Internet Appendix for

"Collateral Shocks and Corporate Employment"

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Appendix IA.I: First-stage for IV estimation

This table presents estimates of the impact of land supply elasticity on real estate prices. The unit of observation in each regression is an MSA-year pair. The dependent variable is the real estate price index (single-family home, residential) defined at the MSA-year level. The MSA-level land supply elasticity is interacted with the interest rate on a 30-year, fixed-rate conventional home mortgage. Column [1] uses the land supply elasticity directly. Column [2] uses the quartiles of the land supply elasticity. Each regression is estimated using OLS and controls for year and MSA fixed effects. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the MSA level.

Dependent variable: *RE Price Index*		
	[1]	[2]
Elasticity × Mortgage Rate	0.035	
	(0.004)	
Elasticity (First Quartile) × Mortgage Rate		-0.064
		(0.007)
Elasticity (Second Quartile) × Mortgage Rate		-0.046
		(0.008)
Elasticity (Third Quartile) × Mortgage Rate		-0.014
		(0.007)
Year fixed effects	Y	Y
MSA fixed effects	Y	Y
N	1,358	1,358
R^2	0.95	0.95

Appendix IA.II: Real estate ownership and firm-level characteristics

Panel A presents estimates of the firm-level determinants of the real estate ownership decision in 1993. The unit of observation in each regression is a firm. Column [1] uses *RE Owner* as the dependent variable, which is an indicator variable equal to one if the firm reports any real estate holdings on its balance sheet in 1993. Column [2] uses the market value of real estate assets in 1993 as the dependent variable. Each regression is estimated using OLS and includes for firm characteristics (five quintiles of *Return on Assets, Total Assets, Age*) and industry and MSA fixed effects. All variables are defined in Appendix A. Robust standard errors are shown in parentheses. Panel B provides summary statistics for renters and owners for the Compustat universe from 1993 until 2006. The unit of observation is a firm-year. Renters (owners) report zero (positive) real estate ownership in a given year.

Panel A: Determinants of real estate ownership

Dependent variable:	RE Owner	RE Value
	[1]	[2]
Return on Assets (Second Quintile)	0.128	0.252
	(0.026)	(0.067)
Return on Assets (Third Quintile)	0.151	0.219
	(0.027)	(0.070)
Return on Assets (Fourth Quintile)	0.138	0.189
	(0.027)	(0.069)
Return on Assets (Fifth Quintile)	0.120	0.206
	(0.026)	(0.067)
Total Assets (Second Quintile)	0.173	0.156
	(0.026)	(0.066)
Total Assets (Third Quintile)	0.308	0.203
	(0.026)	(0.068)
Total Assets (Fourth Quintile)	0.484	0.381
	(0.028)	(0.073)
Total Assets (Fifth Quintile)	0.517	0.235
	(0.031)	(0.081)
Age (Second Quintile)	0.057	0.054
	(0.026)	(0.068)
Age (Third Quintile)	0.12	0.120
	(0.02)	(0.066)
Age (Fourth Quintile)	0.227	0.386
	(0.025)	(0.064)
Age (Fifth Quintile)	0.285	0.848
	(0.027)	(0.071)
Industry fixed effects	Y	Y
MSA fixed effects	Y	Y
N	2,474	2,474
R^2	0.58	0.37

Panel B: Summary statistics for renters and owners

	Renters			Owners		
	N	Mean	Std.	N	Mean	Std.
	[1]	[2]	[3]	[4]	[5]	[6]
RE Value	8,770	0	0	16,230	1.361	1.198
Return on Assets	8,884	-0.144	0.343	16,218	0.066	0.140
Cash Flow	8,708	-1.565	4.433	16,154	0.213	1.132
q	8,083	2.870	2.087	14,601	1.708	1.111
Total Assets	8,969	144.4	545.7	16,281	2,554	12,163
Age	9,010	11.806	6.774	16,335	24.420	14.873

Appendix IA.III: Further summary statistics for Compustat-LBD sample

This table provides sample summary statistics for the Compustat-LBD matched sample separately for single- and multi-unit firms. The unit of observation is an establishment-year. All variables are defined in Appendix A.

