Discussion of "Mortgage Lock-In, Mobility, and Labor Reallocation"

by Fonseca and Liu

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UNC Junior Finance Conference
2023

Great paper!

- Intuitive economic force
- Great data
- Contribution is the magnitudes:
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- Is something broken in this market?
- Pareto improving for mortgage holders to take a smaller pre-payment

Outline of discussion

- Couple ideas about identification
  - Both would suggest possibly larger effects!
- Implications

Conflicts of Interest

- Colleagues with Julia
  - Her arrival has allowed me to use the GCCCP
- I thought about pursuing a similar project
  - But identification was too hard

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- So we need an identification assumption

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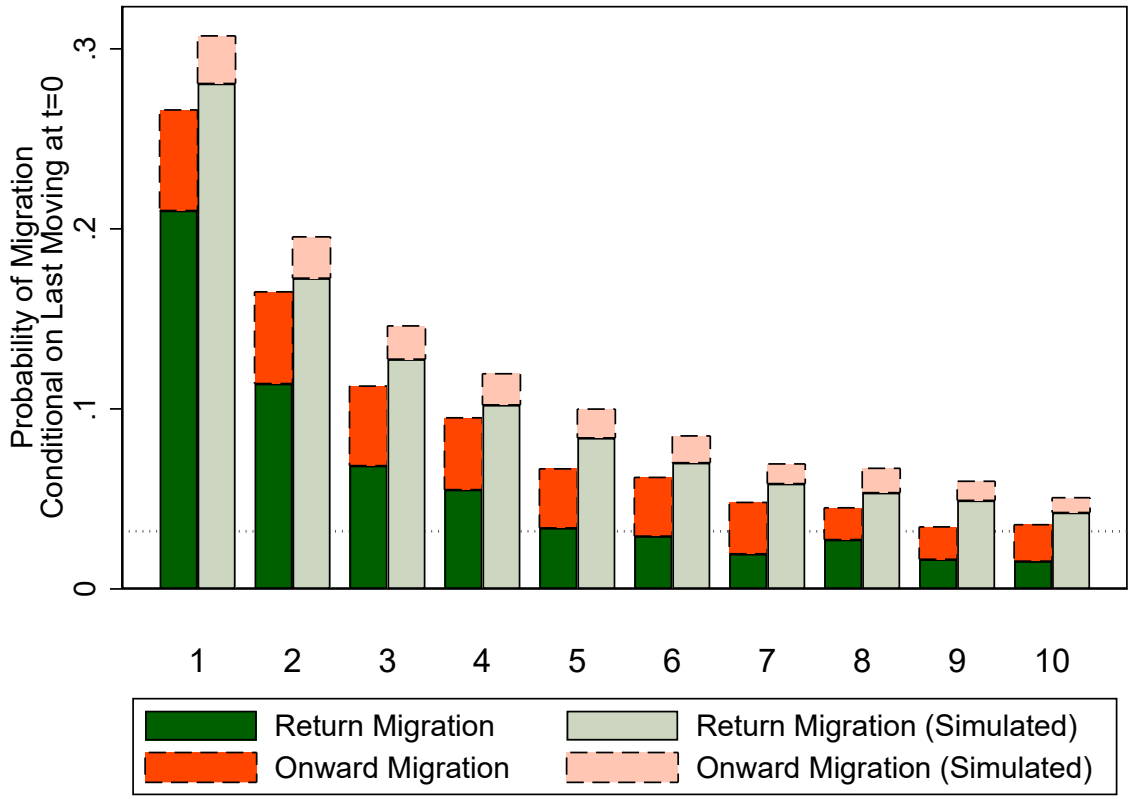
- Fixes concern that some types of people get better mortgage rates
- Authors mention one possible violation: "financially sophisticated households might be more likely to time their mortgage origination..."

