Strategically Staying Small: Regulatory Avoidance and the CRA

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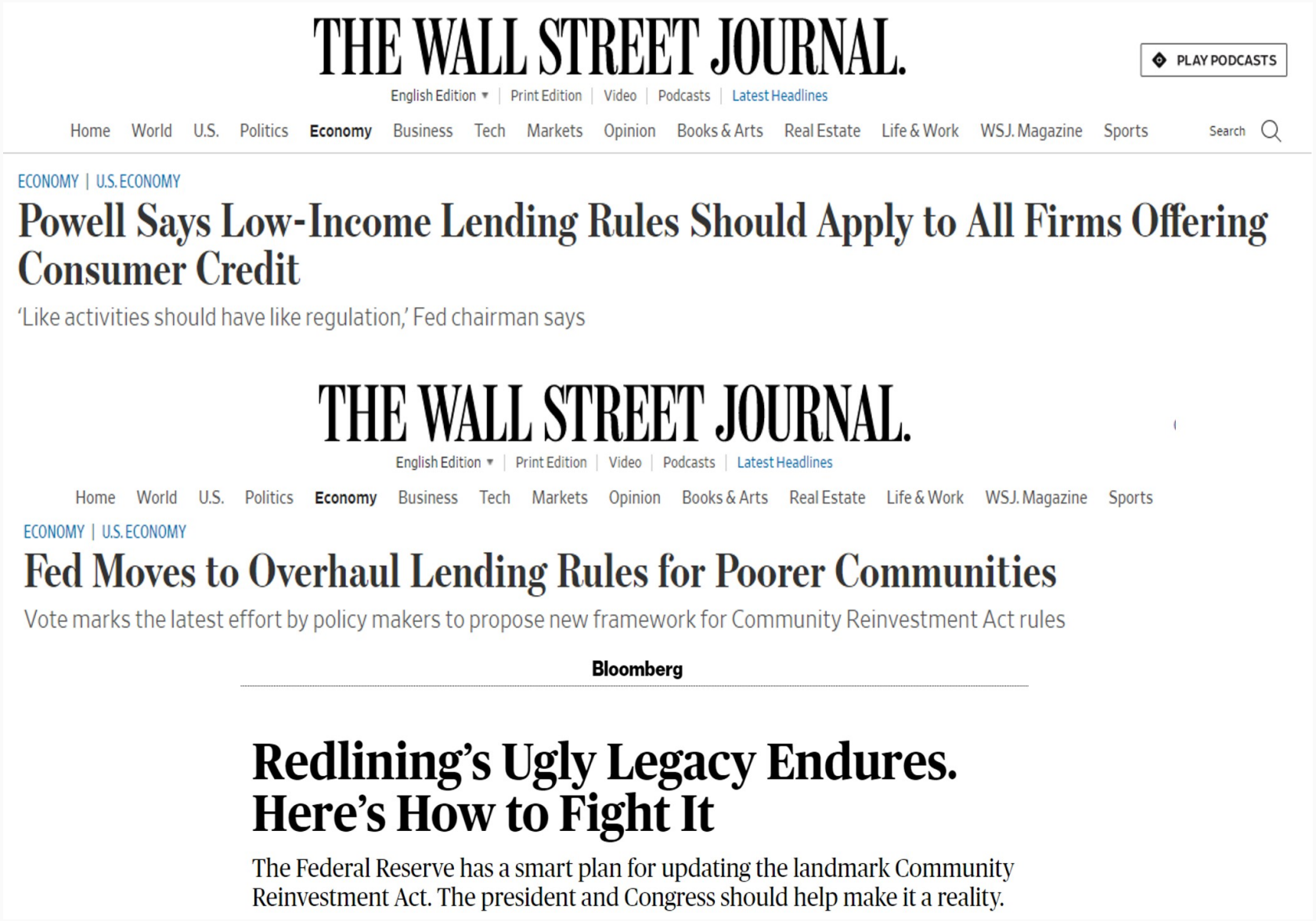
Motivation

- Banks operate in one of the most heavily regulated industries
  - Some objectives: control risk via capital requirements, protect consumers, ensure equal credit access
- **Textbook example:** 1977 Community Reinvestment Act (CRA)
  - Encourages extension of credit to targeted groups in a bank's footprint
  - Prior literature showing extent of CRA-driven risky lending (e.g., Agarwal et al. (2012))
  - However, this only represents one potential cost of the CRA
- **Our paper:** evaluate the strategic incentives to reduce CRA regulatory costs and the consequences of regulatory avoidance on local markets

Motivation (cont'd)



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Redlining's Ugly Legacy Endures. Here's How to Fight It

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This Paper

Our "shock": The 1995 CRA reform which introduced two categories of banks ("small" and "large"), determined by an asset threshold ($250 million)

- Small banks: streamlined CRA evaluation; Large banks: more comprehensive assessment

Research Questions:

- Do banks bunch on the $250 million asset threshold?
- By what means do banks strategically bunch?
- What are the real effects of exposure to banks that circumvent the CRA?

