International Macroeconomics Microfounded models for policy analysis in open economy

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Roadmap

Roadmap

• Short Recap





- Short Recap
- · Microfounded models for policy analysis in open economy



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- Better data based on individual relative prices yields different results for LoOP and PPP.
- Long-run real exchange rate movements are in line with Balassa-Samuelson effects.
- The simple overshooting model correctly predicts high volatility, but ultimately we don't have a good model for nominal exchange rates.

This session: Microfounded models for policy analysis in open economy

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- With nominal rigidities in open economy, is optimal MP inward-looking or outward-looking? Is there gain from policy coordination?
- How about inflation targeting or ER stabilisation or currency union?

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· Quantitative calibrated models with nominal rigidities

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What this session doesn't look at...

- Quantitative calibrated models with nominal rigidities
- Instead: Simple analytically tractable model with role for monetary policy

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 General issues in monetary economics and modeling of economies with nominal rigidities

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• Tractable example of a NOEM model

- General issues in monetary economics and modeling of economies with nominal rigidities
- Tractable example of a NOEM model
- Importance of pricing assumptions and pass-through for optimal monetary policy

Roadmap for this section

- 1. Ingredients of New Open Macroeconomics (NOEM) models and general issues in monetary modeling
- 2. A simple tractable model for policy analysis in open economy (Corsetti and Pesenti 2007)
- 3. The transmission of monetary and productivity shocks under different assumptions about pricing behaviour

4. Optimal monetary policy

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- 5. Inefficiencies: Monopoly distortion, sticky price distortion and policy externalities

NOEM: Advantages r.t. Mundell-Flemming

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- 3. GE: potential for integrating other literatures (trade, \dots)





1. Obstfeld and Rogoff (1995)





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- 1. Obstfeld and Rogoff (1995)
- 2. Svensson and van Wijnbergen (1989)



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1. Transmission of productivity and monetary shocks



NOEM: Questions

- 1. Transmission of productivity and monetary shocks
- 2. Optimal monetary policy
 - Inward- vs. Outward-Looking
 - Additional Targets?
 - Gains from coordination across countries?



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• MIU: $U = U(c, \frac{m'}{p})$

In equilibrium, MRS between c and m/p needs to equal relative price: "user cost" $1/(1 - R_m/R)$. Velocity decreases with rising return on money. EE as usual (with m'/p in MUt).

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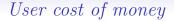
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• Shopping time

ShT increases with c, decreases with m'/p. In equilibrium MU of higher saved time needs to equal MU of user cost: (12) (22)



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- Real return on bonds: R_t
- Real return on money: $\frac{p_t}{p_{t+1}}$
- Difference, discounted: $1 \frac{p_t}{p_{t+1}R_t} = 1 \frac{1}{1+i_t} = \frac{i}{1+i_t}$

$$maxE_0\sum_{t=0}^{\infty}\beta^t \frac{c_t^{1-\sigma}}{1-\sigma} + \phi l_t^a + \psi ln(\frac{m_t}{p_t})$$

s.t.

$$l_{t} = 1 - n_{t}$$

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5. m': $\frac{U_m}{p} - \frac{\lambda}{p} = E[\beta \frac{\lambda'}{p'}] \Rightarrow U_m = U_c \frac{i}{1+i}$

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- So inflation (higher i) reduces money. May have real effects if M not separable from *I*, *c* in U.
- 5. With flexible prices:
 - Money is neutral (once for all increase in MS has only price, no real effect)
 - Money may not be "superneutral": money growth affects inflation, and therefore *i*

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1. Want output to react to monetary expansion in the short run.

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 - 1 period ahead pricing: Have to fix tomorrow's prices today.

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Modeling Nominal rigidity II

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- 2. Solution: Introduce monopolistic price setting for imperfectly elastic products.
- 3. Since monopoly prices are higher than marginal cost $(p^{monop} > MC)$ means producer optimally meets higher than expected demand.

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• Which policy objective? Here: Domestic individual Utility (abstracting from money balances).

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 - With commitment, monetary policy stabilises markup around flex-price level.

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- Third case: Asymmetric "Dollar" pricing.

Corsetti and Pesenti (2005,2007): A tractable NOEM model for policy analysis

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- 2. Linear technology, no capital: $y_t = Z_t I_t$

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4. So efficient allocation is $l_t^{e\!f\!f}=c_t/Z_t=1/\kappa$

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International Macroeconomics Microfounded models for policy analysis in open economy

Tobias Broer

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Stockholm Doctoral Program in Economics