# The Latest Research on Business Cycles and Monetary Policy and Implications for Macroeconomic Prospects of Europe

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# Ⅰ. Cyclical Position of Japanese Economy

1. The last short recession started in March 2012 and ended in November 2012, just before the announcement of Abenomics.

- Shinzo Abe was nominated as Prime Minister in December 2012 and had a happy start from the cyclical point of view.
- The recession came one year after the Fukushima accident in March 2011 which temporarily interrupted the recovery process after the Global Financial Crisis.

# Ⅰ. Cyclical Position of Japanese Economy

2. The expansionary impact arising from fiscal stimulus in FY2012 and FY2013 (the second arrow) combined with QQE (the first arrow) sharply raised growth rate (2.1%) in FY 2013.

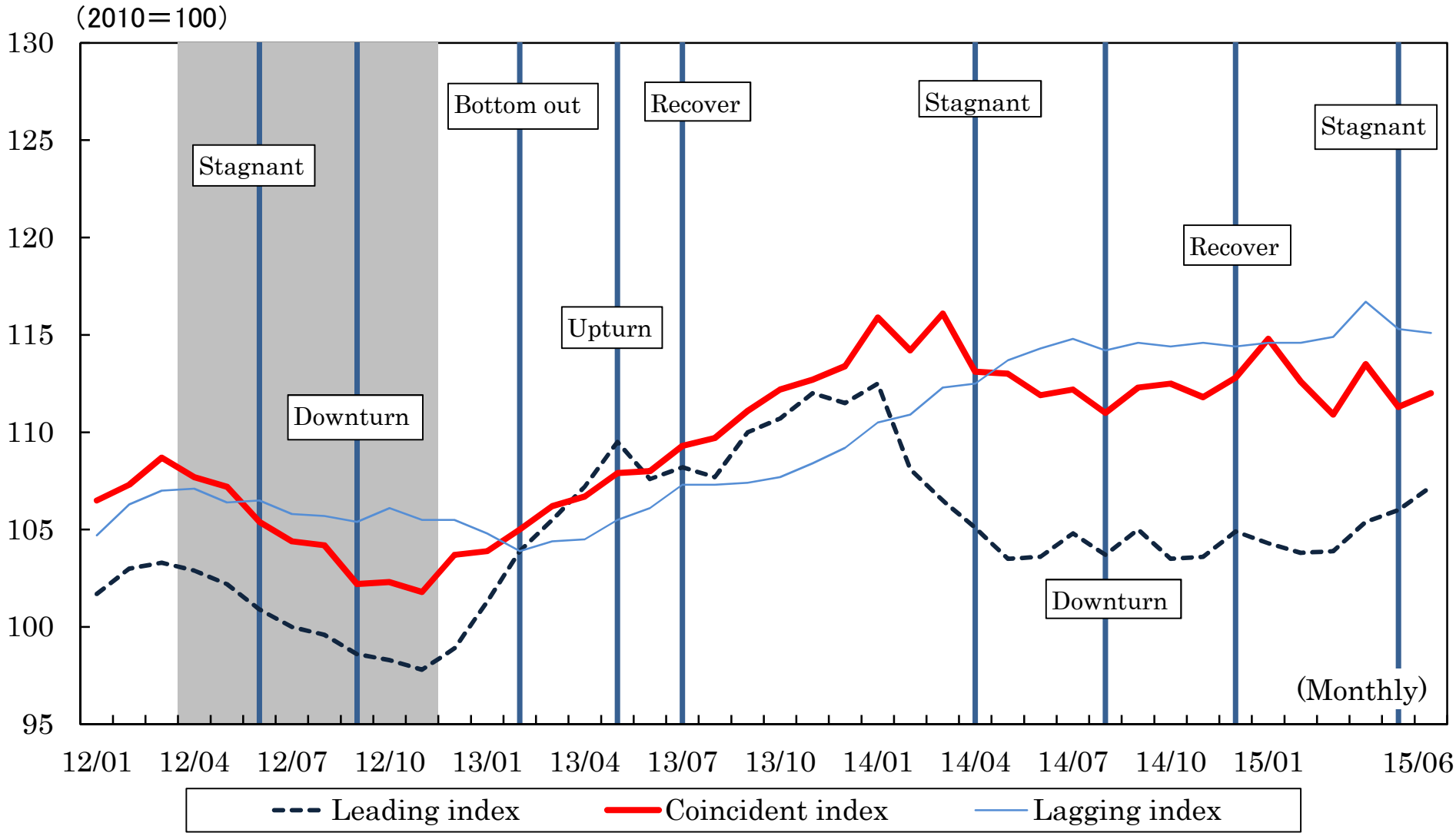
- Business and household sector anticipated the consumption tax rate hike in April 2014 and front-loaded their expenditure.
- The coincident index of business cycle peaked out in March 2014.

# Ⅰ. Cyclical Position of Japanese Economy

3. The growth rate was down to minus 0.9% in FY2014.

- The negative impact of consumption tax rate hike was much stronger than anticipated by market participants.
- There is uncertainty whether the Japanese economy bottomed out in summer from the peak in January 2015, because it entered the stagnant phase in May 2015, according to the coincident indicator.
- On the other hand, both the leading indicator and the GDI including the terms of trade gains/loss points to a continued recovery path.

# Fig.1 Business Indicators




(Note) The shaded areas mark the period of recessions.
(Source) Cabinet Office“Indexes of Business Conditions”

# Ⅰ. Cyclical Position of Japanese Economy

4. Japanese economy has paused in the second quarter 2015, due to sharp decline of exports (minus 4.4% over the previous quarter) and weak consumer spending(minus 0.8%).

- Shrinking world trade (volume) combined with smaller income elasticity to trade after the Lehman shock adversely affected Japan's exports, in addition to the smaller response of exports to sizable depreciation of yen rate.

# Ⅰ. Cyclical Position of Japanese Economy

- The level of real GDP corresponded to that in the period when the QQE started, while real consumption remained at the level in the period before the start of Abenomics, although Abenomics succeeded in swelling asset prices and tightening labor market conditions.
- As a result, GDP gap remained unchanged (about 2%), partly due to the consumption rate hike from 5% to 8%, while the labor shortage became more serious in the construction/elderly care sector and IT skilled workers.

# Ⅰ. Cyclical Position of Japanese Economy

5. Weak nominal/real wage pulled down consumer spending, despite the recent improvement of the terms of trade and the low unemployment rate close to full employment level (3.3%).

- Higher food prices arising from yen depreciation eroded the real income of low class household .

