GRIPS
政策研究大学院大学
NATIONAL GRADUATE INSTITUTE FOR POLICY STUDIES

Evolution in Monetary Policy

GRIPS

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Tomohiro Kinoshita

Gateway to Global Leadership

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What is Monetary Policy?

Is it …

- fighting inflation?
- promoting economic growth?
- maintaining financial stability?

In Milton Friedman's Words

"The first and most important lesson that history teaches about what monetary policy can do --- and it is a lesson of the most profound importance --- is that monetary policy can prevent money itself from being a major source of economic disturbances. … A second thing monetary policy can do is provide a stable back ground for the economy --- … Our economic system will work best when producers and consumers, employers and employees, can proceed with full confidence that the average prices will behave in a known way in the future --- preferably that it will be highly stable."

(Source) Milton Friedman "The Role of Monetary Policy" *The American Economic Review*, Vol. 58, No. 1. (Mar., 1968), pp. 1-17.

Evolution in Monetary Policy

- Rapid evolution and innovation
- After around the turn of the century
- Both in policy practice and academic thinking
- Bank of Japan is the pioneer

What Has Brought About This Evolution?

Three main driving forces are …

1. Global financial crises since 2007
2. Boom in various “targeting” policies
3. Unconventional monetary policy tools

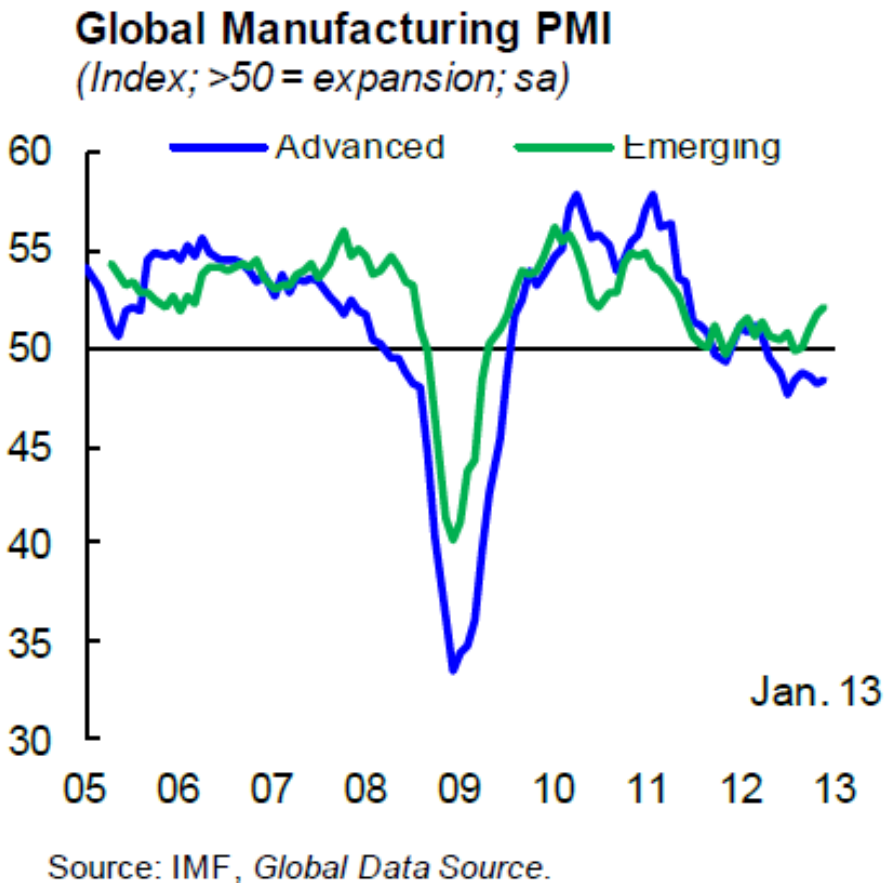
A Look Back at Global Financial Crises

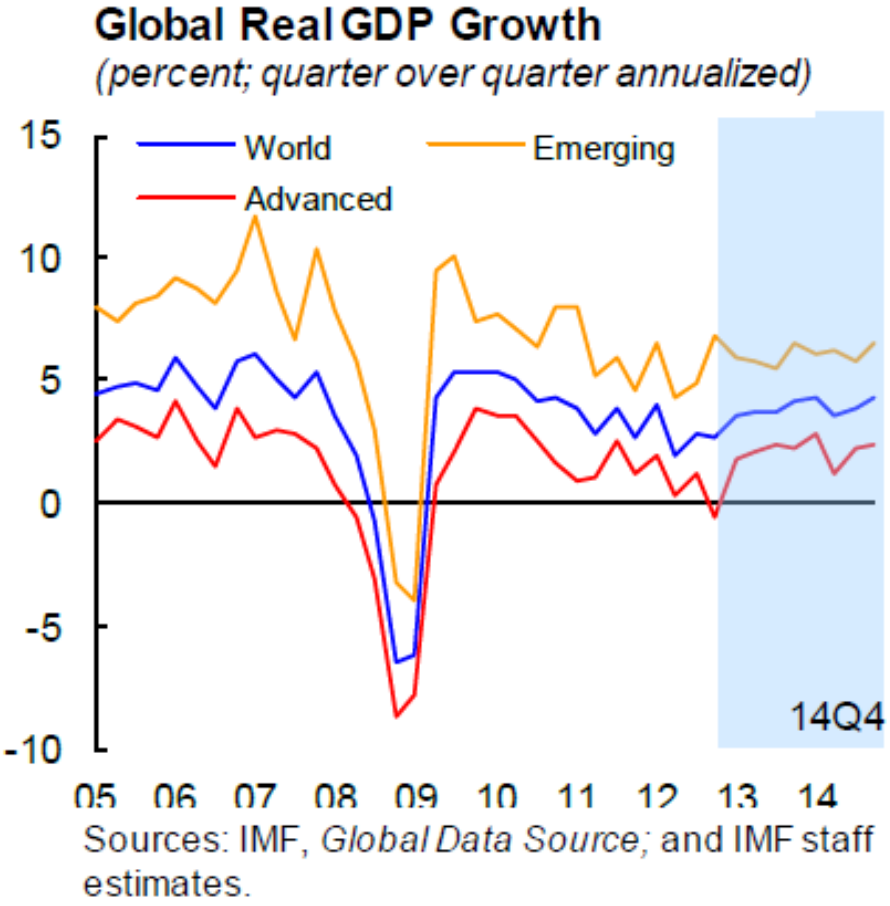
2007: Subprime loan problem in US

2008: Bear Stearns collapse, AIG, and moreover Lehman Shock

2010: Sovereign debt crisis in the Euro-system

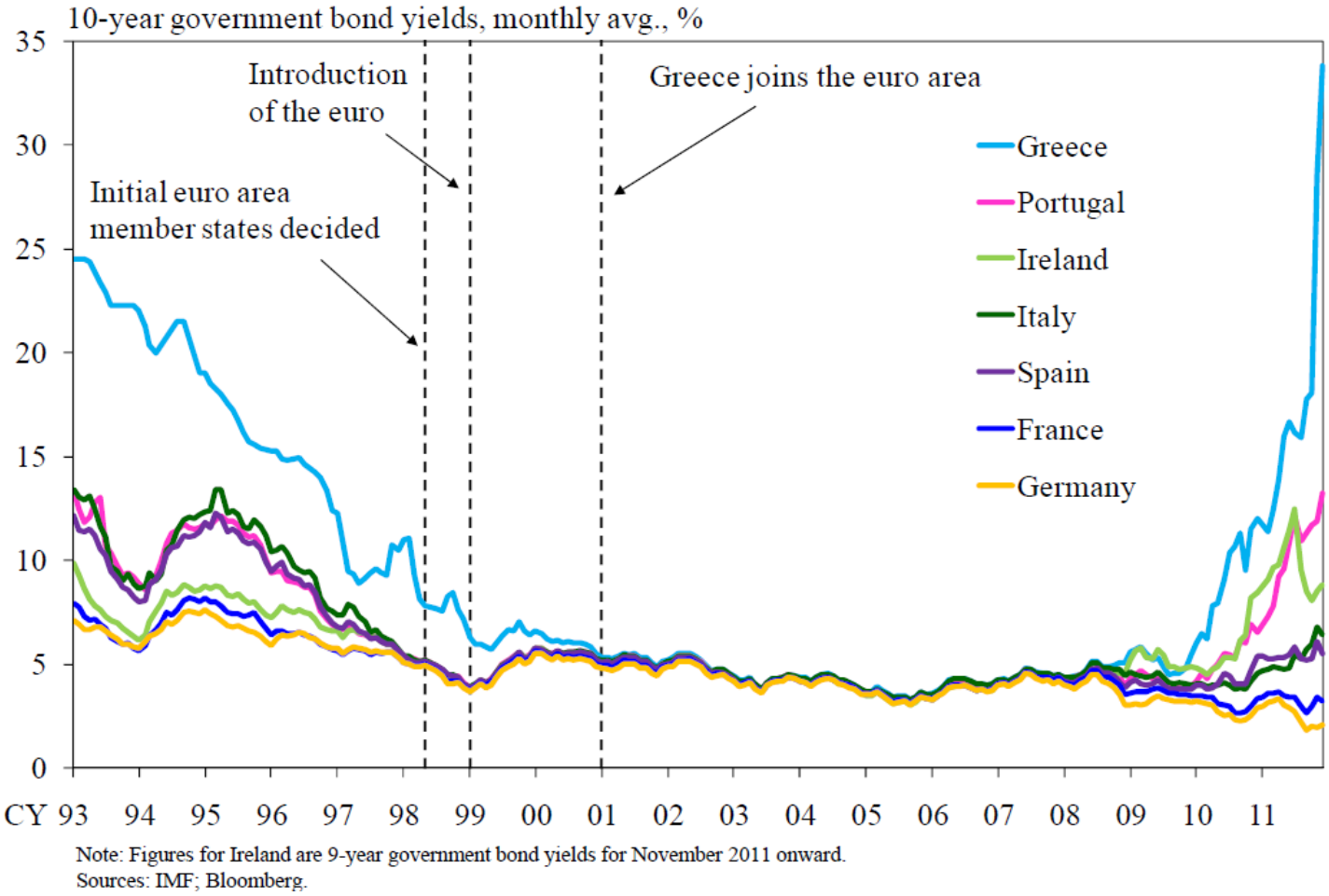
Also Called the "2nd Great Contraction"





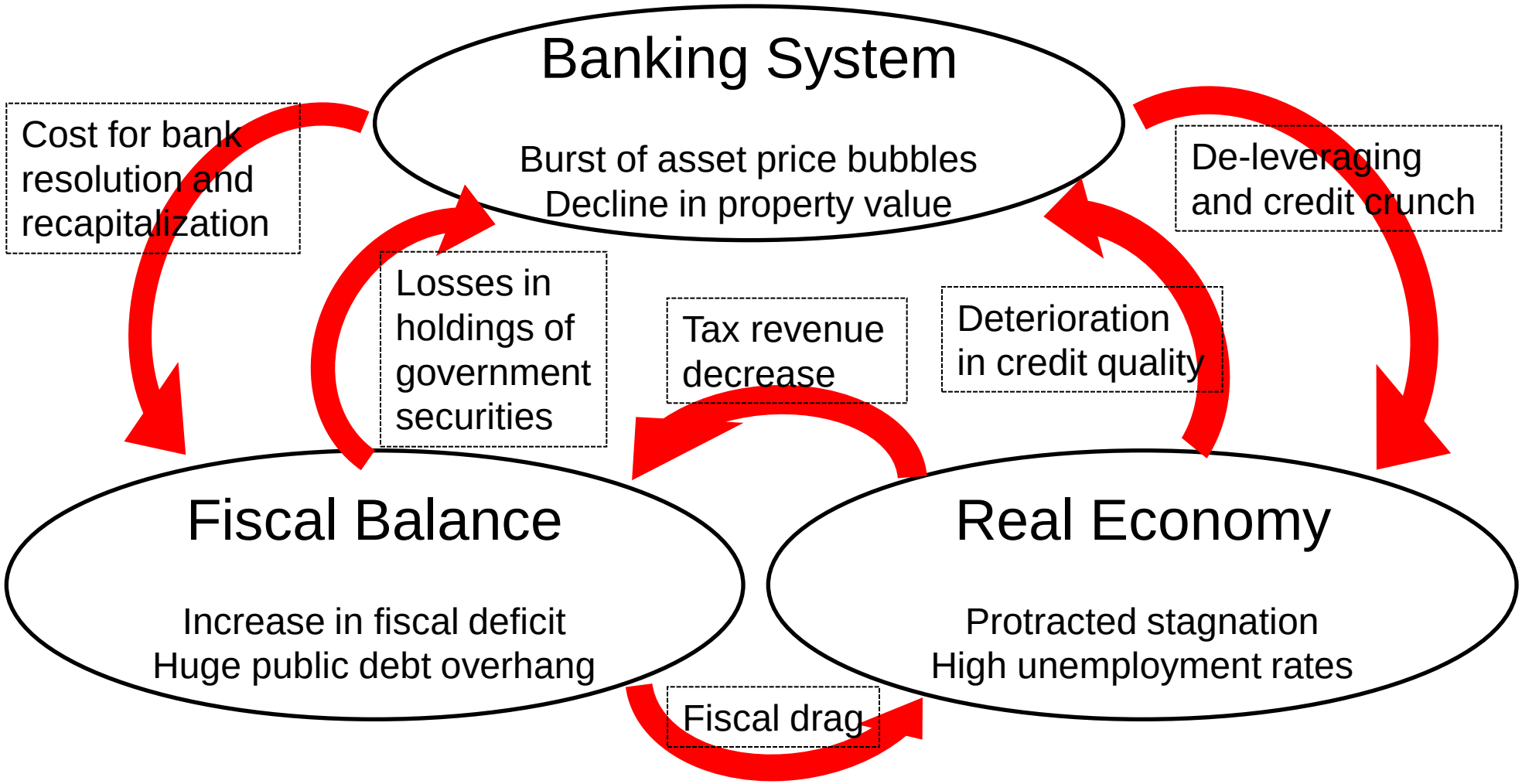
(Source) International Monetary Fund "IMF Note on Global Prospects and Policy Changes" February 15-16, 2013

Sovereign Debt Crisis in the Euro-system



(Source) Masaaki Shirakawa “Globalization and Population Aging: Challenges Facing Japan” Speech to the Board of Councillors of Nippon Keidanren in Tokyo, December 22, 2011

Adverse Feedback Loop



Should Monetary Policy "Lean" or "Clean"?

- Should monetary policy *lean against* the wind of the expansion phase of credit upturns, in order to moderate boom conditions?

