Corporate Debt, Boom-Bust Cycles, and Financial Crises

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Discussion by

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This paper: Firm debts are key to financial crises

- Questions: Are corporate debt important throughout financial crises? Which sector credits are most closely linked to boom-bust cycles?
- Existing studies suggest limited role of firm debt in Great Recession (Jordá et al., 2022; Mian et al., 2017)
- What's new? (Sectoral) credit exposures across 115 economies (1940–2014) collateral data for selected economies
- Firm debt growth and its dispersion significantly predict financial crisis and its recovery

- Very interesting paper! Comprehensive firm debt data that provide crucial policy implications for credit regulation

Methodology & Results: Predicting Financial crises

- Event study: credit-to-GDP throughout crises by (i) borrower type (household, firm) (ii) borrower sector (six sectors + nonbank-financial) (iii) economy (Adv vs. EMs)
- Predictive regressions in sector j country i:

$$P(Crisis)_{i,t+h} = \alpha_i^h + \sum_{j \in J} \beta_j^h \Delta_3 \left(Credit_i^j / GDP_{i,t} \right) + \epsilon_{i,t}^h$$

  by (i) borrower type (ii) borrower sector (iii) economy (iv) collateral (real estate/others)

- Firm debt is more predictive in real estate or retail sectors, in advanced economies, in sectors with high reliance on real estate collateral, at shorter horizon (< 3 years)

Methodology & Results: Distributional effect of credit

- Stylized facts: sectoral dispersion of firm credit growth is
  - higher in advanced economies
  - increasing during credit booms and crunches (v-shaped)
- Predictive regressions on variations of credit growth across sectors in country i:

$$P(Crisis)_{i,t+h} = \alpha_i^h + \beta^h SD_j \left(\Delta_3 \left(Credit_i^j / GDP_{i,t} \right) \right) + \epsilon_{i,t}^h$$

- SD of firm credit growth predicts financial crises, holds in subsample analyses

Methodology & Results: Dynamics of financial crises

- Local projection interacts with crisis dummy

$$\Delta_h y_{i,t+h} = \alpha_i^h + \delta^h Crisis_{i,t} + \sum_{j \in J} \beta_j^h \Delta_3 \left(\frac{Credit_i^j}{GDP_{i,t}} \right) + \sum_{j \in J} \Gamma_j^h \Delta_3 \left(\frac{Credit_i^j}{GDP_{i,t}} \right) \times Crises_{i,t} + X'_{i,t} + \epsilon_{i,t}^h$$

  by (i) borrower type (ii) borrower sector (iii) economy (iv) collateral

- Dependent variable $y_{i,t+h}$ is output, consumption, or investment
- Firm credit slows down recovery, particularly for non-financial corporations, firms backed by real estate collateral, and both in advanced and emerging economies
- Firm credit predicts prolonged slump in investment
- No significant contraction in post-crises consumption, but lower if crises preceded by boom in household debt
- Corporate defaults increased more significantly than household defaults in crises

Comment 1: Lender dispersion of firm/household credit

- Sizable firm loans are typically financed by multiple lenders, whereas individual household debts are financed by a single lender
- Opposing effects of lender dispersion on credit values observed throughout crises:
  - Dispersion leads to more foreclosure and lower collateral price because of less pecuniary externality internalized by lenders (Favara and Giannetti, 2017)
  - Dispersion makes firms hard to rollover loans, increasing repayment incentives (Zhong, 2022)
  - Dispersion leads to coordination problem/inefficient liquidation (Becker & Ivashina, 2021)
- Underlying lender structure of firm and household credits may explain why GFC is different

Comment 1: Accounting for lender dispersion

- Require data on individual lender to borrowers at the sectoral level. Potential sources for constructing sectoral lender dispersion: Call reports with sectoral information (RC-C)
- Construct lender dispersion among lender l in country i sector j (e.g., HHI, ENI):

$$Con_{i,j,t} = \sum_{l \in L} \left(\frac{Credit_{j,l}^{i,t}}{\sum_{l \in L} Credit_{j,l}^{i,t}} \right)^2$$

