Asset Pricing of International Equity under Cross-Border Investment Frictions
By
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Objective

- Theoretically investigate the impact(s) of cross-country investment frictions – represented by holding costs – on international equity return dynamics

Motivation

- The asset pricing literature is interested in learning about salient features of international equity prices (comovement patterns; home biases; integration; etc.): Longin & Solnik (1995, 2001); Karolyi (2003); Dungey, Fry, Gonzalez-Hermosill & Martin (2005); Cappiello, Engle & Sheppard (2006); Bekaert, Hodrick & Zhang (2009); Christoffersen, Errunza, Jacobs & Langlois (2012); Xu (2018); among many others
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  - $\Rightarrow$ Most focus on using general or partial equilibrium models with partial integration (correlated SDF) and frictionless markets
  - $\Rightarrow$ A growing but small literature aims to explain the asset pricing implications of cross-border investment friction: Black (1974); Stulz (1981b); Stulz (1981a); Dumas (1992); Uppal (1993); and Bhamra, Coeurdacier & Guibaud (2014); This paper

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  - $\Rightarrow$ Financial technologies: each country has a tree (heterogeneous dividend claims); households live on financial income and labor income; financial income from foreign equity markets incur holding costs for doing so:
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- **Solving:** (1) HH choose consumption stream; (2) $\sum$ HH financial wealth $\rightarrow$ country wealth = domestic equity+foreign equity investment+domestic bond; (3) each country's equity market clears; (4) international bond market clears

Main findings

Empirical Facts & Model Predictions:

Fact 1: Higher foreign investor presence ⇔ Higher equity return comovement with the global market

1 Intuition: the valuation of country *i* asset is more procyclical w.r.t. global surplus, when the holding cost of a "global" investor in the country *i* asset is lower.

$$\widetilde{\rho}_R^{i0}(s_t) = \widetilde{\rho}^{i0} + \frac{1}{\sqrt{1-(\rho^{i0})^2}}\frac{\sigma^0}{\sigma^i}\nu(1-\lambda s_t)\mathcal{E}_{p^i}^S(s_t;c^i),$$

Fact 2: Smaller pricing errors (alpha) ⇔ Higher equity return comovement with the global market

2 Intuition: equity returns of integrated markets obey a conditional global CAPM after adjusting for holding costs

$$\pi^{ii}(s_t) = c^i + \lambda_{CARM}(s_t)\Sigma_R^{0\prime}(s_t)\Sigma_R^i(s_t),$$

Fact 3: Lower Home Bias (HB) ⇔ Higher equity return comovement with the global market

3 Intuition: degree of HB decreases when the holding cost of a "global" investor in the country *i* asset is lower

$$HB_t^i \equiv 1 - \frac{\sum_{n=0\neq i}^N \theta_t^{ni}}{\sum_{n=0}^N \theta_t^{ni}}$$

Comment #1: What I Like About the Paper

1. Economic question is important and relevant
2. The theory part of the paper involves flexible assumptions, and hence derives intuitive model predictions
3. The tractability and closed-form nature of the solution are appreciated

Comments:

#2 Motivation

#3 When Complexity Meets Interpretations

#4 Consistency b/w Theory & Empirics

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    - Fact 3: Given your formula of HB, Fact 3 can be implied given Fact 1
    - Fact 2: But I think you will need frictions to explain Fact 2

    Suggestion: Argue along this line (i.e., to jointly explain ...)

Comment #3: When Complexity Meets Interpretations

- The system is heavy and complex, involving at least 40 parameters and variables + Many heterogeneities (Slide 3) make it difficult to identify the economic impact (the paper advocates) without a numerical exercise:

Proposition 2 (Optimal Portfolio Choice in International Markets). *The vector of aggregate portfolio weights of country i is given by*

$$\theta_t^i = \frac{1}{\widetilde{\gamma}_t^i}\left(\Sigma_{Rt}'\Sigma_{Rt}\right)^{-1}\left[\pi_t - c^i + \lambda_t^i + (\widetilde{\gamma}_t^i - 1)\Sigma_{Rt}'\left(\Sigma^i + \widetilde{\Sigma}_{ft}^i\right)\right], \tag{27}$$

