

Evolution of Unconventional Monetary Policy: Japan's Experiences

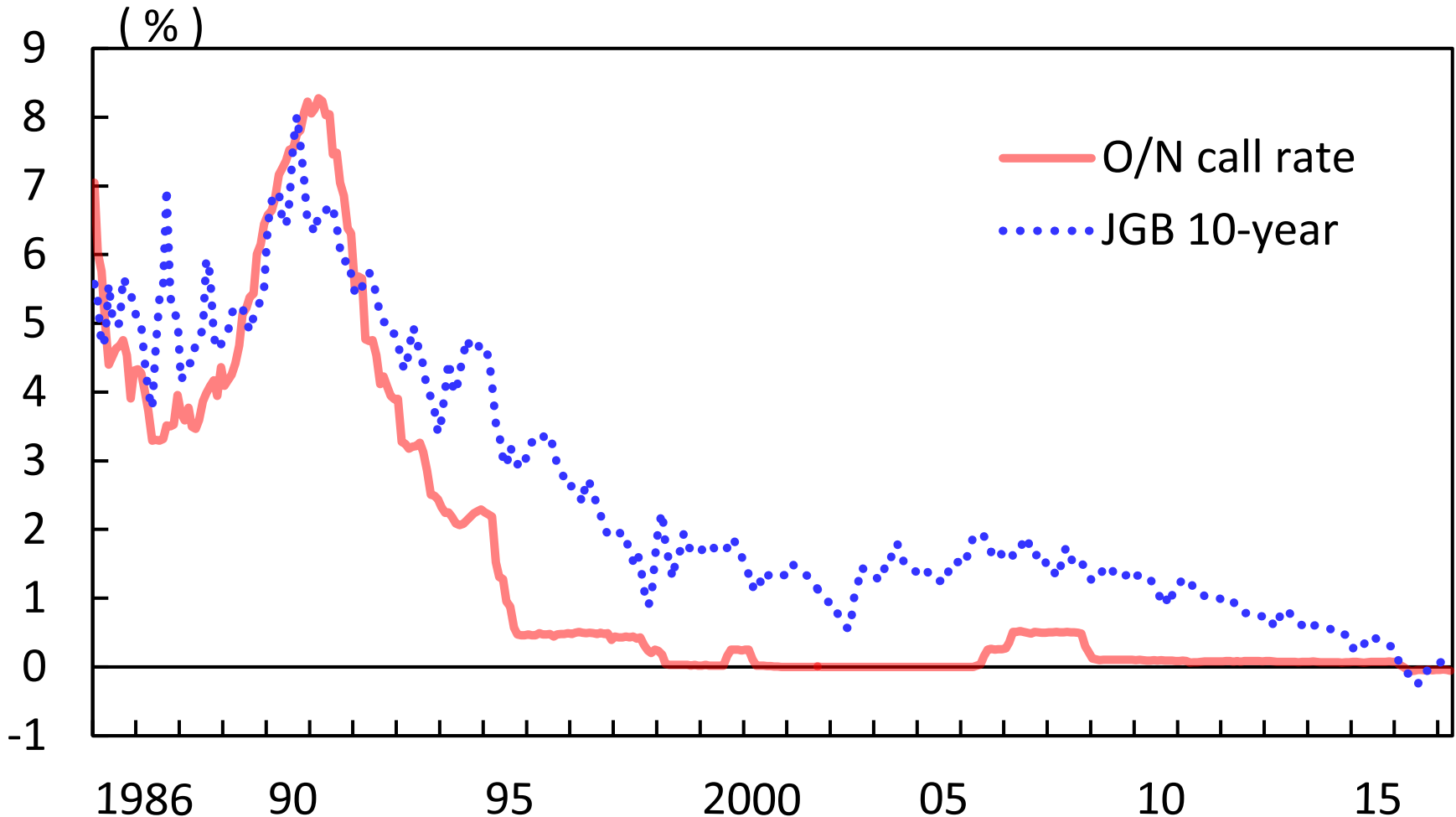
CIGS Conference on Macroeconomic Theory and Policy
May 29, 2017

Institute for Monetary and Economic Studies
Bank of Japan
Shigenori SHIRATSUKA

Plan of Today's Talk

- Introduction
- Overview of Unconventional Policies
- Japan's Episodes:
 - Episode-1: F-Crisis Management in 1997-98
 - Episode-2: Forward Guidance under ZIRP & QE
 - Episode-3: Composition Changes under CE
 - Episode-4: QQE and Inflation Expectations
- Future of CB Policy Framework

Nominal Interest Rates



Sources: Bloomberg; Bank of Japan.

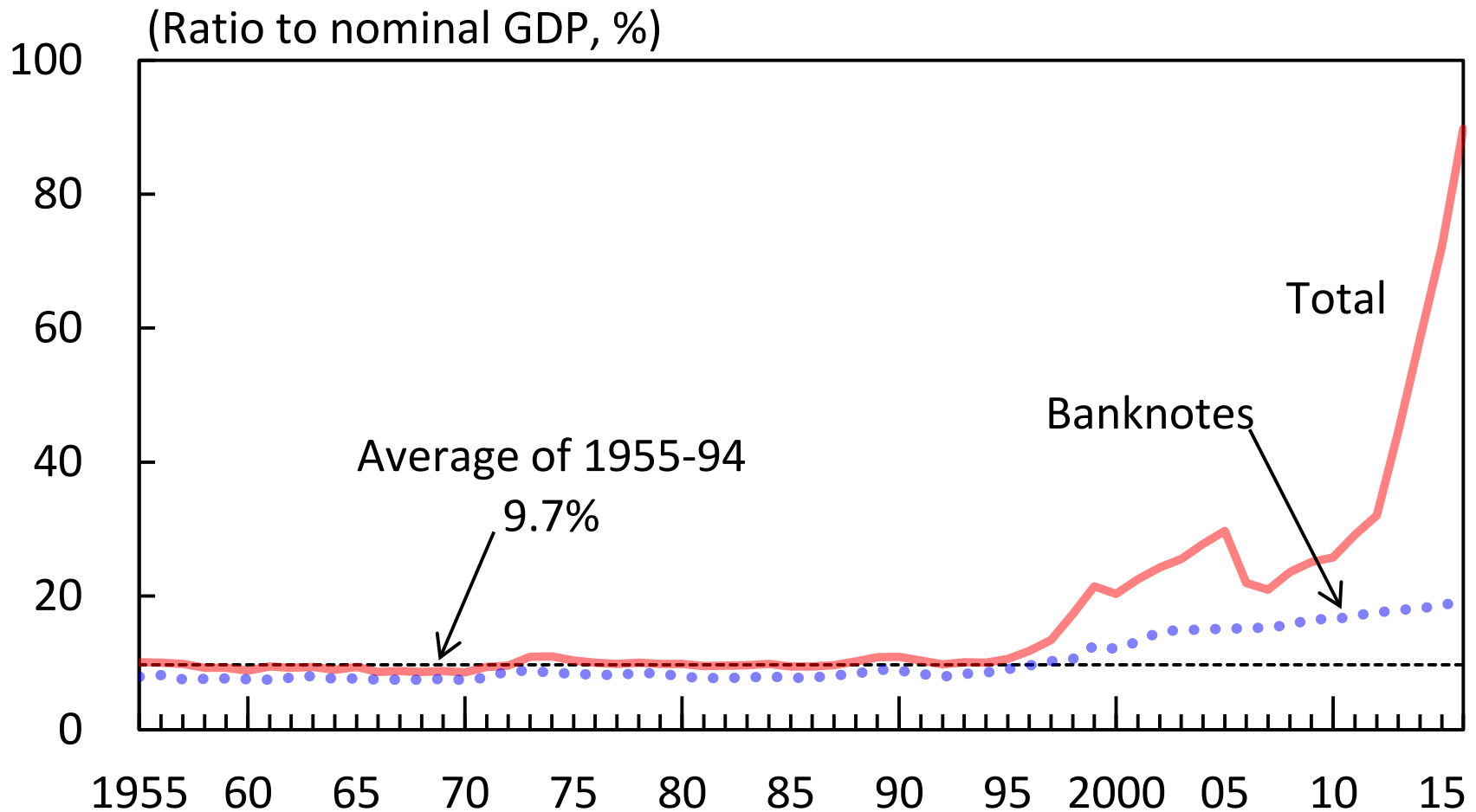
Japan's Deflation

- Mild but Prolonged Deflation :
 - Downward shift in inflation expectations
 - Coexistence w/ low growth:
- Triggered by Burst of AP Bubble:
 - Interaction b/w demand & supply-side factors
 - Not just an amplifying factor of a business cycle
 - But more structural and persistent impacts:
Downward shift in growth trend

Japan's Deflation (2)

- Japanese Economic System:
 - Based on long-term (implicit) contracts: main bank system, life-time commitment to a company w/ seniority wage scheme,
 - Intertemporal smoothing of risk: A buffer role against short-term shocks
 - A buffer role: Fragile against substantial structural changes

BOJ's B/S Size



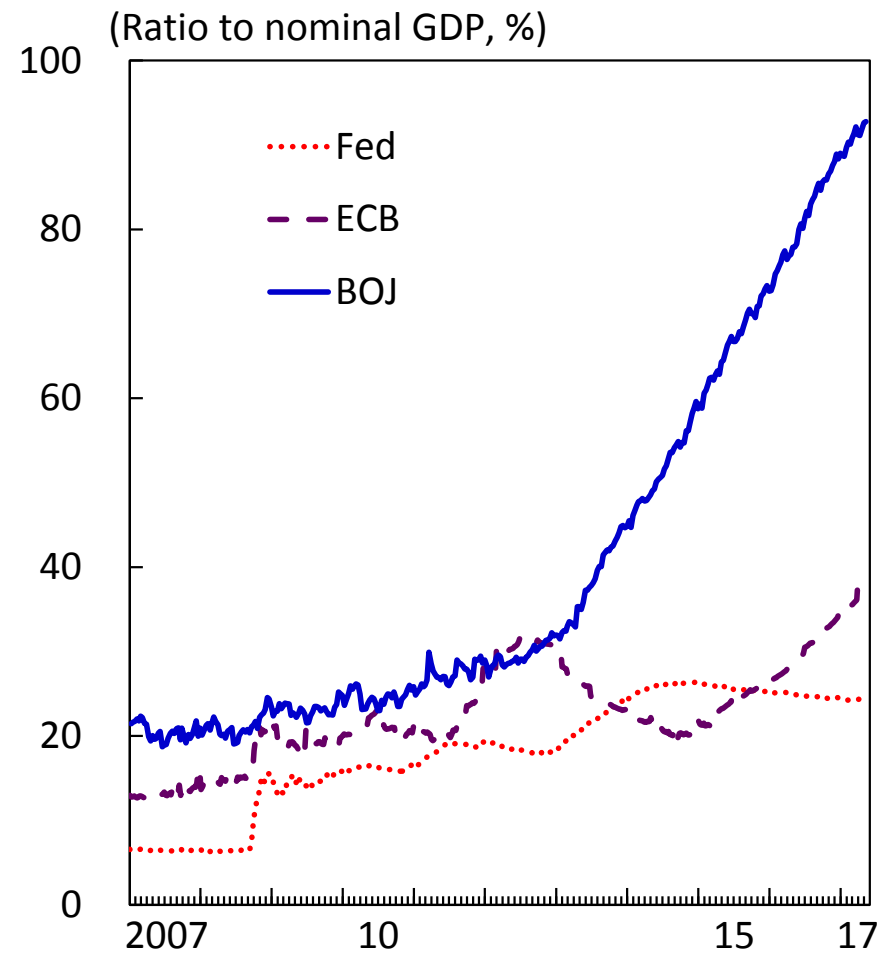
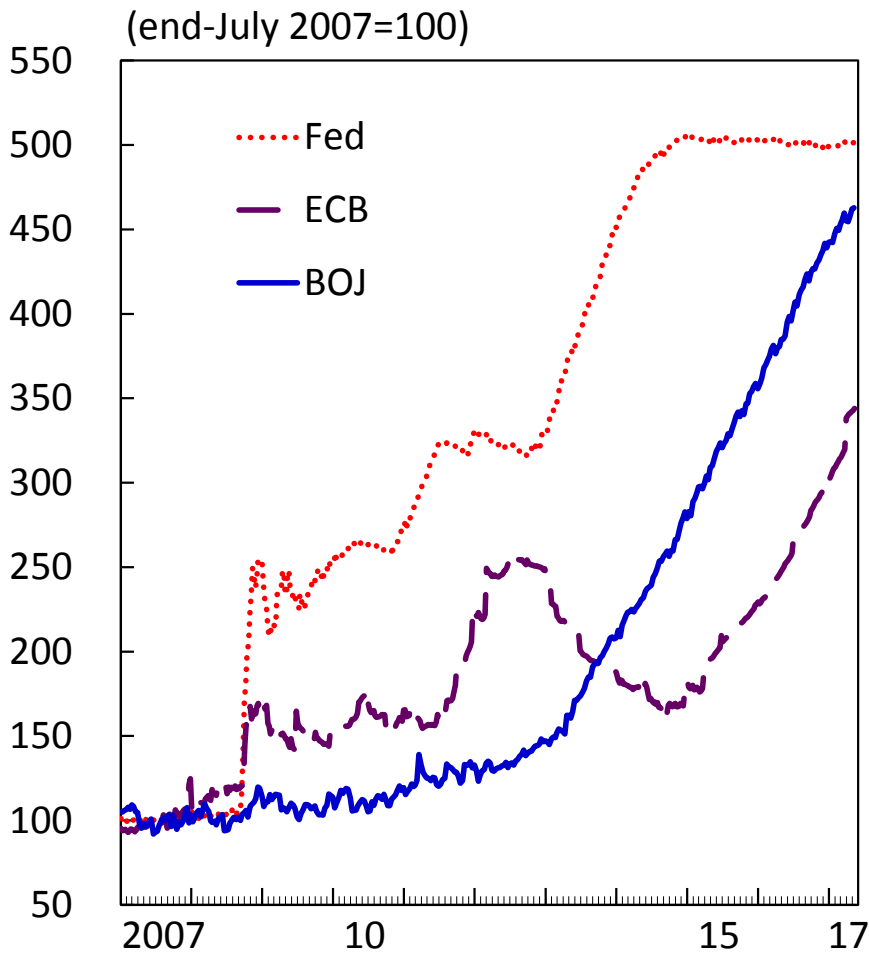
Sources: Cabinet Office, *National Accounts*; Bank of Japan.

