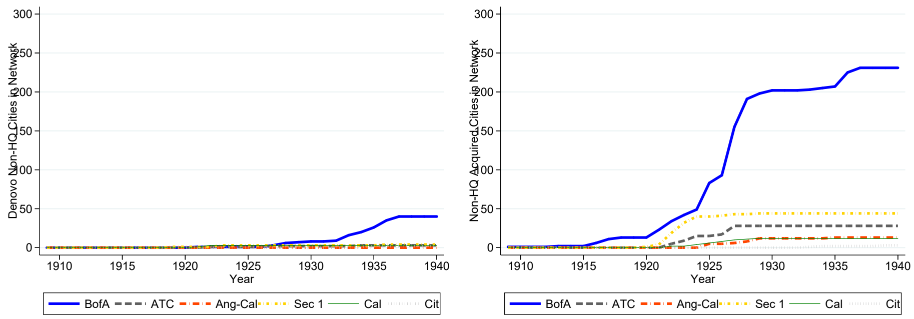
Online Appendix for "Loans for the 'Little Fellow:' Credit, Crisis, and Recovery" by Sarah Quincy

Section	Description
A	Charts and tables
B	Property value data
C	Banking variables
D	Geographic standardization
E	Labor market microdata
F	Additional lending growth robustness
G	Further evidence on 1930s lending determinants
H	Further balance testing

Appendix Figures and Tables

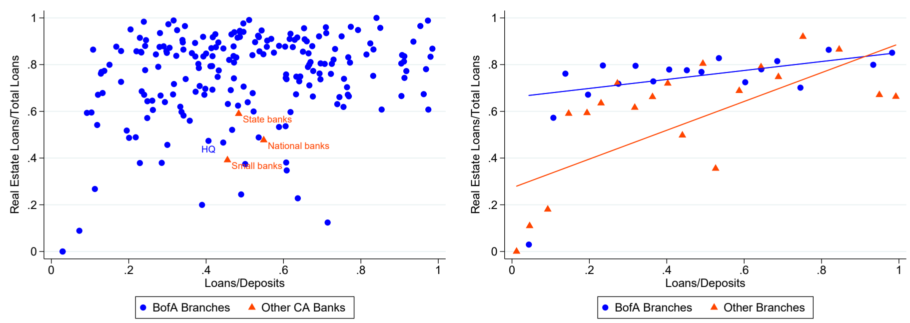
A1. Supplemental Figures



(a) *De novo* (b) Purchased

Figure A1. : California Branch Bank Networks By Acquisition Type, 1909–1940

Source: California Bank branches: California State Banking Department (1910–39). All other branches: Transamerica Corporation vs Federal Reserve Board (1952).
Note: The non-Bank of America banks listed are the only other banks to operate branches in at least four cities in 1929: from left to right, American Trust Company, Anglo-California National Bank, Security First National Bank, California Bank, and Citizens National Bank. Purchase and *de novo* demarcate the method of each branch network's first entry into a city, as identified by regulators.



(a) All banks

(b) Branches only

Figure A2. : Real Estate Lending in California Banks, 1933

Source: Federal Reserve Board of Governors (1933).

Note: All California Federal Reserve member banks in December 1933 included in summary measures on left. The corresponding statistics for all California state banks are real estate loan share of 0.38 and loan-deposit ratio of 0.54 via California State Banking Department (1910–39) observed in June 1933. All Bank of America branches in 1933 included in both figures. In Figure A2a, small cities refers to banks headquartered outside of the reserve cities of San Francisco, Oakland, and Los Angeles. Figure A2b includes all extant national bank branch balance sheets. See Appendix C.C2 for more detail on these records.

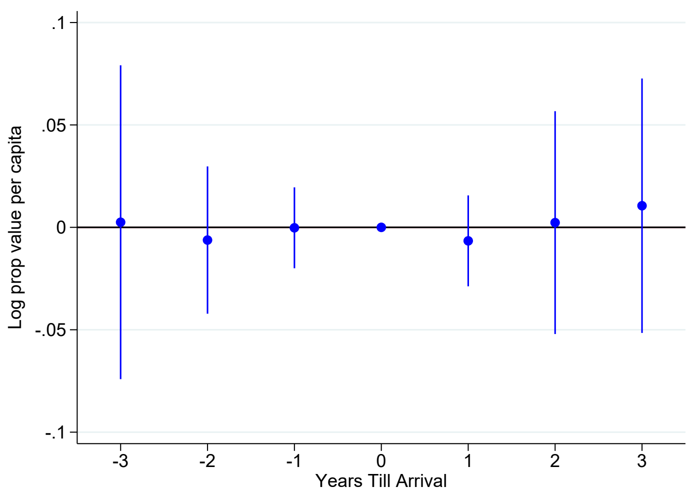


Figure A3. : Generalized Difference in Difference Coefficients Around Bank of America's Arrival

Source: Property value per capita California Board of Equalization (1923–40) and Bleemer (2016). Bank of America arrival date: Transamerica Corporation vs Federal Reserve Board (1952).
Note: This generalized difference-in-difference specification also includes city and year fixed effects with the event defined as Bank of America opening in the city. Coefficients reflect the time till the event so long as it occurred between 1922 and 1929 along with the 95 percent confidence interval. The 20 most populous cities in California in 1929 are not included. Standard errors clustered at the county level.

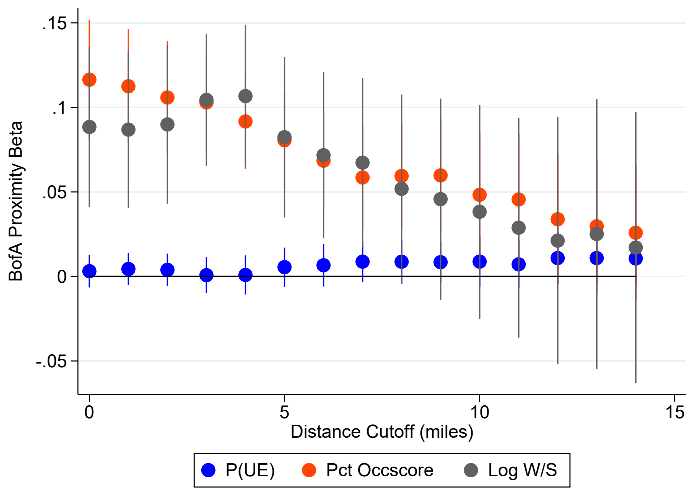


Figure A4. : Robustness of Individual Results to Alternative Distance Cutoffs

Source: See Table 5.

Note: Each y-axis value is the BofA coefficient from a separate regression on the 1940 variable listed above the graph as in Equation 2 using the corresponding x-axis value as the distance cutoff. The lines represented 95 percent confidence intervals based on the standard errors from each separately estimated regression clustered at the county level. The 20 most populous cities in the state in 1929 are not included. See Appendix E.E2 for details on census data and Appendix D for details on spatial aspects of the data.

A2. Supplemental Tables

Table A1—: Effects of Receiving Internal Capital Market Transfers, 1933

	Loan-Asset Share, 1933			1929–33 Prop Val Growth			
				Reduced Form		2SLS	
Share Deposits Due to Network	1.33	1.54	1.49	0.16	0.75		
	(0.08)	(0.19)	(0.29)	(0.19)	(0.15)		
Log(Deposits)	0.046	0.070	0.025	0.014	0.032	0.0073	0.019
	(0.01)	(0.03)	(0.01)	(0.02)	(0.01)	(0.03)	(0.02)
1(HQ)	-0.58	-0.50	-0.95	-0.073	-0.41	-0.022	0.075
	(0.14)	(0.23)	(0.11)	(0.10)	(0.08)	(0.10)	(0.07)
Log(Average Account)	0.0025	0.059	-0.021	0.012	0.23	0.0064	0.24
	(0.02)	(0.03)	(0.04)	(0.02)	(0.04)	(0.02)	(0.03)
Loans/Assets						0.10	0.51
						(0.12)	(0.13)
Constant	-0.23	-0.97	0.25	-0.75	-2.07	-0.65	-2.20
	(0.22)	(0.33)	(0.17)	(0.28)	(0.25)	(0.33)	(0.24)
BofA	X		X		X		X
Non-BofA	X	X		X		X	
R-sq	0.15	0.23	0.16	0.02	0.31	-0.02	0.22
N	360	177	183	177	183	177	183

Source: Property value: California Board of Equalization (1923–40) and Bleemer (2016). Balance sheets: Federal Reserve Board of Governors (1933).
Note: The column describes the outcome variable estimated using the same specification as in Table 3. Columns 5 and 6 instrument for the loan/asset share using the share of deposits due to the network using two-stage least squares. All national bank branch networks in California in 1933 included. Standard errors are clustered at county level. The HQ indicator is one if the office is the headquarters of the network according to the call reports. Log average account size is defined as the total amount of savings deposits divided by the number of savings account holders at that branch, which is then logged, and is zero for offices with no savings deposits. Property value per capita growth measured at city level. See Appendix C.C2 for details on these data.

:q

Table A2—: Branch Level Asset Composition, 1933

	Due from network	Real estate loans	Other loans	Due from other banks	Cash	Other assets
A: No Controls						
1(BofA)	-0.122	0.135	-0.0168	-0.00666	-0.00136	0.0115
	(0.0240)	(0.0232)	(0.0109)	(0.00121)	(0.00123)	(0.00522)
Constant	0.572	0.264	0.122	0.00999	0.0189	0.0137
	(0.0249)	(0.0170)	(0.0219)	(0.00171)	(0.000407)	(0.00385)
N	359	359	359	359	359	359
B: With Controls						
1(BofA)	-0.126	0.133	-0.00141	-0.00559	-0.00178	0.00245
	(0.0157)	(0.0120)	(0.0123)	(0.00214)	(0.000403)	(0.00717)
Log(Deposits)	-0.0820	0.0496	0.0256	0.00439	-0.00377	0.00620
	(0.00600)	(0.00259)	(0.00590)	(0.000735)	(0.000146)	(0.00134)
Log(Average Account)	0.00645	0.00924	0.0161	-0.00882	-0.00130	-0.0217
	(0.0125)	(0.00782)	(0.0108)	(0.00398)	(0.000136)	(0.00945)
N	256	256	256	256	256	256
C: Deposit DD						
1(BofA)	-1.186	1.068	0.111	0.0712	-0.00384	-0.0606
	(0.500)	(0.519)	(0.142)	(0.0283)	(0.00520)	(0.124)
Log(Deposits)	-0.114	0.0777	0.0290	0.00669	-0.00383	0.00431
	(0.0174)	(0.0131)	(0.00216)	(0.000614)	(0.000256)	(0.00338)
Log(Average Account)	0.0130	0.00347	0.0154	-0.00929	-0.00129	-0.0213
	(0.0191)	(0.0140)	(0.0106)	(0.00415)	(0.000144)	(0.00976)
Log(Dep) x BofA	0.0767	-0.0678	-0.00815	-0.00556	0.000149	0.00457
	(0.0367)	(0.0383)	(0.0107)	(0.00207)	(0.000384)	(0.00934)
N	256	256	256	256	256	256
D: Big Banks Only						
1(BofA)	-1.258	0.940	0.230	0.0234	0.0166	0.0480
	(0.314)	(0.255)	(0.0827)	(0.00475)	(0.00292)	(0.00408)
Log(Deposits)	-0.124	0.0634	0.0552	0.00427	-0.00238	0.00324
	(0.0116)	(0.00881)	(0.00408)	(0.000190)	(0.000168)	(0.000414)
Log(Average Account)	0.117	-0.0864	-0.0162	-0.00262	-0.00287	-0.00867
	(0.0182)	(0.0160)	(0.00563)	(0.000474)	(0.000291)	(0.000693)
Log(Dep) x BofA	0.0918	-0.0699	-0.0161	-0.00162	-0.00135	-0.00287
	(0.0232)	(0.0192)	(0.00583)	(0.000353)	(0.000236)	(0.000303)
N	195	195	195	195	195	195

Source: See Table 3.

Note: This table follows Table 3 for a wider range of asset categories and specifications. Omitted controls include city fixed effects (except in Panel A), and a indicator for being the headquarters office. The HQ indicator is one if the office is the headquarters of the network according to the call reports. Log average account size is defined as the total amount of savings deposits divided by the number of savings account holders at that branch, which is then logged, and is zero for offices with no savings deposits. City fixed effects restrict the sample outside of Panel A to cities with at least two offices in the dataset. Panel D restricts to Security First and the Bank of America, the two largest networks. Standard errors are clustered at county level. All variables measured at office level and all extant 1933 national bank balance sheets included.See Appendix C.C2 for details on these data.

Table A3—: Branch Level Asset Shares by Deposit Triple Difference, 1933

	Due from network	Real estate loans	Other loans	Due from other banks	Cash	Other assets
BofA	0.855	-0.128	-0.189	0.0339	-0.0128	-0.560
	(0.530)	(0.363)	(0.666)	(0.111)	(0.00875)	(0.0854)
Log(Deposits)	-0.0723	0.111	-0.0211	-0.00214	-0.00332	-0.0125
	(0.0252)	(0.0251)	(0.0323)	(0.00844)	(0.00101)	(0.00888)
Log(Avg. Account)	0.0183	-0.00449	0.0192	-0.00851	-0.00145	-0.0230
	(0.0180)	(0.0107)	(0.0145)	(0.00413)	(0.000153)	(0.00868)
Log(Dep) × BofA	-0.0517	0.00578	0.00980	-0.00351	0.000912	0.0387
	(0.0307)	(0.0269)	(0.0447)	(0.00748)	(0.000503)	(0.00533)
1(HQ)	-0.198	-0.469	0.199	0.184	-0.000606	0.285
	(0.112)	(0.0492)	(0.0732)	(0.0235)	(0.00271)	(0.0200)
1(Wdrls) × BofA	-2.446	1.610	0.160	0.00431	0.0194	0.652
	(0.738)	(0.309)	(0.722)	(0.115)	(0.00974)	(0.0916)
Log(Dep) × 1(Wdrls)	-0.0502	-0.0287	0.0498	0.00860	-0.000302	0.0209
	(0.0359)	(0.0196)	(0.0371)	(0.00874)	(0.000884)	(0.00903)
Log(Dep) × 1(Wdrls) × BofA	0.156	-0.103	-0.00690	0.000512	-0.00156	-0.0453
	(0.0458)	(0.0215)	(0.0485)	(0.00779)	(0.000593)	(0.00588)
Constant	2.092	-0.936	-0.291	-0.0156	0.0778	0.0724
	(0.0323)	(0.0810)	(0.0730)	(0.0317)	(0.00387)	(0.0508)
R-sq	0.41	0.28	0.31	0.88	0.36	0.78
N	256	256	256	256	256	256

Source: See Table 3.

Note: 1(Wdrls) denotes a city with higher than median deposit losses from 1928 to 1933. These categories represent all asset categories on each national bank branch balance sheet. Other loans refers to all non-real estate, non-interbank, non-intrabank loans at a branch. See Appendix C.C2 for details on these data.

Table A4—: Average Educational Attainment Rates by Occupation, 1940

	Prof./Mgr.	Farm	Cler./Sale	Craft/Op.	Service	Laborers	Total
A: USA							
8th grade	0.866	0.496	0.896	0.682	0.640	0.464	0.672
12th grade	0.555	0.0918	0.493	0.162	0.161	0.0747	0.240
4-year college	0.249	0.00901	0.0868	0.0128	0.0153	0.00575	0.0582
B: California							
8th grade	0.913	0.550	0.936	0.828	0.750	0.623	0.801
12th grade	0.622	0.140	0.593	0.285	0.263	0.153	0.368
4-year college	0.254	0.0183	0.100	0.0196	0.0232	0.0112	0.0789
C: Small Town CA							
8th grade	0.909	0.554	0.940	0.824	0.756	0.616	0.759
12th grade	0.603	0.138	0.588	0.266	0.249	0.137	0.309
4-year college	0.253	0.0177	0.0937	0.0174	0.0192	0.00948	0.0637

Source: Ruggles et al. (2024).

Note: All men between the ages of 25 and 65 who report being employed in 1940 included in calculations. Educational attainment rates calculated using the 1940 census highest grade attended variable. Occupation calculated using the first digit of OCC1950. Small town California excludes the 20 most populous cities in California in 1929. For more details on the data, see Appendix E.E2.

Table A5—: Average Educational Attainment Rates by Industry, 1940

	Ag./Mine	Mfg./Cons.	Trans./Util.	Ret./Whol.	Services	Gov.	Total
A: USA							
8th grade	0.500	0.652	0.712	0.784	0.797	0.872	0.670
12th grade	0.0972	0.189	0.215	0.343	0.436	0.448	0.237
4-year college	0.0111	0.0321	0.0322	0.0534	0.194	0.122	0.0554
B: California							
8th grade	0.598	0.800	0.814	0.855	0.870	0.925	0.801
12th grade	0.168	0.315	0.332	0.434	0.512	0.523	0.366
4-year college	0.0254	0.0474	0.0450	0.0603	0.188	0.134	0.0770
C: Small Town CA							
8th grade	0.595	0.783	0.804	0.859	0.865	0.923	0.759
12th grade	0.159	0.278	0.309	0.421	0.490	0.515	0.307
4-year college	0.0224	0.0395	0.0381	0.0553	0.195	0.135	0.0618

Source: Ruggles et al. (2024).

Note: All men between the ages of 25 and 65 who report being employed in 1940 included in calculations. Educational attainment rates calculated using the 1940 census highest grade attended variable. Industry calculated using the first digit of IND1950. Small town California excludes the 20 most populous cities in California in 1929. For more details on the data, see Appendix E.E2.

Table A6—: Average Sectoral Employment Rates by Occupation, 1940

	Prof./Mgr.	Farm	Cler./Sale	Craft/Op.	Service	Laborers	Total
A: USA							
Ag./Mining	0.0187	0.988	0.00334	0.0773	0.00393	0.0469	0.224
Mfg/Cons	0.166	0.00114	0.217	0.583	0.0804	0.743	0.350
Retail/Service	0.657	0.000631	0.556	0.170	0.692	0.0675	0.282
B: California							
Ag./Mining	0.0183	0.993	0.00275	0.0614	0.00464	0.0898	0.153
Mfg./Cons.	0.168	0.000840	0.179	0.526	0.0534	0.618	0.309
Retail/Service	0.674	0.000849	0.630	0.227	0.762	0.133	0.386
C: Small Town CA							
Ag./Mining	0.0283	0.995	0.00521	0.112	0.0114	0.0780	0.286
Mfg./Cons.	0.172	0.000661	0.188	0.524	0.0717	0.671	0.301
Retail/Service	0.660	0.000561	0.609	0.199	0.743	0.127	0.292

Source: Ruggles et al. (2024).

