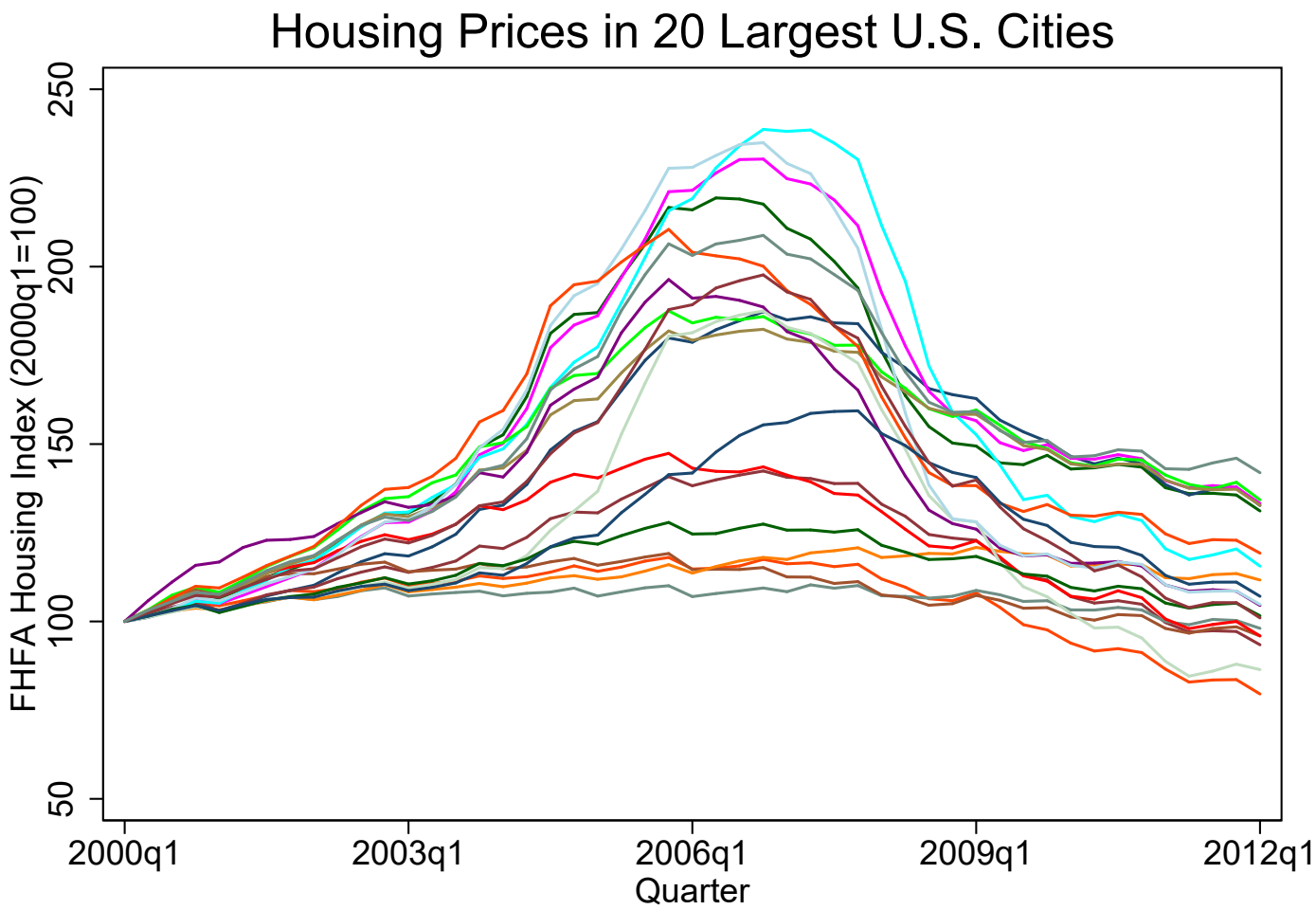
Demand Shocks in the Housing Boom and Bust

