

Online Appendix:
How Do Credit Supply Shocks Affect the Real Economy?
Evidence from the United States in the 1980s

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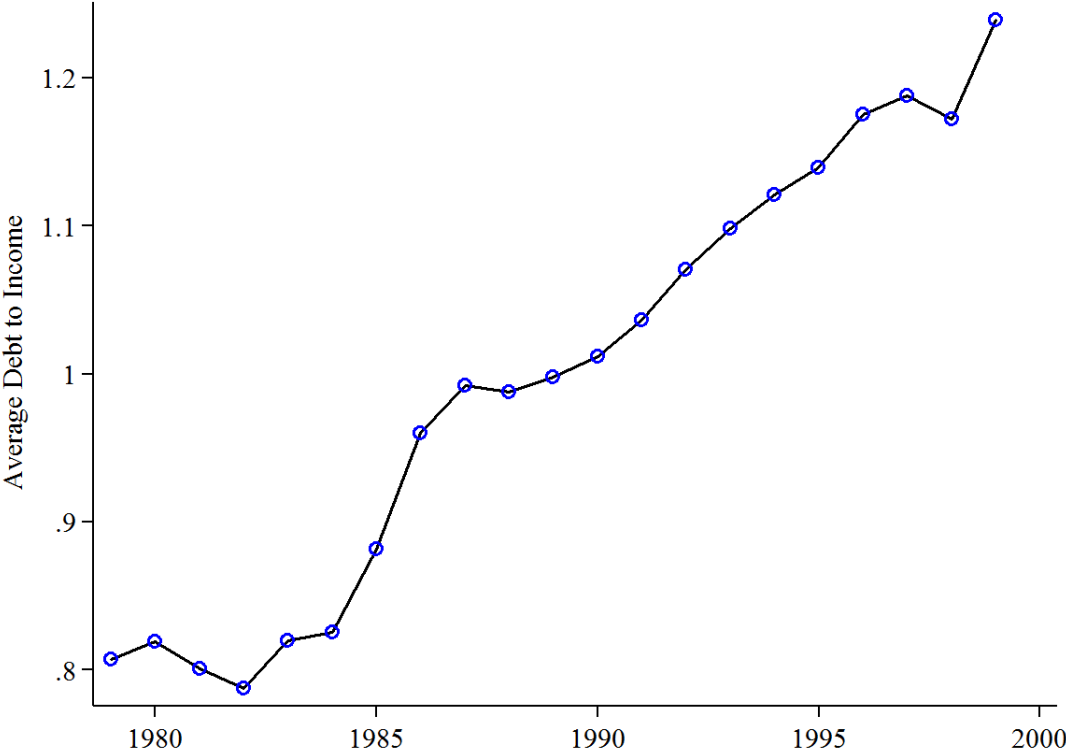
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Appendix

Figure A1: Average Debt to Income



Notes: Average debt to income is the mean of debt to in income across all states in each year.