Moving probability decreases in tenure



- From Howard and Shao (2022), hazard rate of interstate move after x number of years in a given state
  - Ignore simulated bars and different colors
- Would like to see this for zip codes and conditional on mortgage origination

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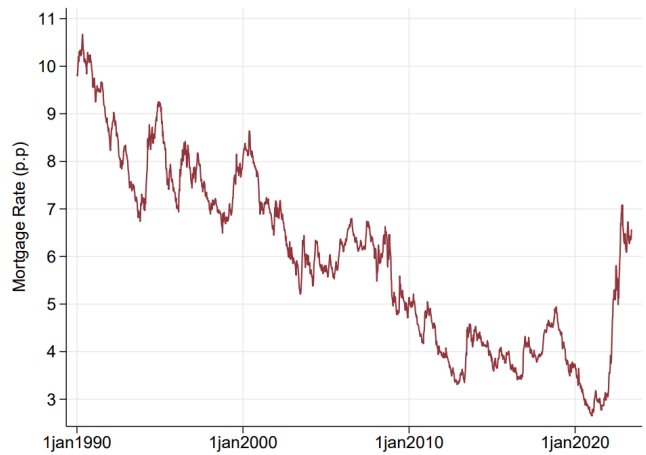
Figure 1: Average 30-Year Fixed-Rate Mortgage Rates



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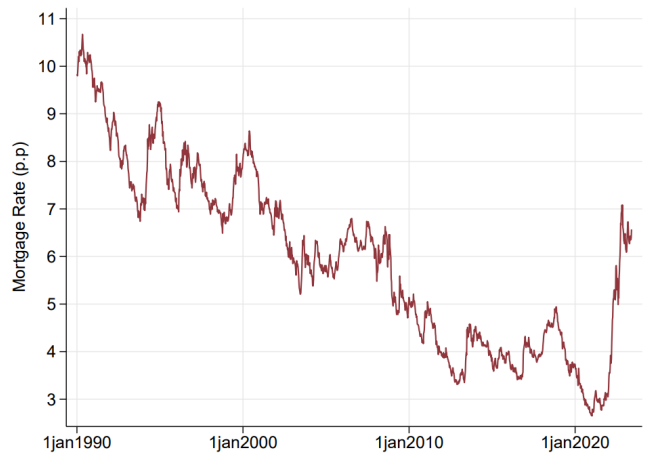

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- Later in quarter is correlated with shorter tenure, more moving
  - Negative bias

Results consistent with this bias (Table A1)

Dependent Variable:	𝕀[Moved]				
	(1)	(2)	(3)	(4)	(5)
Δ r	0.68***	0.61***	0.93***	0.91**	1.14**
	(0.07)	(0.07)	(0.17)	(0.39)	(0.47)
Zipcode FE	Yes	Yes	Yes	Yes	Yes
County×Year FE	Yes	Yes	Yes	Yes	Yes
Origination Year FE	No	No	Yes	No	No
Origination Half-Year FE	No	No	No	Yes	No
Origination Quarter-Year FE	No	No	No	No	Yes
Condition on One Mortgage	No	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
F-Stat	1,910.76	1,907.03	122.18	49.99	54.68
Observations	3,924,792	3,426,737	3,426,737	3,426,737	3,426,737

Notes: This table reports two-stage least squares estimates of Equation (29) with additional fixed effects, indicated in the bottom rows. In columns 2 to 5, we restrict the sample to borrowers with a single mortgage. F-stat refers to the first stage F-statistic. Controls include mortgage balance, mortgage payment, the fraction of the mortgage that has been paid off, credit score, age, age squared, gender, and a zip code house price index. Standard errors are double clustered at the county and origination-month-year level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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New assumption

In the absence of differences in aggregate mortgage rate deltas, differences in moving probabilities based on tenure are constant over time

  - (Similar to a parallel trends assumption)

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- Second concern about identification
- If someone moves or pre-pays their mortgage, they leave the sample
- The results show that having a different mortgage rate delta affects moving
  - I'd be surprised if it doesn't also affect pre-payment
- So the people left with low deltas are different than the people left with high deltas
  - Lose some of the people that were on the margin of moving
- Probably also a negative bias

How to Fix?

- Don't drop them when they move?
  - Just change them to 1 forever
  - Harder to interpret, but less likely to interpret incorrectly
- Some sort of hazard model?
  - Typically relies on stronger assumptions
- My preference: estimate dynamic effects
  - The last suggestion was to do something that felt more like a diff-in-diff
  - Based on that, there should be an event study specification where effects differ over different horizons

My Preferred Specification

$$\text{ever moved}_{it} = \alpha_t + \delta_{s(i)} + \beta X_{it} + \gamma_{s(i)} \Delta r_{it}^{agg} + \epsilon_{it}$$

where t is time and s is tenure.

