Financial imbalances in Asia: How worried should we be?

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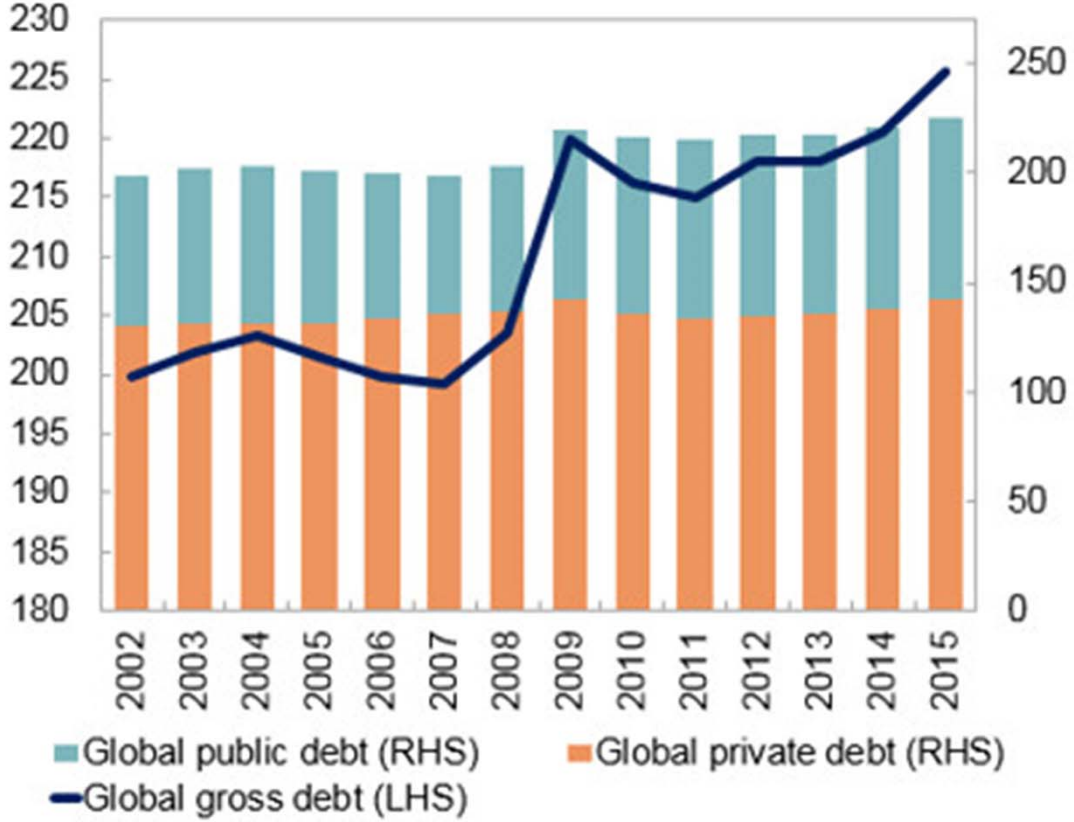
JCER

Ⅰ. Global Debt and Excessive Private Debt

1. In the latest Fiscal Monitor published in October, the IMF reported that the world debt hit a record of 225% of world GDP($152 trillion).

- Excessive corporate debt, notably in emerging economies, has increased sharply; it takes on share of two thirds of global debt and is a major headwind against the global economic recovery and a risk to financial stability.
- The remaining one third is public debt; public debt overhang is one of the factors conducive to secular stagnation in major economies.

Fig.1 Global Gross Debt
(Percent of world GDP, weighted average)



Sources: Abbas and others 2010; Bank for International Settlements; Dealogic; IMF, *International Financial Statistics*; IMF, Standardized Reporting Forms; IMF, *World Economic Outlook*; Organisation for Economic Co-operation and Development; and IMF staff estimates.

Source: IMF "Debt: Use It Wisely - Press Conference Opening Remarks", 6 Oct. 2016

Ⅱ. Private Debt in China Today and Japan in the mid-1990s

1. Notably, China markedly increased private debt in recent years.

- China's non-financial corporate debt to nominal GDP ratio has exceeded the level of Japan's ratio in the mid-1990s.
- Japan's equity and real estate bubbles collapsed in 1990 and 1991.
- China faces the problem of "three excesses" in terms of production capacity, debt and employment (in particular, steel, coal mining, cements and glass) as was the case in Japan in the 1990s.

Ⅲ. Japan's Deleveraging Process in the mid-1990s

1. Private debt overhang tends to create balance sheet adjustments in corporate sector, which worked to reduce its investment.

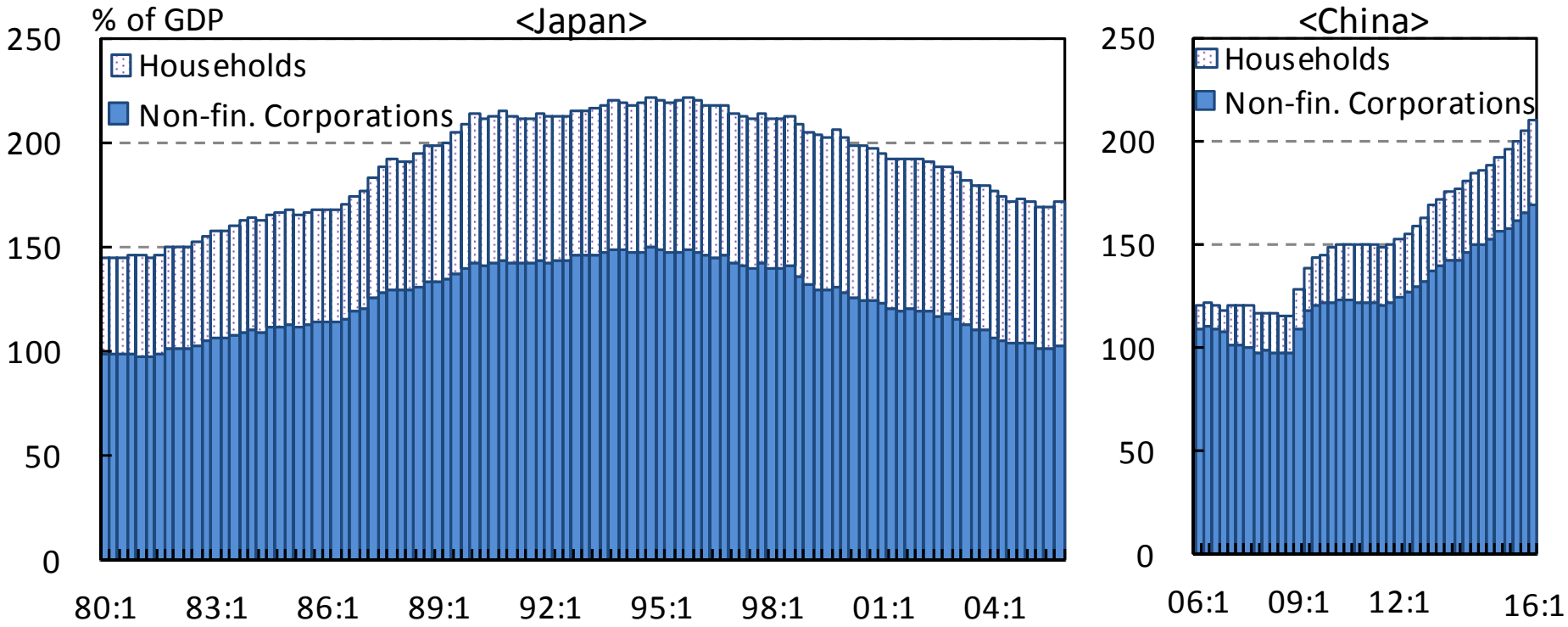
- Japan's deleveraging process in the 1990s was gradual and protracted lasting more than ten years.
- The private investment to GDP ratio reached the peak at the time of bubble burst (1990/91) and bottomed out in the early-2000s.
- However, the private debt to GDP ratio continued to expand after the bubble burst and peaked out in 1995. It came down to the level of the mid-1980s before the emergence of bubbles, when the non-performing loan problem was terminated by the public capital injection into Resona Bank in 2003.

Ⅲ. Japan's Deleveraging Process in the mid-1990s

2. Japan's growth rate decelerated sharply after the bubble burst; it declined from 5-6% during bubble period to 0-2% in the process of deleveraging.

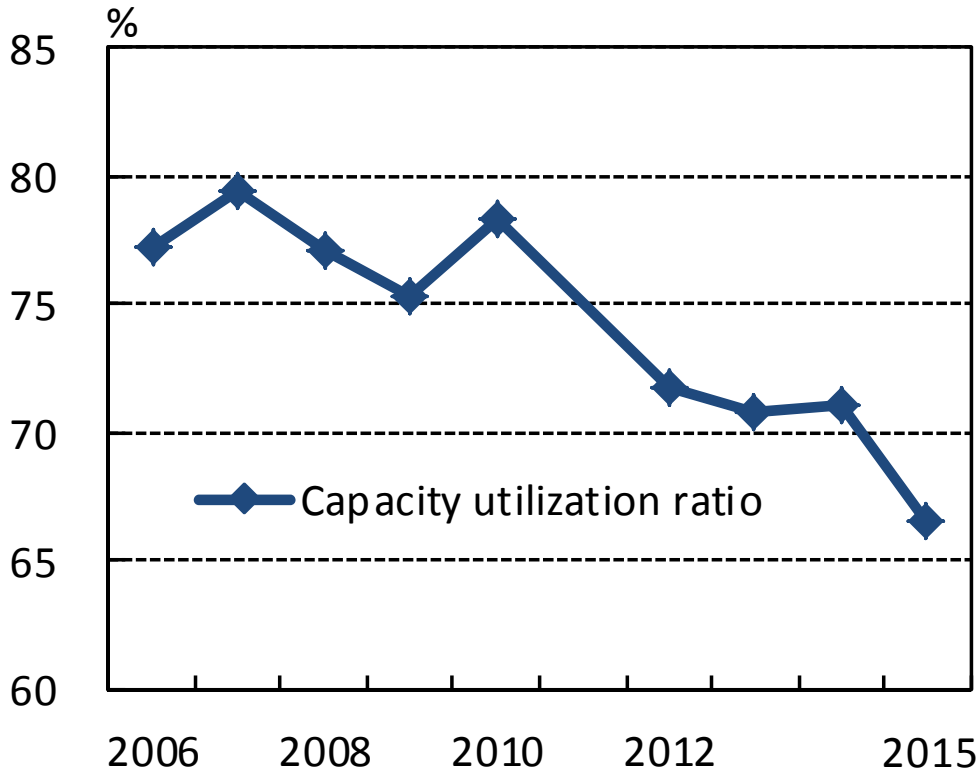
- This is in contrast to the experience in Nordic countries and the UK, where the real growth rate made a quick rebound following a sharp decline.
- In the Asian currency crisis in 1997 (South Korea, Thailand and Malaysia) the decline of investment ratio was much deeper with the growth rate declining from 10% to 5%.

Fig.2 Non-Financial Private Debt in Japan and China



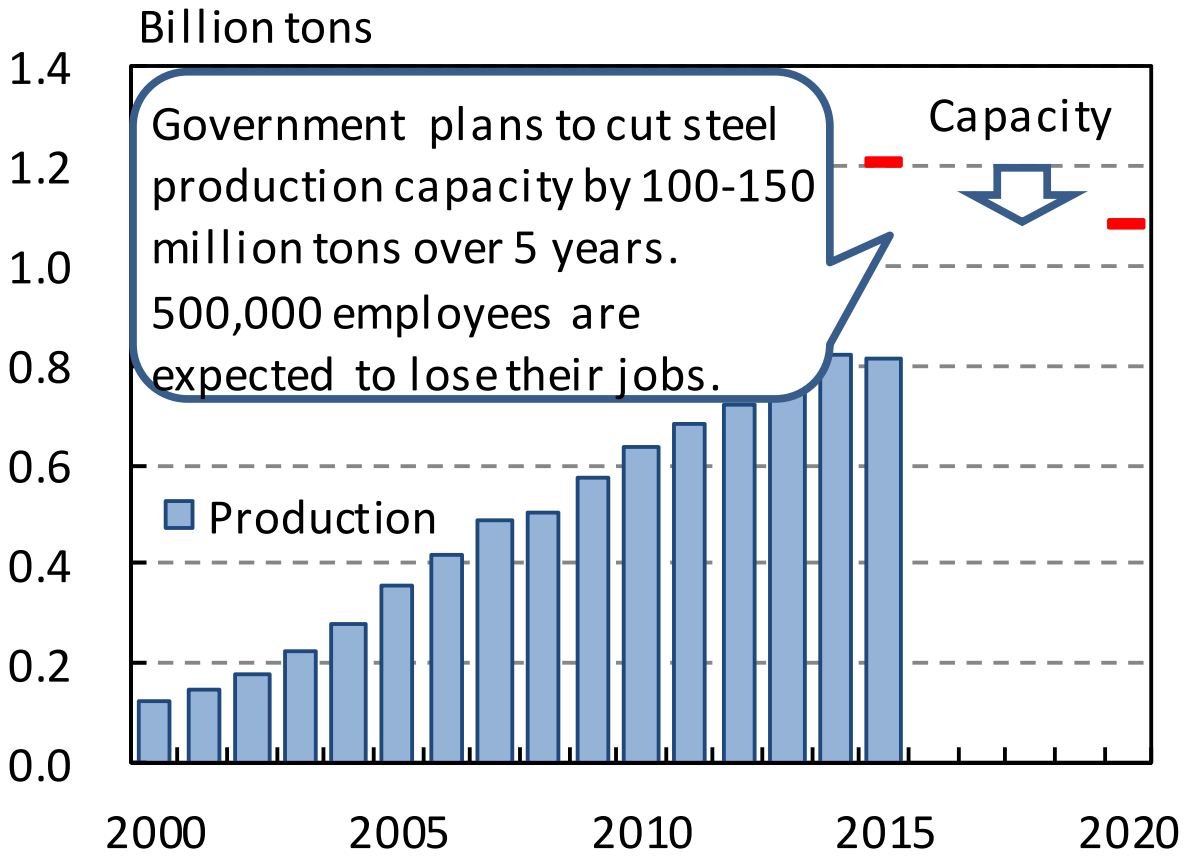
Source: BIS

Fig.3 Capacity Utilization Ratio of the Manufacturing Industry in China



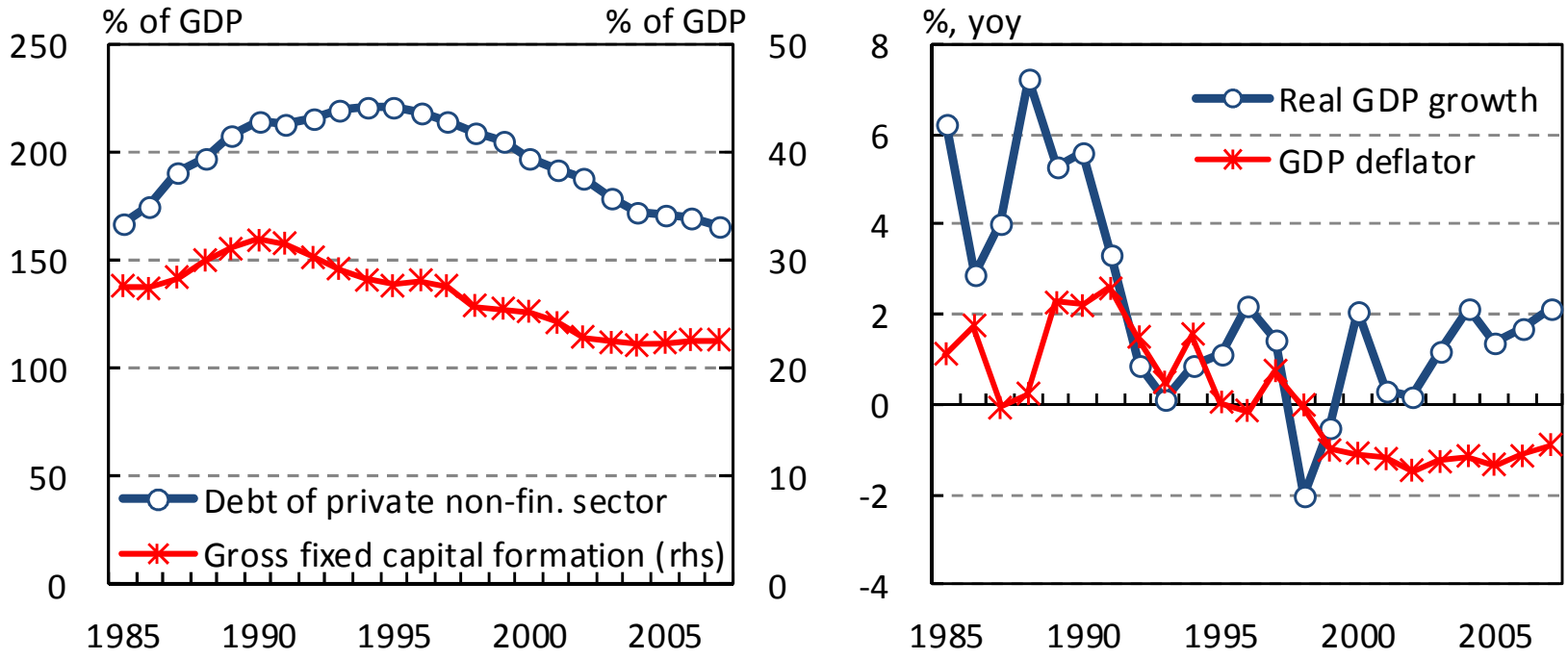
Source: China Entrepreneurs Survey System