Policy Regimes

- Financial Crisis Management: 1997-98
- Zero Interest Rate Policy (ZIRP): 1999-2000
- Quantitative Monetary Easing (QE): 2001-06
- Comprehensive Monetary Easing (CE): 2010-13
- Quantitative & Qualitative Monetary Easing (QQE): 2013-?
 - w/ Negative Interest Rate: Jan 2016-
 - w/ Yield Curve Control: Sep 2016-

Evolving Nature of Policy Frameworks

CB B/S Size

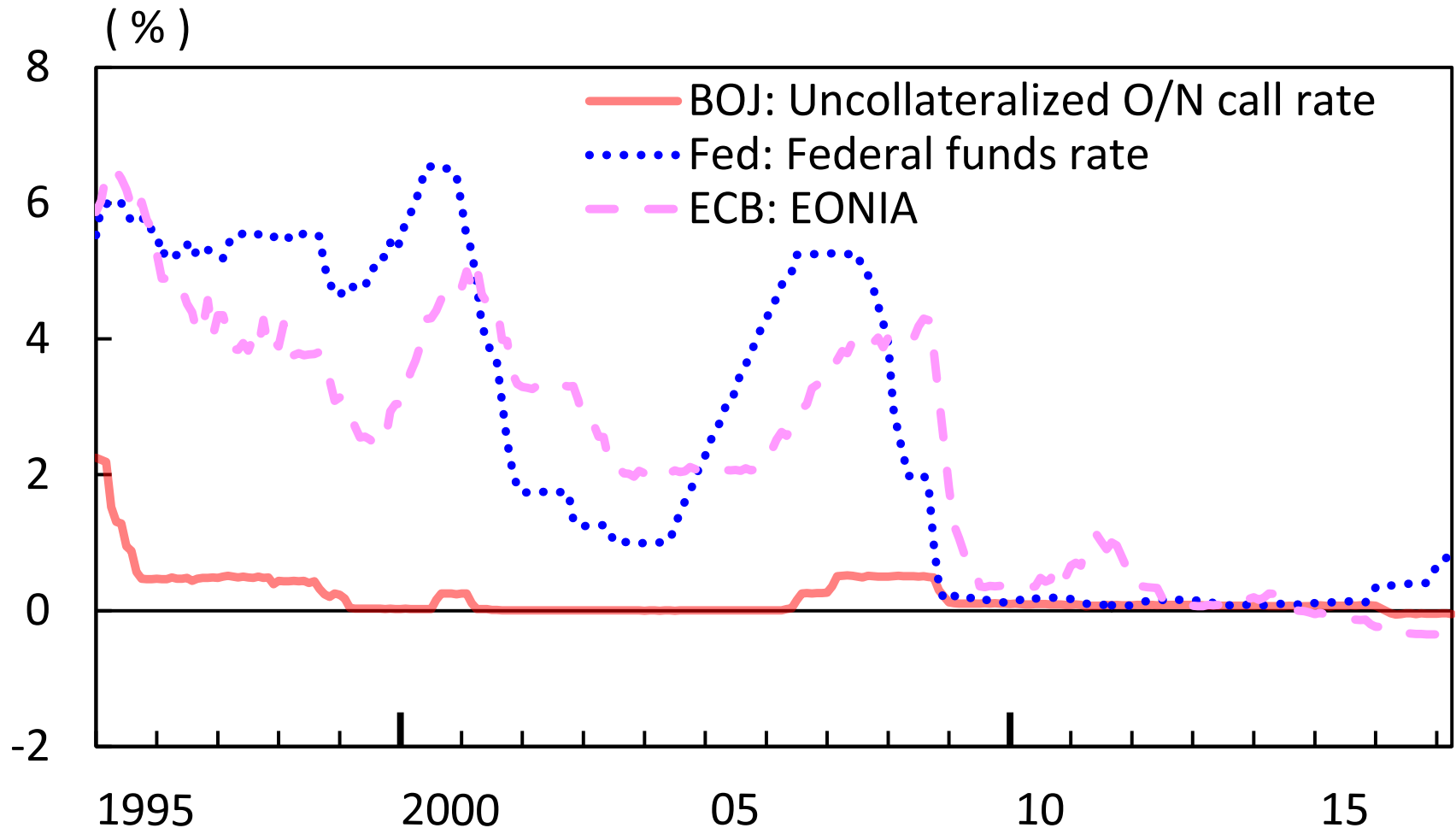


Sources: Board of Governors of the Federal Reserve System, European Central Bank, Bank of Japan

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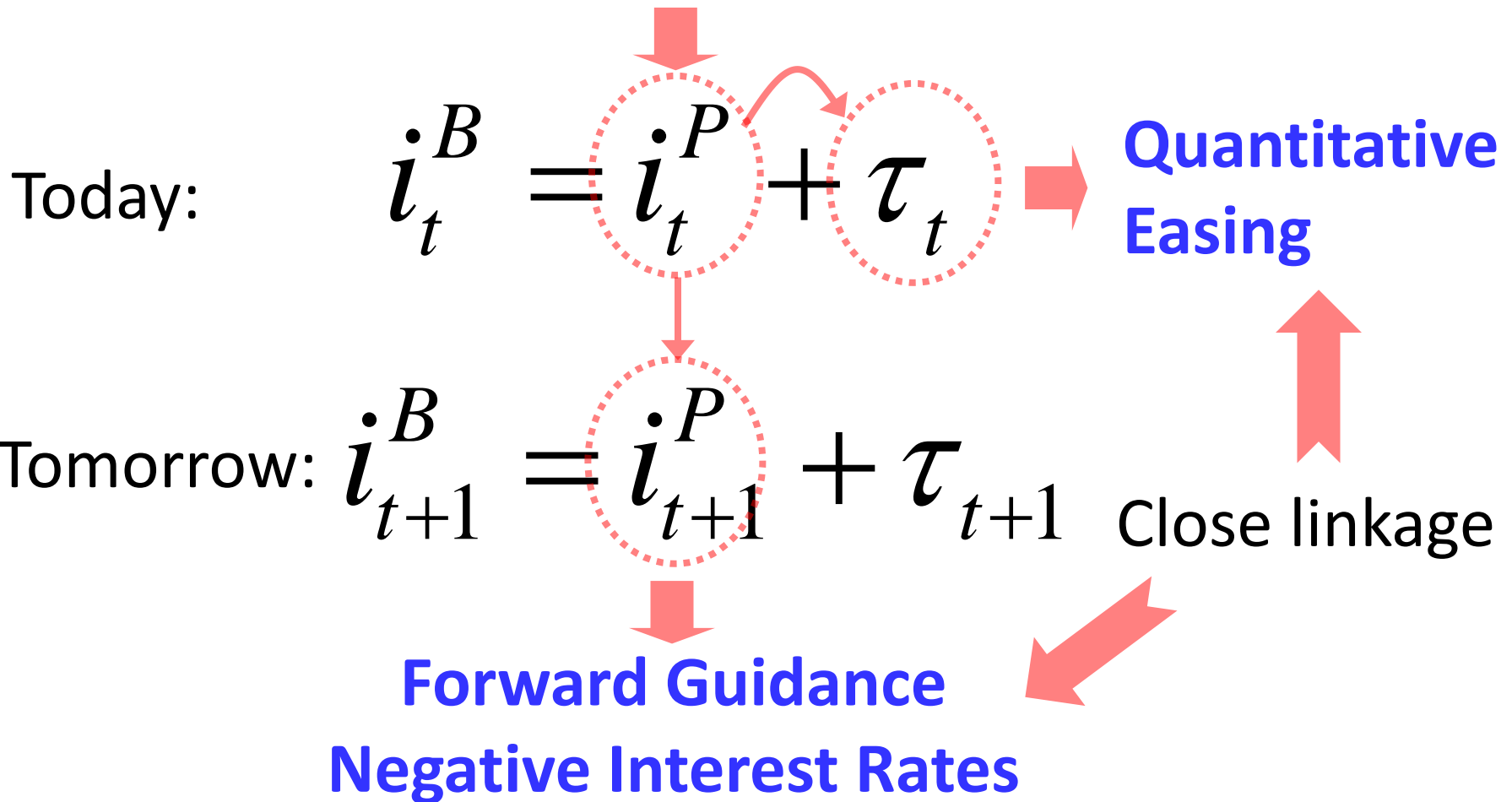
Policy Interest Rates



Sources: Board of Governors of the Federal Reserve System, European Central Bank, Bank of Japan

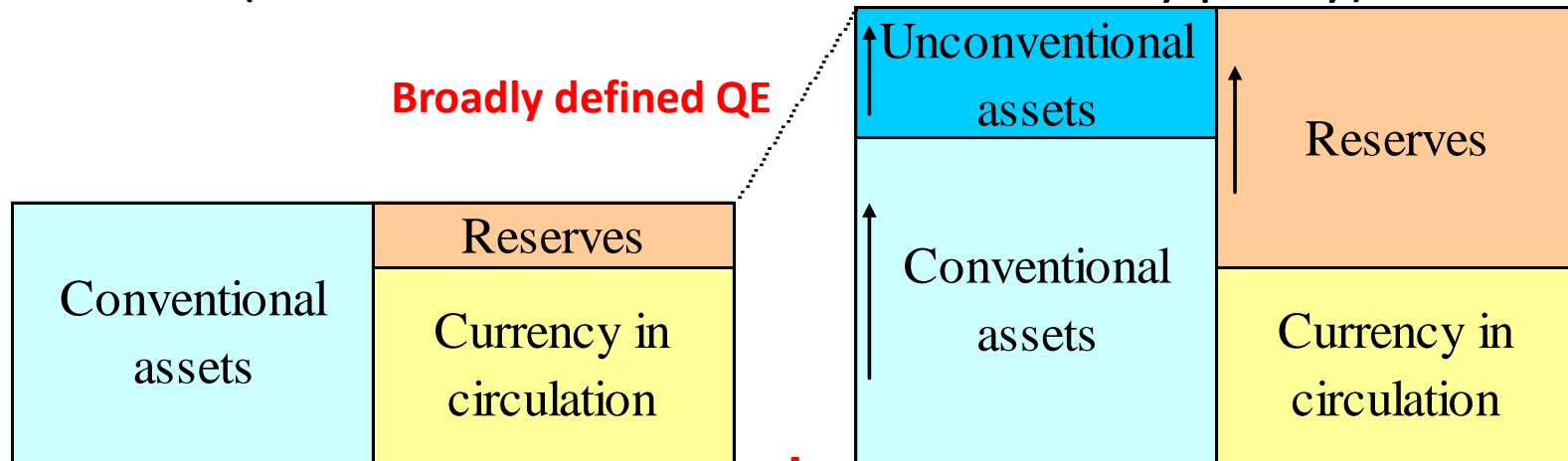
Unconventional Policies

Effective Lower Bound



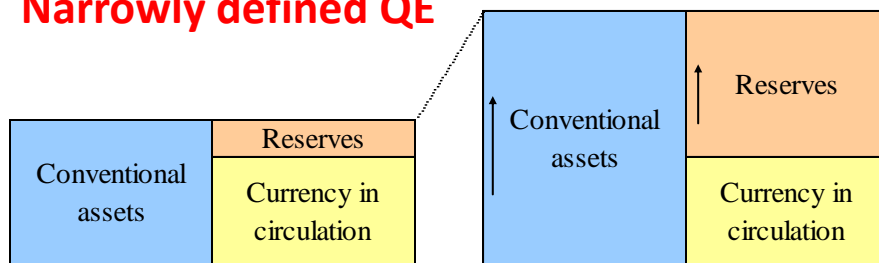
CB B/S under Unconventional Policy

(Observed unconventional monetary policy)



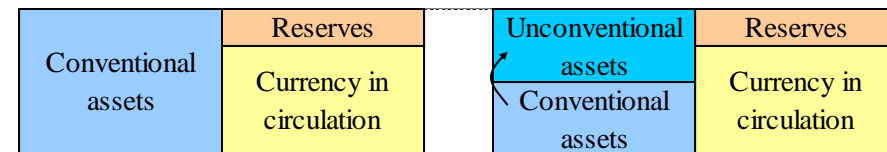
(Size)

Narrowly defined QE



(Composition)

Narrowly defined CE



Source: Shigenori Shiratsuka (2010), "Size and Composition of the Central Bank Balance Sheet: Revisiting Japan's Experience of the Quantitative Easing Policy," *Monetary and Economic Studies*, 28, pp. 79-105.

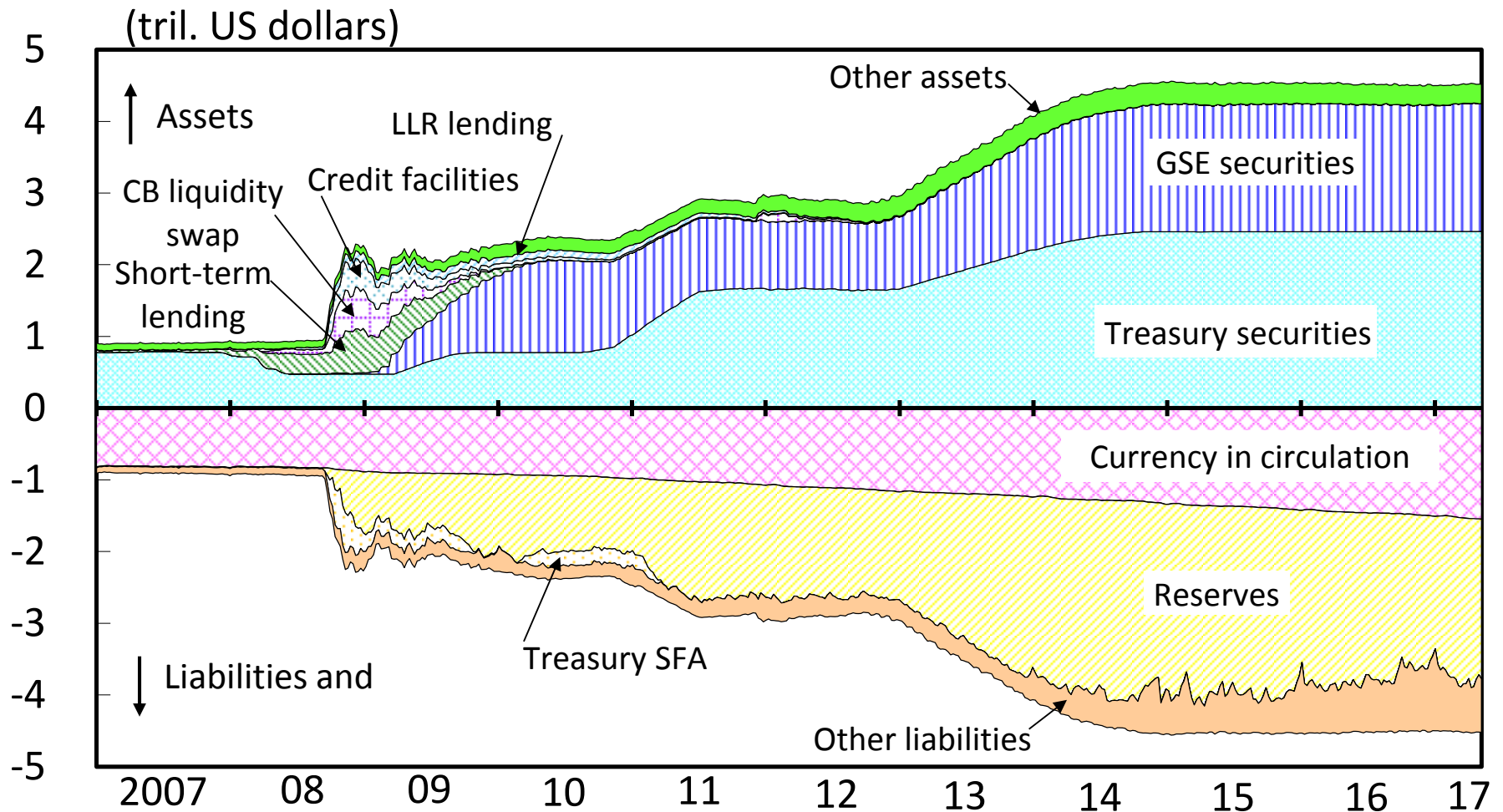
Some Issues for Discussions

- Policy Effectiveness:
 - F-system rescue operation vs. macroeconomic stabilization policy
 - Combinations of Unconventional Tools, given economic, social, and political environments
 - Policy Rule?: Predictability vs. surprises
- Evolving nature:
- Border w/ Fiscal Policy:
 - Intervention to resource allocations

Conventional vs. Unconventional

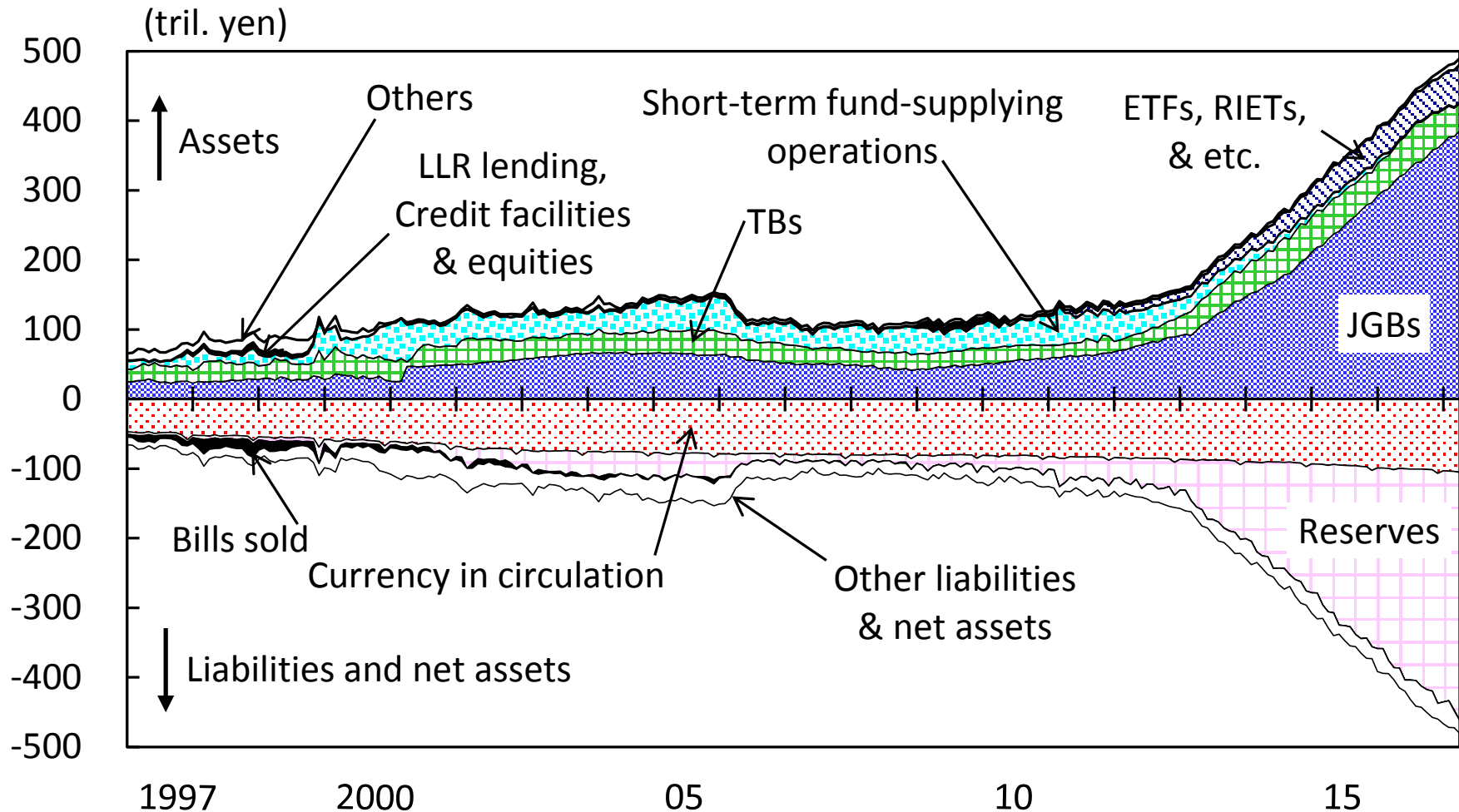
| | Conventional | Unconventional | |
|--------------------------------------|--|---|-------------------------------------|
| Policy tools | O/N rate control | FG, LSAPs, NIRs | |
| Determinants of CB B/S size | Debt side (demand for CB money) → No excess reserves | Asset side (quantity & variety of unconventional asset purchases) → Massive excess reserves | |
| Interbank transactions | Scarce reserves | Arbitrage | |
| Intervention to resource allocations | Remain neutral | Pre crisis | After crisis |
| | | Limited: market distortions, impaired MP transmission channels | Intentional & massive interventions |
| Policy management | Gradualism → High predictability | Gradualism (learning by doing) | Surprise? |

Fed's Balance Sheet



Source: Board of Governors of the Federal Reserve System, *Factors Affecting Reserve Balances*.