6. The JCER forecast envisages 1.1% and 1.6% GDP growth rate in FY2015 and FY 2016 respectively.

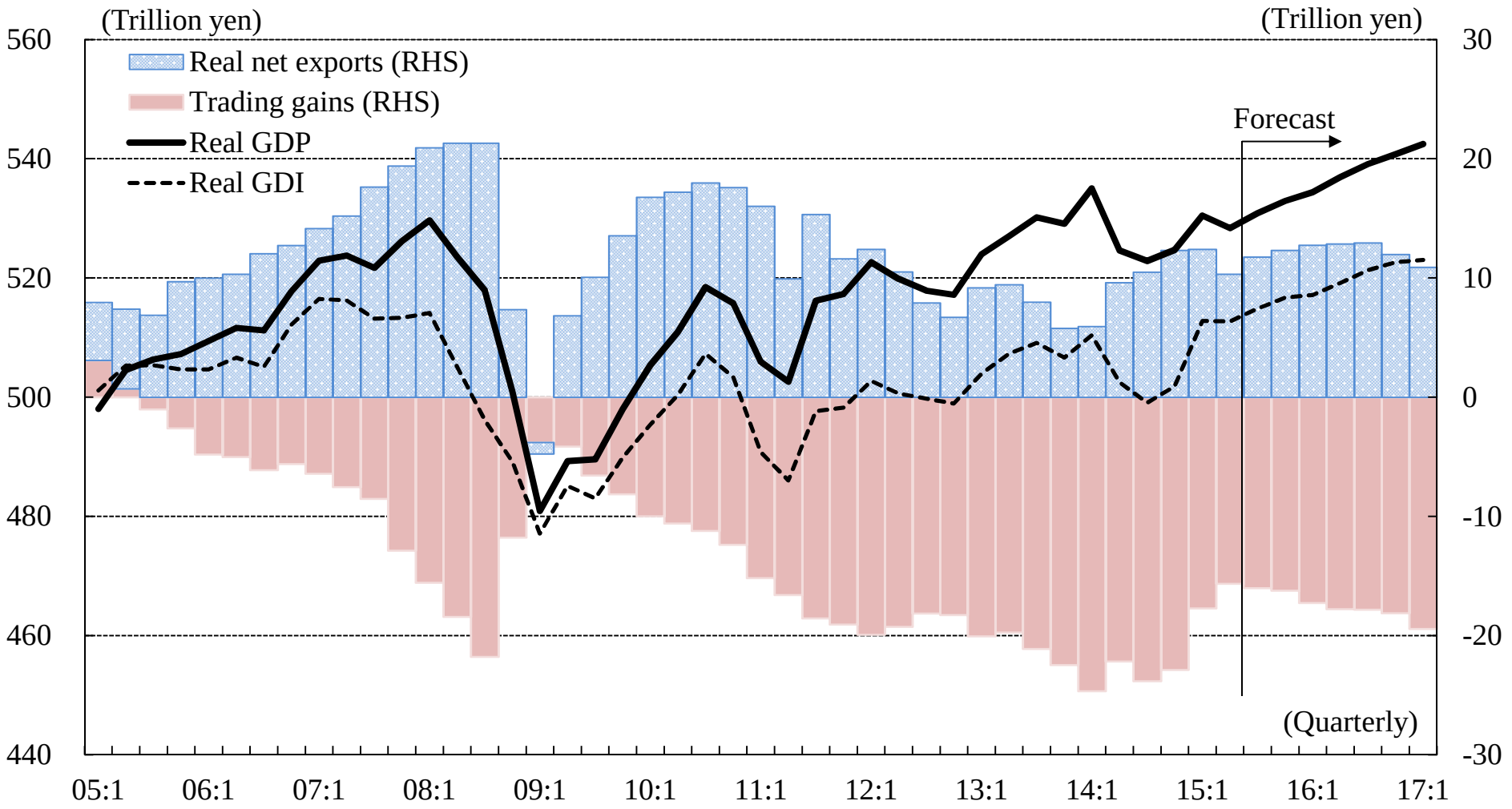
# Table 1　GDP growth forecasts

Real GDP growth rate, %

| | JCER | | ESP Forecast | | Bank of Japan | |
|---|---|---|---|---|---|---|
| FY | Aug. 2015 | June 2015 | Aug. 2015 | July 2015 | July 2015 | Apr.2015 |
| 2014 | | | ▲0.9 | | | |
| 2015 | 1.1 | 1.6 | 1.1 | 1.7 | 1.7 | 2.0 |
| 2016 | 1.6 | 1.3 | 1.7 | 1.8 | 1.5 | 1.5 |

(Note) ESP Forecast shows the median of surveyed forecasters.

# Fig.2 Trading Gains and Net Exports



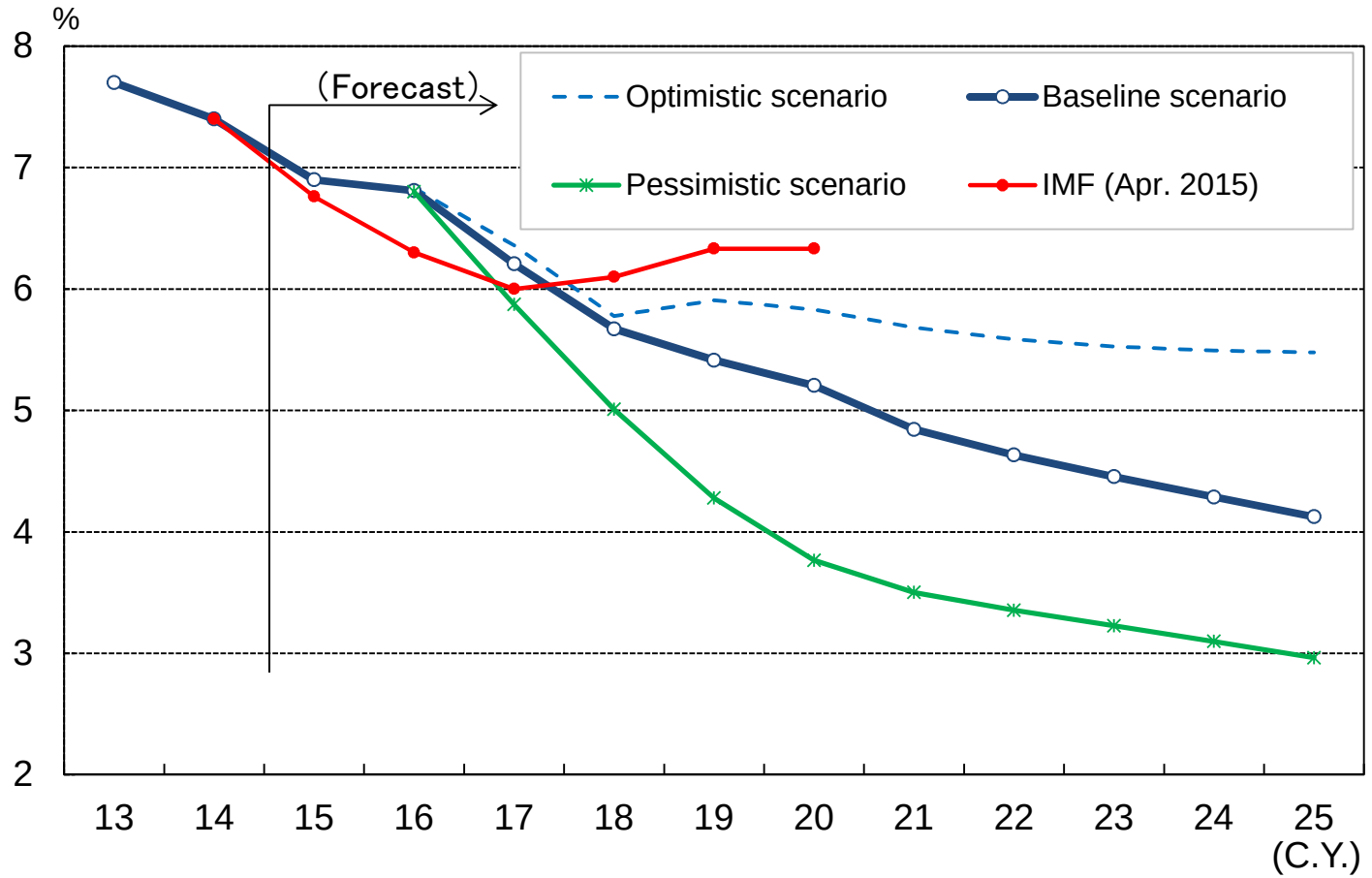

(Note) Real GDI = Real GDP + trading gains
(Source) Cabinet Office, "Quarterly Estimates of GDP"

# Ⅱ. Impact of China Shock

1. The sharp fall of stock price after June 2015 was followed by the renminbi depreciation in August.

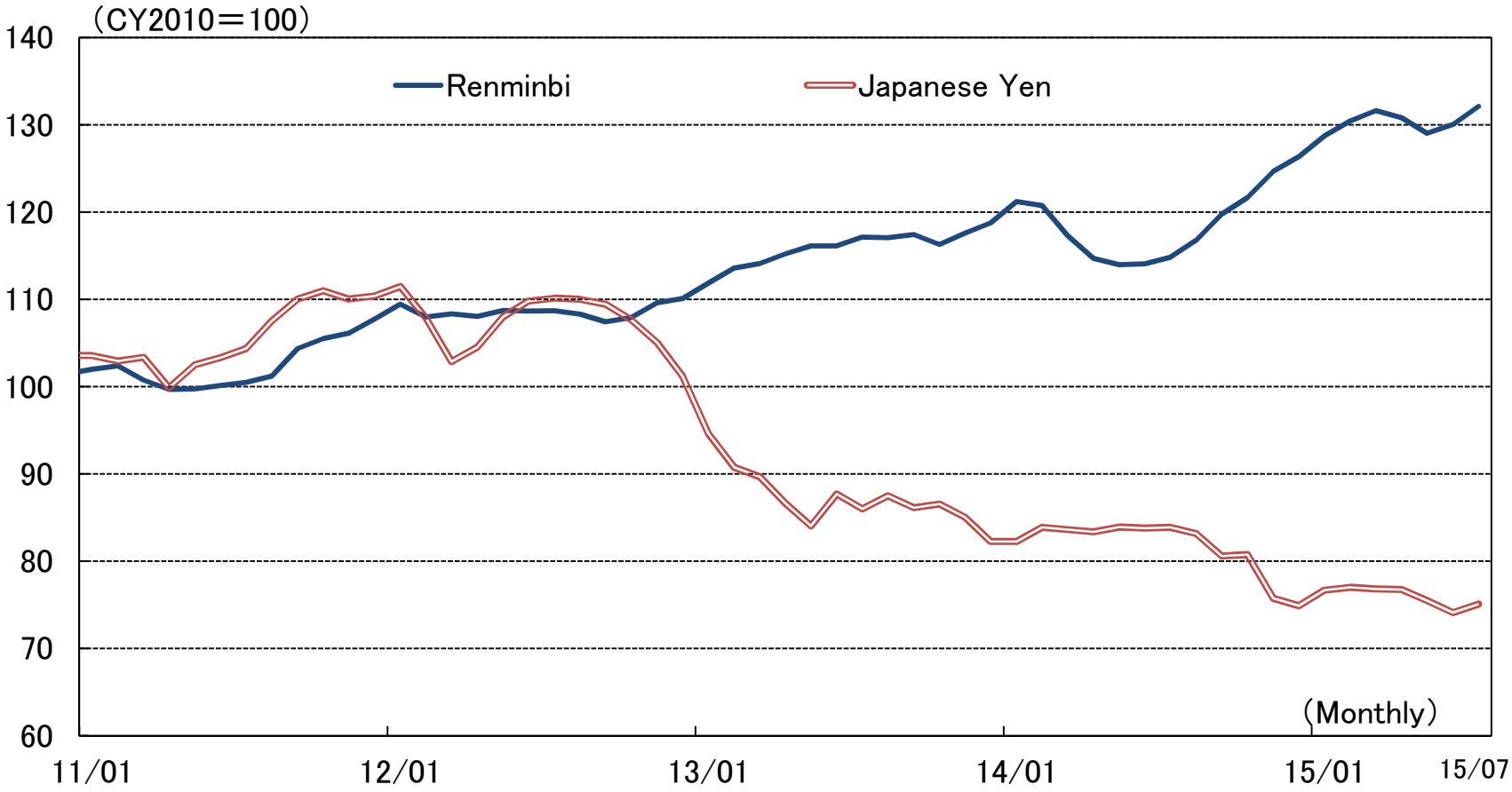
- The turmoil on stock and foreign exchange market worked to reverse the upward trend of Japanese stock price and stopped the depreciation of Yen rate.
- People's Bank of China faces difficulty to achieve the goal of the inclusion of the renminbi into the SDR (maintain stable exchange rate and prevent capital outflow) and stimulate the stagnant domestic economy (further depreciation). The forward rate on offshore market points to the depreciation.

