

# **Monetary Economics & the Political Economy of Central Banking: Inflation Targeting and Central Bank Independence Revisited**

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Question: is the *inflation-targeting operationally independent* central bank 'global best practice'?

Answer:

- As regards inflation targeting: either 'yes, *but only if...*' or '*not really, but if only...*'
- As regards operational independence: either 'yes, *but only if...*' or '*no, unless...*'

## Both relatively recent phenomena:

- Inflation targeting
  - New Zealand 1989
  - Canada 1991
  - UK 1992
  - Sweden 1993
  - Euroland 1999 (the inflation target that dare not speak its name)
  - USA 2006/07??
- Operational independence
  - Old-style: Buba & Fed
  - New-style
    - New Zealand 1989
    - UK 1997
    - Japan 1997
    - ECB 1999

# Inflation targeting

- Operational expression of pursuit of price stability
- Does not have 'deep microfoundations' or conventional welfare economics foundations
- Has political mandate-based legitimacy
  - for *lexicographic/hierarchical* inflation targeting in UK, Euroland, NZ, Japan
  - for *flexible* inflation targeting (on steroids) in US

Table 1

## A taxonomy of the costs of inflation

1. Inflation as *moral failure/sin* (Bundesbank)

2. Efficiency costs through impact of anticipated inflation on opportunity cost of holding cash

2a. Shoe-leather costs of active cash management

2b. Distortions in the relative price of cash goods and credit goods

3. Efficiency costs when the pecuniary opportunity cost of holding cash is independent of the rate of inflation or demand for cash is independent of its opportunity cost

3a. Menu costs of anticipated & unanticipated inflation

3b. Intertemporal relative price distortions due to anticipated or unanticipated inflation & imperfect indexation by markets and political institutions.

3c. Static relative price distortions caused by nominal wage and/or price rigidities

3d. Absence of the long-run natural rate property.

4. Distributional consequences of imperfect indexation by markets or political institutions

# Optimal monetary policy

- Shoe-leather costs and Bailey-Friedman optimal quantity of money rule

⇒⇒⇒ Deflation is optimal

- Menu costs (if attached primarily to changes in money wages)

⇒⇒⇒ Deflation is optimal

- Indexation failures in private contracts & instruments or public contracts

⇒⇒⇒ Better indexation is optimal

- Dodgy New-Keynesian argument for price stability (based on Calvo-Woodford Phillips curve): it avoids relative price distortions between constrained & unconstrained price setters
  - Argument only works if there are wage & price setters who never raise their money wages & prices, regardless of the economy-wide rate of inflation.
  - Such Old-Keynesian wine in New-Keynesian bottles implies the existence of a stable, exploitable long-run unemployment-inflation trade-off.

# Calvo-Woodford New-Keynesian Phillips Curve

$$\pi - \omega = \beta E(\pi_{+1} - \omega_{+1}) + \alpha(\pi_{-1} - \omega_{-1}) + \phi(y - y^N) + \eta(i - i^M) \quad (1)$$
$$0 \leq \alpha, \beta \leq 1, \phi > 0$$

(strict Calvo-Woodford New-Keynesian:  $\alpha=0$ ,  $0 < \beta < 1$ )

$$\overline{y - y^N} = \phi^{-1} [1 - (\alpha + \beta)] (\overline{\pi - \omega}) \quad (2)$$

$$\omega = 0 \quad (\text{Calvo(1983)})$$
$$\omega = \gamma \pi_{-1}, \quad 0 \leq \gamma < 1 \quad (\text{Woodford (2003)}) \quad (3)$$

$$\implies \bar{\omega} = 0 \quad (4)$$



$$\bar{y} = \bar{y}^N + \phi^{-1} [1 - (\alpha + \beta)] \bar{\pi} \quad (5)$$

New-Keynesian Calvo-Woodford Phillips curve is the Old-Keynesian Phillips Curve, which has an exploitable inflation-unemployment trade-off across deterministic steady states!

(Note: Calvo recognises this flaw and has corrected it in recent work which chooses  $\omega$  optimally).