Figure A2: The Rise in Household Debt to Income in the 1980s

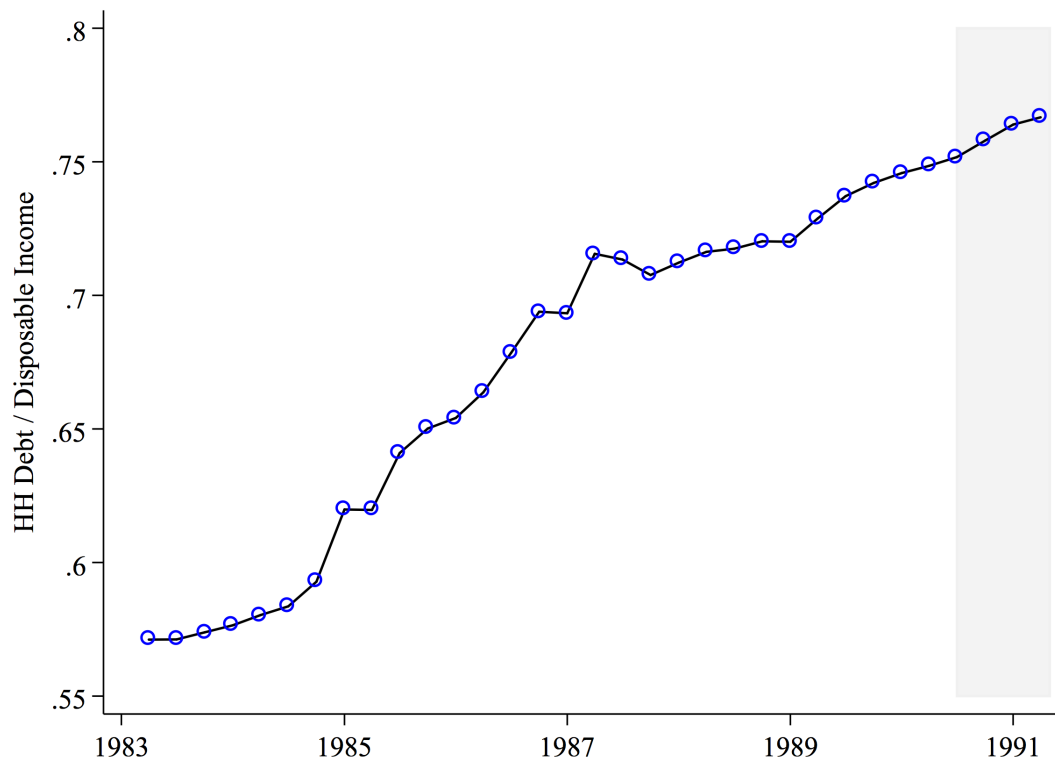
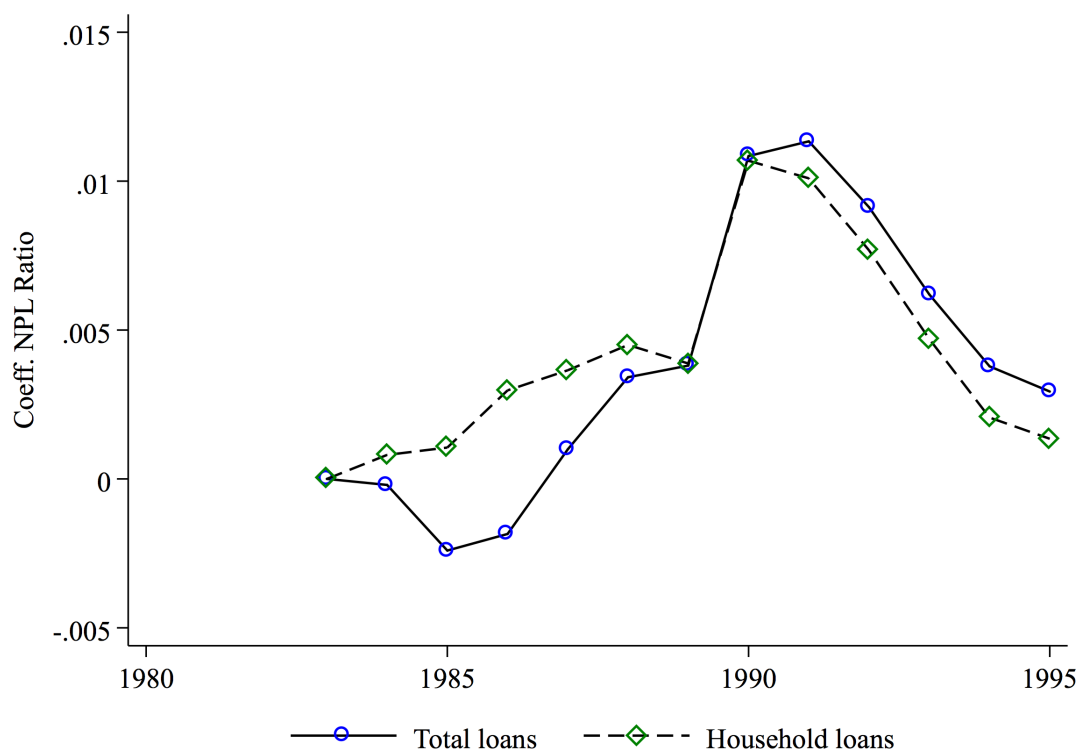


Figure A3: NPL Ratios without Controls



Notes: This figure presents estimates of $\{\beta_y\}$ from $NPL_{st} = \alpha_s + \alpha_t + \sum_{y \neq 1983} \mathbb{1}_{t=y} d_s \beta_y + \epsilon_{st}$, where d_s is the deregulation measure and NPL_{st} is the non-performing loan ratio for household or total loans.