BOJ's Balance Sheet



Source: Bank of Japan, *Monetary Base and the Bank of Japan's Transactions*.

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Japan Premium

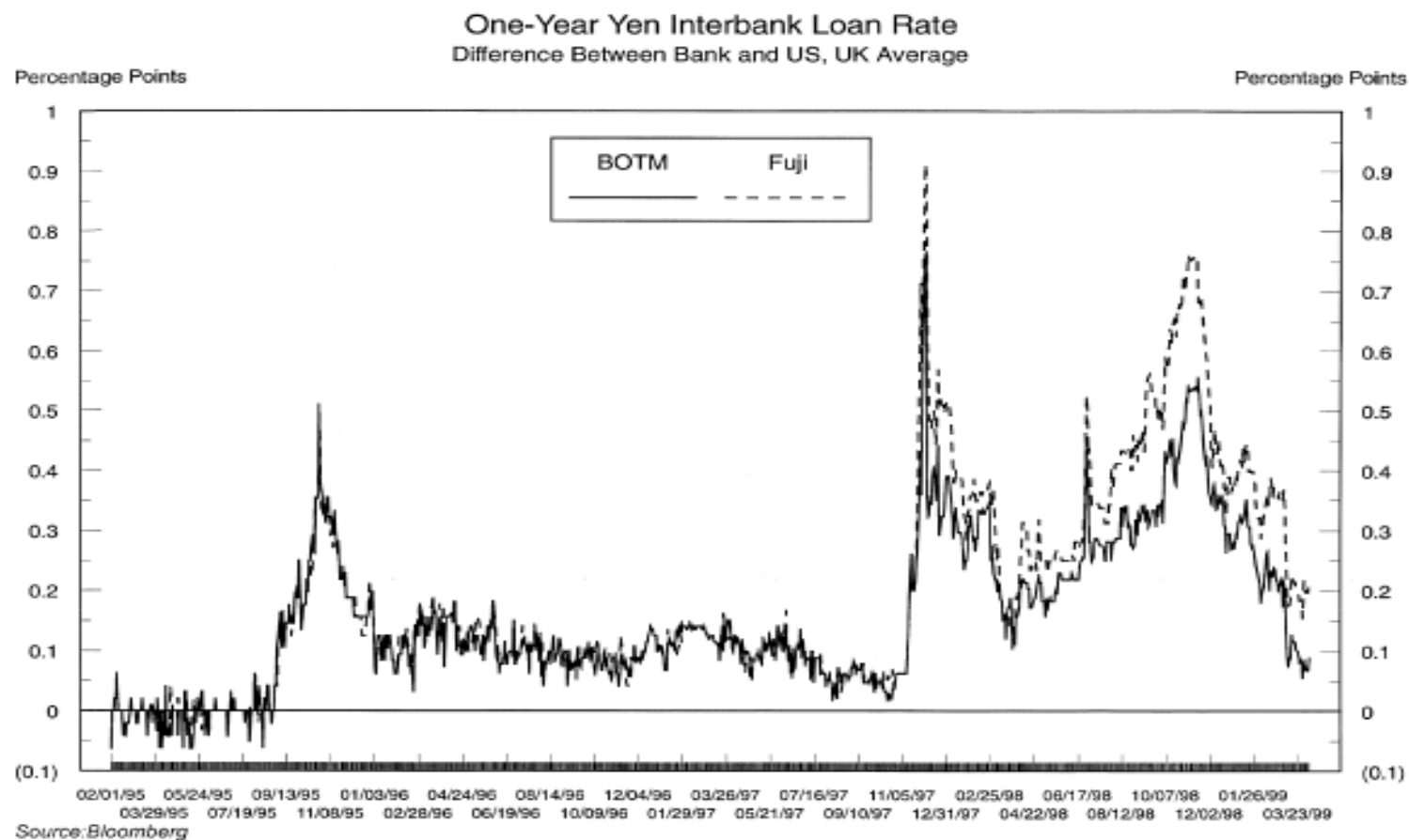
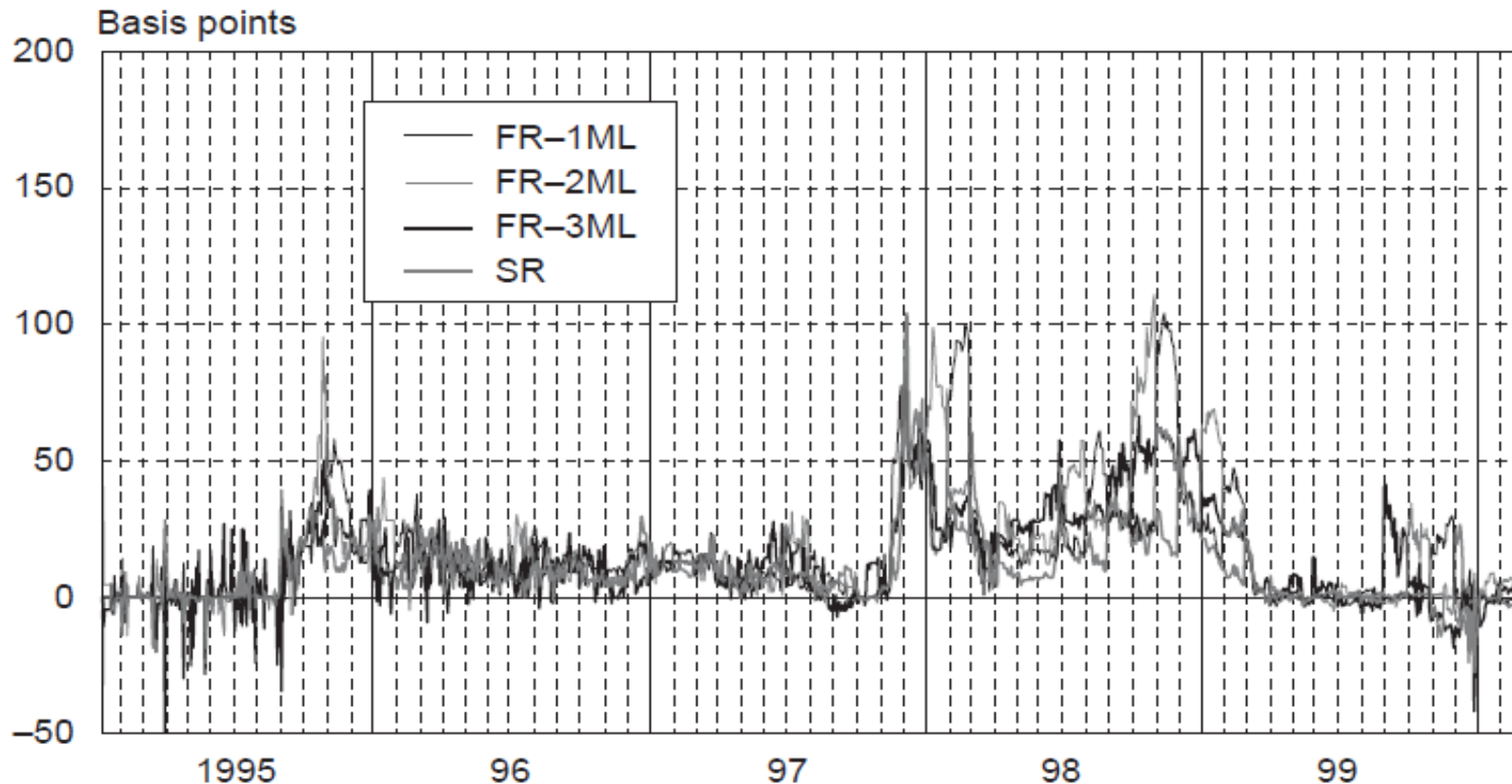


Fig. 1. 1-Year yen interbank loan rate. Difference between bank and US, UK average.

Source: Joe Peek, and Eric S. Rosengren, (2001), "Determinants of the Japan Premium: Actions Speak Louder," *Journal of International Economics* 53, pp. 283–305.

Japan Premium (cont'd)

[1] Bank of Tokyo-Mitsubishi ("Japan Premium" in Yen Forward Rates)

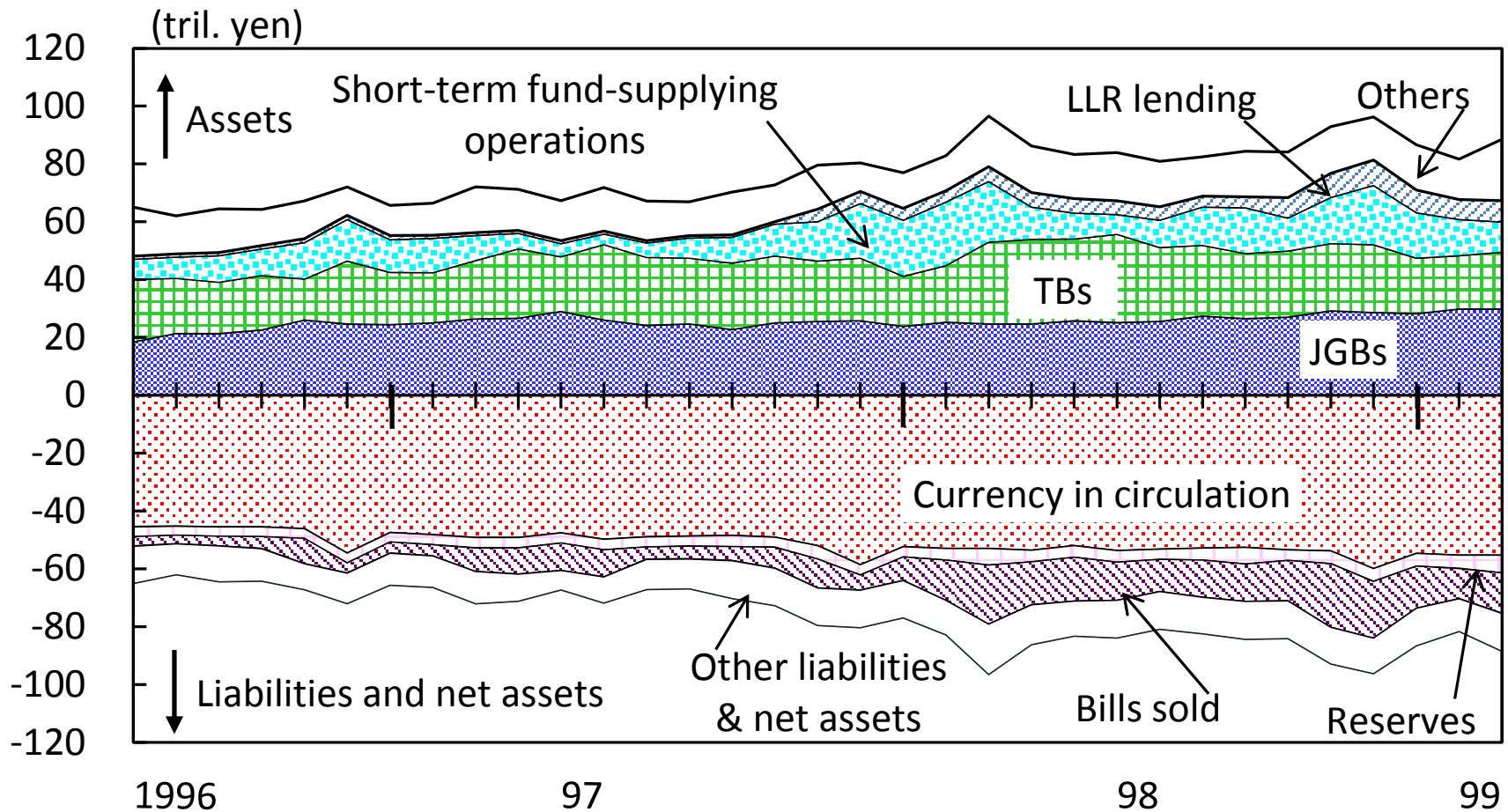


Source: Makoto Saito and Shigenori Shiratsuka (2001), "Financial Crises as the Failure of Arbitrage: Implications for Monetary Policy," *Monetary and Economic Studies* 19(s-1), pp. 239–270.

Dual Operation

- Simultaneous Operations:
 - Provision of money in relatively long maturities
 - Absorption of money in short maturities
- Impaired MP Transmission Mechanism:
 - Liquidity constraints → Failure of arbitrage
 - Malfunction in transmission b/w O/N & longer maturities
 - Not just adjusting aggregate amounts of liquidity, but allocation of liquidity

BOJ B/S: Jul 96-Mar 99



Source: Bank of Japan, *Monetary Base and the Bank of Japan's Transactions*.

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Conditional Commitments

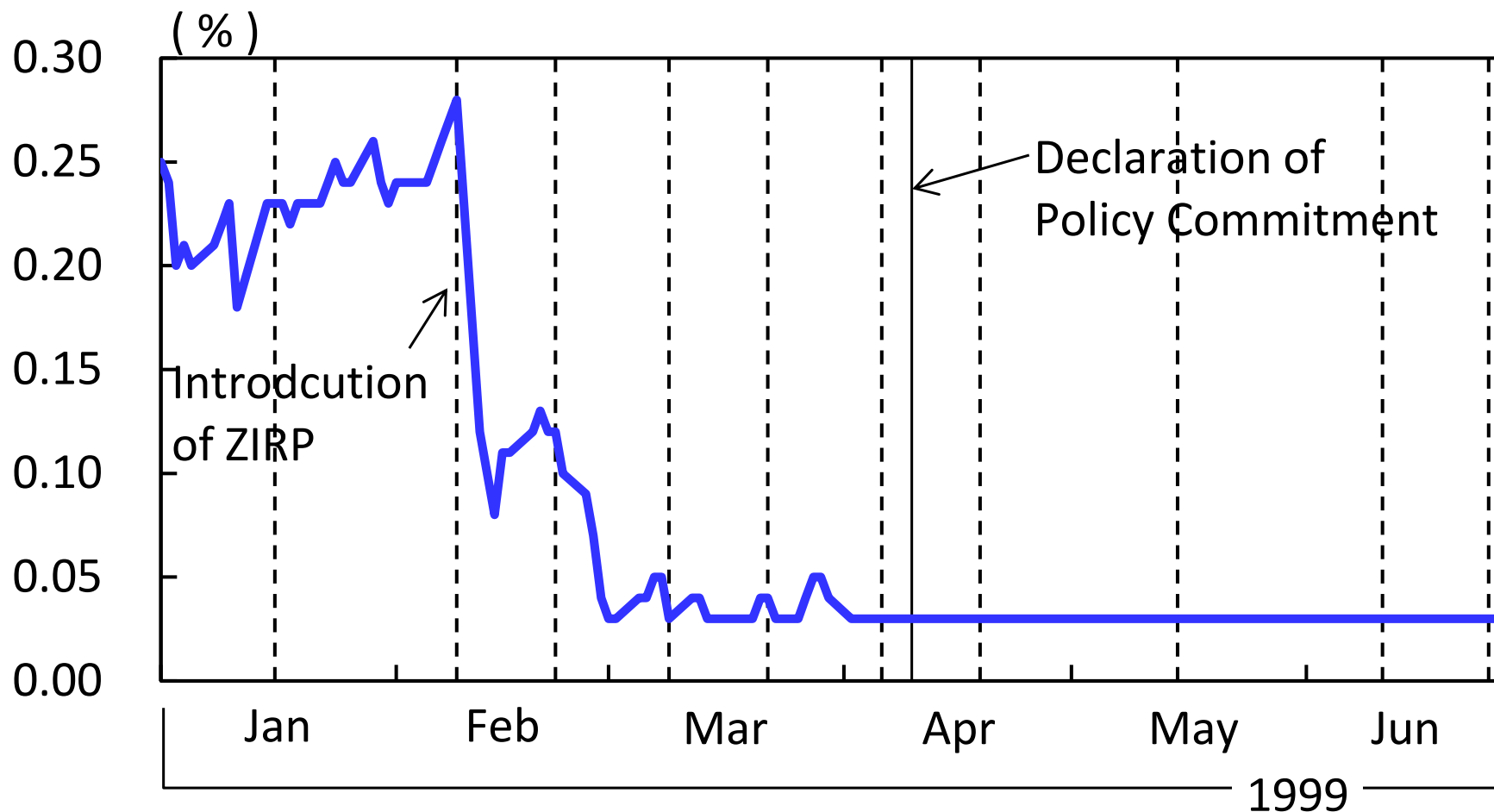
- ZIRP (from Feb 1999 to Aug 2000):
 - Commit to zero rate until deflationary concerns are dispelled
- QE (from Mar 2001 to Mar 2006):
 - Commit to CAB targeting until CPI inflation becomes stably zero or above
- Preciseness of Conditionality

Directive on Feb 12, 1999

The Bank of Japan will provide more ample funds and encourage the uncollateralized overnight call rate to move as low as possible.

