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Financial Exchange Rates and International Currency Exposures

Discussion by

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Comments on "Financial Exchange Rates and International Currency Exposures" by Philip Lane and Jay C. Shambaugh

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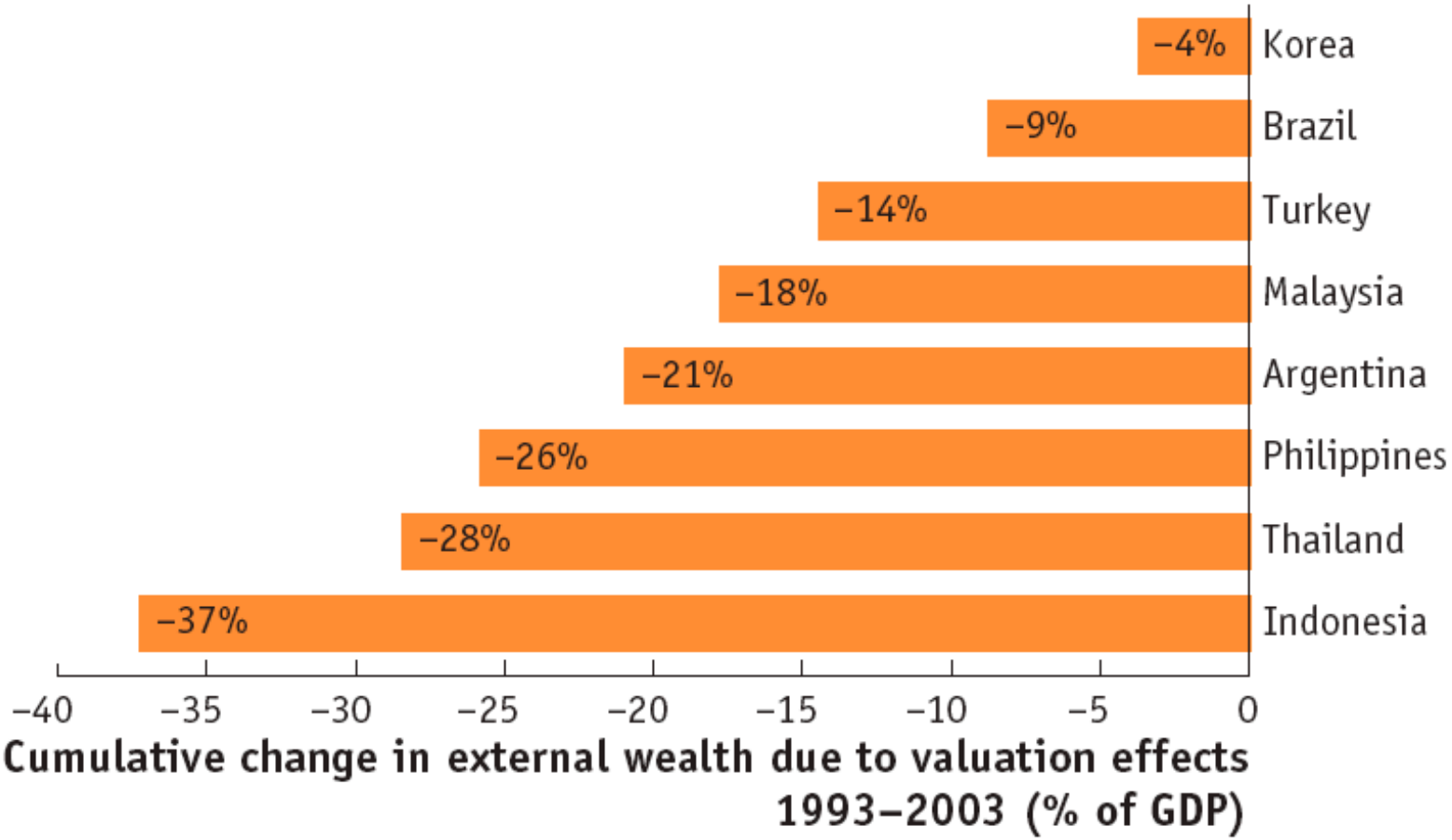
Outline

- Goal
  - Understand financial implications of currency movements
- New primary data
  - Need to construct a dataset of external/asset liability currency weights
- Empirical analysis (first cut)
  - What has happened?
  - How big are these effects?
  - Are they changing over time?

