discussion of

A debt-financed real estate boom with an endogenous credit crunch

by Juhana Siljander

Luca Gemmi
Boston College

Young Economist Symposium 2021

Summary of the model

- Brunnermeier and Sannikov (2014) + Real estate market

- **Brunnermeier and Sannikov (2014)** + Real estate market
  1. Collateral borrowing constraint → financial accelerator

$$-b = (1-\phi)q_k k$$

   - Constr tightens → $\downarrow q_k k$ → constr tightens → $\downarrow q_k k$ ...

     Kyotaki and Moore (1997), BGG (1999), Gertler and Karadi (2011)

- **Brunnermeier and Sannikov (2014)** + Real estate market
    1. Collateral borrowing constraint → financial accelerator
    2. Non-lin solution & occasionally binding constr → endogenous risk

$$-b \leq (1-\phi) q_k k$$

- Constraint binding only far from steady state

Mendoza (2010), Jeanne and Korinek (2010), Chahrour and Akinci (2018), Krishnamurthy and Lee (2021)

- **Brunnermeier and Sannikov (2014)** + Real estate market
  1. Collateral borrowing constraint → financial accelerator
  2. Non-lin solution & occasionally binding constr → endogenous risk
  3. Skilled and unskilled agents → asset misallocation
     - Skilled agents deleverage → sells k to unskilled → average productivity lower

- **Brunnermeier and Sannikov (2014)** + Real estate market
  1. Collateral borrowing constraint → financial accelerator
  2. Non-lin solution & occasionally binding constr → endogenous risk
  3. Skilled and unskilled agents → asset misallocation

⇒ Model of boom & bust

- Brunnermeier and Sannikov (2014) + **Real estate market**
  - Housing: asset h with price q_h and "dividend" r_h
  - No arbitrage condition for *unskilled*: return on k = return on h

$$\frac{q_k}{\underline{a}} = \frac{q_h}{r_h}$$

- Brunnermeier and Sannikov (2014) + **Real estate market**
  - Housing: asset h with price q_h and "dividend" r_h
  - No arbitrage condition for *unskilled*: return on k = return on h

$$\frac{\uparrow q_k}{\underline{a}} = \frac{q_h}{\uparrow r_h}$$

  - When constraint relax, *skilled* agents demand k ($\uparrow q_k$) and housing services ($\uparrow r_h$)

- Brunnermeier and Sannikov (2014) + **Real estate market**
  - Housing: asset h with price q_h and "dividend" r_h
  - No arbitrage condition for *unskilled*: return on k = return on h

$$\frac{\uparrow q_k}{\underline{a}} = \frac{\uparrow\uparrow q_h}{\uparrow r_h}$$

  - When constraint relax, *skilled* agents demand k ($\uparrow q_k$) and housing services ($\uparrow r_h$)
  - Return lower on k and higher on $h \Rightarrow$ unskilled buy $h \Rightarrow q_h \uparrow\uparrow$

$\Rightarrow$ Boom & bust in housing as well as in capital

Comments

- The paper often refers to a "real estate bubble"
- ...but is it really a bubble?

Real Estate Bubble

"Bubbles arise if the price exceeds the asset's fundamental value" (Markus Brunnermeier, New Palgrave Dictionary of Economics, 2008)

- Financial accelerator $\neq$ bubble
- House prices are driven by portfolio reallocation which depends on fundamentals
- No frictions between asset fundamental value and its price

- Model matches the $\uparrow$ in housing price with $\uparrow$ in demand
- But the supply is mostly (I think) fixed
  - Adj cost on housing investment 100 times higher than on capital
- However the housing boom was also characterized by a large increase in housing supply

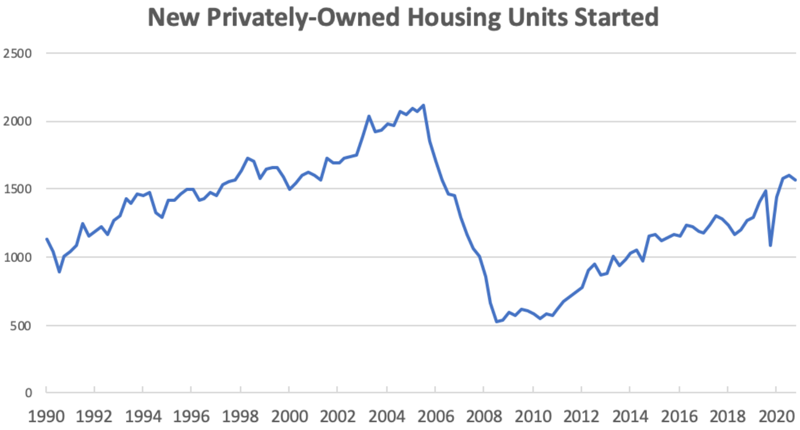

Figure: Thousands of Units, Seasonally Adjusted Annual Rate (FRED)

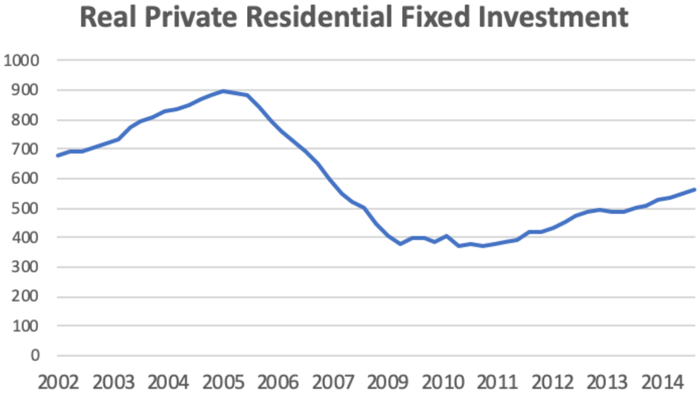

Figure: Billions of Chained 2012 Dollars, Seasonally Adjusted Annual Rate (FRED)

- Test the effect of credit access on business activity
- **Hypothesis:** $\uparrow$ collateral value, constraint relax, $\uparrow$ borrowing, $\uparrow$ investment
  - Assume housing used as collateral

$$\begin{aligned} EstablishmentGrowth_i = &\beta_0 + \beta_1 HPgrowth_i + \beta_2 LoanGrowth + \\ &\beta_3 HPgrowth_i \times LoanGrowth + \beta_4 X_I + \epsilon_i \end{aligned} \tag{1}$$

- Instrument house price with Saiz (2010) land topography

$$\begin{aligned} EstablishmentGrowth_i = &\beta_0 + \beta_1 HPgrowth_i + \beta_2 LoanGrowth + \\ &\beta_3 HPgrowth_i \times LoanGrowth + \beta_4 X_I + \epsilon_i \end{aligned} \tag{2}$$

- But *LoanGrowth* is endogenous as well in a fin accelerator model
  - ↑ establishments, constraint relax, ↑ borrowing, ...
- Instrumenting only house price is not enough to solve the endogeneity issue
- Why not instrumenting directly loan growth with the Saiz (2010) instruments?

Conclusion

- Relevant and interesting question
- Tractable real estate market in a boom&bust model
- Final suggestion: clarify the contribution of the paper vs previous literature on housing boom & bust
- Looking forward for the final version of the paper!