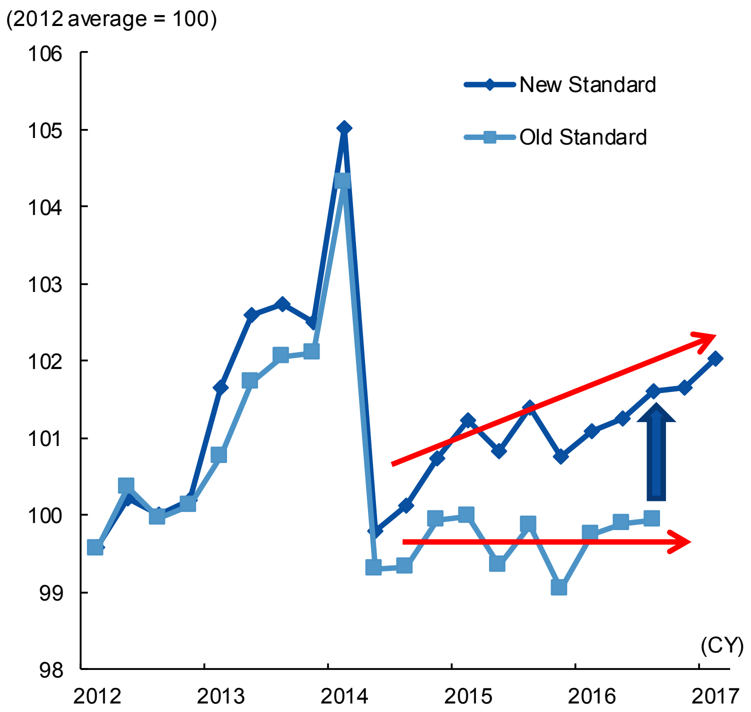


Note: Since the components of fixed business investment are only released on a calendar year base, this chart presents the calendar year base figures. Intellectual property refers to software investment and R&D, etc.
Source: Made by MHRI based upon Cabinet Office, *National Accounts*

Personal consumption: consumer spending is recovering, but some areas remain weak

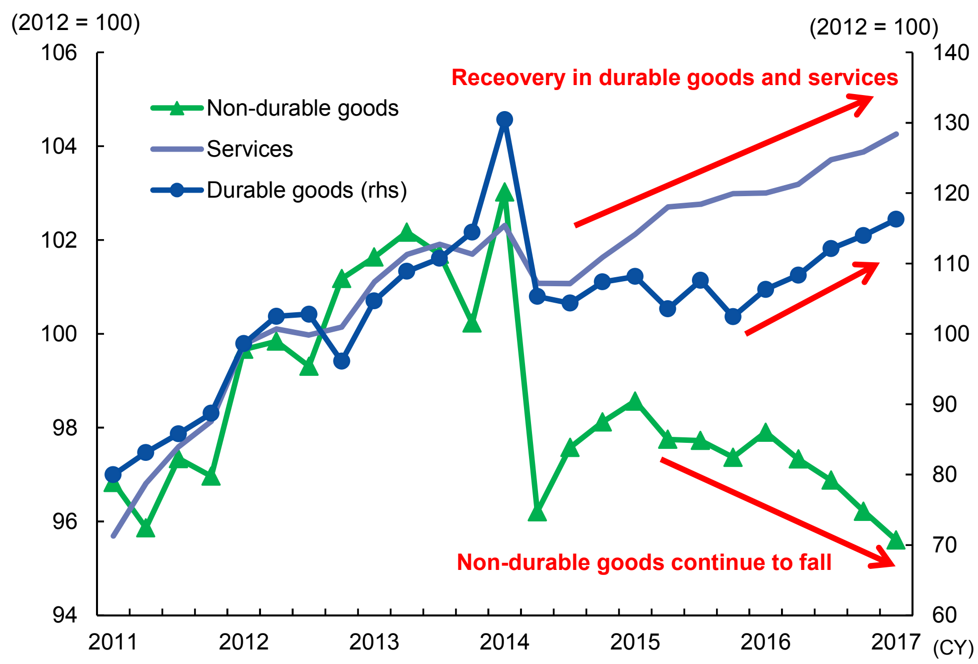
- Personal consumption is recovering, but non-durable goods remain weak.
  - The revision to the standard in the “2008SNA” clearly highlights the recovery in GDP base personal consumption following the increase in consumption tax.
  - By type, consumption of services is firm and consumption of durable goods is also recovering, but consumption of non-durable goods remains weak.

[Personal consumption (GDP base)
(comparison of before and after revision of standard)]



Source: Made by MHRI based upon Cabinet Office, *Quarterly Estimates of GDP (The First Preliminary)*, etc.

[Personal consumption (classified by type)]

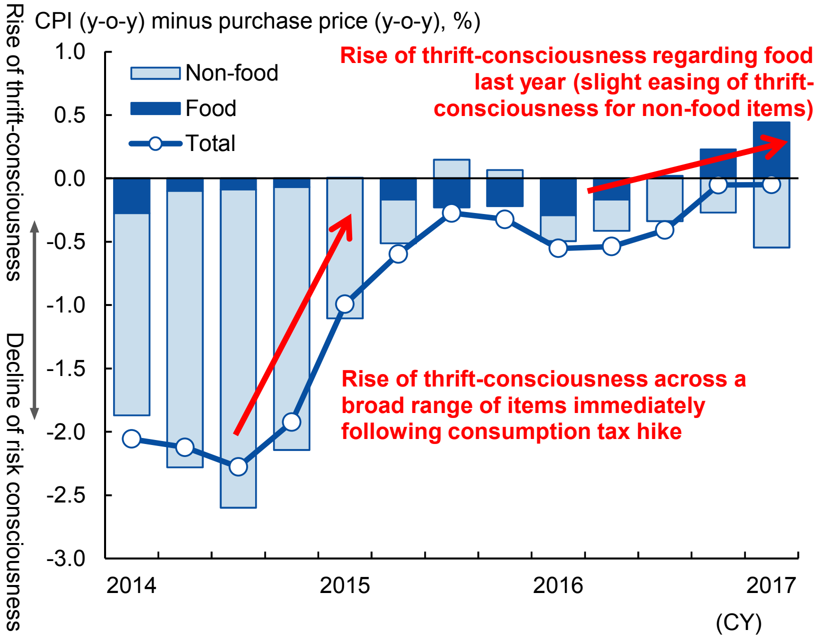


Source: Made by MHRI based upon Cabinet Office, *Quarterly Estimates of GDP (The First Preliminary)*, etc.