Table A1: Robustness: Deregulation Measure

	(1) Δ_{82-89} Debt to income	(2) Δ_{84-89} Loan appl. volume	(3) Δ_{84-89} Loan appl. number	(4) Δ_{82-89} Total loans	(5) Δ_{82-89} C&I loans	(6) Δ_{82-89} HH loans	(7) Δ_{82-89} Con. loans	(8) Δ_{82-89} HH leverage index
Panel A: Years Inter-state Deregulation								
Years inter-state	-0.0121** (0.00331)	-0.131 ⁺ (0.0703)	-0.0564 (0.0352)	-0.0422* (0.0208)	-0.0512* (0.0250)	-0.0282 (0.0175)	-0.0553** (0.0190)	-0.212** (0.0674)
R^2	0.153	0.146	0.089	0.087	0.096	0.052	0.123	0.266
Panel B: Years Intra-state Deregulation								
Years intra-state	-0.00427* (0.00160)	-0.0288 ⁺ (0.0161)	-0.0122 (0.0102)	-0.0219** (0.00757)	-0.0264** (0.00760)	-0.0158* (0.00747)	-0.0258** (0.00927)	-0.0699** (0.0172)
R^2	0.142	0.053	0.031	0.176	0.191	0.122	0.201	0.215
Observations	49	49	49	49	49	49	49	49

Notes: This table presents regressions of credit growth from 1982 to 1989 on the inter- or intra-state deregulation year. Standard errors in parentheses are heteroscedasticity robust. +,*,** indicates significance at the 0.1, 0.05, 0.01 level, respectively.

Table A2: Employment with China Exposure Control.

	(1) Δ_{82-88} Empl. Tradables	(2) Δ_{82-88} Empl. Non-Tradables	(3) Δ_{82-88} Empl. Construction	(4) Δ_{89-92} Empl. Tradables	(5) Δ_{89-92} Empl. Non-Tradables	(6) Δ_{89-92} Empl. Construction
Dereg. measure	0.00318 (0.0164)	0.0579** (0.0118)	0.176** (0.0335)	-0.0372** (0.0109)	-0.0265* (0.00993)	-0.121** (0.0297)
China exposure	0.00551 (0.0276)	0.0624** (0.0212)	0.154** (0.0565)	-0.0377+ (0.0196)	-0.0556** (0.0171)	-0.136** (0.0486)
R^2	0.002	0.449	0.484	0.349	0.397	0.423
Observations	46	46	46	46	46	46

Notes: This table presents robustness to including “China Exposure” in the specification for employment growth in the boom and bust. The “China Exposure” variable is as defined in Autor et al. (2013). It is available for 46 states. Standard errors in parentheses are heteroscedasticity robust. +, *, ** indicates significance at the 0.1, 0.05, 0.01 level, respectively.

