

House Prices and New Firm Capital Structure

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Real Estate Shocks and Firms

Increasing literature that looks at the effect of real estate shocks on firms investment and financing decisions

Investment and Employment. Chaney et al. 2012, Kleiner 2014

Capital Structure. Cvijanovic 2014

New firms. Robb and Robinson 2012, Adelino et al 2015, Schmalz et al 2015, Corradin and Popov 2015, Kerr et al 2015

$$\Delta Y_i = \beta_0 + \beta_{ij} \Delta HP_j + \varepsilon_i$$

for firm i and geographical area j

Real Estate Shocks and Firms: Empirical Challenge

Empirical Challenge :

$$\Delta Y_i = \beta_0 + \beta_{ij} \Delta HP_j + \varepsilon_i$$

Omitted variables. $E[\Delta HP_j, \varepsilon_i] \neq 0$. Changes in house prices are correlated with:

- Investment opportunities/local economic conditions. Usual approach elasticity of housing supply
- Local demand shocks. More to come

Channel. Is increase in debt due to collateral or wealth effects?

$$\Delta L_i = \alpha_0 + \alpha_{ij} \Delta HP_j + \nu_i$$

Paper Contribution

This paper document the importance of home-equity as a source of initial capital (**channel**)

Aims to measure $\Delta L_i = \alpha_0 + \alpha_{ij}\Delta HP_j + \nu_i$ but observing $1_{HE_i>0}$

It founds that:

- Firm in states with **higher house price appreciation** have a **higher propensity to use home-equity** as a source of funding.
- Also, lower likelihood to use bank loans

Comments: Measurement of House Price Growth

House prices are measure at the state level. Measurement error on HP

$$1_{HE_i > 0} = \alpha_0 + \alpha_{ij} \Delta HP_j + \nu_i$$

Downward biases. If business owners own a house in places where house prices rise more than state average

Upward biases. If the opposite.

It raises concern about accuracy of elasticity value

Suggestion: Measurement of House Price Growth

I will encourage more discussion/analysis about the issue.

Look at geographical location of self-employed or small business

- For example, identify clusters per industry and state, and look exclusively on this areas-industries.

Aimed is to establish some upper and lower bounds of the estimated elasticity.

	N of Self-Employed, County Average	
	Census	BEA
Non MSA	1544	2535
MSA	14554	23959

Comments: Endogeneity of RE Shocks - Local Demand

Increases in HP lead to increase in consumption (home-equity)

Differential effect between firms with (start-up capital $< 5k$) and firms with (start-up capita $> 5k$)

Assumptions are:

- Firms that only need 5k as initial financing do not use home-equity. Plausible based on summary statistics
- Local demand shocks affect firms with low and high initial capital needs equally.
Unlikely, a firm that only need 5k as a start-up capital very different from a firm that need 20k

Suggestion: Endogeneity of RE Shocks - Local Demand

Industry analysis to isolate the effect. Adelino et al 2015

How different are the estimates for industry that are less likely to be affected by local demand (for example Manufacturing)

Table 9 shows that effect on home equity is **0.084 (t-stat 2)** instead of **0.11 (t-stat 4.6)** for all firms

Comments: Intensity of Treatment

	Home Equity		
Change in HP 02-06	0.064	0.011	0.051
	0.019	0.005	0.014
	0.001	0.031	0.001
Change in HP 02-06 x (F>5k)		0.105	
		0.039	
		0.011	
Change in HP 02-06 x F (25k-100k)			0.090
			0.050
			0.079
(F>5k)		0.099	
		0.018	
		0.000	
F (25k-100k)			0.142
			0.023
			0.000
N	69,461	69,461	69,461
r2	0	0.07	0.05

1(start-up capital < 5k) interaction is picking up intensity of the treatment

Use house prices and average LTVs to get bounds of the available home-equity

Average HP 300k with an LTV=0.8 implies **home-equity 60k**

Comments: Endogeneity of RE Shocks - Inv. Opp.

$$\Delta Y_i = \beta_0 + \beta_{ij} \Delta HP_j + \varepsilon_i$$

Endogeneity: Investment opportunities/economics conditions are driving both ΔY_i and ΔHP_j (omitted variables)

Elasticity of housing supply as a valid instrument:

- It only correlates with ΔY_i through ΔHP_j

Elasticity in the paper is average of MSA elasticities in a state weighted by population.

- Makes the exclusion restriction less plausible, likely not a valid instrument

Suggestion: Endogeneity of RE Shocks - Inv. Opp.