# Fig.3 Three Scenarios of Economic Growth in China




(Sources) Haver Analyticsm, IMF, JCER

# Fig.4 Real Effective Exchange Rate




(Source) Bloomberg

# Ⅱ. Impact of China Shock

2. The fragility of financial market not only clouds the prospect of the US interest rate in September, but also undermines the promise of Abenomics to achieve both 2% inflation target and 2% medium-term growth rate.

# Ⅲ. Monetary Policy

1. QQE was effective to raise asset prices like stock price and exchange rate, while the impact on real economic activity(real consumption and GDP gap) was limited.

2. The core CPI registered zero% increase in July 2015, after recording 1.5% rate of increase in April 2014(excluding effects of the consumption tax hike). The core CPI excluding energy showed 0.8% rate of increase in July 2015.

- Expected inflation rate measured by inflation swap rate dropped below 1%, instead of targeted 2%.

3. There remains wide divergence between the BOJ and the market consensus on inflation rate forecast in FY 2015 and FY2016.

- We should not overlook the fact that the market real interest rate was brought down to negative territory and possibly below the natural rate after the implementation of QQE (Iwata=Samikawa(2014).

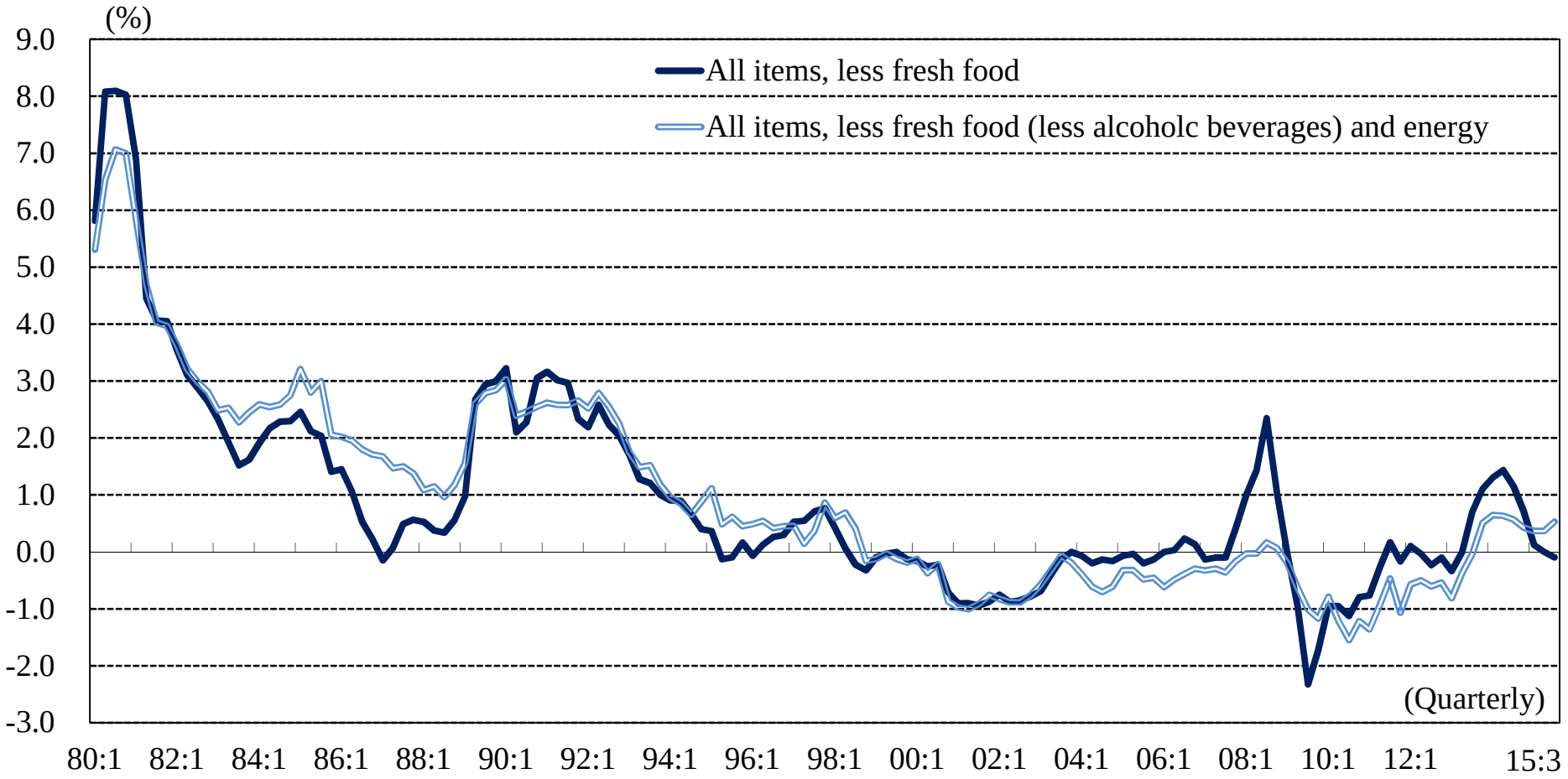
# Table 2　Core CPI Forecasts(All items, less fresh food)

change rate, %

| | JCER | | ESP | Bank of Japan | |
|---|---|---|---|---|---|
| | Aug. 2015 | June 2015 | Aug 2015 | Jul. 2015 | Apr. 2015 |
| FY2014 | 0.8 | | | | |
| FY2015 | 0.2 | 0.3 | 0.3 | 0.7 | 0.8 |
| FY2016 | 0.9 | 1.1 | 1.2 | 1.9 | 2.0 |

(Notes) Figures of BOJ indicate the median of the Policy Board members' forecasts. Figures of ESP show the average of forecasters.
(Sources) Statistics Bureau, Bank of Japan, JCER

# Fig.5 Year-on-Year Rate of Increase in Consumer Price Index (Quarterly)



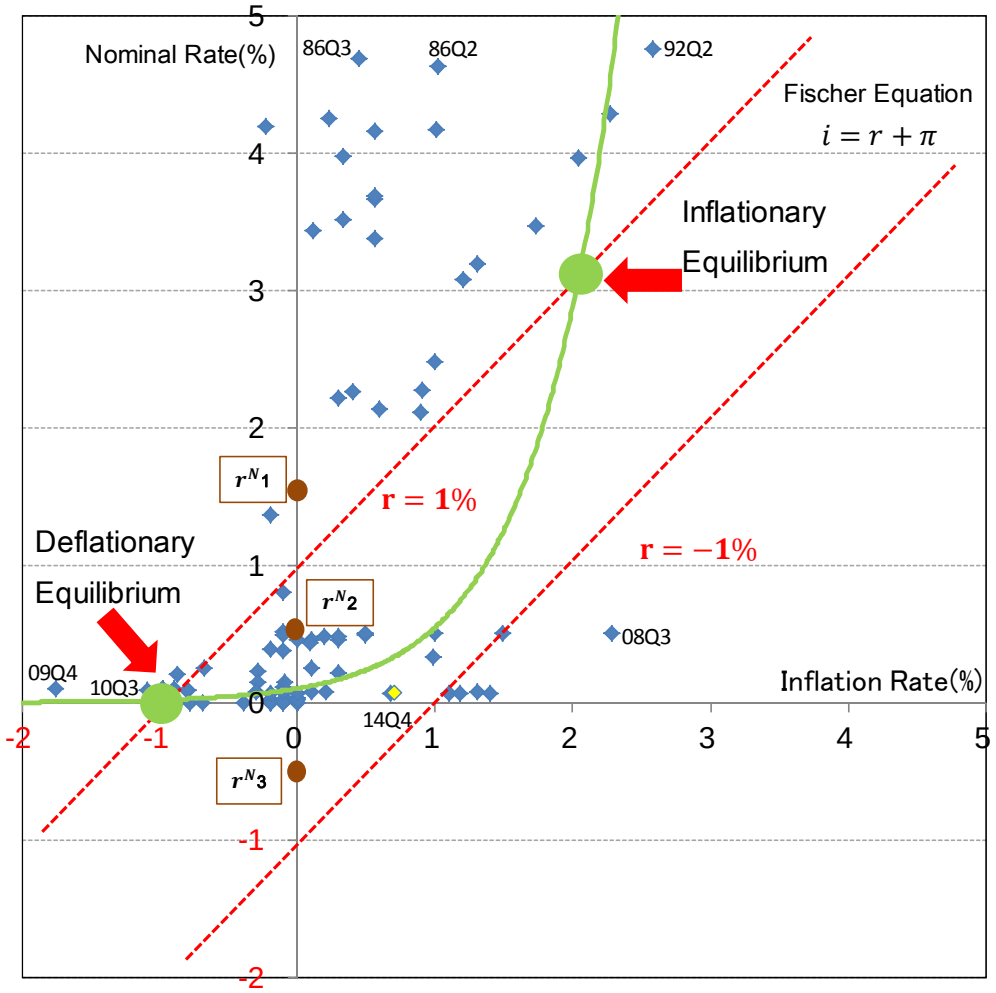

(Note) Data the third quarter of 2015 is based on the indices for July. The direct effects of the consumption tax hike, computed by the Bank of Japan, are subtracted for the period after April 2014.