Note: All men between the ages of 25 and 65 who report being employed in 1940 included in calculations. Occupation and industry calculated using the first digit of OCC1950 and IND1950. Small town California excludes the 20 most populous cities in California in 1929. Omitted sectors are government, transportation, and utilities. For more details on the data, see Appendix E.E2.

Table A7—: City Property Value Robustness Using Propensity Score Matching

	1929-1940	1929-1933	1933-1940	1923-1929	1929–33 Lending
1922 Bank Acquisition Costs					
BofA	0.220	0.0670	0.153	-0.0493	0.226
	(0.0822)	(0.0374)	(0.0637)	(0.0575)	(0.0615)
Observations	170	170	170	163	173
1920s Prop. Val. pc Growth					
BofA	0.156	0.0721	0.0839	0.000975	0.134
	(0.0719)	(0.0333)	(0.0627)	(0.00815)	(0.0642)
Observations	211	211	211	211	164
1930s Shock Exposure					
BofA	0.223	0.0722	0.151	-0.0120	0.295
	(0.0519)	(0.0382)	(0.0555)	(0.0518)	(0.0669)
Observations	224	224	224	211	164

Source: Property values: California Board of Equalization (1923–40) and Bleemer (2016). Bank acquisition costs: Office of the Comptroller of the Currency (1910–39) and California State Banking Department (1910–39). Employment shares: Ruggles et al. (2024). Bank lending: see Table 2.
Note: Outcome variable is city per capita property value growth (or lending growth) in each column using the matching criteria in each panel in a long difference with a Bank of America indicator variable as the treatment variable. The propensity score matching criterial change in each panel. Acquisition costs measured with quadratics in capital and assets from 1922 bank balance sheets for cities without any bank branches in 1922. Growth in 1920s refers to 1923–29 property value per capita growth for cities with property values across whole time period. Shock exposure uses 1930 census data on agricultural and manufacturing employment shares, median non-farm home values, and homeownership, unemployment, and self-employment rates. Sample excludes the top 20 cities by population in 1929 in the state, as well as cities lacking matching inputs, depending on the approach. Credit data drops some cities, as described in Table 2. For more details on the property value data, see Appendix B. See Appendix E.E2 for more on the census variable construction. Abadie-Imbens standard errors in parentheses.

Table A8—: Property Value Per Capita Robustness to Non-financial Variables

	1929-1940	1929-1933	1933-1940	1924-29
Above 1929 Prop Val PC Median				
BofA, 1929	0.159	0.102	0.0712	0.0785
	(0.110)	(0.0511)	(0.128)	(0.0575)
Constant	-0.0770	-0.227	0.0348	-0.0301
	(0.0878)	(0.0559)	(0.117)	(0.0585)
Below 1929 Prop Val PC Median				
BofA, 1929	0.227	0.0745	0.116	-0.0261
	(0.0996)	(0.0470)	(0.0806)	(0.0618)
Constant	0.673	-0.0753	0.849	0.358
	(0.309)	(0.0818)	(0.248)	(0.181)
Above 1929 Population Median				
BofA, 1929	0.266	0.0614	0.170	-0.0562
	(0.125)	(0.0523)	(0.103)	(0.0524)
Constant	0.246	-0.102	0.402	0.222
	(0.190)	(0.0683)	(0.135)	(0.104)
Below 1929 Population Median				
BofA, 1929	0.149	0.106	0.0252	0.0373
	(0.0960)	(0.0421)	(0.0710)	(0.0553)
Constant	-0.350	-0.0914	-0.505	-0.136
	(0.188)	(0.0867)	(0.246)	(0.0962)
Additional City Covariates				
BofA, 1929	0.187	0.0677	0.128	0.0222
	(0.0769)	(0.0220)	(0.0604)	(0.0579)
Constant	1.254	0.142	1.179	0.272
	(0.291)	(0.0943)	(0.273)	(0.123)
Per Capita New Deal Spending				
BofA, 1929	0.236	0.0998	0.127	0.0170
	(0.0983)	(0.0352)	(0.0813)	(0.0491)
Constant	0.0788	-0.145	0.209	-0.0109
	(0.0918)	(0.0507)	(0.0939)	(0.0449)
Long-term Industrialization				
BofA, 1929	0.211	0.0902	0.112	0.0323
	(0.0823)	(0.0314)	(0.0719)	(0.0522)
Constant	0.00739	-0.205	0.198	0.0989
	(0.0906)	(0.0390)	(0.0911)	(0.0694)
Home Value Gini				
BofA, 1929	0.247	0.104	0.134	0.0131
	(0.105)	(0.0352)	(0.0875)	(0.0474)
Constant	0.258	-0.127	0.362	0.286
	(0.205)	(0.0582)	(0.196)	(0.0953)

Source: See Table 4. Per capita New Deal spending: Fishback and Kantor (2018-11-18). Industrialization: 1906 earthquake severity Ager et al. (2020). Home value Gini: Quincy and Gray (2022*b*). Additional controls: see Table 1.

Note: Each column uses a different period's city per capita property value growth as an outcome with first period population as a control. Additional covariates are 1930 manufacturing and agricultural labor shares, the self-employment, unemployment, and homeownership rates, 1922–29 population growth (except 1924-29), and region fixed effects. Standard errors clustered at county level.

Table A9—: Property Value Per Capita Robustness to Financial Variables

	1929-1940	1929-1933	1933-1940	1924-1929
Fed Member Cities				
BofA, 1929	0.192	0.117	0.0703	0.0212
	(0.0910)	(0.0392)	(0.0750)	(0.0590)
Constant	0.0952	-0.183	0.262	0.0559
	(0.0840)	(0.0431)	(0.0957)	(0.0385)
National Bank Cities				
BofA, 1929	0.197	0.120	0.0719	0.0198
	(0.0921)	(0.0387)	(0.0765)	(0.0592)
Constant	0 0.0891	-0.188	0.260	0.0577
	(0.0891)	(0.0421)	(0.0995)	(0.0395)
No Bank Failure Cities				
BofA, 1929	0.221	0.106	0.107	0.0209
	(0.109)	(0.0482)	(0.0785)	(0.0495)
Constant	0.0404	-0.176	0.211	0.0551
	(0.0779)	(0.0409)	(0.0776)	(0.0561)
Crisis Deposit Changes				
BofA, 1929	0.196	0.0874	0.102	0.0394
	(0.0902)	(0.0446)	(0.0678)	(0.0666)
City Deposit Growth	0.434	0.232	0.206	-0.173
	(0.268)	(0.0863)	(0.211)	(0.104)
Constant	0.260	-0.0786	0.326	-0.0282
	(0.125)	(0.0549)	(0.104)	(0.0555)
B&L Growth, 1929–33				
BofA, 1929	0.216	0.0990	0.108	0.0107
	(0.0913)	(0.0336)	(0.0765)	(0.0467)
City B&L Asset Growth	0.0161	0.00486	0.0118	-0.00900
	(0.0325)	(0.0183)	(0.0205)	(0.0295)
B&L, 1929	-0.0737	-0.0922	-0.00116	-0.0272
	(0.103)	(0.0315)	(0.0884)	(0.0987)
Constant	0.0790	-0.172	0.230	0.0619
	(0.0657)	(0.0314)	(0.0693)	(0.0567)
No B&L Cities				
BofA, 1929	0.274	0.111	0.154	-0.0490
	(0.118)	(0.0403)	(0.100)	(0.0353)
Constant	0.0358	-0.172	0.178	0.0408
	(0.0726)	(0.0386)	(0.0793)	(0.0511)
One Banking Office				
BofA, 1929	0.254	0.0901	0.155	0.00532
	(0.110)	(0.0313)	(0.0949)	(0.0544)
Constant	0.0499	-0.158	0.192	0.0597
	(0.0712)	(0.0298)	(0.0818)	(0.0548)

Source: See Table 4. Deposit growth: see Table 3. B&Ls California Building and Loan Commission (1929) and California Building and Loan Commission (1933). Bank failures (1929–33): Carlson and Mitchener (2009).
Note: See Table A8 for specification. All banking characteristics as of 1929 except bank failures and B&L asset growth. Standard errors clustered at county level.

Table A10—: Property Value Per Capita Robustness to Branching Variables

	1929-1940	1929-1933	1933-1940	1924-1929
Baseline Specification				
BofA, 1929	0.237	0.102	0.129	0.0115
	(0.0980)	(0.0346)	(0.0764)	(0.0461)
Constant	0.0612	-0.168	0.233	0.0632
	(0.0656)	(0.0333)	(0.0671)	(0.0502)
Oster	(0.24, 0.27)	(0.10, 0.12)	(0.13, 0.15)	(0.01, 0.01)
R-sq	0.07	0.13	0.02	0.00
N	224	224	228	216
Other Large Branch Networks				
1(Other Large Bank)	0.0438	0.0404	-0.00953	-0.0314
	(0.0922)	(0.0353)	(0.0761)	(0.0502)
Constant	0.174	-0.120	0.272	0.0674
	(0.0756)	(0.0343)	(0.0709)	(0.0646)
Post-1929 Expansion				
BofA, 1929	0.232	0.122	0.100	0.00187
	(0.0837)	(0.0327)	(0.0838)	(0.0507)
BofA, Post-1929	-0.0126	0.0510	-0.0668	-0.0231
	(0.104)	(0.0633)	(0.0794)	(0.0561)
Constant	0.0658	-0.187	0.238	0.0712
	(0.0763)	(0.0421)	(0.0831)	(0.0583)
No County Seats				
BofA, 1929	0.258	0.116	0.134	0.0160
	(0.0895)	(0.0309)	(0.0806)	(0.0550)
Constant	0.0594	-0.154	0.196	0.0570
	(0.0707)	(0.0344)	(0.0732)	(0.0534)
McFadden Act Acquisitions Only				
BofA, 1929	0.207	0.0631	0.136	0.0220
	(0.0957)	(0.0366)	(0.0802)	(0.0583)
Constant	0.0608	-0.154	0.198	0.0605
	(0.0690)	(0.0369)	(0.0692)	(0.0519)
Drop First in County				
BofA, 1929	0.262	0.127	0.125	-0.0526
	(0.0882)	(0.0251)	(0.0831)	(0.0388)
Constant	0.0982	-0.154	0.230	0.0449
	(0.0798)	(0.0397)	(0.0757)	(0.0449)
Drop De Novo Branches				
BofA, 1929	0.244	0.0991	0.133	0.0223
	(0.0921)	(0.0347)	(0.0773)	(0.0492)
Constant	0.0498	-0.167	0.202	0.0539
	(0.0686)	(0.0359)	(0.0745)	(0.0535)

Source: See Table 4. Deposit growth: see Table 3. B&Ls California Building and Loan Commission (1929) and California Building and Loan Commission (1933). Bank failures (1929–33): Carlson and Mitchener (2009).
Note: See Table A8 for specification. Bank of America indicator as of 1929 except McFadden Act, which refers to branches opened during 1925–28 (or no BofA by 1929), or the (largely post-1933) post-1929 indicator. Other large bank refers to presence of the other branch networks plotted in Figure 1. Standard errors clustered at county level.

Table A11—: Industrial Employment Shares in 1940 for 1930 Bank of America Residents

	Ag./Mining	Mfg./Cons.	Trans./ Util.	Trade	Gov.	Services
Sector Emp. Share	0.143	0.303	0.087	0.194	0.045	0.172
A: Overall Effect						
BofA	-0.140	0.0142	0.0235	0.0608	0.0146	0.0299
	(0.0182)	(0.0124)	(0.00877)	(0.00841)	(0.00406)	(0.00667)
R-sq	0.25	0.14	0.19	0.16	0.12	0.20
N	123942	123942	123942	123942	123942	123942
B: Not In Sector, 1930						
BofA	-0.142	-0.00671	0.00592	0.0442	0.00936	0.0155
	(0.0155)	(0.0126)	(0.00408)	(0.00785)	(0.00362)	(0.00698)
R-sq	0.15	0.06	0.02	0.07	0.02	0.09
N	104230	90104	112467	105804	120573	105909
C: In Sector, 1930						
BofA	-0.127	0.0720	0.115	0.152	0.191	0.134
	(0.0415)	(0.0219)	(0.0338)	(0.0212)	(0.0306)	(0.0160)
R-sq	0.15	0.13	0.18	0.13	0.34	0.14
N	19691	33823	11454	18119	3357	18013

Source: See Table 5.

Note: Specification and variables as in Table 5. Only men living within 5 miles of a 1929 Bank of America branch in 1930 included. Geographical aspects described in Appendix D.D2. All other variables defined as in Appendix E.E2. Standard errors clustered at 1940 county level. Regressions weighted by the inverse of population for each man's geographic unit. Men living in 1940 in the 20 most populous cities in California are excluded from the sample.

Table A12—: Occupational Employment Shares in 1940 for 1930 Bank of America Residents

	Prof./Mgr.	Farming	Nonfarm Lab.	Sales/Cler.	Craft/Op.	Service
Sector Emp. Share	0.247	0.103	0.080	0.150	0.366	0.052
A: Overall Effect						
BofA	0.0419	-0.119	0.00488	0.0426	0.0228	0.0100
	(0.00777)	(0.0179)	(0.00647)	(0.00618)	(0.0120)	(0.00411)
R-sq	0.21	0.29	0.08	0.17	0.22	0.13
N	123942	123942	123942	123942	123942	123942
B: Not In Sector, 1930						
BofA	0.0232	-0.111	-0.00184	0.0251	-0.0117	0.00476
	(0.00824)	(0.0157)	(0.00552)	(0.00435)	(0.0128)	(0.00398)
R-sq	0.08	0.12	0.04	0.06	0.12	0.01
N	101683	111907	108434	105783	85074	120193
C: In Sector, 1930						
BofA	0.155	-0.163	0.0470	0.147	0.0888	0.109
	(0.0164)	(0.0483)	(0.0220)	(0.0223)	(0.0174)	(0.0338)
R-sq	0.13	0.15	0.11	0.11	0.08	0.21
N	22246	12022	15481	18144	38841	3724

Source: See Table 6.

Note: Specification and variables as in Table 6. Only men living within 5 miles of a 1929 Bank of America branch in 1930 included. Geographical aspects described in Appendix D.D2. All other variables defined as in Appendix E.E2. Standard errors clustered at 1940 county level. Regressions weighted by the inverse of population for each man's geographic unit. Men living in 1940 in the 20 most populous cities in California are excluded from the sample.

Table A13—: Industrial Employment Shares in 1940 for 1930 Non-Bank of America Residents

	Ag./Mining	Mfg./Cons.	Trans./Util.	Trade	Gov.	Services
Sector Emp. Share	0.349	0.272	0.059	0.133	0.025	0.107
A: Overall Effect						
BofA	-0.0924	0.0135	0.00330	0.0323	0.000118	0.0271
	(0.0197)	(0.0108)	(0.0113)	(0.00727)	(0.00398)	(0.00606)
R-sq	0.23	0.12	0.11	0.11	0.08	0.13
N	86132	86132	86132	86132	86132	86132
B: Not In Sector, 1930						
BofA	-0.0584	0.0269	0.00477	0.0329	0.000710	0.0288
	(0.0192)	(0.0109)	(0.00717)	(0.00797)	(0.00364)	(0.00659)
R-sq	0.14	0.08	0.02	0.05	0.03	0.05
N	50500	70798	80838	78584	85061	79066
C: In Sector, 1930						
BofA	-0.134	-0.0384	-0.00875	0.0198	-0.0584	0.00676
	(0.0255)	(0.0215)	(0.0478)	(0.0243)	(0.0470)	(0.0193)
R-sq	0.14	0.15	0.30	0.14	0.38	0.17
N	35610	15310	5277	7532	1055	7046

Source: See Table 5.

Note: Specification and variables as in Table 5. Only men not living within 5 miles of a 1929 Bank of America branch in 1930 included. Geographical aspects described in Appendix D.D2. All other variables defined as in Appendix E.E2. Standard errors clustered at 1940 county level. Regressions weighted by the inverse of population for each man's geographic unit. Men living in 1940 in the 20 most populous cities in California are excluded from the sample.

Table A14—: Occupational Employment Shares for 1930 Non-Bank of America Residents, 1940

	Prof./Mgr.	Farming	Nonfarm Lab.	Sales/Cler.	Craft/Op.	Service
Sector Emp. Share	0.138	0.301	0.117	0.077	0.324	0.042
A: Overall Effect						
BofA	0.00460	-0.0710	0.0156	0.0209	0.00683	0.00737
	(0.00683)	(0.0198)	(0.00672)	(0.00441)	(0.0132)	(0.00497)
R-sq	0.17	0.28	0.08	0.11	0.17	0.07
N	86132	86132	86132	86132	86132	86132
B: Not In Sector, 1930						
BofA	0.0129	-0.0296	0.0176	0.0215	0.0201	0.00985
	(0.00699)	(0.0179)	(0.00663)	(0.00388)	(0.0127)	(0.00464)
R-sq	0.07	0.14	0.06	0.04	0.11	0.02
N	78873	55667	75579	80180	67789	84039
C: In Sector, 1930						
BofA	-0.0797	-0.131	-0.00492	0.0222	-0.0383	-0.0565
	(0.0218)	(0.0276)	(0.0224)	(0.0270)	(0.0168)	(0.0384)
R-sq	0.18	0.18	0.13	0.13	0.11	0.27
N	7243	30446	10540	5935	18327	2065

Source: See Table 5.

Note: Specification and variables as in Table 6. Only men not living within 5 miles of a 1929 Bank of America branch in 1930 included. Geographical aspects described in Appendix D.D2. All other variables defined as in Appendix E.E2. Standard errors clustered at 1940 county level. Regressions weighted by the inverse of population for each man's geographic unit. Men living in 1940 in the 20 most populous cities in California are excluded from the sample.

