

Financial Intermediation and Capital Reallocation

by Hengjie Ai, Kai Li, and Fang Yang

Harjoat S. Bhamra

Imperial Business School

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Outline

- Why care about Uncovered Interest Parity and Country Size?
- Model Summary
- Some theoretical results
- Comments

Macroeconomic Fluctuations

- Fluctuations in Macrovariables
 - Aggregate consumption growth
 - Aggregate output growth
 - Aggregate investment growth
- Standard to assume exogenous shocks to technology
- Can we look deeper and avoid just assuming exogenous shocks?

Model

- Non-financial firms
 - Intermediate goods produced
 - Final goods
 - Investment goods
 - People can move, but capital cannot!
 - Real world: capital can move, but people cannot
 - Convert into 1 FC and invest at FC risk-free rate r^* till date T
- Date- T
 - Receive $1\text{FC} \times e^{r^*(T-t)}$ and convert into HC to get $\tilde{S}_T \text{HC} \times e^{r^*(T-t)}$
 - Pay back $S_t \text{HC} \times e^{r(T-t)}$



- Return (in HC) on initial investment

What happens if we cover the FX risk



From no arbitrage

$$F_{t,T} = S_t e^{(r-r^*)(T-t)} \quad (1)$$

Also,

$$F_{t,T} = E_t^{\mathbb{Q}}[\tilde{S}_T] \quad (2)$$

If \mathbb{P} and \mathbb{Q} are the same

$$E_t \left[\frac{\tilde{S}_T}{S_t} \right] = \frac{F_{t,T}}{S_t}, \quad (3)$$

so we should be able to predict FX premia via the forward premium.

UIP Logic (so-called)

$$E_t \left[\frac{\tilde{S}_T}{S_t} \right] = e^{(r-r^*)(T-t)} \quad (4)$$

On average, the risk-based component in the return from investing in the FC should be offset by a corresponding change in the FX rate (a depreciation in the FC)

Would be true in a world with no risk premia.

FX-rates.pdf

This paper

- Simple 2 country model, open economy, integrated financial markets, no frictions
- power utility with CES aggregator
- general Levy processes for individual country output
- general (non-numerical) conditions for violations of UIP

Main contribution

- methodological
- Use cumulant generation functions + Residue Thm in a 2 country model
- do not have to make many assumptions about stochastic process for output
- small country limit is very tractable

Model

- Output processes. One for each country. Different goods.

$$D_1, D_2$$

- Fraction $1 - \phi$ of each tree consumed locally by agents who do not participate in financial markets.
- Remainder consumed by jetsetters who face complete markets. Power utility, CES aggregator

$$\frac{\left[\left(w^{\frac{1}{\eta}} (\phi D_{1,t})^{1-\frac{1}{\eta}} + (1-w)^{\frac{1}{\eta}} (\phi D_{2,t})^{1-\frac{1}{\eta}} \right)^{\left(1-\frac{1}{\eta}\right)^{-1}} \right]^{1-\gamma}}{1-\gamma} \quad (5)$$

Some results

- Look at small country limit. Country 1 is very small, country 2 is very large.
 - Country 2 is like a closed economy: trivial
 - Asset pricing in Country 1 less trivial: would be hard to know some of this with numerical results.
 - Under weak symmetry conditions:
 - excess return on small country's stock market is positive in large-country units
 - $R_{f,1} > R_{f,2}$
 - there is empirical support for this: Hassan (2013)
 - Small countries also have FX rates will strengthen despite low interest rates.
 - Under weak symmetry conditions & convex difference property
 - exorbitant privilege
 - large country's bond earns a negative risk premium in small country units

Comments & Suggestions

- Paper's main strength is also its weakness
 - Properties of CGF's are not economically intuitive.
 - More examples of economies where properties do and do not hold.
 - Perhaps start with log normal case first and then look at general case.
- Looking at finiteness of utility is common (Ingersoll textbook).
 - In one-tree domestic economies with power utility, equivalent to finiteness of wealth-consumption ratio.
 - Also done for Epstein-Zin in one-tree domestic economies.

Suggestions

- Distinguish between various FX puzzles
 - UIP/FPP
 - Carry trade
 - Carry trade and UIP may not be so tightly linked – see next paper.
 - FX Option smirks
- Why should we focus on this model?
 - Need a better reason than tractability.
 - Need to compare with other work resolving UIP (Hollifield & Uppal)
- Can we resolve non -FX puzzles within this model? Or is the model easy to reject when we look at equities or bonds?

Suggestions

Link insights CGF approach to intuition from basic asset pricing equation in local and long-run (Hansen-Schneinkman) forms.

Conclusion

- Powerful hammer.
- Are you hitting too many FX nails?
- Explain what the results mean in more familiar terms.