Fig.4 Excess Production Capacity in Steel Industry



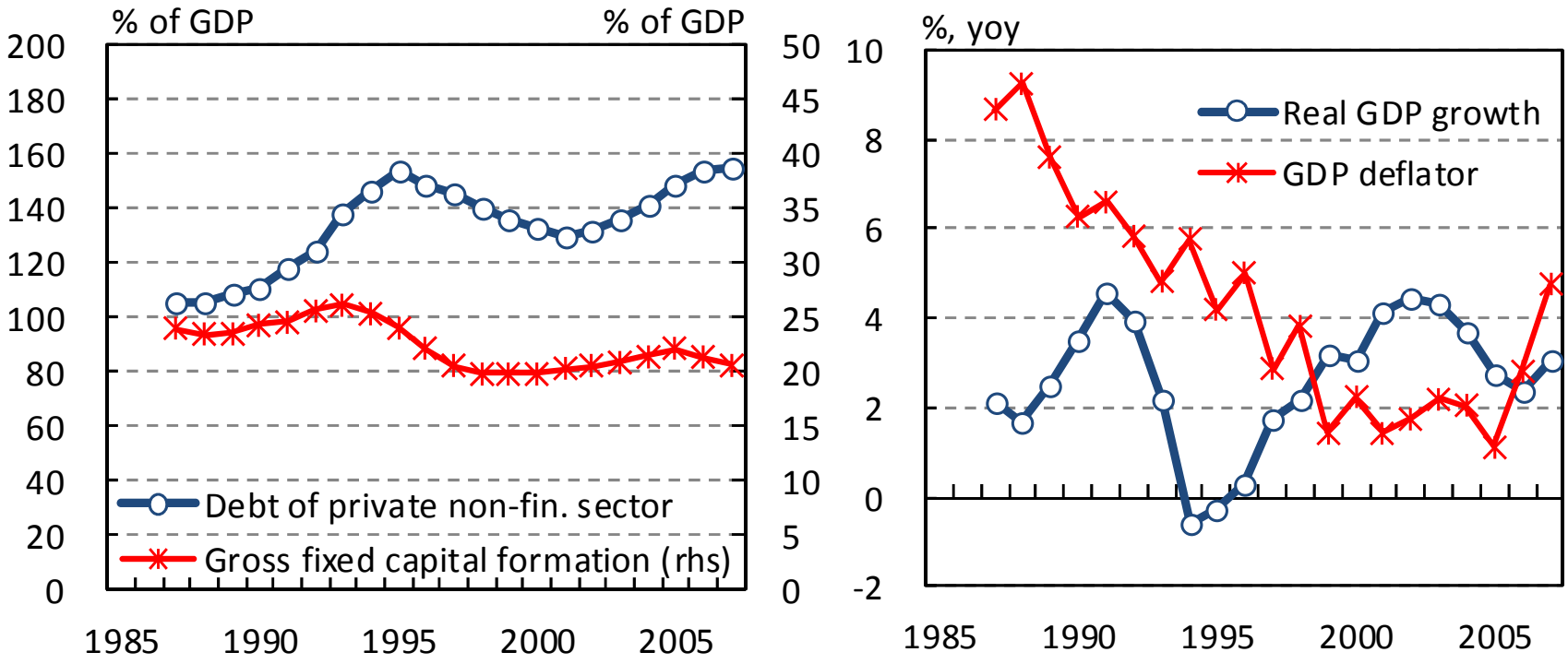
Source: Haver Analytics

Fig.5 Deleveraging Phase in Japan (1990s-2000s)



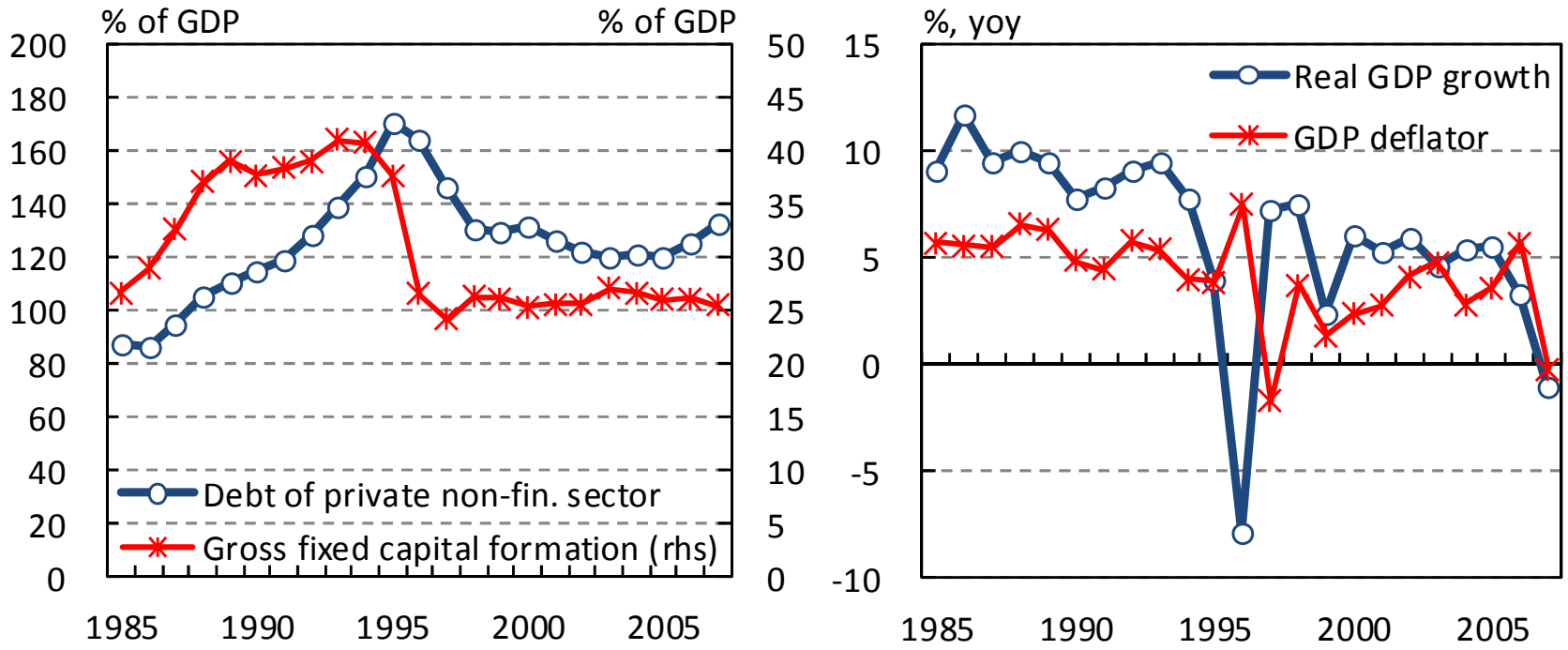
Sources: BIS, IMF, OECD, Haver Analytics

Fig.6 Deleveraging Phase in Nordic Countries and the UK(around 1990)



Notes: The figures are simple averages of Norway (the peak of debt: 1988), Sweden (1990), Finland (1992), Denmark (1988), and United Kingdom (1992).
Sources: BIS, IMF, OECD, Haver Analytics

Fig.7 Deleveraging Phase in Asia (in the late 1990s)



Notes: The figures for the Asian countries are simple averages of South Korea (1997), Thailand (1997), and Malaysia (1997).
Sources: BIS, IMF,OECD, Haver Analytics

Ⅳ. China's Deleveraging Process over the Future

1. According to the JCER medium-term forecast on China, the private debt ratio will continue to rise in coming several years with gradual decline of investment to nominal GDP from 40% to 30-35% towards the mid-2020s (Tahara(2016)).

- In the process of deleveraging ,the real growth rate will slow down gradually, registering below 3% growth rate in 2030.
- The JCER scenario broadly corresponds to the middle value of the "non-reform growth rate range" by the IMF(IMF(2016)).

Ⅳ. China's Deleveraging Process over the Future

2. In an alternative scenario in which the private debt ratio will peak out by 2020, the speed of decline in investment ratio will inevitably be more rapid, and the pace of contraction in private debt growth will be closer to (but still slower than) the historical average (20% contraction over 6 years, (Goretti=Souto(2013))).

- Then the real growth rate will register a sharper decline and show below 4% growth rate in 2019.

Ⅳ. China's Deleveraging Process over the Future

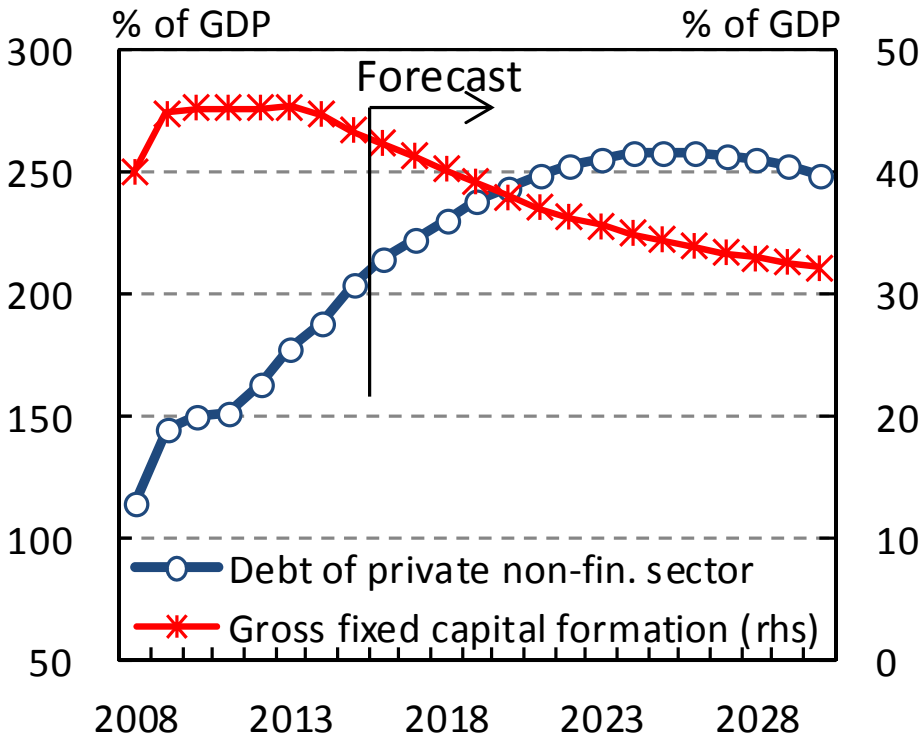
3. In the case where we add the property investment to capital formation, the adjustment path may be more abrupt and volatile.

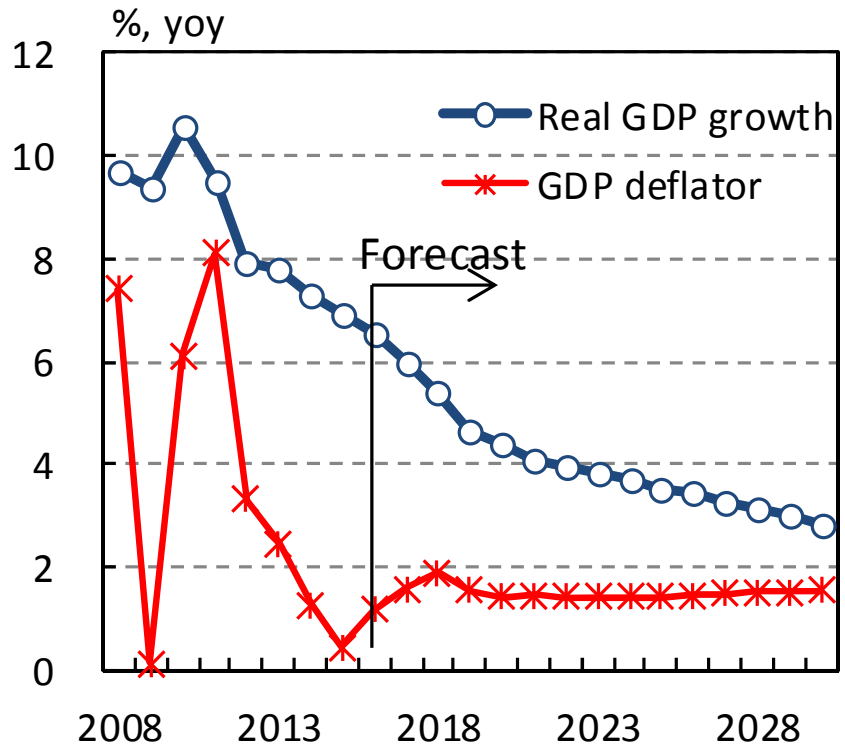
- Given the difficulty to predict the timing of bubble burst, we assumed that China's non-financial firms will cut down external financing gradually, while reducing the capital formation coupled with property investment.
- In Japan, both the borrowing and capital formation with land purchase were cut down sharply after the bubble burst, coupled with the reduction of cash/deposit holdings.
- In Korea, loans, bond and equity financing as well as cash/deposit holdings were reduced sharply, corresponding to the cut in capital formation with land purchase.

Ⅳ. China's Deleveraging Process over the Future

4. The non-performing loan ratio（5.8%）in China is lower than the Japan's ratio(8%) after bubble burst. But it is anticipated to grow to 7%(IMF(2016)), given the growing number of companies with their interest payment exceeding the profit.

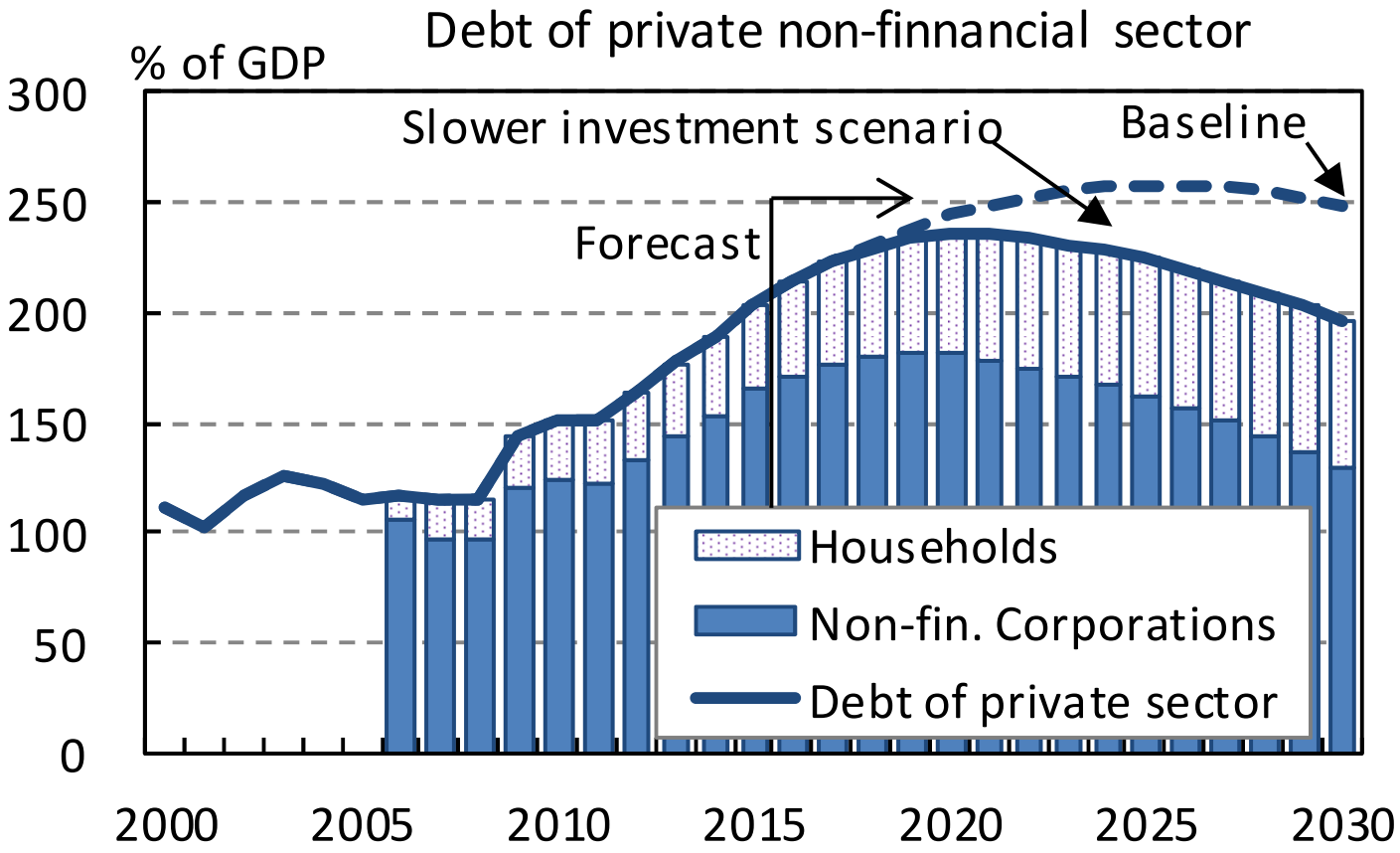
Fig.8 Deleveraging Phase and Forecast in China





