Discussion of "The Effects of House Prices on Fertility: Evidence from House Purchase Restrictions" by Ziqian Liu and Yu Zhang

Michael B. Wong[1]

[1]HKU Business School

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Outline

Major strengths of the paper

1. Very important topic
2. Very nice natural experimental
3. Thorough evidence on mechanisms

Minor econometric issues

Some potential improvements

Major strengths of the paper

#1 Very important topic

Research question: How do housing prices affect fertility?

This is a very important topic.

- Housing affordability problems around the world are exacerbating inequality and impeding growth (Hsieh and Moretti 2018)
- Slowing fertility is causing problems for economic growth and public finances
- Growing but limited evidence on the importance of housing for fertility

#2 Very nice natural experiment

Methodology: Compare prefectures close to Chinese metropolises that imposed housing purchase restrictions to those that were farther away

This is a very nice natural experiment.

- Exogenous variation in housing demand, leading to 10% increase in housing prices
- Transparent results that are immediately seen in scatter plots
- **Huge** negative effects on fertility

#3 Thorough evidence on mechanisms

- Larger effects for rural-sector households
- Larger effects for prefectures with large sexual imbalance (suggesting role for competitive savings for marriage, a la Wei and Zhang 2011)
- Larger effects where rural schools are scarce
- Positive effects on private education investments (as in Becker-Barro)
- No detectable effects on inter-prefecture migration
- Not driven by changes in age composition
- Not driven by one-child policy

Minor econometric issues

#1: Dynamic treatment effects puzzle

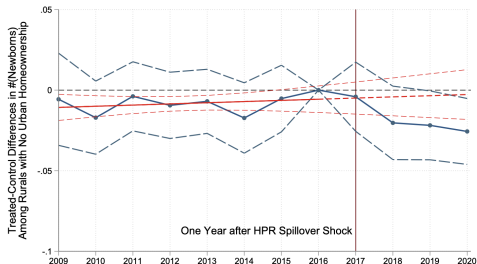A puzzle: Dynamic effects from prefecture-level and individual-level specs are different
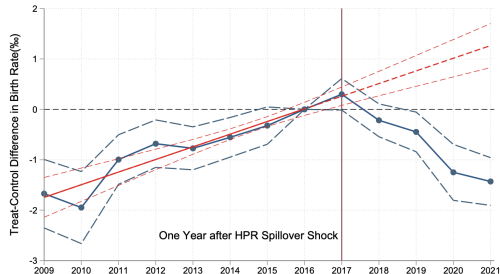

Figure: Individual-level specification

Figure: Prefecture-level specification

#2: Linear trend assumption not ideal

Current approach:

- Show treatment and control on differential **linear** trends
- Control for prefecture-specific **linear** time trends (estimated using pre-period data only by saturating the model with post-post treatment-time dummies)
- Test for robustness using cutting-edge techniques that allow for nonlinear trends / post-treatment trend shifts (Bilinksi and Hatfield 2020; Ramachan and Roth 2023)

BUT <u>assumptions for baseline estimates are arguably still strong</u>: Differential fertility growth in the treatment group may not continue at the same rate in the absence of treatment

#3: Bad controls

Current approach:

- Control for time-varying prefecture-level variables such as fiscal expenditures, average wage, population, and GRP growth

BUT endogenous outcomes are often bad controls: These variables may affected by the treatment, leading to biased estimates (Angrist Pischke 2009, p.64; Cinelli, Forney, and Pearl 2024)

Potential improvements

Potential improvements: econometrics

1. Check if the pre-event differential trends disappear after matching / re-weighting on **pre-period** prefecture characteristics

    - If so, use the matched/reweighted sample throughout, add linear trend controls for robustness, drop endogenous controls

2. Alternatively, add controls for pre-treatment characteristics interacted with time dummies (see "doubly robust" DID estimator, a la Sant'Anna and Zhao 2020)

Potential improvements: framing

1. Very useful to provide new estimates of the elasticity of fertility to housing prices and investigate mechanisms

2. Need to compare with existing estimates and discuss differences

3. Important finding in the literature is that elasticity depends on housing tenure. Novel contribution to show additional mediators: urban vs. rural, sex ratio, and access to schools.

4. Not clear that living space costs remain unchanged, and that fertility declines are purely due to the educational and social amenity cost of housing, as claimed
   - Effect on housing rents and expenditures not measured
   - Plausible that housing rents or expenditures increased in response to policy