Discussion of: Dilemma not Trilemma? Capital Controls and Exchange Rates with Volatile Capital Flows by Emmanuel Farhi and Iván Werning

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Context

- Resurgence in interest for capital controls during last episodes of capital flows to emerging markets in response to policies dealing 2008-2009 crisis in advanced economies
  - Use of controls by emerging markets
  - Endorsement by increasing number of economists, and by the IMF (see IMF, 2010)
- Resurgence also in theoretical literature about desirability of controls
  - **Prudential considerations**: Caballero-Krishnamurthy (2004), Korinek (2007,+), Bianchi (2011), Jeanne-Korinek (2012), Bianchi-Mendoza (2012), Brunnermeier-Sannikov (2014)
  - **Macroeconomic management considerations**: Farhi-Werning (2012), Schmidt-Grohé-Uribe (2012)

Outline

Discussion outline

- Summary
  - Model
  - Results
- Comments
  - General interpretation
  - What are these Ψ shocks?
    - Borrowing constraints?
    - Foreign capital controls
    - Foreign monetary policy
  - Relevant for advanced or just emerging?
  - Robustness away from Cole-Obstfeld parametrization?

Summary: Model

- Minimal departures from Gali-Monacelli (2005)
  - continuum of SOEs
  - nested CES preference structure, home bias
  - monpolistic competition
  - no capital
  - risk-premium shocks Ψ as wedges in UIP conditions
  - flexible exchange rates
  - various assumptions about price setting (flexible, fully rigid, sticky)
- Restrict attention to Cole-Obstfeld (1991) parametrization ($\sigma = \eta = \gamma = \epsilon = 1$)
  - allows analysis of flexible and fully rigid prices in nonlinear model
  - allows analytical derivation of 2nd ordre approximation of welfare function and closed forms for optimal allocations

Summary: Results

- Very powerful result that **optimal capital controls lean against the wind** for all price setting specifications (τ_t has opposite sign as $\Psi_t - 1$)

1. Flexible prices: smooth ToT appreciation/depreciation pattern
   - wealth effect on labor supply
   - labor demand effect due to home bias
2. Fully rigid prices
   - same ToT smoothing motive as with flexible prices
   - but extra instrument because ToT can be perfectly managed
3. Sticky prices (Calvo)
   - same ToT smoothing motive again
   - more complicated because now trade-off with price dispersion distortion

General interpretation of results

- SOE faces a non-constant intertemporal price path, and agents react by adjusting consumption path "excessively," failing to account for country's rent extraction ability on world market for its home good
- Appealing because fits well with narrative of capital controls imposed during episodes where economy is "overheating"
- Mechanism very different from Mundellian view for which capital controls might be desirable under fixed exchange rate
- Suboptimal agent's response to non-constant price path is reminiscent of Calvo-Vegh intertemporal distortion, but key difference:
  - Calvo-Vegh story: agents face non-constant intertemporal price path, but SOE as a whole doesn't
  - Farhi-Werning story: SOE as a whole faces non-constant price path, but agents overreact to it from SOE's perspective

Interpretation of risk-premium shock Ψ?

Does it matter?

- Authors leave interpretation of risk-premium shocks Ψ intentionally open
- After all, should we care about what is behind Ψ?
  - If paper is primarily written for SOEs central banker, no
  - But analysis is so clean, elegant and persuasive that audience should be wider
- Uncovering candidates for Ψ would given paper other dimension(s)
  - International policy spillover & policy coordination (integrated analysis of North-North, North-South & South-South linkages)

Interpretation of risk-premium shock Ψ?

Ψ as time-varying, country-specific borrowing constraints

- Yes, but if interpreted strictly, subsidies on inflows wouldn't be effective?
  - Consider a simple example:

$$\max_{c,c',b} u(c) + \beta u(c')$$

$$\begin{aligned} \text{s.t.} \qquad c &= y + b \\ c' &= y' - R(1+\tau)b + T \\ b &\leq \bar{b} \end{aligned}$$

  - Euler equation when constraint binds:

$$u'(y + \bar{b}) = \beta R(1+\tau)u'(y' - R\bar{b}) + \mu$$

$\Rightarrow$ if constraint binds ($\mu > 0$) without controls ($\tau = 0$), then subsidy on inflows ($\tau < 0$) will only lead to higher shadow price ($\mu \uparrow$)

Interpretation of risk-premium shock Ψ?

Ψ as foreign capital controls

- Distorted UIP condition:

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

- Authors assume throughout that $\Psi_t^* = 1$ and $\tau_t^* = 0$ & find

Proposition (Capital controls lean against the wind)

τ_t has opposite sign as $\Psi_t - 1$.

- But if instead assume $\Psi_t^* = \Psi_t = 1$, then

Corollary (Capital controls are strategic complements)

τ_t has same sign as τ_t^*.

$\Rightarrow$ Model of currency wars!

Interpretation of risk-premium shock Ψ?

Ψ as US monetary policy

- Distorted UIP condition:

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

- Authors assume throughout that $\Psi_t^* = 1$ and $\tau_t^* = 0$ & find

Proposition (Capital controls lean against the wind)

τ_t has opposite sign as $\Psi_t - 1$.

- But if instead assume $\Psi_t^* = \Psi_t = 1$, $\tau_t^* = 0$, then (maybe)

Corollary? (Capital controls respond to US monetary policy)

τ_t has opposite sign as $i_t^* - i^*$ (where i^* is long-term level of i_t^*)

$\Rightarrow$ Model of monetary policy spillovers and optimal capital controls ?!

For whom is model most relevant?

advanced vs. emerging economies

- Practical discussion and recent experience focusses on emerging
- Recent literature motivating controls with prudential considerations is very specifically focussing on emerging (Suden Stops modelled as rare, recurrent, non-linear phenomena)
- Gali-Monacelli model initially developed for advanced economies, could apply to advanced and emerging alike?
- Is case for controls based on terms-of-trade management equally valid for advanced countries?
- If not, why?
  - What aspects of model strengthen or weaken case for controls?
  - What are relevant differences in calibration between EMEs and AEs?

Robustness

Away from Cole-Obstfeld parametrization?

- Result that optimal capital controls lean against the wind is surprisingly robust to specification of supply block (price setting)
- Is it also robust away from Cole-Obstfeld parametrization?
  - Mechanism relies on desirability to smooth extraction of monopoly power from foreigners over time
  - Does this depend on unit elasticity assumptions?
  - Could deserve some intuitive explanations and/or numerical illustrations