- ever moved$_{it}$ is a dummy for the person having moved at any point since mortgage origination
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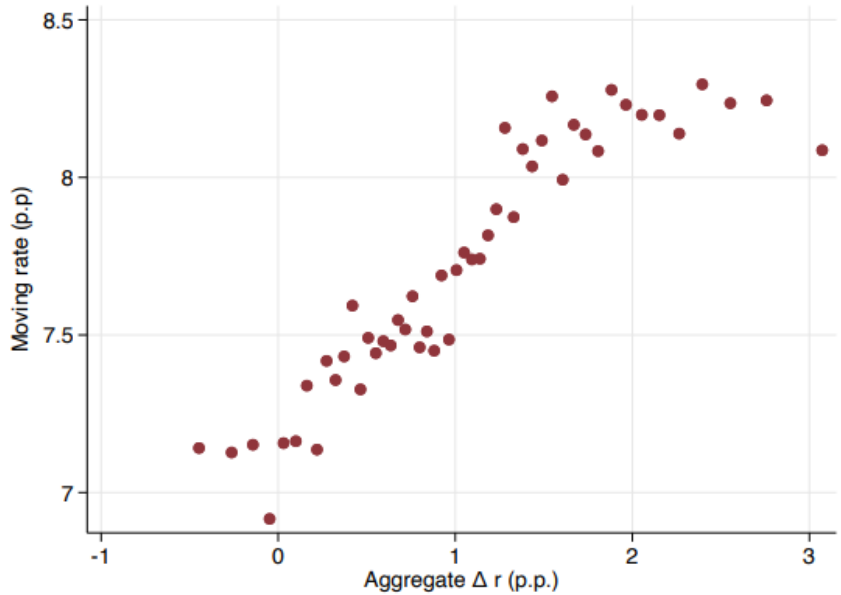
- Authors should still throw in relevant controls, especially county-year fixed effects, and can run the IV instead of the RF if they want
- There are probably concerns here in terms of negative-weighting based on the new TWFE literature
  - But those seem like small potatoes compared to identification/selection concerns

Implications

- Big effects
  - In the more rigorous specifications, closer to 1pp $\rightarrow$ 1pp
  - Could be even larger if my concerns are right
- What to make of it?
  - External validity?

External Validity?

Figure 2: Moving Rates and Aggregate Mortgage Rate Deltas



This figure shows a binned scatter plot of the relationship between individual-level moving rates and aggregate mortgage rate deltas. Variables are residualized from controls. Controls include mortgage balance, mortgage payment, the fraction of the mortgage that has been paid off, credit score, age, age squared, gender, a zip code house price index, and county× year fixed effects.

- Today, the region to the left of 0 is of primary relevance
- Figure suggests non-linearity, so could be even stronger
- More data coming?

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- Not the end of the story
  - Lots of externalities in migration: on children (MTO), innovation, aggregate demand, (this paper:) thickness of housing markets

Conclusions

- Really interesting paper on a topic that will continue to be in the news
- Still a few things to do to improve identification, but might very well make the results bigger!
- Results are interesting for a wide range of literatures

Private comments to the authors

- I'm sure you've thought about this, but I would have found the mortgage rate spread to be more intuitive if you defined it as the negative of what you current have. Probably it's just me, though.
- I think the employment opportunities in the 50-150 mi ring stuff is really cool! Sorry I didn't have time to put it in my discussion
- Controlling for percent of mortgage paid seems like a very strange control, since it's clearly downstream from the mortgage rate delta. I would drop it as a control, but if not, at least explain why you have it.
- I was not very convinced by the event study. Can we possibly believe that there was no effect on moving from anything post-2013 except higher mortgage deltas? I don't remember seeing a sharp drop in aggregate migration rates in 2013 then either. To be honest, I haven't looked in the GCCP.
- I would be very interested in effects for different distances of moving. You might find smaller (proportional) effects on longer moves, since the returns to longer moves are presumably larger.