

Mortgage Choices and Housing Speculation

Barlevy and Fisher

Discussion by

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Overview of Discussion

1. The Credit Supply View of Housing Boom and Bust
2. Do Barlevy and Fisher supplant this view? Do they provide another manifestation of this view?
3. Main concern: Strong evidence that timing goes the opposite way:
House price increases → Use of interest only mortgages

The Credit Supply View of the U.S. Housing Boom/Bust

- A sharp increase in the willingness of lenders to provide mortgage finance is the primary explanation for the housing boom
- Why this increase in willingness?
 - Evidence strongly contradicts “productivity” or “income” stories (Mian and Sufi (QJE, 2009)), which explains why this boom ended so badly
 - Potential mispricing of risk given frictions in securitization (e.g., Keys, Mukherjee, Seru, Vig (QJE, 2010), Demyanyk and Van Hemert (RFS, 2010), Dell’Ariccia, et al (2010))
 - Government policy

Consensus View?

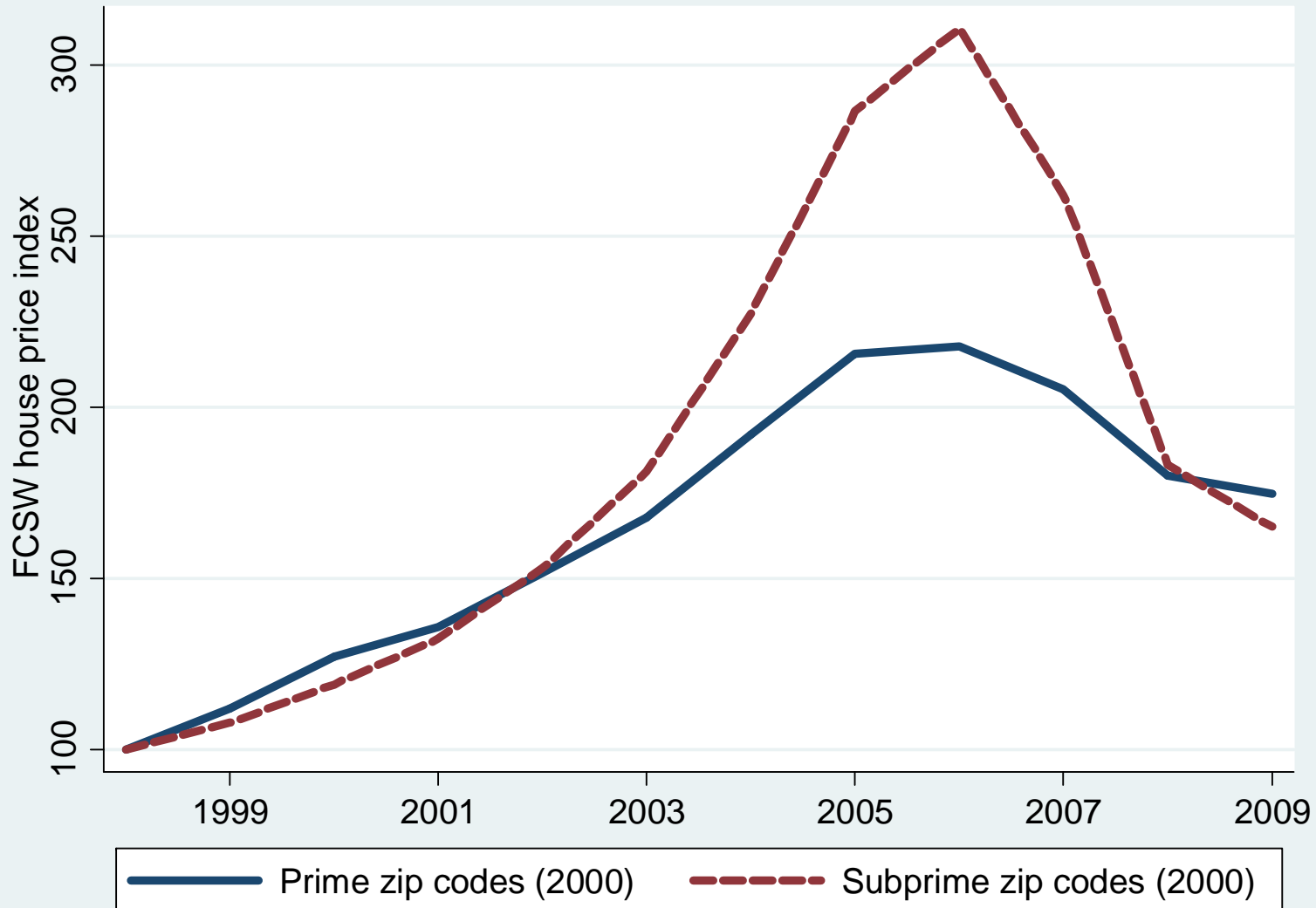
- William Dudley, President of New York Fed, 2010

“Similarly, the recent housing boom was driven by two innovations: (1) in housing finance, where subprime lending made mortgage credit available to households that were much less creditworthy, and (2) in structured finance instruments such as collateralized debt obligations (CDOs).”