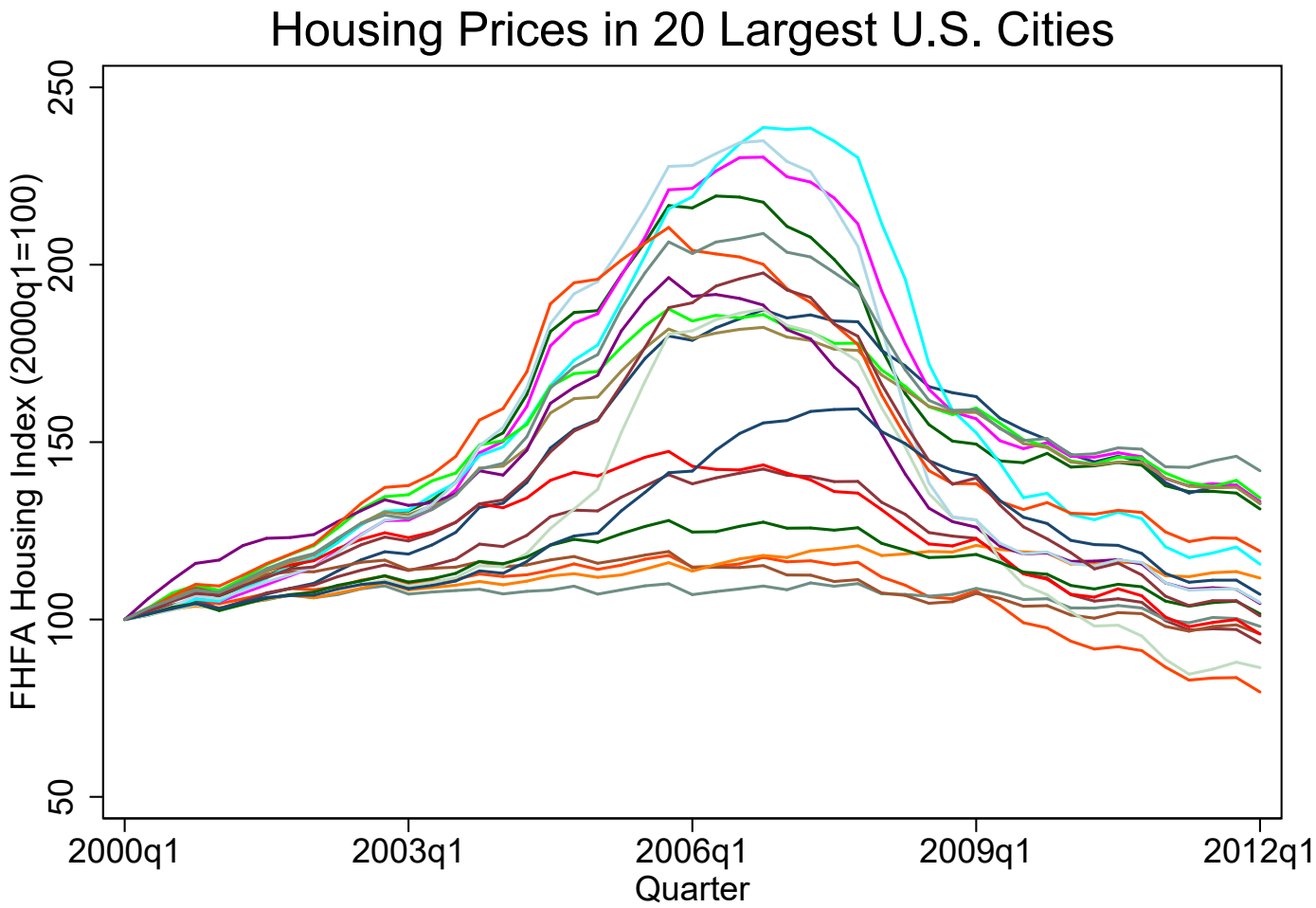
C. Jack Liebersohn

January 29, 2016

Variety in Boom and Bust



