INVESTOR EXPERIENCES AND INTERNATIONAL CAPITAL FLOWS

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• Proposes a theory to explain three features of international capital flows
  • Home bias
  • Fickleness (foreign capital flows out when economic conditions worsen)
  • Retrenchment (locals reduce their foreign holdings when economic conditions worsen)

• Theory builds on information frictions. Two key ingredients
  • Imperfect information over fundamentals
  • Experience-based learning

• Empirical evidence consistent with theory
Three main points of this discussion

1. Role of EBL

2. Heterogeneity in prior beliefs vs. heterogeneity in market participation?

3. Some remarks on empirical analysis
A SIMPLER VERSION OF THE MODEL

• Consider same model, but each generation lives two periods (young/old)

• Optimal portfolio choice (country A) in linear equilibrium

\[
x_{j,t}^A = \frac{\mathbb{E}_t^A[y_{j,t+1} + p_{j,t+1}] - R p_{j,t}}{\gamma \text{Var}_t^A[y_{j,t+1} + p_{j,t+1}]} \\
= \frac{\alpha_j (1 - R)}{\gamma (1 + \beta_j)^2 \text{Var}_t^A[y_{j,t+1}]} + \left[ \frac{(1 + \beta_j) \mathbb{E}_t^A[y_{j,t+1}] - R \beta_j y_{j,t}}{\gamma (1 + \beta_j)^2 \text{Var}_t^A[y_{j,t+1}]} \right]
\]

• Market clearing

\[
x_{j,t}^A + x_{j,t}^B = 1
\]

• Young have prior \(\mathcal{N}(\theta, (\tau_j^A)^2)\), observe \(y_{j,t}\) and update via Bayes rule

\[
\mathbb{E}_t^A[y_{j,t+1}] = \frac{\sigma^2}{(\tau_j^A)^2 + \sigma^2} \theta + \frac{(\tau_j^A)^2}{(\tau_j^A)^2 + \sigma^2} y_{j,t} = w_j^A \theta + (1 - w_j^A) y_{j,t}
\]

\[
\text{Var}_t^A[y_{j,t+1}] = (\tau_j^A)^2 \left( 1 - \frac{(\tau_j^A)^2}{(\tau_j^A)^2 + \sigma^2} \right) + \sigma^2 = (\sigma_j^A)^2
\]
PORTFOLIO HOLDINGS

Portfolio holdings in equilibrium (in country A) become

\[ x_{A,t}^A = \frac{\alpha_A(1 - R) + (1 + \beta_A)w_A^A \theta}{\gamma(1 + \beta_A)^2(\sigma_A^A)^2} + \frac{(1 + \beta_A)(1 - w_A^A) - R\beta_A}{\gamma(1 + \beta_A)^2(\sigma_A^A)^2} y_{A,t} \]

\[ x_{A,t}^B = \frac{\alpha_A(1 - R) + (1 + \beta_A)w_A^B \theta}{\gamma(1 + \beta_A)^2(\sigma_A^B)^2} + \frac{(1 + \beta_A)(1 - w_A^B) - R\beta_A}{\gamma(1 + \beta_A)^2(\sigma_A^B)^2} y_{A,t} \]

Assumption: domestic more precise priors than foreigners \((\tau_j^j < \tau_j^k)\). Then

- \( w_j^j > w_j^k \) (domestic place more weight on prior)
- \( \sigma_j^j < \sigma_j^k \) (domestic less uncertain about domestic fundamental)

Implications:

1. Home bias: On average \( x_{j,t}^j > x_{k,t}^j \)

2. Capital flows: After a positive income shock at home foreigners revise more their belief than domestic agents \( \rightarrow \) bid up the price \( \rightarrow \) portfolio share of foreigners increase
REMARKS

• Very nice insight!
  • Point on home bias present in earlier papers (Gehrig, 1993; Brennan and Cao, 1997; ...)
  • Point on cyclicality less understood in the literature, in my view main contribution

• What assumptions are needed to get there?
  • Two key assumptions: imperfect information and more precise priors for domestic agents
  • Why is EBL needed? Is it because, with infinite history of data, agents perfectly learn the fundamental? Sustain different priors in equilibrium?
  • Non-Bayesian elements (Eq. (5)-(6)) do not seem necessary

• Suggestions
  • Clarify this aspect in the paper
  • Start with two-period lived generations to deliver main point?
  • Is retrenchment really a prediction about $\partial x_{k,t}^i / \partial y_{j,t}$?
Suppose agents in country A live 3 periods and invest in their middle age.

*Today’s posterior is tomorrow’s prior* → With symmetric priors, we have

- \( w_A^A > w_B^A \) and \( \sigma_A^A < \sigma_A^B \) *(As if domestic better informed about country A)*
- \( w_B^A > w_B^B \) and \( \sigma_B^A < \sigma_B^B \) *(As if foreigners better informed about country B)*

Corollary 4.1: “If both countries have the same prior belief, after a recession in country \( H \), there is an outflow of domestic funds and an inflow of foreign funds if and only if country \( H \) has a larger fraction of young market participants”

Does it mean that Ecuador in recession should experience inflow of foreign capital and outflows of domestic capital?
Empirical analysis

- MPV look at model’s prediction for capital flows. Eg: in my example with asymmetric prior

\[ x_{A,t}^A - x_{B,t}^A = \alpha + \beta y_{A,t} + \gamma y_{F,t}, \]

with \( \beta < 0 \) and \( \gamma < 0 \).

- Can we think of a more direct test of the theory?
  - Eg: foreigners make systematic losses relative to domestic when purchasing domestic assets
  - What would be the ideal experiment you would run? Informative to explain even if you do not run it

- Some specific remarks
  - De-trend variables in home bias regressions?
  - Multicollinearity (five lags of very persistent variables)
Nice paper! Three main suggestions

- Clarify role of EBL vs. imperfect information
- Clarify whether heterogeneity in market participation with symmetric priors have counterfactual implications on capital flows
- What would be an ideal experiment to test the theory?