Personal consumption: we expect the recovery to continue. However, higher energy prices will weigh on spending

- The slump in consumption of non-durable goods is attributed to the higher price of items such as food caused by the weak yen and bad weather.
  - Immediately following the consumption tax hike, there was a broad rise of thrift-consciousness. Last year, thrift-consciousness rose with respect to food due to the rise of fresh food prices.
- We forecast ongoing recovery in personal consumption in FY2017 and FY2018 due to factors such as the recovery in consumption of durable goods and services and the easing of thrift-consciousness regarding food. However, in the second half of FY2017, higher energy prices will weigh on spending.

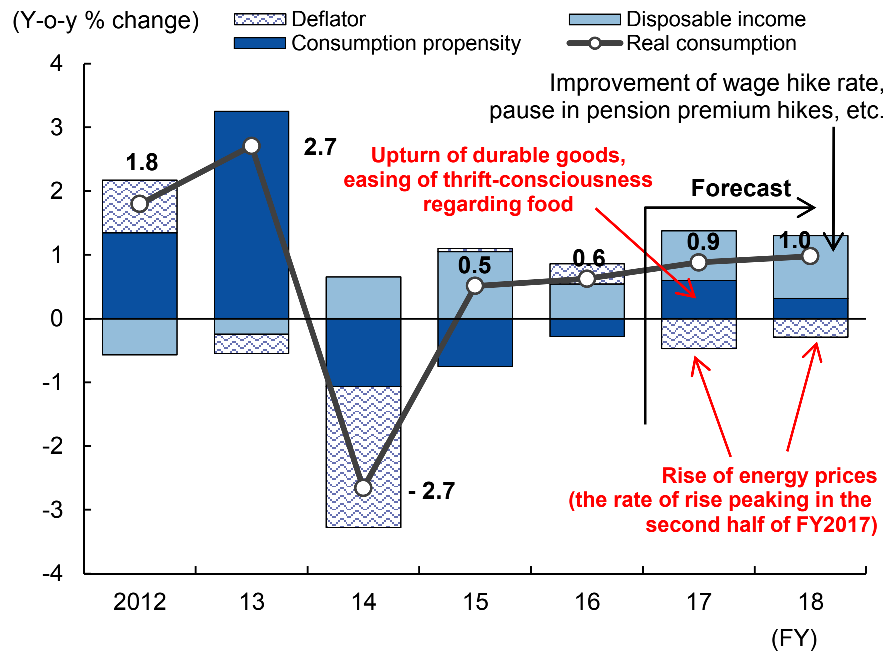
[Thrift-consciousness index]



Note: The thrift-consciousness index is calculated by taking the difference between the CPI (y-o-y) and the purchase price (*Family Income and Expenditure Survey* base) for each item and weighting by each CPI item. Since the larger the figure the more that the actual purchase price is below CPI, it indicates a strong thrift consciousness..

Source: Made by MHRI based upon Ministry of Internal Affaires and Communications, *Consumer Price Index, Family Income and Expenditure Survey*

[Forecast real personal consumption (decomposition analysis)]



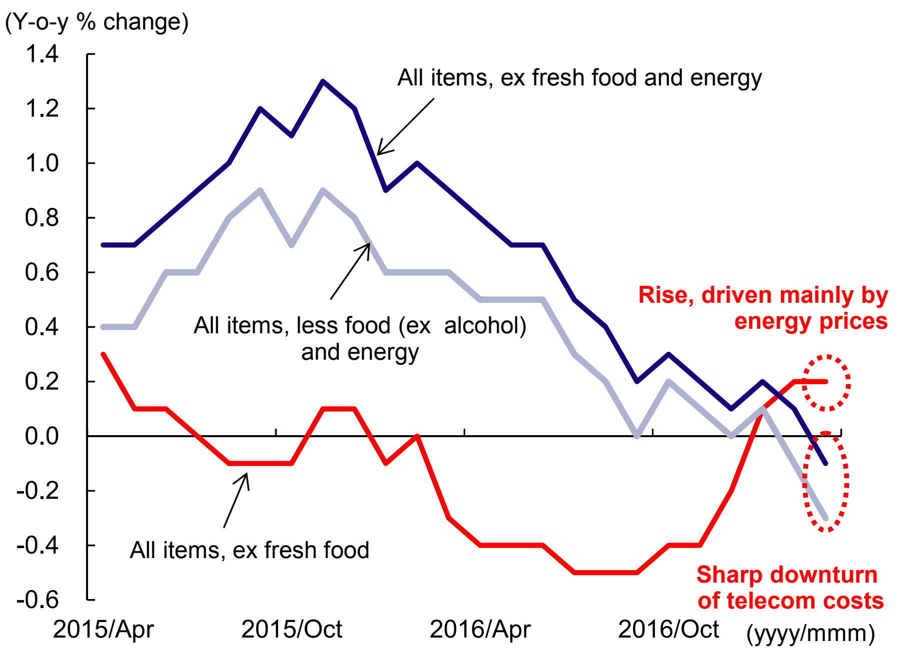
Note: Disposable income and consumption propensity for FY2016 are forecasts

Source: Made by MHRI based upon Cabinet Office, *National Accounts*

Prices: energy prices pushing up core CPI. However, the improvement in prices is moderate

