

Dilemma not Trilemma?

Capital Controls and Exchange Rates with Volatile Capital Flows

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Motivation

- Volatile capital flows in emerging markets
 - inflow surges
 - sudden stops

- How to deal with them?
 - monetary policy and capital controls
 - leave other instruments (fiscal policy etc.) aside

Mundell's Trilemma

- Mundell (63) and Flemming (62)
- Role of exchange rate regime:
 - capital controls if fixed exchange rate
 - no capital controls if flexible exchange rate

Dilemma not Trilemma?

- Recently, “Mundellian” conclusion challenged by policymakers and academics
- Capital controls with flexible exchange rates?
- This paper:
 - microfounded models with nominal rigidities
 - better suited for normative analysis
- Joint theory of **nominal exchange rates and capital controls**

Main Results

- Similarities and differences with traditional “Mundellian” view
- Key role of exchange rate regime
- But role for capital controls even with flexible exchange rates

Unifying Intuition

- Navigate two conflicting objectives:
 - macroeconomic stabilization
 - exchange rate management
- Flesh out two reasons for exchange rate management:
 - simple example...financial stability
 - standard New-Keynesian model...terms of trade manipulation

Simple Example

- Small open economy
- World interest rate r_t^*
- Traded and non-traded goods
- Traded good:
 - endowment $Y_{T,t}$
 - sold competitively, world price $P_{T,t}^*$
- Non-traded good:
 - different varieties
 - produced from labor, productivity A_t
 - monopolistic competition and rigid prices P_{NT}

Policy: Two Instruments

- Monetary policy: exchange rate E_t
- Capital control: tax on international borrowing τ_t^B

Budget Constraints

- Agents' budget constraints

$$(C_{T,t} - Y_{T,t}) + \frac{1}{p_t} (C_{NT,t} - Y_{NT,t}) \leq B_{t+1} - B_t(1 + r_t^*)(1 + \tau_t^B) + T_t$$

$\frac{E_t P_{T,t}^*}{P_{NT,t}}$ ←

- Ad-hoc borrowing constraint

$$B_{t+1} \leq \kappa_{NT,t} \frac{1}{p_t} Y_{NT,t} + \kappa_{T,t} Y_{T,t}$$

- Government budget constraint

$$T_t = \tau_t^B B_t(1 + r_t^*)$$

Preferences

- Utility $U(C_{T,t}, C_{NT,t}, N_t, t)$
- Separable between consumption and leisure
- Homothetic over consumption

- Implies $C_{NT,t} = \alpha(p_t, t)C_{T,t}$

Planning Problem

$$\max_{C_{T,t}, B_t, p_t} \sum_{t=0}^{\infty} \beta^t U(\alpha(p_t, t) C_{T,t}, C_{T,t}, \frac{\alpha(p_t, t)}{A_t} C_{T,t}, t)$$