Table A3: Long Horizon Regressions

	(1) Δ_{82-95} Real GDP per capita	(2) Δ_{82-95} Total empl.	(3) Δ_{82-95} Empl. Non-Tradables	(4) Δ_{82-95} House prices	(5) Δ_{82-95} Empl. share
Panel A: Base Case					
Dereg. measure	0.0370 (0.0366)	0.0170 (0.0202)	0.0262 (0.0184)	0.101** (0.0273)	-0.00214 (0.00518)
R^2	0.037	0.015	0.040	0.235	0.004
Panel B: Lagged Dependent Variable Controls					
Dereg. measure	0.0186 (0.0124)	0.0277 (0.0219)	0.0173 (0.0204)	0.114** (0.0263)	-0.00205 (0.00388)
R^2	0.872	0.128	0.087	0.367	0.366
Panel C: Oil Shock Controls					
Dereg. measure	0.0198* (0.00985)	-0.0181 (0.0209)	-0.000396 (0.0202)	0.0659* (0.0321)	-0.00930+ (0.00504)
R^2	0.906	0.273	0.194	0.365	0.291
Panel D: Demographic & Forbearance Controls					
Dereg. measure	0.0200 (0.0401)	0.0241 (0.0218)	0.0458* (0.0178)	0.112** (0.0341)	-0.00486 (0.00380)
R^2	0.289	0.130	0.269	0.411	0.326
Panel E: All Controls					
Dereg. measure	0.00733 (0.0122)	-0.00727 (0.0164)	0.00263 (0.0172)	0.0882* (0.0391)	-0.00903** (0.00244)
R^2	0.935	0.717	0.657	0.525	0.832
Observations	49	49	49	49	49

Notes: Employment share is defined as total employment/population Panel D and E comprises only 48 observations as there is no information available for forbearance in D.C. Regression specification: (1)-(4) $\Delta_{82-95} \ln y_s = \alpha + d_s \beta_1 + \mathbf{x}_s \boldsymbol{\beta} + \epsilon_s$ with heteroscedasticity robust standard errors; (5) $\Delta_{82-95} y_s = \alpha + d_s \beta_1 + \mathbf{x}_s \boldsymbol{\beta} + \epsilon_s$ with heteroscedasticity robust standard errors.

Table A4: Deregulation and Real GDP per Capita & Employment Growth

Panel A: Real GDP per Capita Growth				
	Real GDP per capita growth		Real GDP per capita growth (WLS)	
	(1)	(2)	(3)	(4)
Intra-state dereg.	0.0173** (0.00460)	0.0133** (0.00429)	0.0214** (0.00444)	0.0185** (0.00445)
Time FE	✓		✓	
State FE	✓	✓	✓	✓
Regional time FE		✓		✓
R^2	0.365	0.530	0.532	0.613
Panel B: Total Employment Growth				
	Total employment growth		Total employment growth (WLS)	
	(1)	(2)	(3)	(4)
Intra-state dereg.	0.0167** (0.00294)	0.0129** (0.00309)	0.0203** (0.00360)	0.0170** (0.00347)
Time FE	✓		✓	
State FE	✓	✓	✓	✓
Regional time FE		✓		✓
R^2	0.536	0.625	0.628	0.671
Observations	767	736	767	736

Notes: Time horizon for panel regression is 1980-1995. Intra-state deregulation covariate assumes value 1 the year after the intra-state branching deregulation has taken place. The year of the intra-state branching deregulation is dropped. Delaware is excluded from all columns. Hawaii and Alaska are dropped from the sample in column (2) and (4). For the regional time fixed effects the sample is split into four main regions. Region 1 (Northeast) contains CT, MA, MD, ME, NH, NJ, NY, PA, RI, VT, and WV; Region 2 (South) contains AL, AR, DC, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, and VA; Region 3 (Midwest) contains IA, IL, IN, KS, MI, MN, MO, NE, ND, OH, SD, and WI; Region 4 (West) contains AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, and WY. Regression specification: (1) $\Delta_t \ln y_s = \alpha_s + \delta_t + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors; (2) $\Delta_t \ln y_s = \alpha_s + \gamma_{t,r} + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors; (3) $\Delta_t \ln y_s = \alpha_s + \delta_t + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors and weights according to real GDP in 1980; (4) $\Delta_t \ln y_s = \alpha_s + \gamma_{t,r} + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors and weights according to real GDP in 1980.

