

Economic Policy #1

Paper presentation



William Poole

“Optimal Choice of Monetary Policy Instruments in a Simple
Stochastic Macro Model”,

Quarterly Journal of Economics, May 1970

Context

- Controversy between monetarists and Keynesians on the choice of a monetary-policy instrument

- **Monetarists: money supply**

$$\left. \begin{array}{l} M \rightarrow P \\ IS \rightarrow r \end{array} \right\} \rightarrow i, P$$

supply $\rightarrow Y$

- **Keynesians: interest rate**

$$\left. \begin{array}{l} LM \\ IS \end{array} \right\} \rightarrow Y, i \text{ for given } P$$

supply $\rightarrow P \text{ for given } Y$ } $\rightarrow i, Y, P$

Existing models



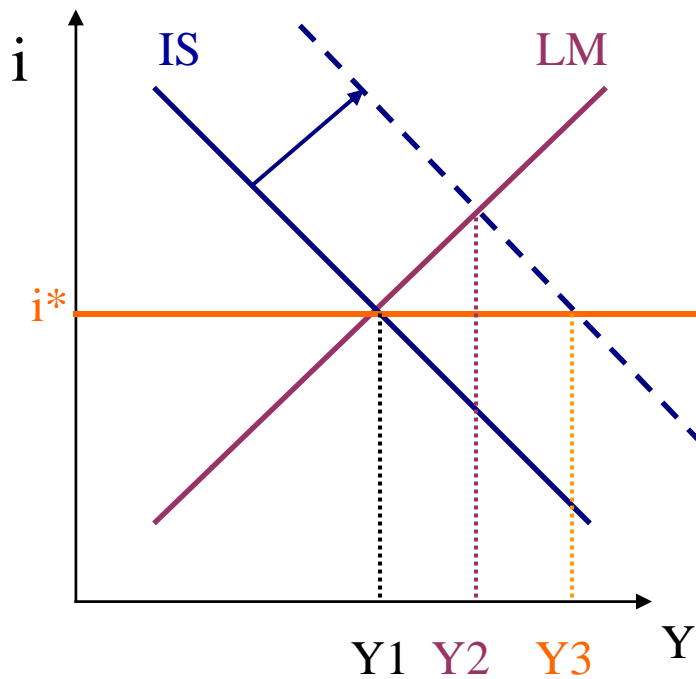
- Tinbergen (1952) :
 - One instrument per objective;
 - Otherwise: trade-off.
- Brainard (1967)
 - Uncertainty on a and u in $y = ax + u$
 - Consequence: be careful when moving x
 - Demonstration: $\text{Min}_x E(y-y^*)^2$

Poole's approach

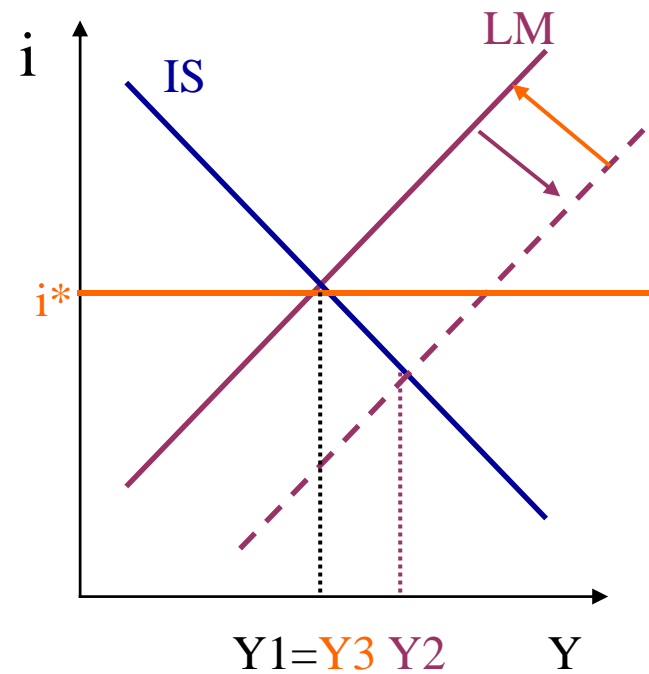


- Insists on the stochastic dimension of the problem
- Model: IS/LM with shocks on the demand for goods and for money
- Result:
 - Shocks on the demand for goods: best instrument is money supply
 - Shocks on the demand for money: best instrument is the interest rate
 - General case: depends on respective variances