Table A15—: Industrial Reallocation Comparison, 1920–30 versus 1930–40

	Ag/Mining	Mfg./Cons.	Trans./Util.	Trade	Gov.	Services
A: Overall Effect						
BofA	-0.0174	-0.00220	0.00935	0.00909	-0.00121	0.00338
	(0.0284)	(0.0311)	(0.0209)	(0.0114)	(0.00415)	(0.0115)
1(1930-40)	0.136	-0.0135	-0.0169	-0.0181	-0.00551	-0.0450
	(0.0268)	(0.0245)	(0.0139)	(0.0120)	(0.00469)	(0.0129)
GD x BofA	-0.101	0.0177	0.0106	0.0414	0.0105	0.0213
	(0.0211)	(0.0238)	(0.0126)	(0.0107)	(0.00421)	(0.0121)
R-sq	0.24	0.13	0.19	0.16	0.11	0.20
N	161474	161474	161474	161474	161474	161474
B: Not In Sector, t-1						
BofA	-0.00804	0.00647	0.0100	-0.00375	-0.00388	-0.00182
	(0.0163)	(0.0294)	(0.0116)	(0.0103)	(0.00434)	(0.0116)
1(1930-40)	0.0619	-0.00847	-0.0125	-0.0297	-0.00890	-0.0445
	(0.0217)	(0.0273)	(0.00995)	(0.0115)	(0.00513)	(0.0123)
GD x BofA	-0.103	0.00174	-0.00394	0.0388	0.00867	0.0142
	(0.0143)	(0.0249)	(0.00875)	(0.00998)	(0.00427)	(0.0111)
R-sq	0.14	0.06	0.03	0.06	0.02	0.07
N	123243	114180	144627	134868	156997	135308
C: In Sector, t-1						
BofA	-0.0604	0.000547	-0.0338	0.0928	0.122	0.0161
	(0.0521)	(0.0412)	(0.0606)	(0.0266)	(0.0450)	(0.0305)
1(1930-40)	0.225	-0.0246	-0.0475	0.0797	0.243	-0.0508
	(0.0404)	(0.0452)	(0.0579)	(0.0400)	(0.0899)	(0.0447)
GD x BofA	-0.0608	0.0413	0.125	0.0400	0.0793	0.0860
	(0.0410)	(0.0375)	(0.0447)	(0.0266)	(0.0500)	(0.0330)
R-sq	0.18	0.12	0.21	0.14	0.36	0.16
N	38092	47134	16715	26493	4325	26041

Source: 1930–40 links: see Table 5. 1920–30 links: Ruggles et al. (2024) and Abramitzky et al. (2022*a*).

Note: This table adapts Table 5 to include indicators for which pair of censuses the worker is observed and an interaction between BofA and being a 1930–40 link. The BofA indicator denotes if man lives within five miles of 1929 BofA location in second period. The 1930–40 indicator is 1 if the linked census records are for those two censuses, not 1920 to 1930. The interaction is 1 if both proximity and the 1930–40 indicator are 1. Regressions weighted by the inverse of population for each man's geographic unit in the second period. Other explanatory variables in these regressions are a quadratic in age, first time period city of residence population, fixed effects for second time period county, birth decade-first period literacy-birthplace, and first time period industry and occupation groups, and dummies for having an eighth grade education, first time period marital and rural status, and reporting race as white. Census matching and variables described further in Appendix E.E2. Only men between the ages of 25 and 65 living in California in second time period included if not in the top 20 most populous cities in state in 1929. Standard errors clustered at second time period county level.

Table A16—: Occupational Reallocation Comparison, 1920–30 versus 1930–40

	Prof./Mgr.	Farming	Nonfarm Lab.	Sales/Cler.	Craft/Op.	Service
A: Overall Effect						
BofA	0.0153	-0.0288	-0.00592	0.0140	0.00877	-0.00259
	(0.0137)	(0.0242)	(0.0120)	(0.00593)	(0.0180)	(0.00430)
1(1930-40)	-0.0720	0.155	-0.0857	-0.0261	-0.00170	0.00853
	(0.0134)	(0.0268)	(0.0151)	(0.00700)	(0.0185)	(0.00817)
GD x BofA	0.0160	-0.0835	0.00780	0.0162	0.0325	0.0120
	(0.0125)	(0.0208)	(0.0117)	(0.00587)	(0.0165)	(0.00465)
R-sq	0.23	0.27	0.09	0.16	0.21	0.13
N	161474	161474	161474	161474	161474	161474
B: Not In Sector, t-1						
BofA	0.00553	-0.0211	-0.00845	0.00977	0.00386	-0.00124
	(0.0137)	(0.0135)	(0.0112)	(0.00508)	(0.0187)	(0.00384)
1(1930-40)	-0.0784	0.0769	-0.0840	-0.0245	-0.0153	0.0135
	(0.0142)	(0.0187)	(0.0131)	(0.00666)	(0.0235)	(0.00718)
GD x BofA	0.0131	-0.0748	0.00583	0.00753	0.0142	0.00526
	(0.0123)	(0.0132)	(0.0111)	(0.00528)	(0.0203)	(0.00407)
R-sq	0.08	0.14	0.07	0.05	0.11	0.02
N	130323	133167	146471	135607	106003	155639
C: In Sector, t-1						
BofA	0.0669	-0.0677	0.0195	0.0463	0.0143	-0.00152
	(0.0321)	(0.0587)	(0.0364)	(0.0378)	(0.0257)	(0.0704)
1(1930-40)	0.00465	0.316	-0.0436	-0.0608	0.0197	-0.100
	(0.0427)	(0.0596)	(0.0389)	(0.0393)	(0.0314)	(0.0694)
GD x BofA	0.0326	-0.0685	0.0248	0.0654	0.0724	0.134
	(0.0335)	(0.0518)	(0.0387)	(0.0342)	(0.0220)	(0.0725)
R-sq	0.15	0.23	0.16	0.12	0.09	0.27
N	31041	28179	14837	25751	55303	5693

Source: 1930–40 links: see Table 5. 1920–30 links: Ruggles et al. (2024) and Abramitzky et al. (2022*a*).

Note: This table adapts Table 6 to include indicators for which pair of censuses the worker is observed and an interaction between BofA and being a 1930–40 link. The BofA indicator denotes if man lives within five miles of 1929 BofA location in second period. The 1930–40 indicator is 1 if the linked census records are for those two censuses, not 1920 to 1930. The interaction is 1 if both proximity and the 1930–40 indicator are 1. Regressions weighted by the inverse of population for each man's geographic unit in the second period. Other explanatory variables in these regressions are a quadratic in age, first time period city of residence population, fixed effects for second time period county, birth decade-first period literacy-birthplace, and first time period industry and occupation groups, and dummies for having an eighth grade education, first time period marital and rural status, and reporting race as white. Census matching and variables described further in Appendix E.E2. Only men between the ages of 25 and 65 living in California in second time period included if not in the top 20 most populous cities in state in 1929. Standard errors clustered at second time period county level.

Table A17—: Industrial Employment Effects Adding 1920 Sector Information

	Ag./Mining	Mfg./Cons.	Trans./Util.	Trade	Gov.	Services
Sector Emp. Share	0.231	0.272	0.077	0.160	0.042	0.148
A: Overall Effect						
BofA	-0.115	0.0181	0.0103	0.0367	0.0128	0.0265
	(0.0160)	(0.0111)	(0.00827)	(0.00656)	(0.00307)	(0.00516)
R-sq	0.32	0.16	0.27	0.21	0.13	0.24
N	62947	62947	62947	62947	62947	62947
B: Not In Sector, 1930						
BofA	-0.0928	0.0122	0.00238	0.0257	0.00740	0.0171
	(0.0139)	(0.0102)	(0.00376)	(0.00603)	(0.00297)	(0.00457)
R-sq	0.15	0.07	0.03	0.07	0.02	0.10
N	44485	46725	57377	54365	61179	54698
C: In Sector, 1930						
BofA	-0.147	0.0442	0.0746	0.112	0.187	0.109
	(0.0215)	(0.0210)	(0.0372)	(0.0174)	(0.0409)	(0.0201)
R-sq	0.16	0.13	0.31	0.18	0.39	0.19
N	18446	16210	5555	8564	1757	8227

Source: 1920–30–40 links: Abramitzky et al. (2022*a*), Abramitzky et al. (2022*b*), and Ruggles et al. (2024).
Note: This table modifies Table 5 to include each individual's 1920 one-digit occupation and industry information so only men successfully matched back to 1920 census included. Census matching and variables described further in Appendix E.E2.

Table A18—: Occupational Employment Effects Adding 1920 Sector Information

	Prof./Mgr.	Farming	Nonfarm Lab.	Sales/Cler.	Craft/Op.	Service
Sector Emp. Share	0.228	0.194	0.081	0.117	0.331	0.049
A: Overall Effect						
BofA	0.0317	-0.106	0.00724	0.0184	0.0238	0.0164
	(0.00622)	(0.0149)	(0.00715)	(0.00376)	(0.0106)	(0.00362)
R-sq	0.27	0.37	0.09	0.21	0.26	0.13
N	62947	62947	62947	62947	62947	62947
B: Not In Sector, 1930						
BofA	0.0198	-0.0772	0.00906	0.0126	0.0145	0.0133
	(0.00568)	(0.0147)	(0.00646)	(0.00264)	(0.00957)	(0.00332)
R-sq	0.08	0.12	0.05	0.06	0.13	0.02
N	51243	48674	55765	55692	43502	61081
C: In Sector, 1930						
BofA	0.0888	-0.156	-0.0112	0.0925	0.0436	0.0851
	(0.0195)	(0.0202)	(0.0174)	(0.0265)	(0.0168)	(0.0382)
R-sq	0.17	0.17	0.15	0.17	0.11	0.31
N	11686	14255	7171	7240	19435	1849

Source: 1920–30–40 links: Abramitzky et al. (2022*a*), Abramitzky et al. (2022*b*), and Ruggles et al. (2024).
Note: This table modifies Table 6 to include each individual's 1920 one-digit occupation and industry information so only men successfully matched back to 1920 census included. Census matching and variables described further in Appendix E.E2.

Table A19—: Industrial Employment Effects Adding 1920–30 Upgrading

Sector Emp. Share	Ag./Mining 0.231	Mfg./Cons. 0.272	Trans./Util. 0.077	Trade 0.160	Gov. 0.042	Services 0.148
A: Overall Effect						
BofA	-0.114	0.0138	0.0126	0.0377	0.0132	0.0249
	(0.0164)	(0.0109)	(0.00843)	(0.00662)	(0.00321)	(0.00473)
R-sq	0.31	0.15	0.26	0.20	0.13	0.25
N	74151	74151	74151	74151	74151	74151
B: Not In Sector, 1930						
BofA	-0.0947	0.00907	0.00472	0.0271	0.00739	0.0148
	(0.0136)	(0.00991)	(0.00325)	(0.00600)	(0.00288)	(0.00416)
R-sq	0.14	0.07	0.03	0.07	0.02	0.11
N	53254	55189	67515	63980	72066	63915
C: In Sector, 1930						
BofA	-0.143	0.0365	0.0701	0.111	0.213	0.107
	(0.0221)	(0.0193)	(0.0385)	(0.0180)	(0.0387)	(0.0182)
R-sq	0.15	0.13	0.29	0.17	0.37	0.18
N	20881	18950	6626	10156	2076	10218

Source: 1920–30–40 links: Abramitzky et al. (2022*a*), Abramitzky et al. (2022*b*), and Ruggles et al. (2024).
Note: This table modifies Table 5 to include the percent change in each individual's occupation score from 1920 to 1930 as a control so only men successfully matched back to 1920 census included. Census matching and variables described further in Appendix E.E2.

Table A20—: Occupational Employment Effects Adding 1920–30 Upgrading

	Prof./Mgr.	Farming	Nonfarm Lab.	Sales/Cler.	Craft/Op.	Service
Sector Emp. Share	0.228	0.194	0.081	0.117	0.331	0.049
A: Overall Effect						
BofA	0.0299	-0.103	0.00747	0.0194	0.0231	0.0140
	(0.00679)	(0.0153)	(0.00610)	(0.00378)	(0.0109)	(0.00337)
R-sq	0.27	0.36	0.09	0.20	0.25	0.13
N	74151	74151	74151	74151	74151	74151
B: Not In Sector, 1930						
BofA	0.0162	-0.0774	0.00872	0.0135	0.0125	0.0106
	(0.00635)	(0.0145)	(0.00552)	(0.00307)	(0.00997)	(0.00306)
R-sq	0.08	0.12	0.05	0.06	0.13	0.02
N	59665	58191	65698	65085	51657	72063
C: In Sector, 1930						
BofA	0.0959	-0.151	-0.00834	0.0923	0.0448	0.114
	(0.0199)	(0.0217)	(0.0154)	(0.0251)	(0.0171)	(0.0357)
R-sq	0.17	0.16	0.13	0.15	0.10	0.29
N	14470	15942	8444	9051	22483	2076

Source: 1920–30–40 links: Abramitzky et al. (2022*a*), Abramitzky et al. (2022*b*), and Ruggles et al. (2024).
Note: This table modifies Table 6 to include the percent change in each individual's occupation score from 1920 to 1930 as a control so only men successfully matched back to 1920 census included. Census matching and variables described further in Appendix E.E2.

Table A21—: Non-tradable Employment and Reallocation

	Same Occ	Change Occ	Same Ind	Change Ind
BofA	0.02	0.08	0.03	0.07
	(0.01)	(0.01)	(0.01)	(0.01)
HS Graduate	-0.00	0.08	0.03	0.07
	(0.01)	(0.01)	(0.01)	(0.01)
BofA x HS	0.01	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)	(0.01)
R-sq	0.46	0.08	0.50	0.07
N	75982	134094	81403	128667

Source: See Table 7.

Note: This table modifies the outcome variable in Table 7 to be an indicator for working in the retail or service industries in 1940. Census matching and variables described further in Appendix E.E2. Standard errors clustered at 1940 county level.

Table A22—: Non-tradable White Collar Employment and Reallocation

	Same Occ	Change Occ	Same Ind	Change Ind
BofA	0.00	0.04	-0.01	0.03
	(0.00)	(0.01)	(0.00)	(0.01)
HS Graduate	-0.01	0.10	0.03	0.09
	(0.01)	(0.01)	(0.01)	(0.01)
BofA x HS	0.01	0.05	0.02	0.05
	(0.01)	(0.01)	(0.01)	(0.01)
R-sq	0.74	0.11	0.76	0.10
N	75982	134094	81403	128667

Source: See Table 7.

Note: This table modifies the outcome variable in Table 7 to be an indicator for working in the retail or service industries and being in a professional, managerial, clerical, or sales occupation in 1940. Census matching and variables described further in Appendix E.E2. Standard errors clustered at 1940 county level.

Table A23—: No Evidence of Reallocation in 1920–30

	Same Occ	Change Occ	Same Ind	Change Ind
BofA	0.02	0.02	0.01	0.02
	(0.03)	(0.02)	(0.02)	(0.02)
HS Graduate	0.18	0.11	0.04	0.13
	(0.05)	(0.03)	(0.03)	(0.03)
BofA x HS	0.04	0.06	0.02	0.03
	(0.04)	(0.03)	(0.04)	(0.03)
R-sq	0.41	0.13	0.55	0.15
N	11434	18963	11536	18860

Source: 1920–30 census links: Ruggles et al. (2024) and Abramitzky et al. (2022*a*).

Note: This table modifies the sample in Table 7 to span 1920 to 1930 a well, so the outcome is an indicator for working in a professional, managerial, clerical, or sales occupation in 1930 and the sample is split by column based on changes in sector between 1920 and 1930. The 1940 observation of each person is only used to identify educational attainment. Census matching and variables described further in Appendix E.E2. Standard errors clustered at 1930 county level.

Table A24—: Additional Log W/S Income Results

	Big Ind	Stay Ind	Ind Triple-Difference	Detailed 1930 FE	Detailed 1940 FE
BofA	0.08	0.07	0.02	0.08	0.04
	(0.02)	(0.02)	(0.05)	(0.02)	(0.02)
$Sector_c$	-0.01		1.57		
	(0.02)		(0.46)		
BofA x $Sector_c$	0.00		0.12		
	(0.03)		(0.46)		
$Sector_i$		0.09	-0.05		
		(0.02)	(0.04)		
BofA x $Sector_i$		0.03	-0.10		
		(0.02)	(0.04)		
ENT Share x $Sector_i$			-0.62		
			(0.35)		
BofA x ENT Sh x $Sector_i$			0.79		
			(0.34)		
R-sq	0.27	0.27	0.28	0.29	0.42
N	141922	141922	141922	141912	141921

Source: See Table 5.

Note: This table estimates Equation 2 with log wage and salary income reported in the 1940 census as the outcome variable in a range of difference-in-difference specifications. Other explanatory variables in these regressions are a quadratic in age, 1930 city of residence population, fixed effects for 1940 county, birthplace, and 1930 industry and occupation groups, and dummies for having an eighth grade education, 1930 marital and rural status, and reporting race as white. The sample includes all men between ages of 25 and 65 living in California and reporting positive income in 1940 who I link back to their 1930 census records. Column 1 defines "big" industry as the largest industry in a city in 1930 ($Sector_c$), and interacts that with an indicator for whether a man works in that industry in 1940($Sector_i$). Column 2 interacts an indicator for whether a man stayed in the same occupational sector ($Sector_i$) between 1930 and 1940 with the Bank of America indicator. Column 3 interacts interacts an indicator for whether a man changed occupational sectors between 1930 and 1940 ($Sector_i$), the 1940 ENT employment share ($Sector_c$), and the Bank of America indicator in a triple-difference modification of Equation 2. Detailed fixed effects in Coumns 4 and 5 are 3 digit industry and occupation codes. The Bank of America indicator is 1 if within five miles of 1929 BofA location in 1940, constructed as described in Appendix D.D2. The ENT share is the 1940 city employment share of service and retail high education jobs defined in Table 7. All other variables defined as in Appendix E.E2. Standard errors clustered at 1940 county level. Regressions weighted by the inverse of population for each man's geographic unit. Men living in 1940 in the 20 most populous cities in California are excluded from the sample.