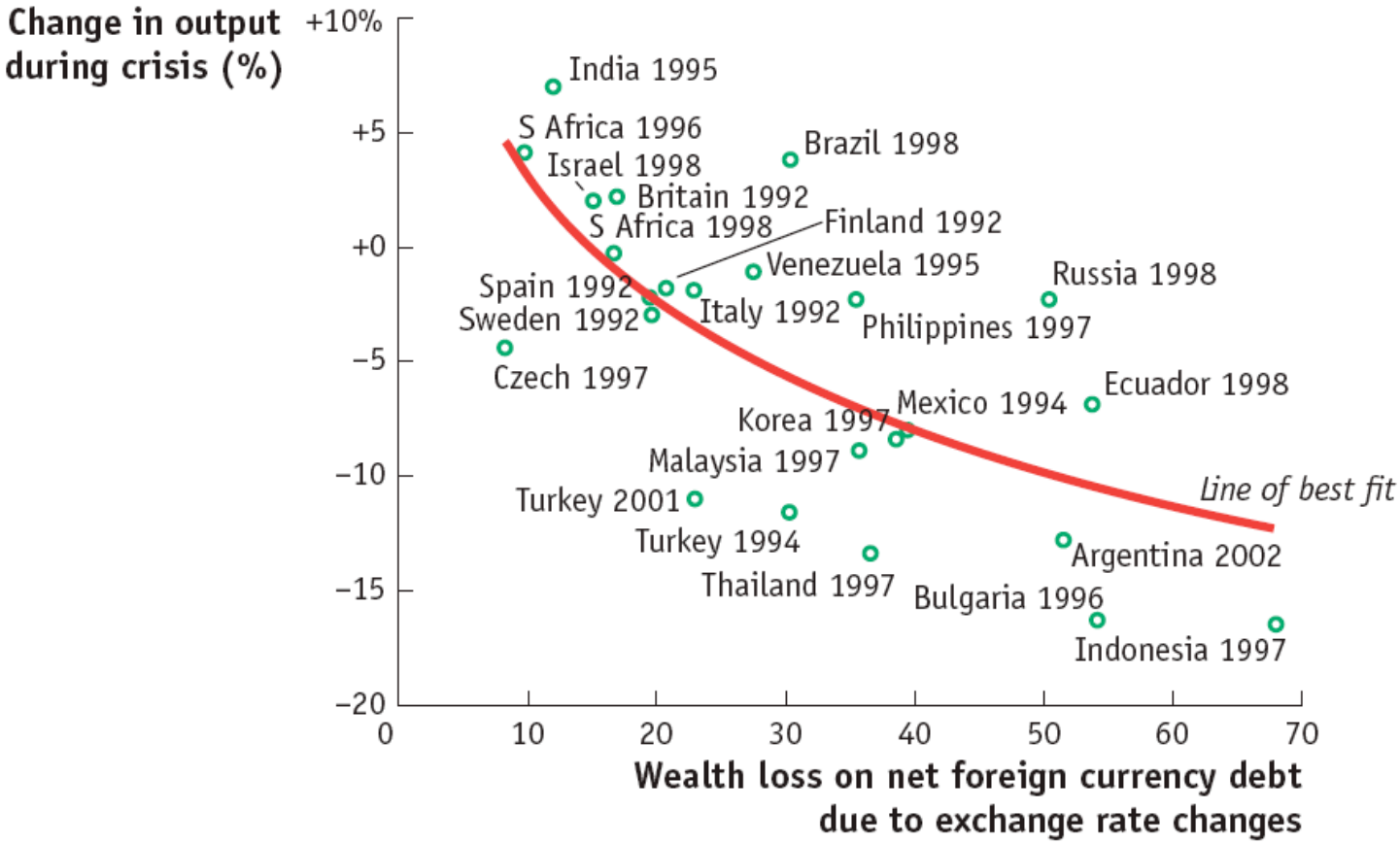
Why do we care?

- Valuation effects are big; dominated by exchange rate effects in most cases
- Large after emerging market crises



Why do we care?

- Negative wealth shocks can have real effects
  - E.g., if consumption or investment depend on wealth via net worth of households and firms (borrowing constraints, collateral constraints)



Notation

- Basic accounting for a single foreign currency i
  - Notation could be simpler? If $W = A_H - L_H + E(A_F - L_F)$
  - Change in W due to E = $\Delta E(A_F - L_F)$
- Normalize by GDP

$$\frac{\Delta W}{GDP} = \underbrace{\frac{\Delta E}{E}}_{\substack{\text{devaluation} \\ \text{vs currency i}}} \times \underbrace{\frac{E(A_F - L_F)}{GDP}}_{\text{net FX position in currency i}}$$

  - Repeat and aggregate over multiple currencies
  - Weight attached to currency i is $W_i = E(A_F - L_F)/GDP$

$$\frac{\Delta W}{GDP} = \sum W_i \frac{\Delta E_i}{E_i}$$

    - *Like trade weighted exchange rate (NEER), could compute recursively from benchmark year. But there is a problem: the weights here need not add to 1. Could = 0 [or <0].*