Preview of Results

- Document significant bunching of banks at the $250M threshold from 1996 to 2004
  - No bunching in the pre-reform period (1986-1993)
  - No bunching at other salient asset values ($150M and $350M)
  - Confirm bunching using "excess mass" techniques from public finance
- Using a difference-in-differences design, banks with 1994 assets between $200-$250M ("bunching banks") experienced post-reform asset growth 4.4pp slower than similarly sized banks
  - Robust to alternate classifications of bunching banks
  - No evidence of pre-trends; Effect immediately realized in 1995

Preview of Results (cont'd)

Bunching banks also:

- reduced growth in different assets (real estate and C&I loans); loan portfolio became more profitable
- experience an increase in rejection rates for LMI-qualifying loans; no evidence void filled by non-bunching banks

Exposure to bunching banks had real effects:

- decline the share of small establishments
- decline in the rate of independent innovation

Our results highlight banks' willingness to strategically avoid greater regulatory burden and the resulting consequences

Institutional Background

Background on the CRA

- The 1977 CRA sought to address discrimination in lending to individuals and businesses from LMI neighborhoods
- The Act mandates that agencies evaluate whether banks offer credit in all communities in which they operate
- 1995 Reform: evaluation components depend on the bank's asset size
- Banks with assets less than $250 million were considered "small"
  - small banks evaluated less frequently
  - second reform in 2005; do not consider banks after 2004 for this reason
- Banks that do not comply with CRA cannot expand their operations and participate in M&A

Background on the CRA (cont'd)

Small banks	Large banks
A) Lending test:	*A) Lending test:*
• Loan-to-deposit ratio	• Number and dollar amount of home mortgage, small business, and small farm loans
• Percentage of loans in its community	• Geographic distribution of loans and number and dollar amount of loans in LM, and upper income census tracts
• Record of lending to borrowers at different income levels and farms and businesses of different sizes	• Loans to borrowers at different income levels, including home mortgage loans, small businesses and small farms with annual revenue less than or equal to $1 million, and small-business and small farm loans by amount at origination
• Geographic distribution of loans	• Community development loans, including their innovativeness
• Responsiveness to complaints	• Complexity, and innovative or flexible credit practices
	B) Investment & C) Service test

Data

- Bank-level data: Report of Condition and Income (or Call Report) from Philipp Schnabl's website
- Branch-level data: Summary of Deposits (SOD) from FDIC
- Loan-level mortgage lending: Home Mortgage Disclosure Act (HMDA)
- Small businesses: County Business Patterns (CBP) from Census Bureau
- Patent-level grants: PatentsView dataset provided by the USPTO