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

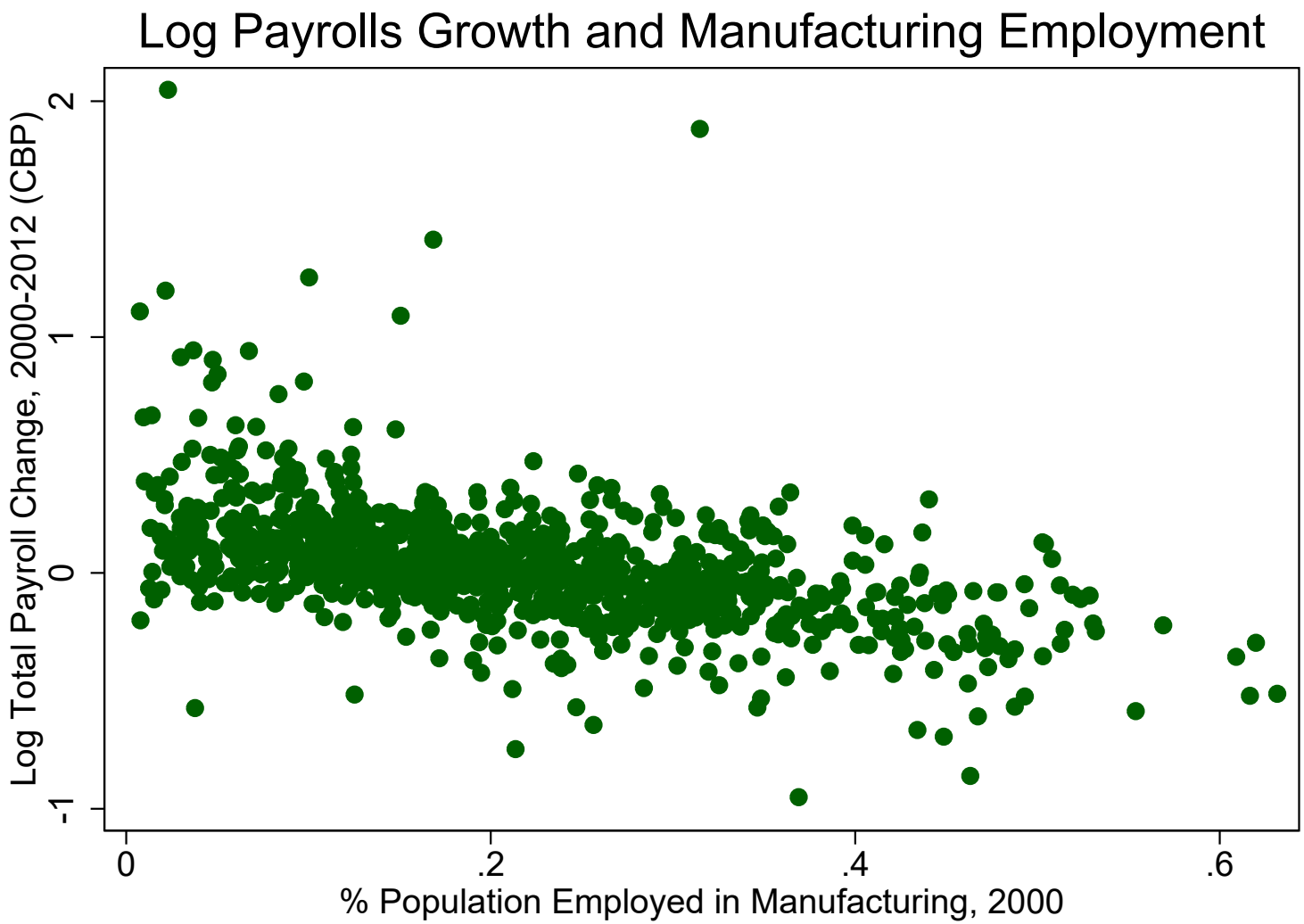
3 Predictions for a negative demand shock