- Ben Bernanke, Chairman of the Federal Reserve Board, 2010

“The availability of these alternative mortgage products proved to be quite important and, as many have recognized, is likely a key explanation of the housing bubble. Slide 8 shows the percentage of variable-rate mortgages originated with various exotic features, beginning in 2000. As you can see, the use of these nonstandard features increased rapidly from early in the decade through 2005 or 2006. Because such features are presumably not appropriate for many borrowers, Slide 8 is evidence of a protracted deterioration in mortgage underwriting standards, which was further exacerbated by practices such as the use of no-documentation loans.”

House Price Appreciation in Subprime Versus Prime Zip Codes (Inelastic Housing Supply Cities)



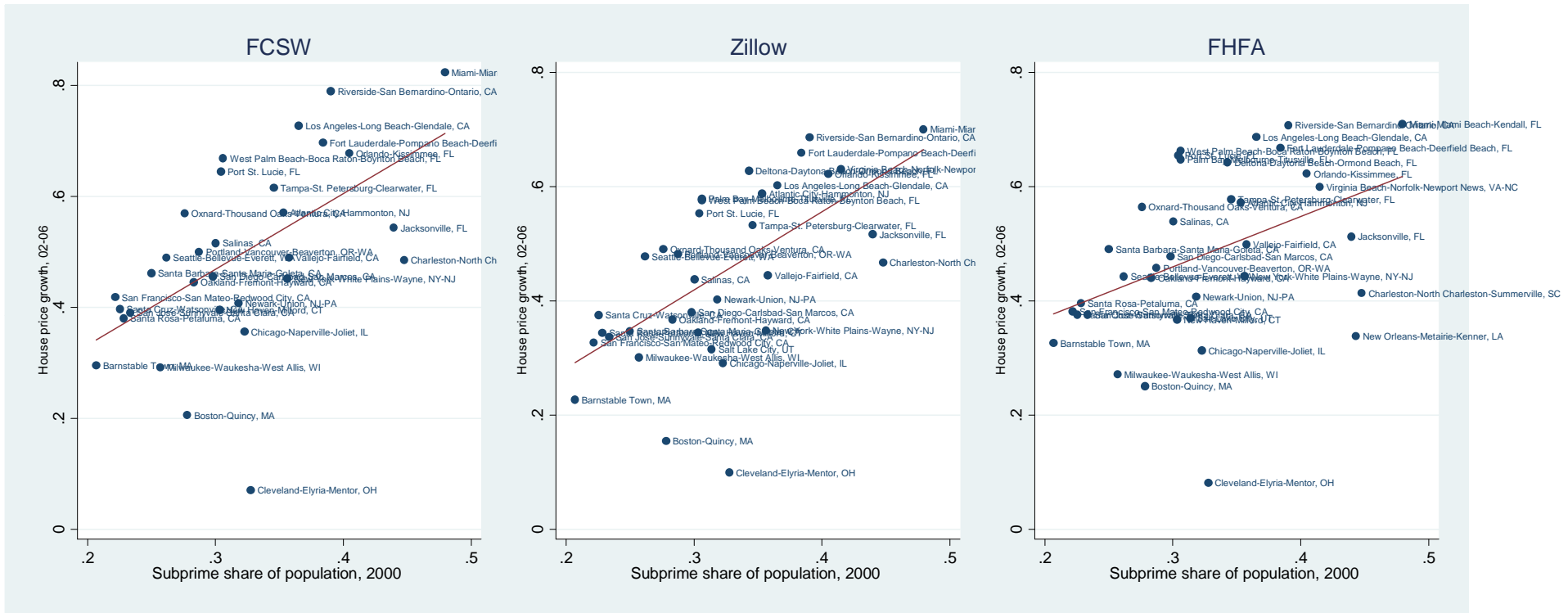
Barlevy and Fisher: Theory

- This study is related to the credit supply view, but the channel through which financing is related to house prices is quite different
- Theory: Allen and Gale (2000) inspired model in which house price bubble emerges because of uncertainty regarding a fundamental demand shock
- Numerical solution shows that back-loaded contracts (i.e., interest only mortgages) are preferred jointly by lenders and borrowers when prices are expected to rise above fundamentals
- This is a theory about timing rather than causation. Interest only mortgages predict bubbles because they are used in anticipation of a bubble

Barlevy and Fisher: Empirics

- Concern #1: How is the IO mortgage channel related to the credit supply view?
- Is IO lending just a proxy for subprime lending?
- Or does it supplant subprime lending as the main predictor of boom/bust?
 - “... we find no relationship between house price appreciation at the city level and the peak of subprime mortgages.”
 - “Thus, expansion of the subprime market does not seem to be relevant for explaining why some cities experienced large boom-bust cycles in housing prices”
- The answer to both questions is no.