(Sources) Ministry of Internal Affairs and Communications, *Consumer Price Index;* Bank of Japan, *Monthly Report of Recent Economic and Financial Developments* (March 2014)

# Fig.6 5year/5year Inflation Swap Rate


(Note) Data: until 20 April, 2015
(Source) Bloomberg

# Fig.7 Japan Stuck in Deflationary Equilibrium




(Note1) The figure is based on quarterly data from Q3 1986 to Q4 2014. Nominal rate refers to uncollateralized overnight call rate. Inflation rate refers to the year-on-year percentage change of Consumer Price Index excluding fresh food.
(Note2) Direct effects of the consumption tax hike is eliminated from CPI inflation rate.
(Note3) Data with interest rate exceeding 5% are not shown.

# Ⅲ. Monetary Policy

4. From the start of Abenomics in December 2012, I argued that it is difficult to attain the 2% inflation target within about two years.

- I argued that it will take five years under the assumption of implementing effective growth strategy.
- Aoki(2013) pointed to the possibility of “sunspot equilibrium” or “self-confirming equilibrium”in the neighborhood of liquidity trap under Abenomics.

# Ⅲ. Monetary Policy

- In the former case, market participants condition their expectations on some random variable which otherwise does not affect the economy.
- In the latter case central bank's perceived beliefs on the expectational Phillips curve can be confirmed by actual data in a "self-confirming equilibrium" (Sargent(1999))

# Ⅲ. Monetary Policy

5. Both market participants and the policy maker are in a process to learn the true structure of the economy, based on the “1990’s adaptive hypothesis (application of recursive method for updating estimates).

- The learning process will take more time than two years.

6. The need for further easing depends critically on development of inflation expectations.

- If it will fall below 0.5%, there is a risk to return to deflation, due to the higher market real interest rate than the natural rate under the zero lower bound on nominal interest rates.

# Ⅲ. Monetary Policy

7. The menu of further easing policy measures as below:

(1)Further purchase of JGB with longer maturity

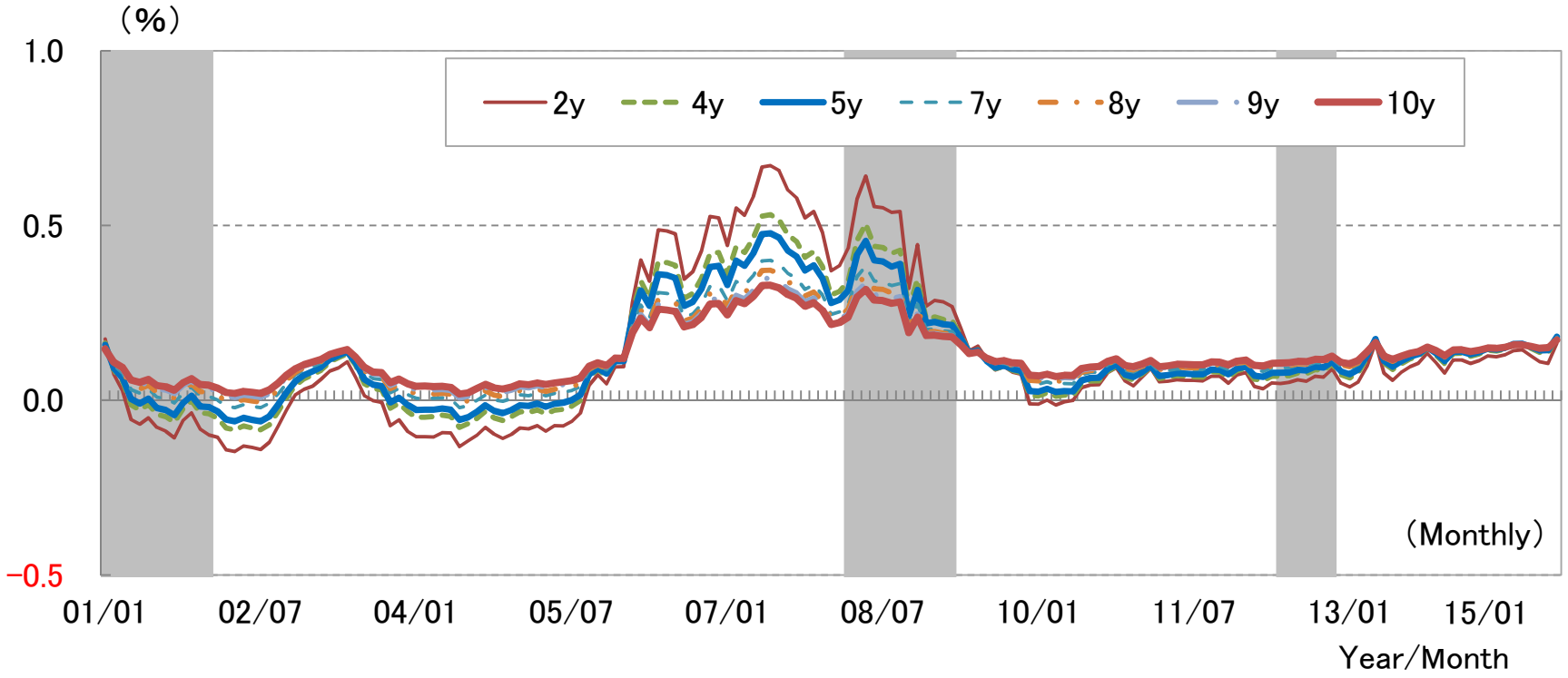
(2)Purchase of private assets

(3)Lower interest rate on excess reserve(possibly negative rate)

8. However, there is limit on further purchase of JGB and J-REIT(5% market rule).

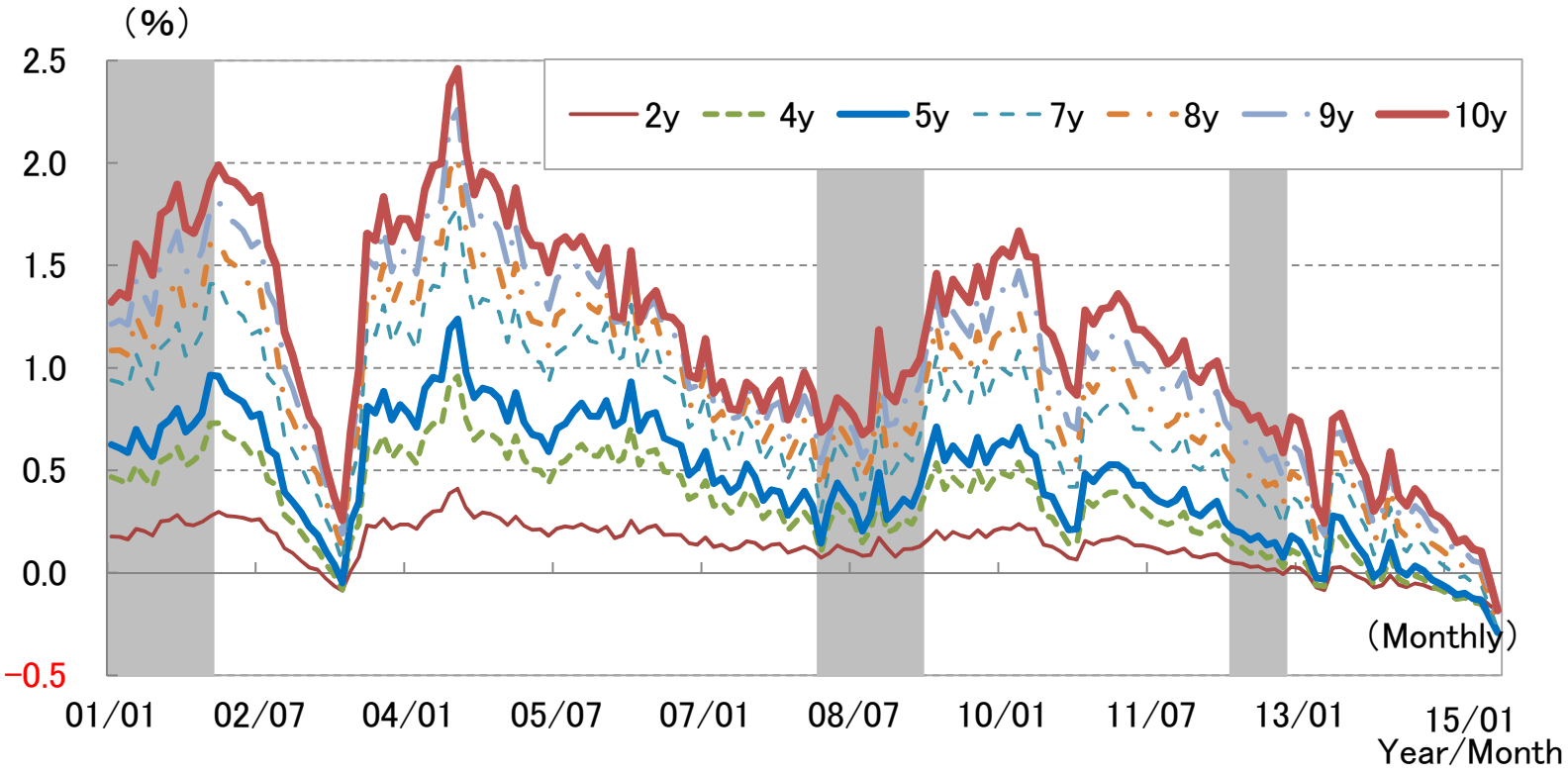
- In addition, the share of the ETF purchased by BOJ is already high.
- The term premium of long-term JGB dropped into the negative territory, while the expected risk-neutral interest rates tend to show upward development.

