

Unemployment and the US Housing Market during the Great Recession

Discussion

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September 11, 2018

Overview

What caused the great decline in house prices during the financial crisis?

- ▶ **Very** rich OLG framework in partial equilibrium.
- ▶ Change key parameters (e.g. downpayment requirements, labor market conditions) to investigate.
- ▶ Model matches the decline in house prices quite well.
- ▶ Smoking gun: Mortgage conditions as well as job finding rates and unemployment benefits.
- ▶ Additionally: Large mobility for the poor is imperative.

Model

- ▶ Asset Markets: Deposits, credit lines, mortgages, home equity (all PE).
- ▶ Goods markets: Consumption (numeraire) and housing (endogenous prices).
- ▶ Income follows a process where you can climb the “human capital ladder”
 - ▶ You climb up (stochastically) when employed, and down when unemployed.
- ▶ Disaster risk: Long-term unemployment.
- ▶ Not rational expectations for house prices.

Result 1

House prices ↓ about 25%

	Added First	Added Last
Financial conditions	17.8	20.8
Mortgage	11.9	17.5
HELOC	3.4	2.0
Credit Card	2.1	3.0
Deposit	0.7	0
Labor conditions	9.1	11.4
Job finding rate	5.7	6.3
Unemployment benefit	3.4	6.0
Long term unemployment	0	0
House price growth expectations	2.9	6.1
Housing transaction cost	0.6	0.5
Balance sheet	-0.9	2.0
Mortgage subsidy	-10.0	-8.9
All shocks together	25	25

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Causality?

Result 2

Mobility is key

	Delinquency rate, %		Networth, 2007 \$k		House Price/Drop		
	Credit card	Mortgage	Non-Housing	Housing	Small	Large	Mean
Model Boom	3.7	0.7	19.4	56	198	369	283
Data 2007	4.0	2.7		104	149	264	206
Model Bust	3.9	3.2	5.8	96	11%	10%	10%
Data 2009	6.8	8.6	19.8	39	15%	15%	15%
Data 2012	2.9	10.4			33%	29%	31%

Travel log

- ▶ To understand this paper I started by setting up the linear asset pricing model

$$q = d + E[\beta q']$$

- ▶ The expectation for growth in q is 6.6% in the boom and 5% in the bust. The value of β is 0.91.
- ▶ The (log) decline in prices is then 39%. Expectations is **everything**.
- ▶ But the result of the model is that expectations accounts for only 20-30%, so my logic was wrong.

Travel log

- ▶ Why?
- ▶ I use marginal logic – in the model it's discrete.
- ▶ It takes a helluva change in (expected) asset price growth to go through the hassle of selling and being a renter.
 - ▶ In fact, most owner would like to stay put, which means very little change in demand.
- ▶ So the model is set up to stabilize house prices.
- ▶ Enter the mobility shock ...

Travel log

- ▶ If you are forced to move – in particular if you are poor (and maybe unemployed) – then downscale.
- ▶ So now the hassle is not in your choice set, and individuals wish to downgrade.
 - ▶ And that's mainly for mortgage reasons as well as the job-finding rate and unemployment benefits.
- ▶ But those reasons wouldn't kick in if the household wasn't forced to sell to begin with.
- ▶ Thus the model seems to be at odds with the literature that attempts to explain high unemployment with low mobility – in fact, high mobility is what caused the decline in house prices.

Travel log

- ▶ Rental apartments are supplied **elastically** at price p .
- ▶ Does that mean that (equilibrium) supply can be anything?
 - ▶ No, since demand for housing is always equal to one, the demand for rentals is always equal to $1 - H_1 - H_2$.
- ▶ Writing that rental apartments are supplied **inelastically** at price p is the same thing in equilibrium.
- ▶ So how can you even fix a price that is suppose to be in equilibrium?
 - ▶ Housing demand is always one for any p .
 - ▶ The only thing that matters are relative prices P_1/p and P_2/p .

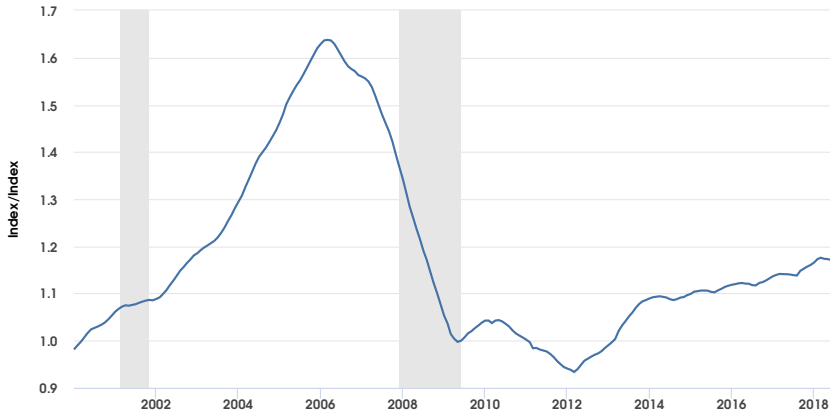
Travel log

- ▶ So this implies that the prices P_1/p and P_2/p declined a lot over the bust.
- ▶ The reason is that “forced” H_1 movers wish to become renters etc. as their income is jeopardized.
- ▶ So demand for rentals increases and its relative price skyrockets.
- ▶ What does the data say?

House prices over rent

FRED 

S&P/Case-Shiller 20-City Composite Home Price Index, Jun 2009=100/Consumer Price Index for All Urban Consumers: Rent of primary residence, Jun 2009=100



Shaded areas indicate U.S. recessions. Source: S&P Dow Jones Indices LLC, U.S. Bureau of Labor Statistics

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Laundry list

What I would like to see

- ▶ What happens to consumption? My hunch is that it falls by a counterfactual amount.
- ▶ Mortgage: Downpayments, payment to income ratio, and amortization change.
 - ▶ This is crucial in explaining the decline in house prices.
 - ▶ Why not decompose the decline in all of these?
- ▶ Similarly, labor market conditions are also Human Capital Transition, separation rates, and both the probability of, as well as the consequences of, long-term unemployment.
- ▶ The supply of H_1 and H_2 increases in the bust, making rentals a scarce commodity. This pushes down the relative price of housing – what is the effect of this?

Conclusions

- ▶ Fascinating paper. Well written and very competently executed.
- ▶ The paper could focus more on the mechanisms at work
 - ▶ Right now its **very** heavy lifting, with some decomposition.
- ▶ The results are very interesting (I like in particular that expectations matter little when housing is lumpy).
- ▶ Needs some polishing, and I bet the author will need to fight with the referees regarding expectations.