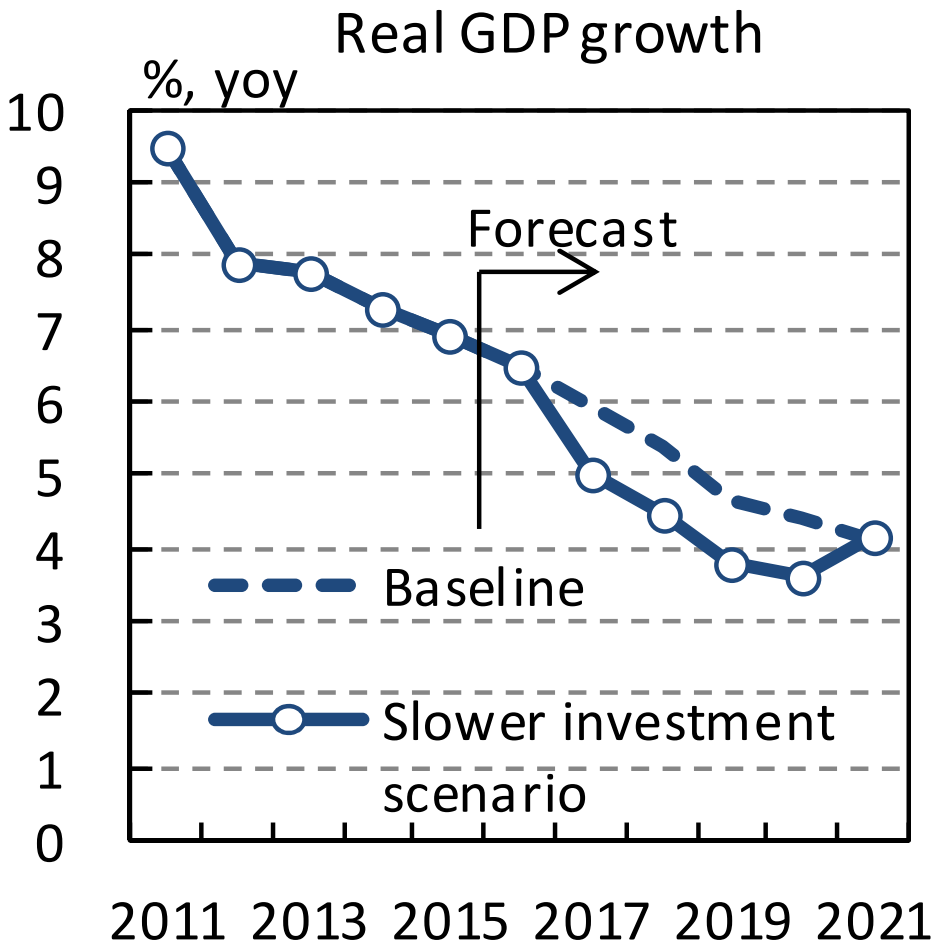
Sources: BIS, IMF, OECD, Haver Analytics

Fig.9 Future Development of Private Debt in China



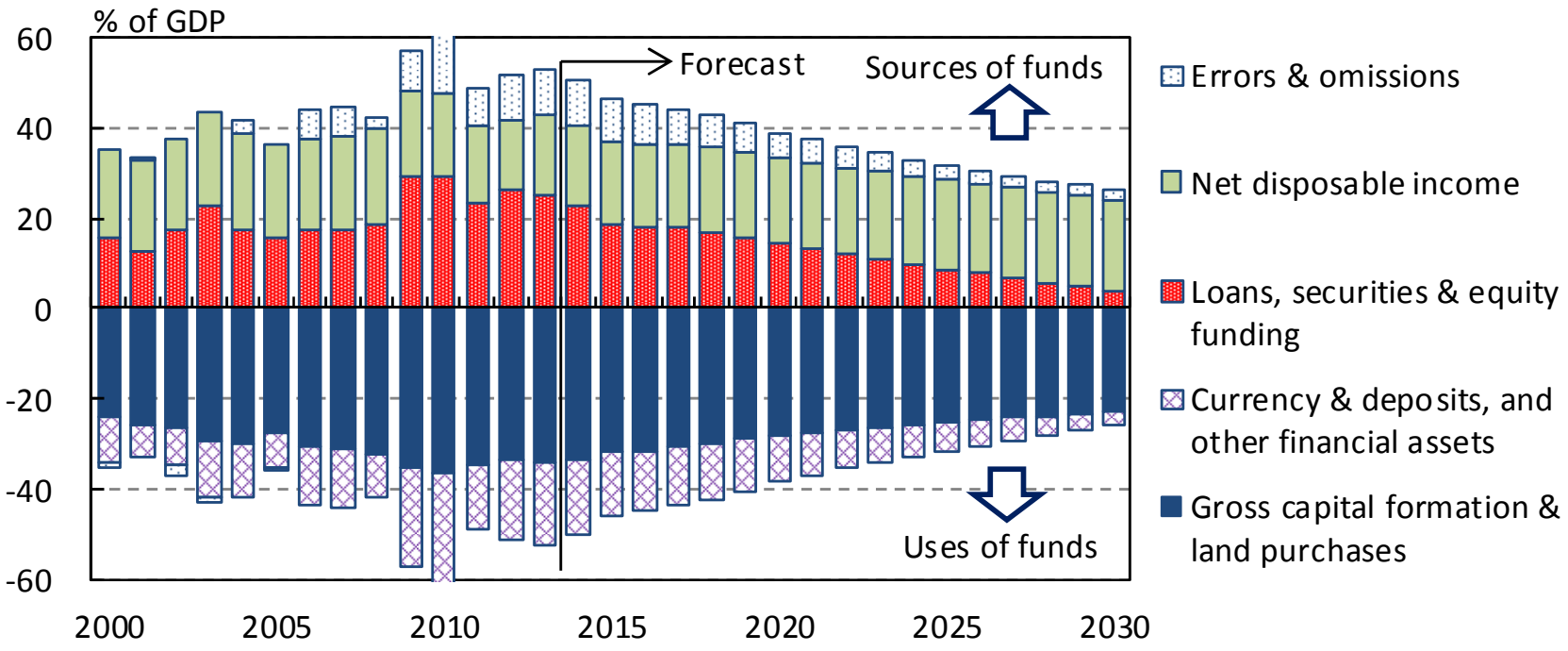
Sources: BIS, Haver Analytics, JCER

Fig.10 Future Economic Growth Rate in China: Two Cases



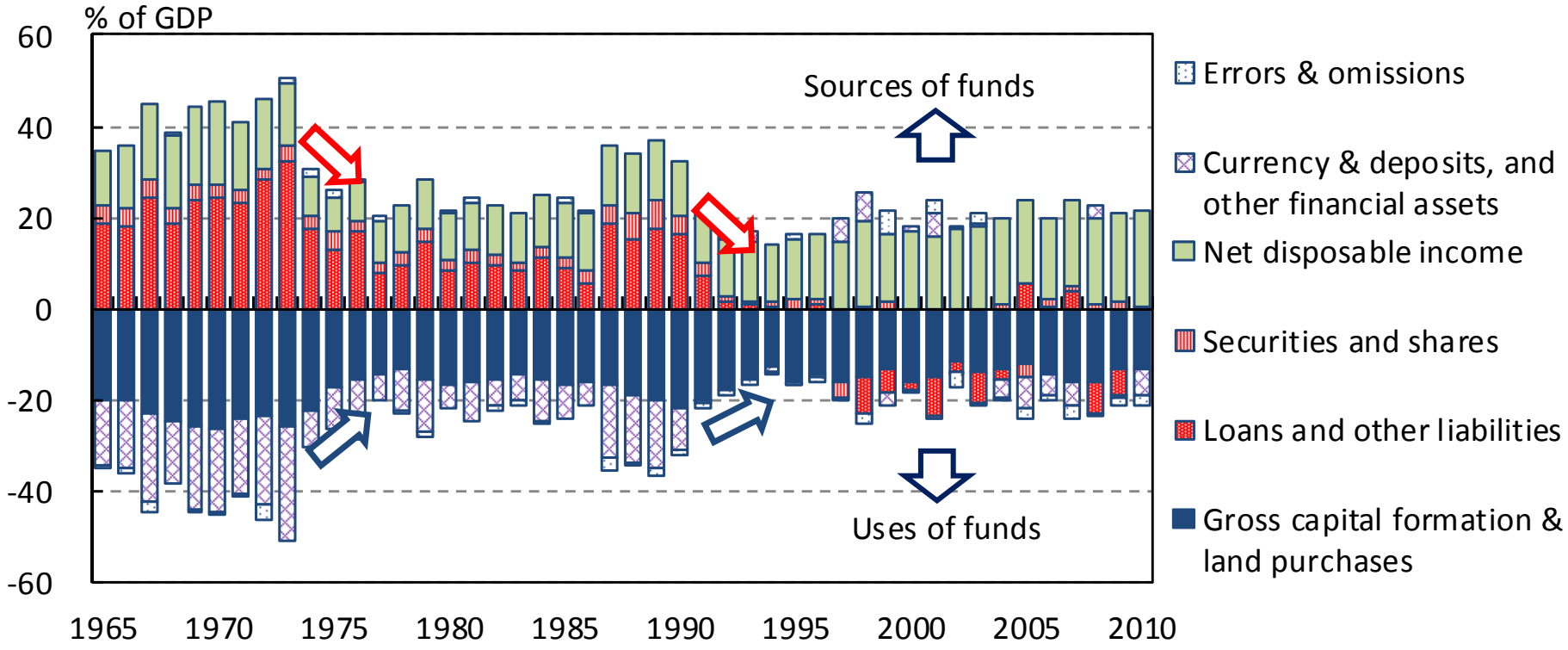
Sources: BIS, Haver Analytics, JCER

Fig.11 Funding and Investment of Non-financial Corporations in China(Base Scenario)



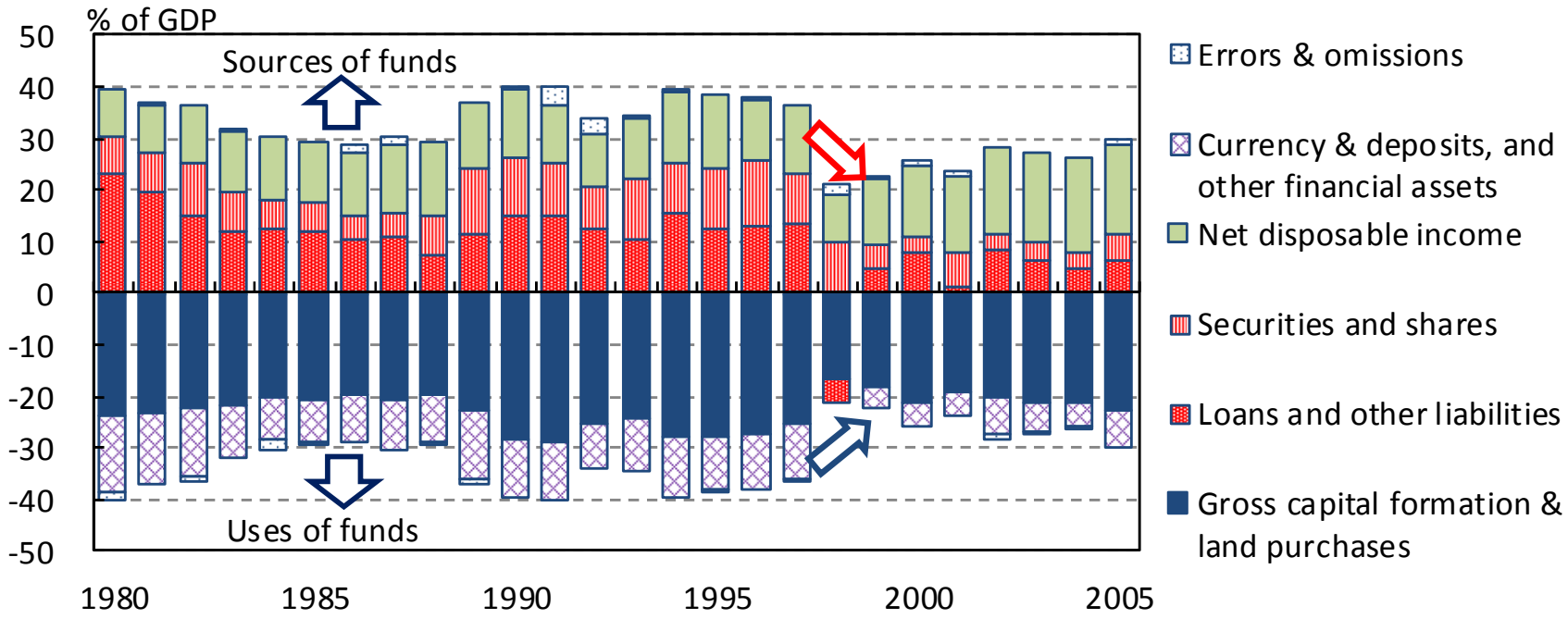
Sources: NBS, People's Bank of China, Haver Analytics, JCER

Fig.12 Funding and Investment of Non-financial Corporations in Japan（1965～2010）



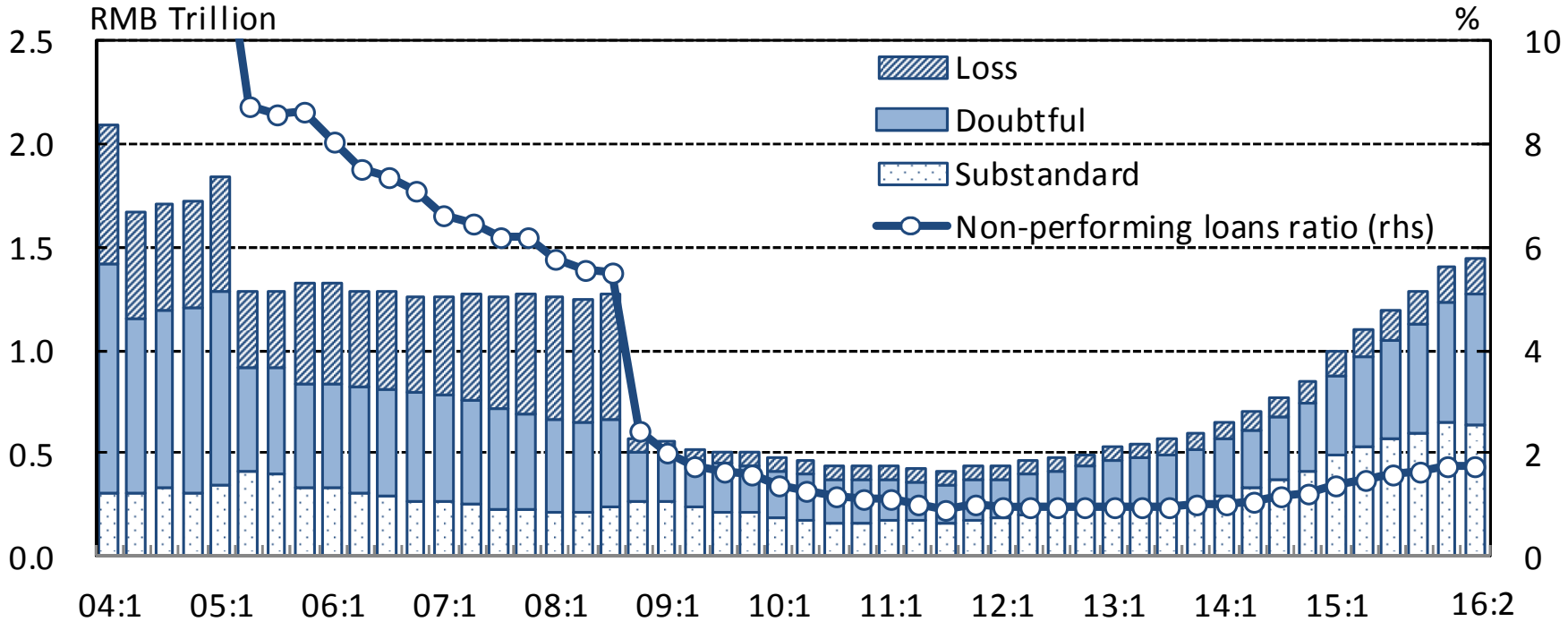
Sources: Bank of Japan "Flow of Funds Accounts", Cabinet Office "Annual Report on National Accounts"

Fig.13 Funding and Investment of Non-financial Corporations in South Korea（1980～2005）



Sources: Bank of Korea, Haver Analytics

Fig.14 Non-performing Loan Ratio of Commercial Banks in China



Sources: CBRC, Haver Analytics

Ⅴ. Capital Outflow and Exchange Rate Development in Japan

1. During the process of deleveraging in Japan, the yen rate continued to appreciate rapidly in the first half of the 1990s, despite the bubble burst (the “Yen appreciation syndrome”).

