House Price Beliefs
and Mortgage Leverage Choice
by
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Discussion by Christopher Carroll

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All the Ingredients for Good ‘Behavioral Macroeconomics’
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1. Deviation from well understood models is well-defined ...
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   - Expectations Not ‘Rational’ But ‘Epidemiological’
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A Likely Hypothesis:

- Shift of sources of ‘infection’ from local to nonlocal makes:
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- Use nonrational ‘infection’ as an exogenous shifter of $\mathbb{E}[\Delta p^h]$
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- Use nonrational ‘infection’ as an exogenous shifter of $\mathbb{E}[\Delta p^h]$
- See whether people make same choices that would be rational if their $\mathbb{E}[\Delta p^h]$ were rational
BDKS Key Empirical Finding (Stylized)

Persons A and B live in Des Moines

... and are identical on ‘observables’

... but person A has more friends in ‘busting’ markets in 2008-10

Is more pessimistic about Des Moines house prices

Check Effect of Expectations on Behavior: In 2008-10, Person A:

1. Is less likely to buy a house

2. If they buy a house, it will be cheaper

3. If they buy, they will put down a smaller down payment

Last is focus of this paper.

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Develop a Model In Which It Would Be Rational
Digression

A certain well-known person, if introduced to the field, might tweet:

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R^2 never more than about 0.3 using observables...

R^2 for their 'main result' is 0.16.

So, stuff about which we (they) have no clue explains:

Best case: 70 percent
BDKS case: 84 percent

Interpretations:
Optimist: Glass is 30 (or 16) percent full!
Pessimist: Glass is 70 (or 84) percent empty!
Realist:
H_0: All results are attributable to unobserved heterogeneity
Deaton: Even a 'perfect instrument' doesn't solve this...
... if the outcome you are modeling is affected by prior choices affected by instrument...
... and the heterogeneity affects those choices.
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Selection on Unobservables (Heckman; Deaton)

Among type-A people, some did buy ... for unobservable reasons. What might those reasons be?

- Lower Relative Risk Aversion (compared to non-buyers)
- A kid arrived ...
- A job change ...
- Neighbor whose house you covet, died in freak drone accident...
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Example: Heterogeneous Relative Risk Aversion

Subtypes among people with ‘buster’ friends:

▶ Aa: High RRA
▶ Ab: Low RRA

Person Ab:
▶ Won’t have much of a ‘buffer stock’
▶ Won’t worry as much about bad shocks
▶ ceteris paribus, more likely to buy despite ‘buster’ friends

Conclusion: Kind of person more likely to buy (Ab), is kind of person who would have low downpayment if they do buy
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A Classic Heckman (1974) Selection Problem, Right?

\[ b \quad - \quad \text{Available ‘balances’ that can be used for down payment} \]

\[ d \quad - \quad \text{downpayment} \]

You buy if \( b + \alpha \mathbb{E}[p^h] + \epsilon > 0 \)

If you buy, you choose downpayment of

\[ d \quad = \quad \gamma b + \omega \mathbb{E}[p^h] + \zeta \] (1)

But authors do not observe \( b \). They estimate:

\[ d \quad = \quad \tilde{\omega} \mathbb{E}[p^h] + \eta \] (2)

But then \( \tilde{\omega} \) is biased estimate of \( \omega \), because \( \text{cov}(\eta, \epsilon) \) is nonzero.

Problem is generic if \( \exists \) any unobserved \( b \) affecting both purchase decision and downpayment.
Authors’ Model

If $\mathbb{P}$ is prob of defaulting and PDV benefit of defaulting is $Z$

Then cost of mortgage is:

$$(1 - \mathbb{P}) E[\text{payments if no default}] - \mathbb{P}Z$$

So if $\partial \mathbb{P} / \partial E[\Delta ph] < 0$, optimistic person believes there is less benefit from default mortgage option.

BIG Caveat (which authors admit): Logic applies only in non-recourse states.

My bias: Finance models imported to household choice always get a lot deeply wrong. Here: No risk aversion ...
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Logic applies only in non-recourse states
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My bias: Finance models imported to household choice always get a lot deeply wrong. Here: No risk aversion ...
'Main Results'

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