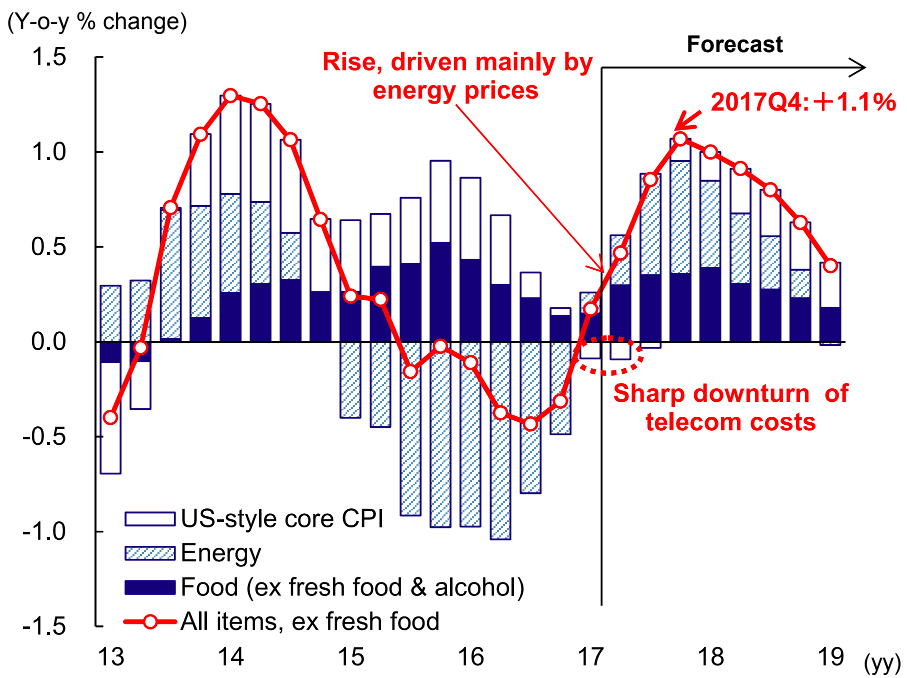
- Core CPI has recently risen, particularly in relation to energy prices. However, US-style core CPI (all items, less food (ex. alcohol) and energy) has fallen due to the decline in communications costs.
- Core CPI will rise to about 1% in late FY2017 due to the rise of energy prices. However, the improvement in US-style core CPI is expected to be moderate.
  - There has been a downward revision from the March forecast. In addition to the impact from the recent decline in communications costs, the downward revision is attributed to the anticipated reduction of oil prices.
    - ✓ Core CPI is forecast to be +0.8% y-o-y in FY2017 (March forecast: +1.1%), and +0.7% y-o-y in FY2018 (March forecast: +1.0%)

[CPI (y-o-y change)]



Source: Made by MHRI based upon Ministry of Internal Affairs and Communications, *Consumer Price Index*

[Core CPI forecast]



Source: Made by MHRI based upon Ministry of Internal Affairs and Communications, *Consumer Price Index*

Prices: the "spring price hike" will have a lagged impact on CPI, but upward pressure will be limited

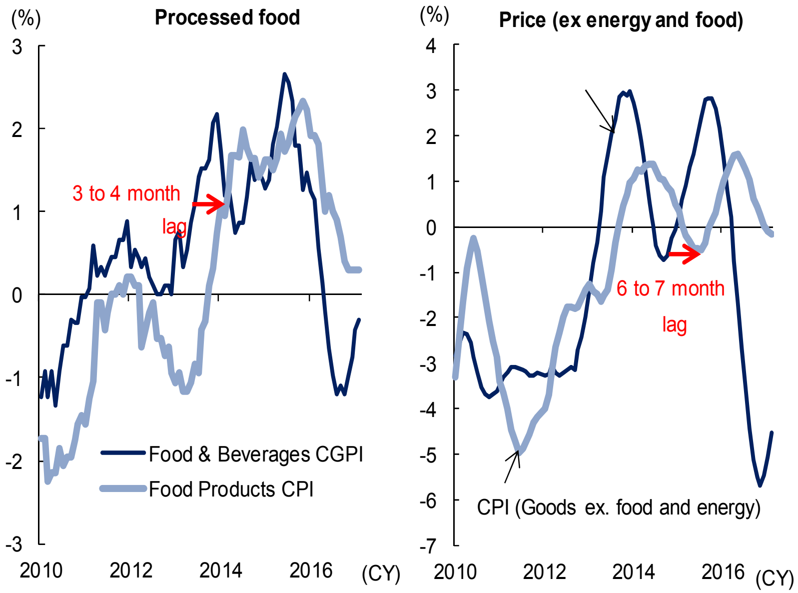
- There were successive reports of price hikes in the spring of 2017. However, the lag for an increase in prices at the wholesale level (corporate goods price) to impact on retail prices (CPI) is about 3 months for processed foods, and about 6 months for other items. In addition, price rises at the retail level will also be curbed by the strong thrift-consciousness of consumers.
  - Furthermore, the 'SRI Hitotsubashi Index' shows the unit price index has increased more than the price index. There has possibly been a "price increase in real terms" due to factors such as capacity reduction.
- The increase in transport costs by major transport companies is estimated to push up core CPI by as much as 0.02% points (direct impact).