- Does lender dispersion change "across sectors" throughout financial crises?
- Add interaction terms regarding lender dispersion at sectoral level

$$P(Crisis)_{i,t+h} = \alpha_i^h + \sum_{j \in J} \beta_j^h \Delta_3 \left(\frac{Credit_i^j}{GDP_{i,t}} \right) + \sum_{j \in J} \gamma_j^h \Delta_3 \left(\frac{Credit_i^j}{GDP_{i,t}} \right) \times Con_{i,j,t} + \epsilon_{i,t}^h$$

Comment 2: Role of housing market

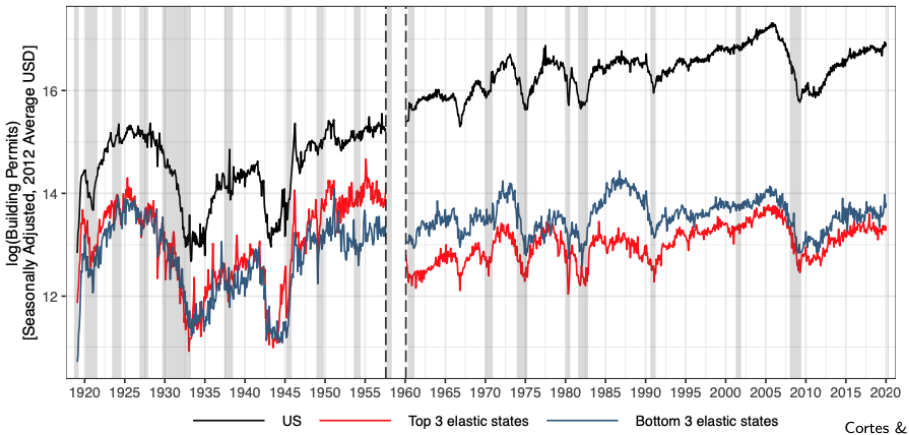
The authors emphasize that real estate is associated with crises in two ways:

- Credit collateralized by real estate predicts crises
  - Kiyotaki–Moore type collateral amplification
  - Financial accelerator (balance sheet effect) on credit-constrained firms (BGG, 1996; 1999)
- Credit to real estate predicts crises
  - Housing market is "single most critical part" of business cycle (Leamer, 2008; 2015)
  - Overbuilding risk of construction sector predicts future crises (Cortes & LaPoint, 2025)

Crises can be triggered by housing market directly through housing supply or indirectly through price on real estate collateral. Which one is more important?

Comment 2: Role of housing market

FIGURE 1. Total Real Value of U.S. Monthly Building Permits Issued, 1919–2019



Cortes & LaPoint (2025)

- Overbuilding risk driven by increasing supply predicts financial downturns

Comment 2: Identifying housing supply effect

- First step: Exclude credit to real estate sector and credit collateralized on real estate and redo the analysis of firm credit
- Alternatively, identify housing supply effect using exogenous variations:
  - Cross-country building permits (OECD database)
  - Regulatory measurements that proxy cost affecting housing supply (Bartik et al., 2024)
  - Residential Land Use Regulatory Index (Gyourko et al., 2008; 2021)
- As in Jorda et al. (2022), interact given type of credit growth with housing supply shock ($H_{i,t}$) in local projection

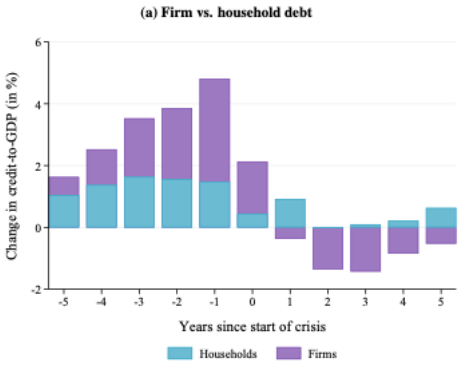
$$\Delta_h y_{i,t+h} = \alpha_i^h + \delta^h Crisis_{i,t} + \eta_{CRE}^h \Delta_3 \left(\frac{Credit_i^{CRE}}{GDP_{i,t}} \right) \times Crises_{i,t} \times H_{i,t} + \sum_{j \in J} \beta_j^h \Delta_3 \left(\frac{Credit_i^j}{GDP_{i,t}} \right)$$