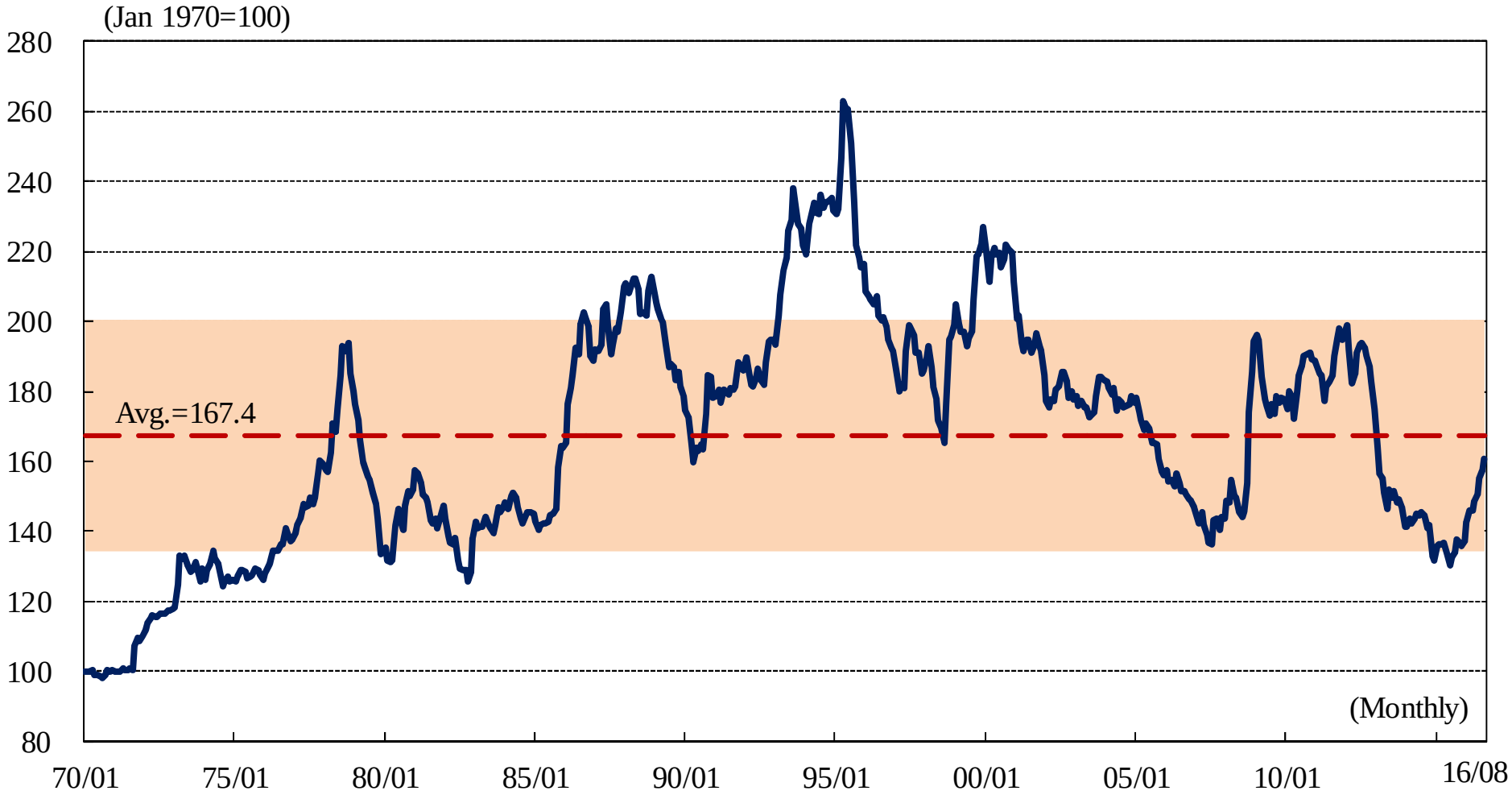
- During the bubble period, efforts were made to stabilize the exchange rates among major currencies, such as the “Louvre Accord” in 1987; it was ineffective to contain the pressure on yen appreciation.
- After the bubble burst, the Japanese government promoted capital exports by relaxing the regulation on quantitative limits on foreign assets purchase by insurance companies and pension funds.

Ⅴ. Capital Outflow and Exchange Rate Development in Japan

2. The Yen rate stopped to appreciate, when the US Treasury changed the “cheap dollar policy” adopted since the Plaza Accord in 1985, to the “strong dollar policy” in the face of the deepening Mexican crisis.

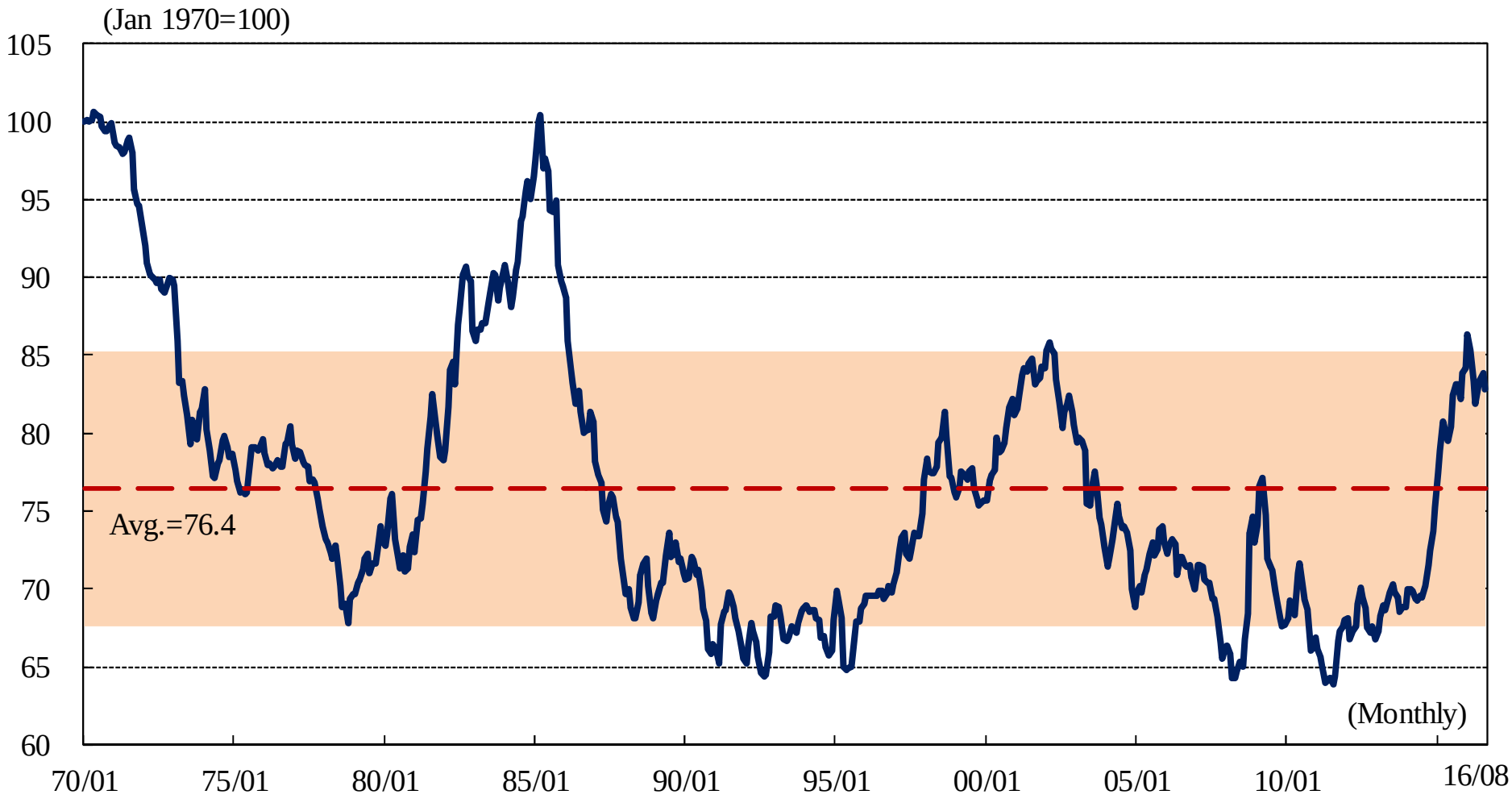
- The Japan’s Ministry of Finance accumulated foreign reserve through dollar-buying intervention, while the private sector accumulated foreign assets.

Fig.15 Real Effective Exchange Rate of the Japanese Yen



Source: BIS "The BIS Effective Exchange Rate Indices"

Fig.16 Real Effective Exchange Rate of the US Dollar



Source: BIS "The BIS Effective Exchange Rate Indices"

Ⅵ. Capital Outflow and Exchange Rate Development in China

1. In contrast to Japan, the capital outflow from China accelerated since mid-2014, while the Renminbi rate vis-à-vis US dollar started to depreciate significantly since mid-2015.

- The size of capital outflow was remarkable, although the China's foreign debt ratio to GDP was about 13% at the end of 2015.
- China lost the foreign reserve($820 billion since mid-2014) through the dollar-selling intervention policy to support the Renminbi rate in the face of massive capital outflow.

Ⅵ. Capital Outflow and Exchange Rate Development in China

2. The real effective exchange rate of Renminbi had appreciated as a trend after hitting the bottom in 2005.

- It reached the peak in mid-2015 and has started to decline since the beginning of 2016.
- Yet, it deviated upward from the long-term average value similar to the Japanese yen in mid-1990s.

3. We observe that the capital outflow from China began to expand steadily since 2012 and accelerated in the early-2014, mainly reflecting the repayment of foreign debt.

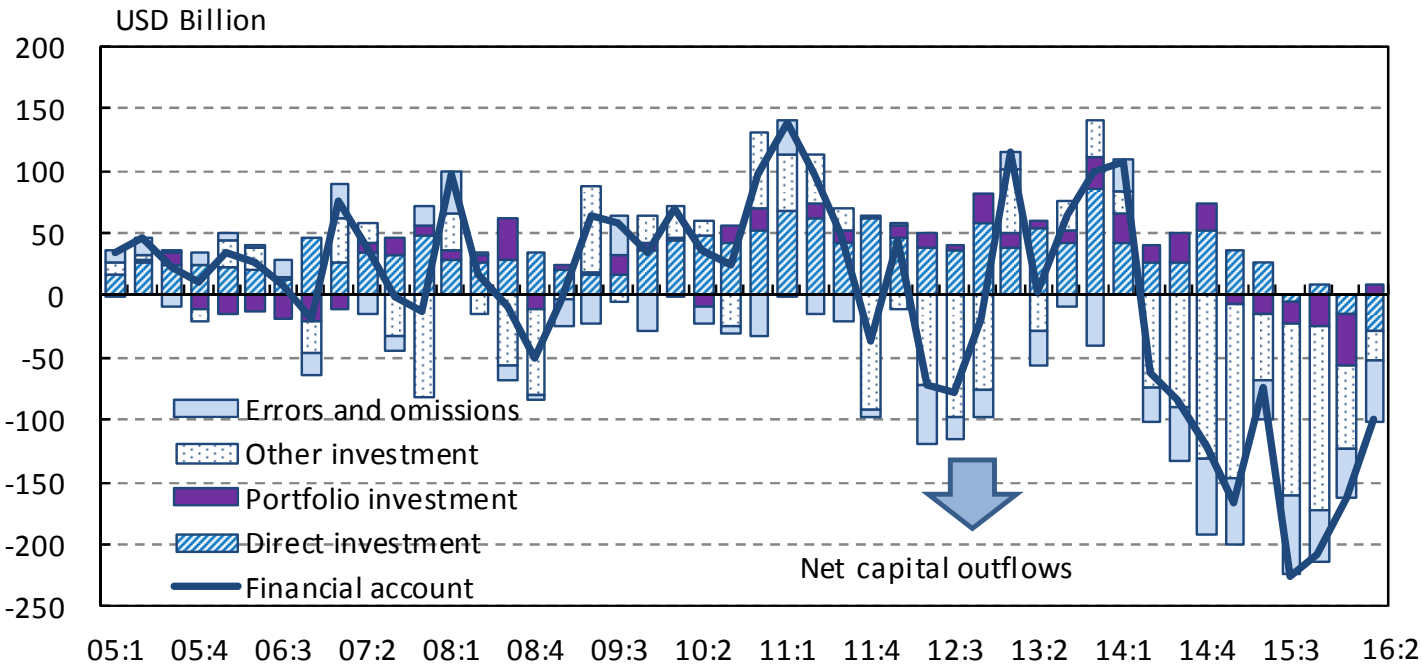
- Capital inflow to China accelerated since 2010, but it decelerated sharply in early-2015.

Ⅵ. Capital Outflow and Exchange Rate Development in China

4. The massive capital outflow seems to be largely due to the interest rate differentials and the change in expected exchange rate by market participants between China and abroad.

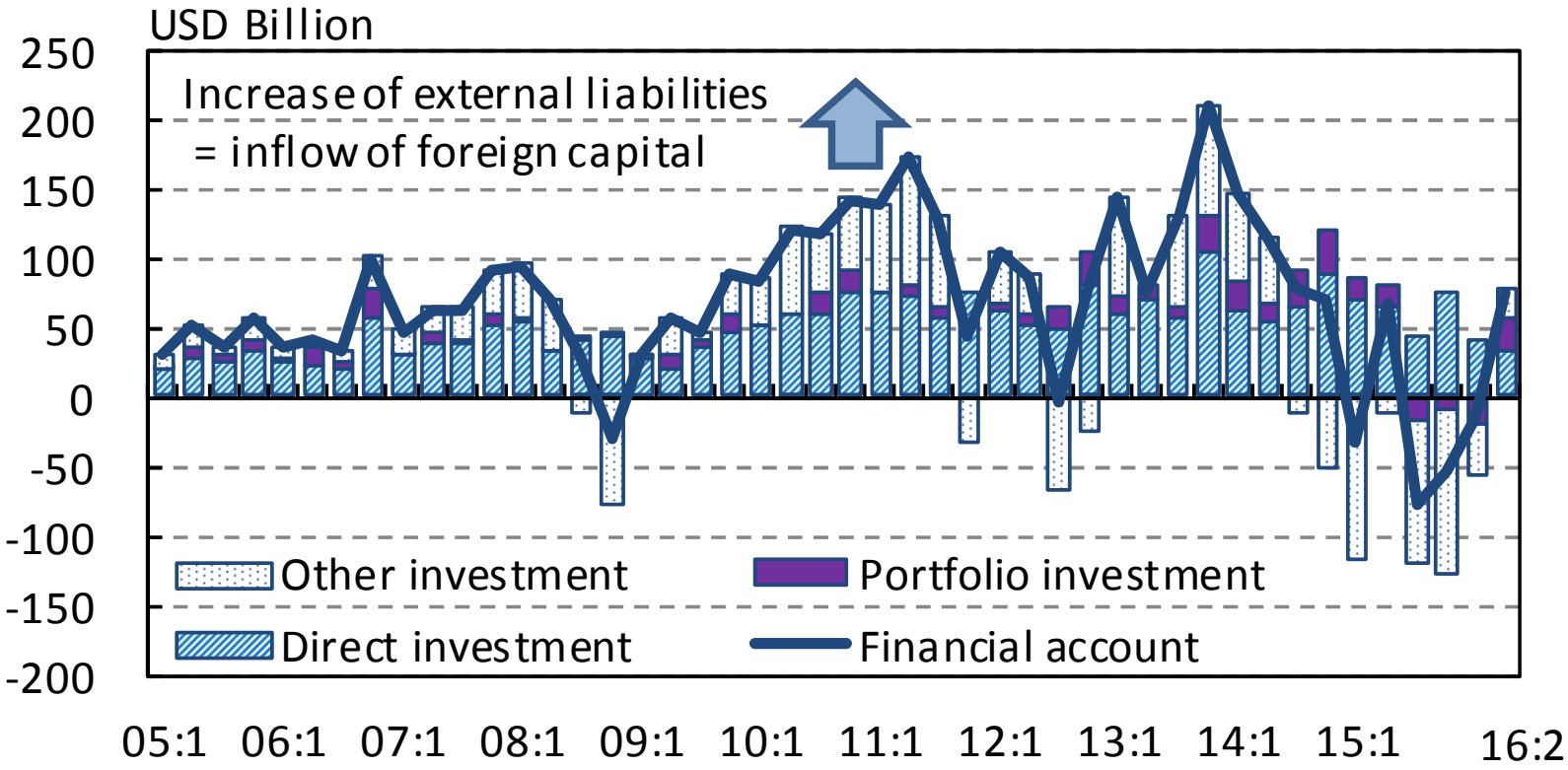
- The interest rate cut by the People's Bank of China since October 2014 narrowed the interest rate gap between China and abroad. It worked to dampen the capital inflow from abroad.
- The change in expectation of market participants from appreciation to depreciation of Renminbi enhanced the repayment of foreign debt and curtailed the foreign debt issue and borrowing.
- The interest rate and exchange rate arbitrage activity between onshore and offshore market induced the over and under-invoicing in trade, resulting in rapid shrinkage of Renminbi deposits in Hong Kong.