[Main products & services subject to price increases]

Basic materials	Iron & steel	Price of steel materials for cars
	Chemicals	Vinyl chloride resin, PP, PE, etc.
	Pulp & paper	Printing paper, corrugated board, paper products for daily use
	Grains	Wheat (government's selling price)
Food	Processed edible oils & fats	Margarine, whipped cream, etc.
	Oil	Cooking oil, olive oil, etc,
	Dairy products	Butter, cheese, etc.
Distribution	-	Postal fees, delivery fees, etc.
Services	Entertainment	Increase in entry fees
Insurance	-	Earthquake insurance, life insurance, etc.
Fuel	Transportation	Reinstatement of fuel surcharge

Source: Made by MHRI based upon media reports and company press releases

[Corporate goods price index and consumer price index (verification of ripple effect lag)]

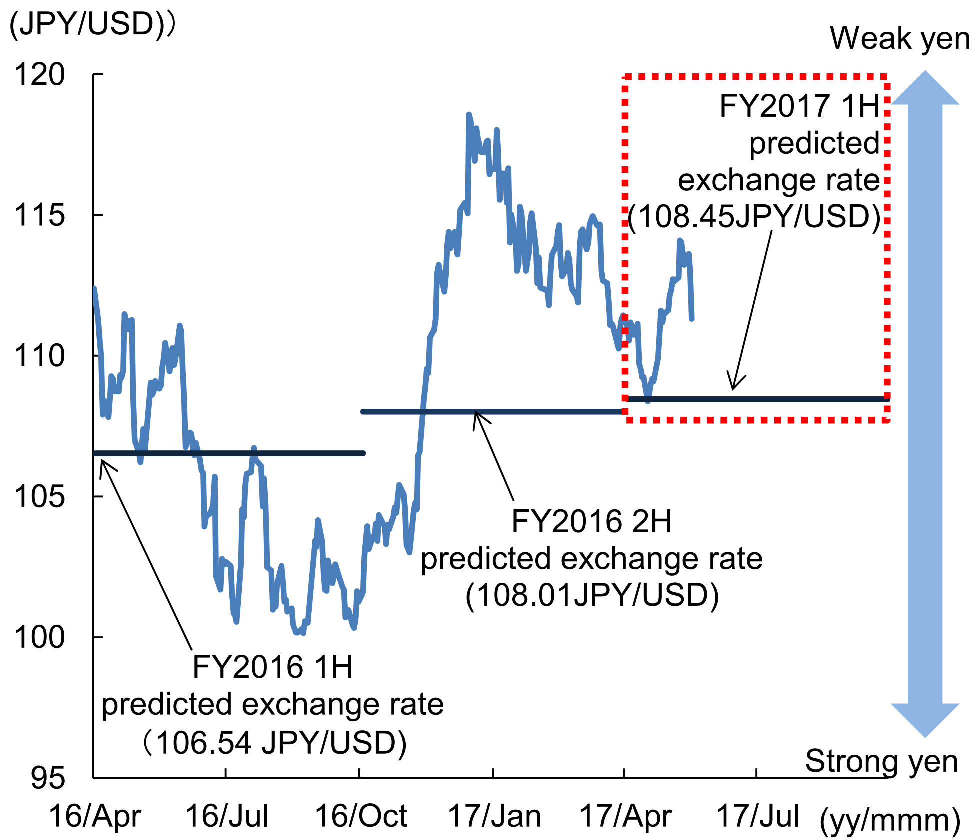


Source: Made by MHRI based upon BOJ, *Corporate Goods Price Index, Consumer Price Index*

Reference: Predicted Foreign Exchange Rates

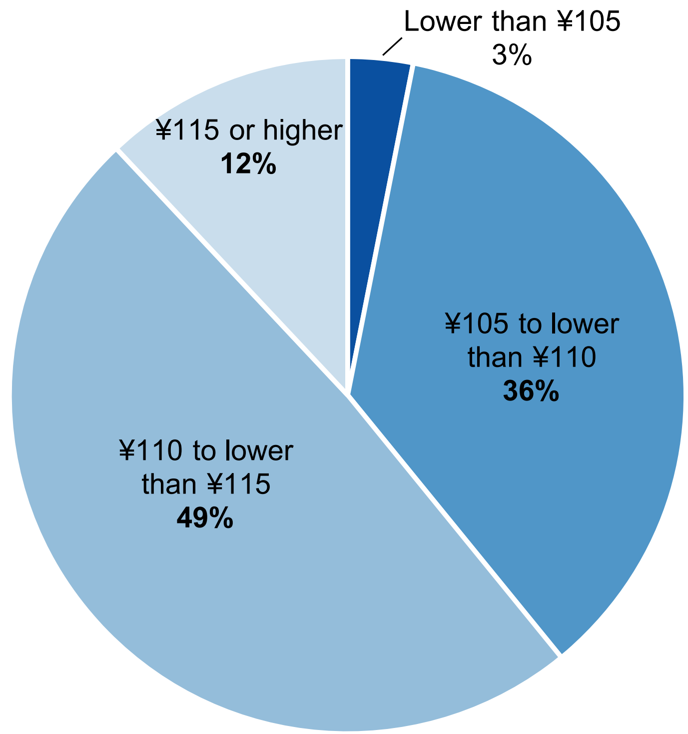
- The yen has recently been weaker than the JPY/USD exchange rate predicted by large manufacturers.

[JPY/USD and predicted exchange rates (manufacturers, large enterprises)]



Source: Made by MHRI based upon releases by the Bank of Japan, Bloomberg

[Predicted exchange rates by proportion of companies (all industries)]



Note: 1. Percentage of predicted currency rates of companies in 2017 and FY2017
2. As of May 12, 2017. Survey of 225 companies
Source: Made by MHRI based upon Nikkei NEEDS

III. The Asian Economies

Growth rate in the overall Asian economies to be flat through 2018

The Asian Economies: growth rate to be flat overall through 2018

- In the Jan-Mar quarter of 2017, China's growth rate stood at +6.9% y-o-y, moderately up from the previous quarter (+6.8%). Despite a decline in investment by manufacturers and real-estate developers, there was positive contribution from net exports, government consumption and infrastructure investment.

- We forecast an ongoing slowdown in housing investment in China due to the impact of measures to curb housing purchases. Investment by the manufacturing sector will also lack strength due to full-fledged adjustment in industries that have excess capacity. Even so, the overall economic decline will be mild, given underpinnings by fiscal spending such as investment in infrastructure.