To avoid excessive volatility in the short-term financial markets, the Bank of Japan will, by paying due consideration to maintaining market function, initially aim to guide the above call rate to move around 0.15%, and subsequently induce further decline in view of the market developments.

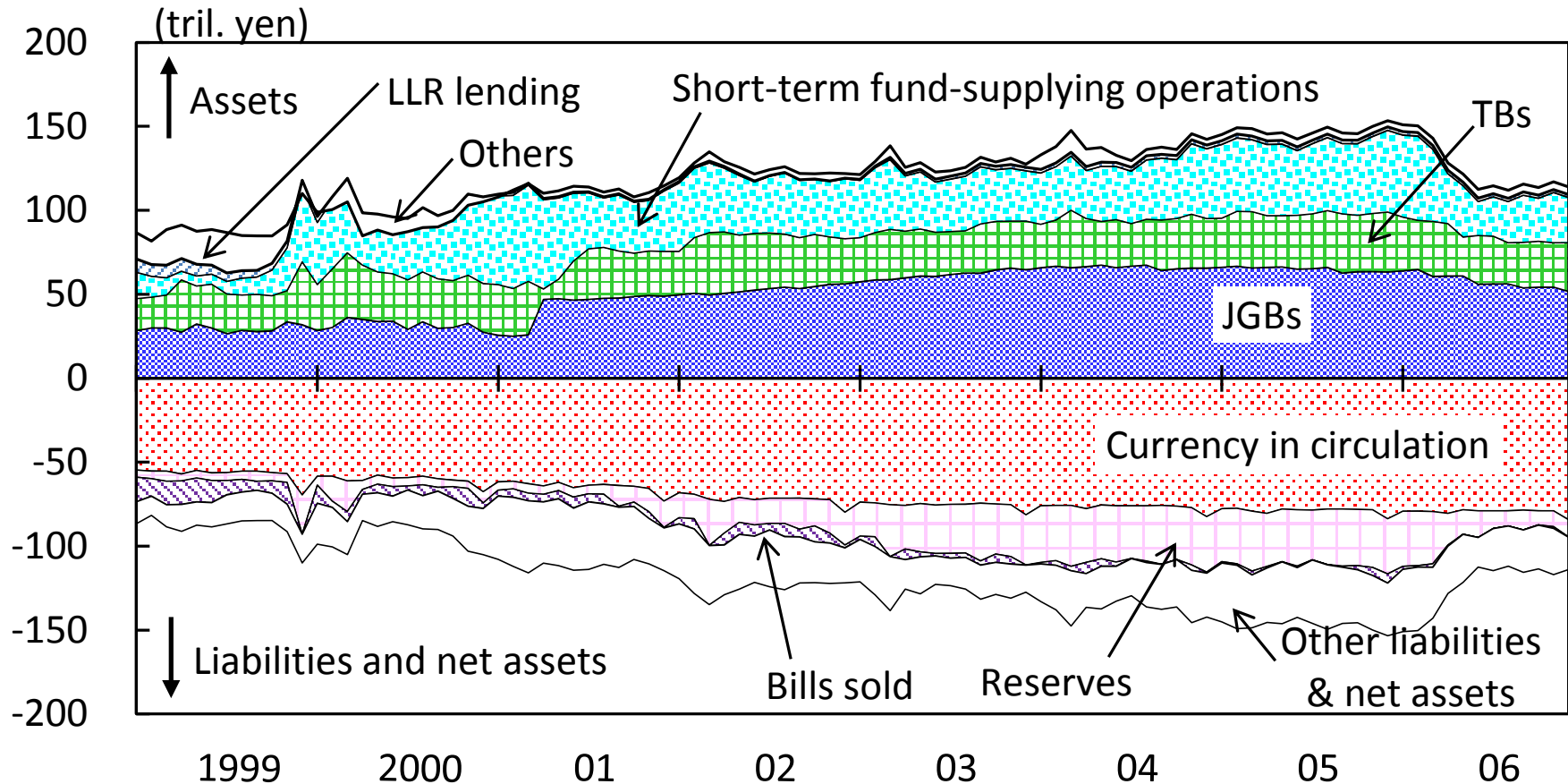
O/N Call Rate



Note: Dashed lines indicate the days MPM was held.

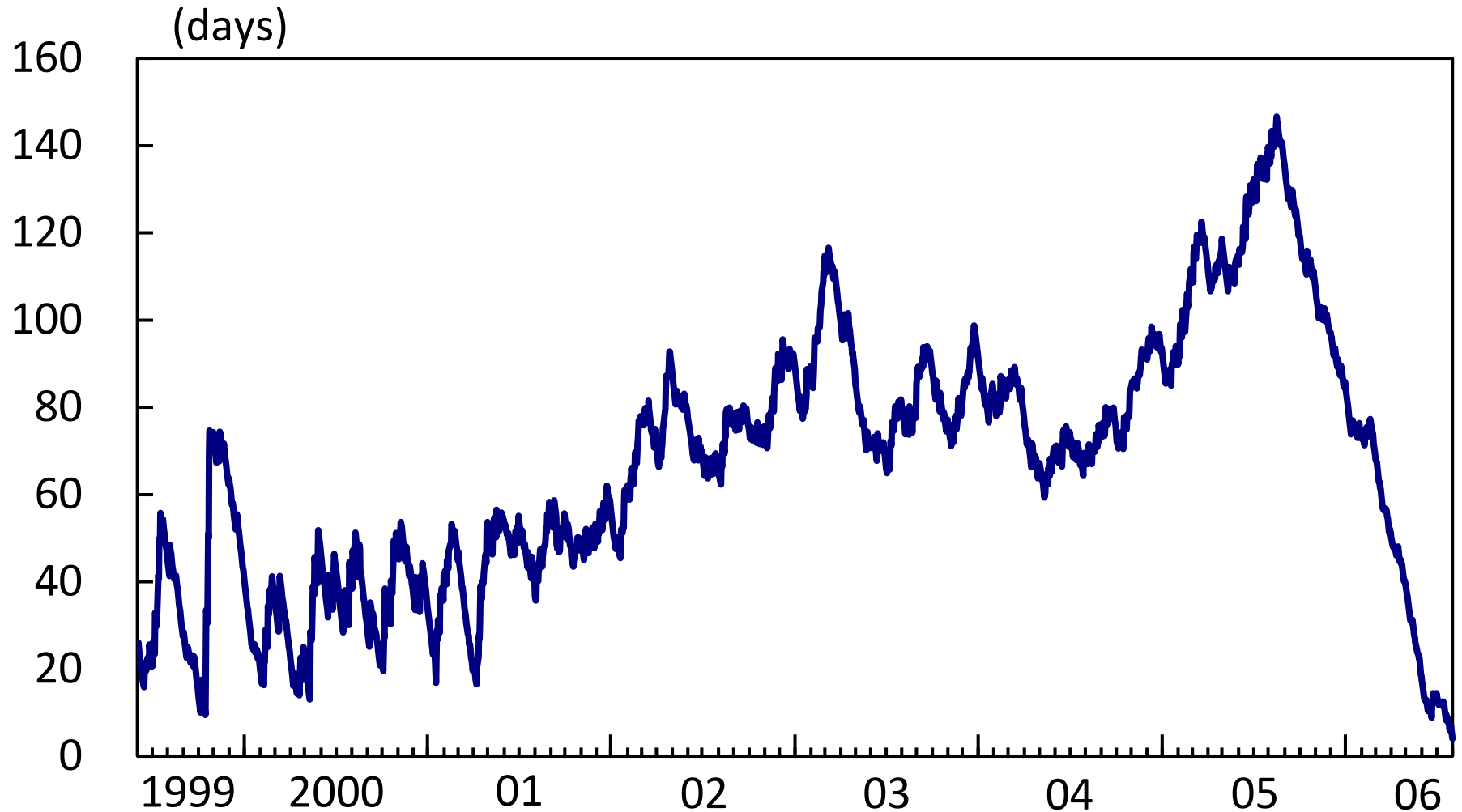
Source: Bank of Japan

BOJ B/S: Jan 99-Dec 06



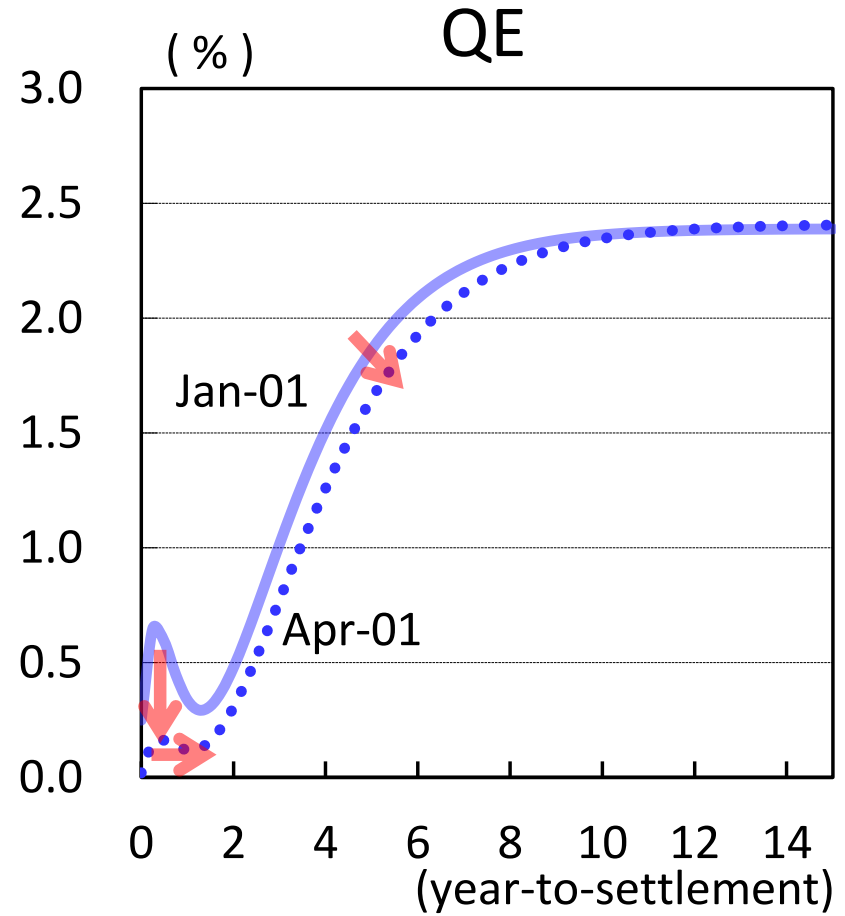
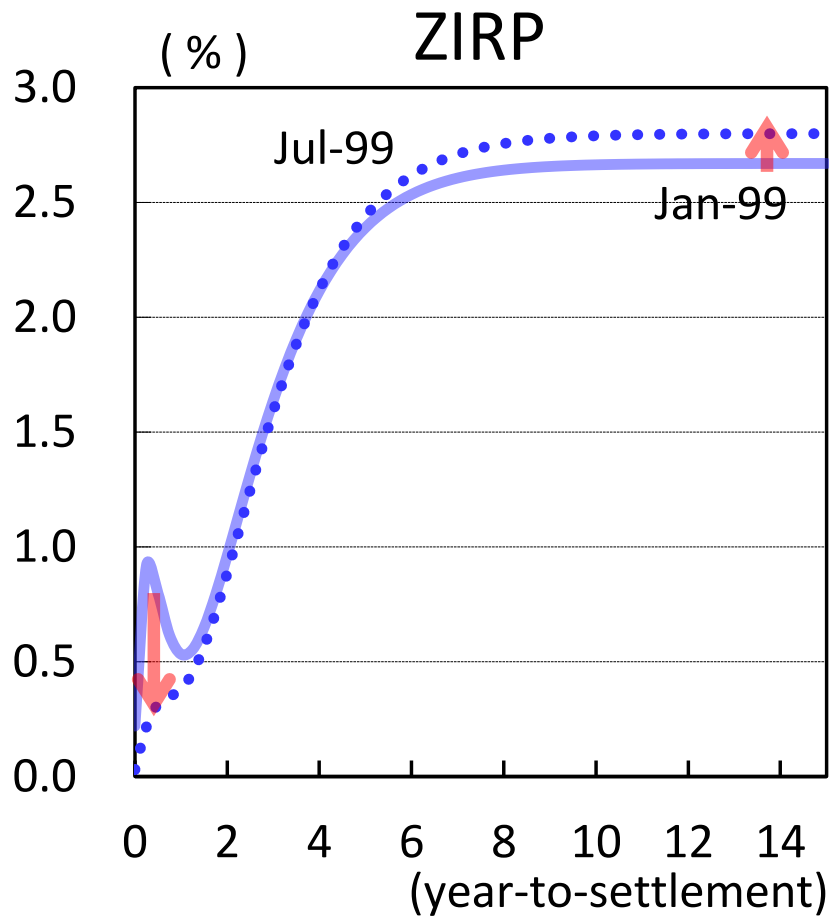
Source: Bank of Japan, *Monetary Base and the Bank of Japan's Transactions*.