Table A5: Deregulation and Total Loan & C&I Loan Growth

Panel A: Total Loan Growth				
	Total loan growth		Total loan growth (WLS)	
	(1)	(2)	(3)	(4)
Intra-state dereg.	0.0475** (0.0154)	0.0398** (0.0147)	0.0310+ (0.0178)	0.0332* (0.0143)
State FE	✓	✓	✓	✓
Time FE	✓		✓	
Regional time FE		✓		✓
R^2	0.180	0.438	0.241	0.436
Panel B: C&I + Commercial Real Estate Loan Growth				
	C&I loan growth		C&I loan growth (WLS)	
	(1)	(2)	(3)	(4)
Intra-state dereg.	0.0443** (0.0115)	0.0252* (0.0117)	0.0285+ (0.0149)	0.0261+ (0.0144)
State FE	✓	✓	✓	✓
Time FE	✓		✓	
Regional time FE		✓		✓
R^2	0.314	0.420	0.401	0.492
Observations	767	736	767	736

Notes: Time horizon for panel regression is 1980-1995. Intra-state deregulation covariate assumes value 1 the year after the intra-state branching deregulation has taken place. The year of the intra-state branching deregulation is dropped. Delaware is excluded from all columns. Hawaii and Alaska are dropped from the sample in column (2) and (4). For the regional time fixed effects the sample is split into four main regions. Region 1 (Northeast) contains CT, MA, MD, ME, NH, NJ, NY, PA, RI, VT, and WV; Region 2 (South) contains AL, AR, DC, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, and VA; Region 3 (Midwest) contains IA, IL, IN, KS, MI, MN, MO, NE, ND, OH, SD, and WI; Region 4 (West) contains AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, and WY. The dependent variable C&I loan growth represents the growth of the aggregate of C&I loans and commercial real estate loans. Regression specification: (1) $\Delta_t \ln y_s = \alpha_s + \delta_t + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors; (2) $\Delta_t \ln y_s = \alpha_s + \gamma_{t,r} + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors; (3) $\Delta_t \ln y_s = \alpha_s + \delta_t + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors and weights according to real GDP in 1980; (4) $\Delta_t \ln y_s = \alpha_s + \gamma_{t,r} + d_{t,s} \beta_1 + \epsilon_{t,s}$ with heteroscedasticity robust standard errors and weights according to real GDP in 1980.

Table A6: Real GDP per Capita Growth and Deregulation

	Real GDP per capita growth			
	(1)	(2)	(3)	(4)
Intra-state dereg.	0.0187** (0.00493)	0.0180** (0.00507)	0.0125* (0.00498)	0.0121* (0.00505)
Inter-state dereg.	-0.00273 (0.00535)	-0.00268 (0.00538)	-0.00241 (0.00526)	-0.00230 (0.00528)
-5y to intra-state dereg.		-0.00364 (0.00553)		-0.00287 (0.00552)
+5y after intra-state dereg.		0.00173 (0.00518)		-0.000529 (0.00504)
Share empl. mining			-0.396 (0.408)	-0.389 (0.409)
Share empl. construction			0.274 (0.426)	0.276 (0.427)
Share empl. manufacturing			-0.463 (0.371)	-0.478 (0.372)
Share empl. transportation			1.755** (0.522)	1.725** (0.526)
Share empl. trade			-1.188** (0.444)	-1.194** (0.445)
Share empl. finance			-2.324** (0.556)	-2.334** (0.557)
Share empl. services			-0.218 (0.388)	-0.224 (0.389)
R^2	0.363	0.364	0.423	0.423
Year FE	✓	✓	✓	✓
State FE	✓	✓	✓	✓
Observations	751	751	751	751

Notes: Industry employment shares are based on the SIC industry classification. Regression specification: $\Delta_t \ln y_s = \alpha_s + \delta_t + \mathbf{x}_s \beta + \epsilon_{t,s}$ with heteroscedasticity robust standard errors.

Table A7: Idiosyncratic Volatility of State Employment Growth and Deregulation

	State employment growth idiosyncratic volatility, $ \hat{\epsilon}_{st} $			
	(1) Total	(2) Tradable	(3) Non-tradable	(4) Construction
D_{st}	-0.00519 ⁺ (0.00267)	0.0000334 (0.00353)	-0.00662* (0.00268)	-0.0129 (0.00828)
R^2	0.127	0.077	0.151	0.113
State FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	374	374	374	374

Notes: This table shows results from estimating: $|\hat{\epsilon}_{st}| = \alpha_s + \gamma_t + \beta D_{st} + u_{st}$. The left-hand-side variable $|\hat{\epsilon}_{st}|$ is the absolute value of residuals from a regression of employment growth on state and time fixed effects $\Delta \ln(Empl) = \alpha_s + \gamma_t + \epsilon_{st}$. D_{st} is a variable that takes on a value of 0 if a state has neither deregulated intra-state branching nor interstate banking, 1 if a state has adopted one form of deregulation, and 2 if a state has deregulated both restrictions. The estimation period is 1983-1991, and we omit the year of deregulation. Standard errors in parentheses are clustered at the state level.

