Monetary Policy and Inflation

"Challenges in Monetary Policy"
At an Executive Seminar for Macroeconomic Policymakers

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Questions

1. How is the performance of inflation targeting as monetary policy strategy?
2. Is the policy framework of inflation targeting still valid after the global financial crisis of 2007-2009?
3. What changes are necessary in the inflation targeting framework if any?
4. How should central banks take account of asset prices?
5. How should central banks respond to supply shocks?
6. How should central banks consider international spillover effects of monetary policy?

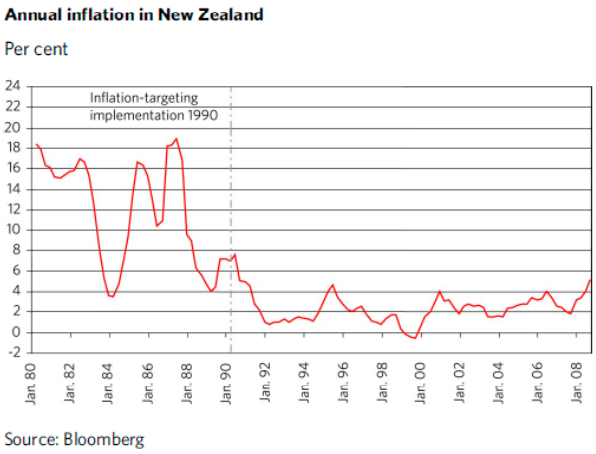
First inflation targeting country: New Zealand

- Policy framework established by the Reserve Bank Act of 1989

(1) The establishment, in discussions between the central bank and the government, of a means to measure the central bank's performance (price stability but defined as an inflation target);

(2) The grant to the Reserve Bank of the powers to pursue its assigned goal without government interference (that is, central bank independence); and

(3) A means of establishing accountability (through making the target public and holding the Governor of the Reserve Bank responsible for achieving it).



Source: Martinez, p.89.

Table 1: Inflation Statistics for Inflation Targeting (IT) Countries

	Entire sample		Pre-IT		Post-IT	
	Mean	SD	Mean	SD	Mean	SD
Australia	5.16	3.80	6.14	3.98	2.66	1.45
Canada	4.13	3.00	5.26	3.10	2.07	1.19
Korea	8.73	6.77	10.20	6.83	3.14	1.71
New Zealand	6.09	5.01	8.36	5.02	2.29	1.40
Norway	4.85	3.26	5.39	3.19	1.67	1.17
Sweden	4.97	3.50	6.37	3.02	1.19	1.00
Switzerland	2.95	2.26	3.35	2.27	0.94	0.46
United Kingdom	5.52	4.82	7.32	4.97	1.93	0.91
Iceland	15.70	14.87	17.61	15.27	4.50	2.06
Mexico	18.46	20.98	22.13	24.52	11.77	9.00
IT10*	7.66	6.83	9.21	7.22	3.22	2.03
IT8*†	5.30	4.05	6.55	4.05	1.99	1.16

Notes:
*The average of statistics above.
†Excludes Iceland and Mexico.

Source: Walsh, p. 203.

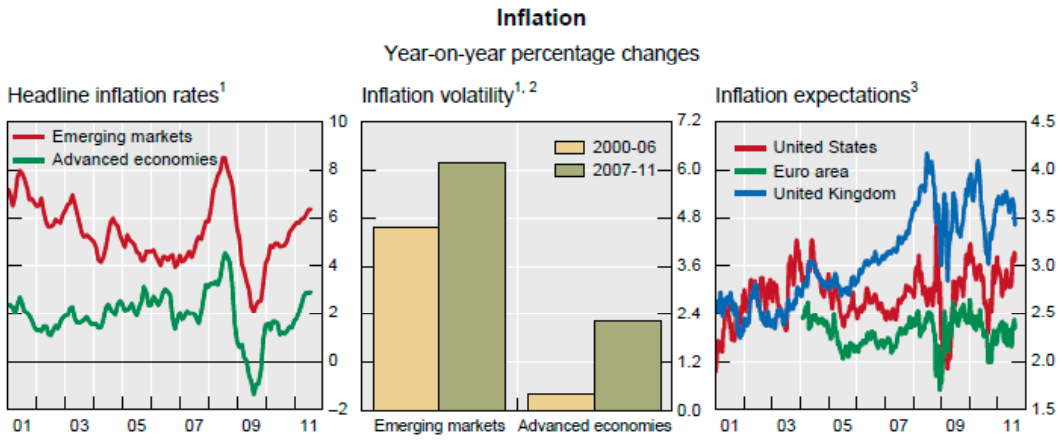
Table 2: Non-Inflation Targeting Countries