Subprime and House Price Growth Strongly Correlated at MSA Level (Inelastic MSAs)



- Why do the authors find no correlation between subprime share and house price growth?
 1. Because their measure of subprime is awful: Their subprime share is only barely correlated with actual subprime borrowers data from Equifax
 2. They use FHFA house price data, which completely ignores house price growth in subprime areas

Is Interest Only Simply a Proxy for Subprime (Properly Measured)?

Dependent Variable:
Zillow House Price Growth, 2002 to 2006

| | (1) | (2) | (3) | (4) |
|-----------------|--------------------|---------------------|--------------------|--------------------|
| Max IO Share | 0.530** (0.099) | | 0.546** (0.094) | 0.546** (0.094) |
| Subprime Share | | 0.688** (0.176) | 0.723** (0.161) | 0.716** (0.172) |
| Saiz Elasticity | -0.027 (0.014) | -0.071** (0.012) | -0.031* (0.013) | -0.031* (0.013) |
| Subprime LPS | | | | 0.937 (8.280) |
| Constant | 0.308** (0.042) | 0.266** (0.061) | 0.079 (0.065) | 0.078 (0.065) |
| Observations | 168 | 168 | 168 | 168 |
| R-squared | 0.262 | 0.207 | 0.343 | 0.343 |

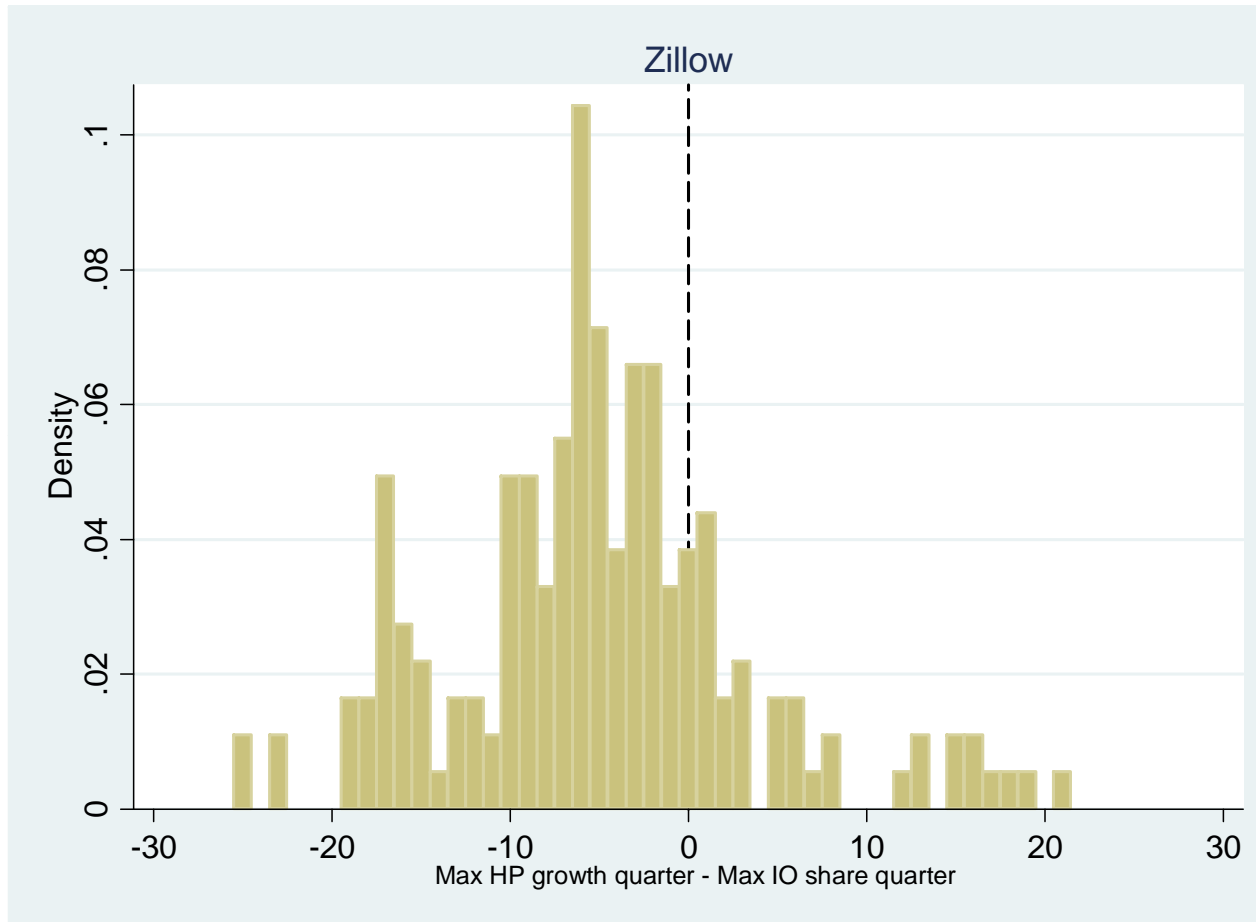
- The effects are both strong and close to orthogonal!
- Correlation is very robust, not simply a proxy for expansion in credit supply
- Definitely something new here!