- Asian economies (ex. China) continued to recover in the Jan-Mar quarter, mainly in regards to exports due to the improvements in the IT cycle and the recovery of the Chinese economy.

- Looking forward, China-bound exports should peak for Asian economic (ex. China). However, the moderate recovery in exports to Europe and the US will likely continue. The recovery in exports for each ASEAN country, which have high capacity utilization rates, will spread to domestic demand such as capital investment. Despite a temporary slowdown in consumption in India due to bad weather, there should be a recovery in 2018.

- We forecast the growth rate for Asia as a whole to be flat overall through 2018 with a moderate decline in China and slight recovery in other countries. However, if the adjustment in housing and capital investment in China does not progress as planned, leading to a sudden tightening, it could serve as a downside risk for Asian economies.

Asia: in China, adjustments in the housing market will serve as downward pressures, while exports to Europe and the US will serve as tailwinds for other countries

- The growth rate for Asian economies is forecast to be flat through 2018.
  - In China, the economy will be subject to adjustment pressures stemming from the housing market and excess capacity. However, the economic slowdown will only be mild, since investment in infrastructure will serve as underpinnings.
  - The NIEs will peak out in exports to China, while their exports to Europe and the US should recover, leading to overall flat growth.
  - In the ASEAN5, the recovery in exports should spread to domestic demand, leading to a gradual acceleration of the economy in 2018.
  - The Indian economy will slow down temporarily in 2017, dragged down mainly by consumption in rural agricultural areas due to the fading impact of the good weather and bumper crops in 2016. However, economic conditions should pick up in 2018.

[Outlook on the Asian economies] (%) (%)

	2014 (Actual)	2015 (Actual)	2016 (Actual)	2017 (Forecast)	2018 (Forecast)	2017 (Previous: March Forecast)	2018 (Previous: March Forecast)
ASIA	6.3	6.2	6.1	6.1	6.1	6.0	6.1
China	7.3	6.9	6.7	6.6	6.4	6.5	6.4
NIEs	3.5	2.0	2.3	2.5	2.5	2.3	2.6
South Korea	3.3	2.8	2.8	2.6	2.8	2.4	2.8
Taiwan	4.0	0.7	1.5	2.3	2.6	2.3	2.6
Hong Kong	2.8	2.4	1.9	2.7	1.4	2.3	1.6
Singapore	3.6	1.9	2.0	2.5	2.5	2.2	2.5
ASEAN5	4.6	4.8	4.9	4.9	5.0	4.9	5.0
Indonesia	5.0	4.9	5.0	5.1	5.2	5.1	5.2
Thailand	0.9	2.9	3.2	3.3	3.1	3.1	3.2
Malaysia	6.0	5.0	4.2	4.3	4.6	4.3	4.6
The Philippines	6.1	6.1	6.9	6.3	6.6	6.4	6.3
Vietnam	6.0	6.7	6.2	6.1	6.4	6.3	6.4
India	6.9	7.5	7.5	7.4	7.5	7.4	7.5
Australia	2.8	2.4	2.4	2.3	2.8	2.3	2.8
(Reference) Asia ex. China and India	4.1	3.7	3.9	4.0	4.1	3.9	4.1
(Reference) Asia ex. China	5.3	5.4	5.5	5.5	5.7	5.5	5.7

Note: 1. Real GDP growth rate (y-o-y) .
2. Average figures are calculated from the 2015 GDP share from the IMF (purchasing power parity base)

Source: Made by MHRI based upon statistics of the relevant countries and regions

Asia: the Asian economies are picking up. Looking forward, exports should recover and spread to domestic demand in the ASEAN countries

- GDP growth rates of the Asian economies generally picked up in the Jan-Mar quarter of 2017.
  - While some countries experienced a slowdown, the Asian economies overall are continuing to follow a recovery trend. Note that Singapore's slowdown stems from a backlash to the surge in inventory investment in the previous quarter.
- Since export orders continue to increase or remain high for all Asian countries, we expect exports to recover for the foreseeable future.
  - In 2018, Asia's exports should continue to follow a mild recovery despite China's economic slowdown because of the recovery of the European and US economies.
  - Amongst major ASEAN countries, countries other than Thailand continue to have a high capacity utilization rate. The recovery of exports is spreading to domestic demand such as capital investment.

[Rate of growth in real GDP (quarterly)]

(Q-o-q % change, annualized)

	2015	2016				2017
	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar
South Korea	2.8	2.0	3.7	1.9	2.0	3.6
Taiwan	0.1	4.8	0.8	4.0	1.8	2.9
Hong Kong	0.4	- 1.2	6.0	3.2	5.0	2.9
Singapore	5.1	- 0.5	0.8	- 0.4	12.3	- 1.9
Thailand	2.8	3.9	4.3	1.7	2.1	5.2
Malaysia	5.0	4.2	2.7	5.8	5.7	N.A.
The Philippines	8.5	5.6	7.9	6.0	7.3	4.3
						(Y-o-y % change)
China	6.8	6.7	6.7	6.7	6.8	6.9
Indonesia	5.2	4.9	5.2	5.0	4.9	5.0
Vietnam	7.0	5.5	5.8	6.6	6.7	5.1
India	6.9	8.6	7.2	7.4	7.0	N.A.