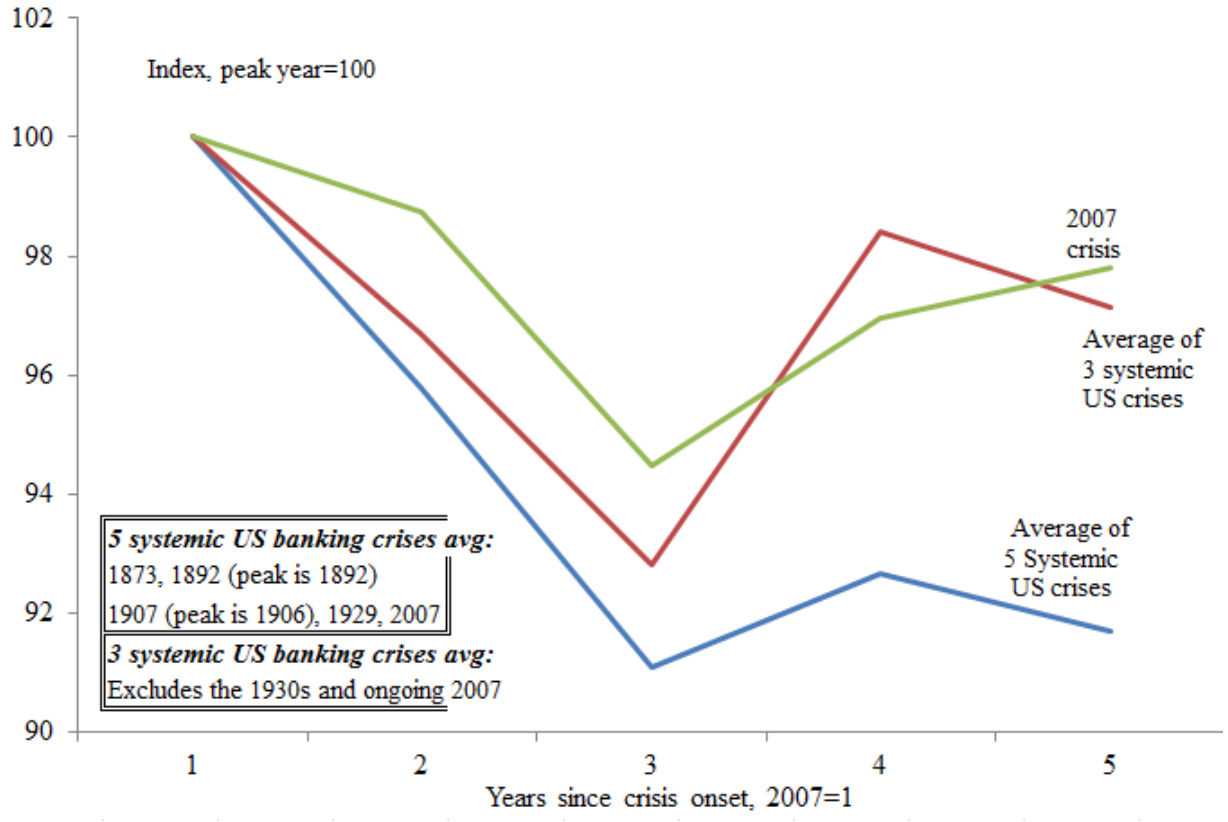
- Or, should monetary policy be content with trying to *clean up* the mess afterwards, once the boom has turned to bust?

“Lean” vs. “Clean”

- FRB View: “Clean”
  - ✓ Uncertainties in identifying bubbles.
  - ✓ Fast and drastic response afterwards will clean the mess.
  - ✓ Allocate regulatory policy.
- BIS View “Lean”
  - ✓ Soft landing afterwards is easier said than done.
  - ✓ Systemic risk arises from externalities.
  - ✓ Monetary policy should play a role in leaning against the wind.

Deep and Protracted Recessions Follow

Real Per-capita GDP (levels) in the Aftermath of Systemic Banking Crises in the US



(Source) Carmen M Reinhart and Kenneth Rogoff "This time is different, again? The US five years after the onset of subprime" October 22nd 2012, http://www.voxeu.org/article/time-different-again-us-five-years-after-onset-subprime-0

FRB's Concession Remarks?

William Dudley "… costs of waiting to respond to an asset bubble until it has burst can be very high. … Despite the fact that it is hard to discern bubbles, especially in their early stages, … uncertainty is not grounds for inaction."

(Source) "Asset Bubbles and the Implications for Central Bank Policy," April 7, 2010

Jeremy Stein "Nevertheless, as we move forward, I believe it will be important to keep an open mind and avoid adhering to the decoupling philosophy too rigidly. In spite of the caveats I just described, I can imagine situations where it might make sense to enlist monetary policy tools in the pursuit of financial stability. … decisions will inevitably have to be made in an environment of significant uncertainty, … Waiting for decisive proof of market overheating may amount to an implicit policy of inaction on this dimension."

(Source) "Overheating in Credit Markets: Origins, Measurement, and Policy Responses," February 7, 2013

Macroprudential Policy Frameworks

Two objectives :

1. Strengthen the resilience of the financial system
2. Lean against the financial cycle to actively limit the build-up of financial risks

Appropriate timing :

- "Costs of a mistimed activation are asymmetric, as delayed action is generally more costly than a premature intervention."

(Source) BIS Committee on the Global Financial System "Operationalising the Selection and Application of Macroprudential Instruments" December 2012

Capturing the Financial Cycle

Capturing the financial cycle: some useful indicators

Macroeconomic indicators	Broad credit aggregates Measures of debt sustainability (debt to income, debt service ratio)
Banking sector indicators	Stress tests, bank risk metrics Leverage ratios Maturity and currency mismatch Indicators of funding vulnerabilities Profits and losses
Market-based indicators	Asset valuations in equity and property markets Corporate bond and CDS spreads and risk premia Margins and haircuts Lending spreads
Qualitative information	Underwriting standards Asset quality Credit conditions

(Source) BIS Committee on the Global Financial System "Operationalising the Selection and Application of Macroprudential Instruments" December 2012

Macroprudential Policy Instruments

1. Capital-based instruments
   - Countercyclical capital buffers
   - Dynamic provisions
   - Sectoral capital requirements
2. Liquidity-based instruments
   - Countercyclical liquidity requirements
     - Liquidity Coverage Ratio (LCR)
     - Net Stable Funding Ratio (NSFR)
   - Margins and haircuts in markets
3. Asset-side instruments
   - Loan-to-Value (LTV) cap
   - Debt-to-Income (DTI) cap

Macroprudential Policy Measures by Country

	LTV cap	DTI cap	Credit growth cap	Of which foreign currency	Time-varying capital requirements	Profit distribution limits	Risk weight restrictions	Dynamic provisioning	Liquidity ratio regulation	Of which foreign currency	Reserve requirements
Japan											
China	○		○		○			△			○
South Korea	○	○	○	○					○		○
Hong Kong	○	○	○								
Mongolia								○	○	○	○
Indonesia											○
Singapore	○		○						○		
Thailand	○	○					○		○	○	
Philippines											
Malaysia	○		○				○				○
India	○				○			○			○
Canada	○										
United States											
Mexico	○		○					○	○	○	
Italy	○										
Germany											
France									○		
United Kingdom					△						
Ireland							○				
Austria											
Netherlands											
Croatia	○	○	○		○		○	○	○		○
Greece		○	○					△			
Switzerland					△						
Sweden	○										
Spain							○	○			

(Source) Kawata, Kurachi, Nakamura and Teranishi “Impact of Macroprudential Policy Measures on Economic Dynamics: Simulation Using a Financial Macro-econometric Model” Bank of Japan Working Paper Series, February 20, 2013

Macroprudential Policy Measures by Country (continued)

	LTV cap	DTI cap	Credit growth cap	Credit growth cap: Of which foreign currency	Time-varying capital requirements	Profit distribution limits	Risk weight restrictions	Dynamic provisioning	Liquidity ratio regulation	Liquidity ratio regulation: Of which foreign currency	Reserve requirements
Slovakia						○			○		
Serbia		○	○	○		○			○	○	○
Czech Republic											
Turkey	○		○	○		○			○	○	
Norway	○	○					○				
Hungary	○	○	○	○							
Finland											
Bulgaria					○		○	○			○
Belgium											
Poland		○	○	○		○	○				○
Portugal							○	△			
Romania	○	○	○	○				△			○
Russia								○	○	○	○
Jordan											
Lebanon	○								○	○	○
Australia											
New Zealand									○		
Argentina						○					
Uruguay							○	○	○	○	
Colombia	○	○	○			○		○	○	○	○
Chile	○				△						○
Paraguay											
Brazil	○						○	○	○	○	○
Peru								○	○	○	○
Nigeria			○						○	○	○
South Africa					○						

(Source) Kawata, Kurachi, Nakamura and Teranishi “Impact of Macroprudential Policy Measures on Economic Dynamics: Simulation Using a Financial Macro-econometric Model” Bank of Japan Working Paper Series, February 20, 2013

Central Bank's Role in Macroprudence

- Regulatory and supervisory powers
- Incorporate macroprudential policy objectives into monetary policy frameworks
- Function prudently as lender of last resort

BOJ Macroprudential Policy Framework

1. Two Perspectives Approach since March 2006

In the second perspective, the Bank of Japan is “examining, in a longer term, various risks that are most relevant to the conduct of monetary policy.”

2. Comprehensive Monetary Easing Framework since October 2010

The Bank of Japan specified that “the accumulation of financial imbalances” would be examined as risk factors regarding continuation of monetary easing.

3. Financial System Report

In its bi-annual report, the Bank of Japan examines the financial system to ascertain financial imbalances which may stem from bullish expectations.