Table A8: Employment Growth Within State Estimates

	Δ Employment			
	(1) Total	(2) Tradable	(3) Non-tradable	(4) Construction
D_{st}	0.0108* (0.00479)	0.00432 (0.00694)	0.0126** (0.00425)	0.0333 ⁺ (0.0169)
R^2	0.537	0.456	0.485	0.370
State FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Observations	515	515	515	515

Notes: This table shows results from estimating: $\Delta \ln(Empl_{st}) = \alpha_s + \gamma_t + \beta D_{st} + u_{st}$. D_{st} is a variable that takes on a value of 0 if a state has neither deregulated intra-state branching nor interstate banking, 1 if a state has adopted one form of deregulation, and 2 if a state has deregulated both restrictions. The estimation period is 1983-1991, and we omit the year of deregulation. Standard errors in parentheses are clustered at the state level.

Table A9: Inflation and Deregulation

	Special Aggregates			Sub-categories: Major groups					
	(1) Δ_{84-89} All items	(2) Δ_{84-89} Non-tradables	(3) Δ_{84-89} Tradables	(4) Δ_{84-89} Apparel	(5) Δ_{84-89} Food & Beverages	(6) Δ_{84-89} Housing	(7) Δ_{84-89} Medical	(8) Δ_{84-89} Transportation	(9) Δ_{84-89} Other
Dereg. measure	1.450 (0.956)	2.400 (1.675)	0.224 (0.428)	0.867 (1.346)	1.412 ⁺ (0.802)	1.740 (1.916)	3.047** (0.664)	0.348 (0.534)	1.207 ⁺ (0.607)
R^2	0.139	0.131	0.013	0.014	0.153	0.061	0.365	0.016	0.106
Unit of obs.	State	State	State	State	State	State	State	State	State
Observations	26	26	26	26	26	26	26	26	26

Notes: Columns 1-3 present inflation regressions where we include Alaska, which is a larger outlier. Columns 4-9 present inflation by other sub-categories reported by BLS. Regression specification: (1)-(9) $\Delta_{84-89}\text{CPIInfl}_s = \alpha + d_s\beta_1 + \epsilon_s$ with heteroscedasticity robust standard errors.

Table A10: Deregulation and Wage and Price Phillips Curves in the Boom and Bust

	Wage Phillips Curve				CPI Phillips Curve			
	(1) u_{s1987}	(2) $\Delta_{82,89}$ Wages	(3) u_{s1992}	(4) $\Delta_{89,94}$ Wages	(5) u_{s1987}	(6) $\Delta_{82,89}$ CPI	(7) u_{s1992}	(8) $\Delta_{89,94}$ CPI
Dereg. measure	-0.718* (0.286)		0.466* (0.194)		-0.735* (0.292)		0.439* (0.195)	
u_{s1987}		-5.910** (1.582)				-3.139** (0.961)		
u_{s1992}				-2.182+ (1.187)				-0.0829 (0.695)
Specification	First Stage	IV	First Stage	IV	First Stage	IV	First Stage	IV
R^2	0.122	.	0.0933	.	0.125	.	0.0828	0.0134
Observations	49	49	49	49	48	48	48	48

Notes: This table presents IV estimates of state-level wage and price Phillips curves in the expansion and contraction. Column 1 shows the first stage estimate of the unemployment rate in 1987 on the deregulation measure. Column 2 shows the second stage estimate of wage growth from 1982 to 1989 on the 1987 unemployment rate, instrumented with the deregulation measure. Columns 3 and 4 show the first stage and IV estimates for the bust, using the 1992 unemployment rate and wage growth from 1989 to 1994. We choose the 1987 and 1992 unemployment rates as representative of the peak and trough of the expansion and contraction. Columns 5-8 show the same specifications for state-level CPI inflation, which is missing for Washington, D.C. Standard errors in parentheses are heteroskedasticity robust. +,*,** indicates significance at the 0.1, 0.05, 0.01 level, respectively.