Source: Made by MHRI based upon each country's and region's statistics, and CEIC Data

[Capacity utilization rate index (Since Jan-Mar 2009 quarter)]

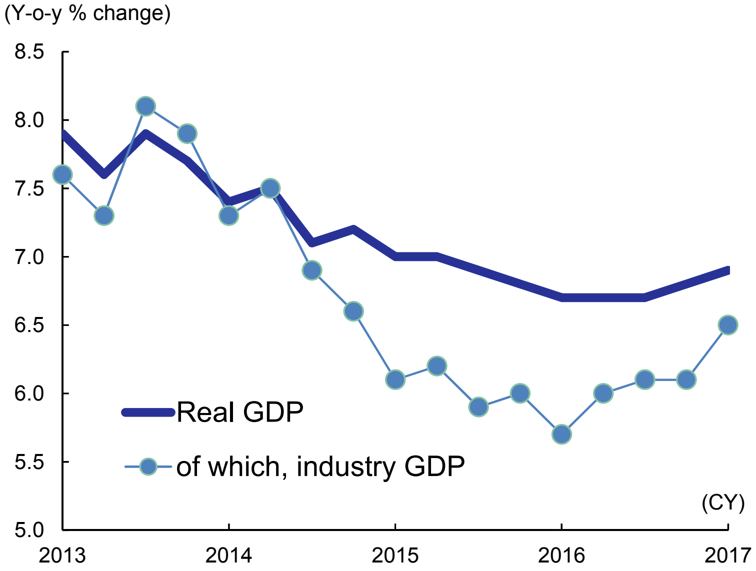
Country	Capacity utilization rate index	Recent assessment
The Philippines		High level
Indonesia		〃
Malaysia		Sharp recovery
India		Sluggish
South Korea		〃
Thailand		〃

Note: Quarterly data, 4-qtr moving average. Thailand shows the period since the Oct-Dec quarter of 2011. Only India shows the real utilization rate.
Source: Made by MHRI based upon each country's statistics and CEIC Data

China: economic growth will gradually decline due to factors such as the ongoing slump in housing investment

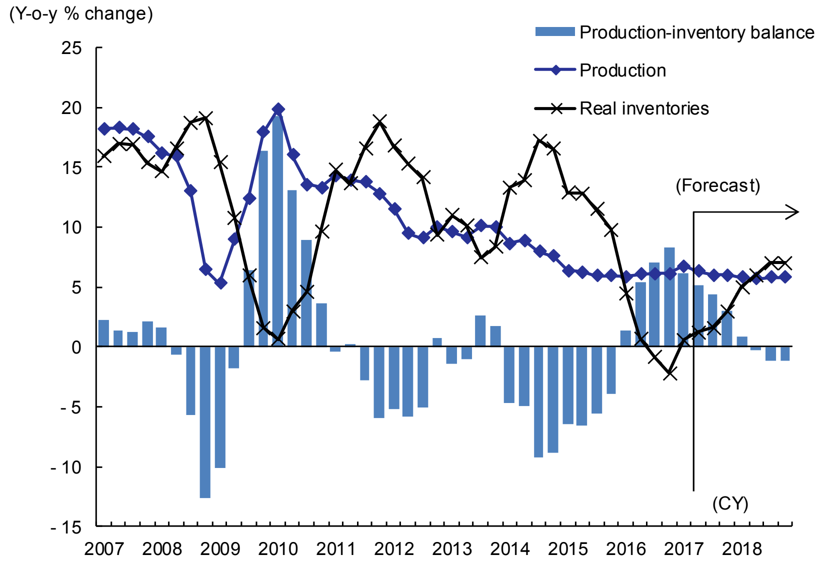
- China's economic growth rose in the Jan-Mar quarter of 2017 due to improvement in the industrial sector.
  - While real estate investment slowed, it appears that the recovery of demand for construction equipment for infrastructure investment and the recovery of exports served as a positive contribution to economic growth.
- Looking forward, China's economic growth rate should gradually fall due to a slowdown in investment stemming from a slump in real estate investment and lower growth in infrastructure investment.
  - Although investment by manufacturers will recover, particularly in relation to IT, the pace of recovery should be sluggish due to progress in adjustment among sectors with excess capacity.
  - We expect a gradual contraction in the positive production-inventory balance, as well as a slump in import growth.

[Rate of growth in real GDP]



Source: Made by MHRI based upon National Bureau of Statistics China

[Forecast production-inventory balance]



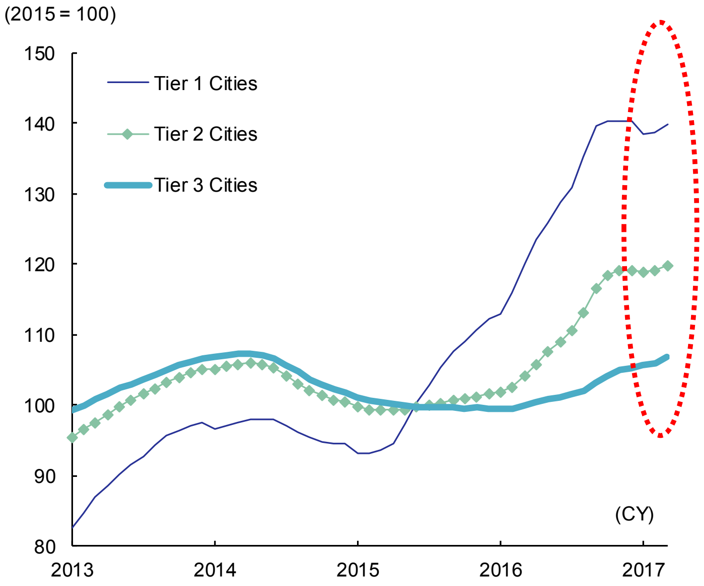
Note: The production – inventory balance = production (y-o-y) minus inventory (y-o-y). Inventory is made real using PPI

Source: Made by MHRI based upon National Bureau of Statistics China

China: real estate investment is sluggish because of stronger regulation on housing investment