Table A25—: Other Outcome Comparison, 1920–30 versus 1930–40

	P(Change Ind)	P(Change Occ)	Pct Ch Occscore	Log(Home Value)
BofA	-0.00717	-0.00229	-0.000996	0.00970
	(0.021)	(0.017)	(0.029)	(0.064)
1(1930-40)	-0.0966	-0.0374	-0.242	-0.695
	(0.026)	(0.021)	(0.040)	(0.069)
GD x BofA	-0.0198	-0.0404	0.0928	0.267
	(0.021)	(0.019)	(0.028)	(0.074)
Observations	161474	161474	161474	87950

Source: 1930–40 links: see Table 5. 1920–30 links: Ruggles et al. (2024) and Abramitzky et al. (2022*a*).

Note: For details on this specification, see Table A15. The outcomes in Columns 1 and 2 are indicators for a worker changing one-digit industry or occupation codes between censuses, respectively. The outcome in Column 3 is the percentage change in occupational score for each worker between censuses. The outcome in Column 4 is the log home value among homeowners in the second period. Standard errors clustered at second time period county level.

Table A26—: 1940 Labor Market Outcomes Adding in 1920–30 Upgrading

	Log W/S Income	P(Change Occ)	P(Change Ind)	%Δ Occscore	Log Home Value
BofA	-0.0886	0.00129	0.00312	0.0738	0.246
	(0.029)	(0.009)	(0.013)	(0.015)	(0.051)
Observations	37181	57017	57017	54511	39029

Source: 1920–30–40 links: Abramitzky et al. (2022*a*), Abramitzky et al. (2022*b*), and Ruggles et al. (2021).
Note: This table estimates Equation 2 adding in each worker's 1920–30 percent change in occupation score as a control. The outcomes in Columns 1 and 2 are indicators for a worker changing one-digit industry or occupation codes between 1930 and 1940, respectively. The outcome in Column 3 is the percentage change in occupational score for each worker between 1930 and 1940. The outcome in Column 4 is the log home value among homeowners in 1940. Other explanatory variables in these regressions are a quadratic in age, 1930 city of residence population, fixed effects for 1940 county, birthplace, and both 1920 and 1930 industry and occupation groups, and dummies for having an eighth grade education, 1930 marital and rural status, and reporting race as white. Men only included if linked back to 1920 and 1930 and living outside of the 20 most populous cities in California (as of 1929). Census matching and variables described further in Appendix E.E2. BofA is 1 if within five miles of 1929 BofA location in 1940. Income included only for those reporting wage/salary income in 1940. Regressions weighted by the inverse of population for each man's geographic unit in 1940. Standard errors clustered at 1940 county level.

Table A27—: 1940 Labor Market Outcomes Adding in 1920 Sector Information

	Log W/S Income	P(Change Occ)	P(Change Ind)	%Δ Occscore	Log Home Value
BofA	0.0871	0.00163	0.00378	0.0730	0.244
	(0.028)	(0.009)	(0.013)	(0.015)	(0.051)
Observations	37181	57017	57017	54511	39029

Source: 1920–30–40 links: Abramitzky et al. (2022*a*), Abramitzky et al. (2022*b*), and Ruggles et al. (2021).

Note: See Table A26. The only difference is that this table uses 1920 one-digit occupation and industry sector information as controls instead of 1920–30 percent change in occupational scores. Men only included if linked back to 1920 and 1930 and living outside of the 20 most populous cities in California (as of 1929). Census matching and variables described further in Appendix E.E2. BofA is 1 if within five miles of 1929 BofA location in 1940. Income included only for those reporting wage/salary income in 1940. Regressions weighted by the inverse of population for each man's geographic unit. Standard errors clustered at 1940 county level.

Table A28—: Other 1940 Outcomes Based on 1929 BofA Treatment

	P(In LF)	P(Unemp)	P(New Ind)	P(New Occ)	%Δ Occscore	P(Occscore Up)	Ln Home Val.
BofA	-0.0048	0.0055	0.0025	-0.011	0.068	0.032	0.29
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)
R-sq	0.09	0.04	0.15	0.11	0.25	0.30	0.27
N	210091	194906	210091	210091	179778	209410	111597

Source: See Table 5.

Note: Each cell is the β_1 coefficient found by estimating Equation 2 on each column header as an outcome. Other explanatory variables in these regressions are a quadratic in age, 1930 city of residence population, fixed effects for 1940 county, birthplace, and 1930 industry and occupation groups, and dummies for having an eighth grade education, 1930 marital and rural status, and reporting race as white. Only men between ages of 25 and 65 living in California in 1940 included if outside of the 1929 20 most populous cities in the state. Table A26 describes variable construction in Columns 3,4,5 and 7. Column 1 outcome is an indicator for reporting being in labor force. Column 2 outcome is an indicator for reporting being unemployed among those in the labor force. Column 6 outcome is an indicator for a worker's 1940 occupational score being higher in 1940 than in 1930. All other variables defined as in Appendix E.E2. BofA is 1 if within five miles of 1929 BofA location in 1940. Standard errors clustered at 1940 county level. Regressions weighted by the inverse of population for each man's geographic unit in 1940.

Table A29—: 1940 Labor Market Based on 1929 BofA Locations, No Emergency Workers

	P(In LF)	P(Unemp)	P(New Ind)	P(New Occ)	%Δ Occscore	P(Occscore Up)	Ln Home Val.
BofA	-0.0055	0.0062	0.00095	-0.014	0.068	0.032	0.30
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)
R-sq	0.09	0.05	0.16	0.11	0.24	0.30	0.26
N	204157	188972	204157	204157	174454	203483	109488

Source: See Table 5.

Note: This table modifies Table A28. Men coded as emergency workers in 1940 (according to the variable empstat) dropped.

Table A30—: Manufacturing Establishment Reported Labor Outcomes, 1929–1935

	Avg Wage	Output per Wage Worker	Employment
A: Dynamic Effects			
BOFA X 1931	0.0876	-0.0488	-0.0788
	(0.0947)	(0.0651)	(0.127)
BOFA X 1933	0.211	0.114	0.00982
	(0.121)	(0.0858)	(0.260)
BOFA X 1935	0.328	0.0401	-0.0122
	(0.133)	(0.213)	(0.209)
R-sq	0.56	0.76	0.94
N	657	724	612
B: Balanced Panel DD			
BOFA X POST	0.213	0.0183	-0.173
	(0.0598)	(0.127)	(0.141)
R-sq	0.66	0.76	0.95
N	346	366	325
C: Unbalanced Panel DD			
BOFA X POST	0.0627	0.00809	-0.0404
	(0.0274)	(0.0622)	(0.0894)
R-sq	0.26	0.47	0.47
N	1264	1372	1186

Source: Manufacturing establishment data: Vickers and Ziebarth (2018). Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952).
Note: All outcome variables are winsorized at the 1 and 99 percentiles of each industry-year sample, following Ziebarth (2013) and transformed from levels to logs. In all cases, treatment defined as being within five miles of a city with a Bank of America branch in 1929 after 1929. Panel A estimates a dynamic effect difference in difference regression using establishment and year fixed effects. Panel B estimates a balanced panel of establishments, including industry-year dyad and establishment fixed effects as well. Panel C uses an unbalanced panel of establishments in a difference-in-difference approach with industry time dyad fixed effects. Standard errors are clustered at the county level. See Appendix E.E3 for information on this dataset.

Property Values Data

The assessed property value per capita variable constructed for this paper overcomes the usual tradeoff between geographic disaggregation and measurement frequency while still measuring differences in regional business cycles, the latter of which I verify below. This portion of the appendix explains both the institutional history of this variable and the degree to which it captures meaningful variation in economic activity across both years and cities to support the use of these data in the main analysis.

First, I explain why city-year information was important for the research question considered. While imperfect, this variable allows me to test for pre-trends around treatment, is observed throughout the 1930s, and captures the disaggregated nature of California banking in this period. The first two criteria ruled out retail sales per capita as well as datasets from the agricultural, manufacturing, and population censuses.[56] The final criterion is why I use city data. Complete citations for each report consulted can be found in this paper's replication package (Quincy, 2024).

B1. Background

Starting in 1910, California split tax bases for state and local governments.[57] The state assessed and taxed public utilities, personal property of banks and insurance companies, corporation franchise value, and large vessels. County governments assessed and taxed everything else held by households and firms, including land, improvements, money and other personal tangible property, and intangible assets like stocks and bonds. Each county hired between 500 and 1,800 employees every year to visit each property at least once between March and July (California Board of Equalization (1923–40), 1929 p123). Assessed property value included personal ownership of stocks and bonds as well as all land and structures owned by households and businesses, aside from banks, utilities, and railroads.

Each year, the county appraiser's office was responsible for revising its assessments of each parcel of land within the county. Every property in the county was visited each year in order to fix its value for taxation by the county as of the first Monday in March (California Board of Equalization (1923–40), 1922 p76). More specifically, assessors' handbooks mentioned that business income should be part of the property's assessed value (California Board of Equalization (1945)

[56]Retail sales data begin in 1929 with the Census of Distribution but do not separate out cities with populations under 10,000 until 1933. The population censuses are decennial. As mentioned below, manufacturing census microdata only exist for the 1929 to 1935 period. Other series, like building permits or the manufacturing aggregates in Lee and Mezzanotti (2017) were collected only for large cities. The former covers the 13 largest cities by population in California while the latter observes only the Los Angeles and San Francsico metropolitan areas. County agricultural and census data in Haines (2010) fail the disaggregation test.

[57]This split occurred because county assessors struggled to assign the value of railroads to individual localities.

p15). In the case of residential parcels, market value was the focus. Preliminary values were often modifications of sales prices of similar properties in that year based on these characteristics. The county appraiser would go over each parcel himself before finalizing the assessment for each parcel in each year (California Board of Equalization (1945) p149).[58] In this last step, the appraisal office would investigate the value of each parcel using zoning restrictions on property use, neighborhood meetings, lease and mortgage contracts, sales and rental prices, economic geography concepts like access to commerce and transportation, lot size and shape, topography, and visits to each parcel.

Due to political wrangling over the quality of county assessments in the early 1920s, the California Board of Equalization supervised county assessors closely. The state sent its own assessors to a different sample of properties in each county every year, beginning in 1922 (California Board of Equalization (1923–40), 1930 p15). Starting in 1924 the state started equalizing values between and within counties. The state would compare the assessed value of selected properties all over the state to state employee appraisals, probate values, and sales prices in every biennial report, and publish equalization values for each city, county, and year. The average ratio of assessed to market value hovered between 40 and 50 percent in the 1920s and 1930s. In addition, these property valuations formed the basis for county expenses, including all school funding until 1934 (California Board of Equalization (1923–40), 1930 p8). County assessment offices were therefore under substantial local and state pressure to measure property values fairly and precisely. In 1929, the state published a county level comparison between local assessments and market values of recently sold homes. These average deviations between local assessments and market prices were not correlated with Bank of America market share, minimizing the risk that the results in this paper are due to an otherwise unobservable relationship between data quality and treatment. Together, these pieces of evidence suggest that city property value is a similar concept to housing wealth but is available at the city-year level.

B2. Annual Series Construction

Two annual series constitute the components of my city-level outcome variable: population and total property value. There are roughly 200 incorporated cities included in my dataset in every year. I use total property value per capita in my preferred specifications to control for changes in city borders. I define per capita property value in a town for a given year as the total property value divided by the population of that city. Both population and property values for each city-year observation derive from California Board of Equalization reports. I next describe the construction of these components over the 1923 to 1940 period.

City level annual population data come from Bleemer (2016). Decennial values

[58]In the 1921–1922 Board of Equalization report, it states that a deputy assessor listed and valued each property in his district of the county but was still subject to the chief assessor's approval (California Board of Equalization (1923–40), 1922 p75).

are from the census. In other years, the state wrote letters to county assessment boards to solicit estimates. In order to correct for city population estimation error, Bleemer (2016) fits a high-order polynomial to the data he collected, weighting census years more heavily. I make no adjustments to his series.

I use the total assessed value of property value for each city in each year. This includes all structures, machinery, and landholdings owned by households and nonfinancial and non-utility companies in incorporated cities until 1934. Then I use total property value, which includes stock and bond holdings, due to a change in what was reported, and continue to exclude property held by utilities and banks. To ensure continuity, I constructed a ratio in 1933 and 1934 of real estate to total property value for each city and multiply all pre-1933 years by this ratio, yielding a harmonized measure of property values.[59]

B3. Comparison to Other Economic Activity Measures

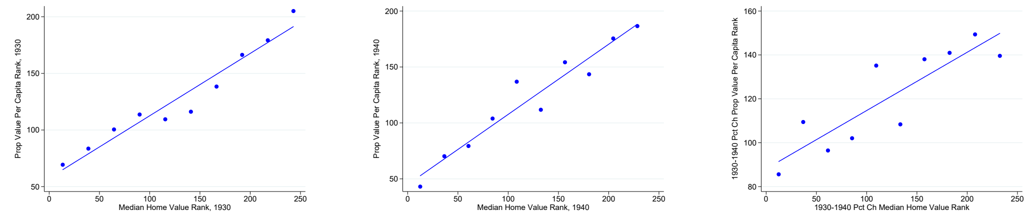
Although the property value per capita measure does fit the geographic and chronological requirements, it is a useful city-level outcome only if it reflects changes in economic activity both over time and across space. I first validate that cities' property values per capita reflect the distribution of housing values across cities and then discuss the time series aspect of these data.

Home values, while reflective of a long tradition in urban economics of using site prices to capture amenities and relative productivities, are not available for a broad range of cities at a higher frequency than every ten years (Roback, 1982). I use property value per capita to analyze dynamic effects in this paper. As discussed above, property values included housing, which is also available in Ruggles et al. (2024) microdata on the 1930 and 1940 census as self-assessed non-farm housing values. I show in Figure B1 that cities' rank in property value per capita in 1930 and 1940 is closely associated with cities' median home values in the census. The median home value rank has a correlation of 0.55 with property value per capita rank in 1930 and 0.63 in 1940. The decadal percent change in median home values is similarly associated with the property value per capita growth rate from 1930 to 1940 as well.[60] Property value per capita preserves the ordinal information in housing value levels and changes across the Great Depression decade.

These data also provide insights into the size of the home value decline across cities. I show this using the decadal change in median home values for all California cities, which I construct from the 1930 and 1940 population microdata. These results seen in Table B1, indicate that having a Bank of America branch in 1929 is associated with 12 percentage point higher home value growth from 1930 to

[59]In effect, this fixes the ratio of real estate to total property value, which includes stocks and bonds, at a two-year average for each city.

[60]These correlations are also similar when estimated in levels. In 1930, a one dollar increase in median home value is associated with a 0.22 unit increase in property value per capita with a t-statistic of 3.2. In 1940, the same regression has a coefficient of 0.13 and t-statistic of 1.3.



(a) 1930 Ranks (b) 1940 Ranks (c) 1930–1940 Ranks

Figure B1. : Comparison of Property Value Per Capita and Median Home Value Distributions

Source: Property value per capita: California Board of Equalization (1923–40) and Bleemer (2016). Census data: Ruggles et al. (2024).
Note: Ranks separately constructed for baseline sample and each variable in 1930 levels, 1940 levels, and the 1930–40 growth rate, respectively

1940, which has a median of -34 percent in the sample. The effect is similar when also including the largest cities in the state. Property value growth preserves the same ordering as home values from 1930 to 1940 and gives similar magnitudes of the Bank of America effect, indicating the comparison across cities of cumulative property value changes likely reflects relative home value developments over the decade at an appropriately disaggregated level.

To assess whether the property value series captures a similar set of dynamics as home values in non-census years, I next compare the evolution of home prices to property values for the one California city with home value measures and property values in the 1920s and 1930s, Sacramento.[61] I show in Figure B2 how these series, indexed to 1929, compare to the property value data. The overall correlation for these two indices is 0.64. It is possible to compare house prices, a la the Grebler Blank Winnick series used by Case and Shiller, and property values (labeled as BOE for Board of Equalization) annually from 1920 to 1934. For Sacramento, both series similar picture: a real estate boom peaking in 1926–1927, followed by small declines until after the onset of the crisis, when house prices and property values both fall below their 1929 levels by at least 20 percent over the next several years. Again, Sacramento shows an incomplete recovery from the Depression, with the nadir in each coming after 1933. In 1938, property prices averaged about 84 percent of their 1929 equivalents in both the HOLC real estate professional survey of sales house prices and the baseline per capita property values. Finally, the final hollow triangle marker denotes their estimate of the change in housing prices between 1930 and 1940 which is again similar to the property value analysis. This case study, therefore, alongside the home value

[61] I thank Trevor Kollmann and Price Fishback for sharing these data. These data come from the US census, two New Deal surveys, and the original Grebler Blank Winnick series underlying the Case-Shiller index in this period.

Table B1—: Effect of Bank of America Network on Median House Price Growth, 1930–1940

	Baseline Sample	Cities Under 150,000	All Cities
$BOFA_{1929}$	0.0993	0.117	0.116
	(0.0658)	(0.0676)	(0.0679)
Pop_{1930}	0.00000550	-0.000000217	-8.47e-08
	(0.00000501)	(0.000000883)	(8.46e-08)
Constant	-0.446	-0.434	-0.434
	(0.0674)	(0.0640)	(0.0638)
R-sq	0.01	0.01	0.01
N	426	443	446

Source: Property value per capita: California Board of Equalization (1923–40) and Bleemer (2016). Population and housing data: Ruggles et al. (2024). Bank of America locations: Transamerica Corporation vs Federal Reserve Board (1952).
Note: The dependent variable is the long change in median home value in each place from 1930 to 1940 as recorded in the decennial censuses. Each observation is a settled place and does not have to be incorporated, unlike the property value results (see Appendix D). Baseline sample includes all California cities except the 20 largest by population, which are included in the second column if the 1930 population was under 150,000. The final column adds (in ascending order of population), the 3 largest cities: Oakland, San Francisco, and Los Angeles Standard errors clustered at county level. See Appendix E.E2 for more information on these data.

analysis in the census in Figure B1, indicates that the baseline property value data correlate well with housing values both over time and across cities.

Finally, I make one caveat with respect to the data. Though property values per capita reflect changes in housing values, this measure does not map directly into commonly used proxies for income fluctuations year by year. Comparisons at the county level with retail sales per capita in Figure B4 and at the state level with per capita personal income (Figure B3) in this setting yield strong correlations in the recession but not during the recovery.[62] Using the county data, I find that this is driven by outliers; trimming the data to exclude the top and bottom 10 percent of observations yields tighter estimates. These are plotted using the dotted lines in Figure B4 for both the recession and recovery. Once the dataset is trimmed, the recession coefficient is 0.36 with a p value of .01 and the recovery coefficient is 0.37 with a p value of 0.06. This indicates that the property value data capture income measures except at the extremes in the distribution.