Targeting in Monetary Policy

In 1960,

Milton Friedman's *k-percent* money growth rule

In 1990,

Reserve Bank of New Zealand's inflation targeting

In 1993,

John Taylor's Taylor rule

Why Such Boom in “Targeting” Policies?

- Rules vs. discretion controversy.
- Discretionary policies contribute to cyclical fluctuations.
- Rules-based policies increase transparency.
- Commitment to rules and good policy performance improves credibility.
- Transparency and credibility coupled with effective policy communication anchor inflation expectations.

Taylor Rule

$$i_t = \mu + \lambda\pi_t + \gamma y_t$$

i_t : policy interest rate

π_t : inflation rate

y_t : output gap

$\mu = 1\%,\ \lambda = 1.5$, and $\gamma = 0.5$

FRB Deviates from the Rule after 2003

Greenspan Years: Federal Funds Rate and Taylor Rule
(CPI $p^* = 2.0$, $r^* = 2.0$) $a = 1.5$, $b = 0.5$

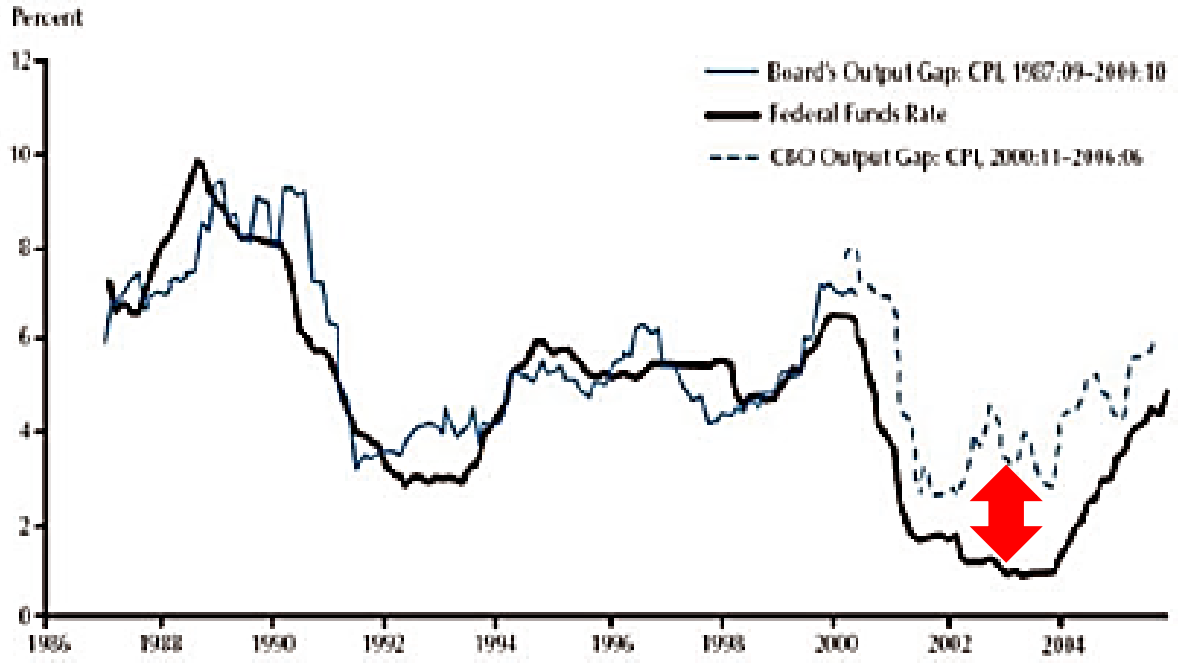


FIG. 2. Federal Funds Rate: Actual and Policy Rule, 1985–2006.

SOURCE: Reproduction of a chart from Federal Reserve Bank of St. Louis, Poole (2007).

(Source) John B. Taylor (2012) "Monetary Policy Rules Work and Discretion Doesn't: A Tale of Two Eras" *Journal of Money, Credit and Banking*, 44: 1017–1032

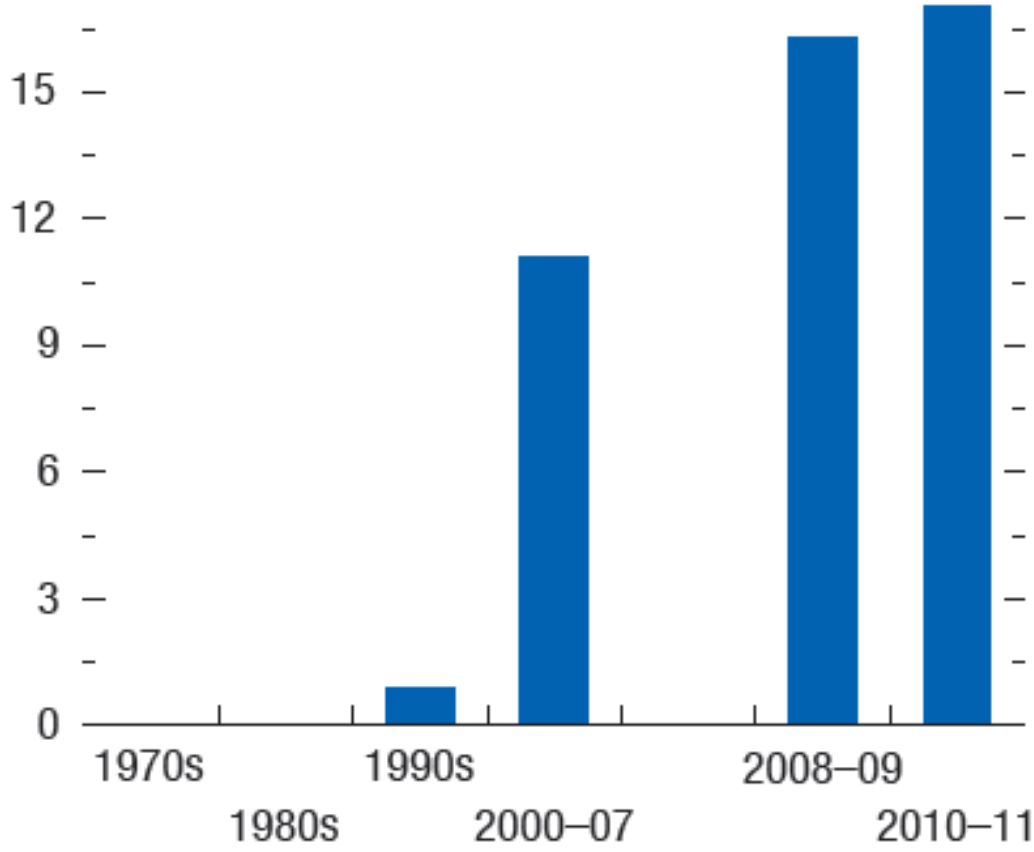
Inflation Targeting Adopted

Country/area	Name/price indicator	Numerical value	Set by	Period
United Kingdom	Target Consumer Prices Index (CPI) (all items)	2 percent	Government	Reasonable time period (medium term)
Canada	Target Consumer Price Index (CPI) (total)	2 percent (midpoint of the target range of 1-3 percent)	Government and central bank	Usually between six and eight quarters
Australia	Target Consumer Price Index (CPI) (all groups)	2-3 percent	Government and central bank	Medium term
New Zealand	Target Consumers Price Index (CPI) (all groups)	Near 2 percent (midpoint of the target of between 1 percent and 3 percent)	Government and central bank	Medium term
Sweden	Target Consumer Price Index (CPI)	2 percent	Central bank	Normally two years

(Source) Takehiro Sato (Bank of Japan Member of the Policy Board) “Recent Developments in Economic Activity, Prices, and Monetary Policy” Speech at a Meeting with Business Leaders in Gunma, February 6, 2013

Inflation Targeting in Emerging Market and Developing Economies

Percentage Share of EMDEs with Inflation Targeting



(Source) IMF "World Economic Outlook: Coping with High Debt and Sluggish Growth" October 2012

Not Adopting Inflation Targeting

Country/area	Name/price indicator	Numerical value	Set by	Period
United States	Longer-run goal Personal Consumption Expenditures Price Index (PCEPI)	2 percent	Central bank	Longer run
Euro area	Quantitative definition of price stability Harmonized Index of Consumer Prices (HICP)	Below, but close to, 2 percent	Central bank	Medium term
Switzerland	Definition of price Stability Consumer Price Index (CPI)	Less than 2 percent per annum	Central bank	Medium and long term