	Entire sample		Pre-1990		Post-1990 (incl.)	
	Mean	SD	Mean	SD	Mean	SD
Austria	3.52	2.02	4.31	2.08	2.21	0.96
Belgium	3.74	2.77	4.73	3.06	2.10	0.74
Denmark	5.08	3.49	6.89	3.25	2.06	0.50
Finland	5.19	4.09	7.16	3.88	1.91	1.48
France	4.70	3.54	6.43	3.44	1.82	0.71
Germany	2.87	1.74	3.32	1.85	2.13	1.25
Greece	9.18	7.27	10.36	7.98	7.22	5.41
Ireland	6.25	5.11	8.19	5.54	3.01	1.30
Italy	6.56	5.16	8.53	5.56	3.28	1.54
Japan	3.55	4.07	5.37	4.09	0.52	1.26
Luxembourg	3.57	2.62	4.34	2.99	2.27	0.84
Netherlands	3.88	2.94	4.82	3.33	2.31	0.77
Portugal	9.35	7.61	12.24	8.06	4.54	3.02
Spain	7.32	5.09	9.48	5.28	3.70	1.36
United States	4.09	2.72	4.82	3.15	2.86	0.96
Turkey	29.68	21.36	22.56	17.86	41.55	21.54
Non-IT16*	6.78	5.10	7.72	5.09	5.22	2.73
Non-IT15*†	5.26	4.02	6.73	4.24	2.80	1.47

Notes:
*The average of statistics above.
†Excludes Turkey.

Source: Walsh, p. 204.

"I have little doubt that the adoption of inflation targeting frameworks – either explicit or implicit – was one of the key factors in the achievement of low and stable inflation rates globally for more than a decade." (Cecchetti 2011)



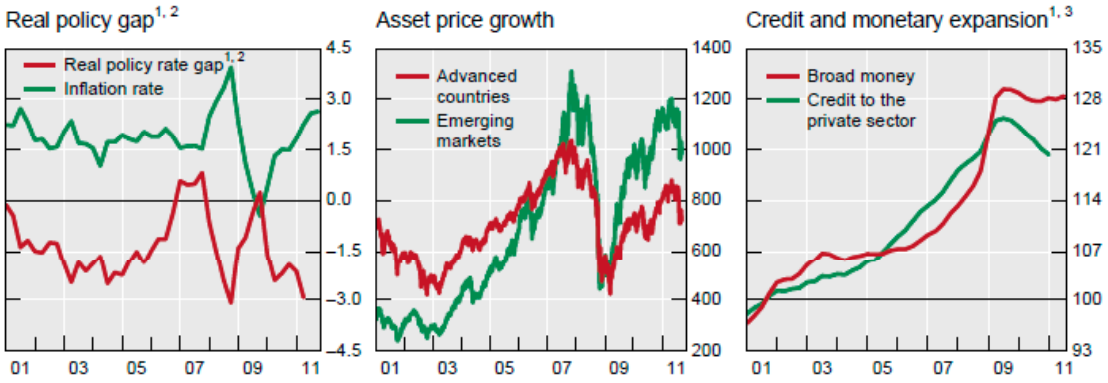
[1] Aggregates based on 2005 GDP and PPP exchange rates of the countries listed. Emerging markets: Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, Thailand and Turkey. Advanced economies: the euro area, Japan, the United Kingdom and the United States. [2] Variance of monthly year-on-year changes of headline inflation. Argentina, Russia and Turkey are excluded. [3] Five-year forward five-year-ahead inflation-linked swap rate.

Sources: Bloomberg; Datastream; national data.

Source: Cecchetti, 2/10.

"The central bank can best contribute to high growth and financial stability by providing a stable macroeconomic environment through price stability… This sounds dogmatic and almost tenable." (Prasad 2010)

Low interest rates, asset price growth and credit expansion



[1] Major OECD countries; weighted averages based on 2005 GDP and PPP exchange rates. [2] Real policy rate minus natural rate. The real rate is the nominal rate adjusted for four-quarter consumer price inflation. The natural rate is defined as the average real rate in 1985–2005 (for Japan, 1985–95; for Switzerland, 2000–05) plus the four-quarter growth in potential output less its long-term average. [3] For advanced countries, MSCI World Index; for emerging markets, MSCI Emerging Markets Index. [4] Relative to nominal GDP; 2001 = 100.

Sources: IMF; OECD; Bloomberg; national data; BIS calculations and estimates.

Source: Cecchetti, 3/10.

