Consumption Risk Sharing, the Real Exchange Rate, and Borders: Why Does the Exchange Rate Make Such a Difference?

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September 2010
Summary of the paper

Comments
This paper studies the Backus-Smith puzzle

- Document the importance of the nominal exchange rate in the Backus-Smith puzzle
- Show standard international macro models fail to replicate this finding and why
- Propose a solution
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The Backus-Smith Puzzle

- The real exchange rate and cross-country relative consumption are perfectly correlated under risk sharing
  \[ \sigma(c_t - c_t^*) = q_t \]
- Not true in the data
  - Backus and Smith (1993)
  - Kollmann (1995)
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Some Solutions to the Puzzle

- **Demand shocks**
  \[ \sigma(c_t - c_t^*) = q_t + (\xi_t - \xi_t^*) \]

- **Supply shocks plus incomplete financial markets**
  - Non-tradable goods (Benigno and Thoenissen, 2008)
  - Wealth effect of productivity shocks (Corsetti, et al., 2008)
  - Investment specific shocks (Raffo, 2010)

- No role for price stickiness and the nominal exchange rate.
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Empirical findings in Devereux and Hnatkovska (2010)

- The nominal exchange rate is important for the Backus-Smith puzzle.
  - Significant evidence of risk-sharing within the country
  - Risk-sharing is poor across countries
  - Failure of cross-country risk-sharing is mostly from nominal exchange rate movements.
- Other evidence in the literature
  - Risk-sharing is worse for country-pairs with the more volatile nominal exchange rate.
  - Countries (regions) with fixed exchange rates show better consumption risk sharing.
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A bare-bones model

  - Two countries and two shocks in each country
  - Calvo-style sticky prices
  - Monetary policy (Taylor) rules

- Analytical solution of the model

  \[ \Delta c_t = \alpha_1 \Delta \varepsilon_t + \beta_1 \Delta a_t \]
  \[ \tau_t = \alpha_2 \Delta \varepsilon_t + \beta_2 \Delta a_t \]

  \( \alpha_1 > 0 \) and \( \alpha_2 < 0 \) \( \Rightarrow \) \( \text{corr}(\Delta c_t, \tau_t) < 0 \) under demand shocks

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What we learn from the bare-bones model

- $\text{corr}(\Delta c_t, \tau_t)$ depends on price stickiness
  - Price stickiness helps to replicate the Backus-Smith puzzle.

- The exchange rate peg does not change the sign of $\text{corr}(\Delta c_t, \tau_t)$.

- Woodford-style price setting can reconcile the data and model prediction.
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A more general model

- Incomplete financial markets
- Nontradable goods (Benigno and Thoenissen, 2008)

What we learn from this model

- Results in the bare-bones model hold in the general model.
- Results hold even without demand shocks
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Outline

1 Summary of the paper

2 Comments
Comment 1: Price stickiness

- Calvo- plus Woodford-style price stickiness

- Woodford-style price stickiness helps to reduce \( \text{corr}(\varepsilon_t - \varepsilon_t^*, RER_t) \) under the fixed exchange rate.
  - Under the exchange rate peg, \( RER_t \) does not respond to \( \varepsilon_t - \varepsilon_t^* \) on impact of the shock.

- Does this additional price stickiness make prices too sticky?

- Can we get the same result by simply increasing price stickiness parameter under Calvo price setting?
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Comment 2: Why nontradable goods?

- Shortcomings for the explanation with nontradable goods
  - Negative correlation between the terms of trade and the real exchange rate
  - Real exchange rate volatility is mainly driven by the relative prices between tradable and nontradable goods
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More consistent with the data

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Low elasticity of substitution between home and foreign goods

- TOT deteriorates after a positive shock ⇒ negative wealth effect for the home country
- Strong negative wealth effect + home bias in consumption ⇒ demand for home goods declines
- To reach the equilibrium, the TOT improves after a positive productivity shock.
- Multiple equilibria
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The effect of the exchange rate peg

- Under the exchange rate peg
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**Figure:** IRFs to a positive TFP shock

[Flexible Exchange Rate]

[Fixed Exchange Rate]
Comment 3: Disconnection between the bare-bones and general models

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- More explanations to the results without demand shocks
  - Different channels to replicate the Backus-Smith puzzle
  - The bare-bones model only explains how demand shocks work.
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Additional comment

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