

Leverage and Foreclosure Crisis By Corbae and Quintin

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Motivating facts

Figure 1: FHA and GSE purchase loans with a cumulative LTV above 97%

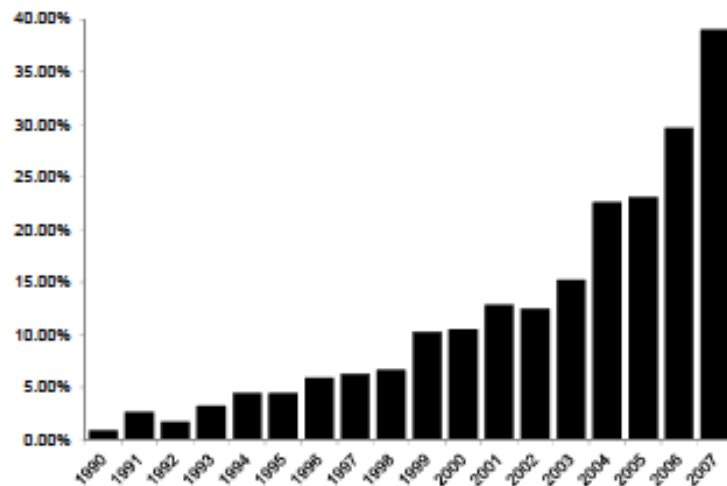
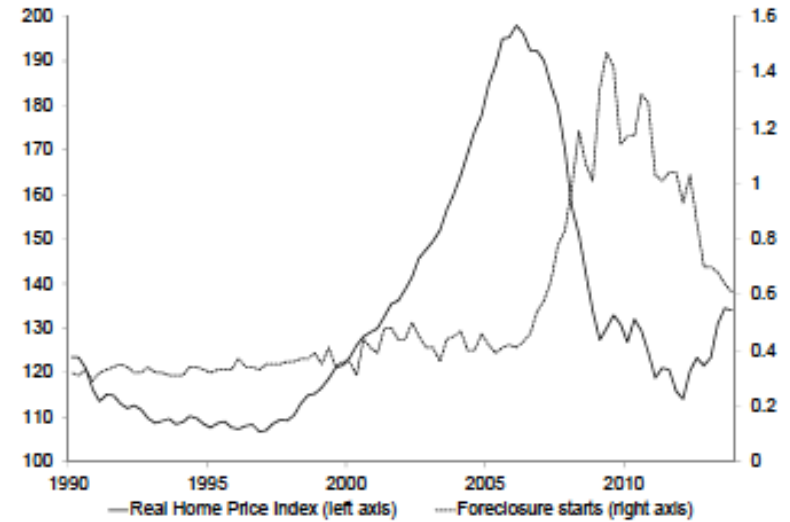


Figure 2: The housing boom and bust



Paper's contribution

- Develops a data-consistent DSGE housing model in which leverage and foreclosures are endogenous
- Shows that
 - (1) About 60 percent of the increase in foreclosures is due to looser lending standards
 - (2) Full (but costless) recourse could have helped mitigate the crisis

Outline

- Model ingredients
- Main experiment
- Findings and channels
- How to interpret the results?
- Conclude

Model ingredients

- Heterogeneous agents:
 - Four generations (Y, M, O, D)
 - One source of aggregate uncertainty (house prices, q) and three sources idiosyncratic uncertainty (demographics, income shocks, and house-specific price shocks)
- Housing services from renting or owning
 - House supply exogenous



Model ingredients (cont.)

- Risk neutral intermediaries:
- Mortgage contracts:
 - 30 year fixed-rate mortgages with either high (20%) or low (0%) down payment to purchase large or small house (h)
 - $r(a, y; h; s, \alpha)$. Credit rationing is possible in eq.
 - $m/y < \alpha_s$
 - Down payment decision (LTV or leverage) is endogenous given 20%/0% menu



Model ingredients (cont.)

- Mortgages can be either prepaid or defaulted
 - Default by agents in negative equity
 - And agents with positive equity but smaller than maintenance cost plus opportunity cost of renting during eviction process
 - Default is costly, but no full recourse
- Equilibrium:
 - given mortgage menu, agents optimize;
 - given agents' decision rules, mortgage menu solves intermediary's problem for each set of agent's characteristics at origination
- Model is very carefully calibrated and solved numerically with global methods



Experiment

- 1999-2006 economy is in a boom: house price increase (q goes up) and lending standard relaxed (α goes down) exogenously
- 2007-2008 house prices and lending standard revert to pre 1998 levels
- Model tracks homeownership rates, share of LD mortgages, and default rates very well



Key finding: the importance of lending standards

- Shut down change in approval standards: default rate is much smaller
 - Headline result: leverage increase **because of loosening of lending standards** explains about 60 percent of total foreclosure increase
 - Mechanism: houses become more expensive during the boom, only relatively richer and higher income agents can access the mortgage market, much less defaults when prices decline during bust

Could (Costless) Recourse have mitigated the foreclosure crisis?

- With full recourse, default is more costly and recovery rates are higher, interest rates are lower, and all else equal default less frequent
- But mortgages become more accessible, the pool of borrowers riskier, and all else equal default is higher
- Quantitatively, in the model, the first channel dominates the latter:
 - Foreclosure crisis mitigated because mortgage access is already broad in the pre boom period, and risky loans increase less during boom



Two questions

- Why moving both lending standards and house prices at the same time in the main experiment?
- How do we interpret changes in lending standards?
 - Is it policy or intermediaries' behavior?
 - What does the model have to say on regulatory changes?