Flexible inflation targeting
(Mishkin 2010)

- Nine Basic Principles

1. Inflation is Always and Everywhere a Monetary Phenomenon.
2. Price Stability Has Important Benefits.
3. There is No Long-Run Tradeoff Between Unemployment and Inflation.
4. Expectations Play a Crucial Role in the Macro Economy.
5. The Taylor Principle is necessary for Price Stability.
6. The Time-Inconsistency Problem is Relevant to Monetary Policy.
7. Central Bank Independence Improves Macroeconomic Performance.
8. Credible Commitment to a Nominal Anchor Promotes Price and Output Stability.
9. Financial Frictions Play an Important Role in the Business Cycle.

Framework of optimal monetary policy

- The objective function of the central bank has two components:

  (i) the deviations of inflation from its optimal rate

  (ii) the deviations of real economic activity from its natural rate level

- Linear quadratic framework
  - The equations describing the dynamic behavior of the economy are linear, and the objective function specifying the goals of policy is quadratic.
- Representative-agent framework
  - Without asymmetric information, the financial sector has no special role to play in economic fluctuations.

Linear-quadratic framework

- Reasonable approximation under normal circumstances, but less likely to be adequate when there is risk, even if small, of particularly poor economic performance.
  - Dynamic behavior of the economy may well exhibit nonlinearities.
  - It does not reflect the extent to which most individuals have strong preferences for minimizing the incidence of worst-case scenarios.
- Need for a “risk management” approach
  - In some circumstances, the shocks hitting the economy might exhibit excess kurtosis (“tail risk”).

Representative-agent framework

- In this framework, there are no financial frictions.
- "Separation Principle" ⇒ No longer tenable
  - Monetary policy targets price stability and regulatory policies target financial stability. The two sets of policies operate independently of each other.
- Central banks were aware of the interaction between the real economy and the financial system, but this interaction was not incorporated in monetary policy strategy.

Non-inflation targeters' attitude toward inflation

- The Fed espouses a strong commitment to stabilize inflation, but is not willing to announce an explicit inflation objective.
  - "Price stability obtains when economic agents no longer take account of the prospective change in the general price level in their economic decisionmaking." (Greenspan 1996)
- The ECB is willing to announce an explicit numerical inflation objective, but are reluctant to treat it as a target.
  - "The ECB aims at inflation rates of below, but close to, 2% over the medium term."
- The BOJ announces the "understanding of medium- to long-term price stability."
  - The "understanding" is the level of inflation that each member of the Policy Board understands, when conducting monetary policy, as being consistent with price stability over the medium to long term.
  - "In a positive range of 2 percent or lower, and the midpoints of most Policy Board members' 'understanding' are around 1 percent."

Risk management approach

ECB: Two-pillar approach

- Two-pillar approach
  - Designed to ensure that no relevant information is lost in the assessment of the risks to price stability and that appropriate attention is paid to different perspectives and the cross-checking of information in order to come to **an overall judgement on the risks to price stability.**
  - Economic analysis is to assess the short to medium-term determinants of price developments, with a focus on real activity and financial conditions in the economy.
  - Monetary analysis focuses **on a longer-term horizon**, exploiting the long-run link between money and prices. The monetary analysis mainly serves as a means of **cross-checking, from a medium to long-term perspective**, the short to medium-term indications for monetary policy coming from the economic analysis.

Risk management approach

BOJ: Framework from two perspectives

- The BOJ examines the economic activity and prices from two perspectives.
  - The first perspective is

    (i) to make public the outlook of economic activity and prices over one to two years in the future which is considered most likely by the BOJ

    (ii) and to examine whether the outlook follows a path of sustainable growth under price stability.
  - The second perspective is to examine, **in a longer term**, various risks that are most relevant to the conduct of monetary policy aimed at realizing sustainable growth under price stability. For example, the BOJ may examine risk factors that will **significantly impact economic activity and prices when they materialize although the probability is low**.

Monetary policy and asset prices

"Lean" versus "Clean" debate about asset prices
(BIS view versus FED view)

- How central banks should respond to potential asset price bubbles?
  - (i) BIS view : "Lean" against asset price bubbles
  - (ii) FED view: "Clean" up after the bubble bursts

    (Sometimes referred to as the "Greenspan doctrine")

Arguments against "Lean" camp

- Bubbles are hard to detect.
- Raising interest rates may not be effective in restraining the bubble.
- At any one time, a bubble may be present in only a fraction of many assets.
- Raising interest rates would cause a bubble to burst more severely.
- Focus on asset prices could lead to public confusion.

