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MONETARY POLICY IN A LOW PASS-THROUGH ENVIRONMENT

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"Small Structural Models for Monetary Policy Analysis
Progress, Puzzles, and Opportunities"

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The paper:

- Issue

  - How is optimal monetary policy design affected by incomplete exchange rate pass-through?

- Results / main conclusions

  Due to incomplete pass-through:

  i) No policy isomorphism between closed and open economies

  ii) Endogenous short-run trade-off between inflation and output stabilization

  iii) Optimal to partially stabilize the deviations from the law of one price (commitment vs. discretion)

- Procedure

  - Sticky import prices imply deviations from the LOP:

(42) $$\pi_t = \beta E_t \pi_{t+1} + \kappa_y^c \tilde{y}_t + \kappa_\psi^c (p_t^* + e_t - p_{F,t})$$

  - Analytical exercise (policy trade offs and design)

(38) $$\tilde{y}_t = \frac{\omega_s}{\sigma} s_t + \frac{\omega_\psi}{\sigma} \kappa_y^c \psi_{F,t}$$

  - Dynamics (commitment vs. discretion)

  - Simple rules

Comments:

- Monetary policy trade-offs
  – unique to this open economy?

- Stabilization bias
  – should central banks stabilize deviations from the law of one price / the exchange rate?

- Policy implications
  – what conclusions to be drawn?

Monetary policy trade-offs:

- Transmission channels of monetary policy
  - Aggregate demand (expenditure switching effect)
  - Exchange rate channel (enters CPI inflation directly)

Incomplete pass-through;

- weakens the expenditure switching effect
- larger exchange rate volatility

Smets and Wouters (2002), Adolfson (2001)

Monacelli (2003):

- independent LOP-channel makes the effects of interest rate changes endogenous

- Are imported inputs important?
  - Could create intrinsic trade-off

A small open economy with

- imported intermediate inputs ($\kappa_q > 0$)
- <u>complete</u> exchange rate pass-through

(1) $$\pi_t = \beta\, \pi_{t+1|t} + \kappa_y\, y_t + \kappa_q\, q_t + \varepsilon_t^{\pi}$$

(2) $$y_t = y_{t+1|t} - b_\pi\, (i_t - \pi_{t+1|t}) - b_q\, \Delta q_{t+1|t} + \varepsilon_t^{y}$$