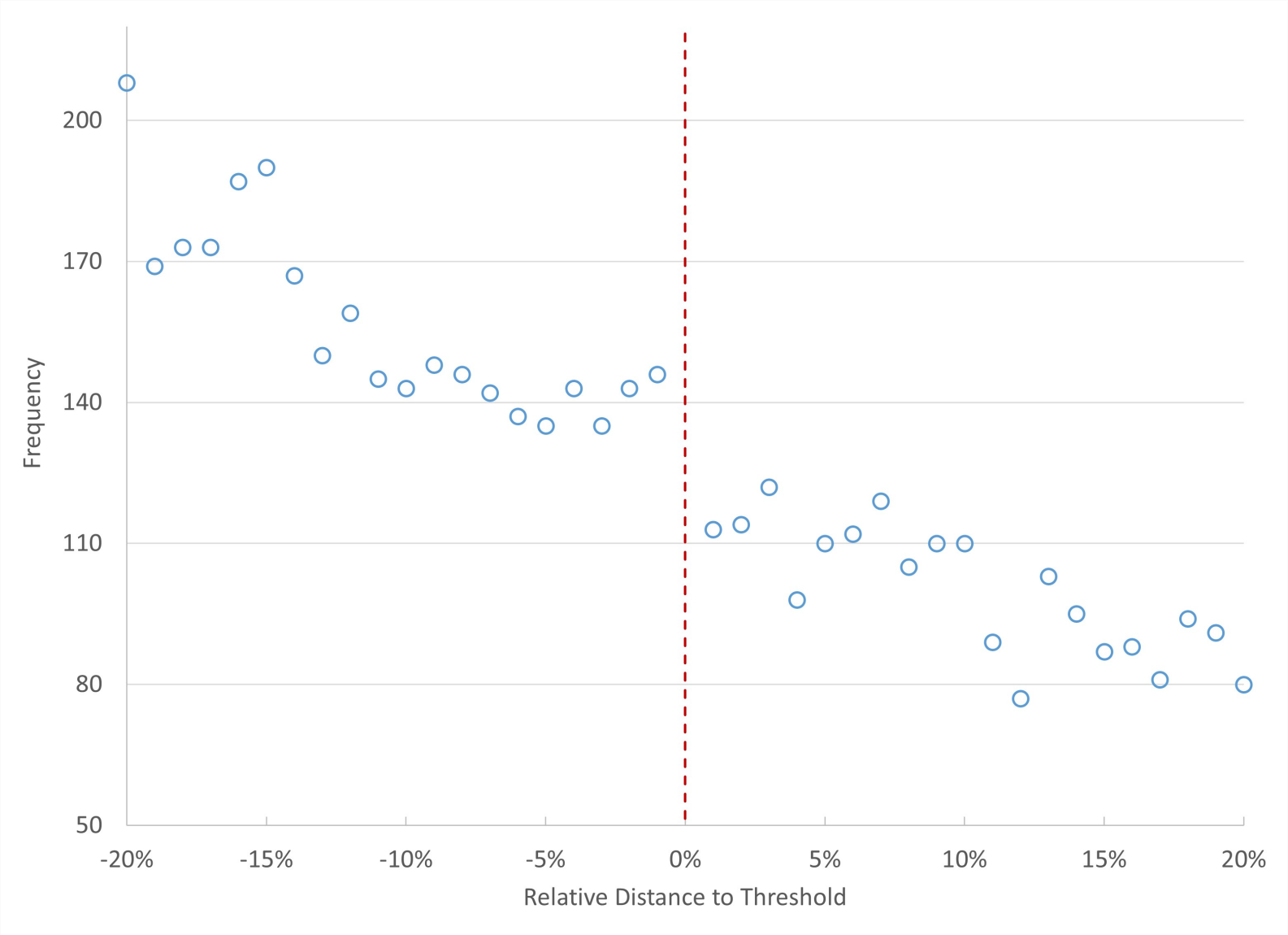
Summary Statistics

	N	Mean	SD	p25	Median	p75
Assets ($M)	151,869	534.40	8101.42	32.63	65.12	141.20
Loans ($M)	151,868	318.90	4427.91	16.67	36.42	85.58
Cash ($M)	151,868	35.97	551.20	1.62	3.21	7.01
Asset Growth	151,869	0.06	0.19	-0.02	0.03	0.09
Loan Growth	151,867	0.07	0.30	-0.02	0.04	0.12
Cash Growth	151,867	0.01	0.42	-0.21	0.00	0.22
Equity (%)	151,869	9.96	5.63	7.62	8.94	11.00