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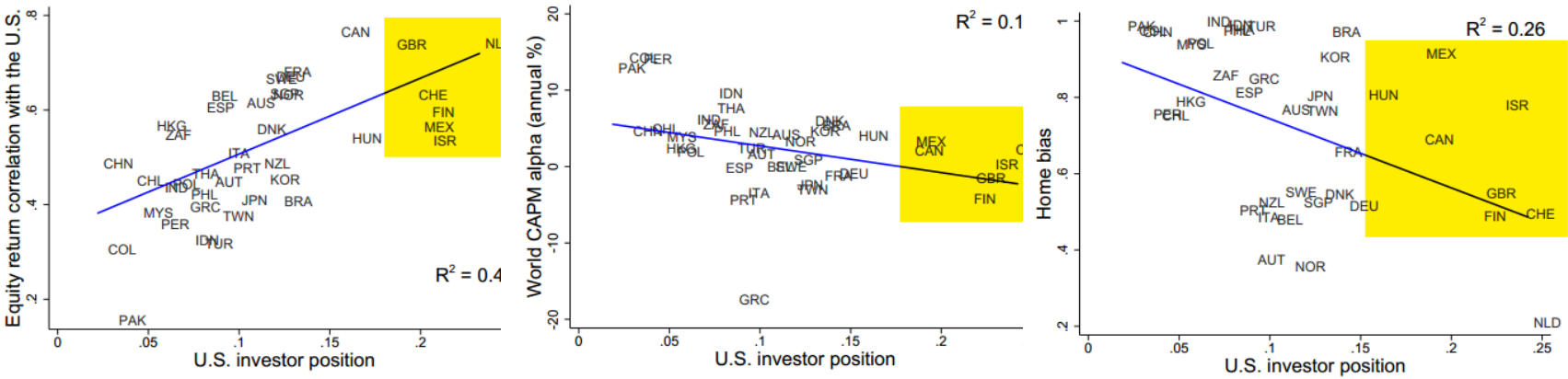
⇒ (b) The model solutions (Slide 3), the comovement, and empirical evidence (Comment #4 later) are about a world economy between country *i* and a "global" country / U.S. → Simplifying the cross-country investment channel among other countries will not change the key results (e.g., eq. 11)

Comment #4: Consistency b/w Theory & Empirics

- **4.1) The current country set to establish empirical facts (40 = DM + EM):**
  - ⇒ Empirically: Integration and openness behaviors are quite different in these two country groups — both will be related to "hosting costs" (the core object of interest)
  - ⇒ The current theoretical setup = essentially, U.S. versus the rest of the world; to be in line with the empirical evidence, there might need regional components to help distinguish between DM and EM
  - ⇒ This is a reasonable concern because the plots show DM/EM clustering (deleting one cluster might change the empirical benchmark):



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- **4.2) The theoretical model will generate quite flexible exchange rates, while the empirical evidence uses all USD-denominated excess returns:**
  - ⇒ This theory-empirics connection is fine in Xu (2018) because, in that model, the global pricing kernel prices all country assets where heterogeneity is coming from dividends
  - ⇒ More importantly, I wonder if some of the empirical facts are due to the USD assumption. E.g., exchange rates determine total dollar return volatilities drastically differently between DM and EM: higher U.S. investor presence in EM + higher relative importance of currency in EM → Fact 1
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- **4.3) The current definition of Home Bias is not precise:**

$$\text{Home Bias} = 1 - \frac{\text{Share of foreign equities in the country's portfolio}}{\text{Share of foreign equities in the world portfolio.}}$$

⇒ Suggestions: $\frac{\text{Domestic Investment}_{ii}}{\text{Total Share Holding}_i} - \frac{\text{Total Market Capitalization}_i}{\text{World MCAP}}$

Conclusion

- I highly recommend it!
- To make it more convincing:
  1. Motivate the core object of interest (a type of friction, hosting cost) with awareness of the some primary channels
  2. Tone down the complexity to help interpretations
  3. Improve the consistency b/w theory & empirical work (e.g., DM/EM, exchange rates, HB construction)

Thank You!

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