Maturity of Short-term Operations



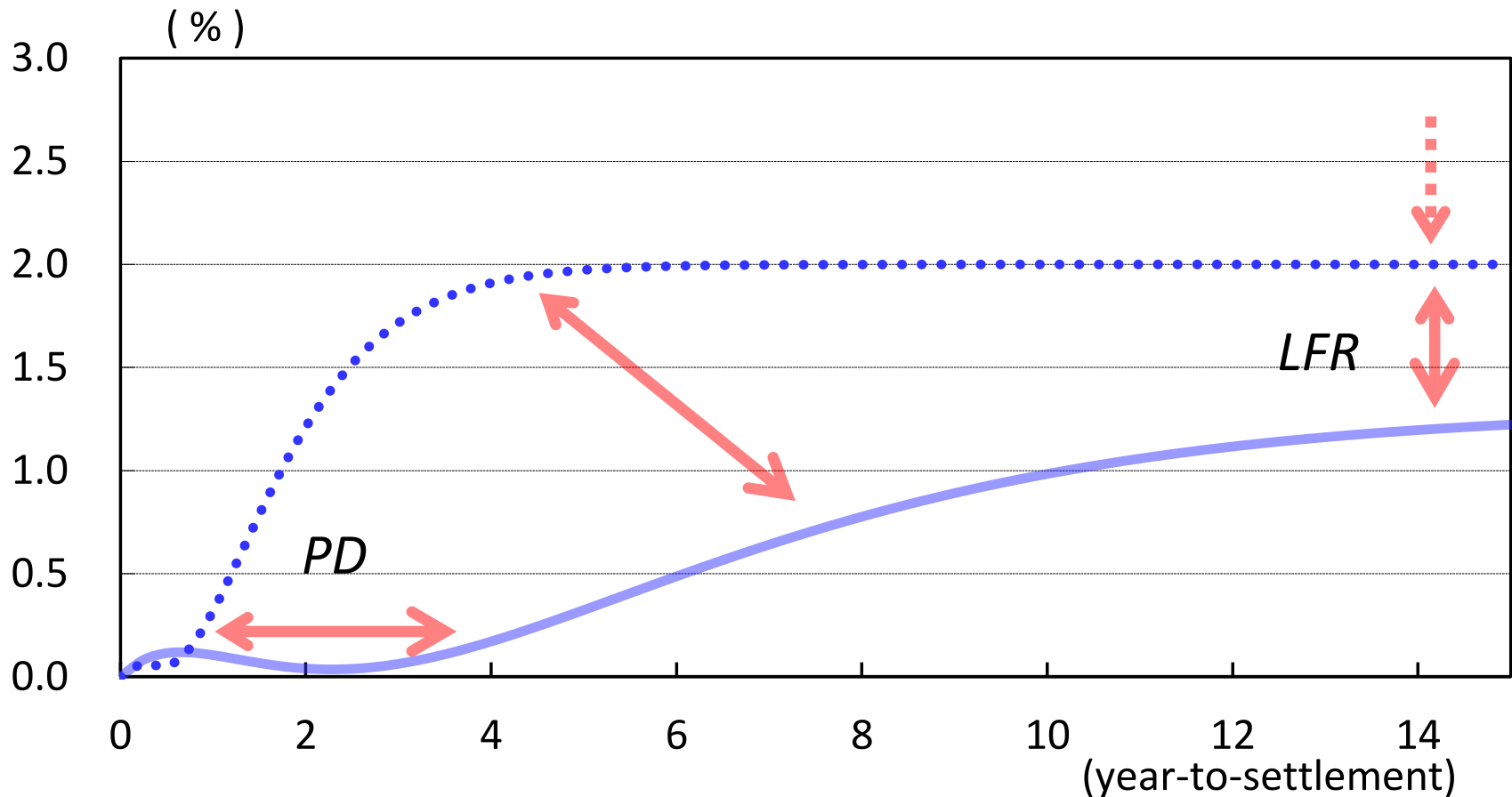
Source: Bank of Japan

Strong Liquidity Effects



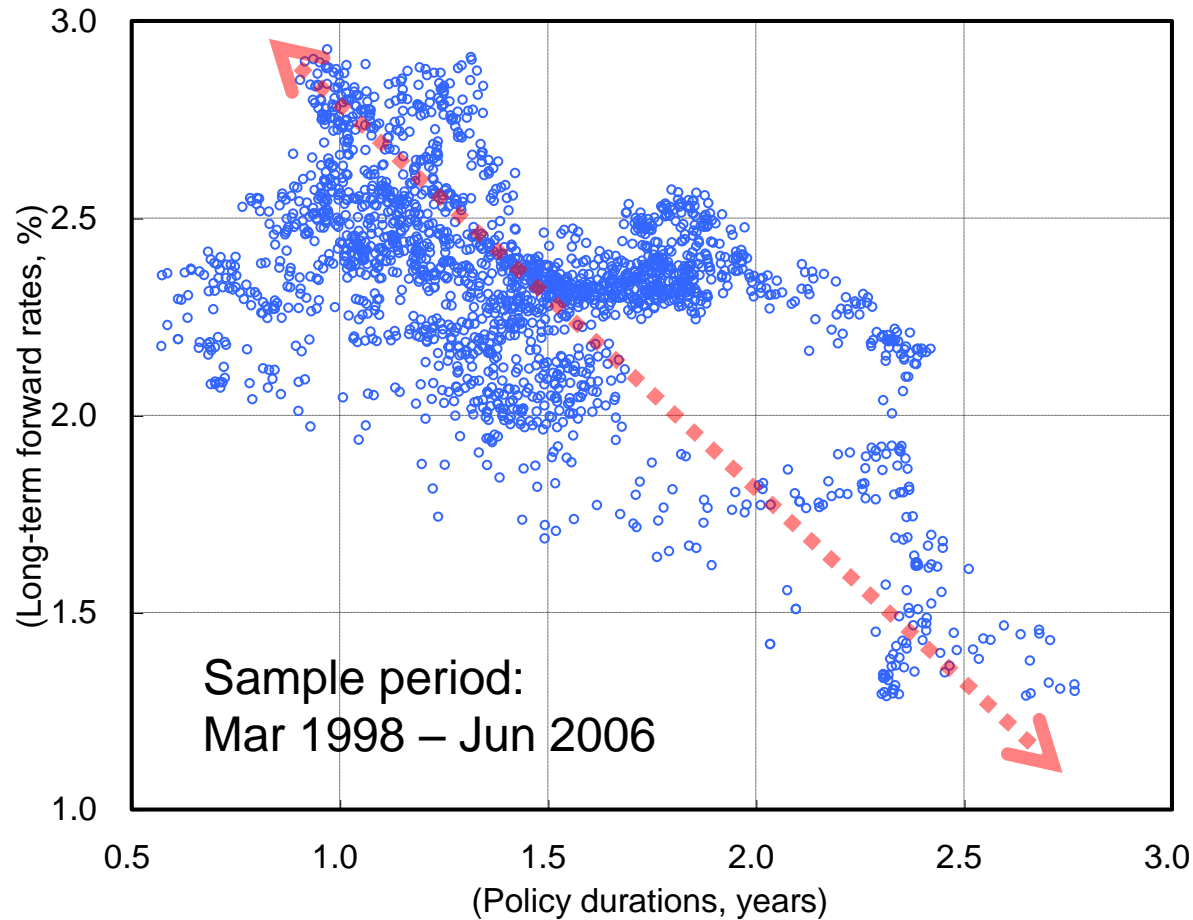
Source: Kunio Okina and Shigenori Shiratsuka (2004) "Policy Commitment and Expectation Formation: Japan's Experience under Zero Interest Rates," *North American Journal of Economics and Finance* 15: 75-100.

Limited Stimulating Effects



Source: Kunio Okina and Shigenori Shiratsuka (2004) "Policy Commitment and Expectation Formation: Japan's Experience under Zero Interest Rates," *North American Journal of Economics and Finance* 15: 75-100.

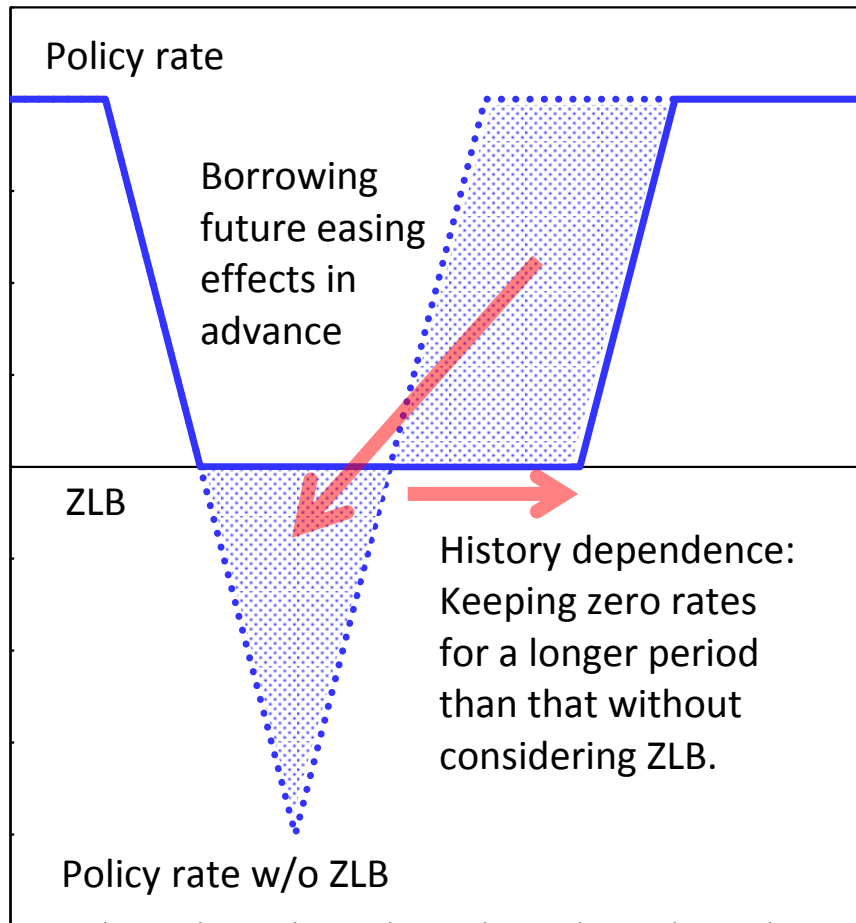
Confined Deflationary Expectations



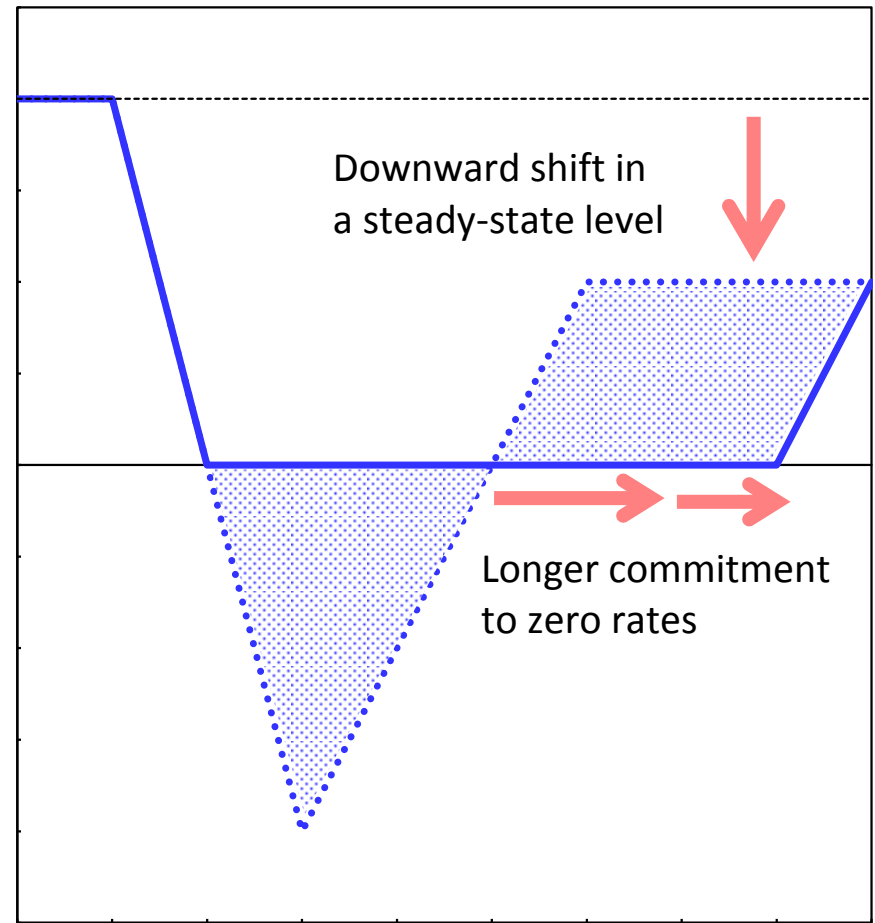
Source: Kunio Okina and Shigenori Shiratsuka (2004) "Policy Commitment and Expectation Formation: Japan's Experience under Zero Interest Rates," *North American Journal of Economics and Finance* 15: 75-100.

FG and Steady-state Level

(Constant Steady-state)



(Downward Shift in Steady-state)



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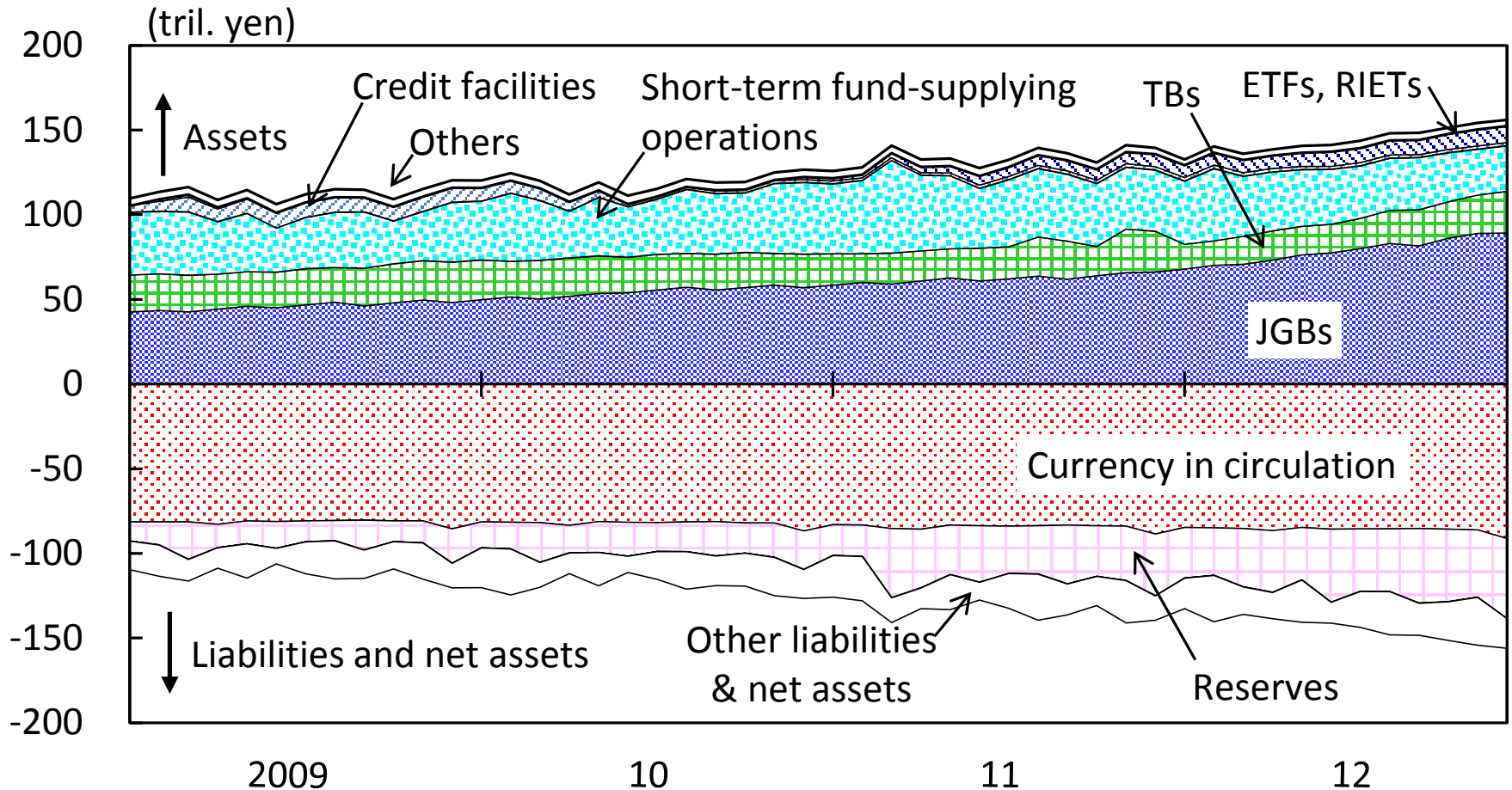
Comprehensive Monetary Easing

- Asset Purchase Program:
 - Introduced in Sep 2010
 - Expansion of size and variety of assets purchased (JGBs, TBs, CPs, ABCPs, CBs, ETFs, J-RIETs)
 - Fixed-rate funds-supplying operations (initially introduced in Dec 2009)
- Significant Changes in Composition, Not Size:
 - Variety of assets purchased
 - JGB: Conventional asset → Unconventional asset

Banknote Rule for JGB Holdings

- Outright Purchases of JGBs:
 - A ceiling at the outstanding amount of bank note issuance
- Implications:
 - Consistent with smooth provision of long-term stable funds to accommodate banknote demand
 - Securing the credibility of the monetary policy
 - No intention of providing price support for JGBs
 - No intention of money-financing of government deficit

BOJ B/S: Jan 09 – Dec 12



Source: Bank of Japan, *Monetary Base and the Bank of Japan's Transactions*.