(Source) Takehiro Sato (Bank of Japan Member of the Policy Board) “Recent Developments in Economic Activity, Prices, and Monetary Policy” Speech at a Meeting with Business Leaders in Gunma, February 6, 2013

Evolution in Inflation Targeting

- Flexible targeting
- Medium to long term time frame
- Balanced approach in seeking to mitigate deviations from targets or goals
- Paying due attention to financial system stability
- Sustainability

BOJ's Price Stability Target

adopted on January 22, 2013

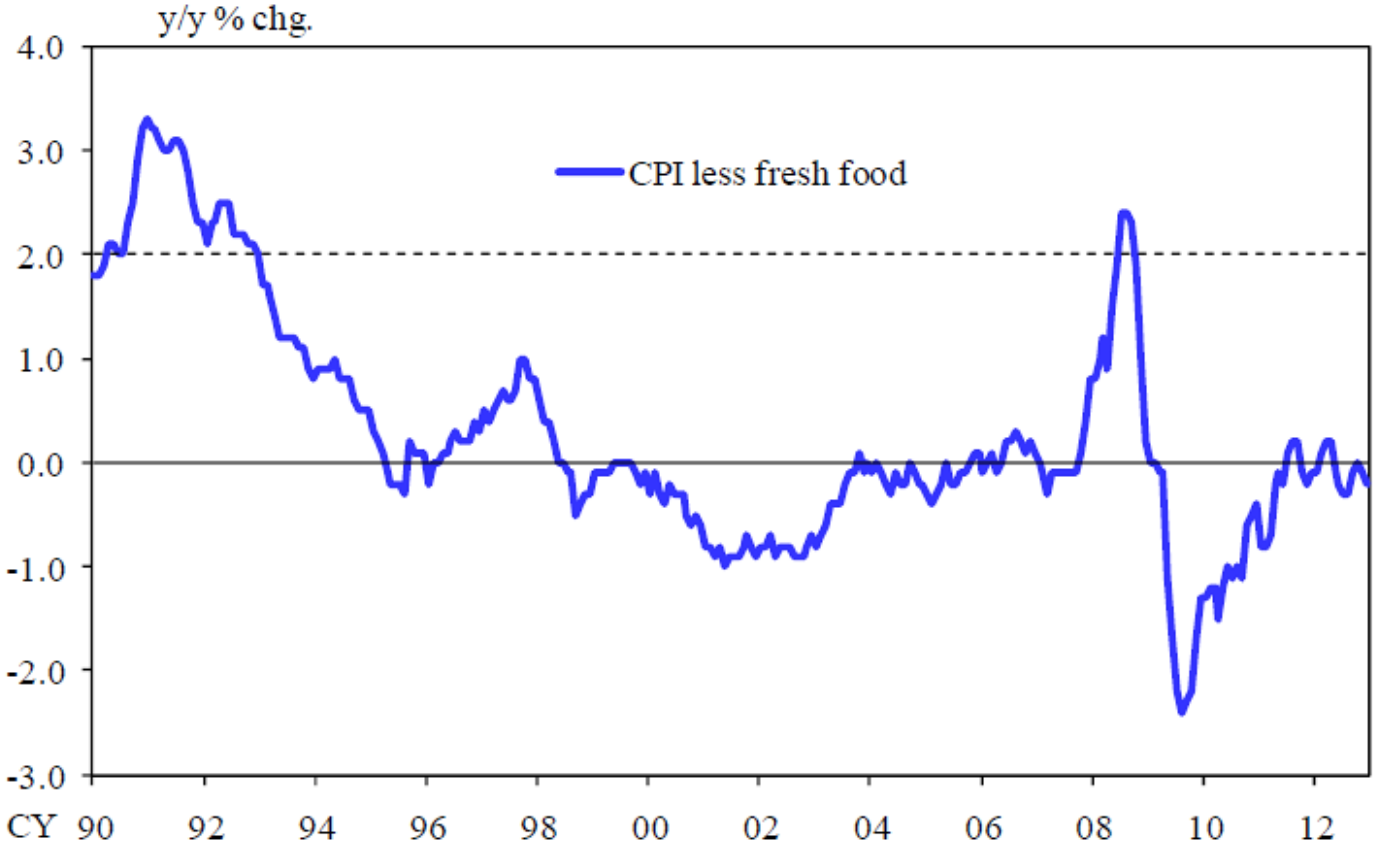
"CPI +2%, ASAP"

What's new?

- A novel experiment: fighting DEFLATION, not inflation
- Achieving "price stability" on a sustainable basis, not merely targeting inflation
- Coupled with the Joint Statement between the Bank and the Government which also committed to play its own role

15 Years of Mild Deflation in Japan

Consumer Price Index



Note: Figures for the CPI are adjusted to exclude the effect of changes in the consumption tax rate.
Source: Ministry of Internal Affairs and Communications.

Unconventional Monetary Policy Tools

Conventional tools, what are they?

But, faced with the lower bound or zero bound, then came in, the unconventional tools, or unorthodox monetary policies.

List of Unconventional Tools

1. Quantitative easing
2. Asset purchases
3. Central bank balance sheets

---

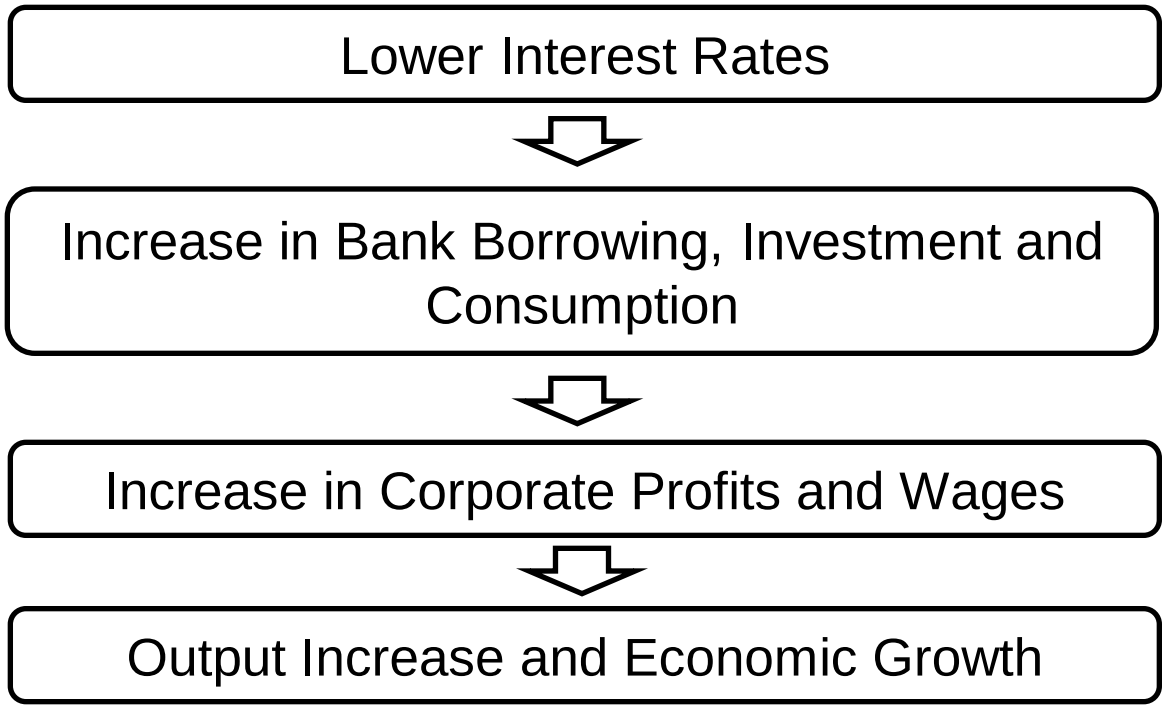
4. “Policy duration” commitment or “forward guidance”

