

# Real Integration and Asset Return Comovement

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## MAIN IDEA OF THIS PAPER

- ▶ Object of interest is

$$\text{corr}(\Delta V_{i,t}, \Delta V_{j,t})$$

where  $V_{c,t}$  is the stock market value of country  $c$ , at time  $t$   
( $\Delta$  transforms to return)

## MAIN IDEA OF THIS PAPER

- ▶ Trade integration (global value chains) should affect  $\text{corr}(\Delta V_{i,t}, \Delta V_{j,t})$
- ▶ Literature has shown  $\left[\frac{X+IM}{Y}\right]_{i,j,t} \not\Rightarrow \text{corr}(\Delta V_{i,t}, \Delta V_{j,t})$
- ▶ Do better than literature:
  - ▶ Compile data on input-output linkages between countries & sectors
  - ▶ Gives rich information on **final and intermediate input use** at  $\{i, j, s, t\}$ -level
  - ▶ Measure bilateral trade intensity  $TI_{i,j,t}$
  - ▶ Show that  $TI_{i,j,t} \Rightarrow \text{corr}(\Delta V_{i,t}, \Delta V_{j,t})$  using panel regressions

## HIGHLIGHTS OF THIS PAPER

- ▶ Significant data effort based on chaining multiple sources:
  - ▶ Cover 30 sectors, 41 countries (advanced and emerging economies), 1980-2017
- ▶ Construction of trade intensity measures guided by theory:
  - ▶ Equilibrium multi-country model with trade in intermediate and final goods
  - ▶ Profit comovement is function of intensity in both: construct “ITI” & “FTI”
- ▶ Headline finding:

$$IT I_{i,j,t} \uparrow (1 \text{ s.d.}) \Rightarrow \text{corr}(\Delta V_{i,t}, \Delta V_{j,t}) \uparrow (1/4 \text{ s.d.})$$

# PLAN FOR THIS DISCUSSION

## 1. One major suggestion

- ▶ Cash flows vs. discount rates
- ▶ Sharpen the regression specifications

## 2. Various additional thoughts

- ▶ Firm coverage of stock market indices vs. IO data
- ▶ Exploit country-sector variation in regressions?
- ▶ The role of the exchange rate

## CASH FLOWS VS. DISCOUNT RATES

- ▶ Object of interest in this paper is

$$\text{corr}(\Delta V_{i,t}, \Delta V_{j,t})$$

where

$$V_{i,t} = \mathbb{E}_t \sum_{\tau=0}^{\infty} \Lambda_{i,t+\tau} d_{i,t+\tau} \quad \text{and} \quad V_{j,t} = \mathbb{E}_t \sum_{\tau=0}^{\infty} \Lambda_{j,t+\tau} d_{j,t+\tau}$$

- ▶  $V_{c,t}$ : stock market value in country  $c$ , time  $t$  ( $\Delta$  transforms to return)
- ▶  $\Lambda_{c,t+\tau}$ : stochastic discount factor applied to stock market in country  $c$ , time  $t$
- ▶  $d_{c,t+\tau}$ : value-weighted cash flows (dividends) of companies in country  $c$ , time  $t$

## CASH FLOWS VS. DISCOUNT RATES

- ▶ Model provides a mapping from ITI and FTI into  $corr(d_{i,t+\tau}, d_{j,t+\tau})$
- ▶ But how do we think about effects of ITI and FTI on  $corr(\Lambda_{i,t+\tau}, \Lambda_{j,t+\tau})$ ?
  - ▶ The paper acknowledges that trade integration affects return comovement via both cash flows and discount rates but it remains more of a side note
- ▶ Also important: stuff affecting  $corr(d_{i,t+\tau}, d_{j,t+\tau})$  that is absent from the model
  - ▶ In particular, want to distinguish trade integration from financial liberalization

## CASH FLOWS VS. DISCOUNT RATES

- ▶ “Real integration”
  - ▶ Drives  $\text{corr}(d_{i,t+\tau}, d_{j,t+\tau})$  through direct trade relations (see model) **[A]**
  - ▶ Drives  $\text{corr}(\Lambda_{i,t+\tau}, \Lambda_{j,t+\tau})$  through macro synchronization **[B]**
- ▶ “Financial integration”
  - ▶ Drives  $\text{corr}(d_{i,t+\tau}, d_{j,t+\tau})$  through company level financial links **[C]**
  - ▶ Drives  $\text{corr}(\Lambda_{i,t+\tau}, \Lambda_{j,t+\tau})$  through global investor discount rates **[D]**

(Narrower definitions of “financial integration” may refer to only **[D]**)



## CASH FLOWS VS. DISCOUNT RATES

- ▶ Can formulate the precise goals of the paper as
  - ▶ **Goal 1:** Quantify contribution of real integration → **[A,B]** controlling for **[C,D]**
  - ▶ **Goal 2:** Disentangle channels → **[A]** controlling for **[B,C,D]**
- ▶ I think the paper would benefit from sharpening the specification choices with explicit reference to **goals 1 & 2** and channels **[A,B,C,D]**
  - ▶ Which controls (fixed effects) take care of exactly which channel?
- ▶ This suggestion refers to the exposition and interpretation of the current results but also warrants adding additional/different specifications

## SHARPER REGRESSION SPECIFICATIONS

- ▶ **Goal 1:** Quantify contribution of real integration → **[A,B]** controlling for **[C,D]**
  - ▶ ITI and FTI are measures of **[A,B]**
  - ▶ Beware: throwing in certain country level controls may absorb some of the discount rate effect through which ITI and FTI operate, i.e. **[B]** (“bad controls”)
  - ▶ For **goal 1**, do not want to control for macro synchronization coming from trade integration, but only for **[C,D]**
  - ▶ **[C]** may be captured through ITI and FTI if input-output data includes financial services (this was not clear to me from the draft)
  - ▶ To control for **[D]**, include financial integration directly, or something that captures “global discount rates”: global real rate measure, US real consumption growth?

## SHARPER REGRESSION SPECIFICATIONS

- ▶ **Goal 2:** Study mechanism → **[A]** controlling for **[B,C,D]**
  - ▶ Maintain best specification for **goal 1** and additionally control for **[B]**
  - ▶ Here the model comes in useful: tells us control for “everything” other than direct effect of **ITI** and **FTI**
  - ▶ Tightest specification may have country-pair FE, time FE and appropriate time-varying country-level controls

## IN A NUTSHELL

- ▶ When moving from 'lighter' to 'heavier' specifications, I recommend
  - ▶ Drawing a clearer distinction between **goal 1** and **goal 2**
  - ▶ Justifying choices of controls (fixed effects) using “[A,B,C,D]” distinction
- ▶ Including variation in discount rates and financial integration in the theoretical model would be an additional option (but could be difficult)

## OTHER THOUGHTS ON THE PAPER

- ▶ Overlap between listed companies and companies underlying input-output data?
  - ▶ Systematic differences in overlap between different countries?
  - ▶ Results stronger for countries with stronger overlap?
- ▶ Any possibility to bring in country-sector-level variation in returns?
  - ▶ In principle, could exploit  $\{i, j, s, t\}$ -variation on left-hand-side
  - ▶ Maybe this is possible for a subset of the data, for example within one country-pair
- ▶ Role of exchange rates?
  - ▶ Bilateral: how do we think about relative price levels across two countries?
  - ▶ USD: what about the special role of the dollar in trade?

## FINAL REMARKS

- ▶ Really cool paper, I learned a lot!
- ▶ I hope my comments are helpful to further discipline the analysis and provide some general food for thought