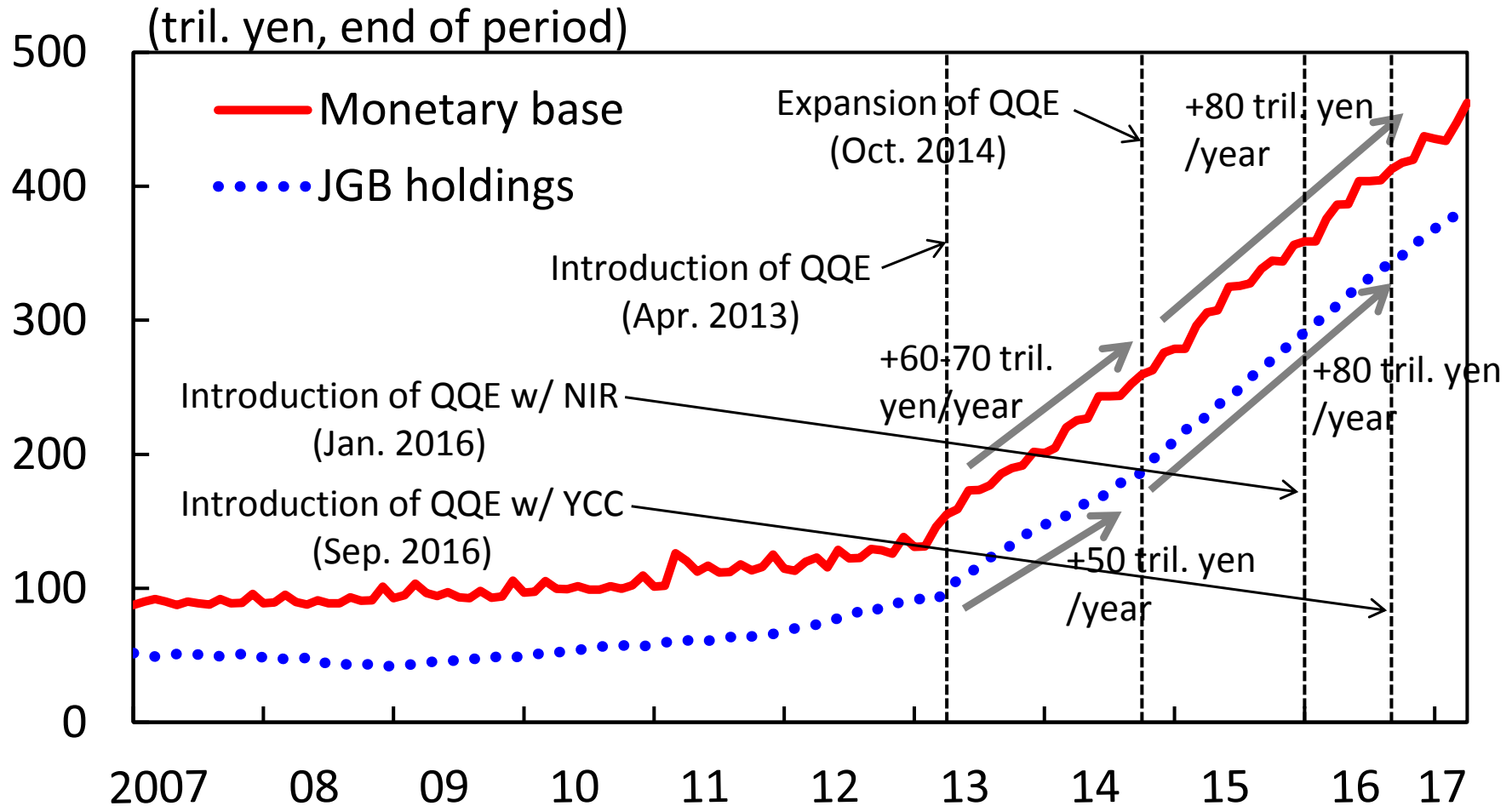
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Developments in QQE

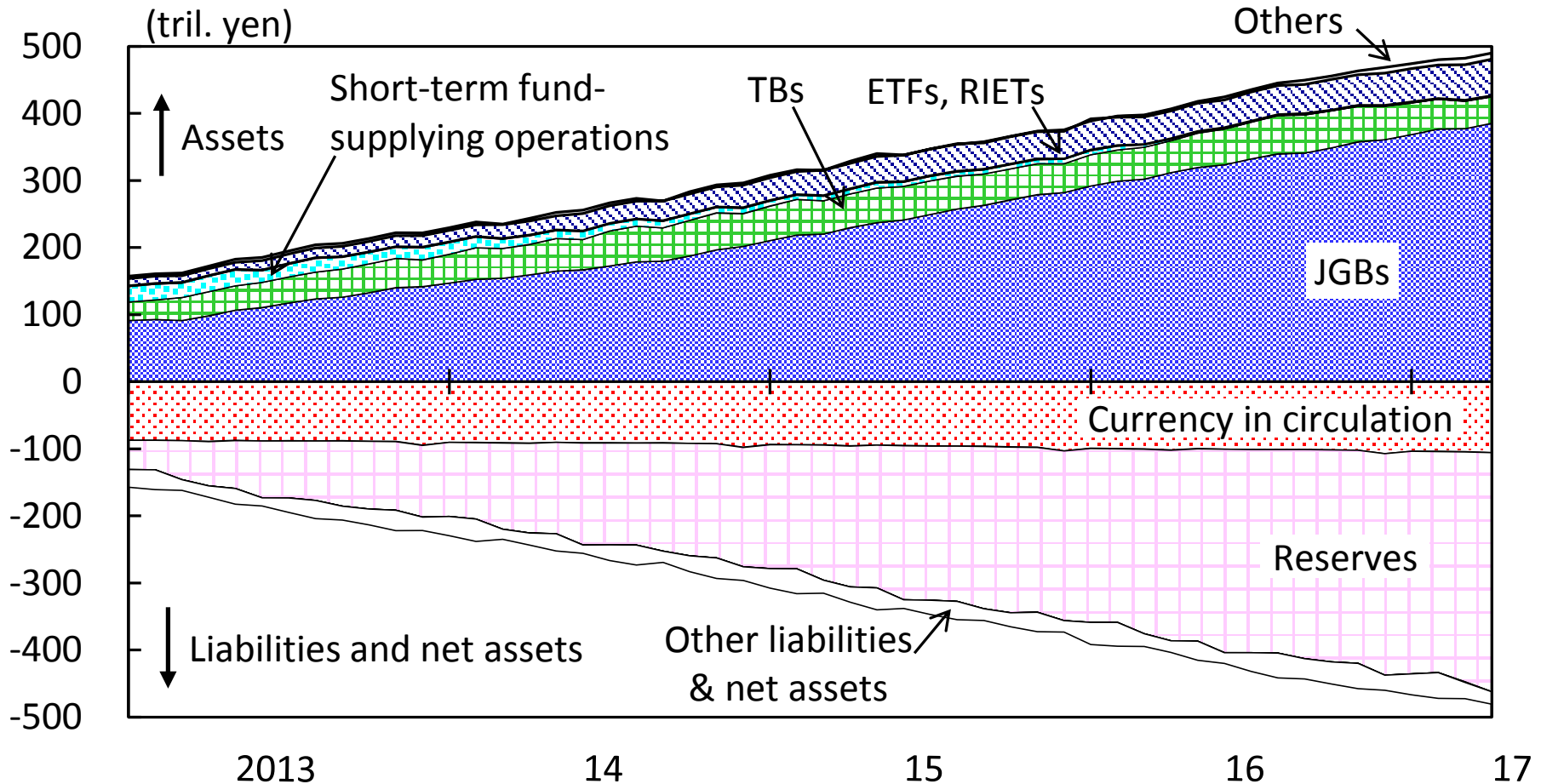
- Introduction of QQE (Apr 2013)
- Expansion of QQE (Oct 2014)
- Introduction of QQE w/ a Negative Interest Rate (Jan 2016)
- Introduction of QQE w/ Yield Curve Control (Sep 2016)

Monetary Base and JGB Holdings



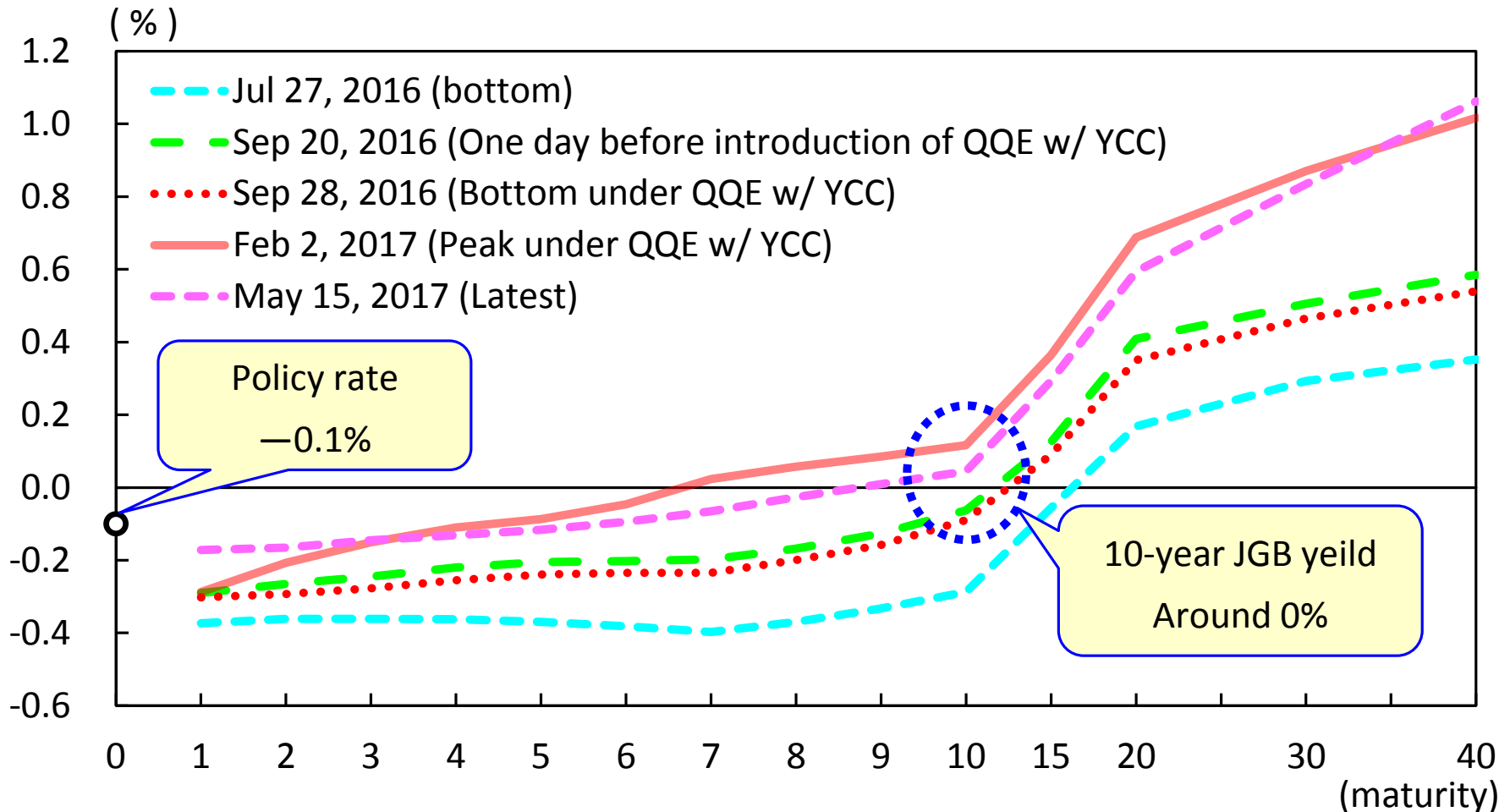
Source: Bank of Japan

BOJ's B/S: Jan 2013-



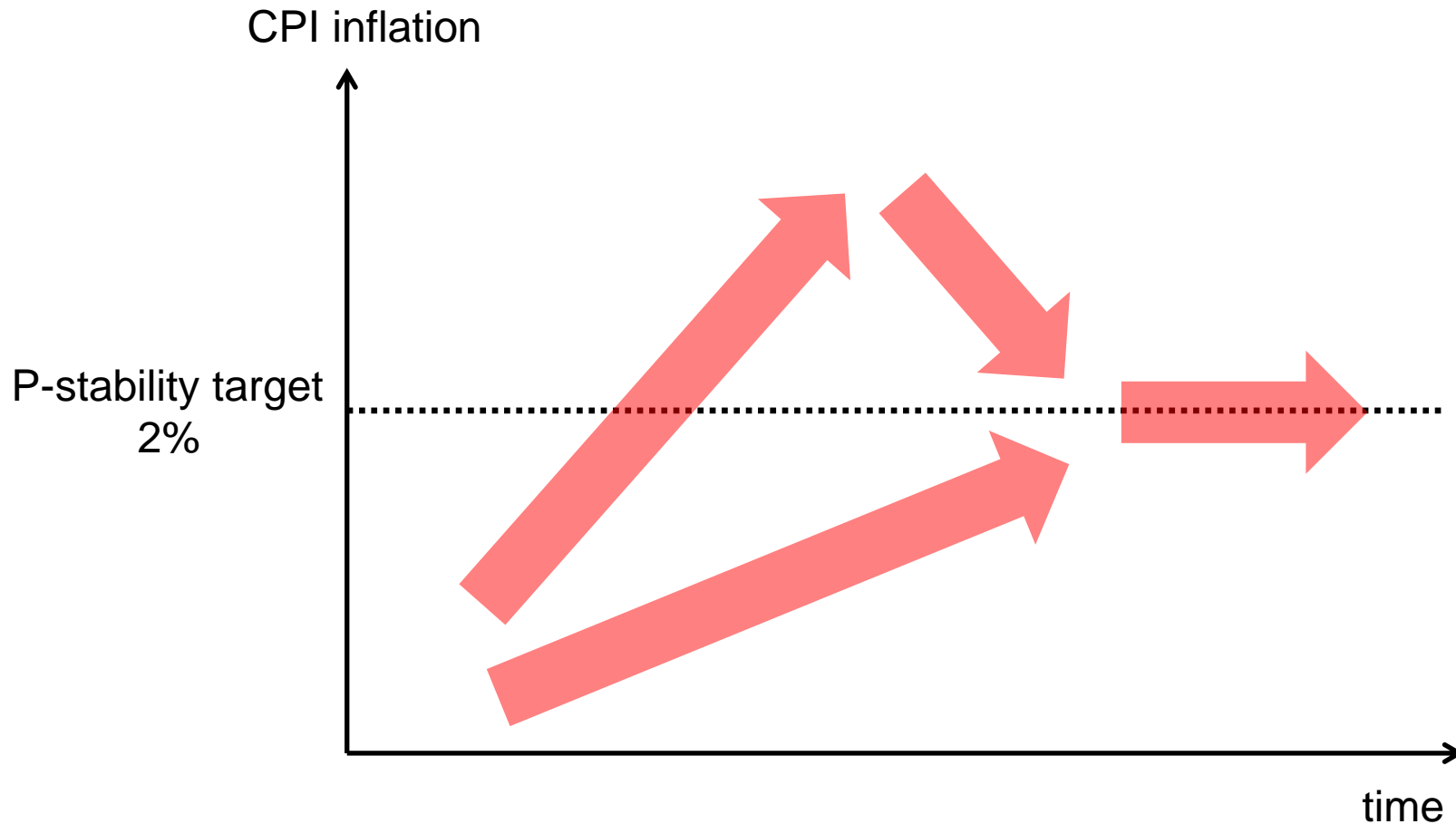
Source: Bank of Japan, *Monetary Base and the Bank of Japan's Transactions*.