Impact of Unconventional Tools

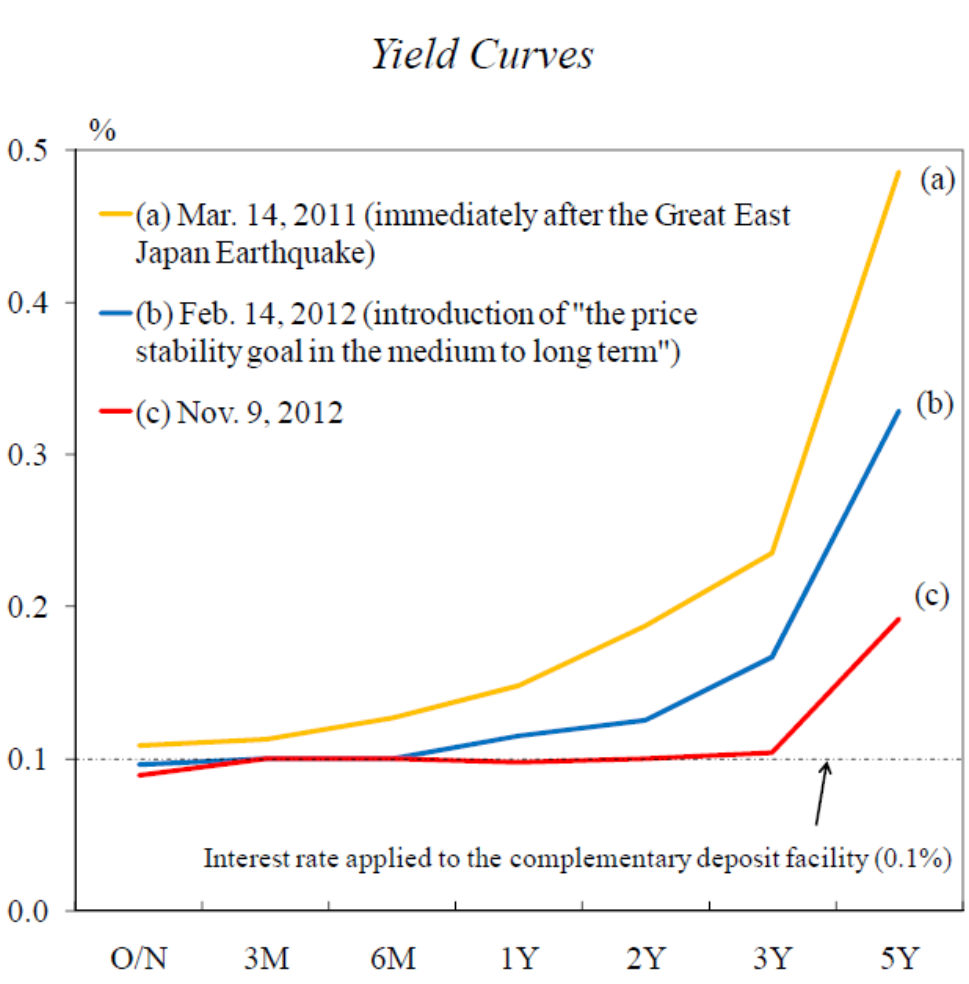
- Yes, interest rates declined.
- But, other than such conventional consequences, the effects of unconventional policy tools are unclear.
- So then, are these “unconventional” tools really unconventional?

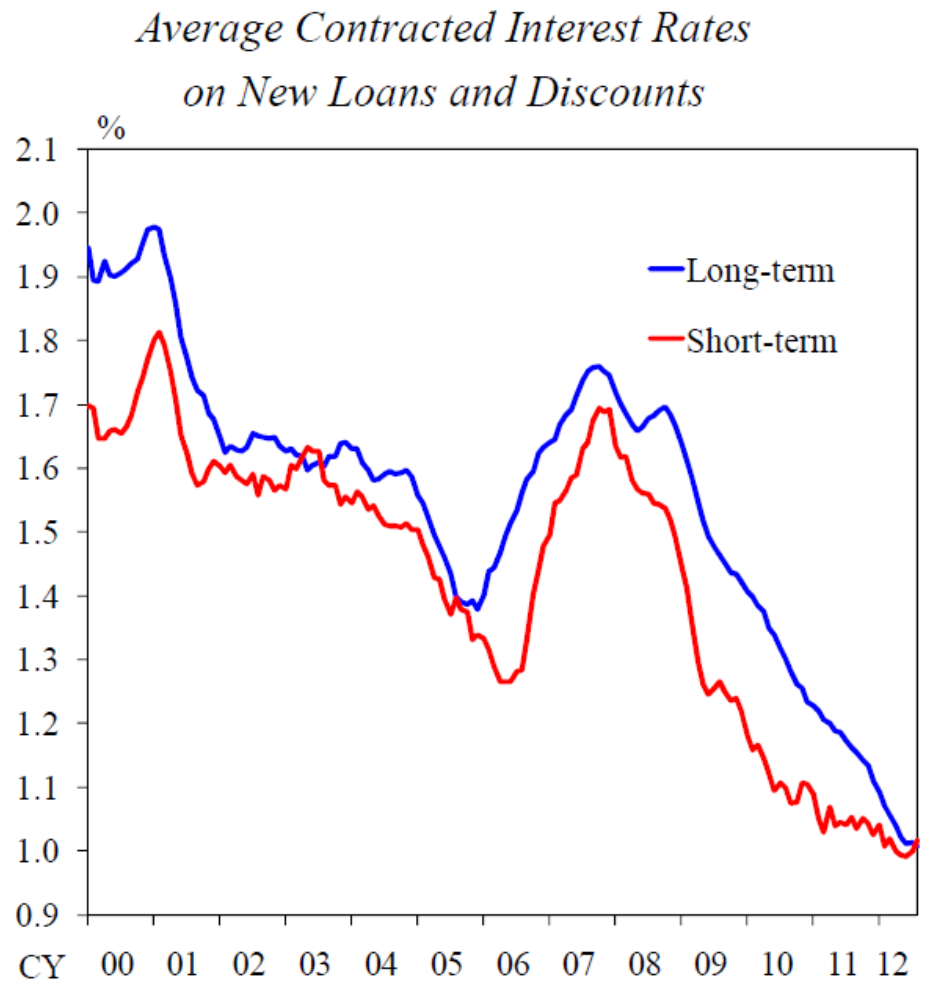
Policy Transmission Mechanism

… is very conventional, even for unconventional monetary policies.



Suppressing the Entire Yield Curve





Note: Average contracted interest rates are the six-month backward moving averages on new loans and discounts.
Sources: Bank of Japan; Bloomberg.

Bank of Japan, the Pioneer

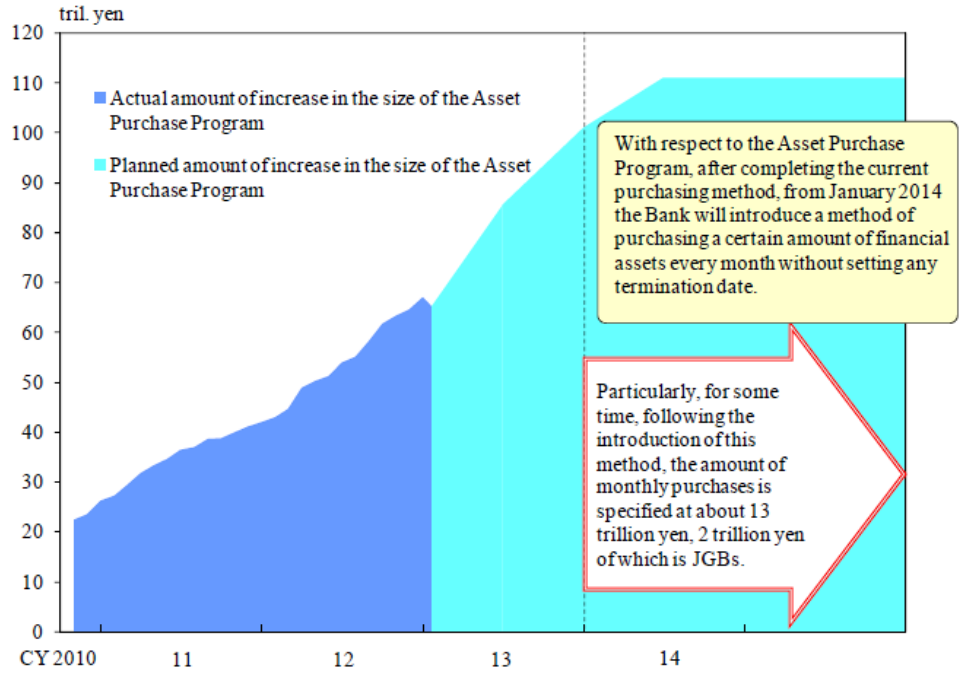
- In March 2001, the Bank introduced **quantitative easing** and zero interest rate policies and announced a strong ***commitment to continue these policies until*** the CPI stably registers year-on-year increase.
- In October 2010, the Bank introduced Comprehensive Monetary Easing Framework, a combination of **Asset Purchase Program** and virtually zero interest rate policy, and ***committed to continue the latter until*** it judges that price stability (= CPI annual increase +1%) is in sight.
- In February 2012, the Bank introduced "price stability goal in the medium to long term“ and reiterated its ***commitment to pursue powerful monetary easing by conducting its virtually zero interest rate policy and by implementing the Asset Purchase Program until*** it judges that the CPI +1 % goal is in sight.

