Discussion of Lustig and Richmond's Gravity in FX R^2 Understanding the Factor Structure in Exchange Rates (MFA Meetings, March 2017)

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The Question

For USD as base (numeraire) currency, take the cross-sectional average of USD appreciation: The dollar factor

$$\text{base}_{\$,t} = \frac{1}{N-1} \sum_{j \neq \$}^{N-1} \Delta s_{j,\$,t}$$

- Currency $i's$ exposure to dollar factor (currency beta)

$$\Delta s_{i,\$,t} = a_{\$,i} + \beta_{i,\$} \text{base}_{\$,t} + \epsilon_{i,\$,t}$$

- Repeat for every base (numeraire) currency.
- All show cross-sectional variation.
- The question: How to make sense of this variation.

The Answer

$$\Delta s_{\$,i,t} = m_{\$,t} - m_{i,t}$$
$$= \gamma \left(\Delta \ln \left(c_{i,t} \right) - \Delta \ln \left(c_{\$,t} \right) \right)$$

- Shock to base is primarily a USD shock.
- Canada is 'just like' the US
- Kazakhstan is pretty different from the US

The Answer

Arbitrage International Trade

Trade is inversely related to trade costs

Measure trade costs by

- Physical distance between trade partners.
    - Do they share a border?
    - Suggestion: Is country land-locked?
- Ethno-linguistic distance
    - Language (same or different)
    - Culture, colonial heritage
- Less trade means bigger differences in consumption baskets and higher currency betas.

Praise

- Authors really know the data
- Found an interesting pattern that calls out for explanation
- Clever explanation
- Reintegration of IF with IT
- Nice idea. Do I wish I had written it? Yeah I do!

Critique

- $base_{\$,t}$ is (approx.) the 1st PC.
- Variations in $base_{\$,t}$ are from US shocks, not global shocks.
- The variation in exposure is sort of interesting, but the base (dollar) factor isn't that interesting in itself.
  - ▶ Take issue with title. Decomposing the first factor, but is this real understanding?
- Exchange rates known to have a 2-factor (possibly 3) structure. Can we make sense of second factor?
  - ▶ Verdelhan (JF): HML carry trade exchange rate appreciation.
  - ▶ Greenaway-McGrevy et al. (2016): Identified as a Euro factor. Geographical dimension.