Challenges to the new conventional wisdom in monetary policy

The surprising fragility of the theoretical foundations of inflation targeting and central bank independence

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- The two sacred cows of modern central banking
  - Inflation targeting as the operational expression of price stability (except in the US)
  - Central Bank (operational) independence
- Practice ahead of theory (Mervyn King (2005))
- Two straw men:

1. There exist robust welfare economic foundations for price stability as the overriding objective of monetary policy and for the pursuit of some low, constant rate of inflation as the operational expression of the pursuit of price stability
2. Central Bank independence is (a) possible and (b) desirable

Table 1

A taxonomy of the welfare costs of inflation

0. Inflation is a sin, a moral failure (Buba)	
1. Efficiency costs through the impact of anticipated inflation on the pecuniary opportunity cost of holding cash	
	1a.Shoe-leather costs of active cash management (Allais (1947), Baumol (1952), Tobin (1956), Feldstein(1979)).
	1b.Distortions in the relative price of cash goods and credit goods (Lucas & Stokey (1987))
2. Efficiency costs when the pecuniary opportunity cost of holding cash is independent of the anticipated rate of inflation	
	2a. Menu costs of anticipated inflation (Caplin & |Spulber (1987))
	2b. Intertemporal relative price distortions that depend on anticipated inflation (imperfect indexation of financial contracts, tax and benefit schedules) (Feldstein (1997), with or without nominal price or wage rigidities.
	2c. Static relative price distortions caused by nominal wage and/or price rigidities and imperfect wage and price indexation of incomplete price and wage contracts (Buiter & Jewitt (1981), Calvo (1983), Woodford (2003), Lucas (2000), Blanchard & Gali (2005)); can depend both on anticipated and on unanticipated inflation.
	2d. Long-run ouput and/or employment gaps that vary with anticipated inflation due to imperfect indexation even in the long run (Phillips (1958), Samuelson & Solow (1960), Tobin (1968), Woodford (2003), Benigno & Woodford (2004)).
3. Distributional consequences of unanticipated inflation when financial contracts, price contracts, wage contracts and tax or benefit schedules are imperfectly index-linked (Fischer (1981)).	

- Inflation affects the pecuniairy opportunity cost of holding money (cash): $i - i^M$

•Shoe-leather costs (Allais-Baumol-Tobin)

•Too high a price of cash goods to credit goods (Lucas & Stokey)

Solution: set $i = i^M$. Friedman's OQM rule

Problem: requires *i = 0* if $i^M = 0$

If *i=0,* $\pi = -r < 0$

However, while setting *i=0* for OQM reasons pins down the consumption price index, it does not pin down the production price index, because of indirect taxes & subsidies.

Costs of inflation when $i = i^M$

- Menu costs
- Tax & benefit distortions & other failures of indexation in public & private sectors (Feldstein).
- Note: absence of superneutrality of money is not the same as a stable, exploitable policy trade-off between inflation and output/employment/unemployment (Lucas (1972a) and Wright et. al. (2005)).

Relative price distortions & inefficient output gaps due to nominal price & wage rigidities

- Woodford (2003) version of Calvo (1983) contracts.

Constrained price setters follow simple indexation rule:

$$p_t^j = \omega_{t,t-1} + p_{t-1}^j$$

Should satisfy:

(1) $\bar{\omega} = \bar{\pi}$ (indexation rule is rational in deterministic steady state)

(2) $$\pi_{t,t-1} - \omega_{t,t-1} = k(y_t - \bar{y}_t) + \beta E_t(\pi_{t+1,t} - \omega_{t+1,t})$$

$$k < 0;\ 0 < \beta < 1$$

- Note: long-run inflation-output trade-off unless $\bar{\omega} = \bar{\pi}$

(3a) $\omega_{t,t-1} = 0$ (Calvo) Zero indexation

Does not satisfy (1)

(3b) $\omega_{t,t-1} = \gamma\pi_{t-1,t-2}$ Partial (if $\gamma < 1$) lagged indexation (Christiano et. al., Smets & Wouters, Woodford, Giannoni & Woodford)

Does not satisfy (1) if $\gamma \neq 1$.