$$C_{T,t} - Y_{T,t} \leq B_{t+1} - B_t(1 + r_t^*)$$

$$B_{t+1} \leq \kappa_{NT,t} \frac{1}{p_t} Y_{NT,t} + \kappa_{T,t} Y_{T,t}$$

Optimal Monetary Policy

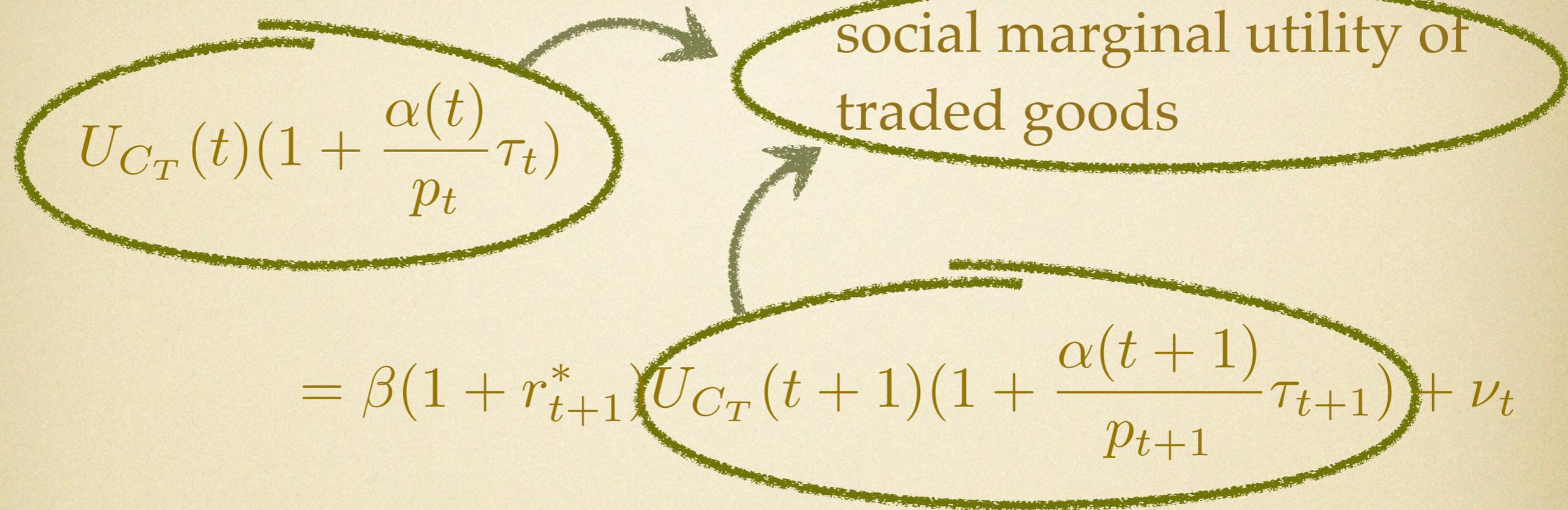
$$\alpha_p(t) C_{T,t} U_{C_T}(t) \tau_t = \nu_t \kappa_{NT,t} Y_{NT,t} \frac{1}{p_t}$$

labor wedge

multiplier on
credit constraint

- Recession when credit constraint binds
- Two conflicting objectives:
 - macro stabilization
 - exchange rate management (financial stabilization)

Optimal Capital Controls



- Positive tax on capital inflows if credit constraint slack today but expected to bind in future
- Role for capital controls despite flexible exchange rates!

Alternative Take

$$1 + i_t = (1 + \tau_t^B)(1 + i_t^*) \frac{E_{t+1}}{E_t}$$

- Independently control i_t and E_t ?
 - without capital controls...**no**
 - with capital controls...**yes**
- Many reasons why independent control useful

New-Keynesian Model

- Build on Gali-Monacelli (05), and Farhi-Werning (12)
 - continuum of small open economies
 - differentiated goods within and across countries
 - home bias
 - nominal rigidities (Calvo, Producer Currency Pricing)
- Risk premium shock (wedge in UIP equation):
 - inflow surges
 - sudden stops
- Monetary policy and capital controls
- Focus: sudden stop in one country

Sudden Stop (Flip for Inflow Surge)