Demonstration



**Shocks on the demand
for goods**



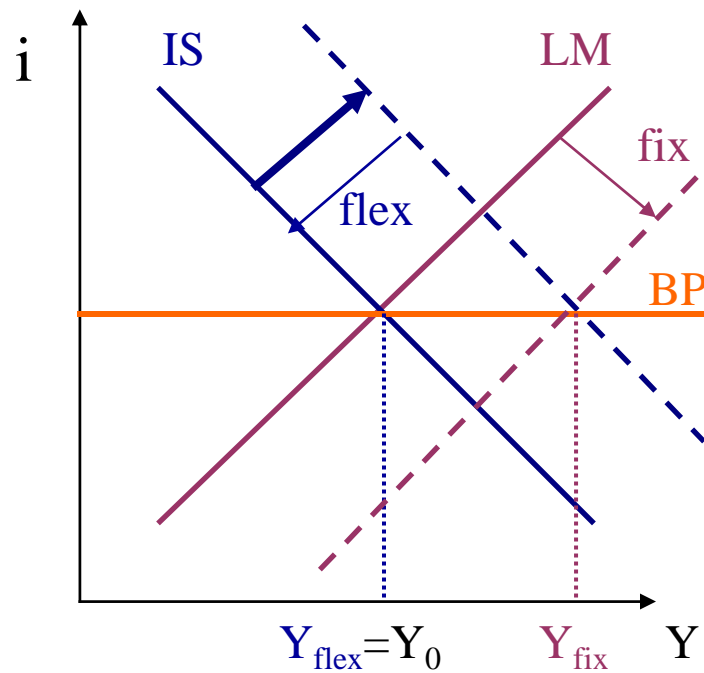
**Shocks on the demand
for money**

Lessons and extensions

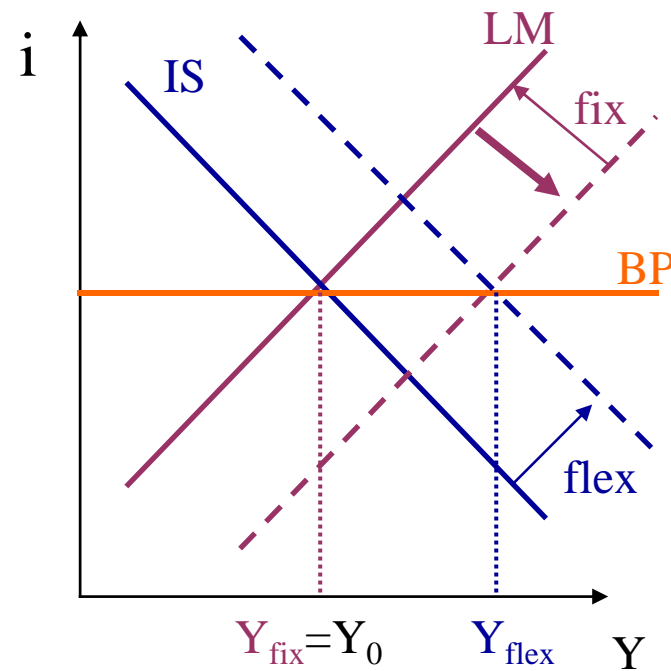


- Compare policy rules rather than policy decisions
 - Notion of policy *regime*
- An empirical question
 - The appropriate regime depends on economy's characteristics
 - Stochastic simulations
 - Problem of the Lucas critique (VAR methodology/DSGE)
- Extension: exchange rate regime choice
 - Shocks on the demand for goods: flexible exchange rate
 - Shocks on the demand for money: fixed exchange rate

Demonstration



Shocks on the demand for goods



Shocks on the demand for money



Paper presentation

Robert Lucas

“Econometric Policy Evaluation: A Critique”

in K. Brunner and A. Meltzer, The Phillips Curve and Labor Markets,
Carnegie-Rochester Conference Series on Public Policy, 1976

Context



- Practice of Keynesian fine tuning
- Excessive confidence in a ‘mechanistic’ approach to economic policy, derived from optimal control
- Empirical assessment of economic policy based on macro-econometric models:
 - Accounting identities (ex.: $Y = C+I+G+X-M$)
 - Behavioral assumptions for household consumption, business investment, wage formation, usually backward looking and non micro-founded
 - Parameters estimated on past data

Methodology

- Model of the economy:

$$y_{t+1} = F(y_t, x_t, \theta, \varepsilon_t)$$

- with:

- « y »: n -dimension vector describing the economy
 - Ex. : $y = (Y, C, I, G, X, M)'$
- « x »: vector of exogenous variables
 - Ex.: oil price, public spending, key interest rate...
- « θ »: vector of parameters describing behaviors
 - Ex.: propensity to consume
- « ε »: vector of random shocks

- Econometric estimate:

$$\theta = \operatorname{argmin} \sum_{t=1}^T M(y_t - F(y_t, x_t, \theta, \varepsilon_t))$$

where M is a measure of distance

- Based on F and θ , it is possible to simulate the impact of economic policies on the social welfare:

$$U = \sum_{t=0}^{\infty} \beta^t u(y_t, x_t, \varepsilon_t)$$

The Lucas critique

- This methodology makes sense only if F and θ are stable over time and do not depend on x .
- But in reality, F and θ depend on economic policies:
 - The households' savings rate depends on present and future public spending
 - Firms' investment depends on expectations concerning future demand and on capital depreciation rules
 - Wage negotiations depend on inflation expectations, hence on the monetary and exchange-rate regime
- Lucas advises not to study sequences of policy choices $\{x_t\}$, but *policy regimes*:
 - $x_t = G(y_t, \lambda, \eta_t)$
- After a certain learning process, behaviors will depend in a stable way on policy parameters λ :
 - $\theta = H(\lambda)$
 - 'Fundamental' (deep) parameters summarized by H are stable and the equation can be used to simulate a change in the policy regime



Implications



- **Theoretical implications:**
 - The appropriate distinction is not between short- and long-run implications of policies, but on the implications of *expected* versus *unexpected* policies.
 - Starting point of the ‘rational expectation’ school of thought (ex. Barro-Gordon, 1983 on monetary-policy ‘surprises’)
- **Methodological implications:**
 - Traditional macroeconometric models are useless to assess economic policies
 - Use micro-founded models: RBC, DSGE