Other Central Banks Followed BOJ

- In March 2009, the Bank of England introduced **quantitative easing**.
- In August 2011, FRB introduced the so-called “forward guidance” where it stated that economic conditions ***are likely to warrant exceptionally low levels for the federal funds rate at least through*** mid-2013.
- In September 2012, the European Central Bank introduced the **Outright Monetary Transactions**, program for purchase of sovereign bonds in secondary markets in the Euro area.
- In September 2012, FRB expanded the so-called “forward guidance” where it stated that it will ***continue its asset purchases as appropriate until*** the labor market improves substantially.

BOJ's Asset Purchase Program

(1) Amount of the Asset Purchase Program



(2) Breakdown of the Asset Purchase Program

tril. yen

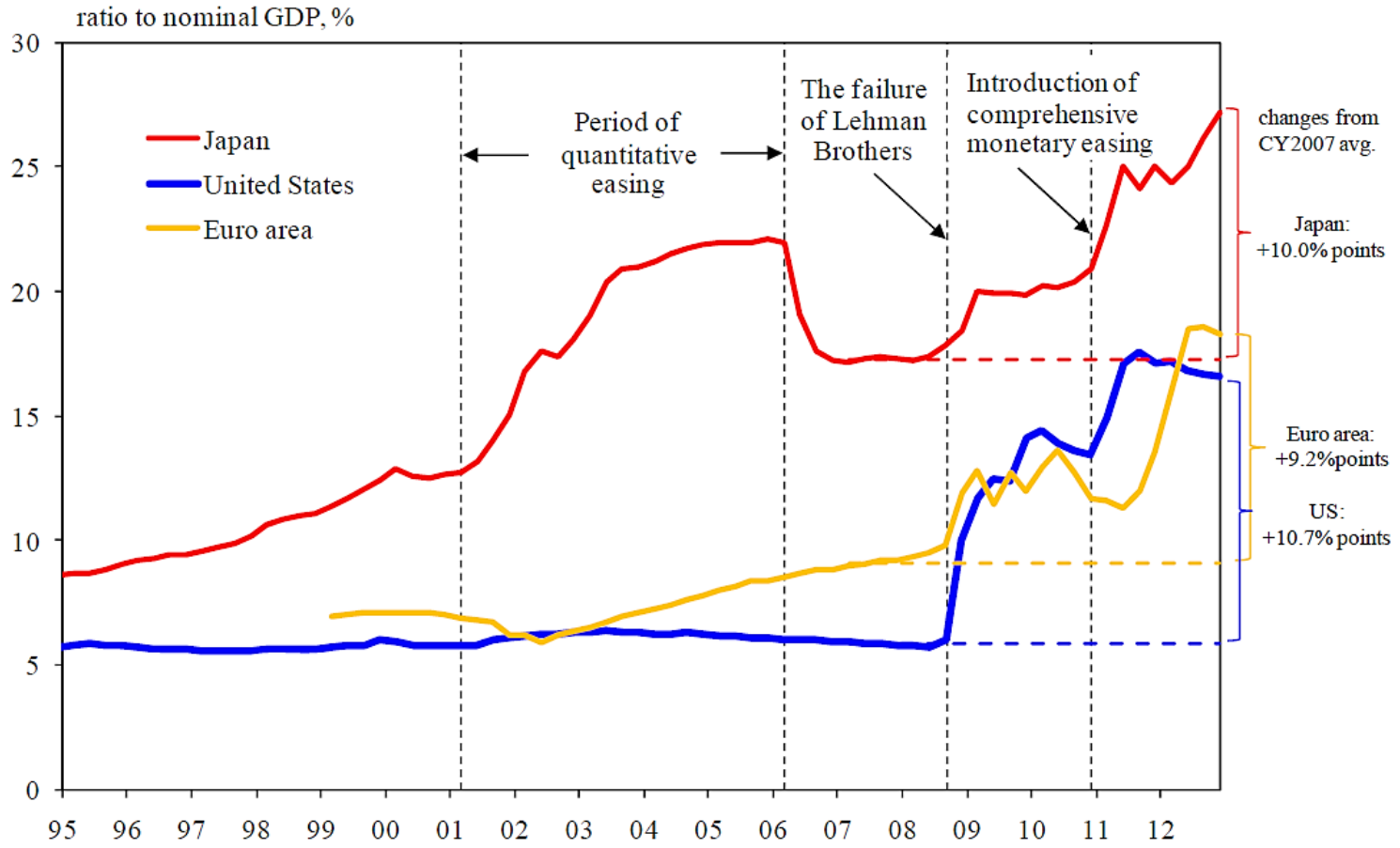
	Started in Oct. 2010	Amount outstanding (as of Jan. 20)	Program size (end-Dec. 2013)	From Jan. 2014
Total size	About 35	65.3	About 101	
Asset purchases	5.0	40.2	76.0	
JGBs	1.5	24.6	44.0	Open-ended asset purchasing method (the amount of monthly purchases is specified at about 13 trillion yen, 2 trillion yen of which is JGBs)
T-Bills	2.0	9.4	24.5	
CP	0.5	1.8	2.2	
Corporate bonds	0.5	2.9	3.2	
ETFs	0.45	1.5	2.1	
J-REITs	0.05	0.11	0.13	
Fixed rate operation	30.0	25.0	25.0	

Note: In addition to purchases under the Program, the Bank of Japan regularly purchases JGBs at the pace of 21.6 trillion yen per year.

(Source) Takehiro Sato (Bank of Japan Member of the Policy Board) "Recent Developments in Economic Activity, Prices, and Monetary Policy" Speech at a Meeting with Business Leaders in Gunma, February 6, 2013

