Optimal Monetary Policy under Dollar Pricing

Konstantin Egorov
kegorov@NES.ru

Dmitry Mukhin
dmitry.mukhin@Yale.edu

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Motivation

- Global use of the dollar
  - in financial markets ⇒ “Global Financial Cycle” (Rey 2013)
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- International spillovers as positive implications
  - for global trade and inflation (Gopinath et al. 2019)
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- Build a framework for normative implications
  - consistent with key facts about prices
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  - consistent with **key facts about prices**
    1. high PT into border prices
    2. low PT into retail prices
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    1. high PT into border prices ⇒ prices sticky in dollars (DCP)
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  - in international trade ⇒ “Global Monetary Cycle” (this paper)

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6. Are there gains from a currency union (Eurozone)? (Mundell’61)
Relation to the Literature

- **Empirical evidence:**

- **Theories of currency choice:**

- **Optimal monetary policy in open economy:**
MODEL
Continuum of small open economies (Gali & Monacelli 2005)
- U.S. is symmetric except for DCP
Setup

Continuum of small open economies (Gali & Monacelli 2005)
- U.S. is symmetric except for DCP

Key assumptions:

1. international prices are sticky in dollars
2. foreign intermediates in production
Consumers:

- CES consumption bundle with home bias
  \[ C_{it} = \left[ (1 - \gamma)^{\frac{1}{\theta}} C_{iit}^{\frac{\theta - 1}{\theta}} + \gamma^\frac{1}{\theta} \int C_{jit}^{\frac{\theta - 1}{\theta}} \, dj \right]^{\frac{\theta}{\theta - 1}} \]

- complete asset markets

Firms:

- Cobb-Douglas technology
  \[ Y_{it} = A_{it} X_{it}^{\alpha_{it}} L_{iit}^{1 - \alpha_{it}} \]

Government:

- monetary policy with commitment
- labor subsidy (→ domestic markup) + export tax (→ dynamic ToT)
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  - Rotemberg pricing:
    1. domestic market \( \rightarrow P_{iit} \) (in local currency)
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OPTIMAL POLICY
Non-U.S. Policy

Can the first best be achieved?

\[ W_{it} - \alpha P_{it} = MC_{it} = MU_{it} = P_{iit} - \theta_{it} = (1 - \gamma) P_{1} - \theta_{iit} + \gamma (E_{it} P^{*}_{t}) 1 - \theta \]

Proposition

The optimal policy in non-U.S. countries:

1. fully stabilizes domestic prices,
2. partially pegs exchange rate to the dollar,
3. gives rise to a Global Monetary Cycle.

- U.S. tightens $E_{it} \uparrow$, $P_{it} \uparrow \Rightarrow$ non-U.S. tightens $E_{it} \downarrow$, $P_{it} \downarrow$, $W_{it} \downarrow$

- Key ingredients: no peg if either 1) producer pricing or 2) $\alpha \rightarrow 0$
Non-U.S. Policy

- Can the first best be achieved?
  - for closed economy and producer pricing, yes
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— for dollar pricing, no (exports are suboptimal)
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- If domestic margin is stabilized, export margin is constrained-efficient
  - changing export prices is costly
  - private and social costs coincide
  - under appropriate subsidy, benefits coincide too
  - without other distortions, laissez-faire is efficient subject to adj. costs
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— Generalization of Casas, Diez, Gopinath & Gourinchas (2017)
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  - for closed economy and producer pricing, \textit{yes}
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Can capital controls insulate from U.S. spillovers?

Blanchard (2016): “[The use of capital controls by EMs] allows AEs to use monetary policy to increase domestic demand, while shielding EMs of the undesirable exchange rate effects.”
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— Monetary policy under DCP eliminates AD externality and equalizes private and social values of transfers
**Assumption:** focus on a case with no intermediates $\alpha = 0$ and equal inter/intra-temporal elasticities $\theta = \frac{1}{\sigma}$

- Use second-order approximations
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Use second-order approximations

**Lemma**

*Welfare loss function of the U.S.:

$$L^{US} \approx \frac{L}{2} \mathbb{E} \sum_{t=0}^{\infty} \beta^t \left[ \sigma \tilde{y}_{it}^2 + \varphi \pi_{iit}^2 + \gamma \Psi \int \tilde{s}_{jt}^2 \, dj \right] + t.i.p.,$$

with output gap $\tilde{y}_{it}$ and ToT gap $\tilde{s}_{jt}$. 
**U.S. Policy**

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**Proposition**

*The optimal policy in the U.S. deviates from price stabilization by responding less to domestic shocks and targeting the global ToT gap.*
Gains from DCP

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- Welfare loss function of a non-U.S. country:

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with law-of-one-price gap \( \tilde{\phi}_{it} \equiv p_{it}^* + e_{it} - p_{iit} \)
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*The welfare of the U.S. relative to other countries under DCP is higher if all countries stabilize domestic prices.*

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- the U.S. is likely to gain from DCP when openness \( \gamma \) is small
- cooperative policy: \( MC_{it} = 1, \ \forall i \neq \text{U.S.}, \int MC_{it} / \mathcal{E}_{it} \ di = 1 \)
Optimal currency area:
- loss of independent monetary policy
+ commitment against inflationary bias
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Are there gains from promoting a common currency (euro)?
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\textbf{Proposition}
\begin{quote}
\textit{Under }\alpha = 0 \textit{ and } \theta = \frac{1}{\sigma}, \textit{Eurozone problem is isomorphic to the problem of the U.S. and achieves the same welfare under the optimal policy.}
\end{quote}
Conclusion

1. Does U.S. monetary policy generate negative spillovers on the RoW? If so, should the Fed be concerned about it?

2. What is the optimal response of other countries float vs. peg?

3. Can capital controls help?

4. Are there gains from international cooperation?

5. Is there an “exorbitant privilege” from DCP for the U.S.?

6. Are there gains from a currency union (Eurozone)?
Conclusion

1. Does U.S. monetary policy generate negative spillovers on the RoW? If so, should the Fed be concerned about it?
   — yes & yes

2. What is the optimal response of other countries float vs. peg?
   — partial peg

3. Can capital controls help?
   — not much

4. Are there gains from international cooperation?
   — not for the U.S.

5. Is there an “exorbitant privilege” from DCP for the U.S.?
   — yes

6. Are there gains from a currency union (Eurozone)?
   — yes
APPENDIX
Pass-through to Border and Retail Prices

Source: Auer, Burstein, and Lein (2018)
Pass-through to Border and Retail Prices

Source: Auer, Burstein, and Lein (2018)
DCP in Imports

Source: Gopinath (2016)
Dollar as an Anchor Currency

Source: Ilzetzki, Reinhart and Rogoff (2017)
DCP vs. Response to Fed’s Shocks

Source: Zhang (2018)