But What if Timing Goes the Wrong Way?

- I am definitely convinced that the correlation between interest only mortgages and house price growth is not just another channel for credit expansion to subprime borrowers
- There is something new and interesting here, and I agree that it is related to speculation
- But I remain concerned about timing
 1. Authors want us to believe: IO mortgages → house price growth
 2. But other theories (credit constraints) would suggest: house price growth → IO mortgages

Test #1:

When is Max House Price Growth Quarter Relative to Max IO Share Quarter?



- 77% of sample MSAs have their highest house price appreciation quarter before their highest IO share quarter!
- For FHFA house price index, also 77%. For FCSW house price index, 83%

The Usual Suspects (Highest 10 House Price Booms)

| MSA | Max FCSW HP growth quarter | Max Zillow HP growth quarter | Max FHFA HP growth quarter | Max IO Share quarter |
|--------------------------------------|-------------------------------|---------------------------------|-------------------------------|----------------------|
| Las Vegas-Paradise, NV | 2004q3 | 2004q3 | 2004q3 | 2006q4 |
| Phoenix-Mesa-Scottsdale, AZ | 2005q3 | 2005q3 | 2005q4 | 2006q4 |
| Bakersfield, CA | 2005q1 | 2005q1 | 2005q2 | 2007q1 |
| Merced, CA | 2005q2 | . | 2005q2 | 2007q1 |
| Riverside-San Bernardino-Ontario, CA | 2004q3 | 2004q3 | 2004q3 | 2007q1 |
| Visalia-Porterville, CA | 2005q2 | 2005q2 | 2005q1 | 2007q1 |
| Lakeland-Winter Haven, FL | 2005q4 | 2005q4 | 2006q1 | 2006q4 |
| Orlando-Kissimmee, FL | 2005q4 | 2005q3 | 2005q4 | 2007q1 |
| Stockton, CA | 2005q1 | 2005q1 | 2005q2 | 2007q2 |
| Modesto, CA | 2005q2 | 2005q2 | 2005q2 | 2007q1 |

Test #2: Granger Causality

- In light of results above, I was quite surprised with Granger causality test
- Authors restrict sample for Granger causality tests to (1) quarters before 2006q4 and (2) MSAs with a max IO share of at least 0.4
- Results are very sensitive to these restrictions, and I'm not sure why ...

| SAMPLE: | Replicating Authors | | Decrease IO Share Max By 10% | Full Sample up to 2006q1 | Same MSAs as Authors, but extend to 2007q4 |
|-----------------------|---------------------|--------------------|------------------------------------|-----------------------------|--|
| | FHFA HP growth | IO share | IO share | IO share | IO share |
| FHFA HP growth lagged | 0.623** (0.029) | 0.018 (0.045) | 0.108** (0.027) | 0.186** (0.012) | 0.508** (0.046) |
| IO share lagged | 0.185** (0.023) | 0.412** (0.036) | 0.342** (0.024) | 0.172** (0.013) | 0.470** (0.040) |
| Constant | 0.008** (0.001) | 0.009** (0.002) | 0.005** (0.001) | 0.001* (0.000) | -0.012** (0.002) |
| Observations | 754 | 754 | 1,690 | 6,682 | 870 |
| R-squared | 0.494 | 0.168 | 0.142 | 0.086 | 0.333 |

Conclusions

1. The correlation between interest only mortgages and house price growth is extremely strong and is unrelated to the standard credit supply view—supports the importance of speculation
2. But it does not supplant the credit supply view—house price growth strongly positively correlated with the share of the population that is subprime
3. Authors need to work on showing IO mortgages predict house price growth and not vice versa