The Downstream Channel of Financial Constraints and the Amplification of Aggregate Downturns

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This paper: new channel for amplification of downturns

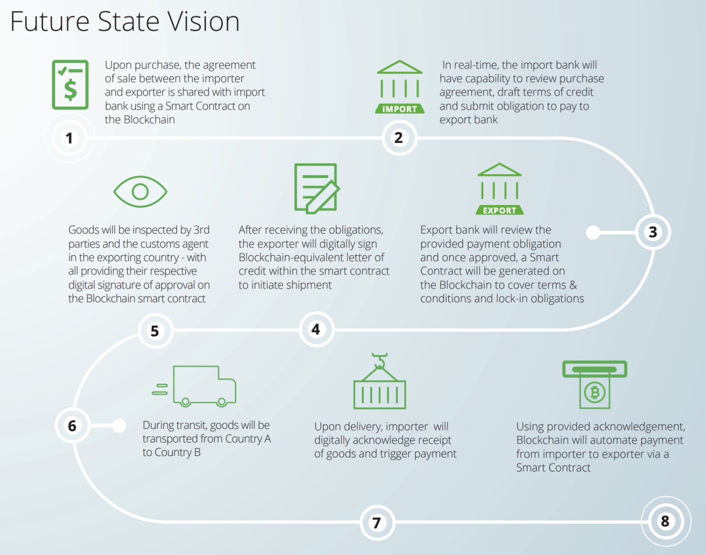
Punchline: financial constraints (FC) of suppliers pass through to downstream firms

- Quantitatively important: 9.5–16.7% of amplification of downturn abnormal returns
- Accounts for $\approx$ 60% of amplification in sales growth decline during downturns

- Stacking analyses from three papers:
  - Almeida et al. (2012) $\longrightarrow$ debt maturity around crisis period matters for output loss
  - Carvalho (2015) $\longrightarrow$ how FC propagate within competition network
  - Barrot & Sauvagnat (2016) $\longrightarrow$ how shocks propagate within production network
- Implementation: interact suppliers' debt maturity FC measure with industry downturn dummies in DD and DDD specifications

Emphasis on trade credit

- Very well-written paper and clearly outlines contribution relative to existing work
- Important to document this amplification channel given...
  - (i) Pervasiveness of trade credit, particularly for small firms (e.g. Petersen & Rajan 1997; Klapper, Laeven, Rajan 2012)
  - (ii) Timely given discussion on how blockchain might improve trade finance system
- My comments are more about **big picture** takeaways...
  1. Economic content of the financial constraint measure
  2. Is there boom-bust asymmetry?
  3. Pinning down the real effects



- Recent Deloitte and IBM reports on blockchain in trade finance
- Trade finance market was $10 trillion in 2015
- Main argument: speed improvements of traditional invoicing and eliminating correspondent banks
- This paper offers a potential macroprudential argument in favor of replacing the existing system

Source: `https://www2.deloitte.com/content/dam/Deloitte/global/Documents/grid/trade-finance-placemat.pdf`

Comment #1: economic content of the FC

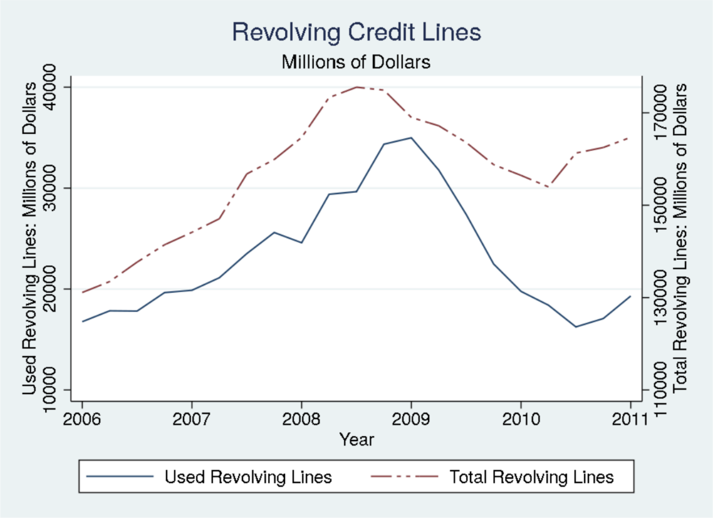
- Main measure at firm level: fraction of long-term debt maturing within next year
  - Experiment with different ways of aggregating this up to supplier network or industry level

- Compustat accounting definition:

$$\frac{dd1}{dd1 + dltt}$$

- Idea: higher fraction $\implies$ firms will have less cash cushion at onset of downturn
- **Do revolving lines of credit get classified as long-term debt (could be)?**
- Need to go to SEC filings to get credit facilities (Berrospide & Meisenzahl 2021)

Credit line utilization increases around downturns



Source: Berrospide & Meisenzahl (2021), *International Journal of Central Banking*

Comment #1: economic content of the FC

- **Question:** what happens if we use the more standard above/below median size-age index of Hadlock & Pierce (2010) or distance to default?
- If I create the Almeida et al. (2012) measure in Japanese Compustat, it is -20% correlated with the size-age index measure (-15% if I use median split dummies)
- Why? The measure is capturing access to short-term revolving credit lines
  - Could the same be true for large U.S. firms?
  - We know larger firms rely on relationship banking
  - Checking the loadings on the financial variables $\times$ time FEs could be informative about lending environment (e.g. stock vs. flow collateral)

Comment #2: Boom-bust asymmetry?

- Focus is entirely on downturns in this paper
  - Definition: negative median stock returns and median revenue growth
  - Split also by severity bins $\longrightarrow$ monotonic effects
- Other definitions of downturns based on other real outcomes (e.g. employment)?
  - Heterogeneous effects by the nature of the downturn?
- **Also, what about upswings?**
  - Production-based asset pricing (Cochrane 1991): liquidity less valuable during good times $\Longrightarrow$ more muted positive effects of these I-O links
  - Event study version of baseline specification to show persistence
  - Potentially feedback loop of doom type effects à la Kiyotaki-Moore

Comment #3: what are the real effects?

- Show supplier FC matters for $\Delta(sales_{t+1}/assets_t)$
- Why doesn't this show up in CAPX?
  - Measurement issues? How to deal with missing values?
  - **What about employment?**
- Recent work on production/competition networks in macro-finance tries to separate out price and quantity responses
  - FC suppliers $\times$ downturn $\implies$ pass through costs to consumers to offset production loss
  - Nielsen-CRSP-Compustat merges (e.g. Clara, Corhay, Kung 2021)
  - Authors hint at doing this in the last line of the paper
  - GE effects needed for thinking about aggregate $\rightarrow$ consumer spending

Overall assessment

- Natural empirical extension of growing literature on how macro shocks propagate through production/competition networks
- Results highlight importance of trade credit as a source of macro instability
  - Potential to inform current discussions on how blockchain might revolutionize trade finance
- **Can push the envelope a bit further to elevate the contribution**
  - Look at other real outcomes, separate prices from quantities
  - Merge in credit line data from SEC filings to rule out competing interpretation
  - Might result in multiple papers!

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THANKS!