Given the paucity of other variables to validate this measure in this context, I also note that other studies have found that housing values did not recover to the

[62]Per capita personal income is the only state level income measure available in this period. It is available from 1929 to 1940. Property values were not consulted in the construction of personal income figures, according to Bureau of Economic Analysis documentation (Schwartz and Graham, 1956). State level retail sales per capita has a correlation with per capita personal income have a correlation of 0.86 in the four years both exist: 1929, 1933, 1935, and 1939.

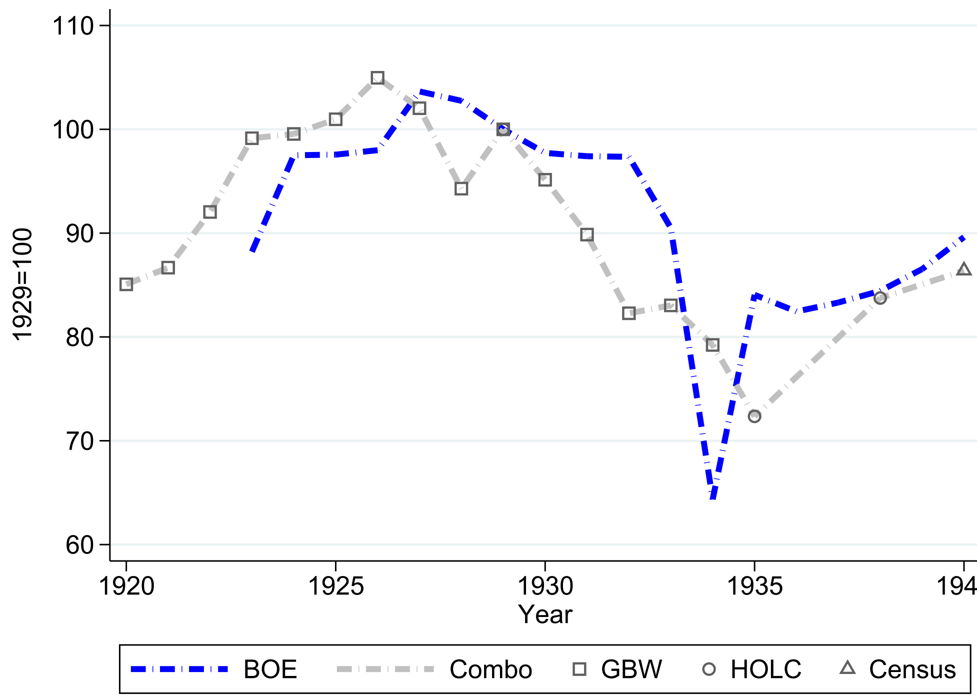


Figure B2. : Sacramento Housing and Property Values, 1920–40

Source: Property value per capita: California Board of Equalization (1923–40) and Bleemer (2016). Other estimates: Fishback and Kollmann (2014).
Note: Each line indexes the given series to its 1929 value for ease of comparison. BOE is the property value series collected for this paper. GBW stands for Grebler-Blank-Winnick. HOLC represents the housing surveys conducted in the 1930s.

same extent as income from 1930 to 1940 in both national and city-level contexts. Fishback and Kollmann (2014) stated that US home values fell more slowly than GDP per capita (which retail sales are often used to proxy) in the early 1930s but remained substantially below 1929 values in 1940, unlike GDP per capita. Rose (2022) also finds no evidence of a recovery in the housing market by 1940 in his Baltimore repeat sales house price index. Property values per capita should be treated as representing a more meaningful approximation for home values than for income-related economic activity measures.

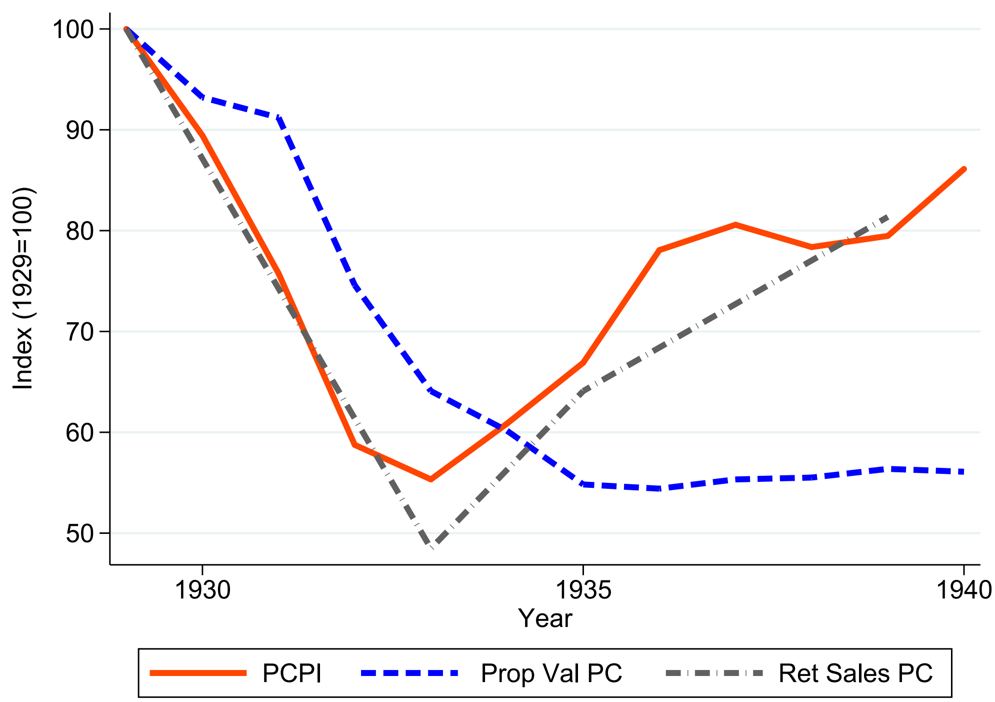
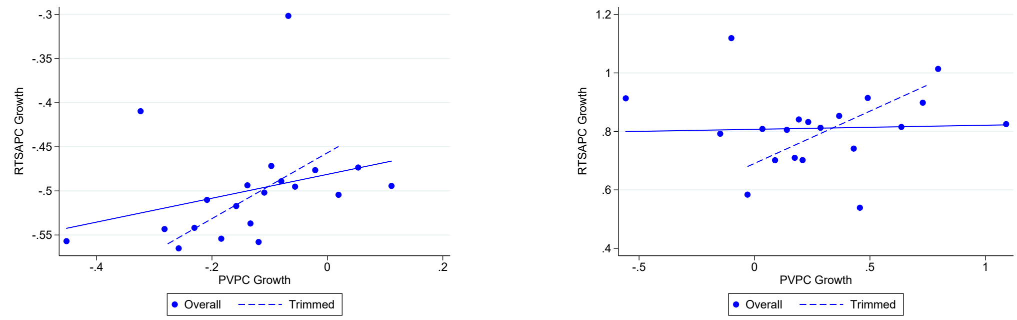


Figure B3. : California Annual Economic Activity Measures, 1929–1940

Source: Property value per capita: California Board of Equalization (1923–40) and Bleemer (2016). Retail sales per capita (1929, 1933, 1935, 1937): Fishback and Kantor (2018-11-18). State per capita personal income: *CAPCPI* via US Bureau of Economic Analysis and Federal Reserve Bank of St. Louis (2024).
Note: PCPI and property value per capita are annual. Property value per capita and retail sales per capita aggregated up from local information using population data in each source. Each line indexes the given series to its 1929 value for ease of comparison.



(a) 1929—33 Changes

(b) 1933—39 Changes

Figure B4. : Comparison of Property Value Per Capita and Retail Sales Per Capita Growth

Source: Property value per capita: California Board of Equalization (1923–40) and Bleemer (2016). Retail sales per capita: Fishback and Kantor (2018-11-18).
Note: RTSAPC is retail sales per capita at the county level. PPVC is property value per capita from this paper, aggregated up to the county level. The dashed line trims the top and bottom decile of PPVC distribution.

Banking Variables

C1. Bank Organizations and Locations

Before the Depression, I use regulator reports to track bank and branch locations. The Annual Report of the Superintendent of Banks (California State Banking Department (1910–39)) list the location of each unit bank acquired by a branch bank and each banking office opened, as well as the date of these transactions, throughout the entire period of analysis if at least one of the banks involved was a state bank. The Annual Report of the Comptroller of the Currency (Office of the Comptroller of the Currency (1910–39)) only does this in 1927 for branches entering the national bank system.[63] Because most of the large branch networks in California became national banks, I have to supplement these records using 1929 and 1933 editions of McNally (1929–33) to check branch locations of both national and state banks.

The methods used to expand branch networks also may have affected local financial markets. However, bank directories and OCC reports omit these details, so I collect them using Transamerica Corporation vs Federal Reserve Board (1952). Board Exhibit 257 lists total deposits in each city, as well as the deposits held by Bank of America in 1924, 1926, 1928, 1933, 1935, and 1937 and the

[63]Until the passage of the McFadden Act in 1927, national banks were prohibited from branching. With the passage of the McFadden Act, national banks were subject to the same branch restrictions as their state bank competitors. Because branch banking was legal in California, national banks therefore could branch, beginning in 1927.

method (e.g. *de novo* versus converted unit bank) and date of Bank of America's entry into each city's banking market. Board Exhibit 308, 314-I, 315-I, and 316-I do the same for the other large branch networks in California in the same period (Security First Trust, Anglo California National Bank, Citizen's National Trust and Savings Bank, and the American Trust Company and their predecessors), ensuring that I know the location and size of each branch of each bank in every year.[64]

The Federal Reserve retroactively constructed data on network expansion methods, and their potential local effects, which they defined as city deposit share, for this trust-busting banking case. To test whether Bank of America was monopolizing deposits in the cities in which it operated, clerks at the Federal Reserve Bank of San Francisco during the late 1940s looked up the value of deposits for every bank in every city in the above years. For Federal Reserve member banks, they used call reports in the Federal Reserve Bank of San Francisco archives. They checked these data with FDIC, Office of the Comptroller of the Currency, and California State Banking Department records for member banks. They also used state bank call reports courtesy of the California State Banking Department for non-member, non-FDIC insured banks. Branch and unit bank openings and closings came from a Federal Reserve Board catalog of banking changes and were verified using call reports and local newspaper reports (Transamerica Corporation vs Federal Reserve Board, 1952).

I complement the Transamerica Corporation vs Federal Reserve Board (1952) information on post-1929 branch bank locations with the Office of the Comptroller of the Currency (1910–39) and California State Banking Department (1910–39) reports during the financial crisis to track other branch acquisitions, bank mergers, and bank closures. The baseline estimation requires this to isolate lending changes due to unit bank or Bank of America balance sheets, not other multi-city branch networks' purchasing a bank before 1933 (since no branch networks reported their loans and deposits at the office level till then), or the multitude of organizational changes which occur in the 1930s to stave off failures. Therefore I drop six 1929 offices which became branches of a non-Bank of America branch network headquartered outside their city between 1929 and 1933. The credit results also drop cities for which I cannot identify deposits or loans for every banking office operating in both 1929 and 1933 to reduce measurement error from these data limitations. Bank failures and liquidations, however, do not disqualify a 1929 office or city from inclusion.

C2. Bank and Branch Balance Sheets

The balance sheet data in this paper exist at the state, bank/financial institution, and branch level. At the bank level, I digitized loans, and deposits for every

[64] I construct location information for California Bank using annual bank regulator reports and banking directories in an analogous fashion.

bank in California in 1933 from California State Banking Department (1910–39) (state banks) and Office of the Comptroller of the Currency (1910–39) (national banks), building on the data collected by Carlson and Mitchener (2009) for 1922 and 1929.

I do the same for building and loans' assets from 1929 to 1933 to ensure that the baseline credit changes are not driven by these non-bank lending institutions.[65] I use these records to identify which cities had building and loans in 1929 or 1933, track the organizational changes which occur in that window of time, and construct a city-level asset growth variable for those cities with building and loan associations.

I also construct state banking aggregates to contrast with Bank of America over a longer time window. Transamerica Corporation vs Federal Reserve Board (1952) provides me with a time-consistent measure of banking offices, total banks, loans, and deposits in the state of California and Bank of America's system. The Annual Report of the Superintendent of Banks reports on June 30 each year, while the Annual Report of the Comptroller of the Currency published balance sheets as of December 31. Complete citations for each report consulted can be found in this paper's replication package (Quincy, 2024). Transamerica Corporation vs Federal Reserve Board (1952) Board Exhibit 13 lists each of the above variables on December 31 annually from 1924 to 1940, which eliminates the possibility of a state branch becoming part of the national system in the second half of the year and getting double counted. Wherever possible, I use these consistent measures to contrast Bank of America and all other California banks (defined as the California total minus the Bank of America network total for each observation). California State Banking Department (1910–39) and Office of the Comptroller of the Currency (1910–39) collected these balance sheet items for Bank of America, and its component banks before 1930, from 1904 to 1940.[66]

I construct a sub-bank-level panel for this paper using city-year observations on total lending by Bank of America from 1927 to 1930 published in 71st U.S Congress Committee on Banking and Currency (1930) and branch balance sheets from the December 1933 Federal Reserve call reports available on FRASER. The former were offered up by Bank of America as evidence that they did not take country deposits to make loans in urban centers, a major concern of regulators at the time. The latter were scanned as images from existing microfiche records.[67]

[65]I use assets because it includes two important non-lending aspects of financial intermediation: interest earned and not collected and net real estate holdings (which prior work on the Great Depression in other states has noted is one way building and loans affected the housing markets).

[66]During the 1920s, A.P. Giannini started several other banks besides the Bank of Italy to accumulate branch offices and evade regulatory discrimination. These banks merged starting in 1928, with the majority of the consolidation done by 1930, when Bank of Italy became Bank of America National Trust and Savings Association. The final subsidiary became part of Bank of America NT & SA in 1934 (James and James, 1954). I collect balance sheet, merger, and location information for all of these component banks over the entire period.

[67]Federal Reserve Board meeting minutes note that after ten years, the original call reports were destroyed, hence the need for microfiched records. See `https://fraser.stlouisfed.org/blog/2018/11/call-reports/` for more information.

I use 1933 for several reasons. First, as noted in the main text, it overlaps with the financial crisis. Second, 1933 has the some of the most complete Bank of America branch balance sheets in the FRASER collection. When the microfiche records were scanned and uploaded to FRASER, there are instances of several cities in a row being skipped. Branches were listed in alphabetical order by bank, then by city and sorted by name within a given city if applicable ("First St" before "Main St," for example). Missing branches are therefore grouped by city name. For example, I am missing balance sheets in 1933 for 35 cities which appear in 1929. Nineteen of these branches' balance sheets had been consolidated with nearby branches. The other 14 are in one alphabetically consecutive group between Redding and San Francisco, suggesting there was a filming error. These filming gaps are larger in other years, reducing the sample size to an infeasibly small number.

Finally, I use California State Banking Department (1910–39), Office of the Comptroller of the Currency (1910–39), and McNally (1929–33) to track bank failures, entries, and acquisitions from 1929 to 1933 in order to observe a time consistent measure of lending over the crisis. This means I must drop observations with acquisitions by other branch banks without sufficient 1929 and 1933 branch-level data are dropped because I cannot measure 1929 or 1933 lending at a sufficiently local level (in these cases I only have *bank* aggregates).

At the branch level in 1933, I observe national-chartered bank branches for other networks as well in Federal Reserve Board of Governors (1933). As above, these Federal Reserve records describe the location of the branch, the name of the bank network, its assets, and its deposits for each nationally chartered branch. The six asset categories constructed for this paper are: "due from network" (which is the volume of branch liabilities which have been transferred to other parts of the network, net any transfers received from locations of that bank), real estate loans, other loans (including overdrafts), due from other banks (which is the gross volume of each branch's liabilities which have been transferred outside its branch network), cash, and other assets (this groups the banking house, furniture and fixture, checks in processing, and miscellaneous asset categories like cash in process of collection). Total deposits include both demand and savings deposits held at the branch, regardless of if they are interbank, intrabank, government, or private non-financial accounts. The average savings account variable is the total savings deposits divided by the number of savings passbooks. Each asset category's share is the level of that asset category divided by the total assets held at that branch.

With these balance sheet data in hand, I also construct city aggregates in 1929 and 1933. I use the procedure in Appendix D to find the universe of possible places for banks to operate. Then, I merge in any possible name changes or consolidations for city names to create city level totals of each bank balance sheet item for unit banks, Bank of America, and the sum of the two.[68] The branch

[68]There are several banks that take as their city of operation the minor civil division in which they

geography is the same with two exceptions: some small branches are occasionally consolidated with nearby cities and some networks report all branches within the same city as one branch. I use the largest geographic entity to be consistent over time in these cases. For the percent change regressions, this means using city-by-bank network aggregation. Based on these balance sheet sheets, I demonstrate below how different Bank of America was from its competitors, particularly those in small cities.

Table C1—: California Banks by City Size, 1929

Bank	Assets	Loans	Deposits	US Sec/ Oth Sec	Cities Served	Loan-Deposit Ratio
Bank of America	1,198.29	673.77	988.63	1.68	224.00	0.68
San Francisco	84.69	49.74	68.43	1.16	3.62	0.87
Los Angeles	22.48	13.07	18.88	0.59	2.71	0.72
Other Big City	7.67	4.49	6.42	0.33	1.20	0.68
Small City	1.12	0.60	0.90	0.28	1.10	0.66

Source: California State Banking Department (1910–39) and Office of the Comptroller of the Currency (1910–39).
Note: Calculations include all 428 state and national banks in California in 1929. Balance sheet totals are in millions of dollars. Cities served is defined as the number of cities in which the bank has branches, including the bank's headquarters. For all rows besides the Bank of America, each cell is the mean of all banks with headquarter in that city group. Other big city refers to the 20 most populous cities other than San Francisco and Los Angeles. Small city refers to all other cities with banks in 1929. San Francisco statistics include all banks besides Bank of America.