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

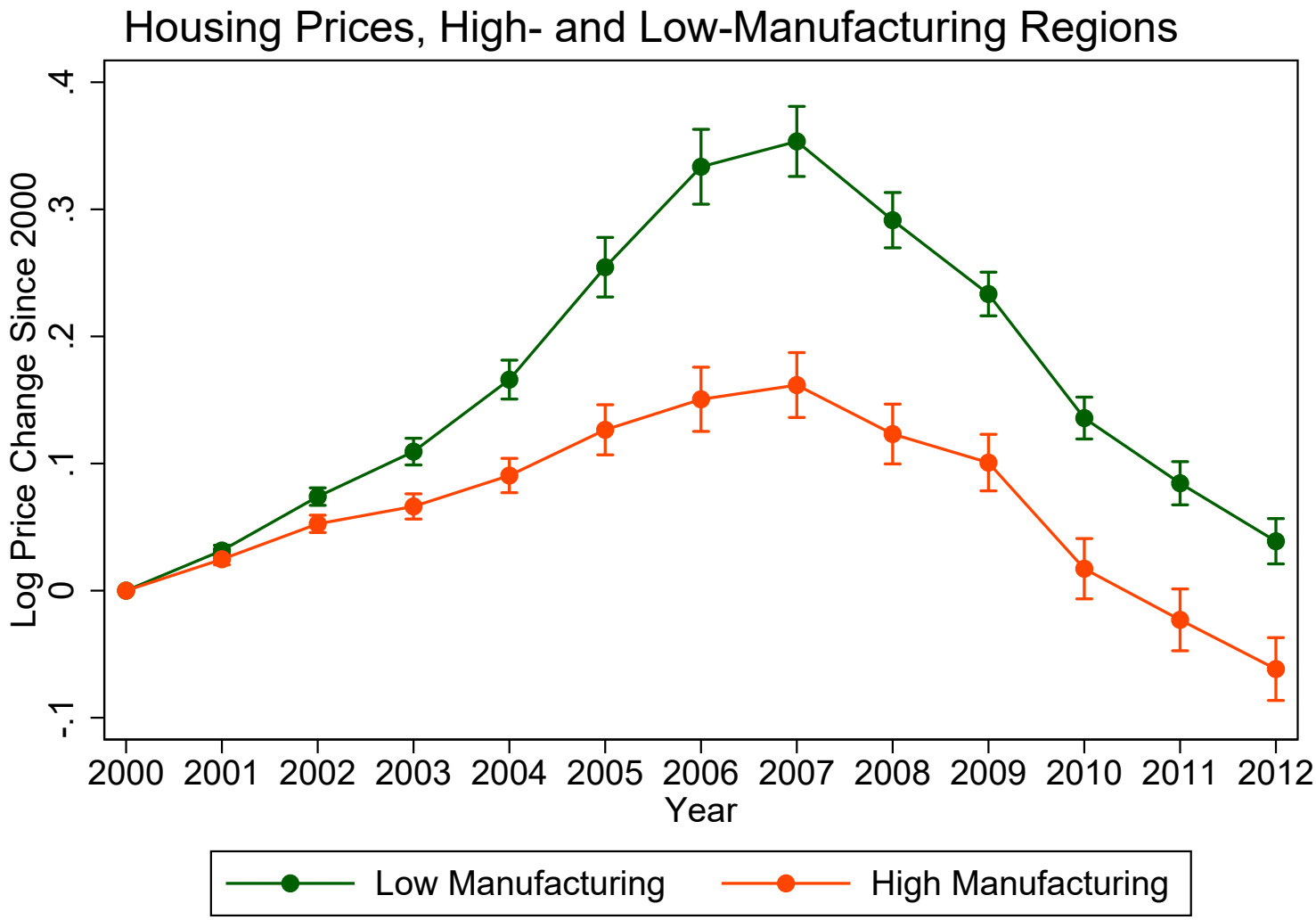
My Shock: Reflects cross-sectional heterogeneity, not an explanation for bubble in general

Consistent with multiple "bubble" hypotheses: Extrapolation, subprime lending, etc.