Arguments against "Clean" camp

- The cost of cleaning up after the bubble bursts may be very high.
- Financial crises are typically followed by very slow growth. (Deleveraging process tends to take a long time.)
- The budgetary position of governments tends to deteriorate sharply.
- The exit strategy for central banks from nonconventional monetary policy may be complicated and hinder their ability to successfully manage the economy in the future.

Monetary policy and supply shocks (1/2)

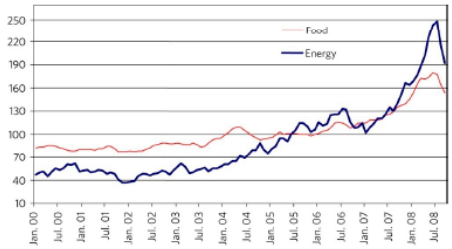
Inflation target and inflation expectations

	Inflation target (%)	Inflation expectations for 2009	
		January 2008	October 2008[1]
Advanced economies			
Australia	2-3	2.7	**3.2**
Canada	2	2.0	2.1
Iceland	2.5		
New Zealand	1-3	2.7	**3.3**
Norway	2.5	2.2	2.8
Sweden	2 (+/-1)	2.3	2.5
Switzerland	<2	1.3	1.4
United Kingdom	2	2.0	2.9
Emerging economies			
Brazil	4.5 (+/-2)	4.2	4.7
Chile	3 (+/-1)	3.3	**4.5**
Colombia	3.5-4.5	4.1	**4.9**
Czech Republic	3 (+/-1)	3.4	3.1
Hungary	3 (+/-1)	3.5	3.9
Israel	1-3	1.9	2.6
Korea	2.5-3.5	2.8	**3.6**
Mexico	3 (+/-1)	3.5	4.0
Peru	2 (+/-1)	2.5	**4.1**
Philippines	5-6	3.6	**7.1**
Poland	2.5 (+/-1)	3.1	3.5
South Africa	3-6	5.5	**7.1**
Thailand[2]	0-3.5	2.7	3.7
Turkey	4	5.7	**8.5**

Inflation expectations for 2009 increased through 2008, partly as a result of the increase in inflation owing to the shock to commodity prices.

Commodity price index

(2005 = 100)



Source: International Monetary Fund

1. Bold numbers indicate that inflation expectations for 2009 are above the upper limit of the variability intervals or tolerance ranges.
2. The inflation target of Thailand refers to core inflation, and inflation expectations refer to headline inflation.

Source: Consensus Forecasts, January 2008 and October 2008. Consensus Forecasts does not report inflation expectations for Iceland.

Source: Martinez, pp.98-99.

Monetary policy and supply shocks (2/2)
(Martinez 2008)

- Tradeoff between keeping inflation expectations anchored and having the flexibility to accommodate the temporary effects of the shock.
- To change the target or expand the variability interval or the tolerance range temporarily is not a good policy response.
- A better policy response:
  - Lengthen the time horizon in which inflation is expected to return to the target
  - Inform the public that there are a number of circumstances or shocks to which it is not a good idea to respond by adjusting the stance of monetary policy

"Happy outcome of flexible inflation targeting " at the international levels
(Eichengreen, et al. 2011)

Triumph of the "own house in order" doctrine

- Flexible inflation targeting (FIT) delivers low inflation at the national level, thereby avoiding the need for large nominal exchange-rate adjustment.
- FIT, by allowing for exchange rate variability, facilitates international adjustment.
- FIT makers reserve accumulation unnecessary.
- The combined policy stance of the countries following this strategy ensures an appropriate level of aggregate demand at the global level.

Should we be so happy?

Criticism against the triumph

- Fails to account adequately for financial-sector risk
- Assumes limited or nonexistent cross-border spillovers of MPs
- Incompatibility of national MPs in the face of spillovers
- Spillovers accentuated when CBs pursue unconventional MPs
- High levels of government debt in advanced countries and the slowdown of growth in developing countries create new problems.

International spillovers

- Coexistence of floaters and fixers
  - Tug of war between US monetary policy and exchange rate policy in emerging market fixers such as China
  - The exchange rate policy of emerging market fixers imposes a negative demand externality on advanced economies.
- Large-country central banks should internalize the spillover effects of their policies.
- Adverse feedback loop among fiscal conditions, the financial system and the real economy at the global level.

Answers

1. Performance of Past FIT– good on price stability. For sustainable growth, it is not enough just to look at price stability.
2. Basic Principles are still valid, but changes needed.
3. Risk management approach is needed because of nonlinearities. Monetary policy and prudential policy should be coordinated.
4. Asset prices are too important not to be taken account in MP.
5. Lengthen policy horizons and improve communication.
6. At the minimum, deeper understandings about each other's MP are needed, particularly among large-country central banks.

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