Mortgage Market Institutions and Housing Market Outcomes

Edward Kung

Discussed by Stijn Van Nieuwerburgh (NYU Stern)

Summary

Main Results

- Equilibrium model of LA housing and mortgage market (IO style)
- Rich mortgage contract structure 30yr frm, prepayable, defaultable, agency vs non-agency
- Paper studies effect of disappearance of non-agency mortgages for house prices, mortgage rates, and default rates
- Introduces full **shared appreciation mortgages** in 03-07
  - Enjoy high take-up, supplant standard non-agency loans, push up house prices in boom
  - But because lower defaults in 07-10 do not lead to higher house prices, bust is in fact larger

Summary

Main Counterfactual Exercise

- Had the non-agency market not disappeared in LA
  - Eager potential home buyers with low wealth would have retained access to high LTV credit to buy modest homes
  - Eager potential home buyers with high wealth would have retained access to credit to buy expensive homes (above CLL)
  - House prices would not have gone down, and lower quality hp would have gone up
  - There would have been almost no mortgage defaults
  - House prices would have been less volatile and mortgage rates lower
- Policy effects in wake of disappearing non-agency market
  - Increasing CLL had a big effect on expensive house prices in 08, small effect by 10
  - Lowering interest rates had a big effect on all house prices, mostly in 09 and 10
  - What about FHA which became the new non-agency lender?
    - Market share rose from 5% in 07 to 25% in 09 (still 21% today)

Summary

Model

- Two housing markets: good and bad quality/price/neighborhood houses in fixed supply
  - Number of houses for sale is fixed by constant moving probability
  - $\Rightarrow$ Transaction volumes are constant in model, but not in data
  - No construction in model, but boom and bust in construction in data
- Households have CRRA preferences, constant income, liquid wealth, mortgage
- Homeowners who receive moving shock can sell or default (non-recourse, zero cost of default); then leave model (LA)
  - No intra-city mobility (sellers do not become future buyers)
- Homeowners who do not receive moving shock choose consumption, savings, can refi into new mortgage type/size (prohibitive cost), subject to borrowing constraint
  - Stayers cannot default, limits possible defaults
  - Stayers cannot change housing type (move up housing ladder)

Summary

Model

- Reserve of potential buyers
  - Heterogeneous in income, wealth, and **outside option** (love for LA or preference for renting - but renters that do not affect housing market)
  - Choose house type, mortgage type/size, consumption, savings, subject to borrowing constraint
  - Demand for houses comes solely from potential buyers
- Lenders are risk neutral and price each mortgage contract s.t. zero profits, given cost of capital
  - Funding cost $r^f + a_m$ depends on mortgage type m
  - Partial equilibrium in that risk-free bond market is not cleared (LA takes r^f as given)
  - Partial equilibrium in that mortgage funding market is not cleared (LA takes a_m as given) - less innocuous for non-agency market
- Goods market does not clear
  - The more defaults the better for LA: injection of goods from "GSEs"

Model

Place in literature

- Combines literature on relaxation of credit constraints and subsequent tightening for explaining housing boom and bust
  - Favilukis, Ludvigson, and Van Nieuwerburgh (11) have richer structure of aggregate and idiosyncratic income risk, construction, bond market clearing, explore decline in hp due to tightening of credit constraints in 08, but simpler mortgages and no default
  - Landvoigt, Piazzesi, and Schneider (15) have PE model of San Diego, but with multiple housing types, also get bigger boom and bust in low quality houses, but simpler mortgages and no default
- With insights from literature on mortgage default
  - Corbae and Quinten (15) investigate effect of mortgage product innovation and PLS in GE model with defaults
- Similar to Laufer (13) who also investigates mortgage and house price dynamics in boom and bust in LA
- Paper should play up **rich mortgage contract structure**, emphasize more the new mortgage products angle (section 6.4)

Comment 1

Calibration & Accounting for the crisis

- In 08, agents *unexpectedly* (probability-zero events) face:
  (1) disappearance of non-agency market, (2) increase in CLL,
  (3) lower interest rates, and (4) a positive expected demand shock g for owning houses in LA (from 07 on)

- Model fits 2 house prices by reverse engineering best-fitting sequence of housing demand shocks $\{\bar{v}_t\}$ and preference for high-quality housing θ
  - Aggregate demand shock for housing in LA is *black box* - did people really expect housing demand to be strong in 08, 09, and 10?
  - Could stand in for unmodeled changes endogenous to the boom and bust (e.g., foreign capital inflows, documentation requirements)
  - Report how much of a decline in house prices and increase in defaults can model account for absent a change in $\{\bar{v}_t, g_t\}$?