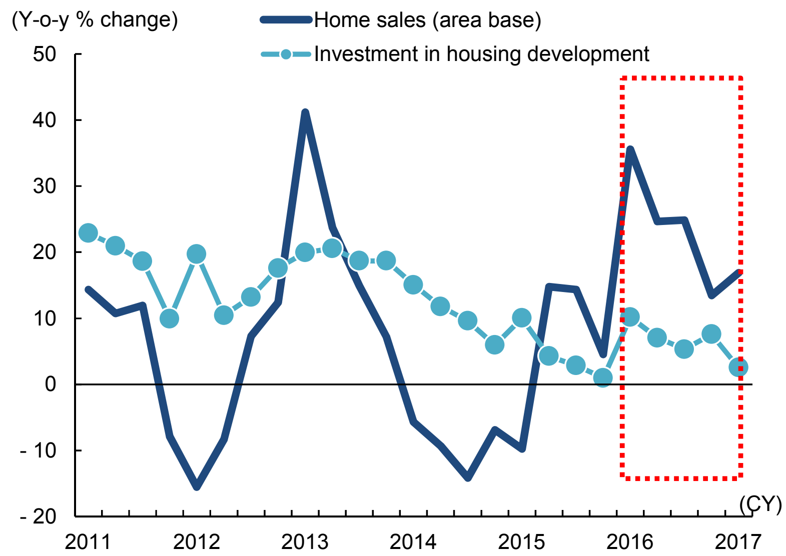
- Regulations on housing purchases were once again strengthened in many cities during March and April 2017 due to the renewed rise in housing prices.
  - Although many cities strengthened regulation on housing purchases from the end of September 2016, the regulatory impact was insufficient with housing prices once again rising from the beginning of 2017 in Tier 1 and Tier 2 cities, which had previously been stable. Consequently, many cities once again tightened regulations in March and April 2017.
    - ✓ Housing prices in Tier 3 cities have risen moderately since regulations were strengthened in 2016, but the level is slightly below the peak recorded in 2014.
  - Housing related investment is also slowing due to the slump in housing sales, and we expect the slowdown to continue due to measures to constrain housing investment.

[New housing price index]



Note: Published value for 2016. Before 2015 and from 2017, calculated using the published y-o-y value.
Source: Made by MHRI based upon National Bureau of Statistics China

[Investment in housing development (real) and home sales (area base)]

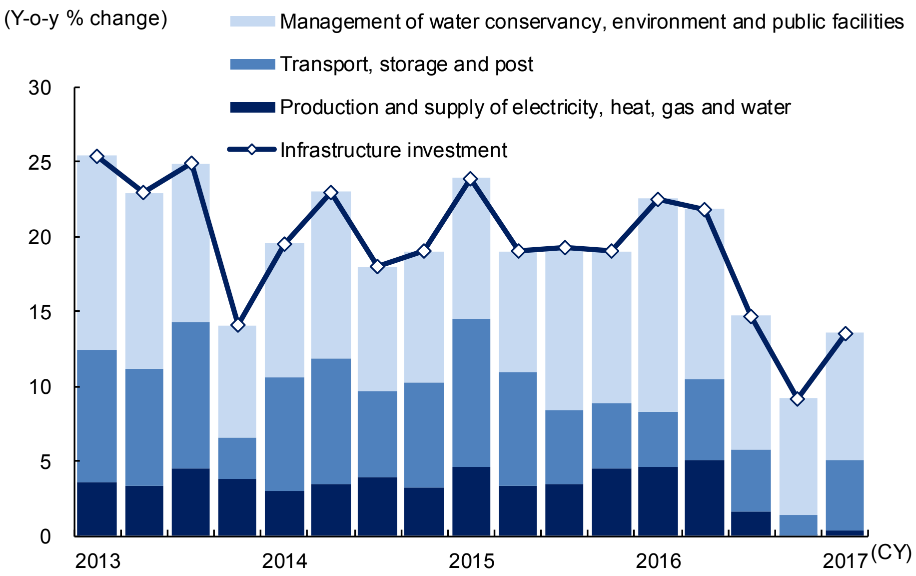


Note: Investment in housing development is made real using the fixed asset investment price index (construction)
Source: Made by MHRI based upon National Bureau of Statistics China

China: infrastructure investment will continue to underpin the economy, but the future impact will wane slightly

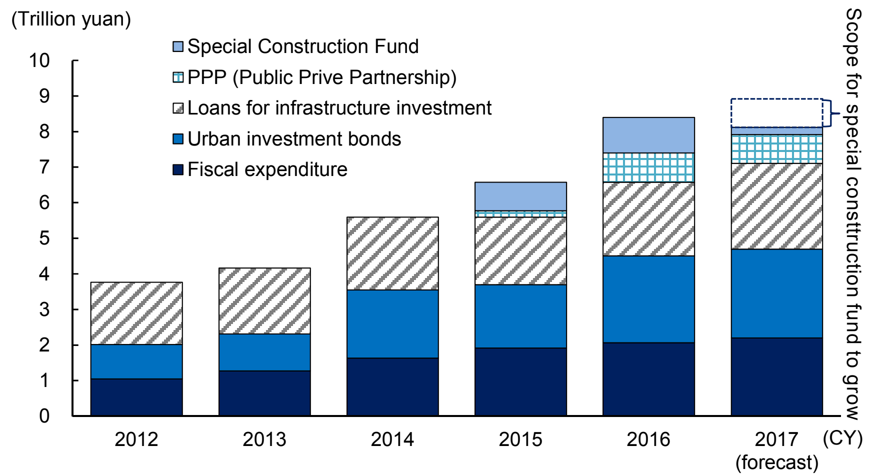
- Infrastructure investment temporarily fell in late 2016, but recovered in the Jan-Mar quarter of 2017, particularly in the transport sector.
  - Progress in implementing approved projects around mid-2016 and the increase in fiscal spending appear to have contributed.
- Non-fiscal funding should contract slightly in 2017, and the support to the economy provided by infrastructure investment will wane slightly.
  - However, there is scope to use funds raised in 2016 and scope to secure funds from the Special Construction Fund that has been increased by the National Development and Reform Commission.
  - It is important to be aware of the risk that the pace of funding could be delayed due to factors such as bond market fluctuations.