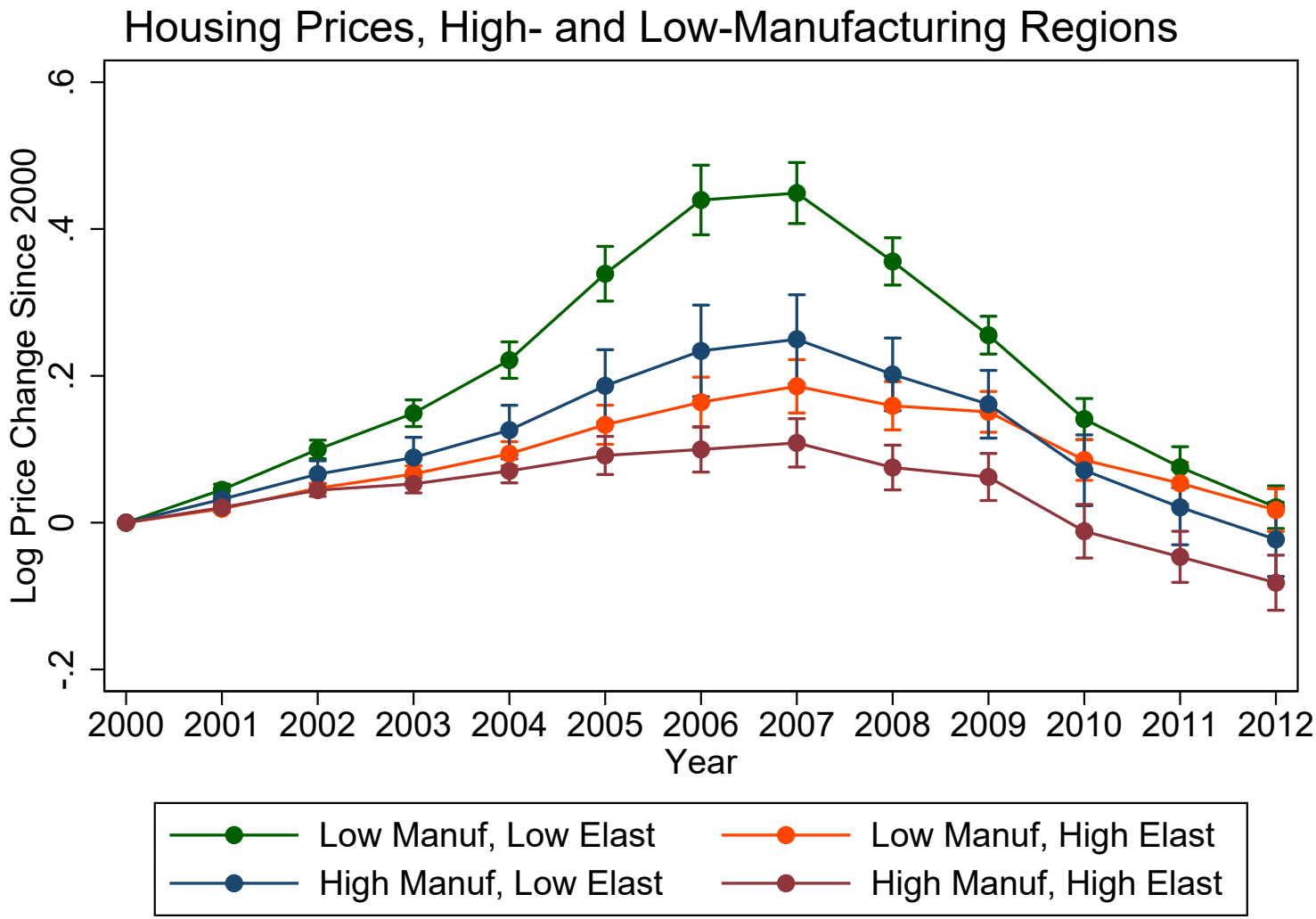
Prediction 1. Payroll Growth and Manufacturing



Prediction 2. Housing Prices and Manufacturing



Prediction 3. Variety in Boom and Bust



Use of New Model: Estimate Effects of Boom & Bust

- 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 Emplyoment

2SLS and OLS Estimates:
Δ Automobile Sales Employment

Specification:	2000-2006		2007-2012	
	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)
Housing Prices	0.17***	0.02	0.13***	0.12**
	(0.03)	(0.06)	(0.02)	(0.05)
Wages		1.4***		0.87
		(0.38)		(0.55)
n	262	262	262	262

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