Notation

- Using the simple (unconstrained) W weights conflates two effects, so more notation used to break down the valuation effect

$$W_i = \frac{E_i(A_{Fi} - L_{Fi})}{GDP}$$

$$W_i = \underbrace{\frac{E_i(A_{Fi} - L_{Fi})}{E_i(A_{Fi} + L_{Fi})} \times \frac{E_i(A_{Fi} + L_{Fi})}{\sum_i E_i(A_{Fi} + L_{Fi})}}_{\text{Lane Shambaugh weight } w \text{ for each currency i (also broken down by asset class k, time t)}} \times \underbrace{\frac{\sum_i E_i(A_{Fi} + L_{Fi})}{GDP}}_{\substack{\text{Lane Shambaugh "IFI" concept} \\ = \\ \text{size of external balance sheet of home country at time t}}}$$

  - *Why is this helpful? Don't like unconstrained weights.*
  - *Extracts scaling factor. A+L has growing fast in last 10-20 years.*
  - *The w weights have to be between –1 and +1.*
  - *Use the above w to compute a "scale free" financial ex rate index*

Data

$$\frac{\Delta W}{GDP} = \sum W_i \frac{\Delta E_i}{E_i}$$

- Finding the exchange rates is easy
- Constructing the weights is very hard
  - Disaggregate by asset class, some guesswork (but not much)
  - Detective work needed to infer "secret" details on the composition of central banks' forex reserves
  - As with many papers, describing data takes up 10% or less of discussion, but probably took 90% of the time.
  - Very carefully done and a major contribution

Results

- Makes sense to check on correlation with trade weighted exchange rate index
  - Not much correlated with trade weighted exchange rates (as expected, Table 1)
- Although the asset and liability parts of this exchange rate are as volatile as a conventional NEERs, the net financial exchange rate is much less volatile (Table 2).
  - However, since A+L is growing, even if that measure stays constant, the real impact of such volatility has been growing over time.
  - And we are comparing apples and bananas anyway
  - The big story is that on average during a nasty shock [for an EM], these effects can be large (as we have seen)
    - Sudden stop wealth loss = -8% times (A+L)/GDP
    - Big change (deval>50%) wealth loss = -30% times (A+L)/GDP

Changes over Time

- Significant
  - Emerging/developing negative exposure to foreign currencies has fallen by 3/4 from 1994 to 2004
    - Median FXAGG (= sum of w_i) falls from –0.43 to –0.10
  - Median impact of a 1% devaluation has also fallen, but not as much for the same group of countries
    - Median NETFX (= FXAGG * IFI) falls from –0.36 to –0.13
  - Advanced countries maintained steady positive exposure but the scale has gone up dramatically
    - Median FXAGG (= sum of w_i) rises from +0.08 to +0.09
    - Median NETFX (= FXAGG * IFI) rises from +0.08 to +0.36
- Summing up (Tables 5 and 7)
  - Most countries have seen balance sheets grow
  - EM and Dev have reduced their -ve FX exposures
    - Adding up? EM/Dev small. And a lot of Advanced scaling up is "within"?

Why the Shift?

- Explaining what has happened
  - Table 8 only does a cross-section analysis for 2004
  - But why is 2004 so different from 1994?
    - Were either/both optimal?
    - GDP per capita "explains" a lot but is always unappealing on the right hand side
    - This is the only major hole
    - Perhaps not needed in this paper, as there is so much in there already, and is possibly a direction for future work

Big Impacts

- Explaining why it matters
  - Exchange rate drives everything (Table 9)
    - Pass through is ~1 to total valuation effect
    - Known exceptions (e.g. U.S. "other" valuation effects according to BEA, if you believe the data…)
  - Dev/EM get much bigger wealth hits (Table 10)
    - NETFX is smaller in these countries
    - But their exchange rate volatility is much higher
      - Mean of ABS(VALxr) is 5.3% of GDP for Dev, 3.8% for EM, versus 2.8% for Advanced
    - Small suggestion: switch away from absolute values
      - Show the distribution of signed levels.
      - Then we can see the skewness in it (currency crashes).
      - And/or in this table too provide summary stats for VALxr for sudden stops and big change (as per Table 2)

Summing Up

- Provides a significant advance in our understanding of exchange-rate driven valuation effects
  - Constructs the necessary data (not easy)
  - Shows that exchange rate is main valuation effect in most countries
    - Yet, although exposure is less in Ems/Devs they take bigger hits due to more volatile exchange rates
  - Shows how countries' exposures have changed
    - Provokes other questions:
    - Why have these changes occurred?
    - Was their learning after the 1990s crises?
    - What explains private versus official changes?
      - Has the accumulation of reserves been driven in part by some policy goal of reducing aggregate currency mismatch?
      - Or by other factors?