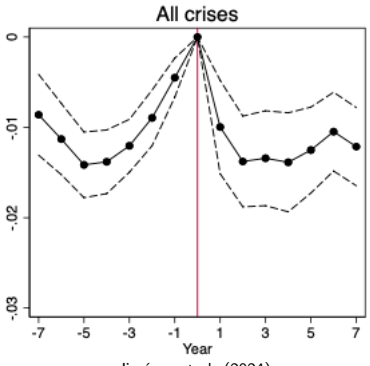
$$+ \sum_{j \in J} \Gamma_j^h \Delta_3 \left(\frac{Credit_i^j}{GDP_{i,t}} \right) \times Crises_{i,t} + X'_{i,t} + \epsilon_{i,t}^h$$

Comment 3: Volume cycles vs. price cycles

- Supply-driven credit boom calls for prudential policy on banks, whereas demand-driven credit boom needs credit regulations on household/firm
- Fluctuation in credit spread helps distinguish between demand and supply shift
- Literature has emphasize predictability of credit spread (e.g., Krishnamurthy & Muir, 2025; Borio & Drehmann, 2009; Borio & Lowe, 2002)
- Crises driven by constrained lenders feature decrease in ex-ante spread and hike in lending spread in crises, yet rate is flat when driven by constrained household (Rockoff, 2021)
- Useful to incorporate cross-country corporate spread data (Krishnamurthy & Muir, 2025; Gilchrist and Mojon, 2018) and household mortgage rates (ECB, OECD data)
- Separate out growth of quantity and price for both firm and household credit (Not causal)
- If crises are predicted by increase in both quantity and prices of household credit, but only by increase in quantity of firm credit, then regulation would be on household but not firms

Comment 4: Credit substitution throughout crises

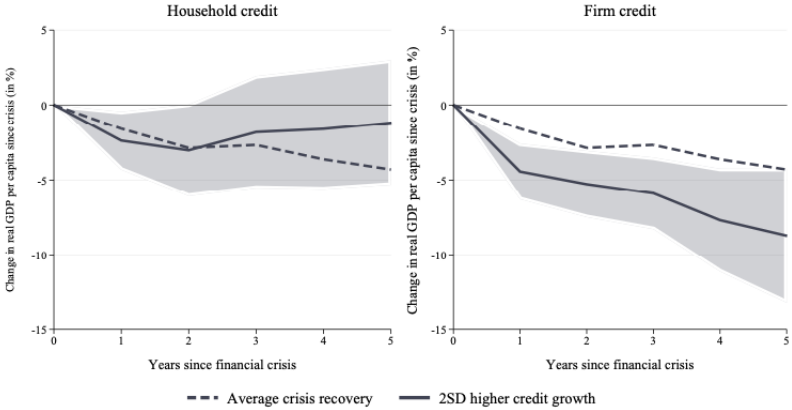




Jiménez et al. (2024)

- Household debt coincides with U-shape credit supply shock via monetary policy rate
- Household debt shifts toward corporate debt in the lead-up to financial crises
- Sectoral macroprudential policies or legal regulations as instruments (Cerutti et al., 2017)
- Useful to check predictability of percentage of firm credit to total credit

Comment 5: No recovery in output



- Ex-ante credit boom predicts negative future growth in crises period up to year 5
- Crises duration 3-10 years, depending on crisis type (shorter for banking crises, longer for sovereign debt crises)

Other comments

- Are nonbank lending observable in data? Do they replace bank lending throughout crises? and for what types of loans?
- Why does dispersed credit growth predict crises? Is it due to credit misallocation?
  - Useful to merge productivity measures (in addition to data used in Müller & Verner (2023))
    - Global Productivity (World bank)
    - Inklaar et al. (2024): Sectoral productivity in country panel (e.g., agriculture, manufacturing, construction, and real estate)
    - Herrendorf et al. (2023): Productivity in agriculture and manufacturing 1990–2018 for 64 countries

Thank you!