[Infrastructure investment (decomposition by industry)]



Note: Made real using the fixed asset investment price index
Source: Made by MHRI based upon National Bureau of Statistics China

[Amount of funds raised for infrastructure investment]



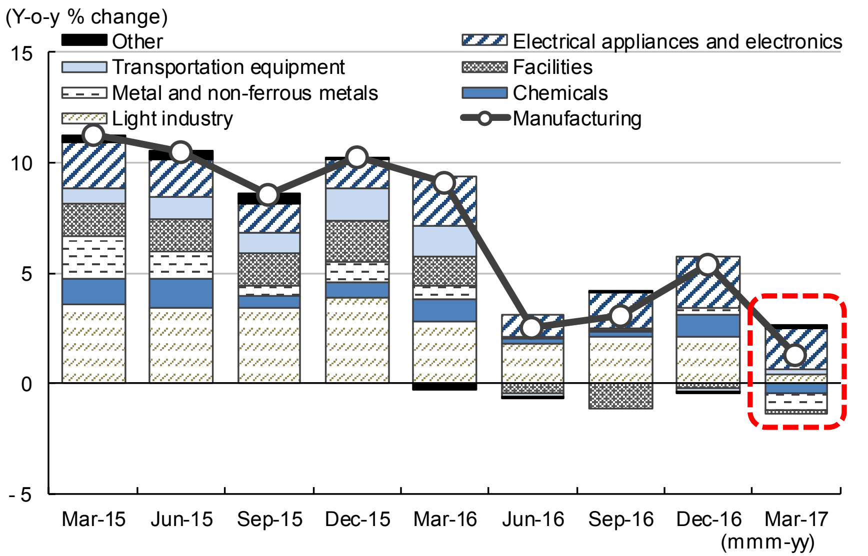
Note: 1. "Urban investment bonds" are bonds issued by Chinese local government financing vehicles. The forecast are those of economist Ren Zeping.
2. The "Special Construction Fund" is a fund established in 2015 by the National Development and Reform Commission ("NDRC"). Only approved projects in 2017. Forecasting expenditure to be the same as last year (1 trillion yuan), we have calculated scope for an increase.

Source: Made by MHRI based upon Ministry of Finance of the People' Republic of China, National Bureau of Statistics China, the People's Bank of China, Wind, Ren Zeping, Following regional land exchange, infrastructure investment committee not expected to say no (China Business Web, March 9, 2017) (in Chinese)

China: investment in the manufacturing sector should recover due to improved profits, but it will lack strength

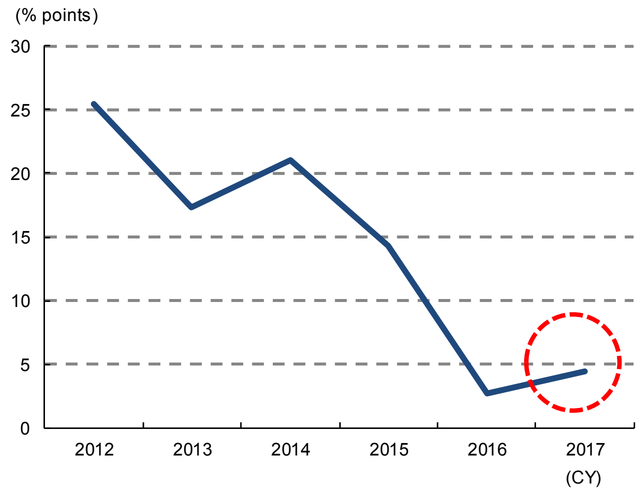
- Real growth in manufacturing investment slowed at the beginning of 2017.
  - While investment in communications equipment, etc. has been strong due to the turnaround in the IT cycle, investment has fallen because of adjustments in excess capacity in sectors such as metals and non-ferrous metals.
- Despite expectations of a recovery in the Apr-Jun quarter of 2017 due to improved profits and rebound from last year's sharp slowdown, we do not expect the recovery to be strong.
  - The improvement in IT-related profits will continue reflecting the recovery of exports. Corporate sentiment towards fixed business investment will also rise.
  - However, cuts to excess capacity in areas such as iron & steel, coal and cement and ongoing deleveraging will constrain expansion of supply capacity.

[Investment in fixed assets by manufacturers]



Note: Made real using the fixed asset investment price index
Source: Made by MHRI based upon National Bureau of Statistics China, CEIC Data

[Investment plan DI (Survey of entrepreneurs]



Note: Ratio of companies that responded 'increase' minus the ratio of companies that responded 'decrease'. The survey was conducted from the summer of 2016. For 2017, the survey was conducted in August to October 2016.
Source: Made by MHRI based *upon Survey of Chinese business operators and entrepreneurs business conditions* (2015, 2016) (in Chinese)

(Reference) Key political events

	2017		2018	
US	Oct	Start of FY2018	Feb	FRB Chair Yellen's term of office ends
	Around Oct - Nov	The Treasury Department will run out of measures to avoid a government default, leading to a resurgence of a debt ceiling crisis	Nov	Mid-term election
Europe	Jun	France: Legislative election	1H	Italy: General election (may be accelerated to 2017)
	Jun	UK: General election		
	Sep	Germany: Legistlative election		
Japan			Apr	BOJ Governor Kuroda's term of office ends
			Sep	LDP Presidential election
			Around Dec	Lower House members' term of office end
Asia	Autumn	China: 19th National Congress of the Communist Party of China	By May	Malaysia: Legislative election
			Autumn	China: 3rd Plenary Session of the CPC Central Committee
			By year end	India: Upper house election
			By year end	Thailand: General election
Others	May	G7 Summit (Italy, Sicily)	Mar	Russia: Presidential election
	Jul	G20 Summit (Germany, Hamburg)	Jul	Mexico: Presidential election
			Oct	Brazil: Presidential election

Source: Made by MHRI