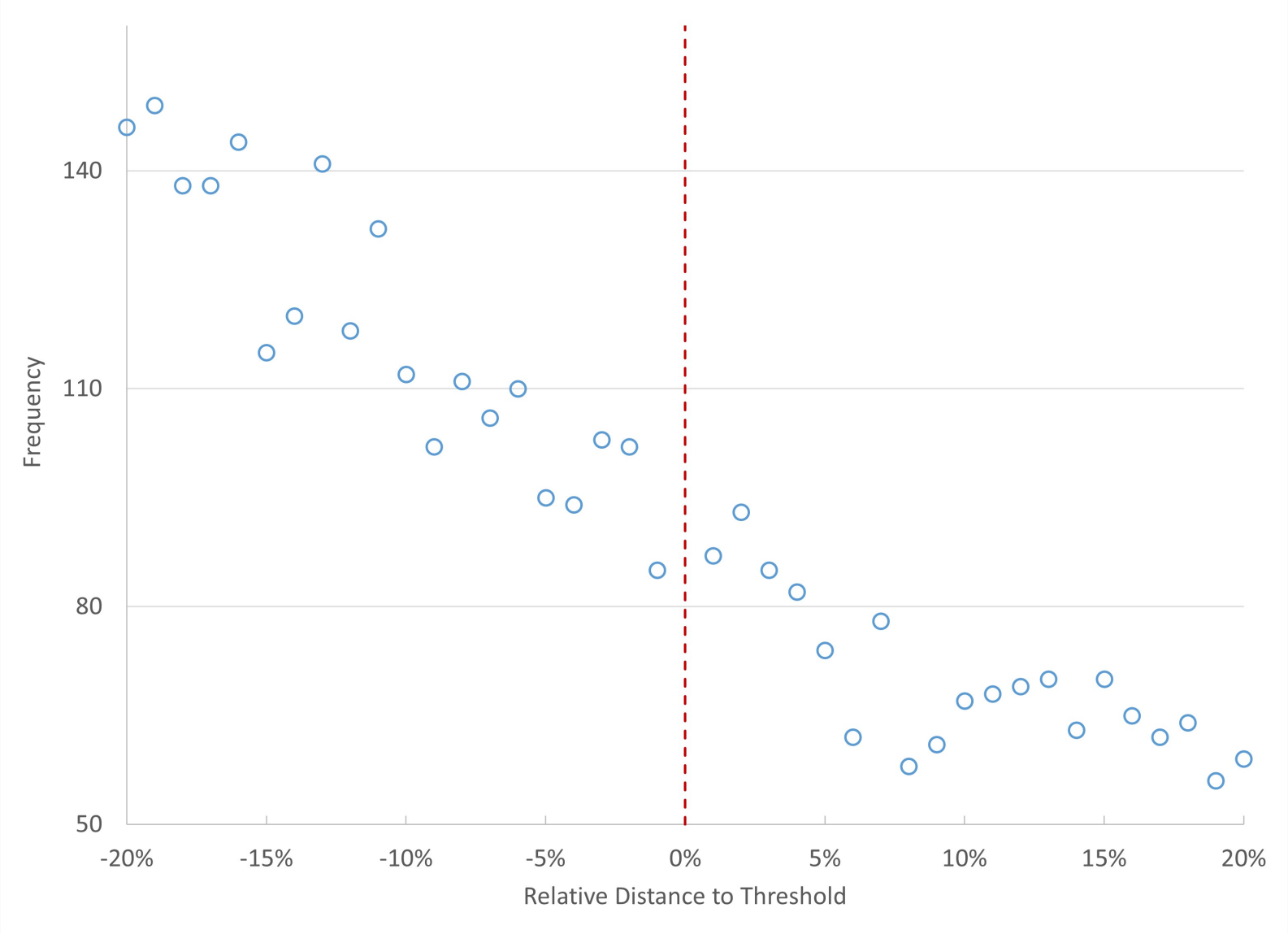
Main Results

Means of Strategic Avoidance: Bunching Evidence

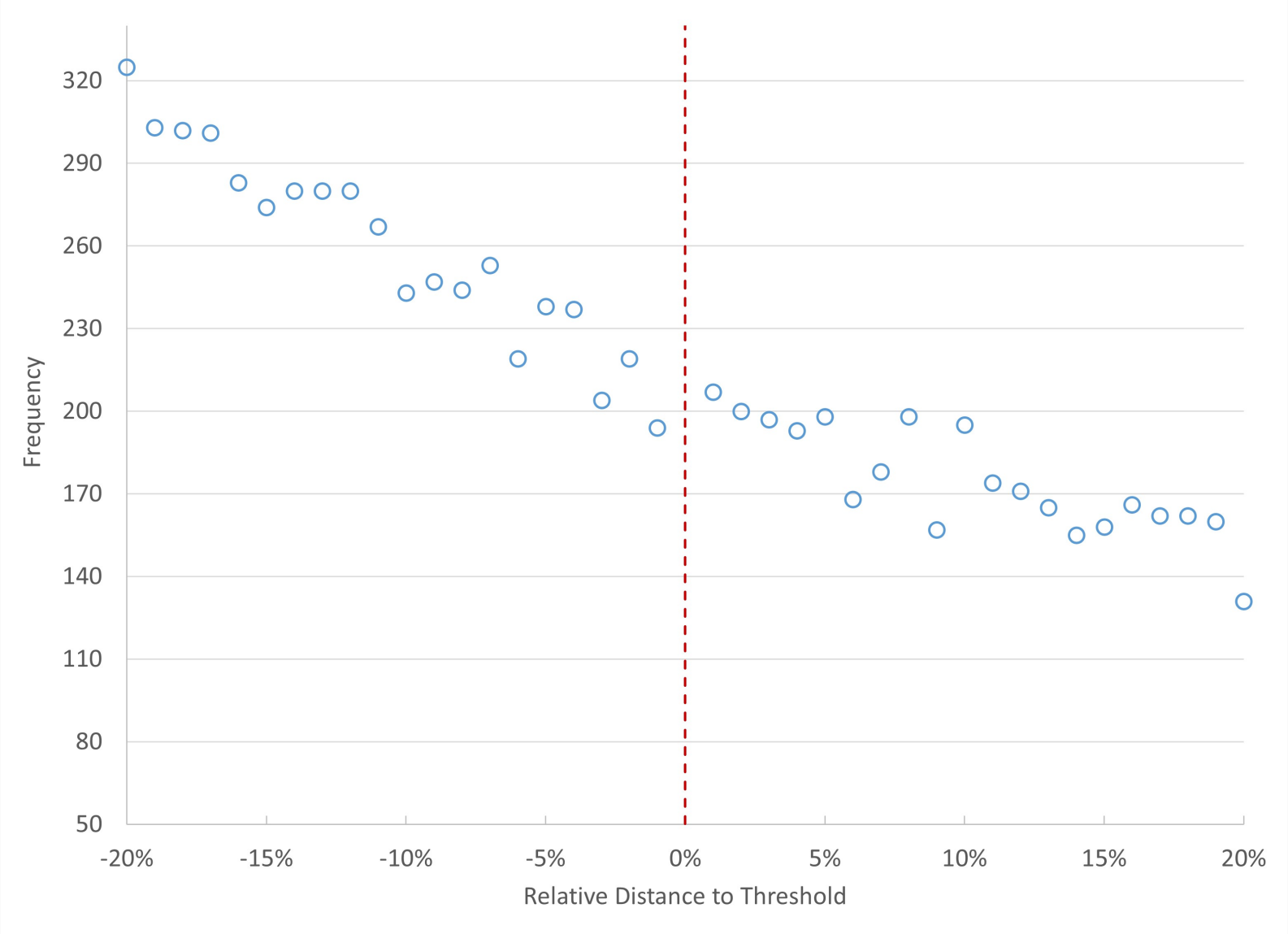
Bunching Evidence: Raw Data 1996-2004



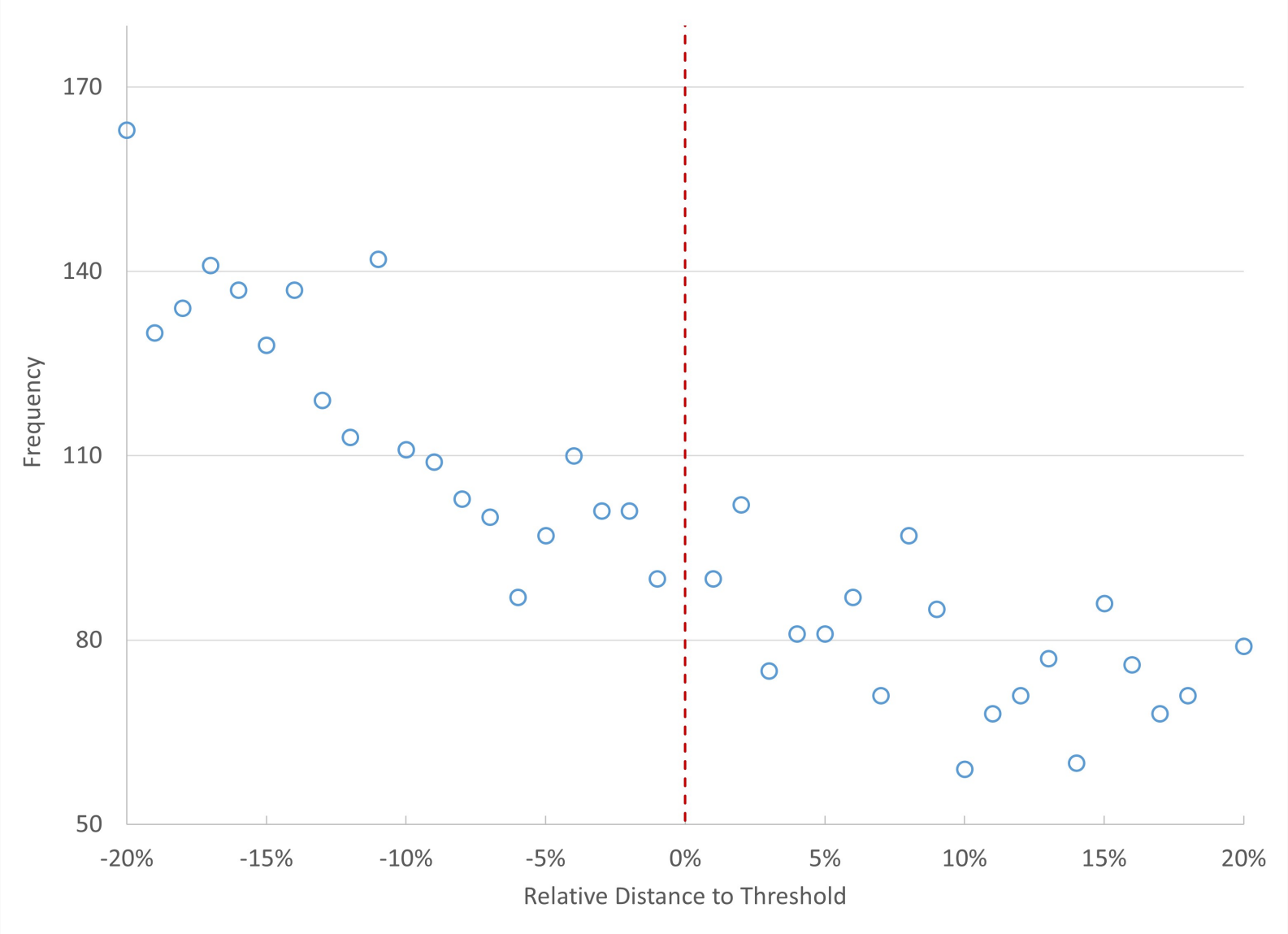
Placebos: Assets from 1986-1993



Placebos: $150M Threshold & 1996-2004



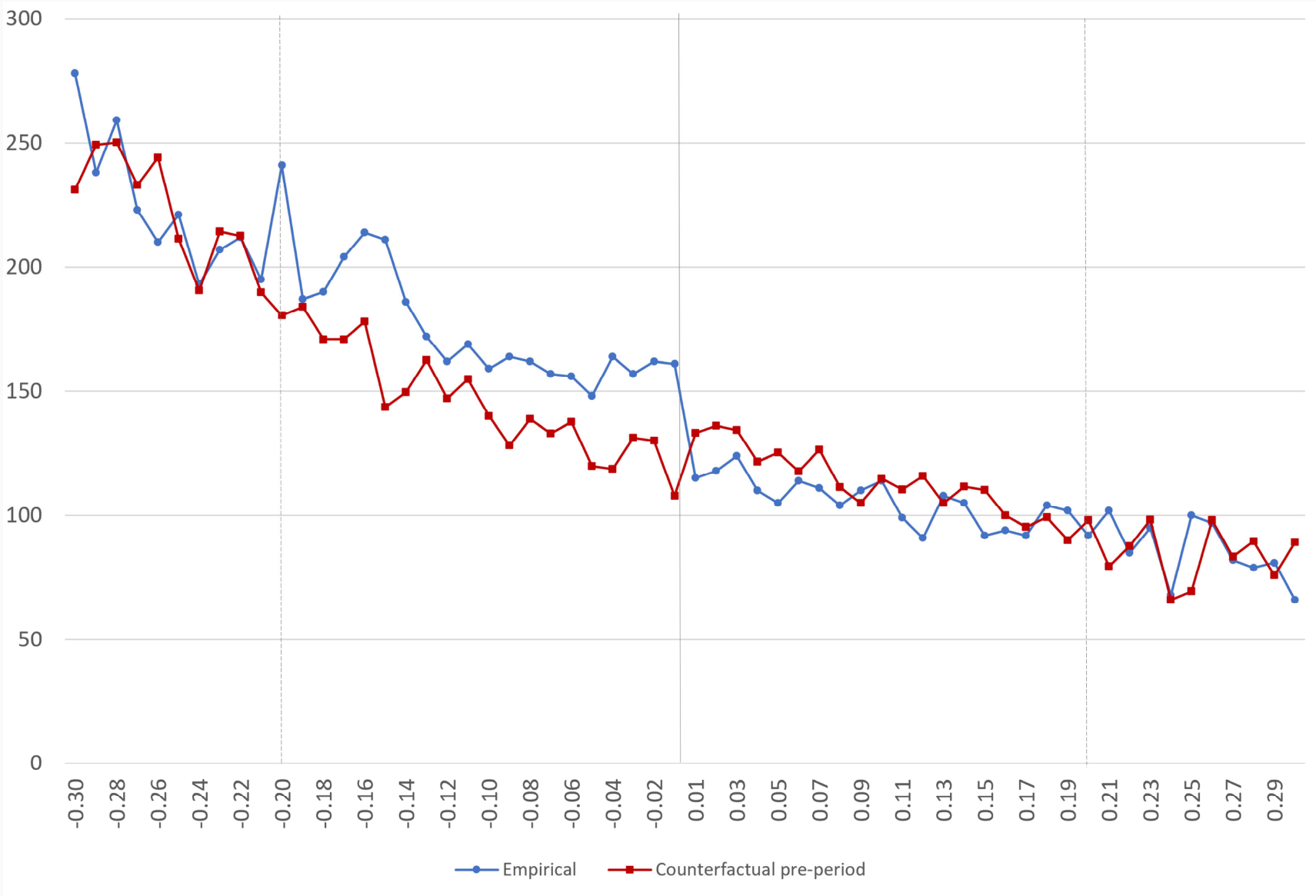
Placebos: $350M Threshold & 1996-2004



Bunching Evidence: Excess Mass Estimation

- To estimate excess mass, we need the distribution that would have prevailed in the absence of the threshold
- We follow two approaches to construct the counterfactual: fitting a polynomial and exploting the pre-period distribution
- Pre-period distribution (1986-1993):
  - It alleviates concerns about implicit functional form assumptions (Blomquist et al., 2019)
  - We make a normalization to account for changes in the distribution across periods (DeFusco et al., 2020)

Bunching Evidence: Excess Mass Estimation (cont'd)



Means of Strategic Avoidance

Means of Strategic Avoidance: Empirical Design

- Reduced-form framework: similar to shift-share design (Bartik, 1991; Blanchard and Katz, 1992)
- Segment banks by pre-reform asset size, test for a differential response following the introduction of the threshold:

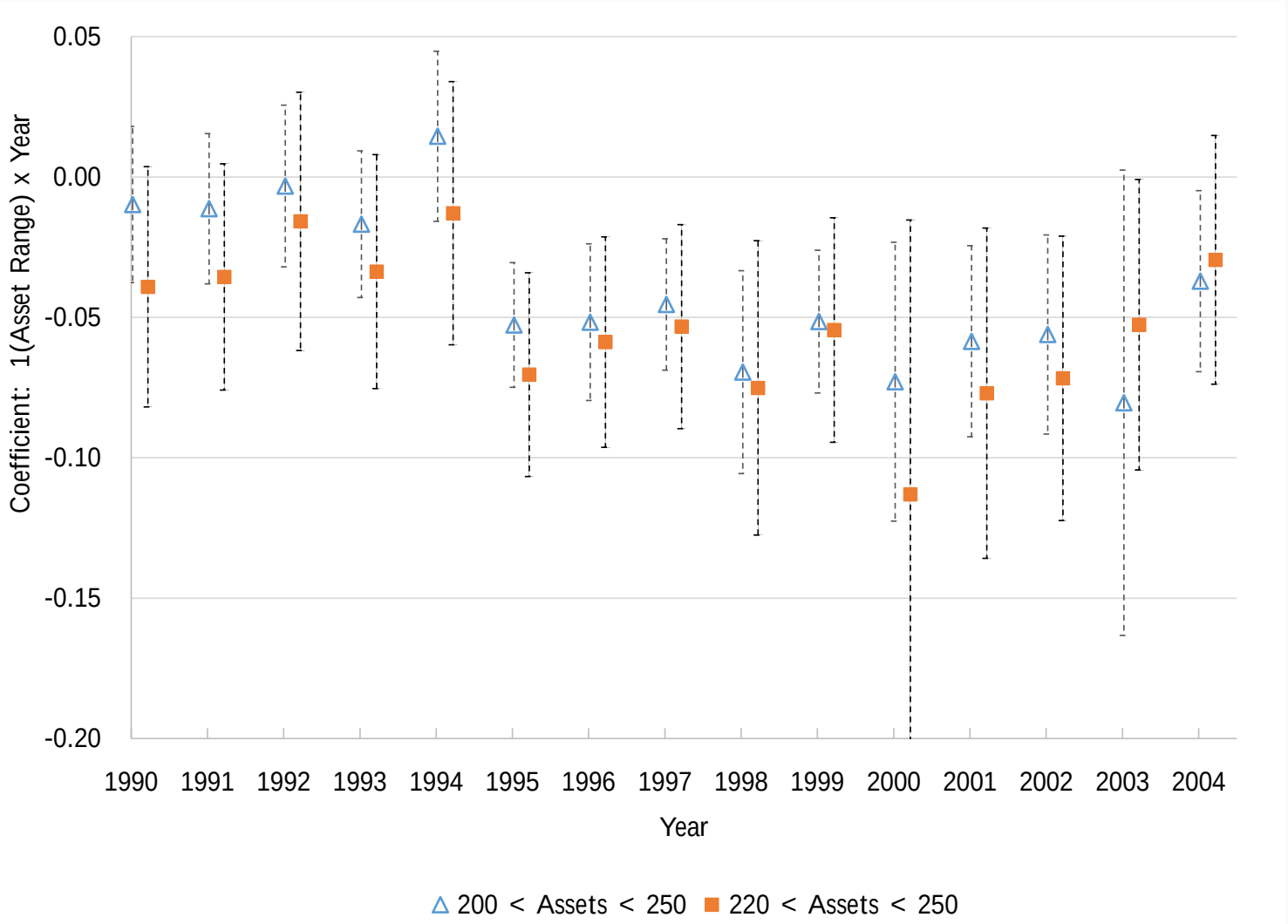
$$y_{it} = \eta_i + \phi_t + \beta Assets^{1994}_{i,LB-250} \times 1(t > 1995) + \varepsilon_{it},$$

  - y_{it}: outcome for bank i in year t
  - $Assets^{1994}_{i,LB-250}$: indicator for end-of-year assets (measured in 1994) in range $[LB, \$250M]$
  - $1(t > 1995)$: indicator for post-reform years

Strategic Avoidance: Asset Growth

	(1)	(2)	(3)	(4)	(5)	(6)
$Assets_{200-250} \times 1(yr > 1995)$	-0.024***	-0.037***	-0.044***			
	(-3.73)	(-5.41)	(-5.76)			
$Assets_{220-250} \times 1(yr > 1995)$				-0.012	-0.025***	-0.035***
				(-1.55)	(-2.85)	(-3.37)
Sample	Full	$<$ \$500M	$<$ \$350M	Full	$<$ \$500M	$<$ \$350M
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	137,051	127,192	123,148	137,051	127,192	123,148
R-squared	0.180	0.200	0.216	0.180	0.200	0.216

Strategic Avoidance: Asset Growth - Pre-trends



Strategic Avoidance: Balance Sheet Changes

Growth:	Cash	Securities	Loans	R.E. Loans	C&I Loans	Div. Payout
	(1)	(2)	(3)	(4)	(5)	(6)
$Assets_{200-250} \times 1(\text{yr} > 1995)$	-0.066***	-0.052***	-0.052***	-0.050***	-0.049***	0.043**
	(-4.82)	(-3.44)	(-3.36)	(-3.24)	(-2.63)	(2.54)
$Assets_{220-250} \times 1(\text{yr} > 1995)$	-0.088***	-0.060**	-0.042**	-0.025	-0.044	0.013
	(-4.07)	(-2.36)	(-1.98)	(-1.44)	(-1.56)	(1.28)
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	123,146	123,148	123,146	123,146	123,148	123,148

Strategic Avoidance: Profitability and Loan Performance

	Profitability		Non-Performance	
	(1)	(2)	(3)	(4)
$Assets_{200-250} \times 1(\text{yr} > 1995)$	0.027***		-0.001*	
	(3.79)		(-1.88)	
$Assets_{220-250} \times 1(\text{yr} > 1995)$		0.032***		-0.003***
		(3.17)		(-2.72)
Bank	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Number of observations	123,420	123,420	123,420	123,420
R-squared	0.758	0.758	0.420	0.420