Fig.17 Capital Outflow from China



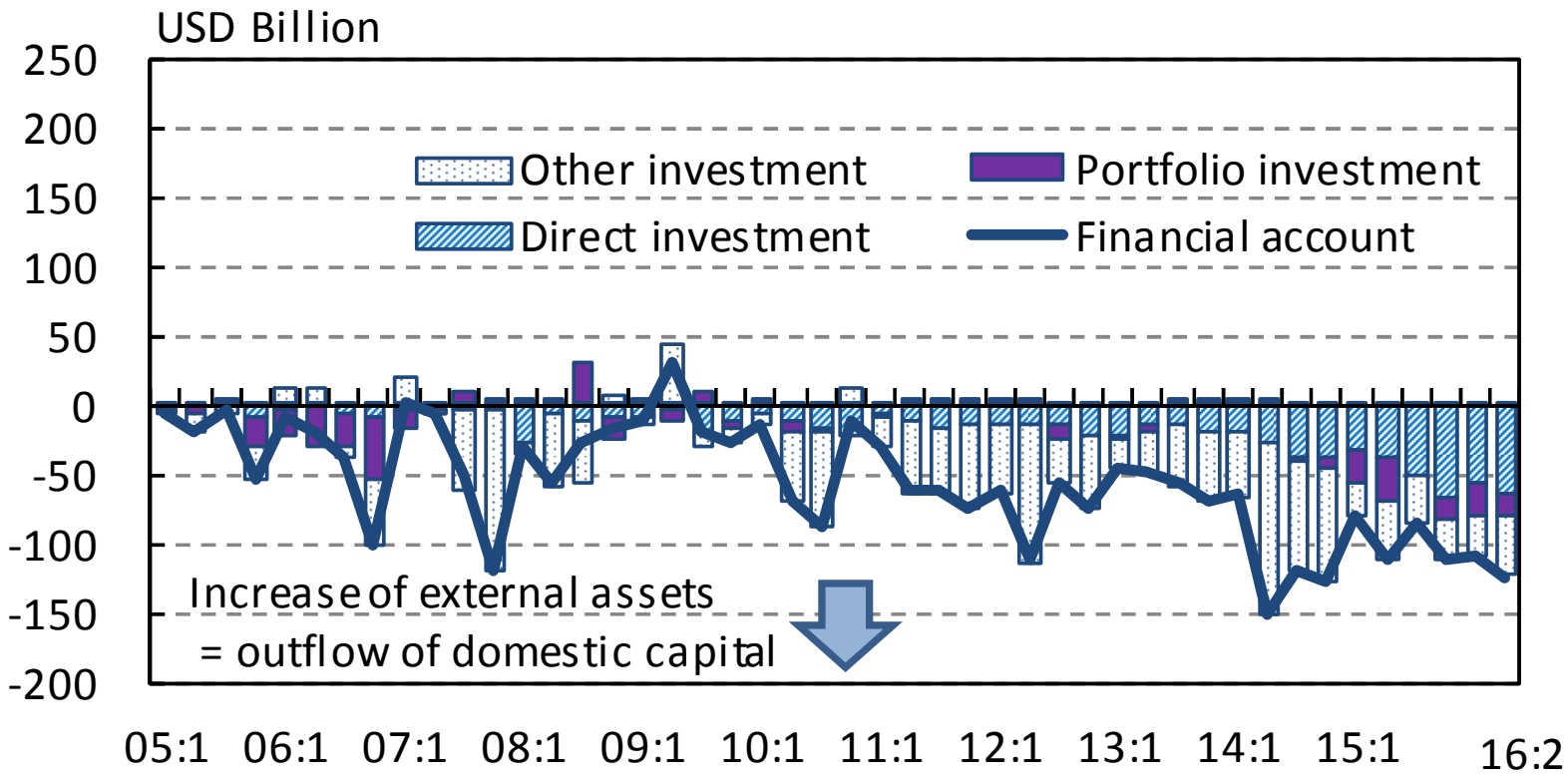
Note: Financial account balance includes errors and omissions, and excludes reserve assets.
Source: Haver Analytics

Fig.18 China's Financial Account Balance - Capital inflows from abroad(Liabilities)



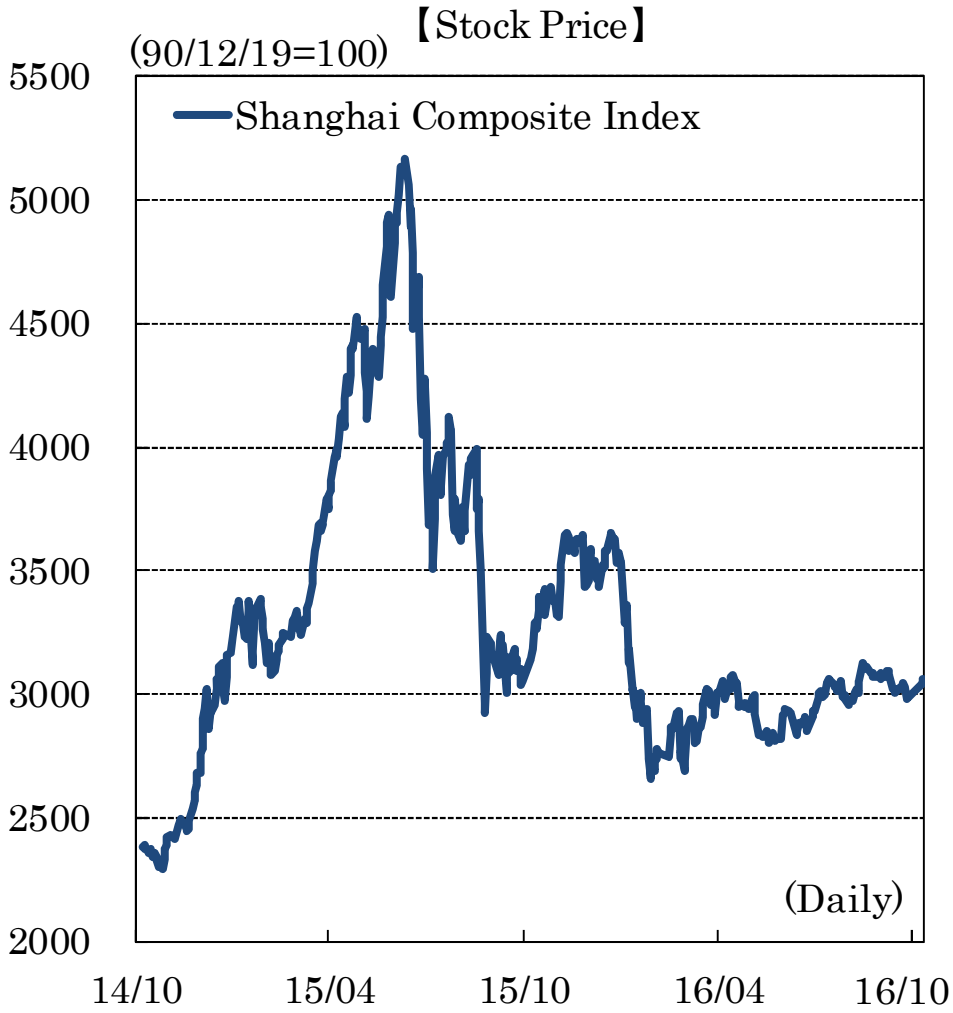
Note: Change in the liabilities of financial account.
Source: Haver Analytics

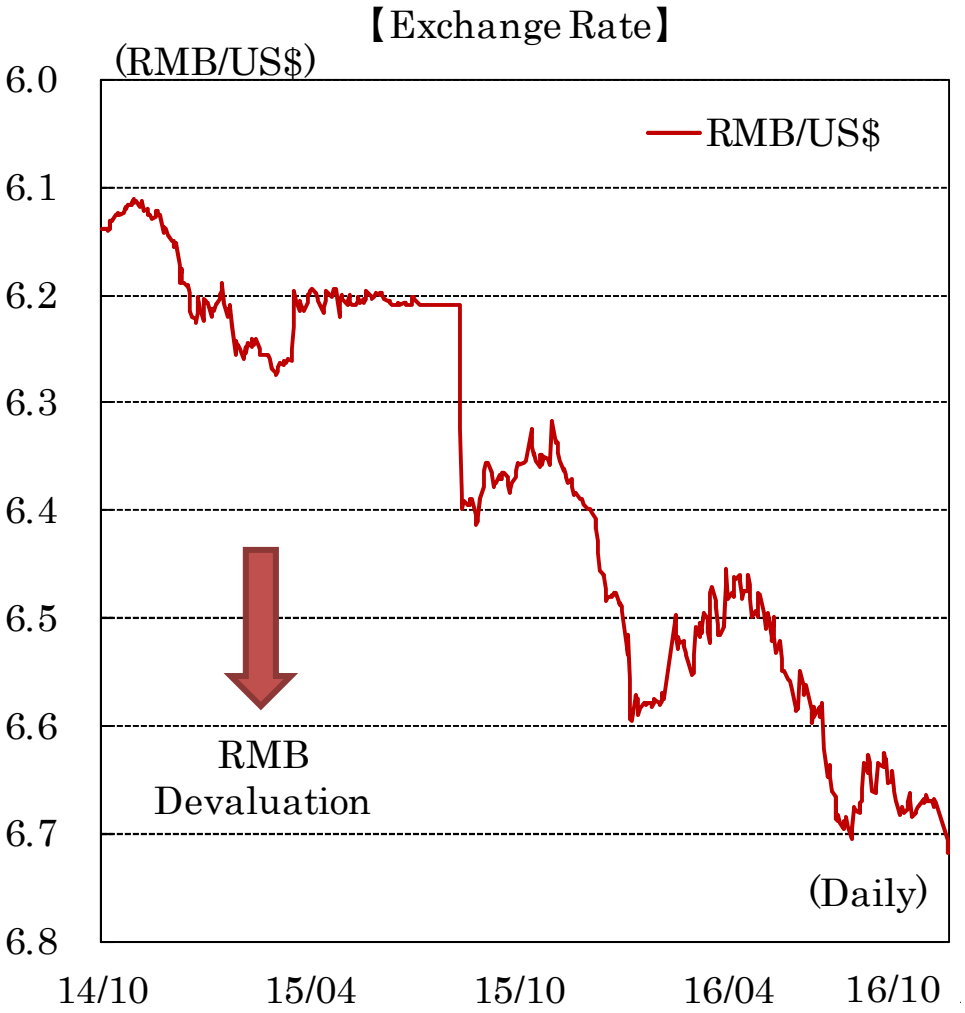
Fig.19 China's Financial Account Balance
- Capital outflows abroad from China(Assets)



Note: Change in the assets (excluding reserves) of financial account.
Source: Haver Analytics

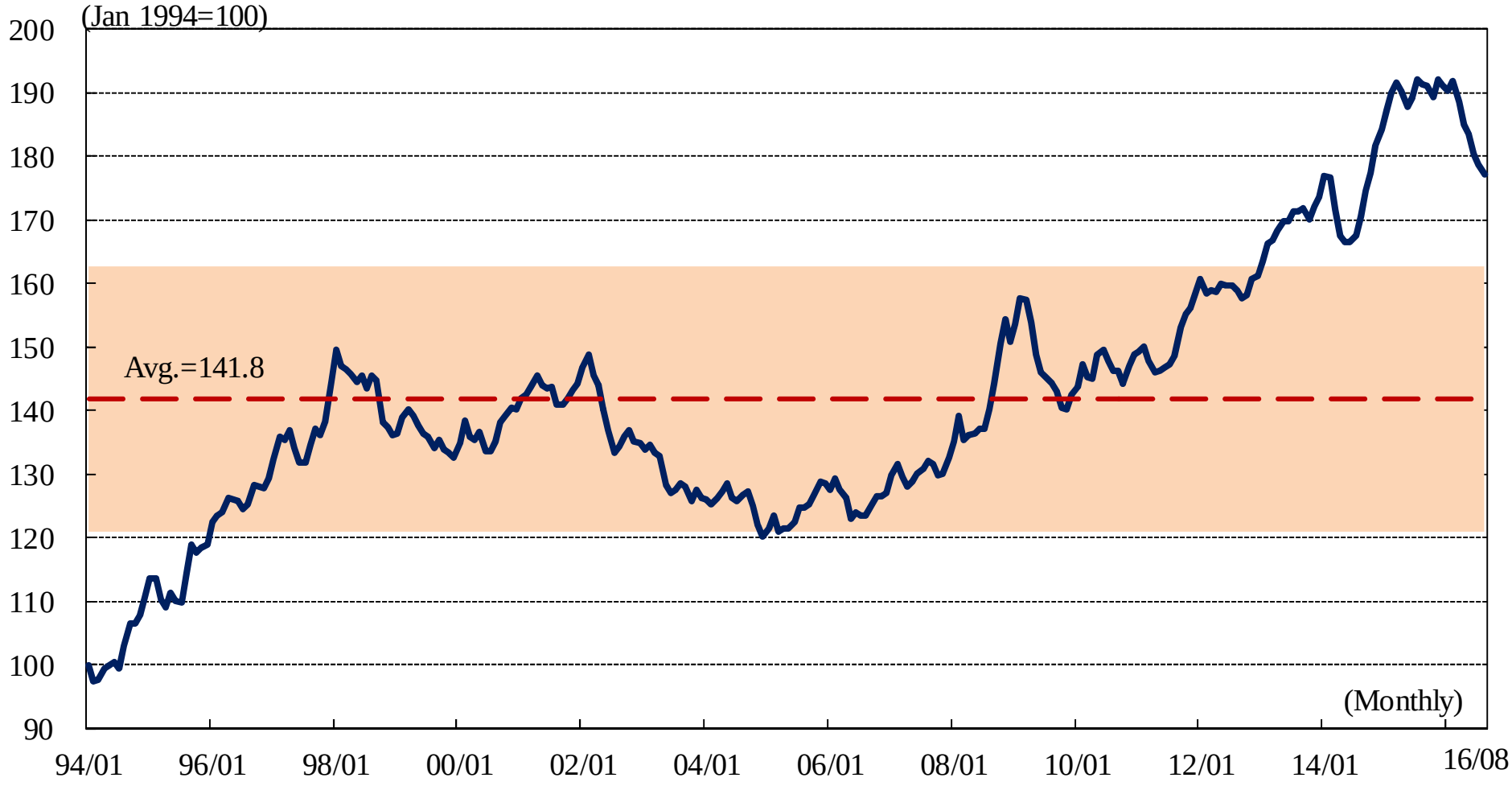
Fig.20 Stock Price and Renminbi-US Dollar Rate





Source: bloomberg

Fig.21 Real Effective Exchange Rate of the Chinese Yuan



Source: BIS "The BIS Effective Exchange Rate Indices"

Ⅶ. Role of Capital Control and the Internationalization of Renminbi

1. PBOC strengthened capital control to stop the vicious circle of expected depreciation and capital outflow including international arbitrage activity.

- PBOC also announced to secure the “basic convertibility” of the Renminbi with the restriction on short-term debt.

2. This contradicts the policy goal of internationalization of Renminbi, as shown in the recent decline of the index of Renminbi internationalization.

Ⅶ. Role of Capital Control and the Internationalization of Renminbi

3. In contrast, capital export promotion policy by the Japan's Ministry of Finance in the midst of the Yen syndrome was consistent with the internationalization of Yen.

- Japan failed to establish the Asian Monetary Fund at the time of the Asian financial crisis, although the AMRO has become international institution in liaison with the CMIM under the collaboration with China.
- On the other hand, China made progress on the AIIB and the New Development Bank, making inroads to regional and global financial architecture.

Ⅷ. Bond Market Distortions under the BOJ's Unconventional Monetary Policy

1. If China succeeds in achieving the convertibility of Renminbi under the carefully designed domestic and external liberalization, the Renminbi will become Asia's leading currency.

2. On the future role of Yen, Subacchi(2013) argued that the Yen should play the role of a global store of value or the safe haven during the times of crisis like the UK sterling and the Swiss franc do, by establishing fully-fledged international financial center.

Ⅷ. Bond Market Distortions under the BOJ's Unconventional Monetary Policy

3. However, the role of Japanese government bond as an international safe asset can be eroded by market distortions under BOJ's unconventional monetary policy(the QQE, the QQE with negative interest rate and the QQE with Yield Curve Control) .

- Market liquidity was reduced and easily exposed to excess volatility by the price shocks.
- The term premium turned into negative since the additional easing in October 2014.

Ⅷ. Bond Market Distortions under the BOJ's Unconventional Monetary Policy

4. The shadow interest rate is derived by taking into account the constraint of the zero lower bound in estimating the term premium. It is in the negative territory.

- Both equilibrium nominal interest rate(the shadow short rate) and the equilibrium real interest rate(the natural interest rate) are negative. This creates difficulty for the BOJ to overcome deflation under the 0% inflation expectation in terms of inflation swap rate.

Ⅷ. Bond Market Distortions under the BOJ's Unconventional Monetary Policy

5.About 40% of Japanese government bond outstanding is absorbed by the BOJ under unconventional monetary policy.

