

# Discussion of: Collateral booms and information depletion

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\*These are my personal views and not those of the Federal Reserve System.

# Objective of the paper

- Provide an information based explanation for boom bust cycles.
  - Proposes a theory of costly information acquisition.
  - Assesses the implications of this theory using firm-level and regional data from before and after the U.S. Great Recession (years 2001–2012).
  - Sample is listed firms from Compustat.

- Two types of capital (high:  $\mu$ , low:  $1 - \mu$ ). Entrepreneurs can abscond with type low. Screening capital is costly and is done by entrepreneurs.
- Entrepreneurs face a collateral constraint: land and good capital can be pledged.
- **Boom** When the value of collateral rises, constrained entrepreneurs allocate fewer resources to screening new capital. The share of unscreened capital and thus low quality capital in total capital increases.
- **Bust** The value of the collateral falls, collateral constraint tightens. Value of good capital is suddenly higher relative to unscreened capital. Stock of unscreened capital plummets but stock of screened capital only gradually increases due to curvature in screening costs.

# Testable implications

- 1 Investment should increase when the value of collateral (real estate) increases.
- 2 **Boom** Investment share of unscreened capital should increase when value of real estate increases.
- 3 **Bust** Investment falls. The magnitude of the decline in investment is larger if the share of unscreened capital in total capital is high.

## Empirical strategy

- Identify a set of firms who are less intensely screened.
- Compare the pattern of their investment to investment of firms that are screened more intensely.

# Comments: Theory

- What is low quality capital?
- The fraction of capital that entrepreneurs can abscond with.
- In the model entrepreneurs make screening decision.
- In equilibrium entrepreneurs only hold good capital:  $K^H$  and unscreened capital  $K^u$ . Holding bad capital  $K^L$  is dominated in rate of return.
- These assumptions make the analysis tractable.
- However, in the model an entrepreneur doesn't know which of his (unscreened) capital he abscond with!

# Moral Hazard

- A central tenant of corporate governance is that managers have private information and that their incentives are not necessarily aligned with those of outsiders.
- In the real world extensive screening is imposed on managers by external parties with the intent of mitigating moral hazard.
- Are moral hazard problems are more severe during booms? It this why busts can be severe?
- This paper only captures this idea in a mechanical way. The fraction of bad capital held by firms is increasing in booms but there is no moral hazard in the model.

# What produces the boom?

- Paper emphasizes the role of a rational bubble in the value of the collateral asset (Lucas trees or real estate).
- Previous research by Martin and Ventura (2018) assumes instead that the bubble is additive in the entire value of the firm.
- Value of the firm includes  $k^L$  (in the model) and organizational capital (in the data).
- Can the model distinguish between real estate specific rational bubbles and bubbles in the value of the firm?

# Using data to assess the theory

- The model is a macro model of boom and bust cycles.
  - Constant returns to scale. Representative entrepreneur.
  - All entrepreneurs have the same incentives during booms and busts.
  - No substantive cross-sectional heterogeneity.
- Yet, thrust of the empirical work is cross-sectional.
- Why not focus on documenting the quantitative properties of the current model using aggregate data?
  - Can this model reproduce the year-to-year movements in aggregate investment and output between 2002–2008?
  - Can this model reproduce the depth and persistence of the declines in output and investment between 2009-2012?
  - Can this model get investment share of unscreened investment and aggregate investment to rise significantly and then to collapse?



# Comments on empirical work: Dataset

- This paper uses data from Compustat: large listed American companies. Not really entrepreneurs.
- Big difference in screening intensity between private and public firms and private firms produce a substantial fraction of output on U.S. and other countries.
- Hard to get data on private companies in the U.S. (Dun and Bradstreet is one source).
- Banco de España has a great data set with extensive coverage of private firms.
- This dataset would also allow the authors to focus on *entrepreneurs* as compared to *managers*.
- Small, young, rapidly growing firms are more likely to face binding collateral constraints.
- Real estate is likely a more important source of capital for them.

# Concluding remarks

- This paper is well worth a careful read.
- Creative and parsimonious theory of a novel channel of boom-bust cycles.
- I see big benefits from documenting the quantitative implications of this theory of information for properties of aggregate time-series during boom-bust cycles.