Aggressive Easing by BOJ

Monetary Base in Major Countries

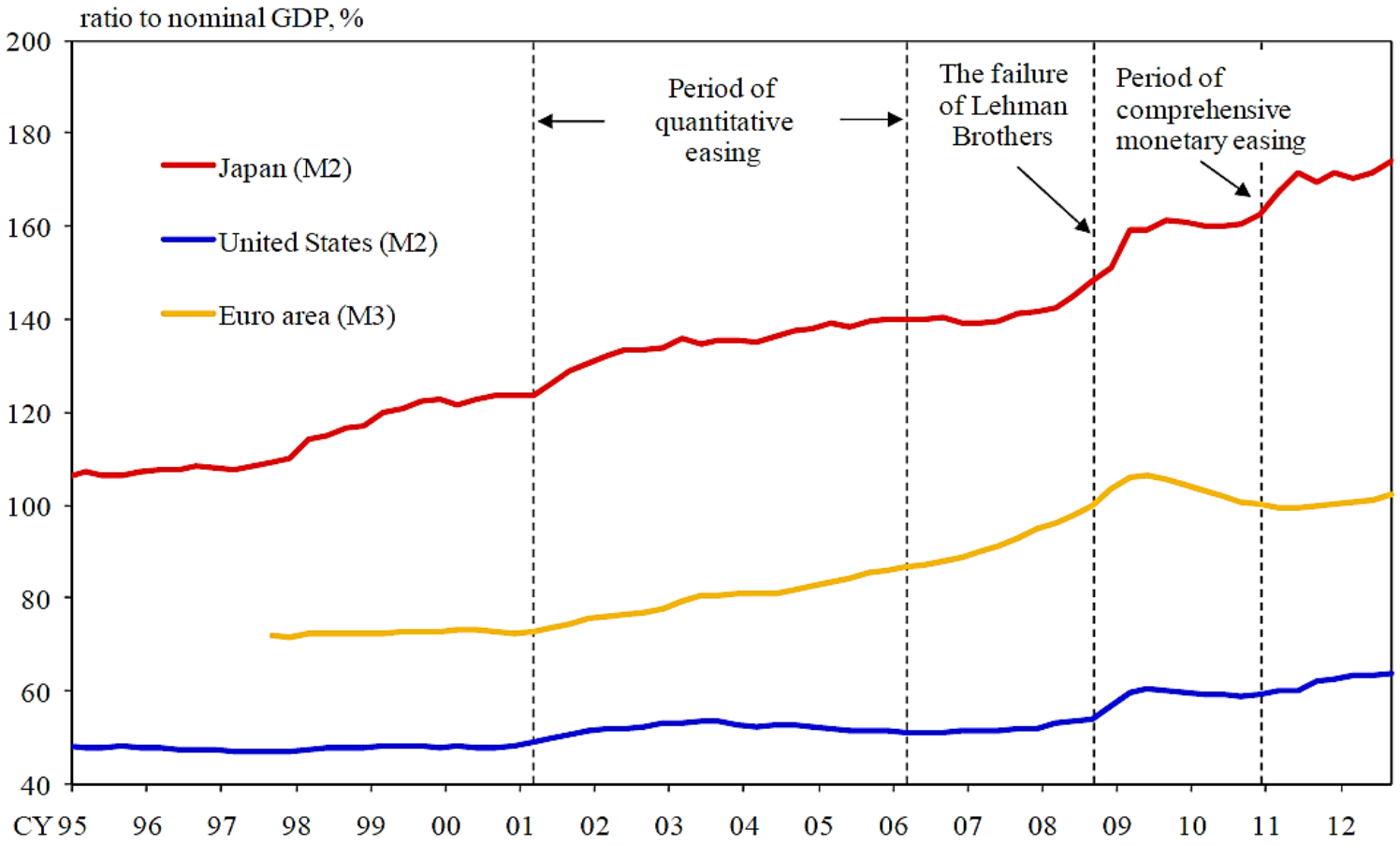


Note: 1. Monetary base is the sum of banknotes in circulation, coins in circulation, and current account deposits at a central bank.
2. Figures for the euro area for 2012/Q3 and Q4 are calculated using its nominal GDP figures for 2012/Q2. Figures for Japan and the United States for 2012/Q4 are calculated using their nominal GDP figure for 2012/Q3.

Sources: Cabinet Office; Bank of Japan; FRB; ECB; Eurostat.

Increase in Money

Monetary Stock in Major Countries



Note: Figures for the euro area for 2012/Q3 and Q4 are calculated using its nominal GDP figures for 2012/Q2. Figures for Japan and the United States for 2012/Q4 are calculated using their nominal GDP figure for 2012/Q3.
Sources: Cabinet Office; Bank of Japan; FRB; ECB; Eurostat.

Challenges Central Banks Face

1. Expectation control
2. Fiscal policy independence
3. Unwinding the swollen balance sheet

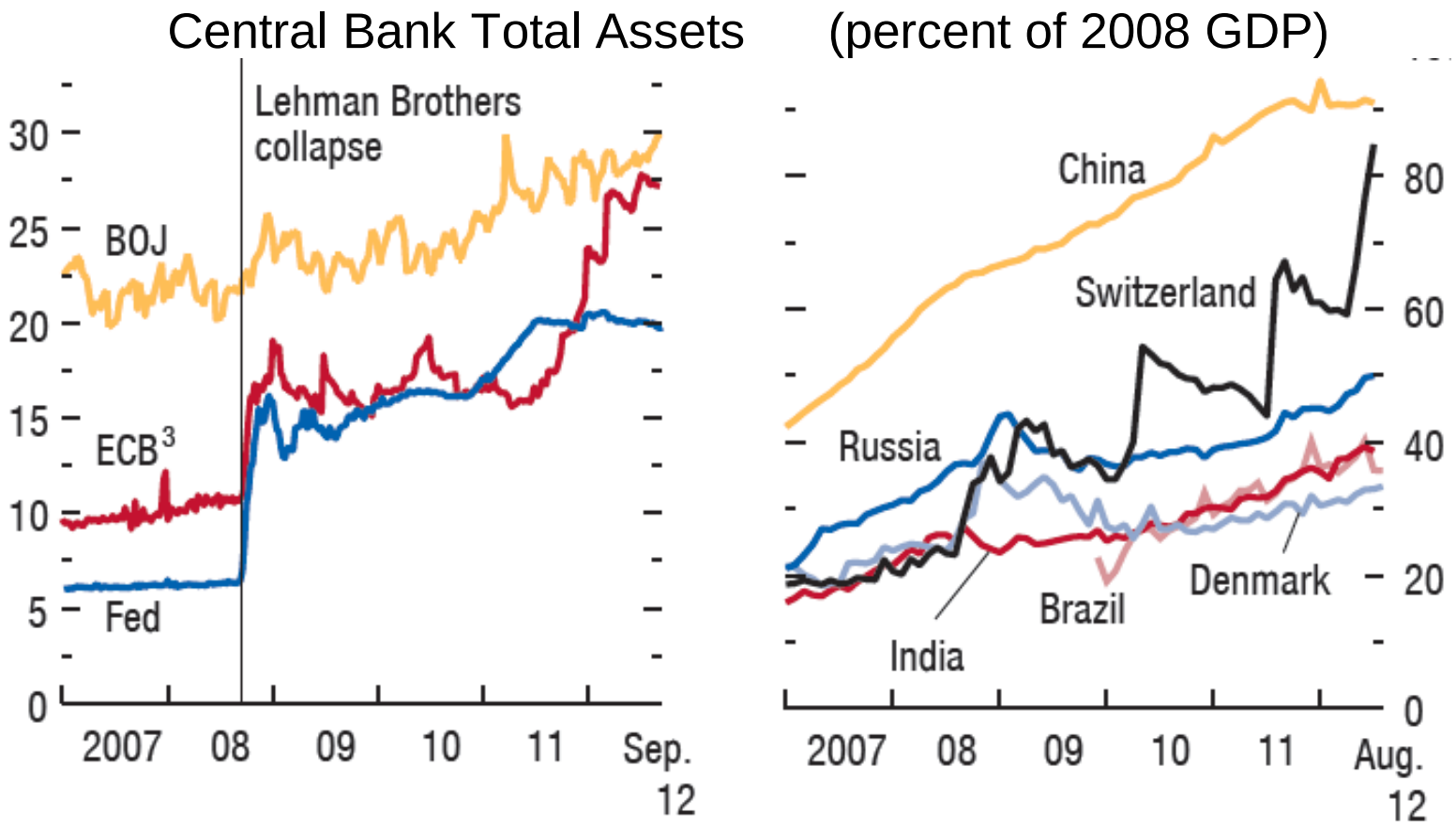
Expectation Control

- Market expectations could self-inflate or self-deflate.
- CBs increased reliance on policy duration commitment.
- Caution required in communication strategies and in choice words for public releases.

Fiscal Policy Independence

- Further expansion of asset purchases could entail central banks taking credit risk and incurring losses.
- In the current environment of shrinking seigniorage, central banks may record net losses, which are eventually transferred to the taxpayer.
- This would in effect turn into CBs' back-door intrusion into fiscal policy.

Swollen Balance Sheet of CBs



(Source) IMF "World Economic Outlook: Coping with High Debt and Sluggish Growth" October 2012

Unwinding the Swollen Balance Sheets

… should not lead to unintended spikes in interest rates.

… should not "monetize" public debt.

… should not "debtize" central bank money.

… should not undermine confidence in the monetary system at large.

Error or Truth

"An error does not become truth by reason of multiplied propagation, nor does truth become error because nobody sees it. Truth stands, even if there be no public support. It is self sustained."

Mahatma Gandhi

Thank you very much for your kind attention.

Your questions and comments will be greatly appreciated.