# Fig.8 The Average of Expected Future Short-term interest rates(risk-neutral yields)




( Note) The shaded areas mark the beginning and end of recessions.
(Source) JCER(2015)

# Fig.9 Estimated Term Premiums




( Note) The shaded areas mark the beginning and end of recessions.
(Source) JCER(2015)

# Ⅲ. Monetary Policy

9. While further depreciation of the yen rate will help to stop the deceleration of inflation rate, it will cause the "beggar-thyself effect" on consumer spending, due to the deterioration of terms of trade: the sluggish export response to the yen depreciation diminishes the merits of further easing.

- The current real effective yen rate is significantly lower than the long run average value.
- There is uncertainty whether the US Congress can tolerate the further appreciation of the dollar rate.

# Ⅲ. Monetary Policy

10. If the BOJ will continue the QQE, it will aggravate the likely loss on the BOJ Balance Sheet over the future.

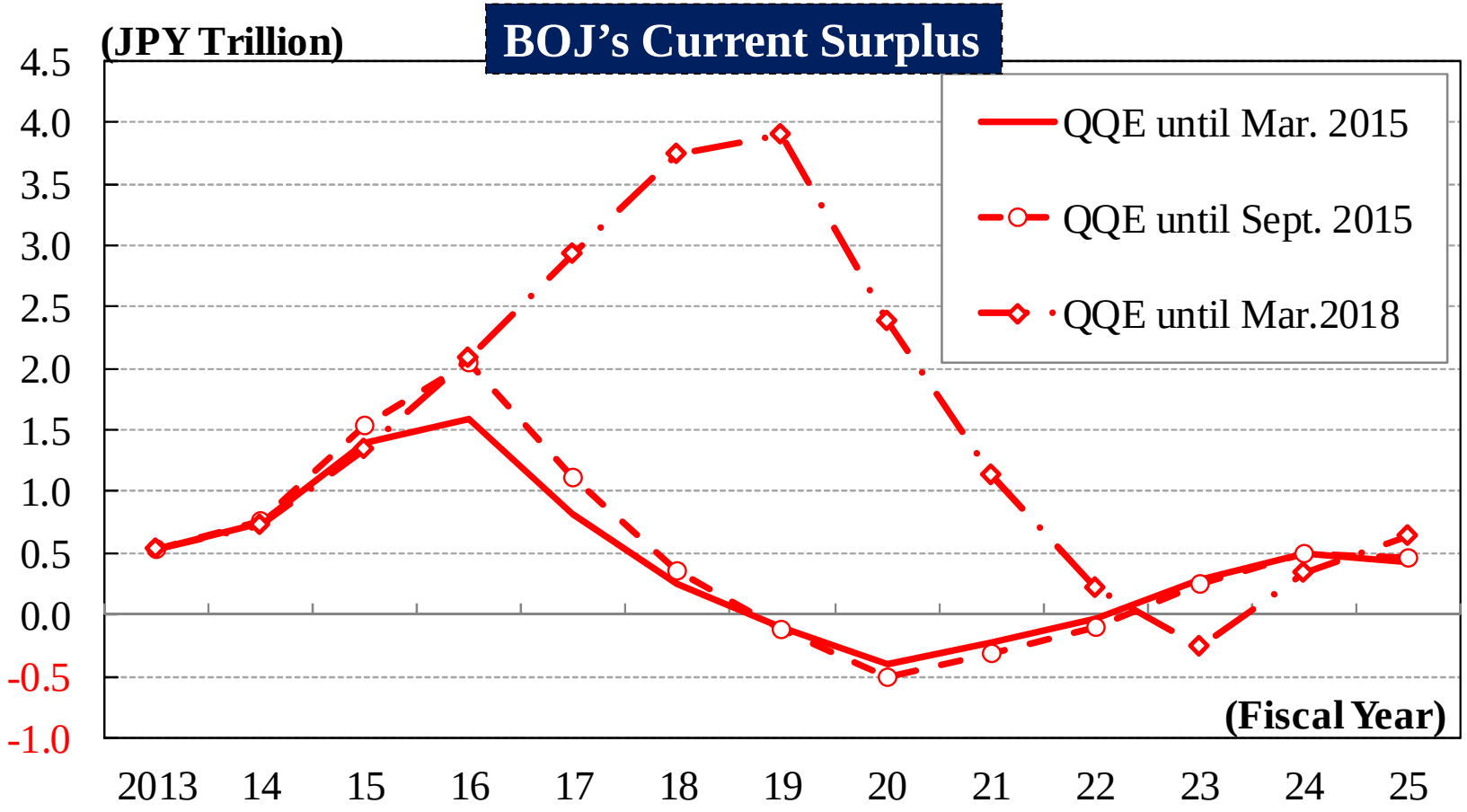
- It must be noted that the 49% of the BOJ paid-in capital is owned by private sector since the establishment of the BOJ in 1882.
- The new BOJ Law in 1998 removed the Article on the loss compensation by the government which was explicitly written in the old BOJ Law.
- At that time the BOJ indicated the need to establish a new law to allow the government subsidy to the BOJ.

# Fig.10 BOJ's Balance Sheet and Exit Strategy

**Associated Risks for QQE**

## Substantial Loss for BOJ?

**Exit may drag down BOJ's remittance to the MOF to zero**



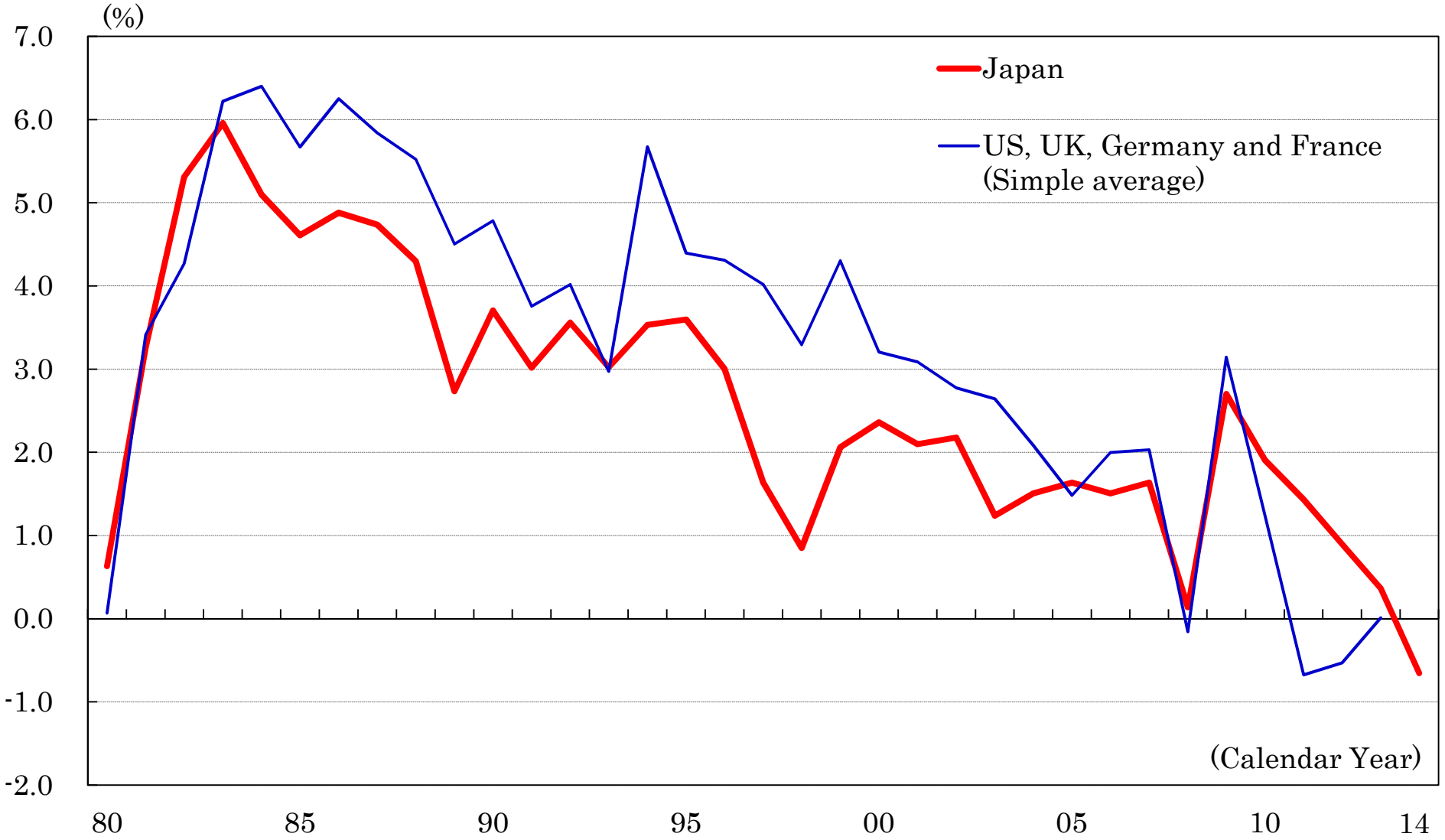

(Source) JCER(2015)