Yield Curve Control

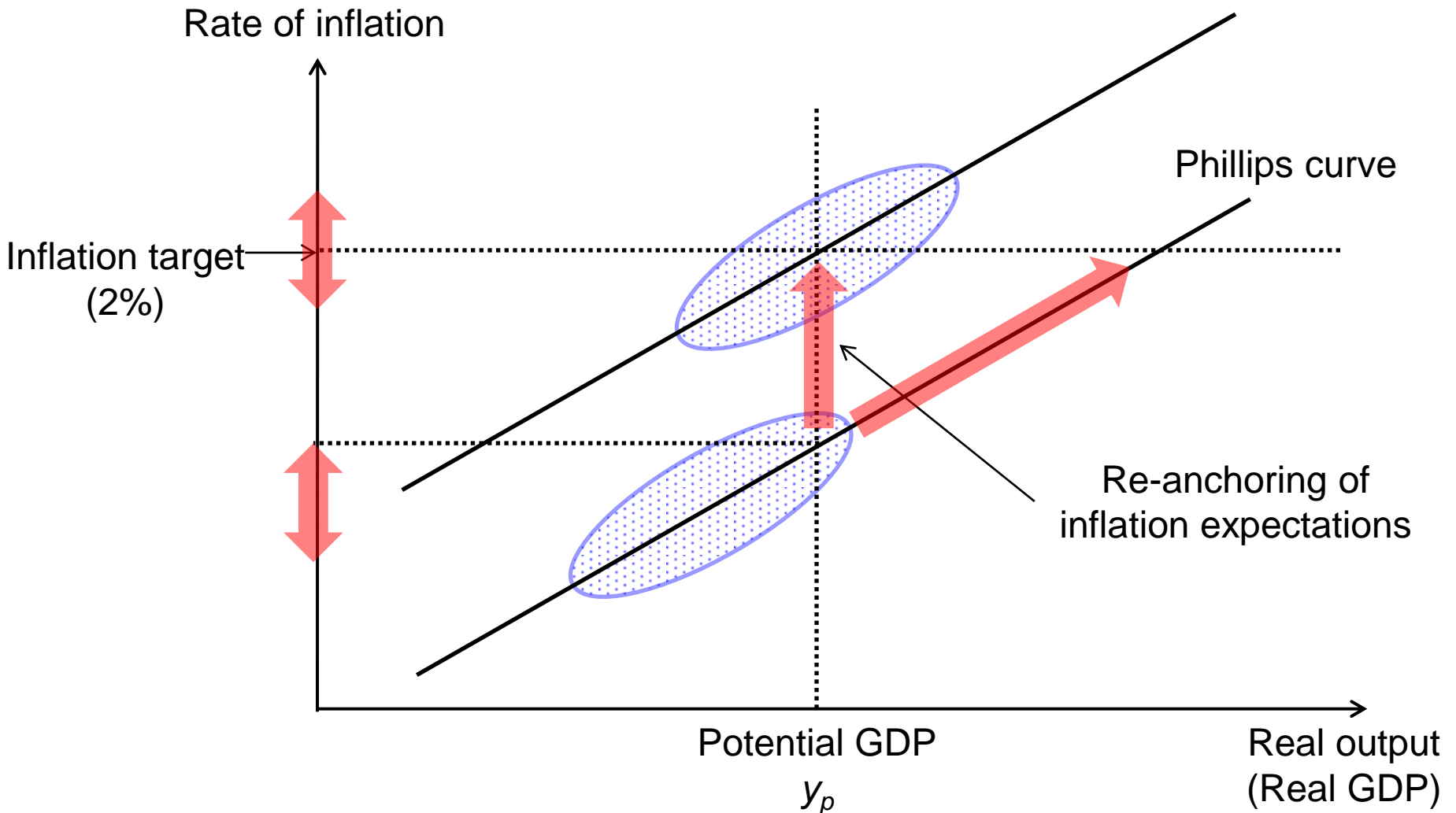


Source: Bloomberg.

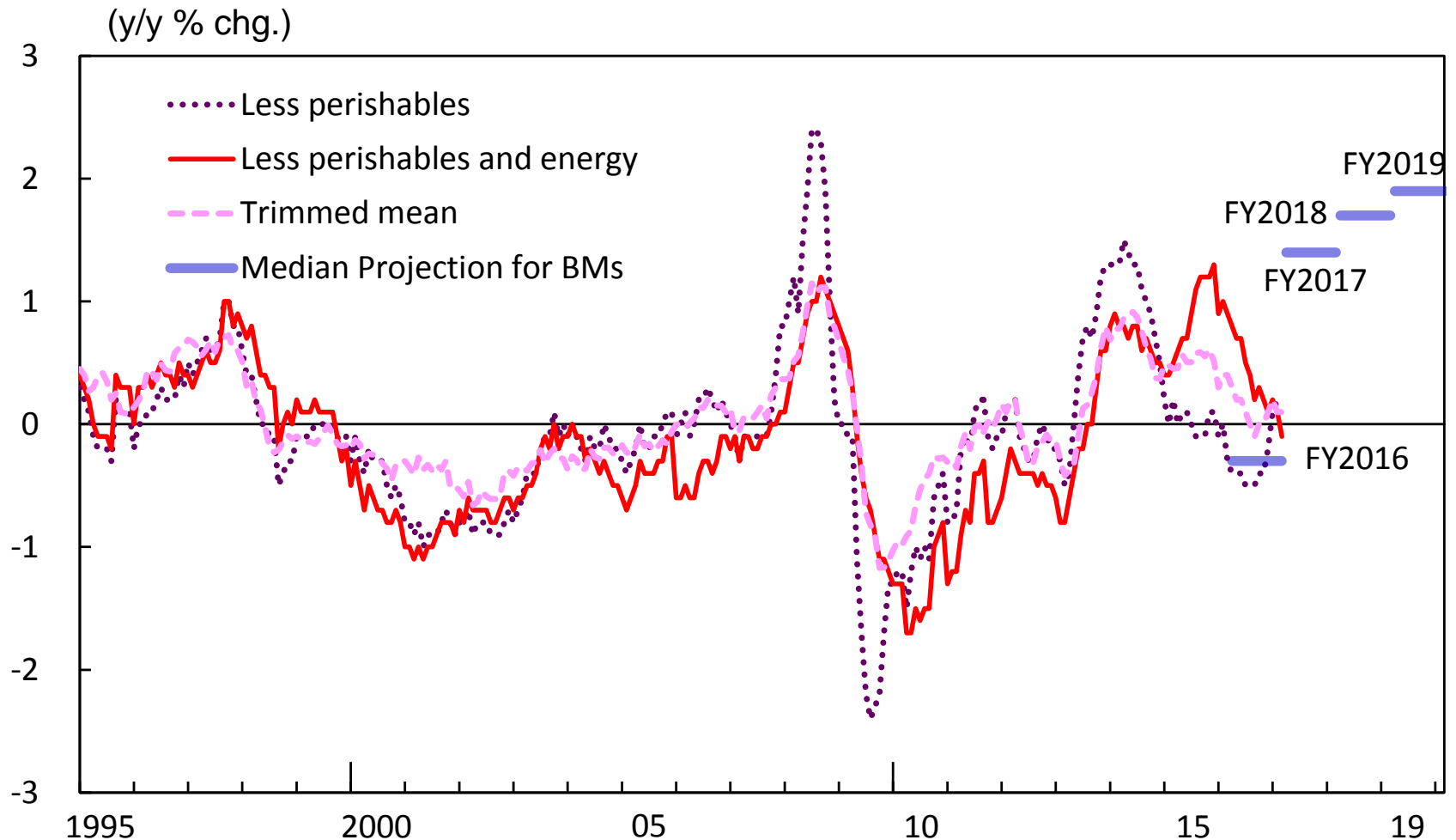
Inflation-Overshooting Commitment



Escaping from Deflation



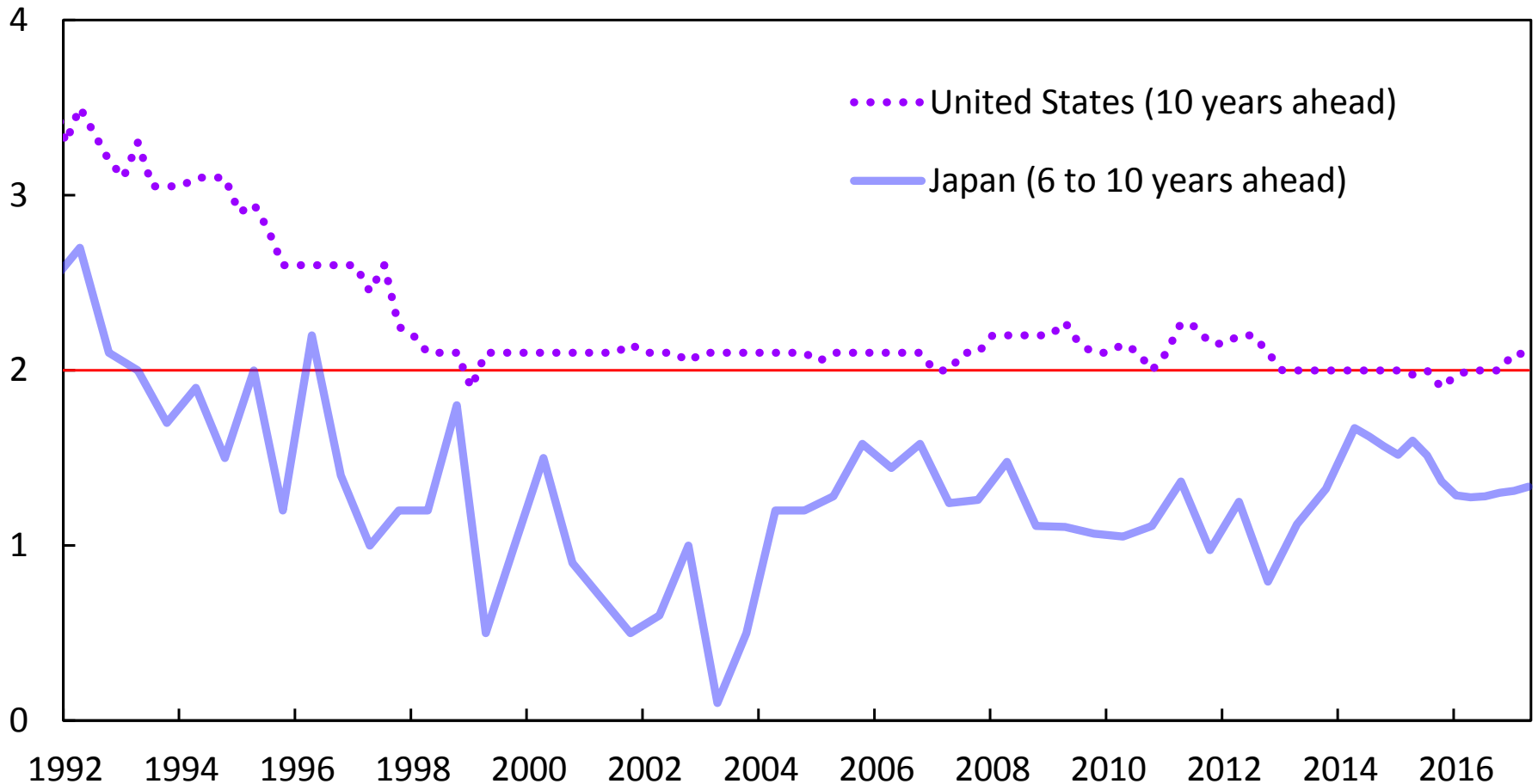
Core CPI



Source: Ministry of Internal Affairs and Communications, *Consumer Price Index*.

Long-term Inflation Expectations

(annual average, percent)



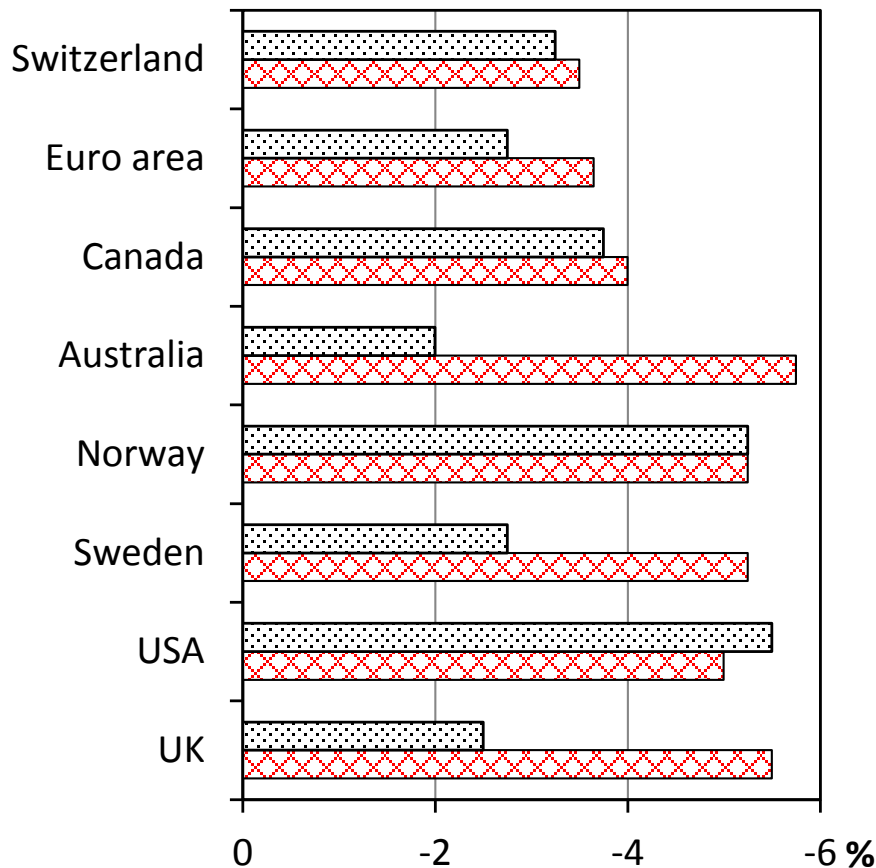
Sources: Consensus Economics Inc., Federal Reserve Bank of Philadelphia.

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Margins to Reduce Policy Rates

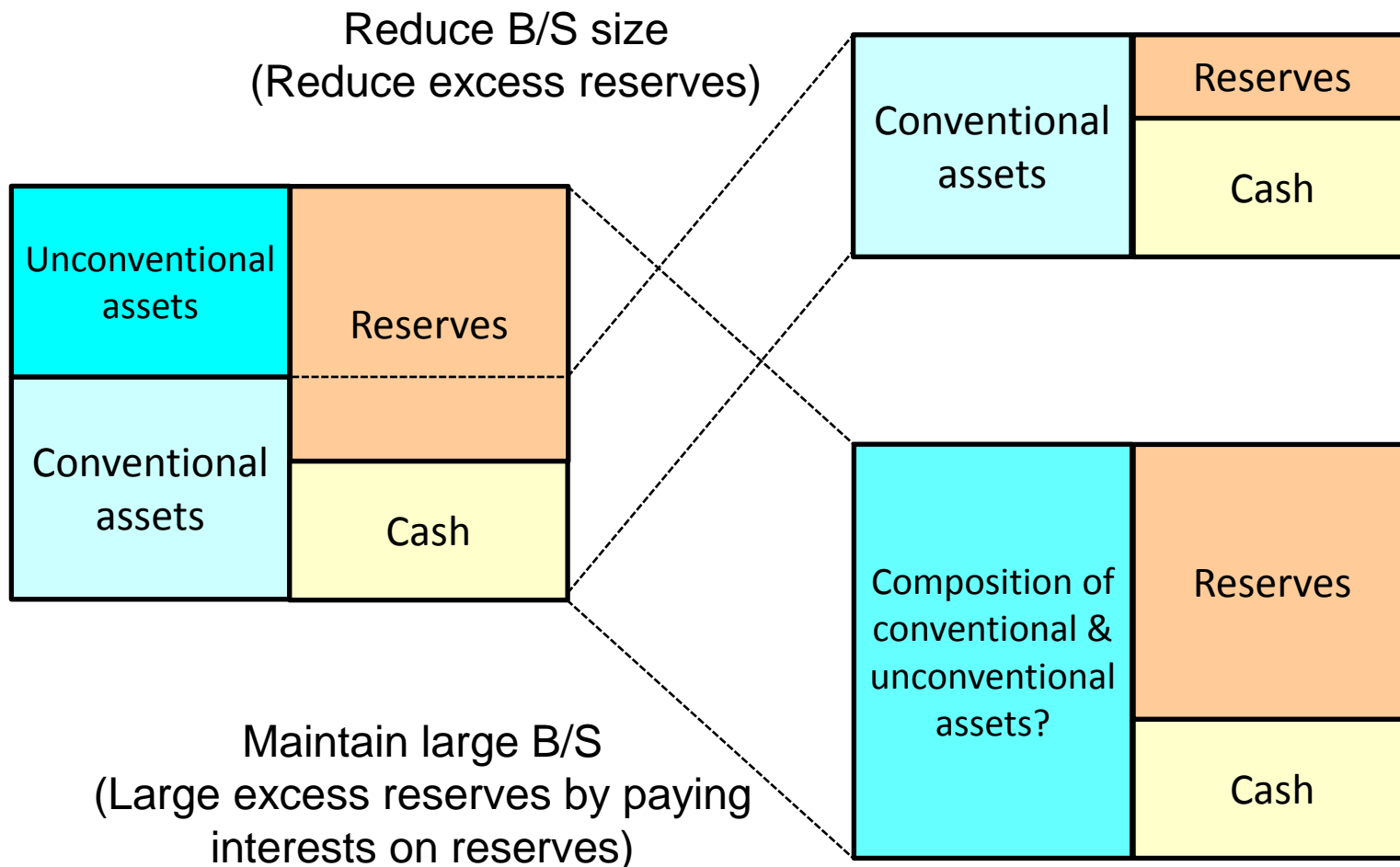
Policy Rate Reductions



 Tech Bubble
  Global Financial Crisis

Policy responses
 in the future
 Large-scale asset
 purchase
 or
 Negative interest rates
 Policy effectiveness
 Political economy risks