C3. Banking Market Definitions

Tracing out these branch and city-level changes are crucial for capturing the effects of finance in California in the 1930s. While many studies demarcate banking markets at the county level (e.g. Jaremski and Wheelock (2020)), this does not appear to be accurate in this context, perhaps because California rural populations tended to cluster in populous farm towns (McWilliams, 1999). Additionally, like many western states, California counties are big and geographically diverse. The largest county in California by area, San Bernardino County, is almost as large as West Virginia. At the time, all banking was relationship-based, so close proximity was key for credit access in this setting even across such large areas.

Archival evidence supports this interpretation, especially in the case of Bank of America. According to the bank's handbook, "character [was] the best basis of all for credit," indicating an organizational emphasis on soft information (Bank of America, 1942, p.95). Both state and national regulators also defined banking

operated because there is no unincorporated or incorporated place corresponding to their locations. I geo-reference these locations using the latitude and longitude of the corresponding enumeration district.

markets at the city level in this setting. In 1945, Comptroller of the Currency Preston Delano detailed his rationale for approving or rejecting 13 of Bank of America's pending branch approval applications (Delano, 1945). For example, in Burbank, a city just outside of Los Angeles, he notes that there are 4 major branch bank network offices within 2 miles but that was insufficient for the area. He also approved a branch in San Gabriel, which is 18 miles from Burbank and still in Los Angeles County, because the city only had one major bank office. In a more rural context, the Lower Lake permit was approved because there was no branch in that specific community although there were Bank of America branches 4.5 miles and 13 miles away. Finally, in a large Central Valley city, Stockton, Delano approved a branch due to a lack of offices within a "trading area" within the city. Despite his personal distaste for Bank of America, and its presence in every county mentioned, Delano restricted his competitive considerations to a relatively fine geographic area in all cases.

Earlier, state regulators governed branch expansion in a similar fashion. In 1927, then State Superintendent of Banks, Will C. Wood, wrote about his decision to approve Bank of America's permits just before its conversion to a national charter (Wood, n.d.). In Los Angeles and Oakland, he refers to district and neighborhood level bank density. Furthermore, he considers Oakland and Berkeley separate markets in terms of competition, despite the two cities being adjacent and in the same county.

Geographic Standardization

I harmonize city level variation in this setting by creating two types of geographic crosswalks. First, I construct a new database of all inhabited places, defined below, in California from 1920 to 1940 to ensure the entire state is part of the analysis. Second, I geocode all of these places, as well as enumeration districts in 1930, because there is a substantial spatial friction in banking in this period. This allows for a more complete accounting of the real economic effects of banking crises. The resulting crosswalk can be found in Quincy (2024).

D1. Inhabited Places

I construct a new list of all inhabited places in California in 1930 with three categories: incorporated cities, unincorporated cities, and outlying rural areas. I capture all incorporated cities using the complete count restricted-use 1930 census available on the NBER server (Ruggles et al., 2024). Specifically, I kept all combinations of county and both the $STDCITY$ and (once cleaned) $US1930D\_0057$ (place) variables. This yielded a list of all incorporated places in California in 1930.

Unlike, say, Massachusetts, large portions of California's population and geography was in unincorporated areas. According to a contemporary survey done by the California State Chamber of Commerce, 56 unincorporated towns had populations of over 1,000 people in 1927. Unincorporated communities ranged in size from 100 to 66,800 people (State Chamber of Commerce, 1928).[69] These locations, therefore, an important part of California economic geography. Also, unincorporated communities were home to 40 Bank of America branches in 1929. Given the importance of within-network transfers from large to small branches, it was important to capture the full range of city sizes.

I observe these because the 1930 census enumeration forms included a field for unincorporated place which was not digitized for IPUMS. I hand-collected these locations from the original census images in 1930 and created a crosswalk to the machine-readable records to remedy this situation. According to the enumerator instructions, any place or village with more than 500 inhabitants was to be enumerated separately from the rest of the enumeration district (Bureau of the Census, 1930).[70] I looked up this field on Ancestry.com for all 30,388 census returns which had no value for $STDCITY$ or $US1930D\_0057$ (its source variable in early versions of the IPUMS full count) already transcribed in the complete count data. 8,439 enumeration sheets contained an entry in the unincorporated place field which was both legible and not institutional housing (which is coded separately in IPUMS). If the enumerator did not follow instructions and listed multiple unincorporated places on one sheet, I transcribed the location which covered the majority of the individuals enumerated.[71] I take the union of these transcribed places and incorporated cities as the universe of inhabited places in California in 1930.

The remainder of these sheets cover people living outside of a populated place, which I group based on their enumeration district. According to the procedural history of the 1940 census, enumeration districts were designed to follow ward and municipality boundaries when possible, and rivers, roads, and railroads otherwise. Each district had to be enumerated by one person in two weeks, so the population of each district was capped at 1,500 people or 250 farms (Jenkins, 1983). These year-specific geographic units should be considered the historical equivalent of the modern census tract.

In order to measure variables in the 1920 and 1940 censuses for all possible locations, I conduct two more standardization procedures. First, I looked up all possible name changes and consolidations in Durham (1998) for my list of possible 1930 locations over the 1920–1940 period. Name changes, like Sisson being renamed Mount Shasta City, were straightforward. In the case of consolidations, for example Venice Beach becoming part of the city of Los Angeles, I use the larger

[69]Even in 2016, 65% of the land and 10.3% of the population in Los Angeles County are unincorporated (Southern California Association of Governments, 2017). State Chamber of Commerce (1928) published estimated populations for unincorporated places in 1928 and finds similarly large concentrations of people in unincorporated areas.

[70]Enumerators were supposed to ask each household if they lived in said place if the boundaries of the unincorporated town was uncertain. Based on my data collection, California enumerators often enumerated places with populations under 500 apart from the rest of the (rural) enumeration district.

[71]The enumerators in San Bernardino County often combined places into one sheet, so in that case, I transcribed the location for each place along with the line references for its residents.

geographic unit for the entire period. For unincorporated places in 1930 which spanned entire enumeration district, I convert the 1930 enumeration district to the 1920 and 1940 equivalents. Specifically, I used the enumeration district definitions I scraped from Morse, Weintraub and Kehs (n.d.) to convert enumeration districts in 1930 to their 1920 and 1940 equivalents. The restricted-use versions of the complete count censuses include enumeration district for each of these years, which makes this possible. For districts that are not one-to-one matches, I use 1930 population as weights for each 1930 enumeration district that is a component of either a 1920 or 1940 district as in Aaronson, Hartley and Mazumder (2021).

When possible, the 1940 census used the same districts as the 1930 census which had similar guidelines for district division, but 1920 districts tend to be larger (Bureau of the Census, 1930; Jenkins, 1983). I construct city level aggregates for a variety of census variables by combining the individual level data from the 1920–1940 censuses with these crosswalks.

D2. Geocoding

With this list of localities in hand, I next construct the spatial aspect of the city dataset. I take the shapefiles for census-designated places using the 2008 Tiger/Line+ 2010 Census boundaries available through Manson et al. (2024). Then, using QGIS, I convert these into point files with each point representing the center of each place's modern boundary.[72]

Not every historical locality has a corresponding modern census-designated place. In those cases, I use Durham (1998) to check for post-1940 city consolidations (e.g. the formation of Rancho Cucamonga from Cucamonga, Alta Loma, and Etiwanda in 1977) or name changes. If there is a post-1940 correspondent to the consolidated or name-changed place, I use those coordinates. In the case that a locality still does not have a latitude and longitude, I use the coordinates listed in Durham (1998) where possible. If there still is not a match, I looked up each location by hand in Federal Writing Project (1939) and used United States Geological Survey GNIS to find coordinates (US Geographic Names Information System, n.d.).

Finally, I geocode the rural parts of California at the enumeration district level. For all enumeration districts which are not subsumed by a locality already geocoded, I find the center of each district using the enumeration district maps available through NARA and the enumeration district descriptions available through Morse, Weintraub and Kehs (n.d.) by hand. For a typical enumeration district, I use the 1940 map, because it is higher quality than the 1930 map, to identify settlements and natural landmarks which correspond to locations in Google Maps. Given these geocoded points, I then triangulate the center of the

[72]Manson et al. (2024) recently made available point files for incorporated places based on historical Census Bureau maps. My point files and theirs overlap despite being constructed independently but mine also cover unincorporated places.

enumeration district in 1930.[73]

Labor Market Microdata

In this section, I describe several aspects of the longitudinal data used in this paper. First, I review the automated linking process used to generate the worker level dataset. Then I discuss the robustness of this process and the potential biases matching creates in my work and define in greater detail the variables used as covariates and dependent variables in the main regressions. Finally, I detail the variable construction and linking process for the manufacturing establishment level panel dataset.

E1. Linking Process

I use 1930 census information to measure pre-crisis variables. The 1930 census was taken in April 1930, which is as near as possible to the traditional start of the Depression, though some workers had already lost their jobs. A lack of high frequency state unemployment data preclude a precise bound on this issue but there was an annual decline in California manufacturing employment of 14 percent from 1929 to 1930 according to data originally collected by the Federal Reserve Bank of San Francisco (Division of Labor Statistics and Law Enforcement, 1941). In 1940, California per capita personal income finally reached its 1929 level, making that census a useful one for measuring recovery. In addition, the start of World War II, especially the Pacific front mobilization, make later years less comparable with the 1930s.

In order to follow people across the Great Depression decade, I use the iterative matching algorithm developed in Abramitzky et al. (2022*b*) for the NYSIIS-standard method. That is, I take a 1930 census record and 1940 census record as matched if they report the same birth state, first and last names, and have birth years within five years of each other. Then I keep only those observations which are unique by first name, last name, and birth place within a birth year to ensure that the matches are unique and maximize the probability that I have indeed found the same person in both censuses. I assign Bank of America treatment if the person lived within five miles of a Bank of America branch in 1940.[74]

First, I keep only male California residents in 1940 who are between 25 and 65. Then, for both the 1940 dataset and the 1930 possible matches, defined as men living anywhere in the United States between ages 15 and 55 in 1930, I use

[73]Most counties' 1940 enumeration district maps use the 1937 highway survey maps as a basis. Some 1930 and 1940 maps either could not be located by the UC Davis map librarians or the boundaries are not legible on the NARA scans.

[74]For those living in an incorporated or unincorporated place, I measure the distance as the crow flies from the center of place to the center of the place with the nearest Bank of America branch. For everyone else, I geocoded the centroid of their enumeration district and then calculate the distance (in miles) to the center of the nearest place with a Bank of America branch. Bank of America branches appear in both incorporated and unincorporated cities. In the case of enumeration districts with maps that make it clear that only one part of the enumeration district is habitable, I geocoded the center of that part.

the NYSIIS algorithm to standardize first and last names phonetically (Atack, Bateman and Gregson, 1992). This is particularly appropriate in this setting because the names are largely the same sort as NYSIIS was created to standardize. Then, I clean nicknames to match full names as in Abramitzky, Boustan and Eriksson (2012). My matching criteria are first and last name, state or country of birth, and self-reported age in years. A 1930 observation and 1940 observation are taken as matched only if they take the same value for each of these variables. If only one 1930 observation matches only one 1940 observation, I take those records as linked and remove them from the pool of possible matches. Then, I repeat this procedure but allow the ages to be within plus or minus a year of each other, instead of an exact match. Again, I save the unique matches and remove them from the potential matches. Finally, I repeat the matching procedure for an age band of plus or minus two years and keep only the unique matches. Any unlinked record is discarded. This results in a match rate of 32 percent, which is higher than the typical match rate for this method. This may be because I am only matching men across a ten-year period, so the probability of exiting the dataset is low. As a baseline, I have 210,091 observations out of 658,387 possibles.

This matching process introduces some selection concerns. Using names as a basis for matching reduces the likelihood of finding non-white or common names, for example. Because I require each individual to be in California in 1940, men from more distant, less-populous birth states have a smaller pool of potential duplicates conditional on their name uniqueness in their cohort. If these men are not representative of the larger California population, e.g. they were positively selected migrants, then birthplace also introduces bias. In Table E1, I run a series of balance tests for demographic characteristics of men between 25 and 65 enumerated in California in 1940. Each coefficient is the result of an unweighted regression of the dependent variable on a dummy variable for being matched with the standard errors clustered on the 1940 county level. The sample size, standard deviation, and mean for all men in the possible match pool are also listed. As hypothesized, the matched sample is whiter, more urban, and higher-earning than the non-matched sample. Men living within five miles of a 1929 Bank of America branch in 1940 are also slightly more likely to be matched. However, these differences are small relative to the mean and variance of each characteristic and the other differences noted here are balanced across a match dummy within the treated and control groups.

I use this automated linking method to avoid introducing human error into the match procedure. However, there is still a chance of false positives skewing my results (Bailey et al., 2020). I therefore use the Abramitzky et al. (2022*b*) crosswalks to demonstrate the robustness of the individual level results to different census linking methods. These matches are required to be unique by name and birth year band. The uniqueness criteria vary on two dimensions: 1) raw name versus NYSIIS-based cleaning and 2) exact year of birth or plus or minus two year band around reported birth year. I re-estimate Equation 2 and replicate results

Table E1—: 1940 Overall Match Balance Table

	Matched		Mean	sd	N
Pct White	0.0413	(0.00882)	0.954	0.21	658,387
Age	0.939	(0.0684)	42.405	11.378	658,387
Occscore	2.149	(0.172)	23.088	12.552	658,387
W/S Income	203.8	(16.24)	1281.343	946.598	472,977
Pct Own Home	0.0867	(0.00651)	0.486	0.5	658,387
Farmer	-0.041	(0.00824)	0.201	0.401	658,387
Married	0.0817	(0.00788)	0.762	0.426	658,387
Urban	0.0247	(0.00545)	0.51	0.5	658,387
In CA, 1935	0.0487	(0.00338)	0.86	0.347	646,267
BofA	0.0262	(0.00519)	0.669	0.471	658,387

Source: Census data: Ruggles et al. (2024) and Abramitzky et al. (2022*b*). Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952).
Note: Sample includes all places in this census except those mentioned in the body of the paper. Each coefficient is the result of a separate unweighted regression of the given variable on a dummy for being matched to a 1930 observation as described in Appendix E. See Appendix D for construction of the spatial aspect. Mean and standard deviation are for the California male population aged 25–65 in these cities. Standard errors are clustered at the county level to right of coefficient for indicator for being matched.

in Table E2 for these linking methods. The magnitudes of these coefficients are quite similar to those in Table A28, indicating that the matching method is likely not driving the regression results.

E2. Variable Definitions

In this section, I discuss in more depth the variables used in the individual analysis. In many cases, I use the Ruggles et al. (2024) definition to create a binary variable. For example, I use the race variable to define a race binary variable which takes the value 1 if the person was reported as white. I do this for race, urban/rural status, and marital status (based on whether the individual reports being currently married).

Other variables I take directly from Ruggles et al. (2024). I use OCCSCORE and age as given. I define a labor force participation dummy using the LABFORCE variable such that being in the labor force is 1. Similarly, unemployment is defined as 1 if the individual reports not having a job (from EMPSTAT) but being in the labor force in the Census. If an observation in 1940 reports having at least an eighth-grade education, then the education dummy takes the value 1. Because income was top-coded at $5,000$ dollars in the 1940 census, I recode any observation of income above that threshold to be equal to $5,001$ if necessary.

To characterize individuals' occupation and industry, I rely on the OCC1950 and IND1950 variables. I correct for uncoded occupation and industry strings by matching individuals' industry and occupation string pairs to the modal OCC1950,

Table E2—: 1940 Labor Market Results Matching Robustness

	In LF	Unemp.	Ln(W/S Income)	New Occ	%Δ Occscore	Occscore Up	Ln Home Val
A: NYSIIS + 1Y							
BofA	-0.00479	0.00550	0.0824	-0.0112	0.0675	0.0324	0.294
	(0.005)	(0.006)	(0.024)	(0.005)	(0.013)	(0.009)	(0.046)
R-sq	0.09	0.04	0.27	0.11	0.25	0.30	0.27
N	210091	194906	141922	210091	179778	209410	111597
B: Exact + 1Y							
BofA	-0.00598	0.00669	0.0836	-0.0126	0.0673	0.0296	0.270
	(0.00464)	(0.00588)	(0.0246)	(0.00574)	(0.0133)	(0.00888)	(0.0441)
R-sq	0.09	0.04	0.26	0.11	0.25	0.30	0.27
N	190302	176439	128275	190302	162724	189643	102255
C: NYSIIS + 5Y							
BofA	-0.00522	0.00665	0.0844	-0.00725	0.0637	0.0339	0.281
	(0.00474)	(0.00555)	(0.0244)	(0.00607)	(0.0123)	(0.00865)	(0.0424)
R-sq	0.09	0.05	0.28	0.11	0.24	0.30	0.27
N	153045	142203	103092	153045	130913	152528	82453
D: Exact + 5Y							
BofA	-0.00403	0.00669	0.0882	-0.0134	0.0634	0.0287	0.256
	(0.00460)	(0.00572)	(0.0243)	(0.00623)	(0.0135)	(0.00881)	(0.0445)
R-sq	0.09	0.04	0.28	0.12	0.24	0.30	0.27
N	149994	139326	100780	149994	128037	149461	81759

Source: Census data: Ruggles et al. (2024) and Abramitzky et al. (2022*b*). Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952).
Note: Panel A replicates Table A28 except for wage/salary income, which is in Table 8. The subsequent panels modify the baseline sample with different linking criteria defined in Abramitzky et al. (2022*b*): either name-cleaning (exact versus NYSIIS) or required age band for uniqueness (1 or 5 years). Other explanatory variables in these regressions are a quadratic in age, 1930 city of residence population, fixed effects for 1940 county, birthplace, and 1930 industry and occupation groups, and dummies for having an eighth grade education, 1930 marital and rural status, and reporting race as white. Only men between 25 and 65 included if they are also living in California and not in the top 20 cities by 1929 in 1940. BofA is 1 if within five miles of a 1929 BofA location in 1940. Regressions weighted by the inverse of population for each man's geographic unit in 1940. Standard errors clustered at 1940 county level. For more details on the data, see Appendix E.