# Ⅳ. Risk of Secular Stagnation

1. If the growth strategy(the third arrow) fails, there is a risk of “secular stagnation”.

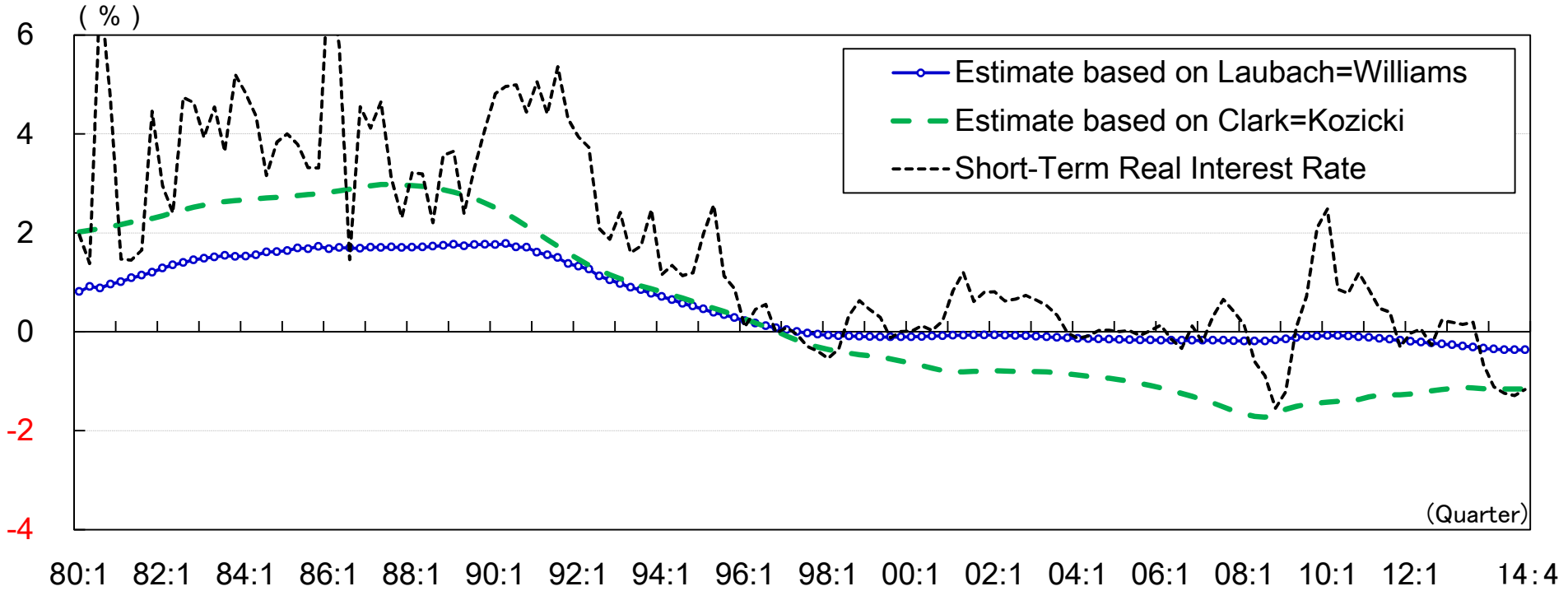
- In advanced economies there is declining tendency of the long-term real interest rates since the early-1980s.
- In base/stagnation scenario of the JCER forecast “Japan in 2050”, where Japan implements reform in the same speed as in the past, Japan will fail to improve the living standards, due to the rise of tax/security burden on working age population.
- This implies a risk of negative trend growth rate and the negative natural interest rate. The recent JCER study (2015) confirmed the possibility of the negative natural interest rate, as is the case in the US.

# Fig.11 Real Interest Rates of Major Industrial Countries on Declining Trend since 1980



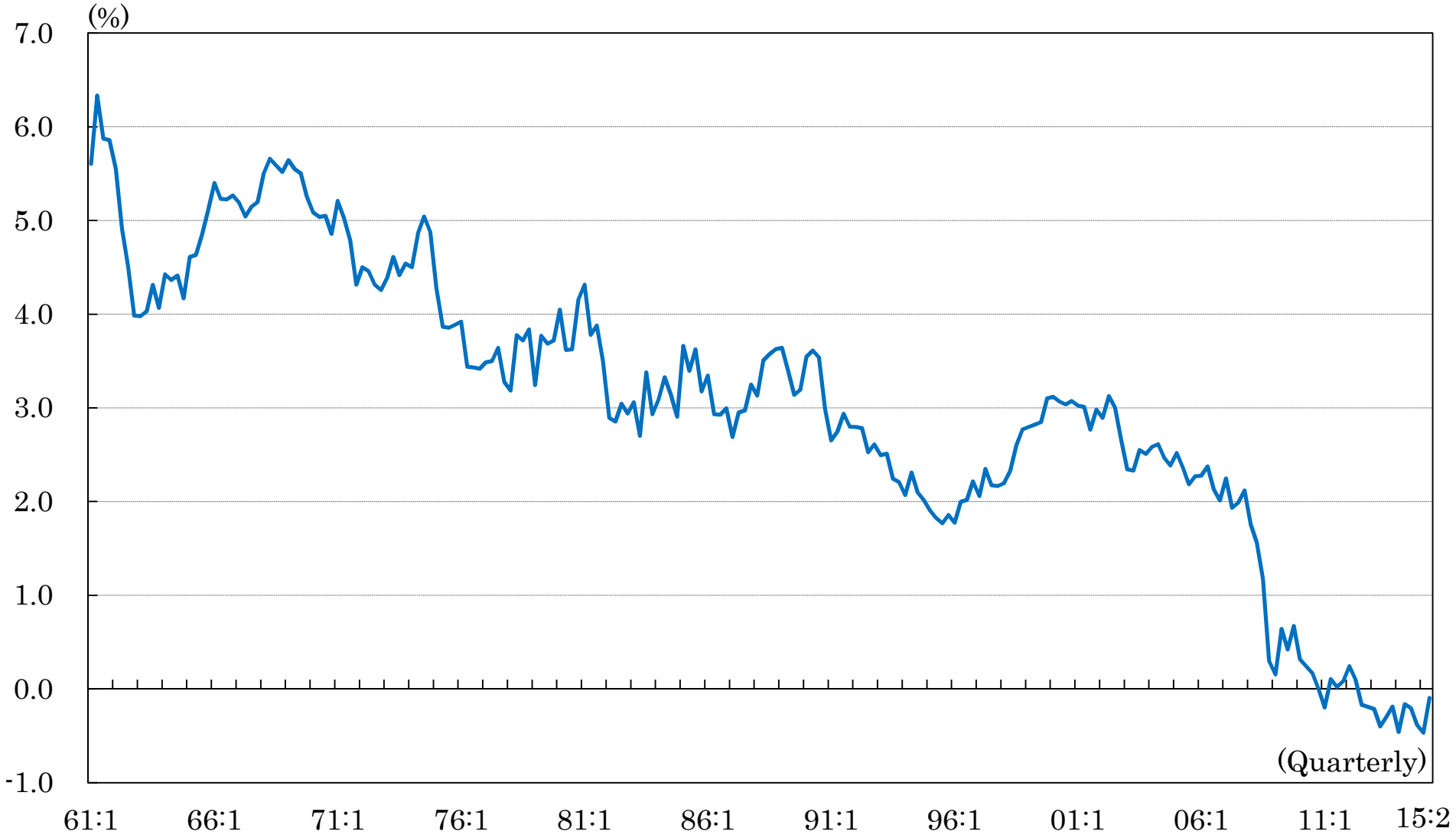

(Note) Long-Term Real Interest Rate=Yield of 10Year Government Bond - Inflation Rate
(Source) The World Bank "World Development Indicators"

# Fig .12 Estimate of Japan's natural interest rate




(Source) JCER(2015)

# Fig. 13 US natural interest rate




(Source) Federal Reserve Bank of San Francisco

# Ⅳ. Risk of Secular Stagnation

2. There are a number of factors which can cause the secular stagnation: (1) demographic changes (Krugman, Iwata(2013)), (2) saving glut(Bernanke) ,(3) shortage of infrastructure investment (Summers),(4) debt overhang (Rogoff), (5)technological advance centering on information and software (Eichengreen).

- Alternative view is the shortage of safe international assets (“safety trap” (Caballero and Farhi)

# Ⅴ. Needed Growth Strategy

1. In the short-run, sizable cut of corporate tax from 35% to 25% is absolutely needed.

2. In the medium- and long run, the first pillar is the policy package measures to maintain the size of the Japanese population at 100 million in 2060.