Strategic Avoidance: Heterogeneity

Prev. Bank Growth:	Asset Growth		Loan Growth	
	(1)	(2)	(3)	(4)
1(Below Med. Growth) × 1(yr > 1995)	0.014***	0.014***	0.013***	0.013***
	(7.64)	(7.81)	(6.98)	(7.22)
$Assets_{200-250}$ × 1(yr > 1995)	-0.028***		-0.031***	
	(-3.74)		(-4.05)	
× 1(Below Med. Growth)	-0.019*		-0.013	
	(-1.87)		(-1.26)	
$Assets_{220-250}$ × 1(yr > 1995)		-0.019**		-0.019**
		(-2.42)		(-2.38)
× 1(Below Med. Growth)		-0.024*		-0.024*
		(-1.70)		(-1.79)
Bank FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Number of observations	118,130	118,130	118,130	118,130
R-squared	0.191	0.191	0.191	0.191

Real Effects of Strategic Avoidance of the CRA

Residential Mortgage Credit Supplied

Loan application accepted	(1)	(2)	(3)	(4)	(5)	(6)
$Assets_{200-250} \times 1(yr > 1995)$	-0.001	0.012**	0.012**			
	(-0.24)	(2.53)	(2.46)			
$\times$ 1(LMI)	-0.022***	-0.019***	-0.018***			
	(-3.15)	(-2.90)	(-2.77)			
$Assets_{220-250} \times 1(yr > 1995)$				-0.008	0.006	0.005
				(-1.29)	(0.73)	(0.66)
$\times$ 1(LMI)				-0.022**	-0.014*	-0.013
				(-2.51)	(-1.69)	(-1.61)
Bank-LMI FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-LMI FE	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	x Year	x Year	Yes	x Year	x Year
Loan Amt-Year FE	No	No	Yes	No	No	Yes
Number of observations	1,233,816	1,231,151	1,230,582	1,233,816	1,231,151	1,230,582
R-squared	0.097	0.121	0.125	0.097	0.121	0.125

Potential Response by Other Banks

All Originated Loans

	(1)	(2)	(3)	(4)
$TractShare_{200-250} \times 1(yr > 1995)$	-0.004		0.001	
	(-1.33)		(0.35)	
$TractShare_{220-250} \times 1(yr > 1995)$		0.002		0.002
		(0.50)		(0.58)
Tract FE	Yes	Yes	× Bank	× Bank
Bank-Year FE	Yes	Yes	Yes	Yes
Number of observations	11,357,130	11,357,130	8,574,287	8,574,287
R-squared	0.436	0.436	0.734	0.734

LMI-Qualifying Originated Loans

	(1)	(2)	(3)	(4)
$TractShare_{200-250} \times 1(yr > 1995)$	-0.000		0.005*	
	(-0.01)		(1.85)	
$TractShare_{220-250} \times 1(yr > 1995)$		-0.001		0.002
		(-0.27)		(0.63)
Tract FE	Yes	Yes	× Bank	× Bank
Bank-Year FE	Yes	Yes	Yes	Yes
Number of observations	5,209,807	5,209,807	3,604,328	3,604,328
R-squared	0.388	0.388	0.671	0.671

Small Business Prevalence

$$y_{ist} = \eta_i + \phi_{st} + \beta BranchShare^{1994}_{i,LB-250} \times 1(t > 1995) + \varepsilon_{it}$$

Share:	< 20 employees		< 50 employees	
	(1)	(2)	(3)	(4)
$BranchShare_{200-250} \times 1(\text{yr} > 1995)$	-0.057***		-0.009	
	(-2.73)		(-0.88)	
$BranchShare_{220-250} \times 1(\text{yr} > 1995)$		-0.068***		-0.016*
		(-3.32)		(-1.65)
County FE	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes
Number of observations	43,480	43,480	43,480	43,480
R-squared	0.917	0.917	0.891	0.891

Independent Innovation

Sample:	All Counties		Has $<$ \$350M	
	(1)	(2)	(3)	(4)
$BranchShare_{200-250} \times 1(\text{yr} > 1995)$	-0.041**		-0.042**	
	(-1.97)		(-2.02)	
$BranchShare_{220-250} \times 1(\text{yr} > 1995)$		-0.044***		-0.046***
		(-3.15)		(-3.23)
County FE	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes
Number of observations	51,611	51,611	48,495	48,495
R-squared	-	-	-	-

Note: We estimate a Poisson count model

Conclusion

Conclusion

- The 1995 CRA reform added various regulatory requirements for banks above the $250 Million asset size threshold
- We show that the CRA asset threshold distorts banks' growth in an economically meaningful way, which in turn, has real effects on local markets
  - At the bank level, lower growth in assets and loans but also greater profitability
  - At the local level, lower mortgage approval rates in LMI neighborhoods, share of small firms, and independent innovation
- Banks took costly actions to avoid the regulatory cost of the CRA, and costs were partially borne by borrowers the CRA seeks to benefit
  - In stark contrast to the CRA's objective of "encourage institutions to help meet the credit needs of the communities in which they operate"

Thank you!