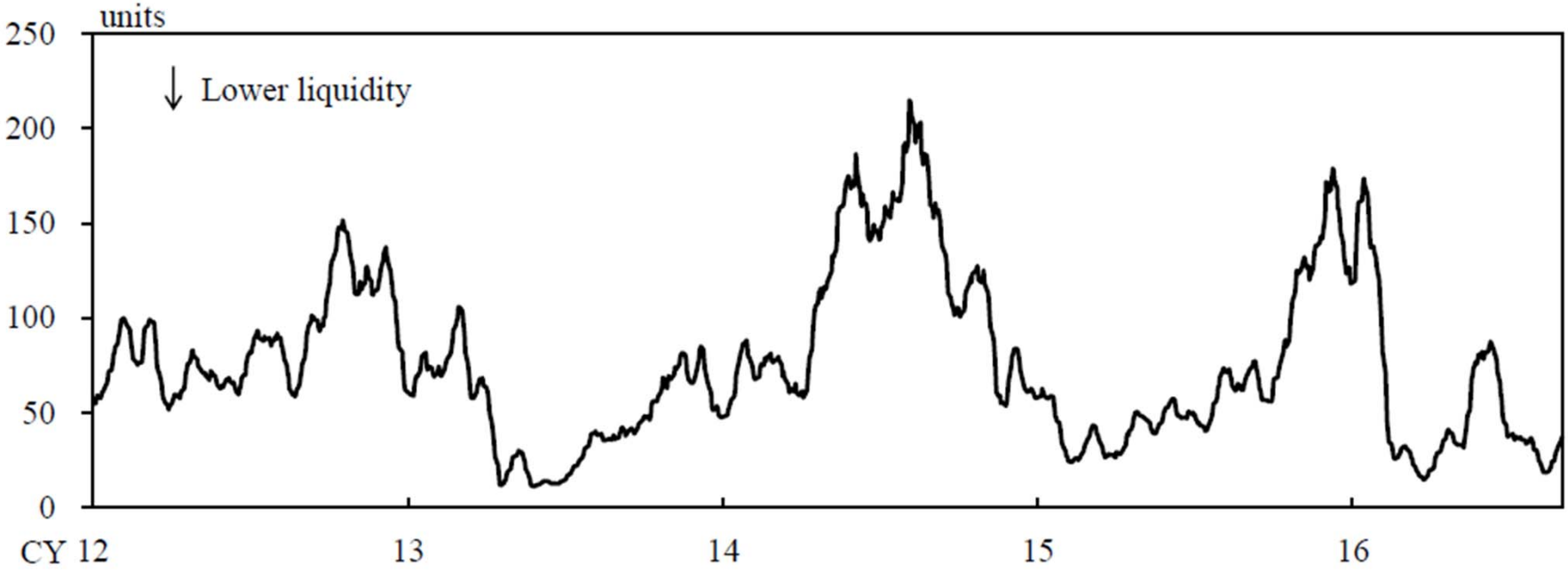
- There may be a limit on further purchase of JGBs due to the erosion of BOJ's equity in 2018.

6. Under the QQE with Yield Curve Control, the gap between the short-term policy rate(minus 0.1%) and the long-term interest rate(0%) is only 0.1% point.

- The new policy framework will lower market liquidity and diminish the market transactions, except for foreign investors taking advantage of the widening dollar–yen basis swap, and purchasing JGBs with negative yield.

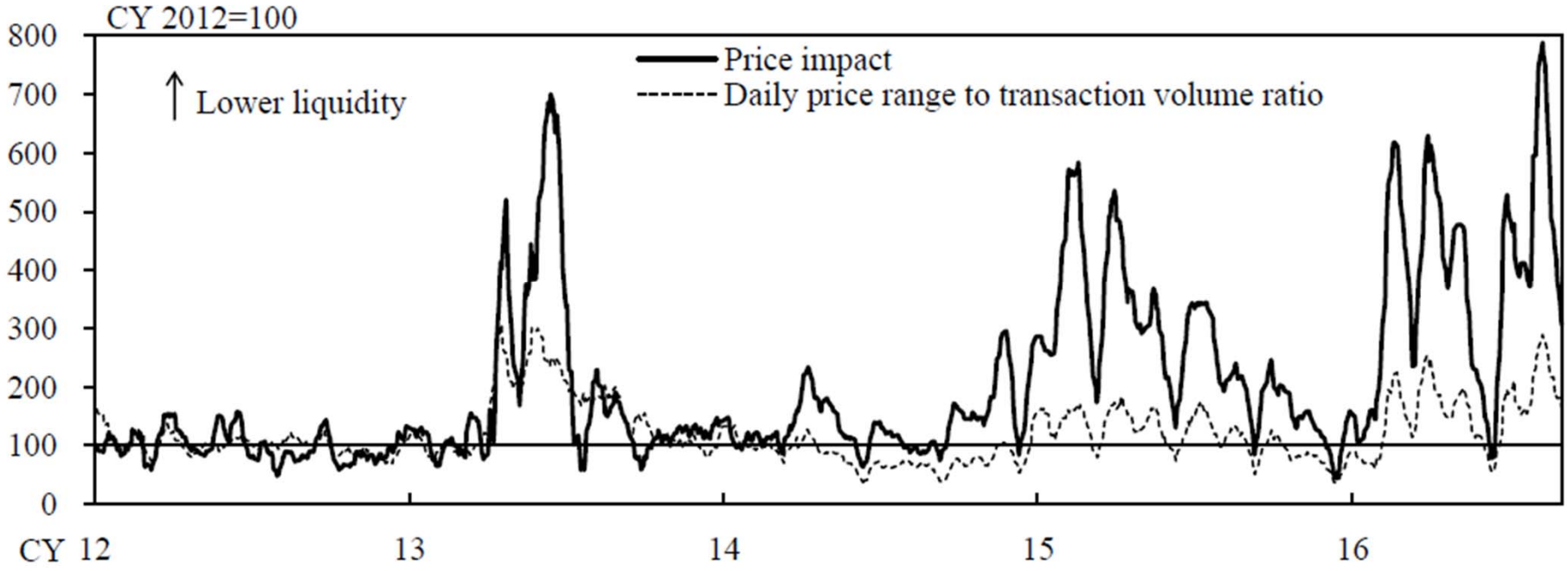
Fig.22 Liquidity Indicators for the JGB Markets

- Volume of Limit Orders at the Bid-Ask Price (JGB Futures)



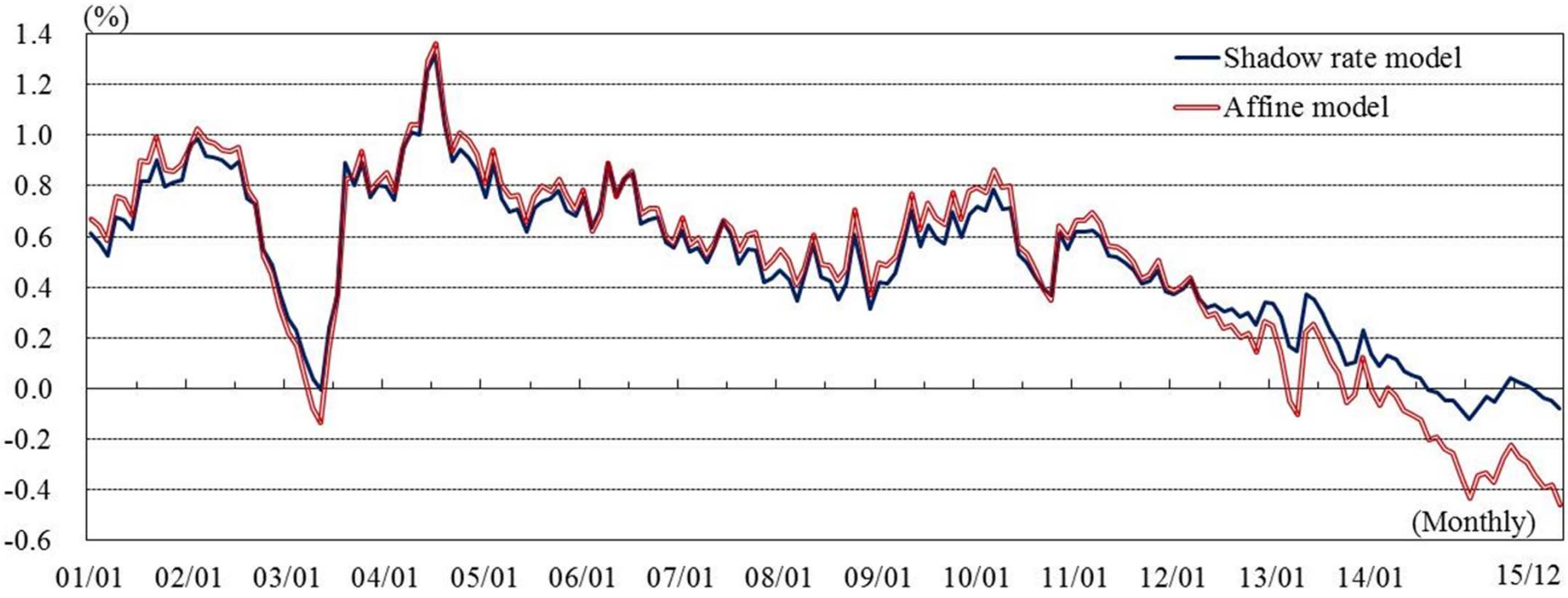
Note: Figures are calculated by taking the median of the volume of limit orders at the best-ask price with a 1-minute frequency within each business day, and then applying a 10-day backward moving average.
Source: Bank of Japan "Comprehensive Assessment: Developments in Economic Activity and Prices as well as Policy Effects since the Introduction of Quantitative and Qualitative Monetary Easing (QQE)", 21 Sep. 2016

Fig. 23 Liquidity Indicators for the JGB Markets
-Price Impact (JGB Futures)



Note: The figure shows 10-day backward moving averages. The price impact is calculated by first taking the average for each business day.
Source: Bank of Japan "Comprehensive Assessment: Developments in Economic Activity and Prices as well as Policy Effects since the Introduction of Quantitative and Qualitative Monetary Easing (QQE)", 21 Sep. 2016

Fig.24 Term Premium of JGBs

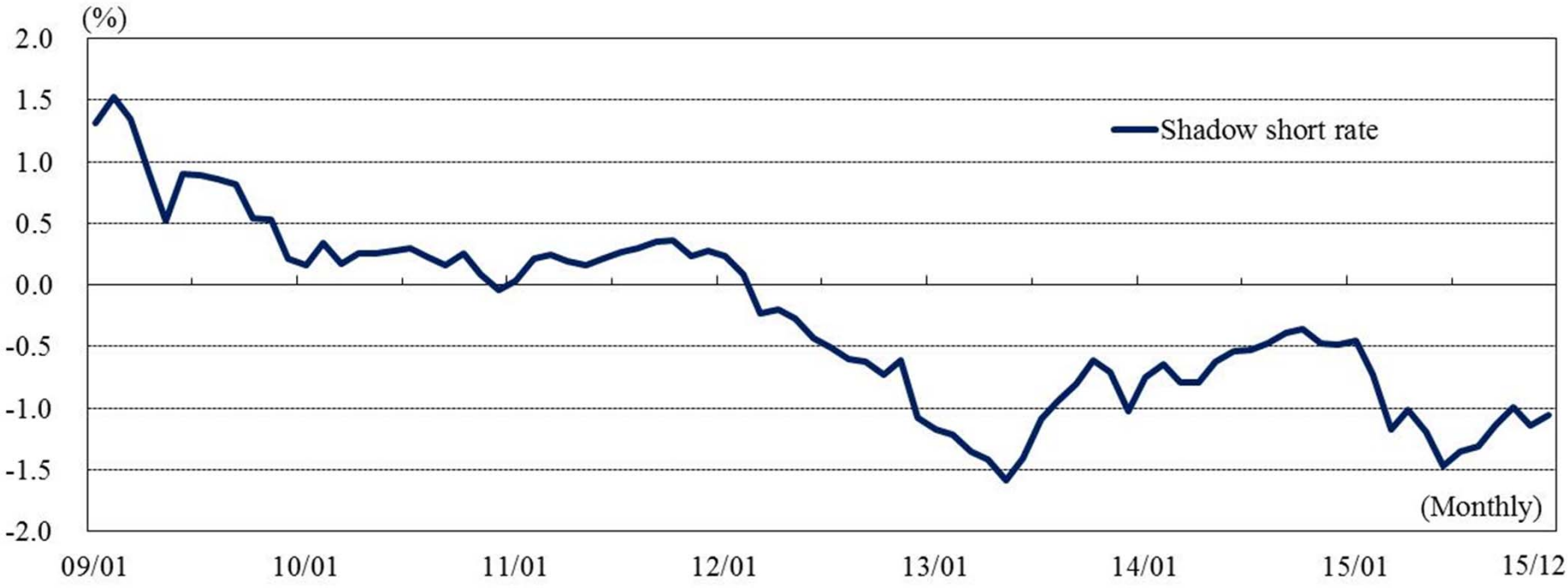


Notes:

1. For further detail regarding the Affine model, refer to JCER Financial Research Report 2014-4 “Almost two years since the Introduction of QQE”, Appendix 1.
2. 5, 6, 7, 8, 9 and 10 year zero coupon bond rates (J.P. Morgan estimates) were used for the estimations.
3. The sudden fall and rise in 2003 was caused by the “VaR Shock”.

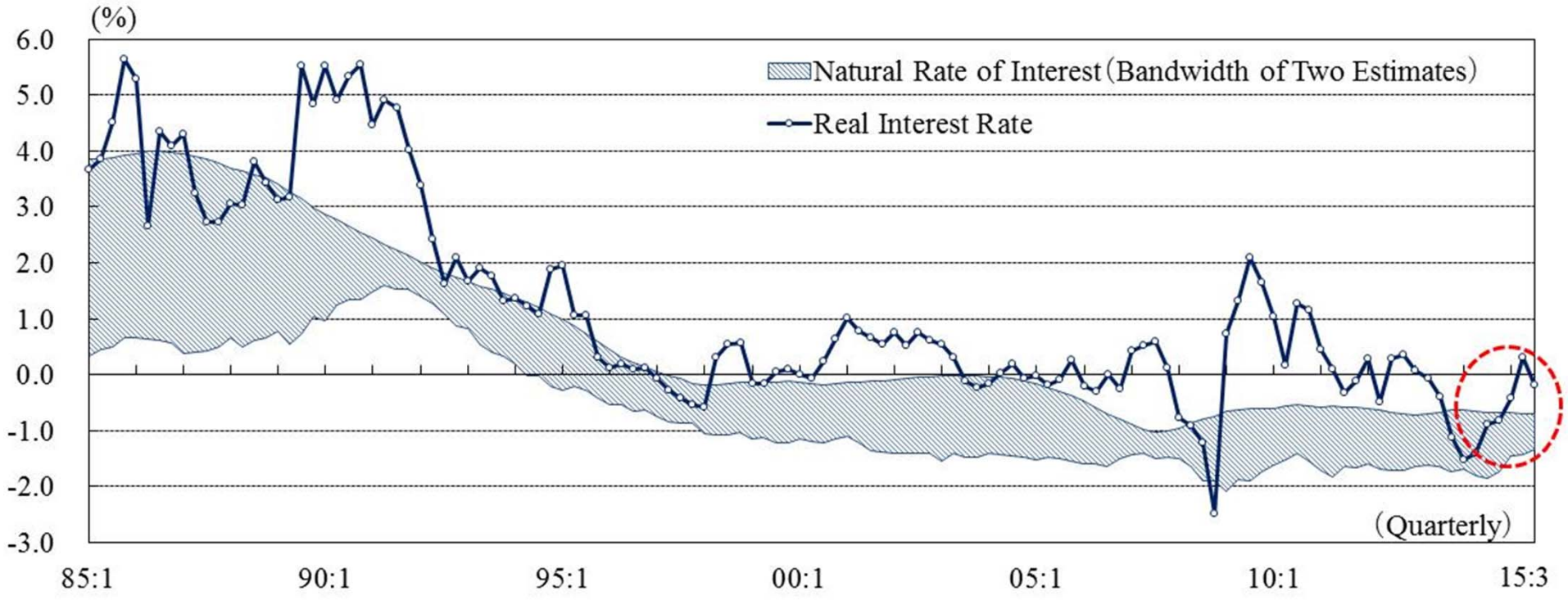
Sources: JCER’s estimate based on Bauer, Rudebusch and Wu(2012), Bauer and Rudebusch(2016)

Fig.25 Japan's "Shadow Short Rate (SSR)"



