Discussion of

Aggregate Shocks and the Volatility of House Prices

by

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Discussant:
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Summary

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Price volatility

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  "The real price series for land is 2.8 times as volatile as real GDP, 2.2 times as volatile as real home prices, and 3.3 times as volatile as real structures prices."
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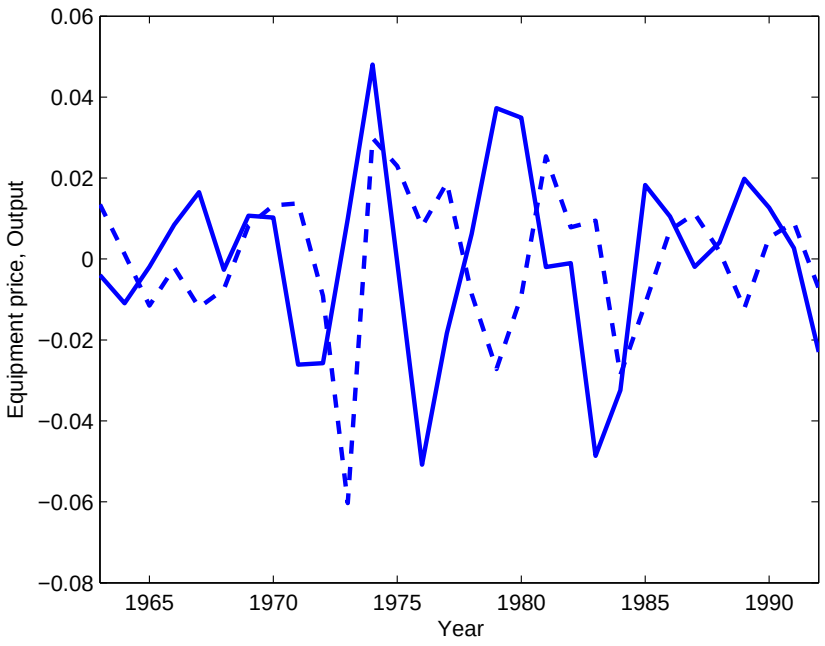
The price volatility of equipment vs. housing



	σ_i/σ_y	$\rho_{i,y}$
price of equipment	0.8	-0.098
price of existing housing	1.3	0.56
price of new housing	2.3	0.8

Source: Krusell et al. (2000), Ríos-Rull and Sánchez-Marcos (2008).

Houses vs. capital structures and equipment

	Volatility (% Std.Dev.)
real GDP	1.71
investment expenditures	8.30
non-residential	5.18
structures	4.75
equipment	6.21
residential	10.89

Source: Kydland and Prescott (1990), Table 2.

Volatility of residential investment / Output volatility $\sim$ 6.37

Ríos-Rull and Sánchez-Marcos (2008), Table 1:
Volatility of house units sold / Output volatility $\sim$ 6.77.

Heterogeneity in house price volatility

- across regions: composition of housing value in terms of land and structures varies substantially (Davis and Heathcote, 2006).
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II. Modeling assumptions

- incomplete markets: rep-agent model with complete markets fails to explain house-price volatility (e.g., Davis and Heathcote, IER, 2005).
- embed Ortalo-Magné and Rady type model of housing demand in quantitative model of incomplete markets with both idiosyncratic and aggregate shocks.

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- key assumptions on housing:

  - housing is in fixed supply, indivisible and there are less dwellings than households $\longrightarrow$ shocks are borne out in prices rather than quantities (price volatility).

  - owner-occupied housing $\longrightarrow$ housing generates utility where a house is better than a flat which is better than no housing at all (renting is not a perfect substitute).