The log-linear approximation at the deterministic steady state of the Woodford (2003) New-Keynesian model can be written as follows: equation (1) and

$$\Lambda_t = \sum_{i=0}^{\infty} \beta^i L_{t+i} \quad (6)$$
$$0 < \beta < 1$$

$$L_{t+j} = E_t \left[ \left( \pi_{t+j} - \omega_{t+j} \right)^2 + \lambda \left( y_{t+j} - y_{t+j}^* \right)^2 + \ell \left( i_{t+j} - i_{t+j}^M \right)^2 \right] \quad (7)$$

$$y^* = y^N + \delta \quad (8)$$

# When is zero inflation optimal in this model?

1. Either

$i = i^M$  or  $\ell = \eta = 0$ , that is, Bailey-Friedman OQM issues are absent

2. Constrained price setters keep nominal prices constant:  $\omega_t = 0$

3. The natural level of output equals the efficient level of output:  $y^N = y^*$

- Dodgy New-Keynesian argument against price stability when there (a) is an exploitable long-run inflation-unemployment trade-off and (b) the natural rate of unemployment is higher than the optimum rate of unemployment because of real distortions.
  - Based on the same Calvo-Woodford New-Keynesian Phillips curve with  $\omega = \bar{\omega} = 0$ .
  - Optimum inflation rate between zero (which would minimise relative price distortions) and the positive inflation rate that would set the actual unemployment rate equal to the optimum level.
  - Phelps, Friedman & Lucas have laboured in vain & have to return their Nobel Prizes.

# Could there be unconventional welfare economics arguments for price stability?

- The fact that there are no conventional micro-welfare economics-based arguments for price stability may be more of a problem for conventional micro-welfare economics than for central banks mandated to pursue price stability.
- What accounts for widespread inflation aversion?
  - Generalised menu costs based on bounded rationality
  - Bounded rationality, trust and the importance of invariant measures
    - Leviticus 19:35-36: *“Ye shall not cheat in measuring length, weight, or quantity. You shall have honest balances, honest weights, an honest ephah and an honest hin: ...”*.
    - Amos 8: 5: *“We make the bushel small and the shekel great, and practice deceit with false balances, ...”*.
  - Irrationality: inflation robs me of my well-deserved real wage increases; my nominal wage increases would have been the same even if there had been no inflation
- Maybe *vox populi* is wiser than *vox turris eburnae*.

# Constitutional/legal mandate-based justifications for inflation targeting

- Bank of England: price stability and *subject to...*
- ECB: price stability and *without prejudice to...*
- BoJ: price stability
- Fed: maximum employment, price stability and moderate long-term interest rates

# Flexible inflation targeting

- Central bank's objective function has trade-off between *price stability* (squared deviation of inflation from target) and *output gap stability* (squared deviation of output from potential output).
- Problems
  - No welfare economics foundations
  - Not compatible with mandate of central banks whose primary objective is price stability, with anything else only *subject to/without prejudice to* achievement of primary objective

# Flexible inflation targeting ctnd

$$L_{t+i} = E_t \left[ \left( \pi_{t+i} - \pi^* \right)^2 + \lambda (y_i - y_i^*)^2 \right] \quad (9)$$

Fed's *triple mandate* should be

$$L_{t+i} = E_t \left[ \begin{aligned} &\left( \pi_{t+i} - \pi^* \right)^2 + \lambda (y_i - y_i^*)^2 \\ &+ \varphi (i^L - i^{L*})^2 \end{aligned} \right] \quad (10)$$



# Flexible inflation targeting ctnd

- If price stability is primary target, correct operational objective is *lexicographic* or *hierarchical* IT, not *flexible* IT
- Flexible IT in practice often assigns monetary authority objective function with trade-off between inflation volatility and output volatility:

$$L = \text{Var } \pi + \lambda \text{Var } y \quad (11)$$

Should instead be:

$$L = \text{Var } \pi + \lambda \text{Var } y + \lambda \text{Var } y^* + (\text{E } \pi - \pi^*)^2 + \lambda (\text{E } y - \text{E } y^*)^2 - 2\lambda \text{Cov}(y, y^*) \quad (12)$$

## Flexible inflation targeting cntd

- In addition to the non-lexicographic problem this adds:
  - Assumption of no ‘inflation target bias’
  - Assumption of no ‘output gap bias’
  - Assumption that monetary policy cannot affect covariance between actual and potential output
- Result: *flexible* inflation targeting becomes *soft* inflation targeting. Risk of upward drift in inflation rate (New Zealand, Australia, US).

# Central bank operational independence

- Freedom or ability of central bank (the Agent) to pursue its objectives as it sees fit, without interference or pressure from third parties (including the Principal(s))
- Reasons for this particular delegation of authority are unclear. Standard story that this solves a commitment problem resulting in an inflation bias is unconvincing (Lohmann (2003) audience cost theory).
- In what follows, this delegation relationship is taken as given. Focus is on how to minimize the negative side effects.
- Note: neither typical Principal-Agent relationship, nor Fiduciary (Trustee – Beneficiary) relationship.