Future of CB B/S



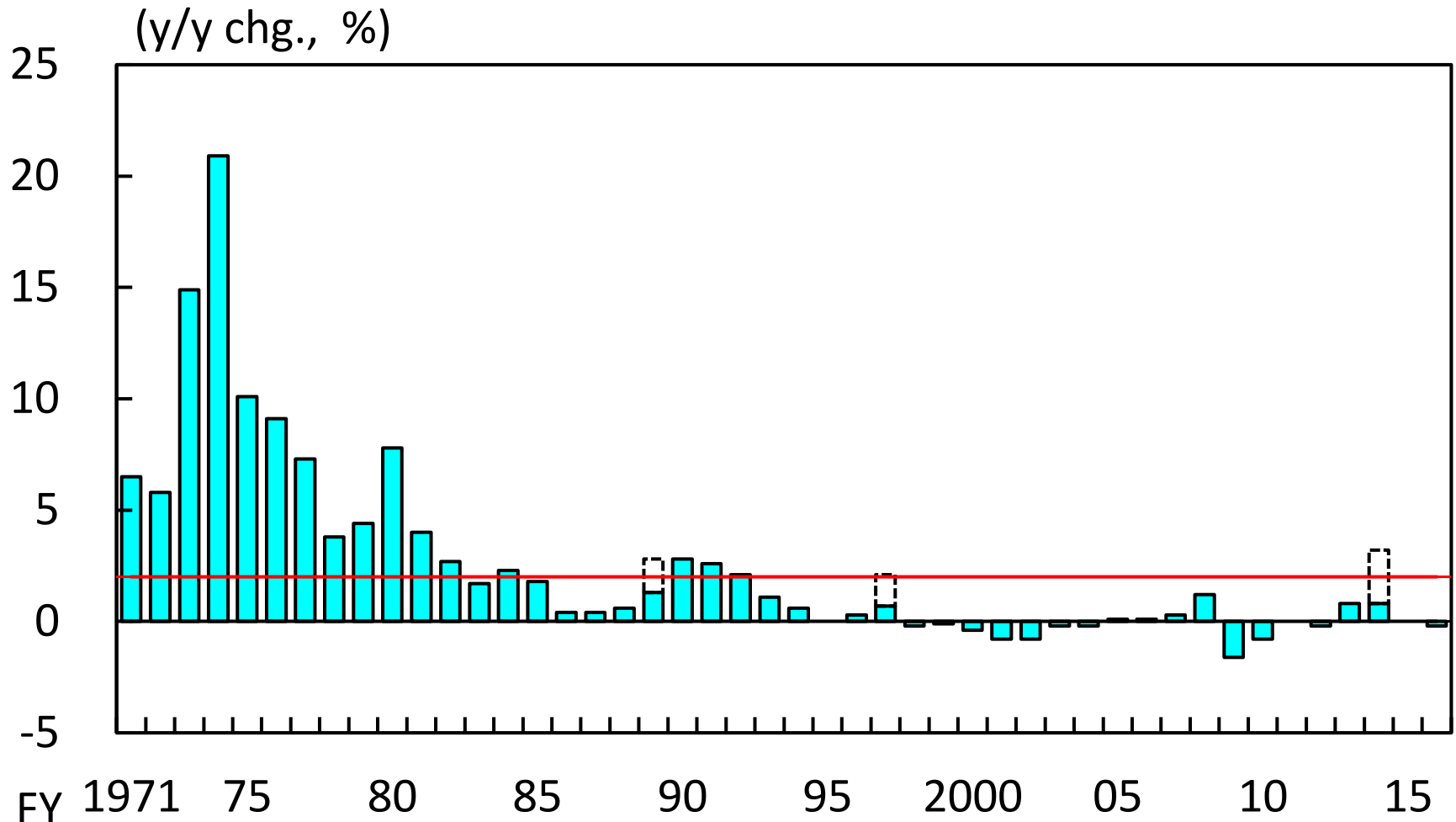
Summary

- Overview of Unconventional Policies:
 - Effectiveness of forward guidance
 - Size & composition of CB B/S
- Japan's Experiences of Unconventional Policies:
 - Evolving nature & Learning-by-doing
 - Way of thinking on policy interventions
- Future of CB Policy Framework

Extra Charts on Japan's Deflation

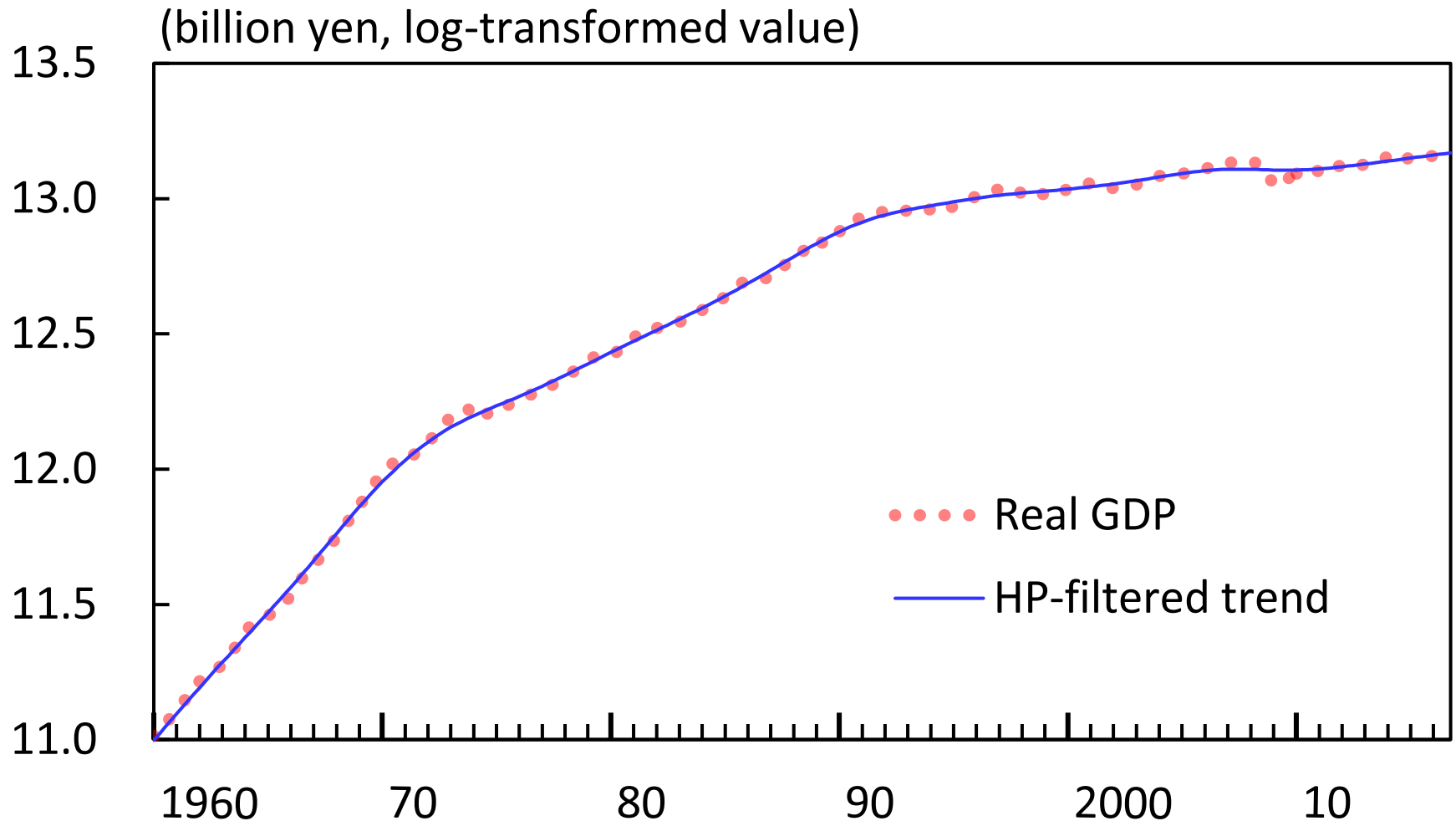
- CPI Inflation
- Growth Path
- Asset Prices
- Demographic Changes

Core CPI



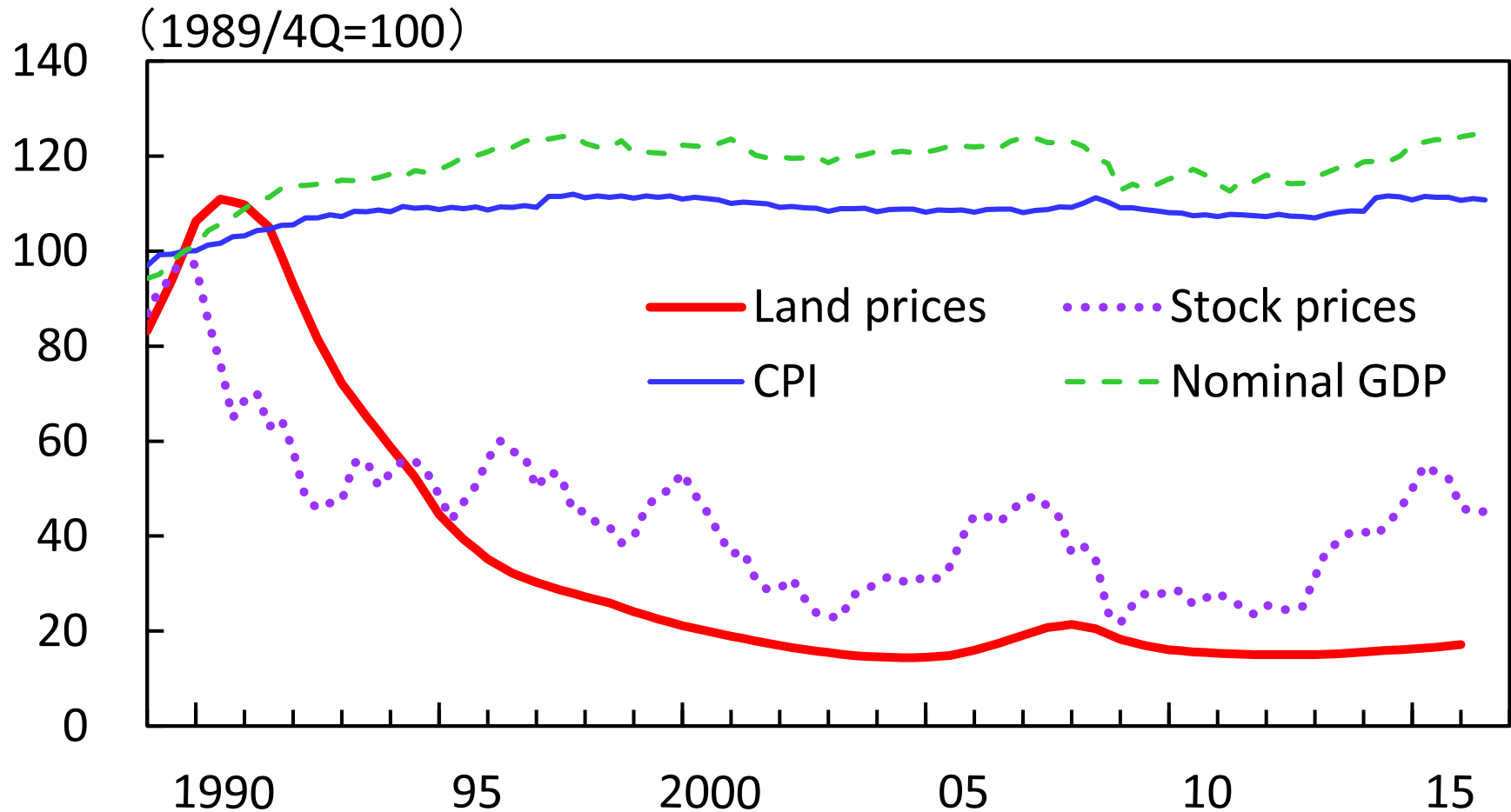
Source: Ministry of Internal Affairs and Communications, "Consumer Price Index."

Downward Shift in Growth Trend



Source: Cabinet Office, *National Accounts*.

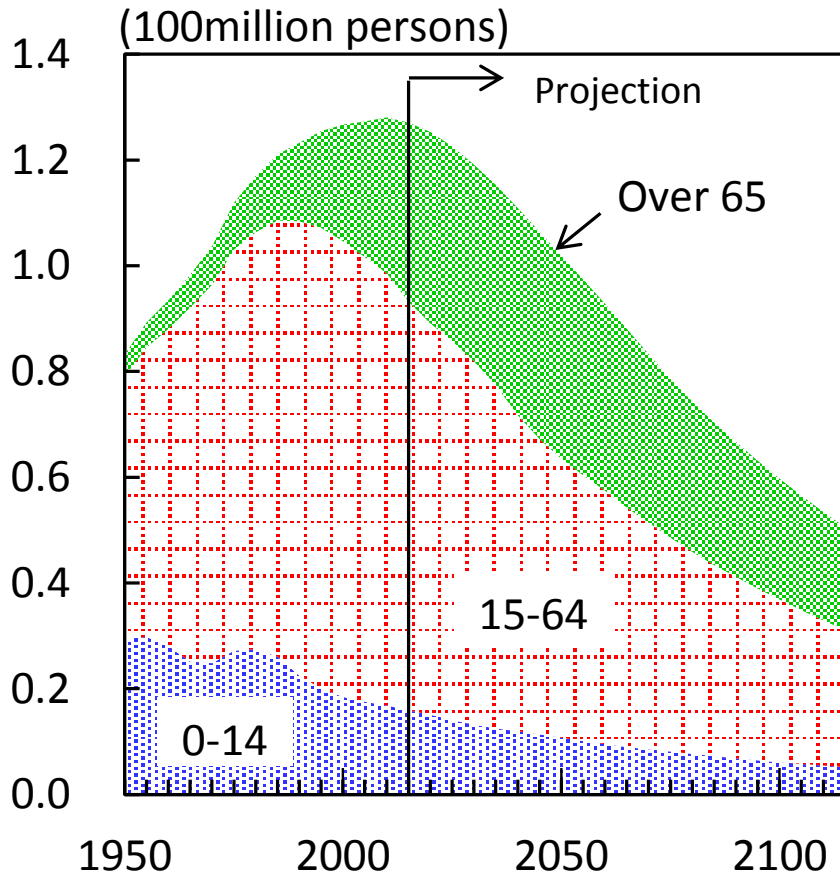
General Prices & Asset Prices



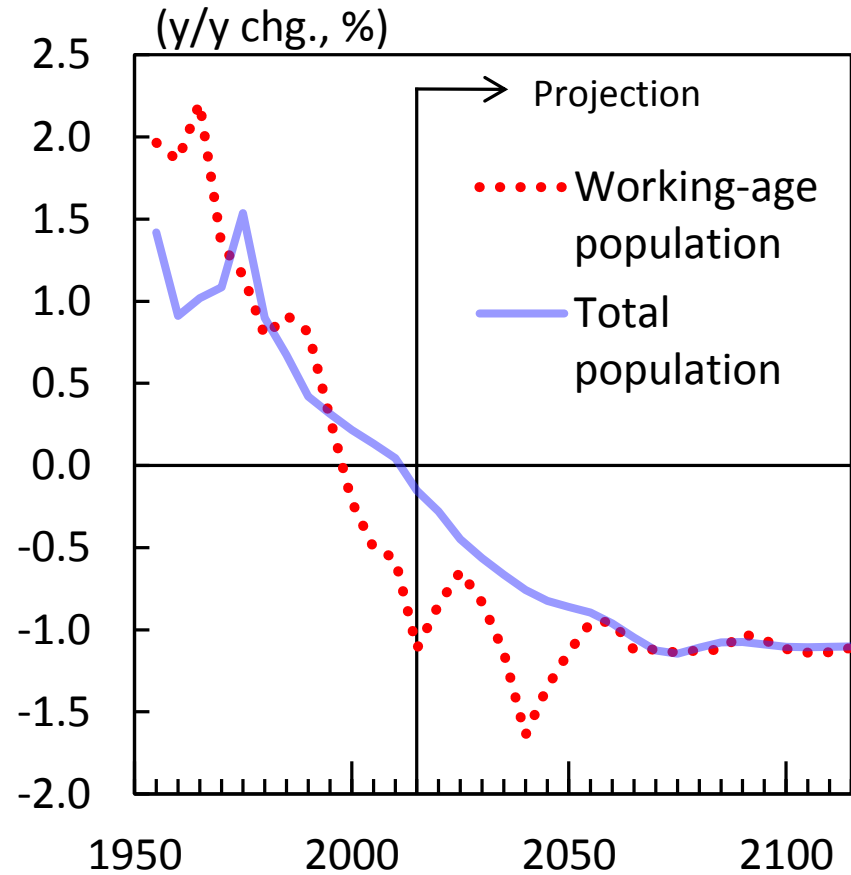
Sources: Cabinet Office, *National Accounts*; Ministry of Internal Affairs and Communications, *Consumer Price Index*; Japan Real Estate Institute, *Urban Land Price Index*; The Nihon Keizai Shimbun, *Nikkei 225 Stock Average*.

Demographic Changes

Population Size by Age Groups



Population Growth



Sources: Ministry of Internal Affairs and Communications, *Population Estimates*; National Institute of Population and Social Security Research, *Population Projections for Japan*.