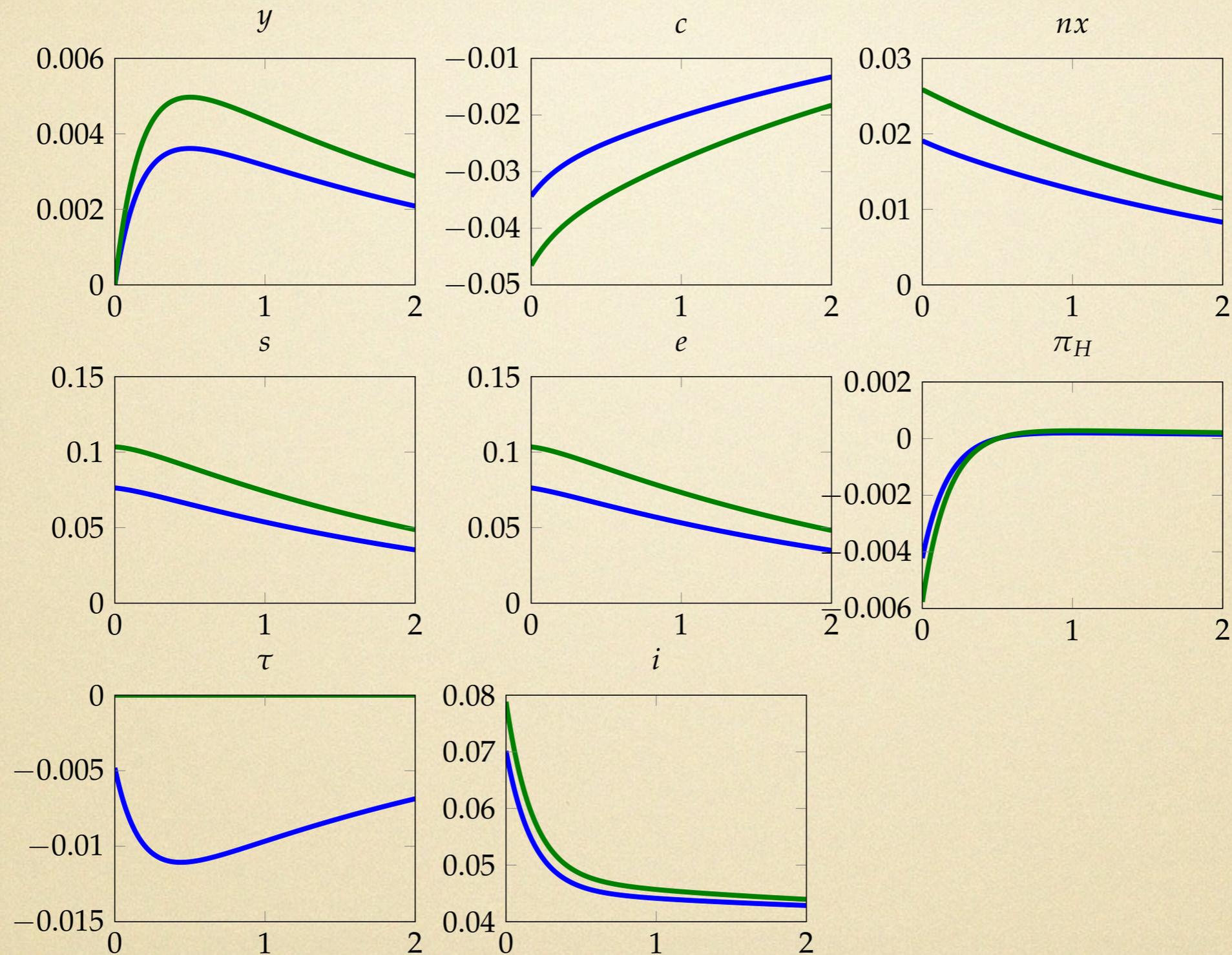


Figure 1: Capital controls (blue) and no capital controls (green) with flexible exchange rates.

Two Objectives, Two Instruments

- Two conflicting objectives:
 - macroeconomic stabilization
 - exchange rate management (terms of trade manipulation)
- Two instruments:
 - exchange rates
 - capital controls
- Independent control of interest rate and exchange rate
- Useful to navigate two conflicting objectives

Conclusion

- Policy to deal with volatile capital flows
- Exchange rate and capital controls
- Navigate two objectives:
 - macroeconomic stabilization
 - exchange rate management
- Similarities and differences with traditional “Mundellian” view:
 - key role of exchange rate regime
 - but role for capital controls even with flexible exchange rates