Discussion of

“Accounting for Changes in the Homeownership Rate”

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EFG Meetings in New York
February 8, 2007
Key Trends in the Housing Market 1994-2005

- Home ownership rate has increased a lot.
- Mortgage debt has increased a lot.
- House prices have increased a lot.
Home Ownership Rate in the U.S.
Mortgage Debt and Home Ownership Rate in the U.S.

Year

Home Ownership Rate

Mortgage Debt


Mortgage Debt

Home Ownership Rate
took a bite out of house prices, and even during the first four years of the recovery, house prices stagnated.

After 1995, however, house prices staged an astonishing increase of almost 50 percent if deflated by CPI and 60 percent if adjusted by either of the deflators. Moreover, no decline occurred in house prices around the 2001 recession, and no stagnation occurred after the recession. On the contrary, as the second panel of Figure 4 shows, year-over-year growth rates in real house prices even accelerated during and after the recession to a record pace of 8 to 10 percent in 2004.

What is the effect of these house price fluctuations, especially the large run-up in prices since the mid 1990s? In a model without heterogeneity, a life-cycle earnings profile, and borrowing constraints, the effect on macroeconomic variables is exactly zero in the following sense: Imagine an economy has only one representative con-
Objective of the Paper

- Construct an OLG model with endogenous housing choice to answer:
  
  Question 1: Can a calibrated version of the model account for observed home ownership rates (by age) in 1994?

- Question 2: Can changes in the age structure of the population and financial innovation in the mortgage market account for the increase in homeownership rate between 1995 and 2005?
Outline of the Discussion

• What drives tenure decisions over the life cycle?

• How well does the model account for home ownership over the life cycle?

• Why do home ownership rates change along the transition from 1994 to 2005?

• What may be missing?
Housing Choice over the Life Cycle

- Frictionless benchmark model

\[
\max \sum_{t=0}^{T} \beta^t u(c_t, s_t)
\]

s.t.

\[c_t + a_{t+1} + h_{t+1} = y_t + (1 + r)a_t + (1 - \delta)h_t + R(h_{t+1} - s_t)\]
Housing Choice over the Life Cycle

- Households indifferent between owning and renting, portfolio choice indeterminate

\[
1 + r = \frac{1 - \delta}{1 - R} \quad \frac{u_2(c_t, s_t)}{u_1(c_t, s_t)} = \frac{r + \delta}{1 + r}
\]
Introducing Trade-Offs

- Elements that favor renting/discourage owning:
  - Downpayment requirement: only mortgage contract is 30 year fixed with 20% down.
  - Housing is lumpy: $h_{t+1} \in \{0, \bar{h}, \ldots, \bar{h}\}$.
  - Transaction costs for buying.
  - Selling is risky (but not costly).
  - Fixed cost of becoming a landlord.
Introducing Trade-Offs

- Elements that favor owning:
  
  - Renting is more expensive: $\delta_o < \delta_r$
  
  - Tax system: mortgage interest payments tax-deductible, imputed income from owner-occupied housing not taxed.
Accounting for the Change: Contenders

- Changes in demographics
- Financial innovation in the mortgage sector
  - Reduction in transaction costs
  - Relaxation in downpayment constraint
  - Introduction of combo loan
Home Ownership Rate by Age

- ▲ - 1994 Data
- ■ - 2005 Data
Accounting for the Change: Demographics

- Changes in the population age structure:

<table>
<thead>
<tr>
<th></th>
<th>20-34</th>
<th>35-49</th>
<th>50-64</th>
<th>65-74</th>
<th>75-89</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>32%</td>
<td>32%</td>
<td>19%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>2005</td>
<td>29%</td>
<td>31%</td>
<td>23%</td>
<td>9%</td>
<td>8%</td>
</tr>
<tr>
<td>HOR 94</td>
<td>37%</td>
<td>65%</td>
<td>78%</td>
<td>80%</td>
<td>74%</td>
</tr>
</tbody>
</table>

- Pure accounting generates an increase in the HOR of 1.5 percentage points.
Home Ownership Rate by Age

- ▲ - 1994 Data
- ■ - 2005 Data
- ● - Model, 1994
- ● - Model, 2005 Demographics

Age Group

Home Ownership Rate

1994 Data
2005 Data
Model, 1994
Model, 2005 Demographics
Home Ownership Rate by Age

- ▲ - 1994 Data
- □ - 2005 Data
- ⬤ - Model, 1994
- ⭐ - Model, No Transaction Costs
Home Ownership Rate by Age

- ▲ 1994 Data
- ■ 2005 Data
- ● Model, 10% Downpayment
What is Missing from the Paper

- Transition analysis is remarkable. Document what comes out in much greater detail (at expense of steady state analysis).

- Show joint distribution of home ownership rate by age and income.

- Document implications for mortgage debt.

- Discuss the role of peculiar model elements (e.g. the house price shock $\xi$, the timing assumption $s_t$ vs. $h_{t+1}$).
What is Missing from the Model?


- Optimal leverage and equilibrium default (Krueger and Jeske, 2005).

- (Constrained-) Optimal mortgage design (Piskorski, 2007).
In summary, households differ substantially, both between and within age groups, in their net worth positions and asset allocations. As one would expect, when households are young and middle-aged they accumulate savings for retirement, and one form of savings is real estate. Even within age groups, there is considerable heterogeneity of households. Incomes and especially net worth vary substantially across age groups and between renters and homeowners. When trying to answer questions such as “What is the effect of increasing house prices?” or “Should we subsidize mortgage interest rates?” one should take into account that different households will be affected very differently by changes in house prices or government policies. An increase in house prices might be beneficial to existing homeowners, but renters may not be affected at all or, even worse, might suffer if rental rates increase. Likewise, subsidizing mortgage interest—for example, through mortgage interest tax-deductibility or...
To Conclude...

- Very careful piece of quantitative work that addresses an important and big stylized fact.

- Passes the time series test for the U.S. For other countries, too?

- Can you predict what tighter credit/falling prices will do to the home ownership rate in the next few years?