Satisfies (1) if $\gamma = 1$ and inflation is constant

(3c) $\omega_{t,t-1} = \gamma\pi_{t,t-1}$ Current indexation (partial if $\gamma < 1$)

(3d) $\omega_{t,t\text{-}1} = \mathrm{E}_{t\text{-}1}\pi_{t,t\text{-}1}$ Indexation (partial if γ<1) to expected inflation

- Proposition: in the New-Keynesian models, optimal inflation (minimizing relative price distortions) is given by full accomodation or validation of core inflation (whatever it is) by actual inflation (if the natural level of output is efficient):

(4) $$\pi^*_{t,t-1} = \omega_{t,t-1}$$

- How do Woodford et. al. conclude that zero inflation is optimal?

  (3c) with partial indexation and evaluated at non-stochastic steady state; with partial indexation the only steady state rate of inflation is zero; non-robust to even the smallest perturbation.

The myth of central bank independence

- Central Bank is part of the state even if it is operationally independent of the goverment
- Treasury has power to tax, Central Bank does not.
- Treasury has power to tax Central Bank
- Treasury de jure or de facto owns Central Bank
- How independent can you be of your owner?
- Central Bank only has short-run non-inflationary deep pockets
- Treasury has long-run deep pockets

- Intertemporal budget constraints of Treasury, Central Bank & Consolidated Tr & CB:

(5) $$B_{t-1} + D_{t-1} \leq \sum_{j=t}^{\infty} \prod_{s=t}^{j} \left(\frac{1}{1+i_s} \right) P_j \left(\tau_j^p + \tau_j^b - c_j^g \right)$$

(6) $$-\left(D_{t-1} + L_{t-1} + e_{t-1} R_{t-1}^f \right) \leq \sum_{j=t}^{\infty} \prod_{s=t}^{j} \left(\frac{1}{1+i_s} \right) P_j \left(-c_j^b - \tau_j^b - h_j - s_j + \frac{\Delta M_j}{P_j} \right)$$

(6½) $$P_t s_t \equiv \left(i_t - i_t^L \right) L_{t-1} + \left[1 + i_t - \left(1 + i_t^f \right) \frac{e_t}{e_{t-1}} \right] e_{t-1} R_{t-1}^f$$

(7) $$B_{t-1} - L_{t-1} - e_{t-1} R_{t-1}^f \leq \sum_{j=t}^{\infty} \prod_{s=t}^{j} \left(\frac{1}{1+i_s} \right) P_j \left(\tau_j - s_j - c_t^g - c_t^b + \frac{\Delta M_j}{P_j} \right)$$

Is the inflation target independently financeable by the Central Bank?

- World's simplest economy: closed, no loans to private sector, constant real interest rate: CB's intertemporal budget constraint:

(8) $$-d_{t-1} + \frac{\overline{\tau}^b}{\rho} + \left(\frac{\overline{c}^b + \overline{h}}{\rho} \right) \leq \sigma(\overline{\pi})$$

Treasury's intertemporal budget constraint:

(9) $$b_{t-1} + d_{t-1} \leq \frac{\overline{\tau}^p + \overline{\tau}^b - \overline{c}^g}{\rho}$$

Consolidated T & CB intertemporal budget constraint

(10) $$b_{t-1} + \frac{\overline{c}^g + \overline{c}^b - \overline{\tau}}{\rho} \leq \sigma(\overline{\pi})$$

Other aspects of necessary cooperation and coordination between Central Bank & Treasury

- Recapitalising the Central Bank
  - Question: which Treasury(ies) stands behind the ECB?
- ”Helicopter drop of money” (monetization of deficits caused by tax cuts/transfer payments)

Conclusions

- There exist (so far) no conventional welfare economics-based justifications for price stability as the overriding objective of monetary policy and for inflation targeting
- This is probably more of a problem for economic theory than for Central Bank practice
- Cooperation between Central Bank and Treasury may be <u>necessary</u> to achieve inflation target
- Cooperation & coordination between Central Bank & Treasury is <u>desirable</u> even if it not necessary to achieve the inflation target