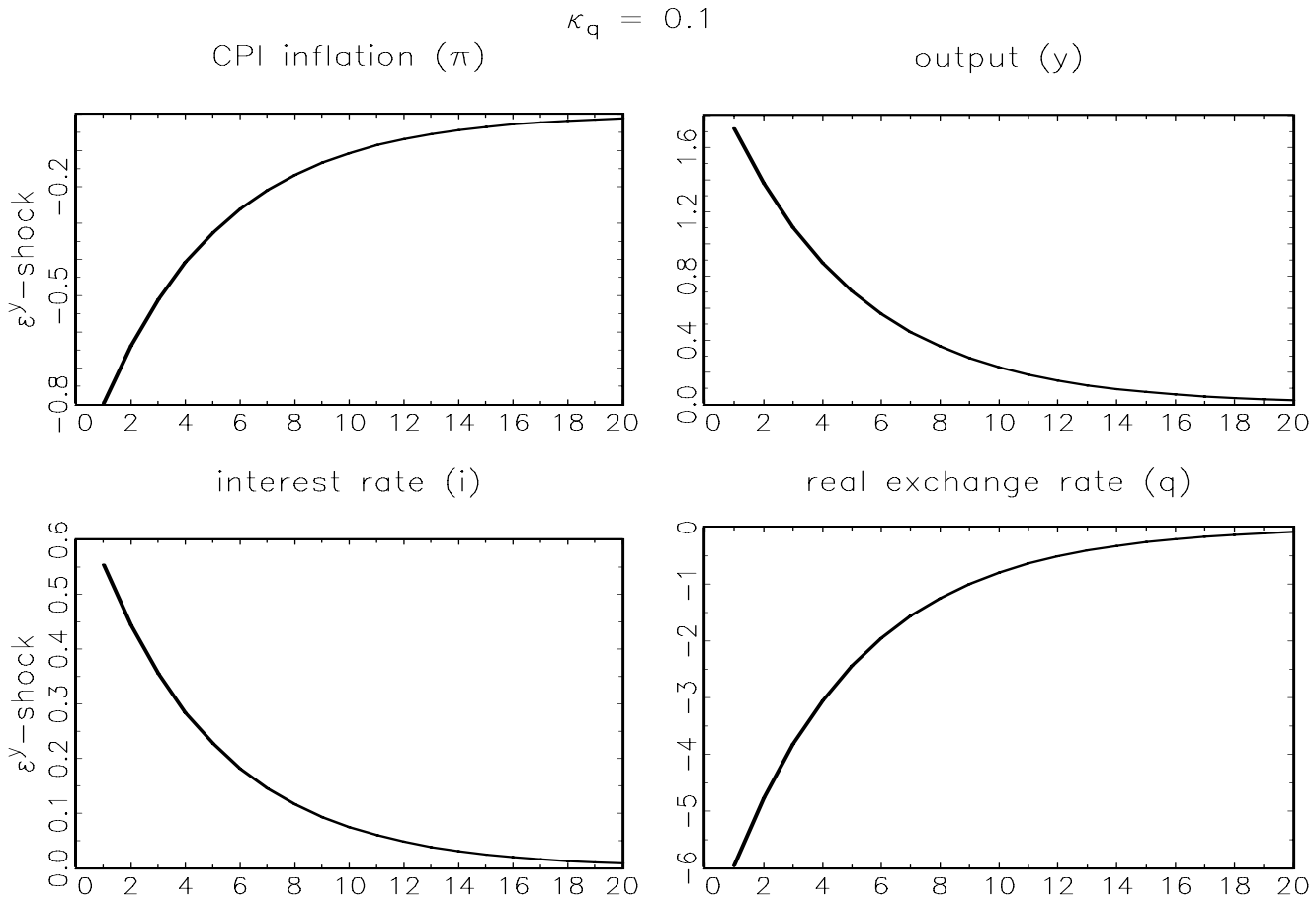
(3) $$i_t - \pi_{t+1|t} = q_{t+1|t} - q_t + \varepsilon_t^{q}$$