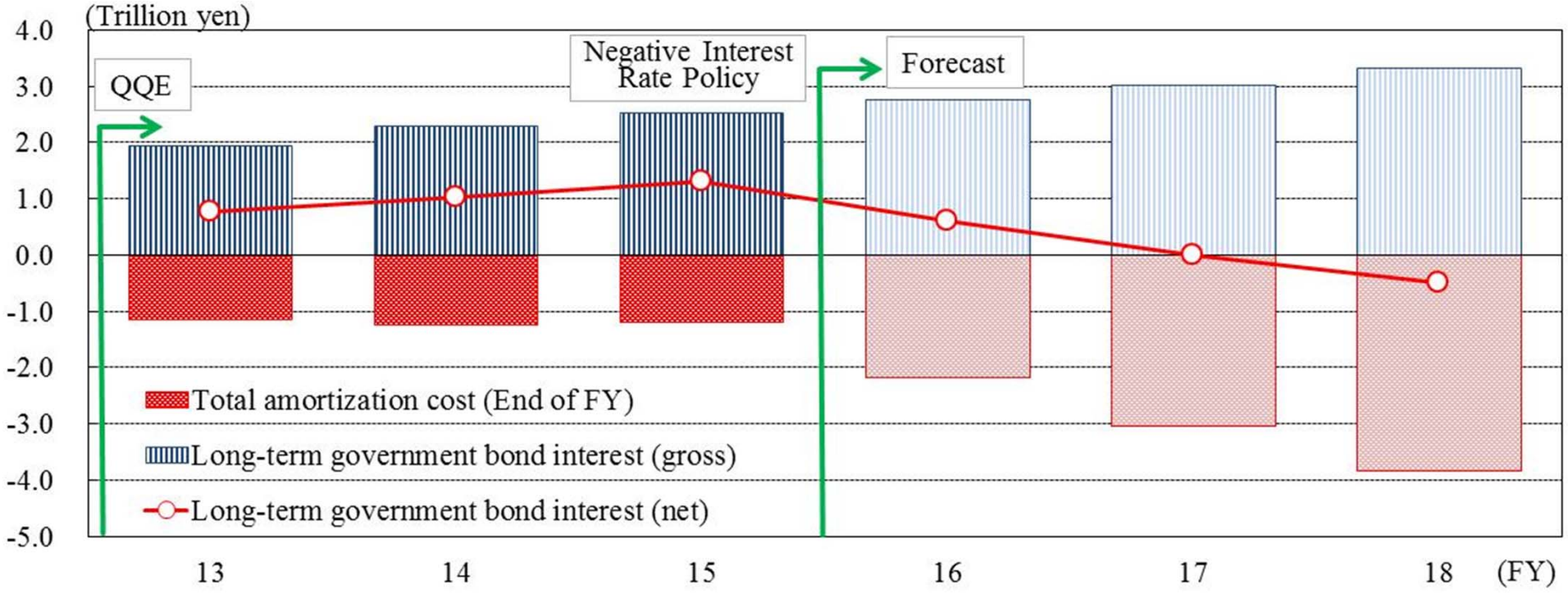
Source: JCER's estimate based on Bauer and Rudebusch（2016）

Fig.26 Japan's "Natural Rate of Interest" and Real Interest Rate



Source: Estimated by JCER Financial Research Team

Fig.27 Loss Sustained by QQE



Note:
1. The total amortization cost covers long-term JGBs purchased by the Bank of Japan from FY2010 onwards. Therefore, the FY2013 amortization cost includes costs incurred in the years FY2010 through FY2012.
2. Forecasts from FY2016 onwards.
Source: Bank of Japan, Ministry of Finance

Reference

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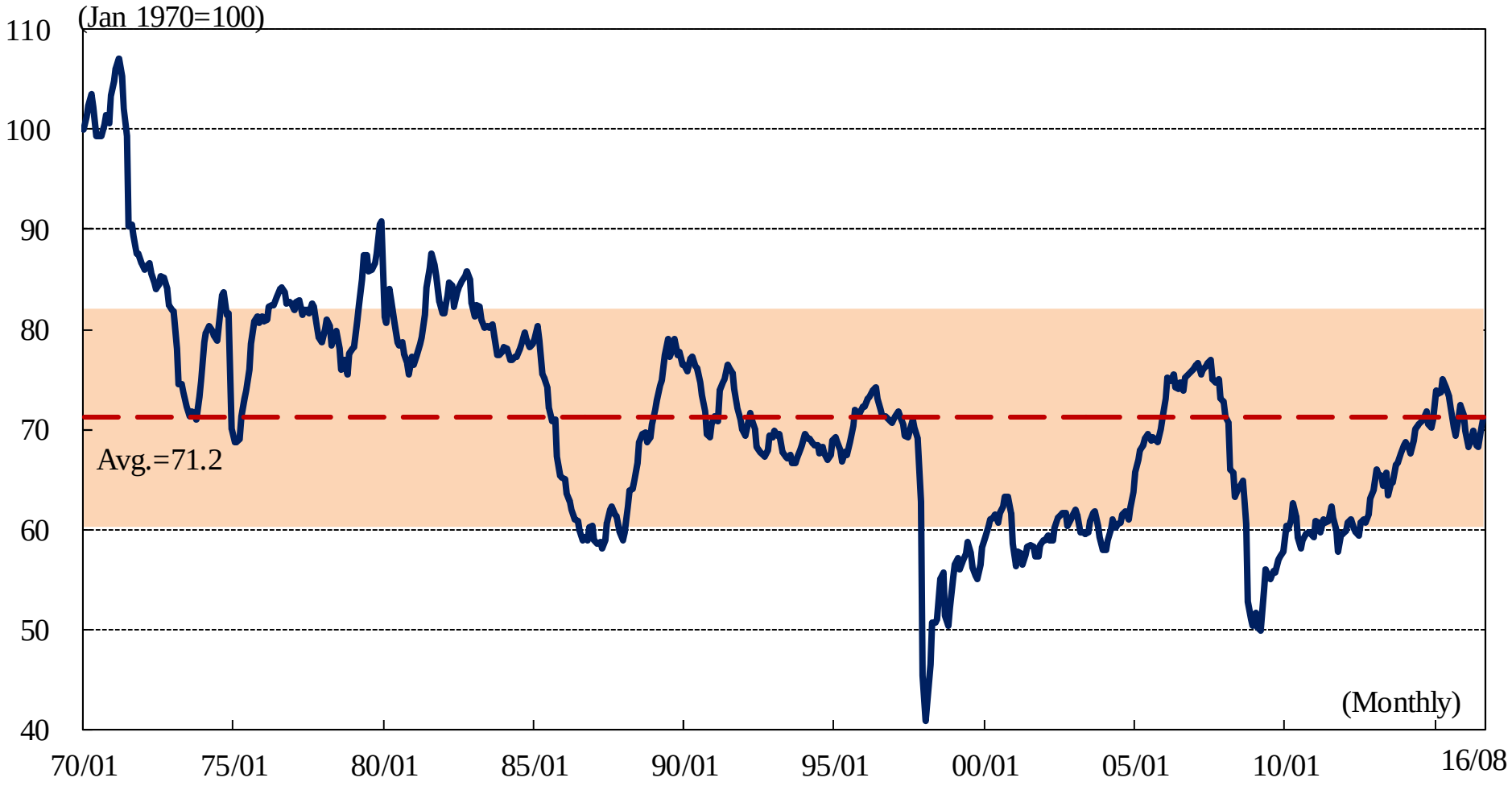
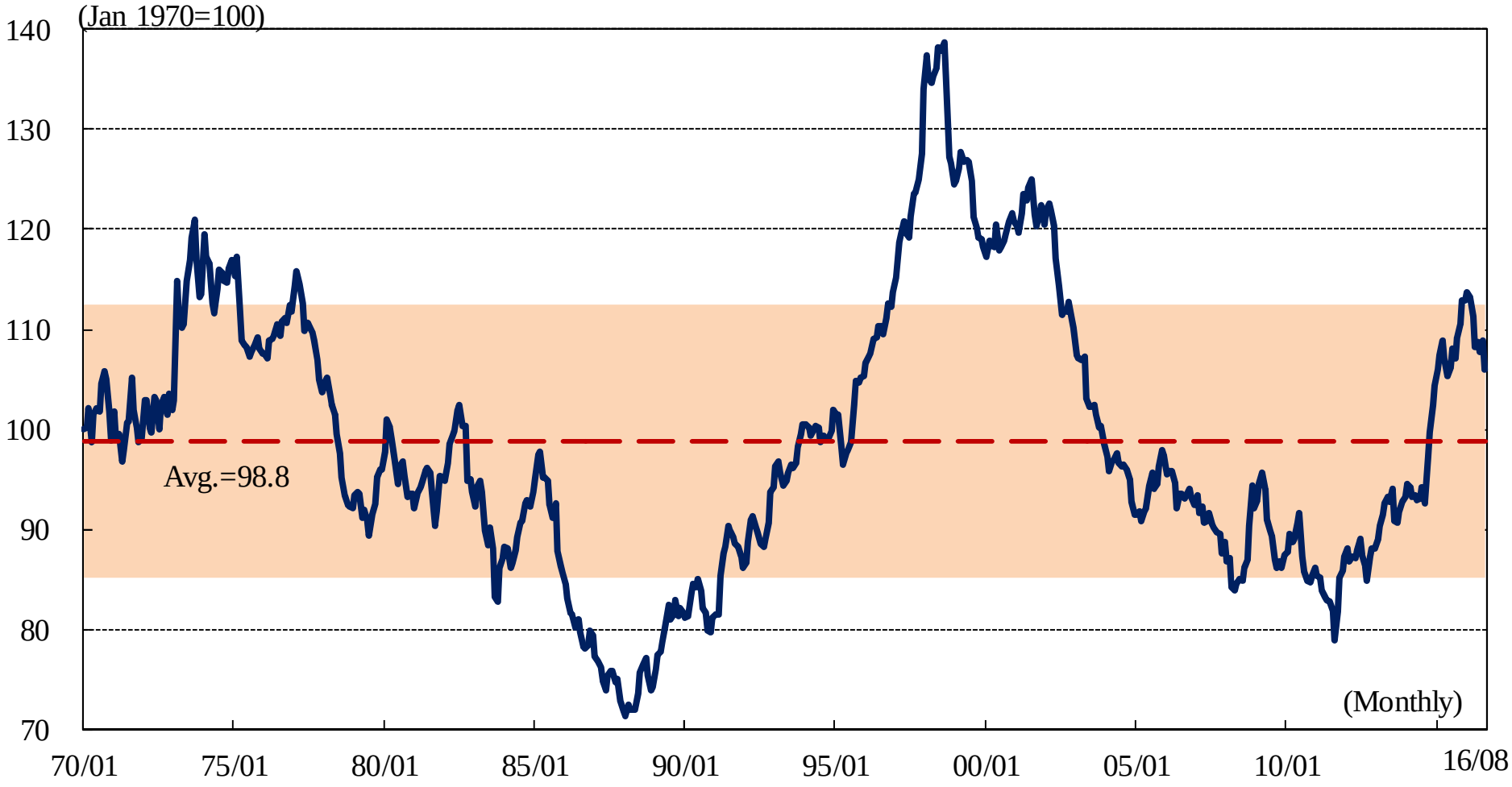
Fig. 1 Real Effective Exchange Rate of the South Korean Won



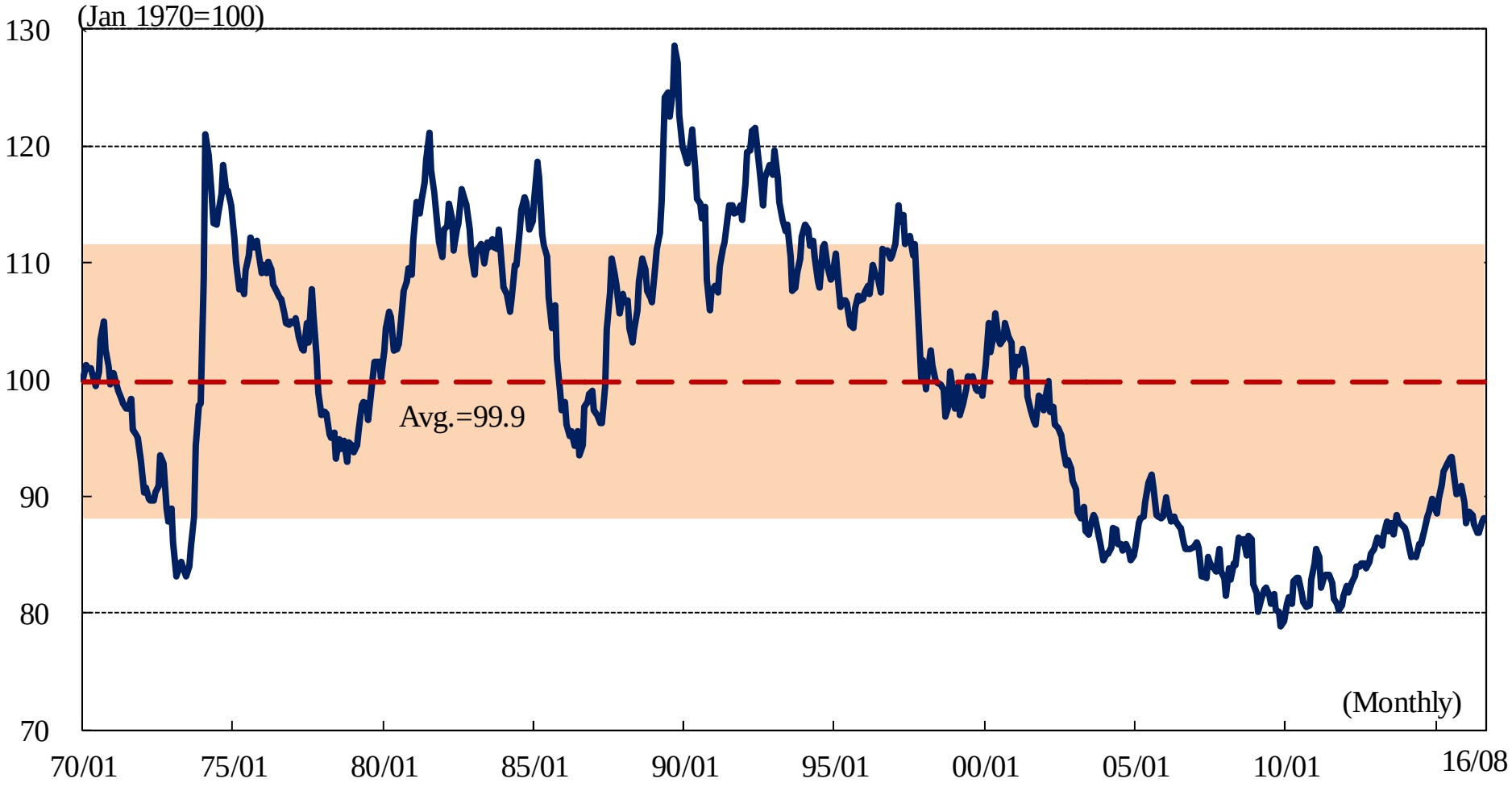
Source: BIS "The BIS Effective Exchange Rate Indices"

Fig. 2 Real Effective Exchange Rate of the Hong Kong Dollar



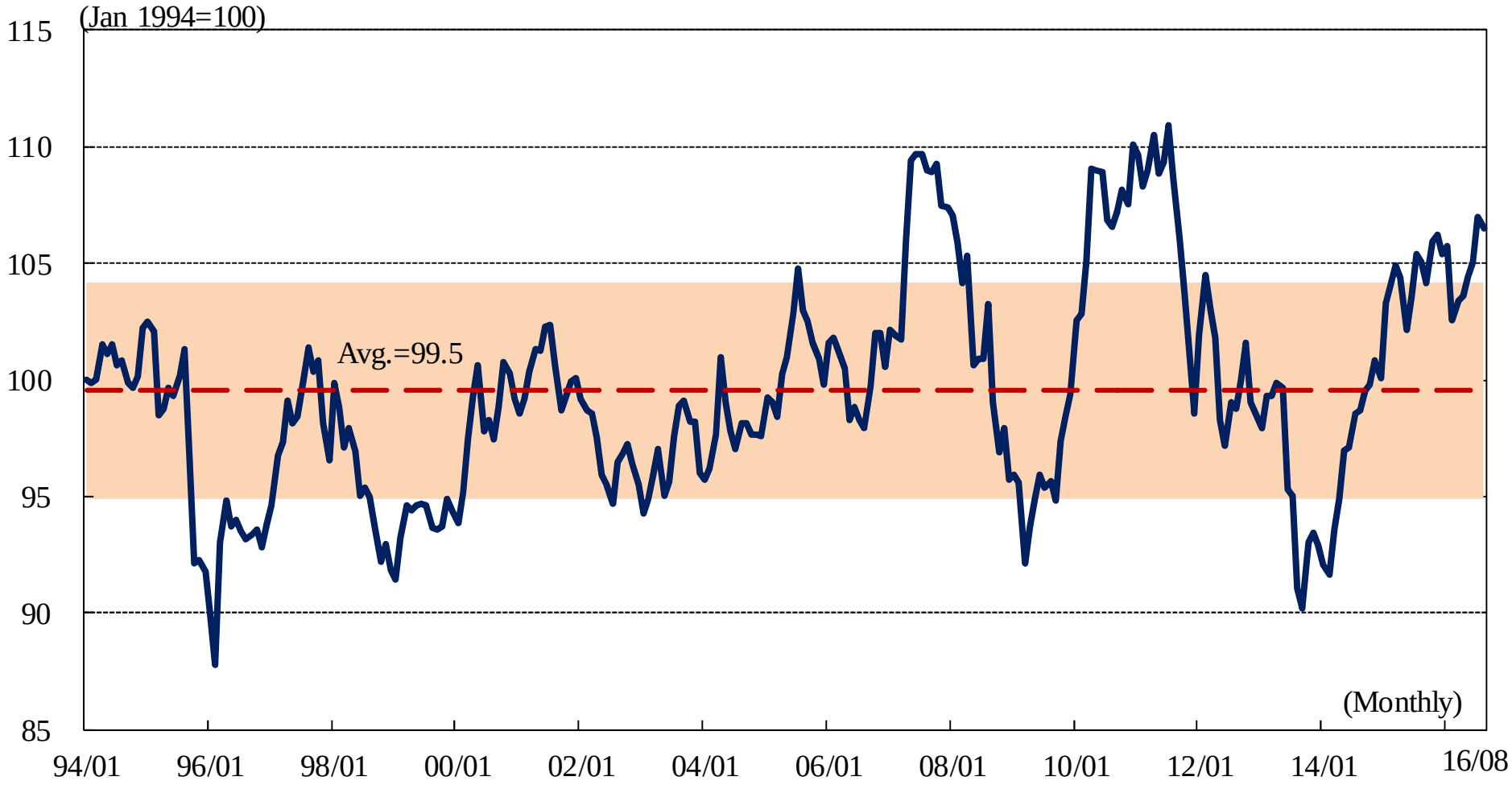
Source: BIS "The BIS Effective Exchange Rate Indices"