Table A11: Robustness: Alternative Deregulation Measure and the Household Leverage Index from 1982 to 1989

	Δ_{82-89} HH leverage index						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dereg. measure (1983 dummy)	1.169** (0.309)	1.213** (0.337)	0.872** (0.303)	1.379** (0.297)	1.355** (0.291)	0.465 (0.304)	0.869* (0.371)
Oil Exposure '85	-0.0560 (0.0443)					-0.368* (0.136)	
Oil Empl. '82	-11.82** (3.547)					-28.87** (4.193)	
Forbearance		0.178 (0.159)				-0.0140 (0.158)	
Northeast region			1.489** (0.536)			1.492** (0.535)	
South region			0.345 (0.246)			0.895** (0.305)	
West region			0.161 (0.328)			0.860* (0.379)	
Debt to income ₁₉₈₂				-1.181 (1.626)		-2.708 (2.150)	
Δ_{82-89} Real GDP per Capita				-0.365 (0.532)		3.543** (1.081)	
Unemployment ₁₉₈₂				-0.0665 (0.0702)		-0.0434 (0.0542)	
Δ_{82-89} C&I loans							1.017* (0.421)
R^2	0.430	0.336	0.478	0.351	0.326	0.693	0.451
Demographic controls					✓	✓	
Observations	49	48	49	49	49	48	49

Notes: This table presents a regressions of the Δ_{82-89} HH leverage index on the deregulation dummy, that assumes value 1 if state has allowed intrastate branching or/and interstate branching by 1983 or earlier and 0 otherwise, and various controls. Δ_{82-89} HH leverage index represents the first principal component of Δ_{82-89} Debt-to-income, Δ_{84-89} Loan appl. volume, and Δ_{82-89} Consumer loans. Oil exposure 1985 represents the share of the state's oil production after excluding federal production. This share is further normalized by the state's population in 1985. Oil employment 1982 is the state's share of employment in the oil industry. Commercial and industrial loans (C&I loans) follows its corresponding definition in the call report. Demographic controls are the fraction of people in urban neighborhood, fraction black, fraction hispanic, fraction with a high school degree, and fraction with college degree, based on the 1980 census. Heteroscedasticity robust standard errors in parentheses. +,*,** indicates significance at the 0.1, 0.05, 0.01 level, respectively.

Table A12: Robustness: Alternative Deregulation Measure and Change in Employment by Industry from 1982 to 1989

	Δ_{82-89} Total employment	Δ_{82-89} Empl. tradables	Δ_{82-89} Empl. non-tradables	Δ_{82-89} Empl. construction	Δ_{82-89} Industry-level employment			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dereg. measure (1983 dummy)	0.100** (0.0307)	0.000303 (0.0348)	0.103** (0.0281)	0.299** (0.0776)	0.0651* (0.0314)	-0.0419 (0.0449)	-0.0359 (0.0447)	- -
Dereg. measure (1983 dummy) x non-tradables						0.167** (0.0497)	0.161** (0.0491)	0.161** (0.0487)
x construction						0.348** (0.0785)	0.342** (0.0793)	0.342** (0.0792)
x other						0.131* (0.0501)	0.123* (0.0494)	0.124* (0.0491)
Unit of Obs.	State	State	State	State	State x 2 digit Ind.	State x 2 digit Ind.	State x 2 digit Ind.	State x 2 digit Ind.
2 Digit Ind. FE							✓	✓
State FE								✓
R^2	0.169	0.000	0.209	0.235	0.003	0.021	0.444	0.477
Observations	49	49	49	49	3,762	3,762	3,762	3,762