Arguably no need of an instrument

$$1_{HE_i > 0} = \alpha_0 + \alpha_{ij} \Delta HP_j + \nu_i$$

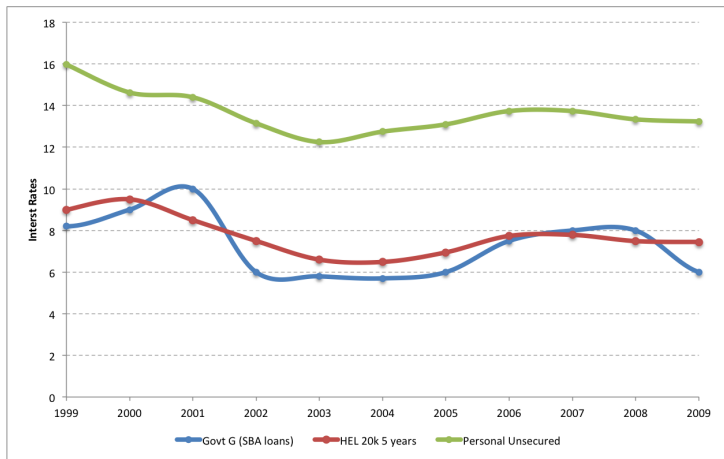
Endogeneity concern: Investment opportunities affects the propensity to use home-equity not through ΔHP_j

In this case the elasticity of housing supply does not help. In fact estimates in table 3 do not change with IV.

	OLS		OLS		IV (Elasticity)		IV (Elasticity)	
	Only Home Equity	Home Equity	Only Home	Home	Only Home	Home	Only Home	Home
Elasticity					-.25*** (-219.77)	-.25*** (-219.77)	-.25*** (-219.77)	-.25*** (-219.77)
$\Delta\%$ Price Index $\times 1[\text{Financial} > \$5,000]$.041*** (6.6)	.11*** (4.8)	.042*** (6.7)	.11*** (4.6)	.042*** (7)	.11*** (4.8)	.043*** (7)	.11*** (4.6)

Suggestion: Endogeneity of RE Shocks - Inv. Opp.

Provide evidence of cost of different sources of finance.



Endogeneity: Only a problem if investment opportunities affect business owner propensity to use home-equity for other reason not related to ΔHP_j

Comments: Endogeneity of RE Shocks - Pseudo Panel

The paper uses a pseudo panel specification

$$1_{HE_{i,t}>0} = \alpha_i + \alpha_{ij}P_j + \delta_t + \text{controls}_{it} + \nu_{it}$$

Collapses the data at the state-financing amount-year level to create representative firm, using older firms.

- It affects the level of observation
- Expansion is interesting but incorporate survivorship biases.

Suggestion:

Run a repeated cross-section on individual data using state-financing amount- industry-year dummies

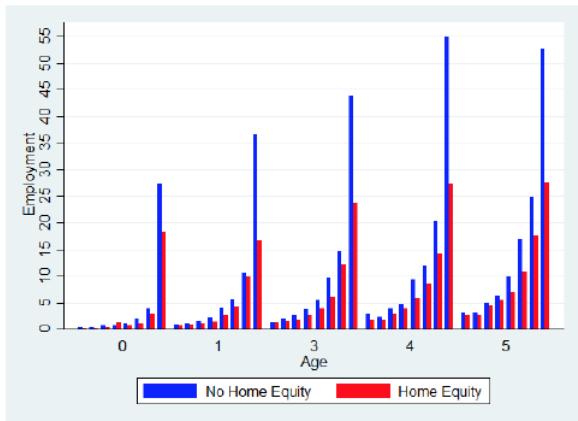
How different are the coefficients?

Comments: Real Effects

Real Effects

Firm employment dynamics in figure 3 interesting.

Different dynamics between home-equity and non-home equity firms.



Interpretation.

Main results is cross-sectional across firms not within firms.

- It is about how different business owner react to differential shocks to house prices
- It is not about business owner change in financing decision based on differential house prices.

Magnitude.

Is the elasticity big or small? It will help to compare to other estimates.

- Kerr et al 2015, for US using LEHD data, but also SBO Table 9. Estimate is 0.0386 vs 0.11 in this paper
- Schmalz et al 2015 for France

Conclusion

Interesting paper that aims to document the importance of collateral channel - home-equity

Need to do more to sharpen the contribution

- Relevant treatment: House price change and intensity of treatment
- Relate to existing estimates. Kerr et al 2015 and Schmalz et al 2015
- Explore more on firms dynamics. SBO 2012 coming up!

Looking forward to read the new version.

Thank you!