- Unavoidable problems with operationally independent central bank:
  1. How to incentivise the Agent (central bank) to act in the interest of the Principal (government, citizens), assumed to be given by the central bank's official mandate
  2. How to achieve political legitimacy for this delegation of authority to a substantively unaccountable body of unelected technocrats
    1. Output legitimacy (how well does the agent perform its delegated tasks, as measured by the extent to which its objectives are realised (assumes legitimacy of and agreement on objectives, and ability to verify/monitor performance)).
    2. Input, process or procedural legitimacy

# “No One Likes Us – We Don’t Care”

- Why do so many central banks & central bankers sound like Millwall FC fans?
  - Good reason: William McChesney Martin’s punch bowl
  - Unavoidable reason: Substantively unaccountable nature of power of operationally independent central bank
  - Bad reasons:
    - Unavoidable lack of substantive accountability sometimes compounded by artificially restricted formal accountability (procedural transparency, reporting obligations etc.)
    - Arrogance with which too often this power is exercised
    - Mandate- and mission creep

# Central bank operational independence is not easily achieved

## Requires

1. Political independence (don't take or seek instructions)
2. Technical independence (does the central bank have the tools to do the job?)
3. Financial independence & security from external raids on its financial resources
4. Security of tenure and of terms of employment
5. Independent body (court) to settle disputes

Example: is the inflation target independently financeable by the central bank?

**Table 2**

**Central Bank Conventional Financial Balance Sheet**

<b>Assets</b>	<b>Liabilities</b>
<i>D</i> : Treasury debt	<i>M</i> : Base money
<i>L</i> : Private debt	<i>N</i> : Other financial liabilities
<i>R</i> : Foreign exchange reserves	
	<i>W</i> : Financial net worth or equity

**Table 3**  
**Central Bank Comprehensive Balance Sheet or**  
**Intertemporal Budget Constraint**

<b>Assets</b>	<b>Liabilities</b>
<i>D</i> : Treasury debt	<i>M</i> : Base money
<i>L</i> : Private debt	<i>N</i> : Other financial liabilities
<i>R</i> : Foreign exchange reserves	
<i>S</i> : Present discounted value of seigniorage profits (interest saved on non-interest-bearing monetary liabilities).	<i>E</i> : Present discounted value of cost of running central bank
	<i>T</i> : Present discounted value of taxes paid to Treasury
	<i>W</i> : Comprehensive net worth or equity



- ECB has achieved the highest degree of operational independence of any central bank
  - Political independence
  - Functional independence
  - Financial independence
  - Security of tenure
  - Independent judicial review in case of disputes
- ECB also has *operational target independence*. This is neither granted nor denied in the TEU.
- Just one potential chink in the armour, related to technical independence. Exchange rate policy is a joint responsibility of ECB and Council of Ministers. What are 'exchange rate orientations', and who decides whether they are consistent with price stability?
- ECB is entirely correct that only ECB ought to decide on exchange rate management issues. Anything else would drive coach & horses through operational independence.

# Formal vs. Substantive Accountability

- *Formal accountability*: reporting obligations (ex-post). Requires openness & transparency. Permits monitoring of Agent by Principal(s)
- *Substantive accountability*: Pay-off relevant consequences may follow after the reporting, explanation & justification.

Principals exercises judgement (imposes penalties or grants rewards).

Litmus test: *Can the monetary policy makers be fired for incompetence?*

- Highly operationally central banks like the ECB have zero substantive accountability; full operational independence *means* no substantive accountability; e.g. incompetence does not mean
  - getting fired,
  - getting demoted
  - getting a pay cut
  - getting sued (probably).
- This applies with almost equal force to the Bank of England

- ECB also one of least formally accountable central banks because of minimalist interpretation of reporting obligations.
  - individual votes (if votes are taken) not in public domain
  - Policy meetings held in private with no minutes or transcripts of meetings
- When there is no substantive accountability, enhanced formal accountability can help incentivise central bankers to give their best efforts.
- With better information on individual performance & competence, incentives can be enhanced two ways:
  - The pride & embarrassment channel
  - Post-central bank term employment/honours
- Selection of appropriate agents (Rogoff (1985), Besley (2005)).
- Special problems of group monetary policy decision making:
  - *Shirking* (more serious problem the larger the group)
  - Pathologies of group decision making (*group think*, aggravated *confirmation bias*)

# Limiting the domain of unaccountability

- Lack of accountability is less apt to undermine the legitimacy of the institution & thus to threaten its independence if
  - (a) there are clear performance benefits ('output legitimacy')
  - (b) the domain of unaccountability is as restricted as possible.
- It is as regards (b) that many central banks have made & continue to make serious mistakes, that exposes them to the risk of a political backlash and may undermine their future independence.