Notes: This table reports regressions of employment growth from 1982 to 1989 by industry on the deregulation dummy, that assumes value 1 if state has allowed intrastate branching or/and interstate branching by 1983 or earlier and 0 otherwise. The employment industry categorization is based on the SIC industries, where tradables: $2000 \leq sic \leq 3900$, $sic = 20001$, and $sic = 30001$; non-tradables: $5200 \leq sic \leq 5900$; construction: $1500 \leq sic \leq 1700$. Columns 1-4 report regressions at the state level for each industry categorization separately. Columns 5-8 report regressions of employment growth at the state by two digit industry level. In columns 6-8 the deregulation measure is interacted with industry category, with tradable employment being the omitted category. Standard errors are heteroscedasticity robust (columns 1-4) or clustered at the state level (columns 5-8). +, *, ** indicates significance at the 0.1, 0.05, 0.01 level, respectively.

Table A13: Robustness: Alternative Deregulation Measure and Consumer Price Inflation from 1982 to 1989

	Special Aggregates				
	(1) Δ_{82-89} All items (Del Negro)	(2) Δ_{84-89} All items	(3) Δ_{84-89} Non-tradables	(4) Δ_{84-89} Tradables	(5) Δ_{84-89} Non-tradables or Tradables
Dereg. measure (1983 dummy)	3.715** (0.939)	4.493** (1.043)	7.684** (1.696)	0.605 (0.770)	0.605 (0.778)
Dereg. measure (1983 dummy) \times NT					7.079** (1.815)
Dummy Non-tradables					8.924** (1.164)
R^2	0.279	0.421	0.457	0.022	0.801
Unit of obs.	State	State	State	State	State \times NT-T
Observations	48	25	25	25	50

Notes: This table presents regressions of CPI inflation on the deregulation dummy, that assumes value 1 if state has allowed intrastate branching or/and interstate branching by 1983 or earlier and 0 otherwise. Inflation measures in columns 2-5 are state-level aggregates computed using the BLS's MSA-level indexes and are thus only available for 26 states. Columns 2-5 exclude Alaska, which is a large outlier in the sample. Tradable and non-tradable CPI inflation are defined at the BLS "Commodities" and "Services" Special Aggregates, respectively. Heteroscedasticity robust standard errors in parentheses. +,*,** indicates significance at the 0.1, 0.05, 0.01 level, respectively.

Table A14: Robustness: Beta Analysis using Alternative Deregulation Measure

	(1)	(2)	(3)	(4)	(5)
	Real GDP growth	Real GDP p.c. growth	Unemployment Change	Housing unit permit growth	House price growth
Aggregate GDP Growth: 1982-89 & 1989-92					
GDP growth	0.280 ⁺ (0.152)	0.499** (0.129)	-1.352** (0.166)	-3.382* (1.422)	0.0586 (0.301)
Dereg. measure (1983 dummy)	-0.0141* (0.00567)	-0.0157** (0.00487)	0.0208** (0.00419)	-0.123* (0.0527)	-0.0397** (0.0133)
Dereg. measure (1983 dummy) x GDP growth	0.984** (0.217)	0.814** (0.179)	-0.830** (0.203)	3.933 ⁺ (2.121)	2.412** (0.677)
R^2	0.350	0.460	0.791	0.114	0.334
Observations	98	98	98	98	98

Notes: This table presents regressions of the form: $\Delta y_{sb} = \alpha + \beta X_b \cdot d_s + \gamma \Delta X_b + \delta d_s + \epsilon_{sb}$. The equation is estimated in changes using two periods, the boom and the bust (i.e. $b = \{boom, bust\}$). The dependent variables are defined as the growth rate from 1983 to 1989 (boom) and 1989 to 1992 (bust), with the exception of unemployment, which is measured as the change from 1982 to 1989 and 1989 to 1992. The variable ΔX_b is the change aggregate GDP growth (1983 to 1989 and 1989 to 1992, panel C). All regressions are estimated using the alternative deregulation measure, which assumes value 1 if state has allowed intrastate branching or/and interstate branching by 1983 or earlier and 0 otherwise. The coefficient on the interaction between the deregulation dummy and the aggregate cycle variable, β , measures how a state's cyclicity over the 1982-92 cycle varies with the deregulation measure. Standard errors are clustered at the state level. +, *, ** indicates significance at the 0.1, 0.05, 0.01 level, respectively.

References

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