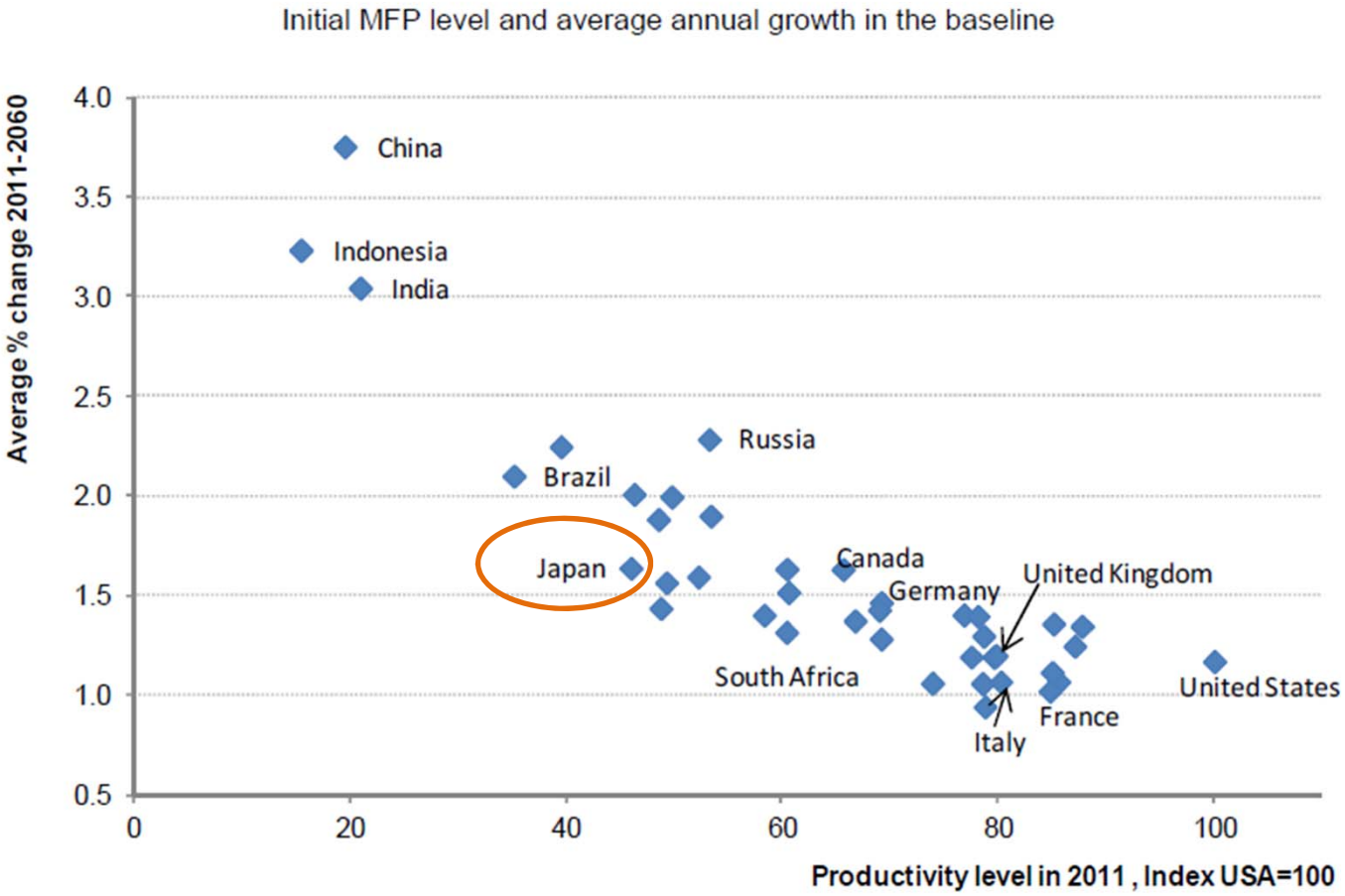
- 13 trillion yen is needed to raise the Japanese fertility rate from 1.4 to 2.1 .
- This implies the need to implement fundamental tax-social security system, shifting to the drastic increase in expense for child rearing.

# Ⅴ. Needed Growth Strategy

3. The second pillar is the policy package measures to improve the total factor productivity/labor productivity, to catch up with the levels of the US.

- The current TFP/labor productivity levels in Japan are below the OECD average and about 50-60% of those of the US.
- Notably, it is necessary to promote “open innovation” centering on start-up business from universities in the “second machine age” under the circumstance of the nearing singularity.

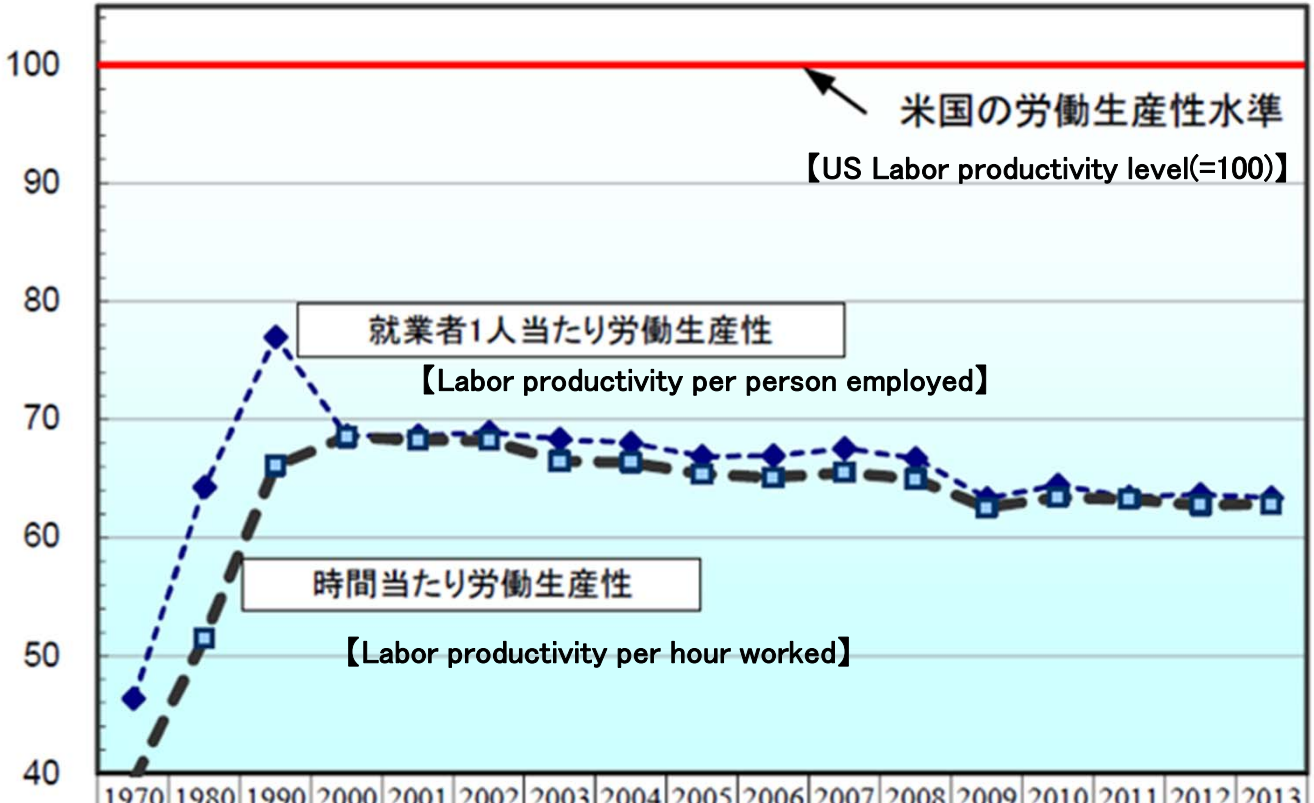
# Fig.14 Multi-factor productivity tends to converge across countries over 2011-2060




1. PMR regulations are hypothetically eased in restrictive countries to reach the OECD average in the base year (2011) by the end of the projection period.

