Exchange Rates and Monetary Policy with Heterogeneous Agents: Sizing up the Real Income Channel

Auclert, Rognlie, Souchier and Straub

Dicussion by Laura Castillo-Martínez
Duke University

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Is a RER depreciation (always) expansionary?

▶ Empirical identification is tricky but many devaluation episodes suggest it's painful.

▶ Theoretical consensus: depreciations stimulate output through an expenditure switching effect.

▶ A few papers consider alternative mechanisms such as
  * Currency composition of debt
  * Real income channel.

▶ This paper revisits the latter in the context of the HANK literature: international Keynesian cross.

▶ Important implications for optimal monetary policy

KEY MECHANISM

In the standard small open economy New Keynesian framework

$$Y_t = (1 - \alpha) \left(\frac{P_{H,t}}{P_t} \right)^{-\eta} C_t + \alpha \left(\frac{P_{H,t}}{P_{F,t}} \right)^{-\gamma} C^*$$

Following a RER depreciation, $Q_t \uparrow$:

- ▶ $\frac{P_{H,t}}{P_t}$ and $\frac{P_{H,t}}{P_{F,t}} \downarrow$ implying $Y_t \uparrow$. This is **expenditure switching**.
- ▶ Consumption is unchanged.

NEW: (i) imperfect international risk sharing and (ii) heterogeneous agents $\Rightarrow C_t = \mathcal{C}_t \left(\left\{ \frac{P_{H,s}}{P_s} Y_s \right\}_{s=0}^{\infty} \right)$.

- ▶ $\frac{P_{H,t}}{P_t} \downarrow$ implying $C_t \downarrow$. This is the **real income channel**.
- ▶ **Multiplier effect** through C_t.

Model Implications

In the analytical model, the trade elasticity, χ, is key:

- ▶ If $\chi = 1$, solution coincides with Gali and Monacelli 2005.
- ▶ If $\chi < 1$, RER depreciations are contractionary.

Add these channels to NK monetary policy transmission mechanism.

- ▶ Neutrality requires $\chi = 1 + home\ bias$.
- ▶ $\chi < 1 + home\ bias$ weakens monetary policy.

Rest of the paper: go quantitative.

- ▶ Make χ dynamic through a delayed import substitution model.
- ▶ Understand when is the real income channel important.
- ▶ Explore multiple extensions.

Some Remarks

Great paper: relevant question, elegant framework & important policy implications.

Summary of my comments

1. Contribution of the paper is quantitative.

   ▶ Quantification exercise is incomplete.

2. The nature of the shock matters.

   ▶ Authors could capture and quantify this.

3. Towards optimal monetary policy

4. Other minor suggestions.

CONTRIBUTION IS QUANTITATIVE
REVISITING THE BACKUS-SMITH PUZZLE

One possibility would be to admit demand side shocks in addition to the endowment shocks [. . .]. Other possibilities include (i) wealth effects, (ii) measurement error, and (iii) incomplete markets.

Backus and Smith (1993)

- ▶ Incomplete markets by themselves do not solve the puzzle (Cole and Obstfeld 1991, Baxter and Crucini 1995).

- ▶ Corsetti, Dedola and Leduc (2008): unless endogenous wealth effects are strong enough.

    - * Requires low elasticity of substitution (or persistent shocks).

- ▶ This paper amplifies the endogenous wealth effect.

How much do the odds of a contractionary depreciation increase? HA versus incomplete-RA

Nature of the Shock

- ▶ Asymmetric demand shocks can break the positive relationship between the real exchange rate and relative consumption.

  - * Shown by literature even under complete markets.

- ▶ In this model (with log utility): $\frac{Q_t}{B_t} = \frac{C_t}{C^*}$.

  - * Monetary policy is set such that $Q_t = B_t$.
  - * But, it's more likely that $\Delta Q_t < \Delta B_t$.

- ▶ Taylor rule extension goes in this direction; but limited to extending neutrality result.

Do demand shocks generate contractionary depreciations?

How much do the odds of a contractionary depreciation increase? HA versus demand shock.

Optimal Monetary Policy

▶ Understanding under which conditions depreciations are contractionary is key for monetary policy design.

▶ The study of optimal monetary policy is unfortunately out of reach at this stage.

▶ In the meantime, worth exploring:

  * Choice of rules: CPI-based Taylor rule, fixed exchange rate.

  * Role of net foreign asset position: non-zero steady state.

  * Other shocks, ZLB and DCP.

Other minor suggestions and concerns

- Most papers feature some kind of trade costs (Corsetti, Dedola and Leduc (2008) feature a distribution sector).
  The extension that is missing!

- Non-homothetic preferences already break the Backus-Smith puzzle.
  Including these in the quantitative model masks the effect of heterogenous agents.

- Footnote 21 should read: Consumption comoves *positively* with real exchange rates.

▶ Accounting for heterogenous agents in the NK model increases the chances of contractionary depreciations.

▶ Ideally, we would like to learn exactly by **how much**!

▶ Looking forward to optimal monetary policy.