Fig. 3 Real Effective Exchange Rate of the Taiwan New Dollar



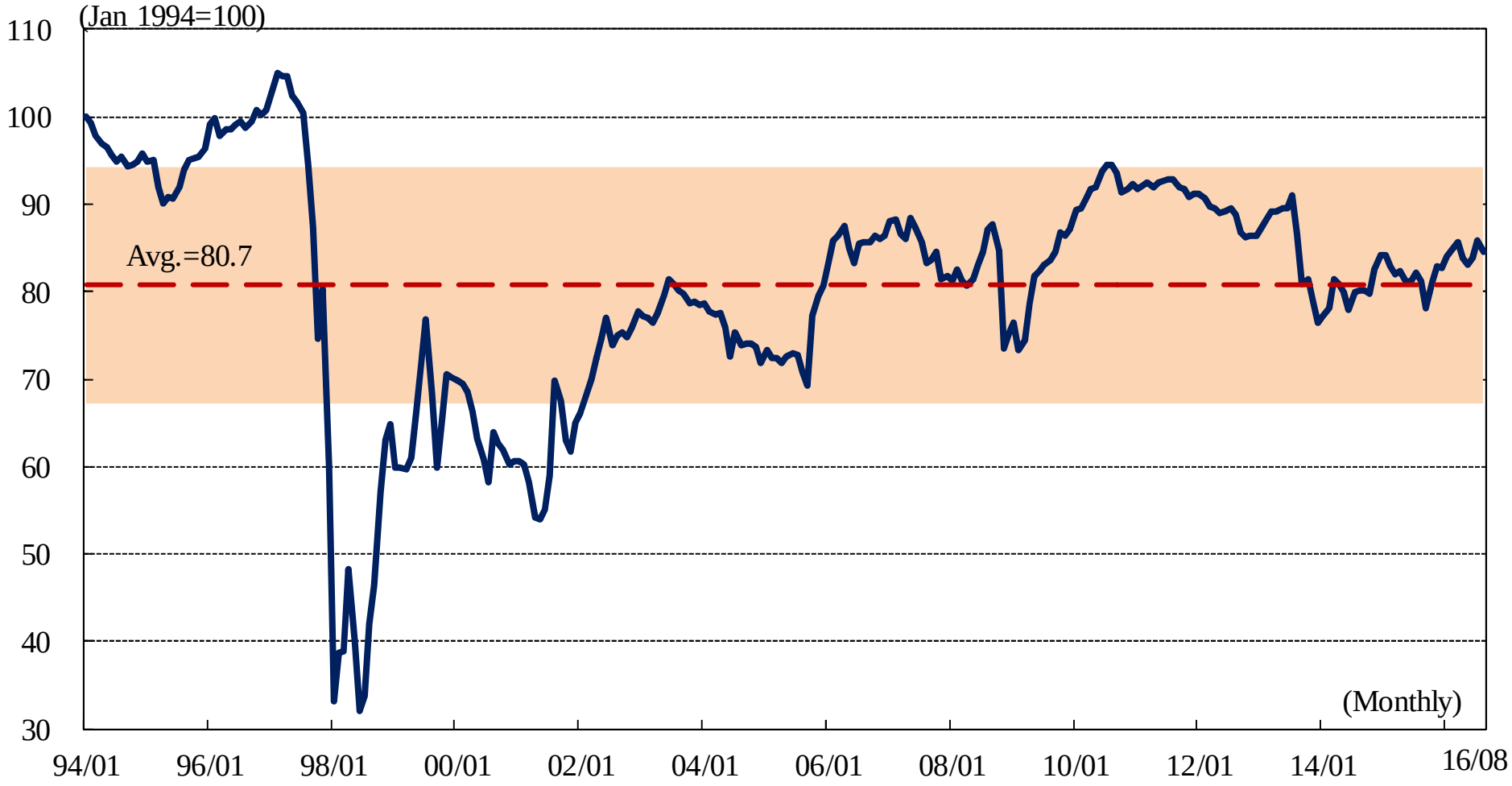
Source: BIS "The BIS Effective Exchange Rate Indices"

Fig. 4 Real Effective Exchange Rate of the Indian Rupee



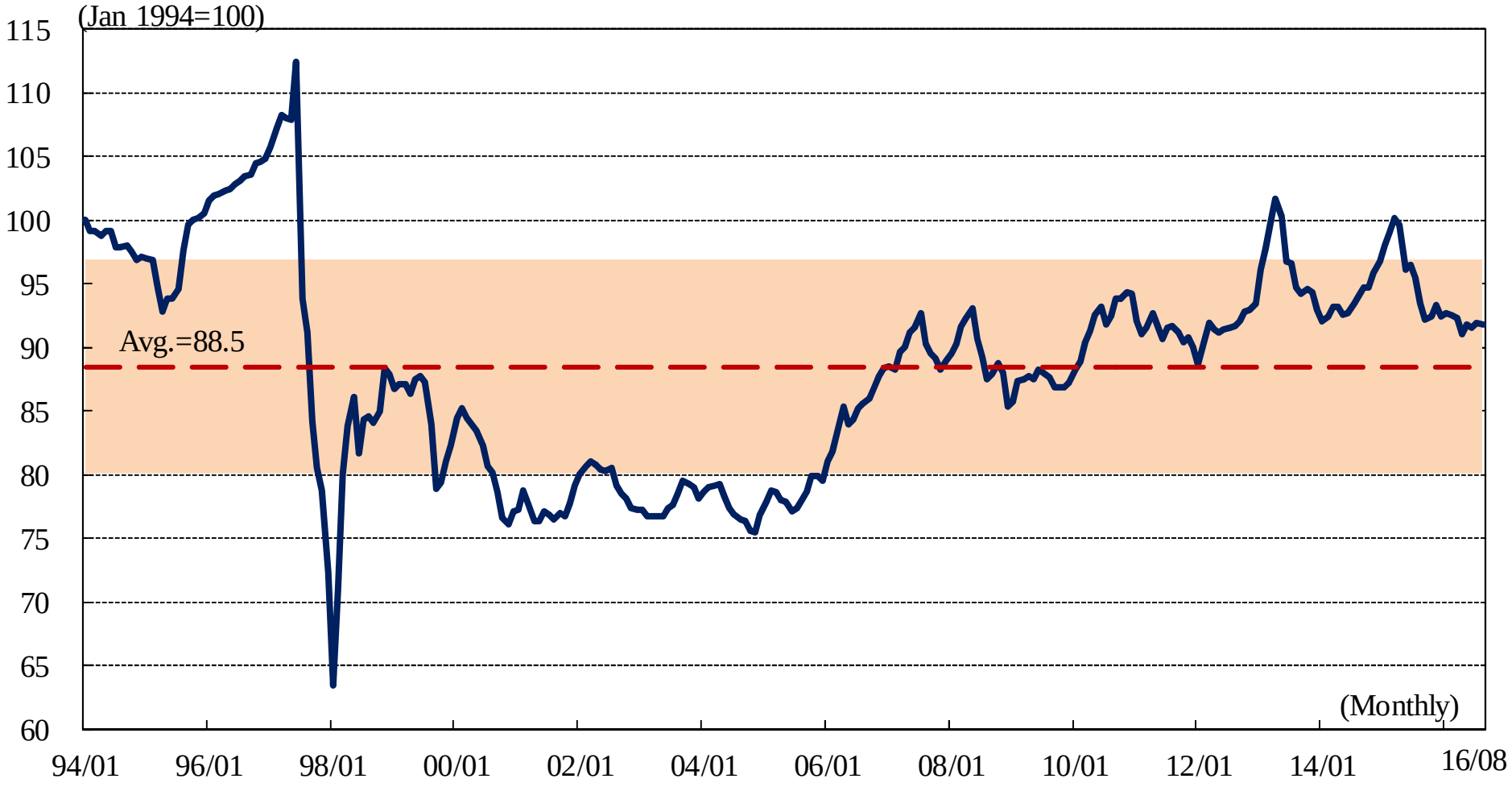
Source: BIS "The BIS Effective Exchange Rate Indices"

Fig. 5 Real Effective Exchange Rate of the Indonesian Rupiah



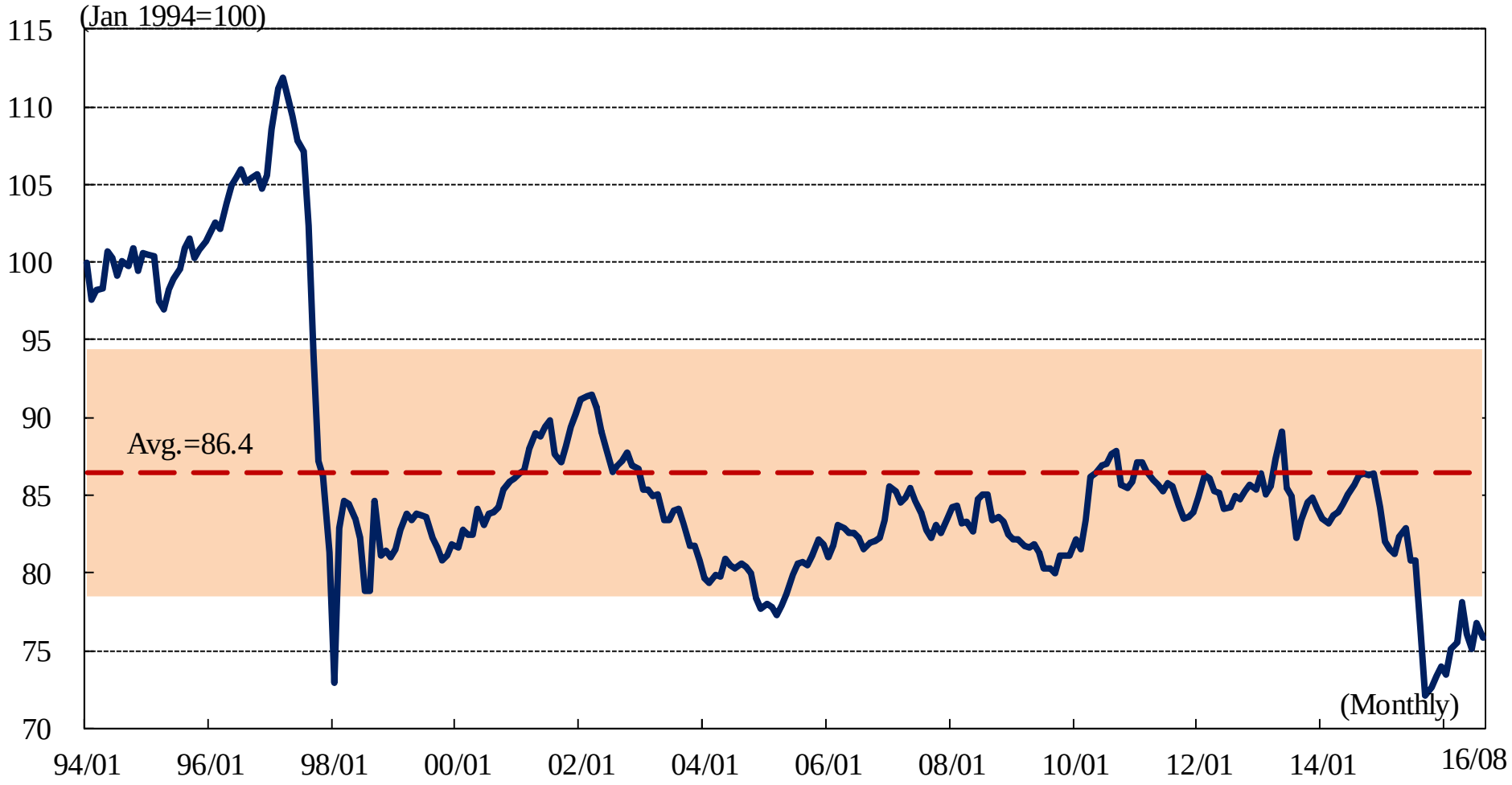
Source: BIS "The BIS Effective Exchange Rate Indices"

Fig. 6 Real Effective Exchange Rate of the Thai Baht



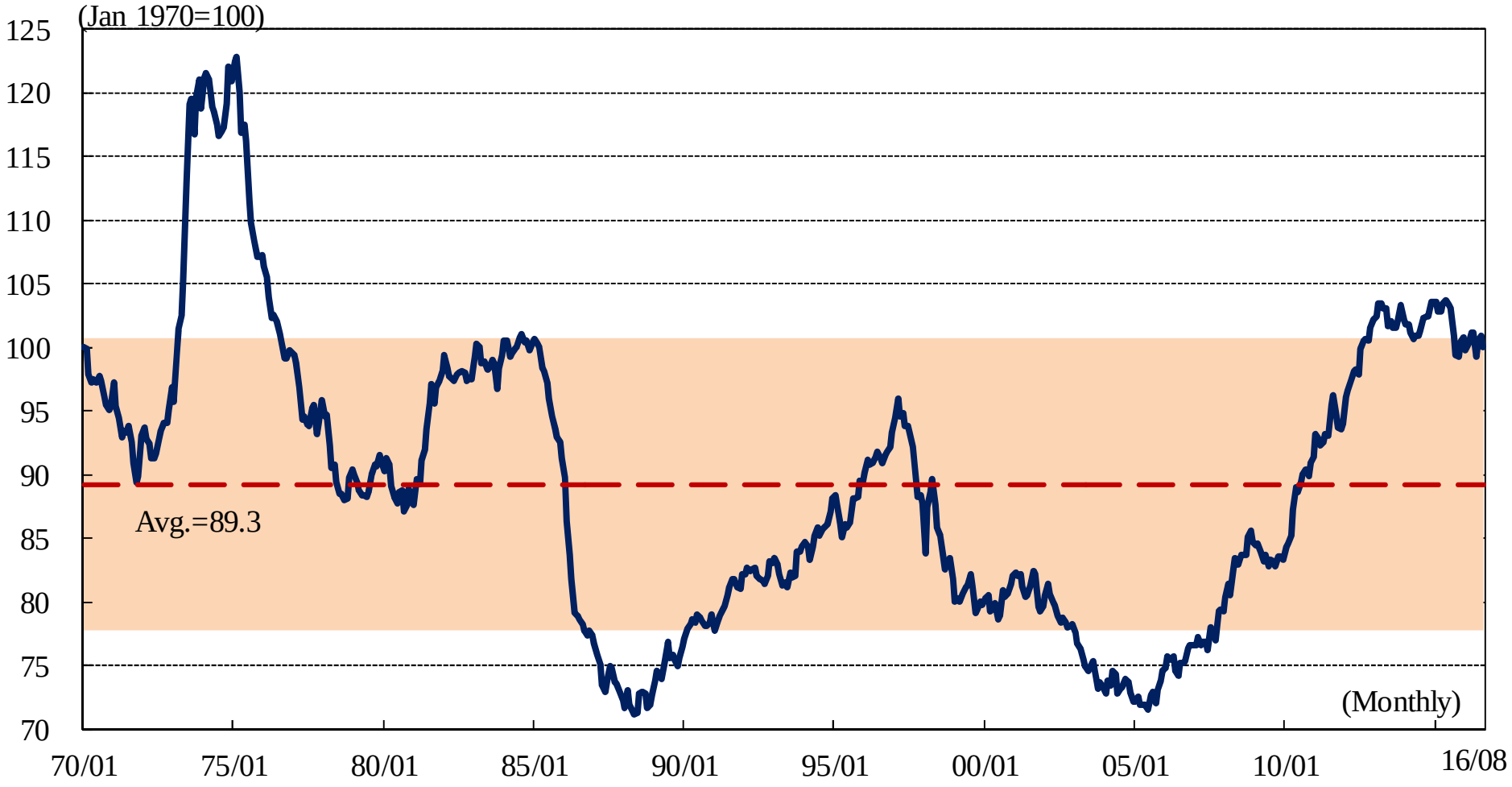
Source: BIS "The BIS Effective Exchange Rate Indices"

Fig. 7 Real Effective Exchange Rate of the Malaysian Ringgit



Source: BIS "The BIS Effective Exchange Rate Indices"

Fig. 8 Real Effective Exchange Rate of the Singapore Dollar



Source: BIS "The BIS Effective Exchange Rate Indices"

Thank you.

For further information,

please see our JCER website.

http://www.jcer.or.jp/eng/index.html