Collateral Constraints and Macro Asymmetries
by Guerrieri and Iacoviello

discussion by Morris A. Davis

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Overview

- Matteo and Luca are pioneers in this area
- The topic is important and paper is clearly written
- The technical prowess is impressive
- I have significant reservations
  - Taste
  - A look at who is constrained
  - Re-interpretation of the housing cycle
  - Housing in the Model
- What’s wrong with Carlos’s explanation?
The paper has the feel of a data-fitting exercise

I think fitting data is important

The distance between this style of research and the old Klein Models, to my taste, is uncomfortably close

Part of this is to find some role for monetary policy; some is to fit data

A good amount of story telling is required
Households supply homogeneous labor services to unions. The unions differentiate labor services as in Smets and Wouters (2007), set wages subject to a Calvo scheme and offer labor services to labor packers who reassemble these services into the homogeneous labor composites $n_c$ and $n'_c$. Wholesale firms hire labor from these packers. (from page 11)

- What?
- Why would labor unions have a policy for differential pay based on patience?
- Labor unions don’t mater.
- This is all storytelling for data fitting.
Who is Constrained?

- The model relies critically on heterogeneity
  - 2 different types of agents, patient and impatient
  - Impatient households occasionally reach borrowing limit

- Model-verification: Replicate cross-sectional facts

- My intuition – this model cannot
  - Model: Everyone owner-occupies
  - Data: Bottom 42% do not have enough income to matter
## 2010 SCF - Data on the Bottom 42

<table>
<thead>
<tr>
<th></th>
<th>Sorted by</th>
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<tbody>
<tr>
<td></td>
<td>Net Worth</td>
<td>Income</td>
</tr>
<tr>
<td><strong>Bottom 42 Avg. Net Worth</strong></td>
<td>$2,384</td>
<td>$126,712</td>
</tr>
<tr>
<td><strong>Economywide Avg. Net Worth</strong></td>
<td>$494,916</td>
<td>$494,916</td>
</tr>
<tr>
<td><strong>Net Worth Share of bottom 42</strong></td>
<td><strong>0.2%</strong></td>
<td><strong>10.9%</strong></td>
</tr>
<tr>
<td><strong>Bottom 42 Avg. Income</strong></td>
<td>$36,777</td>
<td>$21,348</td>
</tr>
<tr>
<td><strong>Economywide Avg. Income</strong></td>
<td>$78,332</td>
<td>$78,332</td>
</tr>
<tr>
<td><strong>Income Share of bottom 42</strong></td>
<td><strong>19.7%</strong></td>
<td><strong>11.6%</strong></td>
</tr>
<tr>
<td><strong>Homewonership Rate, bottom 42</strong></td>
<td><strong>33.6%</strong></td>
<td><strong>47.4%</strong></td>
</tr>
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_by M. Davis_  
Asymmetries Discussion
House prices were 30% below trend in 2009?
A Standard Look at the Housing Cycle

Log Real House Prices and Trend

Data End 2000 End 2002 End 2004

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Asymmetries Discussion
A Standard Look at the Housing Cycle

Deviation from Trend, Log Real House Prices

End 2000  End 2002  End 2004

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A Standard Look at the Housing Cycle

Rent-Price Ratio from Davis-Lehnert-Martin 2008

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Asymmetries Discussion
Why Does This Matter?

- Stationary Model: house prices have a known mean
- Was the bust a negative shock driving prices below mean? (Current paper)
- Or was the bust just mean reversion? (Standard analysis)
- Conjecture: if bust was just mean reversion, expected to occur, it should not have had significant macro implications
What if it was Mean Reversion?

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Housing in the Model

- The action in house prices comes from taste shocks to housing (shocks to the MU from housing)

  + Taste shock: rents rise by more than prices? (not true in data)

  - Taste shocks → credit constraints → financial crisis? Weird explanation for the financial crisis
Households borrow $\phi$ of home value, earn spread $r_d - r_m$

Price of a house $p$ satisfies (steady state)

$$p = \frac{q}{1 + r^d} + \frac{\phi p (r^d - r^m)}{1 + r^d} + \frac{p}{1 + r^d}$$

$$\log p = \log \left( \frac{q}{r^d} \right) - \log \left[ 1 - \frac{\phi (r^d - r^m)}{r^d} \right]$$

Unanticipated changes to $\phi$ change prices/rents and can have real effects on macro aggregates that look like the data.