(Source) OECD "Long-term Growth Scenarios" (January,2013)

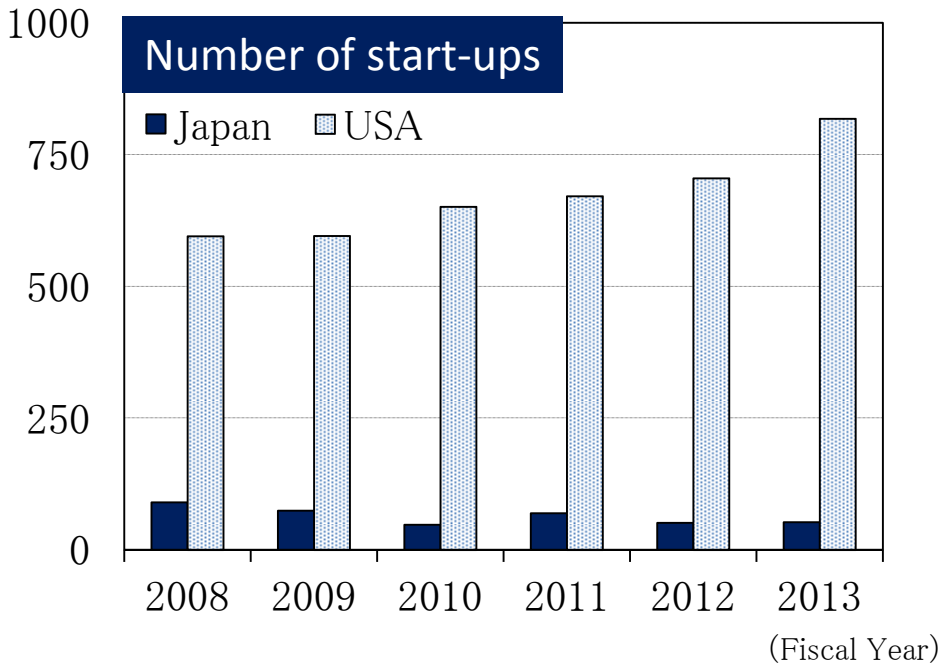
# Fig.15 Labor Productivity Gap between the US and Japan



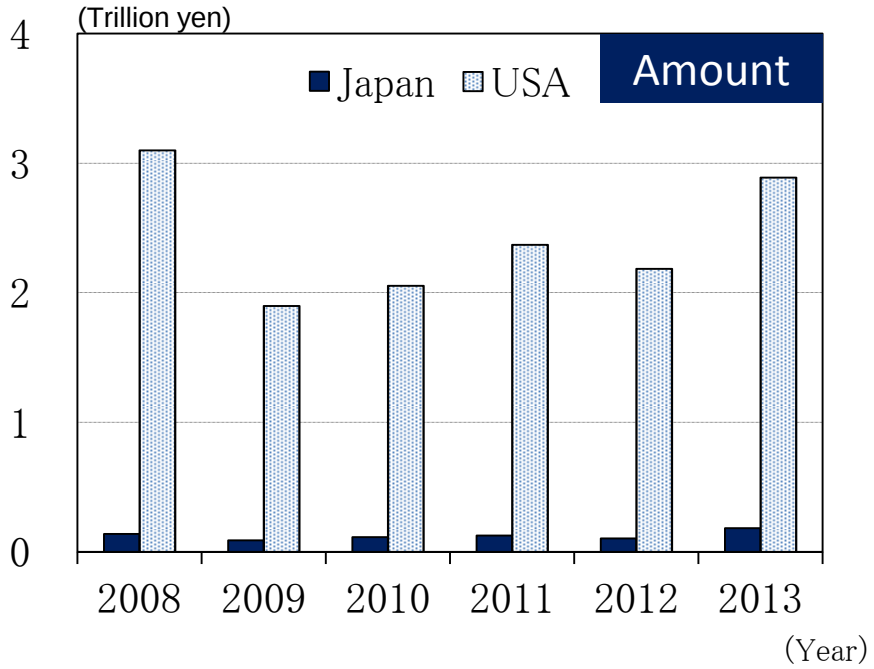

| | 1970 | 1980 | 1990 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 【Labor productivity per person employed】 | 46.4 | 64.3 | 77.0 | 68.6 | 68.6 | 68.9 | 68.3 | 68.0 | 66.9 | 66.9 | 67.5 | 66.7 | 63.3 | 64.5 | 63.4 | 63.6 | 63.4 |
| 【Labor productivity per worked】 | 39.3 | 51.4 | 66.1 | 68.5 | 68.2 | 68.2 | 66.5 | 66.3 | 65.4 | 65.1 | 65.5 | 64.9 | 62.5 | 63.4 | 63.2 | 62.7 | 62.8 |

(Source) Japan Productivity Center"Trend of Productivity in Japan 2014"( in Japanese )

# Fig.16 Difference in venture investment between US and Japan




(Source) "FY2013 Status of Academia-Industry Cooperation at Universities" prepared by the MEXT,
AUTM U.S. Licensing Activity Survey




(Source) "FY2013 Survey of Venture Capital Investment Trends" prepared by Survey Venture Enterprise Centre

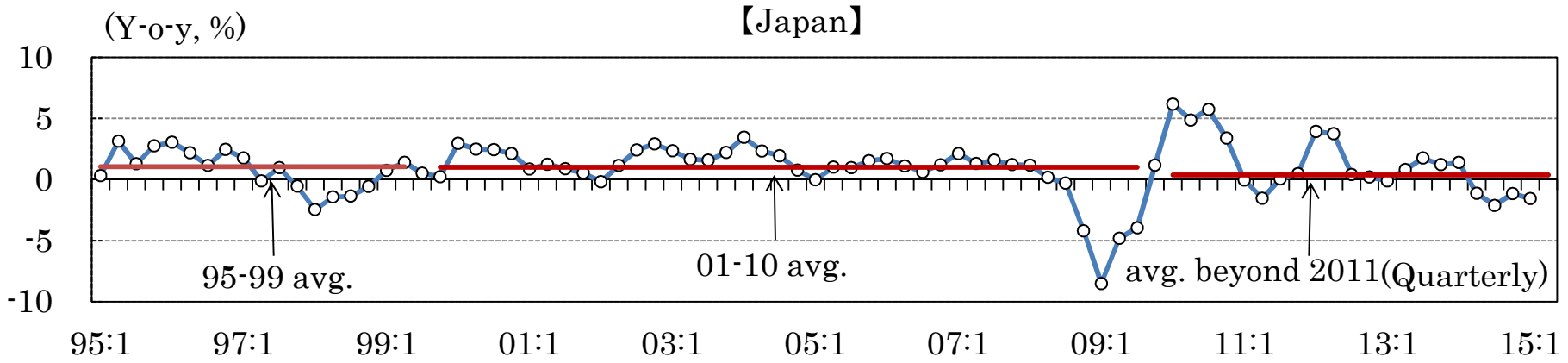
# Ⅵ. Implications for Europe

1. The Euro area is in a process of steady recovery, while the UK now prepares the interest rate increase in next year, given the improvement on labor market conditions.

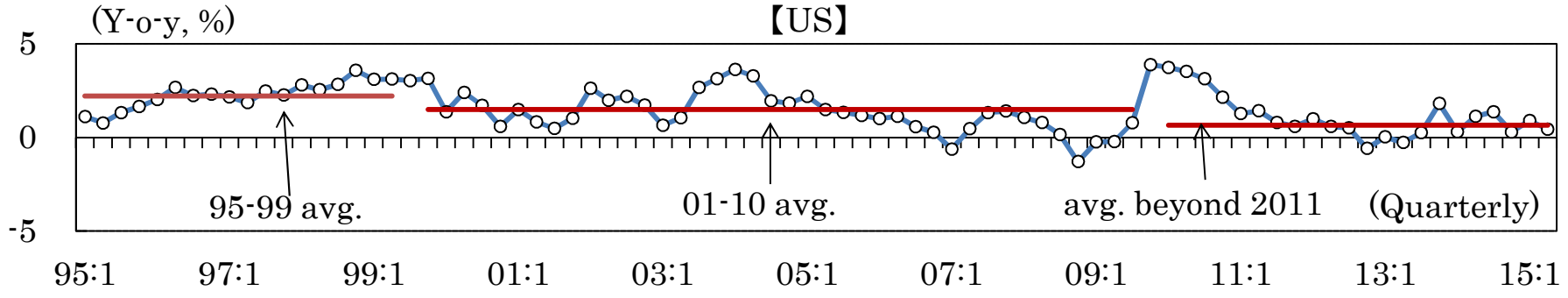
2. The slowdown of the Chinese economy and depreciation of the renminbi work to dampen the economic activity in Europe and tend to appreciate both the euro rate and the UK Sterling.

- The low labor productivity growth rate in Europe including UK implies that the Europe is not immune from the risk of secular stagnation under the zero lower bound on nominal interest rates .

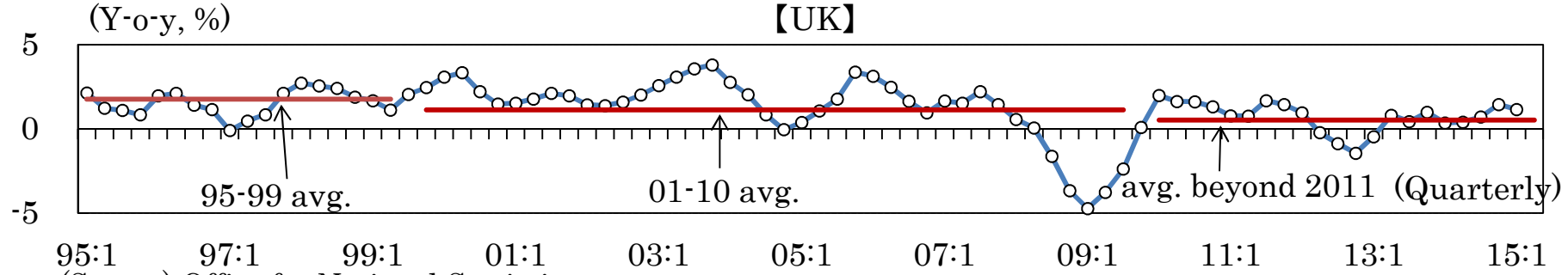
# Fig.17 Labor Productivity Growth Rate in Advanced Economies




(Source) Cabinet Office, Ministry of Internal Affairs and Communications




(Source) Department of Commerce, BLS




(Source) Office for National Statistics

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