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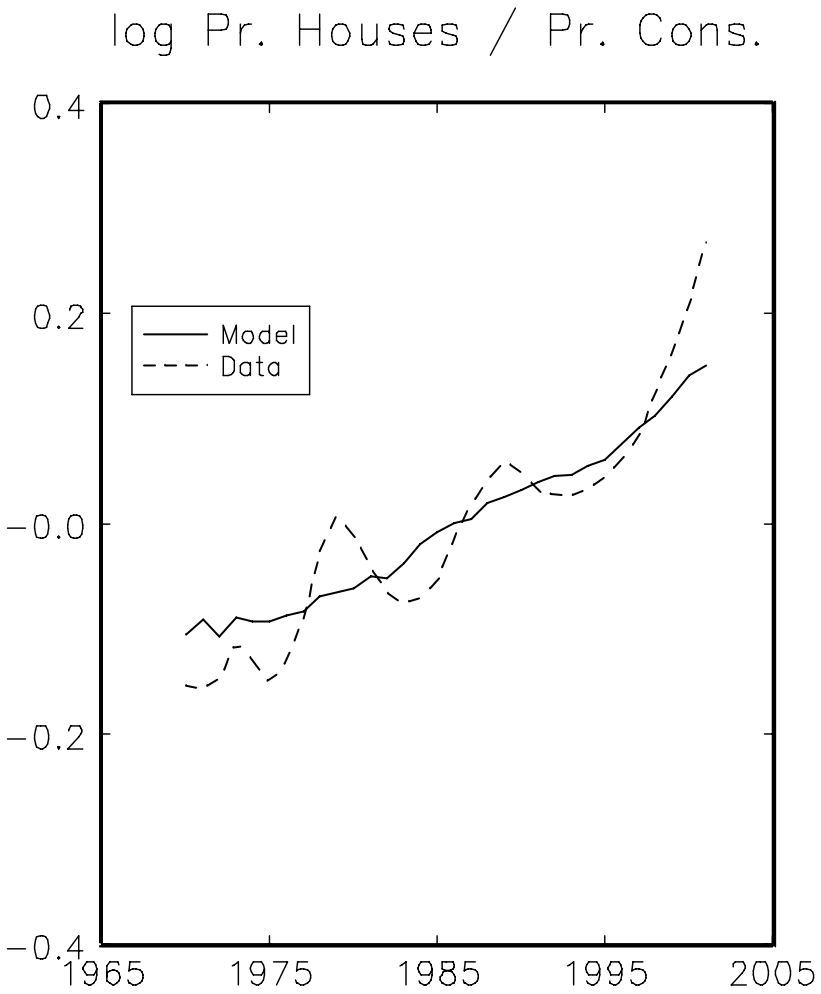
House-price volatility in a model with complete markets



Source: Davis and Heathcote (2005), Figure 2.

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Owner-occupied indivisible housing

- owning directly affects utility:
  - housing helps agents as collateral but implies adjustment cost for owners.
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- adjustment costs for the buyer:
  $\phi(d, d') = p_{d'}(1 + \delta)$ if $d = 0$.
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- adjustment cost for the seller would imply $\alpha > 0$ to guarantee solvency (the fraction of the dwelling that cannot be collateralized).

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- study business cycles using three aggregate shocks:
  - earnings increase from -5% to +5% wrt steady state.
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Countercyclical sales and capital gains

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- **speculation II** on countercyclical sales and house price volatility: too large differences between houses and flats and no dwelling? More types which are less distinct? How are flows between dwelling states affected in the current model?

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- **speculation III**: measurement.

  (i) How much of unit volatility is due to owner-occupied units?

  (ii) Given that housing turnover is underestimated in the model as there are no changes of dwellings of the same type, does this bias cyclical properties of the unit turnover in the model (especially if unit turnover is related to worker mobility)?

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Interpretation of the results ctd.

- Interesting to understand further the importance of capital gains versus the increase in labor earnings:

  the price increase at the beginning of a boom pushes some potential buyers out of the market and there is less bankruptcy.

  BUT: in those experiments where $\Delta p_f < \Delta p_l < 0$ when the recession hits again, is there also an option to wait due to relative price changes in the next recession. Moreover, the adjustment cost for buyers is proportional to the price. Does this explain part of the gradual further decline in turnover during the recession?

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