	Compustat-LBD			Single-unit			Multi-unit		
	Rounded N	Mean	Std.	Rounded N	Mean	Std.	Rounded N	Mean	Std.
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Panel A: Firm-level									
Employment Expenditures	13,000	0.193	0.733	2,000	0.326	1.001	11,000	0.168	0.668
Number of Employees	13,000	2.594	15.795	2,000	3.420	19.126	11,000	2.439	15.087
Number of Employees (Alt.)	13,000	0.011	0.323	2,000	0.013	0.370	11,000	0.010	0.313
Average Wage	13,000	0.002	0.008	2,000	0.002	0.012	11,000	0.002	0.007
RE Value	13,000	0.852	1.121	2,000	0.211	0.748	11,000	0.971	1.139
RE Value (Employment-Weighted)	13,000	0.890	1.215	2,000	0.214	0.759	11,000	1.016	1.242
RE Value (Employment-Maximum)	13,000	0.881	1.207	2,000	0.214	0.759	11,000	1.006	1.234
RE Value (HQ Owner)	9,000	0.781	1.134	2,000	0.174	0.707	7,000	0.923	1.167
RE Owner	13,000	0.641	0.480	2,000	0.127	0.333	11,000	0.737	0.440
Return on Assets	13,000	0.007	0.236	2,000	-0.240	0.373	11,000	0.053	0.163
Cash Flow	13,000	-0.265	2.668	2,000	-2.534	4.803	11,000	0.159	1.730
q	13,000	2.087	1.554	2,000	3.115	2.196	11,000	1.895	1.316
Total Assets	13,000	1,512	5,911	2,000	46.56	141.5	11,000	1,786	6,402
Age	13,000	20.108	14.067	2,000	10.714	6.451	11,000	21.866	14.406
Panel B: Establishment-level									
Employment Expenditures	912,000	0.097	0.695	2,000	0.834	1.841	912,000	0.095	0.689
Number of Employees	912,000	0.000	0.031	2,000	0.008	0.078	912,000	0.000	0.030
Age	912,000	10.374	8.219	2,000	12.658	6.365	912,000	10.368	8.223

Appendix IA.IV: Collateral shocks and firm-level investment

This table presents estimates of the firm-level impact of real estate collateral value on corporate investment. The unit of observation in each regression is a firm-year pair. The dependent variable is investment defined as capital expenditure divided by the lagged book value of plants, properties, and equipment (PPE). The main independent variable is the market value of real estate assets scaled by lagged PPE, which is calculated assuming assets are located in the same MSA as firms' headquarters (see Section 1.2). Columns [1] to [3] show the results of the OLS estimation. Column [4] instruments for the market value of real estate using the triple-interaction of the local land supply elasticity, the nationwide mortgage interest rate, and the market value of real estate holdings in 1993. Each regression controls for firm fixed effects, as well as initial firm characteristics (five quintiles of *Return on Assets, Total Assets, Age*, and two-digit SIC industry dummies) interacted with either MSA-level real estate prices or MSA-year fixed effects. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the MSA-year level. ***, **, and * denote 1, 5, and 10 percent statistical significance, respectively.

Dependent variable: *Investment*				
	[1]	[2]	[3]	[4]
RE Value	0.064***	0.051***	0.059***	0.060***
	(0.005)	(0.005)	(0.006)	(0.007)
Cash Flow		0.030***	0.026***	0.027***
		(0.003)	(0.004)	(0.004)
q		0.068***	0.064***	0.066***
		(0.003)	(0.004)	(0.004)
Firm fixed effects	Y	Y	Y	Y
Year fixed effects	Y	Y	N	N
RE price index	Y	Y	N	N
RE price index × init. controls	Y	Y	N	N
MSA × year fixed effects	N	N	Y	Y
MSA × year fixed effects × init. controls	N	N	Y	Y
N	25,479	23,153	17,067	13,000
R^2	0.37	0.41	0.58	0.58