Demand Shocks in the Housing Boom and Bust

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Variety in Boom and Bust

Housing Prices in 20 Largest U.S. Cities

What caused heterogeneity in boom/bust? What were its effects?
Variety in Boom and Bust

What caused heterogeneity in boom/bust? What were its effects?
Heterogeneity in the Boom and Bust

Standard model: Common/independent shock mediated by local supply elasticity

- In theory: inelastic cities have higher prices, less construction
- Saiz elasticity (2010) uses natural and legal barriers

Model has been criticized

- In reality: elastic cities have less construction (Davidoff, 2015)
- “Las Vegas puzzle”
Main Contribution

Take local demand shocks seriously during boom/bust

- Main shock: Manufacturing exposure
- Labor literature shows manufacturing-exposed cities suffered

3 Predictions for a negative demand shock

1. Urban economics models: Lower payrolls $\rightarrow$ Lower demand
2. ... Causes lower prices
3. But effects dampened in high-elasticity cities

My Shock: Reflects cross-sectional heterogeneity, not an explanation for bubble in general
Consistent with multiple “bubble” hypotheses: Extrapolation, subprime lending, etc.
Prediction 1. Payroll Growth and Manufacturing
Prediction 2. Housing Prices and Manufacturing

Housing Prices, High- and Low-Manufacturing Regions

Year

Low Manufacturing

High Manufacturing

Log Price Change Since 2000
Prediction 3. Variety in Boom and Bust

Housing Prices, High- and Low-Manufacturing Regions

- Low Manuf, Low Elast
- Low Manuf, High Elast
- High Manuf, Low Elast
- High Manuf, High Elast
Empirical literature relates housing price shocks and consumption

- Housing price growth correlated with consumption growth (Berger et al, 2015; Mian, Sufi & Rao, 2013)
- Alternative view: Housing wealth correlated with permanent income (Calomiris et al, 2009)

Can use combination of elasticity and manufacturing to separate effects

- 2SLS regressions with two endogenous variables
- Intuition: Manufacturing and Elasticity differentially affect wages and prices

Will focus on automobile sales: Common in empirical literature

- Proxied using automobile sales employment
### Determinants of Auto Sales Employment

2SLS and OLS Estimates:

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<tr>
<td></td>
<td>OLS (1)</td>
<td>2SLS (2)</td>
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<tr>
<td>Housing Prices</td>
<td>0.17***</td>
<td>0.13***</td>
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<tr>
<td></td>
<td>(0.03)</td>
<td>(0.02)</td>
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<td>Wages</td>
<td>1.4***</td>
<td>0.87</td>
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<td>(0.38)</td>
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Conclusion

- **Existing model:** Demand shock mediated by differential housing supply elasticity
- **Existing critiques:** Possibly correlated with demand shocks, backwards prediction for construction
- **Addition of demand shock to basic model shows it performs well**
- **Re-evaluate effects of housing prices, show asymmetry in boom and bust**