# Central banks should 'stick to their knitting'

- No participation as central bank in public debates about
  - Fiscal sustainability
  - Social security
  - Structural reform
  - Eurozone enlargement
  - Anything beyond monetary policy, narrowly defined.
- These areas are outside the mandate of central banks and outside their areas of competence
- Central banks have right/duty to explain their reaction functions, that is, their contingent responses to developments in economy that are relevant to their price stability mandate, including fiscal developments
- Central banks should speak out when their operational independence is under threat.

To preserve operationally independent monetary policy making, the operationally independent central bank should, where possible, be turned into an operationally independent **minimalist monetary authority**

Main qualification: applies only to countries with well-development financial institutions and markets, not to emerging markets and developing countries with limited institutional capacity

- Operationally independent central banks should be denied any of the following functions (for which a much lower degree of operational independence than that enjoyed by the ECB & BoE are appropriate):
  1. Supervision & regulation of banks, other financial institutions and financial markets
  2. Ownership, control & management of interbank clearing & settlement systems (ECB should divest itself of TARGET2; New TARGET2 owner/manager should have guaranteed access to ECB liquidity)
  3. Ownership, control & management of financial securities clearing & settlement systems (ECB should not play an active role in proposed TARGET2-Securities; TARGET2-Securities owner/manger should have guaranteed access to ECB liquidity)
  4. An active role in prevention and mitigation of financial instability.



- Question: Does the monetary authority have a natural role in the prevention and mitigation of financial instability?
- Answer: **not necessarily**, in well-developed mature financial systems
  - LOLR function is necessary
  - Agency performing LOLR function needs access to the liquidity that is unique to the liabilities of the monetary authority
  - LOLR function *can* be delegated to agency other than monetary authority and *should be* if monetary authority has a high degree of independence

- Whatever institution(s) is (are) responsible for financial stability, a minimalist view of financial instability is essential
- Public policy-relevant financial instability: prevent or mitigate 3 kinds of pathologies:
  - *Disorderly markets.* Extremely rare; job for the lender of last resort, not for the monetary authority.
  - *Extreme credit booms and busts and asset market bubbles.* These are more common, but there is little if anything monetary policy can do about them. Credit policy, open mouth operations and fiscal measures are indicated.
  - *Defaults and bankruptcies that have material negative systemic externalities.* Very rare. A job for the lender of last resort and the Treasury, not the monetary authority.
- ECB favours a definition of financial instability that includes virtually any inefficiency in the intermediation process. It also lobbies for a supervision/regulation role for itself in the Eurozone. Extreme example of 'mandate & mission creep'

- Effective public policy towards financial instability requires cooperation and coordination of LOLR (short-term deep pockets), Treasury (owner of long-term non-inflationary deep pockets) & Regulator-Supervisor (information and knowledge).
- Monetary authority need not be part of Financial Stability Team (FST), even though it has uniquely liquid short-term deep pockets provided by ability to issue legal tender at will.
- Liquid deep pockets do not make central bank *active* LOLR: Regulator-Supervisor could be active LOLR, as long as it had overdraft facility with central bank, guaranteed by Treasury. Role of central bank/monetary authority in LOLR process could be entirely passive
- MoU between UK Treasury, FSA and BoE has one signatory too many.

# Conclusion

- Flexible inflation targeting risks setting back monetary policy to pre-1989 days & soft inflation targeting. Lexicographic inflation targeting is the solution.
- The Calvo-Woodford New-Keynesian Phillips curve risks setting back monetary theory and policy 40 years. The solution is to forget it.
- Highly operationally independent central banks are substantively unaccountable and therefore invariably suffer from legitimacy problems.
- This problem can be mitigated by reducing scope of responsibilities and powers of operationally independent monetary authority include nothing beyond the pursuit of price stability.
- Unless central banks agree to 'stick to their knitting' and to desist from mandate and mission creep, they risk losing their operational independence even where it makes sense: in the single-minded pursuit of price stability.