Real Estate Lending Standards

365.2 Real estate lending standards Appendix A to Subpart A of part 365—Interagency Guidelines for Real Estate Lending Policies

AUTHORITY: 12 U.S.C. 1828(o).

SOURCE: The provisions of Part 365 appear at 57 Fed. Reg. 62900, December 31, **1992**, effective March 19, **1993**, except as otherwise noted.



LTVs

“Institutions should establish their own internal loan-to-value limits for real estate loans. These internal limits should not exceed the following supervisory limits:”

- Raw land 65%
- Land development 75%
- Commercial, other nonresidential and multifamily: 80%
- 1- to 4-family residential: 85%
- Improved property: 85%
- Owner-occupied 1- to 4-family and home equity 2%

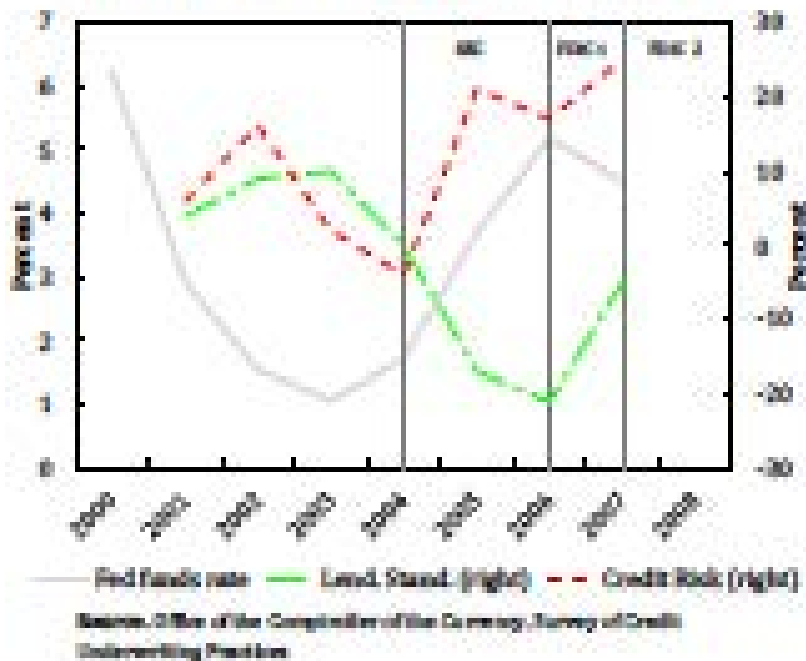
Lending standards

- “Each insured state nonmember bank shall adopt and maintain written policies that establish appropriate limits and standards for extensions of credit that are secured by liens on or interests in real estate, or that are made for the purpose of financing permanent improvements to real estate.”

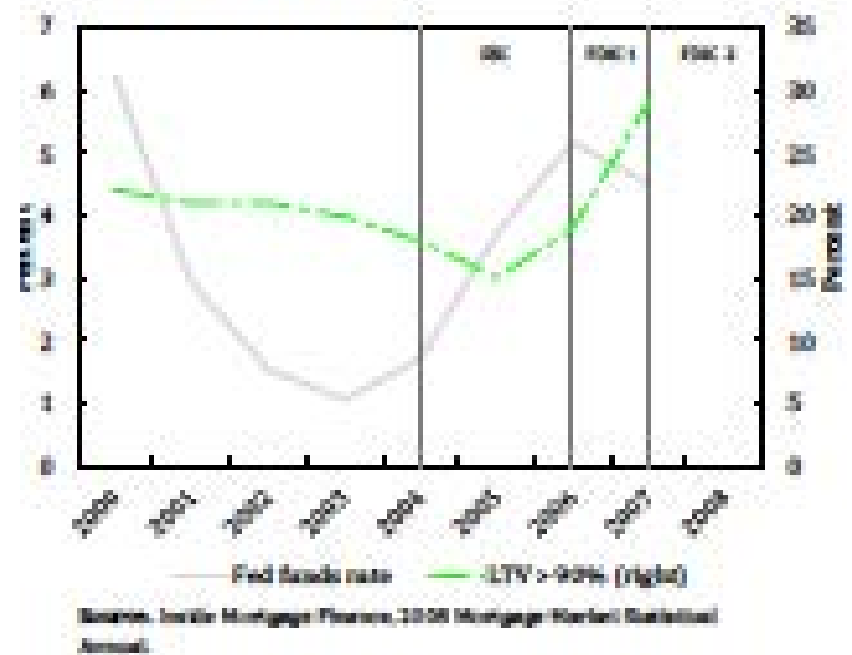


Lending standards, share of DH loans, and regulatory measures

d) Changes in lending standards & perceived level of credit risk in residential real estate loan portfolios



c) Share of mortgage originations with LTV > 90% over total mortgage originations



Source: Cesa-Bianchi and Rebucci (2013)

Conclusions

- Very impressive paper!!
- I would to keep lending standards constant
- I would like to see what the model can tell us about the role of regulatory changes in the run up to the crisis (LD/LH?)

