Discussion: Bilateral Lucas Paradox

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Intro

- Lucas paradox:

  Why doesn't capital flow from rich to poor countries?

- Original Lucas paradox: Uni-directional, net capital flows
- This paper looks into two-way, gross capital flows
  - Study both investor and recipient characteristics
  - Extensive and intensive margins
- A modern take on Lucas paradox
- Discussion: Idea of adding bilateral exchange rates to returns (Lane-Shambaugh (2010), Lustig-Verdelhan (2007))

Bilateral Lucas Paradox

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  - Low income $\rightarrow$ High income, mainly
  - Result 1: Better institution $\rightarrow$ more investment relationships
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- Commonalities (dist., language, religion) matter for both margins

Discussion on returns

- Measurement of returns is the key in this paper
- Underlying theory for gross returns on assets in country j

$$R_{j,t+1} = \frac{q_{j,t+1} + d_{j,t+1}}{q_{j,t}} \tag{1}$$

  where q_j is price of assets and d_j is dividends.

- However, once we consider exchange rates:

$$\tilde{R}_{i,j,t+1} = \frac{E_{i,j,t+1}(q_{j,t+1} + d_{j,t+1})}{E_{i,j,t}q_{j,t}} \tag{2}$$

  where $E_{i,j}$ is bilateral exchange rates of currency j on currency i.

Discussion on relative returns

- In the paper, $R_{j,t+1}$ is measured as returns on physical capital

$$R_{j,t+1} = MPK = \alpha_j Y_{j,t+1} / M_{j,t+1} \tag{3}$$

where $Y = AM^{\alpha} L^{\beta} N^{\gamma}$; M is physical capital

- Now, including bilateral exchange rates:

$$\tilde{r}_{i,j,t+1} = \underbrace{r_{j,t+1}}_{\text{MPK}} + \underbrace{(e_{i,j,t+1} - e_{i,j,t})}_{\text{Currency returns}} \tag{4}$$

- Then, returns on external assets for investor country i:

$$\tilde{r}_{i,t+1} = \underbrace{\sum_j w_{i,j,t} r_{j,t+1}}_{\text{MPK}} + \underbrace{\sum_j w_{i,j,t}(e_{i,j,t+1} - e_{i,j,t})}_{\text{Currency returns}} \tag{5}$$

where lower cases are log values.

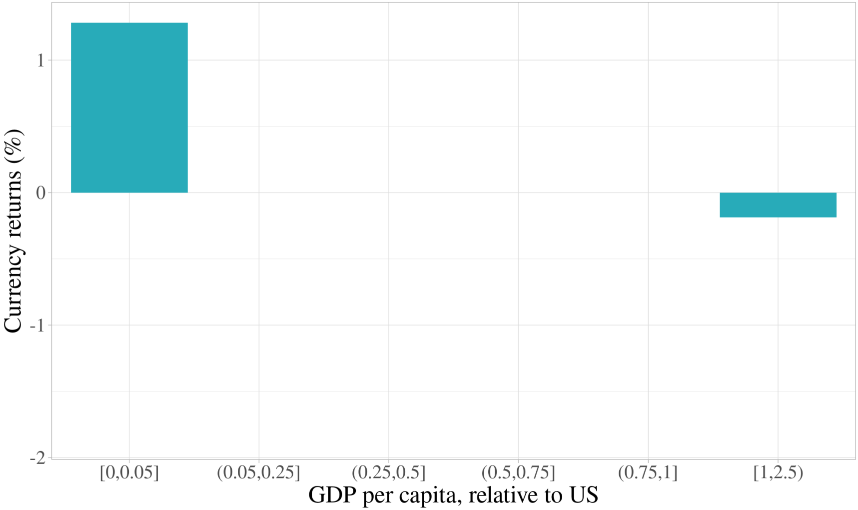
A brief look into currency returns

- Nominal exchange rates
- IMF Coordinated Direct Investment Survey, 2009-2018
  - Inward Direct Investment Positions → ptfl share $w_{i,j,t}$
  - Calculate currency returns on external assets

$$rx_{i,t+1} = \sum_j w_{i,j,t}(e_{i,j,t+1} - e_{i,j,t})$$

- Result 1: Cross section, period average of currency returns
  - Poorer countries have higher returns
- Result 2: Time series, selected countries
  - Currency returns could be sizable, for both poor and rich countries