(4) $$L_t = \pi_t^2 + \lambda\, y_t$$

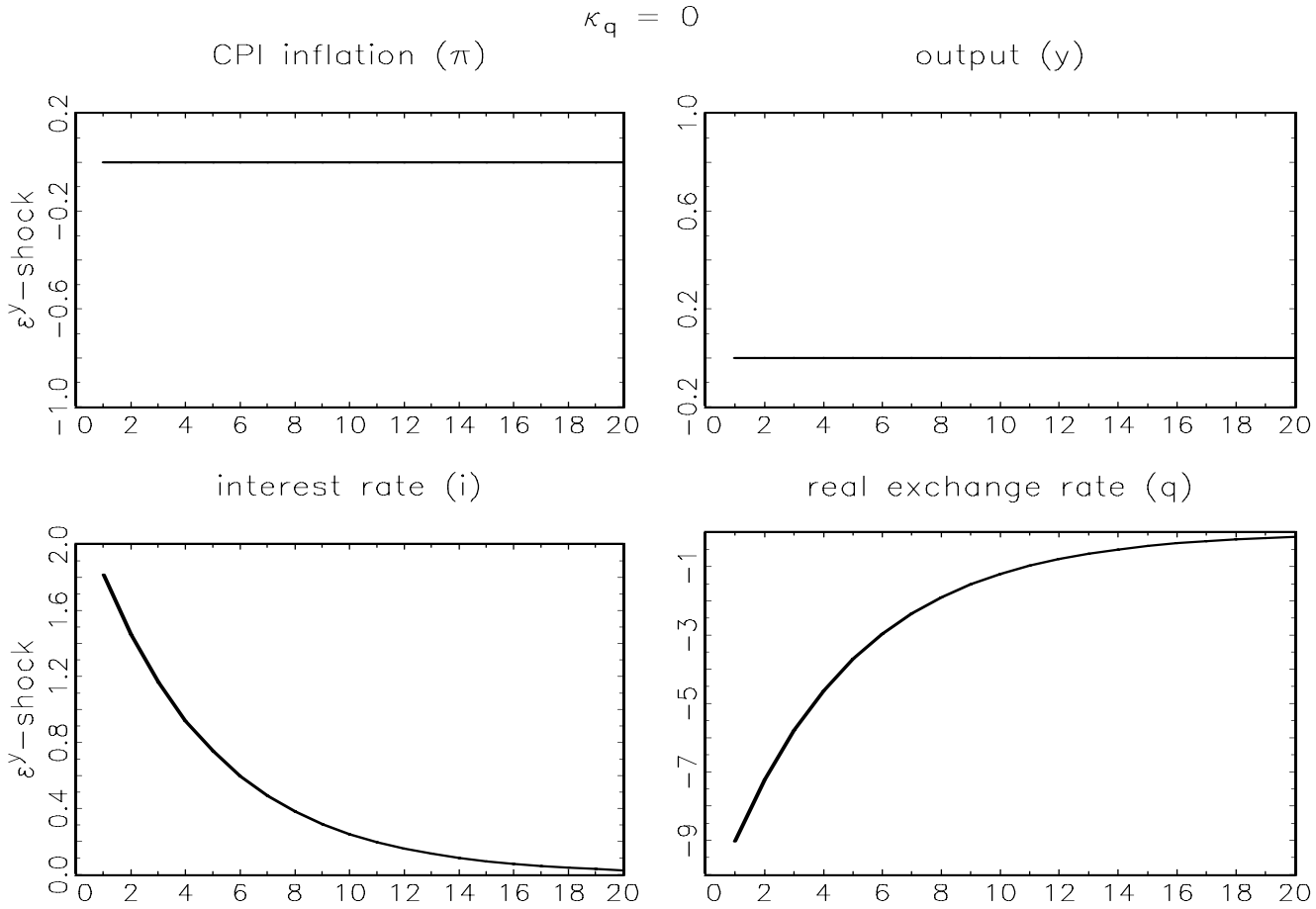
Parameter values:

κ_q = {0 , 0.1}, β = 0.99, κ_y = 0.25 , b_π = 0.35, b_q = 0.20, λ = 0.2

Impulse responses to a demand shock (ε_t^y), with imported inputs (κ_q = 0.1)



Impulse responses to a demand shock (ε_t^y), without imported inputs (κ_q = 0)



Stabilization bias:

- Necessary exchange rate movements should be spread over time
  - can this be done in a discretionary framework?

- Simulate commitment environment

  Optimal inertia: trade off output variability for inflation stability through expectations (Woodford (1999))
    - optimal output stabilization (inflation nutter)
    - interest rate smoothing
    - exchange rate stabilization

- What if no import rigidities?

- Can exchange rate flexibility be useful under certain shocks?

Policy implications:

- What are the policy issues?
  - Stabilize CPI or domestic inflation?
  - Exchange rate stabilization?

- When to include explicit open economy elements?

What is the true social welfare?

– price stability

i) optimal policy

reacting to a variable $\neq$ targeting a variable

improve on the discretionary outcome

ii) simple rule

improve on a suboptimal rule

depends on the type of disturbance?

– exchange rate stabilization?

Relevant loss function includes distorted variables (that can be affected by policy)

- What can we learn from this?

Conclusions:

- Clean analysis of the policy trade-off

  Trade-offs matter for the optimal policy - but not only?

  - production
  - different shocks
  - incomplete pass-through without import price rigidities

- How should we design optimal monetary policy?

  - What is the true social welfare in the open economy?
  - Implementation:

    Optimal policy (commitment or discretion)

    Simple rule
  - Exchange rate flexibility can be useful under certain shocks (stabilization bias)