- Model fits mortgage rates on agency and non-agency loans by choosing cost of funding a_m
  - Consistent with observed spreads on agency and private-label MBS?

Comment 1

Calibration & Accounting for the crisis

- Model fits LTVs for agency and non-agency by choosing wealth distribution of potential buyers
  - Wealth distribution consistent with micro data on wealth (SCF or ACS/AHS)?
  - Consistent with LA wealth distribution (SCF or ACS/AHS)?
- Model understates default rates due to job loss
  - Aggregate shock missing from model: GDP shock/unemployment shock
  - Currently labor market plays no role in driving default and mobility patterns
- Confront more model predictions to the data!
  - E.g. size/importance of first-time home buyers
  - Local vs. out-of-town home buyers

Comment 2

Exploring the non-agency space

- Non-agency space was richer than jumbo (above CLL) and high LTV
  - DTI constrained was effectively relaxed by changed income documentation requirements (Mian and Sufi 15 vs. Adelino et al. 15)
  - Partially or even negative amortizing mortgages (option-ARMS, hybrid ARMs with teaser rates), popular in LA!
  - Second mortgages (HELOCs and CES) very important to understand LA house price boom and bust (Laufer 13, Lee, Mayer, Tracy 14)
    - Paper can accommodate this but only if refi cost is low
- Use richness of model to explore the role of all these products in boom and bust

Comment 3

How palatable is main message?

- Paper: Had non-agency market continued to operate as usual, housing market in LA would have been hunky dory
- Assumes **lenders and their financiers** were correctly pricing the default risk + no mortgage fraud
- But mortgage funding was excessively cheap and therefore oversupplied (and fraud was rampant)
  - Underpriced GSE guarantees
  - PLS securitization demanded by investors clamoring for AAA paper, including banks
  - Race to the bottom between PLS and GSEs led to large GSE purchases of ever worse loans (including "non-agency")
  - Deterioration started in 1990s, accelerated in 2000s
  - Destructive industry dynamic and buildup of risk made collapse of GSEs and PLS ultimately unavoidable
- Given these realities, better off if non-agency market or the GSEs had never been born?
- E.g., Acharya, Richardson, van Nieuwerburgh and White (10), Elenev, Landvoigt, Van Nieuwerburgh (15)

Comment 4

Shared Appreciation Mortgages: Who should bear house price risk?

- Reduction in foreclosures has no effect on house price level in 09-10
  - Defaults do not affect prices here (always same supply)!
  - FSAM makes boom bigger and therefore bust bigger
  - Explain rise in defaults of 07 vintage
- In model, lenders are better able to bear downside house price risk because they are risk neutral while HH are risk averse
- Seems predicated on most housing risk being idiosyncratic. But huge systematic component to house price risk
- Banks may be very sensitive to aggregate house price risk, and their collapse may have severe negative externalities to economy
- Not so clear that social planner would have banks bear downside house price risk rather than households
- Put differently, the social cost of funding, a_m, for SAMs may well be very high
- **SAMs may exacerbate financial fragility**; overall welfare effects of SAM introduction unclear

Conclusion

- Ambitious paper that features rich contract structure, borrowing constraints, two housing market segments, borrower heterogeneity, and default
- Collapse in LA house prices is attributed to the disappearance of the non-agency market - a tightening of credit constraints
- Government response, raising CLL and lowering rates, was very helpful
- Policy recommendation: keep non-agency market alive
- SAMS would have been a popular product in boom, further exacerbated boom without mitigating bust
- Frictions and negative externalities on funding side of market are given short schrift