Currency returns: cross section



Currency returns: cross section

Including currency returns, this prediction line could be flatter

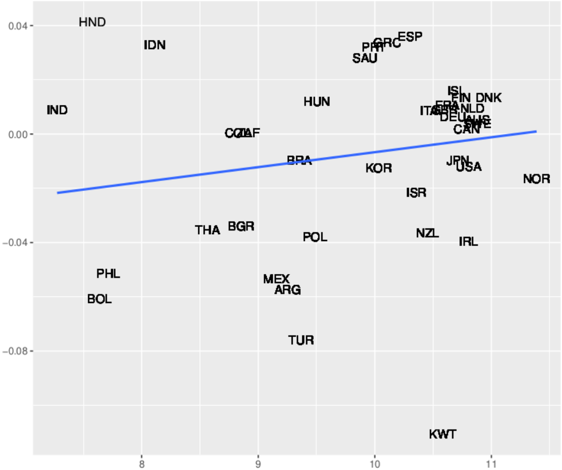
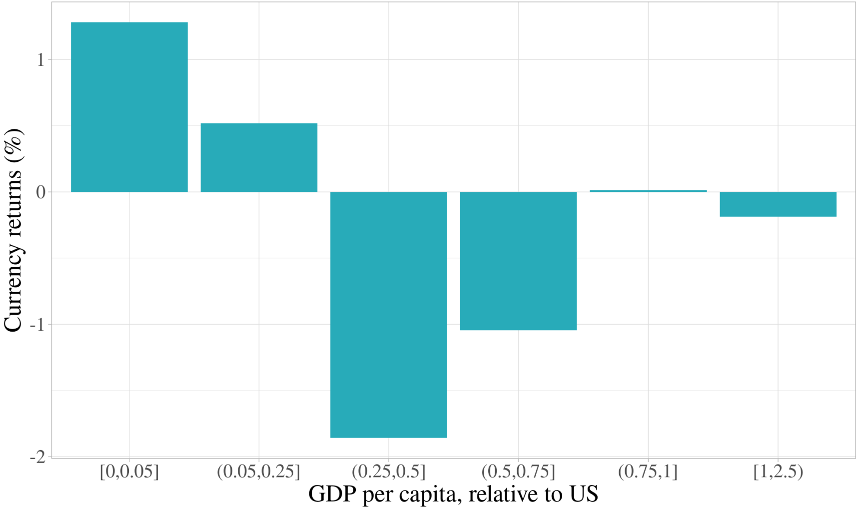


Figure: FDI relative returns against log GDP per capita

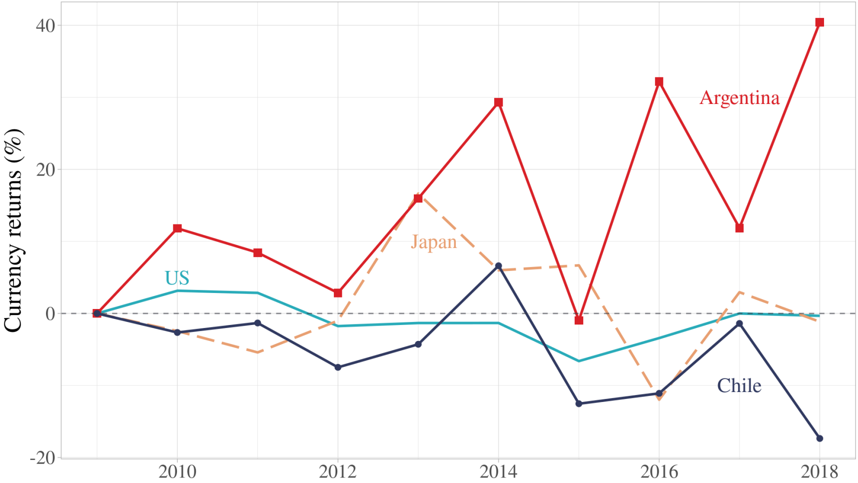
Currency returns: cross section

..and possible non-linear relationship in basket returns



Currency returns: time series

Sizable currency returns for developing and developed countries



Conclusion

- A good framework to add bilateral exchange rates
- Why weak relationship btw institution and intensive margin?
- Potential points to consider:
  - Divide countries into high/medium/low income countries
  - Take into account different riskiness of assets (debt vs. equity)
  - Private vs. public flows
  - Durable consumption goods for risk adjustment

    (EZ-DCAPM, Lustig-Verdelhan 2007)