IND1950, and OCCSCORE values in the respective full count censuses for California workers.[75] Then, I create occupation and industry categories by collapsing the OCC1950 and IND1950 codes into six categories each using the same logic as Long and Ferrie (2013). I group all IND1950 codes between 100 and 299 into the agriculture and mining category, between 300 and 499 as manufacturing and construction, between 500 and 599 as transportation and utilities, between 600 and 699 as retail and wholesale trade, between 700 and 899 as services, and between 900 and 950 as government. The occupation categories are as follows: between 1 and 199 are professional and managerial, between 200 and 299 and 800 and 899 as farming (which includes farmers, farm managers, farm tenants, and farm laborers), between 300 and 499 as clerical and sales workers, between 500 and 699 as craftsmen and operatives, between 700 and 799 as service workers, and between 900 and 970 as nonfarm laborers. If a person changes from one of these occupation categories to another, I code that as a change in occupation group. The same is true for a change in industry group. I calculate the percent change in OCCSCORE as $\frac{OCCSCORE_{40}-OCCSCORE_{30}}{OCCSCORE_{30}}$. The skill upgrading variable is an indicator variable which is 1 if $OCCSCORE_{40} > OCCSCORE_{30}$, which captures any move up the labor compensation ladder, holding relative wages constant.

E3. Manufacturing Data

Although Vickers and Ziebarth (2018) did a massive amount of standardization across the various samples in their data, they noted in their original documentation that they did not clean the city of operation variable across years and establishments. However, most entries had a usable city in the AG002 variable, making it feasible to construct a city identifier for California establishments. For the remainder, I inferred a city of operation by matching establishment names and counties to California state reports on the manufacturing censuses, using the address in AG004 or A004, or for establishments operating in the same county and with the same name, street information, and owner in multiple years, I use the other observation's location. In several other cases, I use local newspapers or industry histories to match the establishment to a city. After this combination of procedures, I go from 4,538 observations with California as their state of operation to 4,462 observations.

With this sample in hand, I cleaned establishment names to construct establishment identifiers based on owner, address, and location across years. Finally, following Ziebarth (2013) and Vickers and Ziebarth (2018), I winsorize at the top and bottom 1 percent of the wage bill (E005S), employment (annual average of EWEMT), and value added (G000V) distributions for each industry in each year. I use this employment average as the denominator for the wage and output per

[75]This ensures the coding is accurate for the California labor market (see Department of Education (1937)) while also using the strings to maximize the accuracy of the coding, as indicated in Chapter 4 of the IPUMS User Guide. Due to the change from "gainful occupation" to employment in census questions after 1930, IPUMS also suggests using the strings to gain information on labor market outcomes.

worker regressions.

Included industries in descending number of observations are planing mills, manufactured ice, ice cream, beverages, concrete products, petroleum refining, macaroni, soap, steel works, radio equipment, agricultural implements, motor vehicles, glass, aircraft and parts, cement, cotton goods, rubber tires, malt, cigars and cigarettes, sugar refining, bone black, matches, and linoleum.

Additional Lending Growth Results

F1. Lending Growth Regression Robustness

On average, that Bank of America-branched offices cut lending by 28 percentage point less than their non-branched counterparts from 1929 to 1933. Previous research by Carlson and Mitchener (2009) has established that the arrival of branch banks reduced unit banks’ failure rates in this setting, which means these effects may be due to in part to unit banks’ decisions. The core empirical strategy rests on the ability of Bank of America’s network to maintain higher lending during the early 1930s through primarily their use of internal capital markets, raising the question of whether this baseline effect was due to Bank of America policy or some other shared characteristics of branched cities. This appendix provides more evidence against this sort of endogenous city-level variable contaminating the Bank of America effect.

Several additional analyses indicate that omitted variables are unlikely to drive the baseline results. Adding more controls where available does not change the Bank of America coefficient substantially in either the city or office level results in Table F2 or F1, suggesting that unobservables are unlikely to account for the estimated effect. This is further supported by how far zero is from the Oster (2019) bounds on the Bank of America treatment effect which either assume zero selection on unobservables or selection on unobservables equal to that of the included regressors. Finally, when using propensity score matching on predictors of other 1930s shocks, 1920s bank acquisition costs, or 1920s observed property value growth, in Table A7, the city lending growth results hold. The Bank of America lending coefficient goes through in a range of identification approaches, providing more confidence that branching, not something else, benefited local financial stability in the Great Depression.

Next, I address whether pre-crisis local banking market competition, not crisis-period branching, brought about heightened lending growth. When restricting to one-office cities or cities in which both Bank of America and at least one other banking office, in Table F1 Column 2 and Column 3, the Bank of America coefficient remains large and significant, providing some confirmation that Bank of America’s policies were shared across banking market types. Then, to absorb city shocks like more stable banking markets, the rest of the table restricts to cities with at least one treated and one control observation. Including city fixed effects and 1929 banking office-level controls does not alter the result. The Bank of

America effect falls slightly in this approach, indicating that unit banks in treated places may have lent more than banks who did not increase their efficiency. Even when accounting for shared local banking market characteristics which may be endogenous to local economic conditions, Bank of America's lending growth was elevated compared to unit banks' credit issuance.

This does not rule out that having more stable and efficient unit bank counterparts benefited the Bank of America system overall. In fact, having a more stable unit banking system likely had state-level spillover effects. It does imply that even when exposed to the same set of city-level shocks and pre-crisis lending decisions, Bank of America branches had higher lending growth than their competitors. The pro-competitive externality in Carlson and Mitchener (2009), then does not explain all of the observed Bank of America effect, minimizing the possibility that Bank of America-branched markets were already different by 1929 than non-Bank of America branched places in a way that fully explains the baseline results.

Table F1—: Office Level Lending Growth, 1929–33

BofA	0.231	0.259	0.249	0.244	0.245	0.238
	(0.050)	(0.078)	(0.062)	(0.077)	(0.077)	(0.073)
Loans/Deposits 1929					0.0237	-0.0138
					(0.140)	(0.166)
Log loans, 1929						0.0270
						(0.055)
Constant	-0.489	-0.570	-0.460	-0.459	-0.475	-0.809
	(0.052)	(0.079)	(0.048)	(0.021)	(0.094)	(0.677)
Multi-Office Cities	X		X	X	X	X
One-Office Cities	X	X				
City Fixed Effects				X	X	X
Oster bounds					(0.24, 0.24)	(0.23, 0.24)
R-sq	0.08	0.15	0.08	0.46	0.46	0.47
N	269	88	181	181	181	181

Source: See Table 2.

Note: This table predicts 1929-33 banking office lending growth as plotted in Figure 3b using banking office-level controls as of 1929. All cities with banks outside the top 20 by population in 1929 included. Column 2 only includes unit (Bank of America) offices which did not have a Bank of America (unit) competitor. The multi-office sample restricts to banking offices with at least one Bank of America office and one non-Bank of America office in 1929. Standard errors clustered at county level. For more details on the data, see Appendix C.C2.

Table F2—: The Effect of Bank of America on City Credit Supply, 1929–33

BofA, 1929	0.23	0.23	0.18	0.16
	(0.05)	(0.06)	(0.05)	(0.06)
Constant	-0.54	-0.54	-0.50	0.44
	(0.06)	(0.04)	(0.04)	(0.96)
Population, 1929		X	X	X
1930 Emp. Shares				X
1929 Banking				X
1920–30 Changes				X
Oster bounds				(0.08, 0.16)
R-sq	0.13	0.13	0.10	0.22
N	151	151	125	125

Source: See Table 2.

Note: See Table 2 for details on the specification. Lending in each year is the sum of all credit issued by unit banks and branches located in that city in that year. Employment shares refer to the share of the employed population working in manufacturing, the educated service sector, and agriculture, as well as the self-employed share and the unemployment rate. Banking variables are the loan-deposit ratio and log total outstanding lending in 1929; both are totals across all banking offices. The decadal changes are the 1920–30 change in the share of workers in agriculture and manufacturing, the 1920–30 change in the median occupation score, the 1922–29 change in total lending (restricting the sample to cities with banks in 1922), and the 1922–29 population growth rate, all at the city level. The final 2 columns restrict to cities identifiable in the 1920 census. All cities with banks outside the top 20 by population in 1929 included if all offices' balance sheets are extant in 1929 and 1933 or the office closed. Standard errors clustered at county level. For more details on the data, see Appendix C.C2.

F2. Evidence on Types of Lending

California banks issued credit to households, firms, and farms, making them the key lender in this setting. Firms were usually small in the 1930s, especially family-owned retail stores and manufacturers, so bank credit was likely crucial for funding inventory and working capital (Mitchener and Wheelock, 2013). Data are scarce during the Depression on specific industries, but contemporary reports mention firms' reliance on bank funding (Kidner, 1946; Department of Education, 1937).

Banks also provided credit in the agricultural sector in California more than they did in other states. Part of this was due to the state's capital intensive farming methods (Olmstead and Rhode, 2017). According to a contemporary agricultural economist, even small California farms needed an average of $20,000 in bank credit every year, which was quite high (Nash, 1992). Banks provided both real estate and non-real estate credit for farmers in California. University of California College of Agriculture (1930) finds that 69 percent of outstanding California farm mortgages were held by banks, split roughly evenly between national and state banks.

Banks' presence in California mortgage markets made them especially important for household finance. State chartered banks faced fewer restrictions on interest rates and maturities than in other states. Additionally, the McFadden Act relaxed rules against national banks' mortgage issuance, which together led to higher bank participation in mortgage markets. Perhaps for this reason, another source of real estate lending in other parts of the country, building and loan associations, were not as dominant in California (Snowden, 2003). Moreover, California banks were relatively large issuers of installment credit, suggesting households were reliant on them for durables purchases as well (Olney, 1999).

Bank of America lent in each of these categories during the Great Depression without charging an interest rate premium. For instance, from 1929 to 1933, Bank of America issued nearly $12 million in small personal loans to 200,000 borrowers (Bonadio, 1994). Perhaps because the bank was such an active real estate lender, the correlation between 1929—33 lending growth Bank of America-branched cities and building and loan association lending growth was −0.06, and 0.09 overall. Moreover, a Federal Reserve interest rate survey reveals that Bank of America's loan rates on commercial loans in 1928 and 1933 were in line with competitors' rates in both rural and urban areas (Board of Governors, 1933). These pieces of evidence suggest that banks, especially Bank of America, were key provides of credit during the Great Depression across a wide range of borrowers.

Its main point of divergence from other banks, however, was likely to be mortgage credit. As shown in Figure A2, Bank of America branches in 1933 held far more real estate loans as a share of total assets than other banking offices. This is also borne out when comparing branches' 1933 asset shares in the same city, as in Table A2. Early on in the Depression, in 1931, real estate mortgages made up 55 percent of Bank of America's total lending, compared to 28 percent for other San Francisco-headquartered Federal Reserve member banks, 46 percent for Los Angeles banks, and 22 percent in the rest of the state (Fishback, Rose and Snowden, 2013; Federal Reserve Board of Governors, 1933).[76] The earliest possible disaggregation of business lending in Federal Reserve Board of Governors (1933) finds no evidence Bank of America was more likely make commercial and industrial loans than other banks, however.

Further Evidence on 1930s Lending Determinants

G1. Predicting Lending with 1929 Portfolios

Banking theory suggest several reasons why Bank of America could maintain a higher degree of credit supply than other California banks. Figure G1 shows California banks' 1929 balance sheets varied alongside their lending growth. To identify potential sources of Bank of America's lending advantage in the 1930s, I build on earlier work in this period by Calomiris and Mason (2003*b*). Specifically, I regress office-level lending growth from 1929 to 1933 on proxies for 1929 bank solvency, liquidity, profitability, local banking market competition, and branch network size, clustering standard errors at the county level.[77] Because my data include branch outcomes, I also include controls for the number of branches and number of cities in the network, as well as office-level loan-deposit ratios and the number of offices in a given city in 1929 to account for geographic and branch-level differences. Results are in Table G1. Reassuringly, using 1929 observable banking information captures the difference in lending distributions between Bank of America branches and other banks in actuality; the average non-Bank of America office has a predicted lending change of -0.56 and the average Bank of America office has a predicted lending change of -0.20 using the coefficients from Column 1; each of these are only 0.02 and 0.04, respectively, off from the actual sample averages.

Assets, interbank deposits, loan-deposit ratios, and branching variables are all significant predictors of lending growth in the baseline regression in the first column. Results are largely similar when restricting to cities with more than one bank in Column 2, though some coefficients are larger. This restriction allows the inclusion of city fixed effects in Column 3, which again finds comparable magnitudes to those in Column 1, except loan-deposit ratios. Though Bank of America was much larger than the average bank in terms of assets, cities, and branches, it did not have an unusual loan-deposit ratio, net worth to asset ratio, or interbank deposit share, as depicted in Figure G1.[78] While increasing the number of

[76] I use 1931 because it is the first post-Mc Fadden Act year for which I observe real estate lending for all of these categories for all member banks in the data (Federal Reserve Board of Governors, 1933).

[77] I am using all California banks, not Federal Reserve call reports for this regression, so I cannot include every bank variable in their baseline specification.

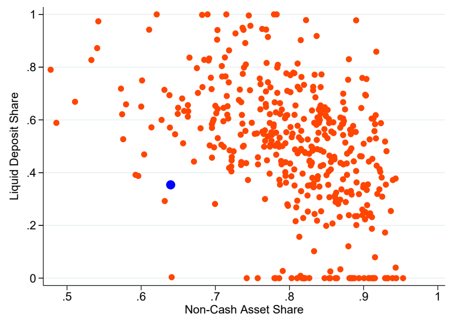
[78] A Federal Reserve study found no conclusive evidence on whether branch banking was more or less profitable than either San Francisco national banks or its competitor unit banks in this context (Federal Reserve System, 1931).

Table G1—: Determinants of office level lending growth, 1929–33

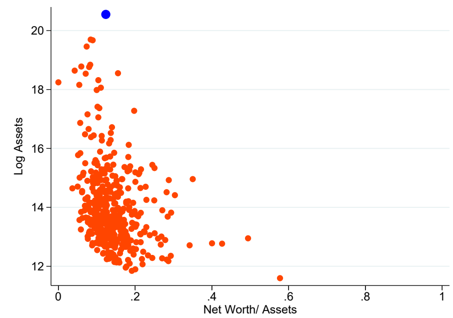
Log Number of Offices	-0.299	-0.300	-0.336
	(0.054)	(0.057)	(0.074)
Non-Cash Asset Share	-0.0796	-0.0978	-0.119
	(0.269)	(0.453)	(0.869)
Net Worth/Assets	1.024	0.893	0.906
	(0.657)	(0.625)	(1.166)
Liquid Deposit Share	-0.139	-0.187	-0.200
	(0.102)	(0.125)	(0.172)
Loan Share Non-Cash Assets	0.202	0.234	-0.302
	(0.151)	(0.267)	(0.399)
Log Assets	0.0942	0.124	0.118
	(0.030)	(0.029)	(0.064)
Fed Member	-0.150	-0.0938	-0.108
	(0.111)	(0.085)	(0.174)
US Security Share	-0.0694	-0.0831	-0.115
	(0.144)	(0.295)	(0.511)
Number of Offices in City	-0.0122	-0.0315	
	(0.019)	(0.018)	
Log Number of Cities	0.273	0.235	0.305
	(0.079)	(0.077)	(0.150)
State Bank	-0.0517	-0.0128	-0.0716
	(0.101)	(0.087)	(0.158)
Interbank Deposit Share	-1.090	-0.867	-1.238
	(0.609)	(0.740)	(0.908)
Loans/Deposits	-0.152	-0.192	0.0143
	(0.037)	(0.104)	(0.180)
Constant	-1.711	-2.057	-1.799
	(0.612)	(0.795)	(1.627)
R-sq	0.18	0.21	0.50
N	482	291	291
Only Multi-Office Cities		X	X
City Fixed Effects			X

Source: Office of the Comptroller of the Currency (1910–39), California State Banking Department (1910–39), and Carlson and Mitchener (2009). Bank of America data: 71st U.S Congress Committee on Banking and Currency (1930) and Federal Reserve Board of Governors (1933).

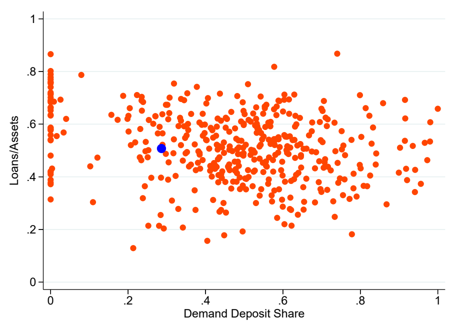
Note: The outcome variable is office-level lending growth. All controls measured as of 1929 at bank level except loan-deposit ratio and total banking offices in city. Non-cash asset share defined as share of assets not held as cash or US securities. Liquid deposits include bank and demand deposits. US security share is the share of securities which are US government assets. Interbank deposit share is the share of deposits owed to banks. All cities in California included to ensure all branch networks are observed at their headquarters where necessary. Standard errors clustered at the county level. Mutiple offices restriction only uses cities with at least two banking offices in 1929 to permit inclusion of city fixed effects.



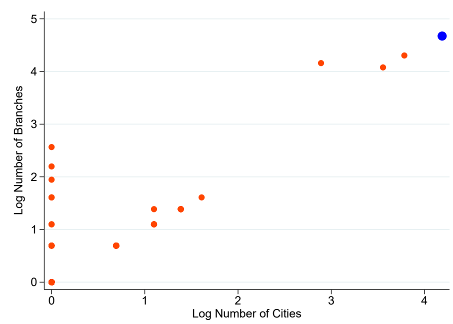
(a) Asset and Liability Liquidity



(b) Solvency and Profitability



(c) Asset and Liability Ratios



(d) Network Size

Figure G1. : California Bank Balance Sheet Characteristics, 1929

Source: Office of the Comptroller of the Currency (1910–39), California State Banking Department (1910–39), and Carlson and Mitchener (2009).
Note: Each scatterplot displays 1929 bank-level balance sheet information for all California banks in 1929 in orange except Bank of America (in blue). Non-cash asset share defined as share of assets not held as cash or US securities. Liquid deposits include bank and demand deposits. For more details, see Appendix C.

branches in a network is significantly correlated with lower lending, increasing the number of cities is correlated with increased loan growth. This suggests that more geographically widespread networks could lend more than single-location branch networks. This is only a sufficient explanation for higher credit supply in a crisis if internal capital markets worked to move money across locations as discussed in the main text.

G2. Using a Branch Network to Smooth Shocks

The historical narrative suggests that internal capital markets allowed Bank of America not to call in loans when local shocks occurred both before and during the Great Depression. Thanks to its expansion, Bank of America had amassed deposits from hundreds of towns with very different seasonal money demand. With this set of diversified funds, the bank then leveraged its internal capital markets so that local idiosyncratic shocks did not cause bank runs. This was certainly something the bank was aware of; in a 1930 book on branch banking, AP Giannini said that he "put the window of a San Francisco bank in each community...[any] hard time will make little dent on the system of a whole (Ostrolenk, 1930, p.173)."

The main text refers to the importance of cross-city network transfers during the depths of the Depression, but the bank's official history notes at least three earlier examples of Bank of America using deposits from large and stable locations to offset liquidity shocks elsewhere. After World War I, when farm export demand fell, Bank of America "saw California as a whole, with all resources capable of being interchanged and utilized" to smooth out the impact on bean producers (James and James, 1954, p.112). Second, the bank also used these resources for more classic sunspot-type bank runs. In 1921, when a Santa Rosa eavesdropper mis-heard a telephone call and assumed Bank of America's branch was weak, when it was in fact simply closed for a funeral, funds were rushed over from nearby Napa and the headquarters sent currency to all branches (James and James, 1954). This was also true in more remote places; a $100,000 loan defaulted in Susanville in 1927, leading to funds being sent from a Reno correspondent because it was closer than San Francisco (James and James, 1954). By moving deposits across locations, Bank of America continually demonstrated its commitment to using internal capital markets to stop local banking instability.

Several other aspects of the bank's organizational philosophy complemented this approach. Additional diversification came from a top-down emphasis on lending to the "little fellow" (Bankers Monthly, 1932, p.270). Branch officers, most of whom were pre-acquisition holdovers, were closely monitored by Bank of America officials to ensure they lent to small borrowers instead of the local elite. Economies of scale induced by branching also allowed Bank of America to concentrate its non-lending assets in government securities and amass enough deposits to become large relative to any one location or borrower. Branching therefore translated into superior liquidity and solvency as well (Kashyap and Stein, 1995, 2000). Finally, the pro-competitive effects of branch expansion in this context likely benefited California's banking markets as unit banks were more efficient due to the threat of branch network expansion (Carlson and Mitchener, 2009). While important, these aspects of branch banking alone cannot explain the cross-city subsidization and diversification underlying Bank of America's distinctive loan allocation. Therefore I view them as supporting the internal capital markets channel emphasized in the baseline analysis.

Further Balance Testing

This appendix provides additional evidence on city observable variation to support the empirical strategy.

H1. Network Expansion Selection

First, I use 1922 information to model whether Bank of America expanded into specific kinds of places before the Great Depression. This year marked the passage of the *de novo* rule, which largely limited expansion to the purchase and conversion method. Formally, I regress the probability of a city c in county $\mathcal{C}$ receiving its first Bank of America branch between 1922 and 1929 on both city and county level characteristics:

$$\text{(H1)}\quad P(BofA_c) = \beta_0 + \gamma DEMOG_{c,1922} + \alpha BANK_{c,1922} + \delta ECON_{C,1920} + \epsilon_{\mathcal{C}c}.$$

City variables include a dummy for having any banks, having a national bank, average capital per bank in the city in 1922, a quadratic in distance to a large city, log 1922 population, banks per 1,000 people in 1922, and the average loan to deposit ratio of existing banks in 1922. The county controls are the percent growth rate of agricultural output 1910–1920, the percent of income from agriculture in 1920, whether the county is in northern California, county manufacturing and agricultural income per capita in 1920, and the percent of the population in 1920 which was born abroad. Results are listed in Table H1.[79]

The majority of these financial, economic, and demographic variables fail to predict selection into the Bank of America branch network in 1929 in economically and statistically significant ways. While average capital per bank is statistically significant, it indicates that increasing the probability of a Bank of America opening by 10 percent would require the average bank to double its capital. The impact of the number of banks per capita in 1922 is similarly small in economic significance. Moving from the 25th to the 75th percentile in number of banks per 1,000 people, the equivalent of 1.5 banks per 1,000 people, would increase the probability of Bank of America branch status in 1929 by 3.3 percent. The growth rate of agricultural income is expressed in percentage points, so the coefficient indicates that a 10 percent increase in the growth rate of agricultural income is associated with a 0.66 percent decrease in likelihood of Bank of America entry. Clearly, though, population did play a part in Bank of America branching, as moving one standard deviation in log population, roughly equal to increasing the population by 1,500, is equivalent to a 19 percent increase in the likelihood of Bank of America acquisition. A city being located north of the Tehachapi Mountains, the informal boundary between southern and northern California at the time, increased its probability of being a Bank of America branch due to the strong ties between Los Angeles bankers and state banking regulators (James and James, 1954). Figure 2a demonstrates that population and city location were not the sole determinants of whether cities received a Bank of America branch. As in the historical background section, there is substantial local unpredictability in whether Bank of America expanded into a given town or not.

[79]A similar bank level regression in Carlson and Mitchener (2009) indicates that few bank level ob-

Table H1—: Determinants of Getting BofA between 1922 and 1929

	1(Get BofA branch)	1(Get BofA branch)
1922 banks per 1,000	0.027	0.023
	(0.01)	(0.01)
Had bank in 1922		-0.096
		(0.07)
Had national bank in 1922	0.041	0.092
	(0.06)	(0.05)
Log 1920 city population	0.21	0.17
	(0.03)	(0.02)
Distance to large city (miles)	-0.00017	0.00041
	(0.00)	(0.00)
Distance to large city sq.	-0.00000099	-0.0000030
	(0.00)	(0.00)
1(County seat)	0.048	0.17
	(0.11)	(0.10)
Share county income ag, 1920	0.18	0.13
	(0.18)	(0.17)
Growth county ag income, 1910-20	-0.00061	-0.00066
	(0.00)	(0.00)
County income per capita, 1920	0.00012	0.00011
	(0.00)	(0.00)
Share county population foreign-born 1920	0.0097	0.0091
	(0.01)	(0.01)
Growth county population, 1910-20	0.00046	0.00073
	(0.00)	(0.00)
1(County in northern California)	0.098	0.15
	(0.07)	(0.07)
Average loan/deposit ratio	-0.042	
	(0.04)	
Average capital per bank ($1000s)	0.0015	
	(0.00)	
Constant	-18.9	-14.0
	(17.67)	(16.63)
Observations	287	366

Source: Carlson and Mitchener (2009), California State Banking Department (1910–39), and Office of the Comptroller of the Currency (1910–39).
Note: This table estimates a linear probability model predicting whether a city receives a Bank of America branch between 1922 and 1929. County variables are from 1910 and 1920 censuses. City and banking variables measured in 1922 except where noted. Both regressions include all incorporated and unincorporated places for which population data in 1920 exist which do not have a Bank of America branch in 1922 and are not one of the 20 largest cities in California in 1929. Standard errors clustered at county level in parentheses.

Finally, I plot the predicted values from this regression for all California cities in H1, which indicate the 20 largest cities in the state were overwhelmingly favored for expansion. Therefore, I drop those cities in the main analysis.

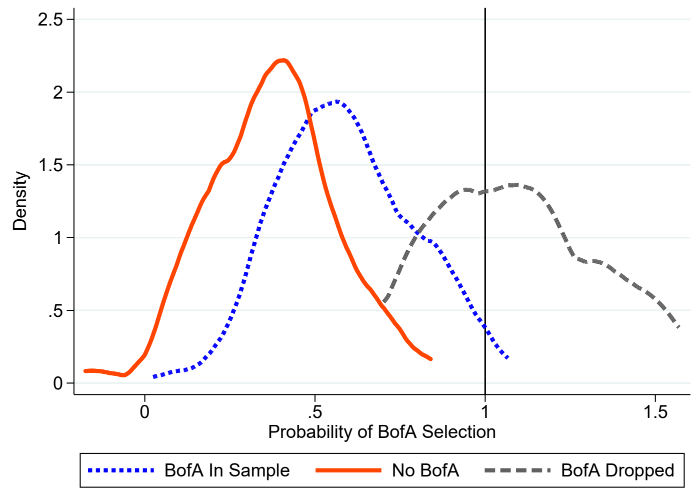


Figure H1. : Density of Bank of America Branch Likelihood by Branch Status and City Size

Source: Bank of America locations: Transamerica Corporation vs Federal Reserve Board (1952). Bank data: Office of the Comptroller of the Currency (1910–39) and California State Banking Department (1910–39). Other data: Carlson and Mitchener (2009)
Note: Each line is a kernel density plot of the predicted probability of getting a Bank of America branch by 1929 using the specification in Equation H1 for all cities in California in a linear probability model. The gray dashed line represents the 20 largest cities in California which are dropped from the analysis in the rest of the paper.

H2. City Balancing Tables

For the identification strategy used in this paper to be valid, cities' characteristics cannot vary based on Bank of America's branch locations in ways which would drive the size of the credit supply shock. If Bank of America branches were systematically exposed to less-severe economic conditions due to a smaller tradable sector, for example, then the effect associated with Bank of America's presence would be misidentified. Ideally, I would be able to measure every characteristic which may affect economic growth during a recession. Due to the paucity of annual city level variables in this time period, balancing tests across 1920 census variables are the closest possible analog to traditional pre-trends analysis for a wide range of observables. Identification also requires that until 1929, Bank

servables predict eventual Bank of America acquisition as well.

of America towns were indistinguishable from non-branched towns. This section presents balancing tests for a variety of 1920 and 1930 traits based on Bank of America's branching network in 1929. These balance tests provide support for the baseline identification strategy. Any unobservable characteristic correlated with Bank of America's network in 1929, 1930s labor reallocation, and local business cycles must be uncorrelated with each of the following variables.

The 1920 balancing tables indicate that there was minimal selection of cities into Bank of America's branch network during the 1920s based on 1920 information, confirming that treatment assignment was balanced with respect to observable information.[80] All of the t-tests in Table H2 are statistically insignificant at conventional levels except the clerical/sales share, but the β coefficient is small relative to the mean.[81] For example, Table H5 uses t- tests to compare the similarity of demographics in 1930 between the treated and control samples. Other evidence in this paper suggests that 1920s property values evolved similarly regardless of branch status.

In 1930, cities with Bank of America branches were similar to other cities in California on demographic characteristics, as demonstrated in Table H5. As in the case of property values for the entire city, t-tests cannot reject that average price-rent ratios are the same in treated and control places. Differences in the 1930 occupational distribution were small, as seen in Table H6. All sectors are statistically indistinguishable based on Bank of America locations. I also present results on the industrial structure of California cities based on employment shares in Table H7. At the onset of the Great Depression, industries were similar sizes in treated and control sectors. Other sectors were similarly sized regardless of the financial environment, indicating the validity of the identification strategy.

Finally, to show that business credit demand was balanced across treatment, I use data from Vickers and Ziebarth (2018) to compare manufacturing outcomes in 1929. Establishments in Bank of America branched towns had no difference in incorporation status,total sales, total wage bill, average wages, or total number of wage earners. These establishment level data indicate that manufacturing firms' credit access and demand was likely unrelated to Bank of America branch access, lending further credence to the empirical approach.

[80] I use only incorporated cities in the analysis because I cannot identify unincorporated cities in the 1920 census. Due to California's rapid population growth in the 1920s, the 1920 enumeration districts are much more spatially aggregated than the 1930 enumeration districts, so I still lose 23 1930 places in the match backwards to 1920.

[81] *OCCSCORE* measures the median earnings for each occupation in 1950. California's earnings distribution followed the national averages. It is the commonly-used measure of occupational standing before 1940, despite having some measurement problems (Olivetti and Paserman, 2015).

Table H2—: 1920 Demographics Balancing Table

	White	Pct Homeowner	Occscore	Self-Employed	Literate
BofA in City	0.000638	0.0143	0.0143	-0.00448	0.00696
	(0.00523)	(0.0216)	(0.300)	(0.00578)	(0.00697)
Mean	0.973	0.503	9.514	0.094	0.787
sd	(0.030)	(0.098)	(1.555)	(0.030)	(0.054)
N	202	202	202	202	202

Source: Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952). Census data: Ruggles et al. (2024).
Note: Sample includes all incorporated cities in this census (see Appendix D) except those mentioned in the body of the paper. Each coefficient is the result of a separate regression of the given city variable mean on 1920 population and a Bank of America in 1929 dummy. Mean and standard deviation are for the estimation sample. For details on the census variable definitions, see Appendix E.E2. Standard errors are clustered at the county level.

Table H3—: 1920 Occupation Employment Balancing Table

	Prof./Mgr.	Farm	Nonfarm Lab.	Cler./Sale	Craft/Op.	Service
BofA in City	0.00260	-0.0198	0.00509	0.00790	0.00295	0.00121
	(0.00985)	(0.0227)	(0.0113)	(0.00745)	(0.0107)	(0.0211)
Mean	0.199	0.147	0.141	0.131	0.178	0.205
sd	(0.062)	(0.108)	(0.081)	(0.044)	(0.070)	(0.083)
N	202	202	202	202	202	202

Source: Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952). Census data: Ruggles et al. (2024).
Note: Sample includes all incorporated cities in this census (see Appendix D) except those mentioned in the body of the paper. Each coefficient is the result of a separate regression of the share of men reporting the given one-digit OCC1950 code on 1920 population and a Bank of America in 1929 dummy. Mean and standard deviation are for the estimation sample. For more details on the census variable definitions, see Appendix E.E2. Standard errors are clustered at the county level.

Table H4—: 1920 Industry Employment Balancing Table

	Manuf./Con.	Ag./Mining	Trans./Util.	Trade	Services	Government
BofA in City	0.0222	-0.0459	0.0115	0.00718	0.00335	0.000591
	(0.0202)	(0.0263)	(0.0181)	(0.00817)	(0.0108)	(0.00564)
Mean	0.247	0.227	0.103	0.155	0.227	0.027
sd	(0.130)	(0.138)	(0.098)	(0.049)	(0.079)	(0.046)
N	202	202	202	202	202	202

Source: Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952). Census data: Ruggles et al. (2024).
Note: Sample includes all incorporated cities in this census (see Appendix D) except those mentioned in the body of the paper. Each coefficient is the result of a separate regression of the share of men reporting the given one-digit IND1950 code on 1920 population and a Bank of America in 1929 dummy. Mean and standard deviation are for the estimation sample. For more details on the census variable definitions, see Appendix E.E2. Standard errors are clustered at the county level.

Table H5—: 1930 Demographics Balancing Table

	White	Employed	Occscore	Pct Homeowner	Price-Rent Ratio
BofA, 1929	0.0221	0.0115	0.220	0.000507	7.576
	(0.0216)	(0.00678)	(0.205)	(0.0186)	(11.07)
Mean	0.898	0.382	9.963	0.505	158.052
sd	(0.124)	(0.041)	(1.283)	(0.101)	(73.672)
N	228	228	228	228	228

Source: Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952). Census data: Ruggles et al. (2024).
Note: Sample includes all identifiable cities in this census (see Appendix D) except those mentioned in the body of the paper. Each coefficient is the result of a separate regression of the given city variable mean on 1930 population and a Bank of America in 1929 dummy. Mean and standard deviation are for the estimation sample. For more details on the census variable definitions, see Appendix E.E2. Standard errors are clustered at the county level.

Table H6—: 1930 Occupation Employment Balancing Table

	Prof./Mgr.	Farm	Nonfarm Lab.	Cler./Sale	Craft/Op.	Service
BofA, 1929	-0.000532	0.00453	0.0140	0.00239	-0.0166	-0.00104
	(0.00774)	(0.0125)	(0.0122)	(0.00627)	(0.0161)	(0.00394)
Mean	0.222	0.103	0.152	0.153	0.258	0.092
sd	(0.061)	(0.085)	(0.073)	(0.050)	(0.086)	(0.030)
N	228	228	228	228	228	228

Source: Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952). Census data: Ruggles et al. (2024).
Note: Sample includes all identifiable cities in this census (see Appendix D) except those mentioned in the body of the paper. Each coefficient is the result of a separate regression of the share of men reporting the given one-digit OCC1950 code on 1930 population and a Bank of America in 1929 dummy. Mean and standard deviation are for the estimation sample. For more details on the census variable definitions, see Appendix E.E2. Standard errors are clustered at the county level.

Table H7—: 1930 Industry Employment Balancing Table

	Manuf./Con.	Ag./Mining	Trans./Util.	Trade	Services	Government
BofA, 1929	0.00562	-0.0105	0.0108	0.00550	-0.00566	-0.00139
	(0.0199)	(0.0133)	(0.0127)	(0.00534)	(0.00899)	(0.00168)
Mean	0.230	0.165	0.088	0.173	0.240	0.027
sd	(0.119)	(0.101)	(0.075)	(0.041)	(0.073)	(0.012)
N	228	228	228	228	228	228

Source: Bank of America locations in 1929: Transamerica Corporation vs Federal Reserve Board (1952). Census data: Ruggles et al. (2024).
Note: Sample includes all identifiable cities in this census (see Appendix D) except those mentioned in the body of the paper. Each coefficient is the result of a separate regression of the share of men reporting the given one-digit IND1950 code on 1930 population and a Bank of America in 1929 dummy. Mean and standard deviation are for the estimation sample. For more details on the census variable definitions, see Appendix E.E2. Standard errors are clustered at the county level.

Table H8—: Manufacturing Establishment Characteristics, 1929

	P(Incorp)	Log Sales	Log Tot Wages	Log Wage Earners	Log Avg Wages
BofA, 1929	0.0570	-0.244	0.0827	0.105	-0.0229
	(0.0518)	(0.244)	(0.233)	(0.221)	(0.0398)
Mean	0.582	10.807	9.043	4.237	4.774
sd	(0.494)	(1.784)	(1.628)	(1.526)	(0.367)
N	478	472	464	478	464

Source: Bank of America locations: Transamerica Corporation vs Federal Reserve Board (1952). Manufacturing establishments: Vickers and Ziebarth (2018).
Note: All manufacturing establishments in California in Vickers and Ziebarth (2018) included, except those in the 20 most populous cities in California in 1929. Each coefficient is the result of a regression of the outcome on a dummy for the establishment's city having a Bank of America branch in 1929 and 1929 city population. Mean and standard deviation are for the estimation sample. Variables constructed as described in Appendix E.E3. Standard errors are clustered at the county level.