ONLINE APPENDIX
INSURANCE PRICING, DISTORTIONS, AND MORAL HAZARD: QUASI-EXPERIMENTAL EVIDENCE FROM DEPOSIT INSURANCE

August 18, 2022

I Propensity Score Trimming Regression

Propensity scores are produced from a pooled logit model starting in the first quarter of 1993 and ending in the second quarter of 1995, where the dependent variable takes a value of 1 if the institution is SAIF-insured and 0 if the institution is BIF-insured. The covariates for this regression are the log of assets, domestic deposits to liabilities ratio, quarterly return on assets, quarterly efficiency ratio, total risk-based capital ratio, Tier 1 risk-based capital ratio, leverage ratio, the composite CAMELS rating from the most recent examination, and the following terms entered as a ratio to assets: 1–4 family residential loans, commercial and industrial loans, credit card loans, securities, cash, and nonperforming assets. These covariates include the variables where the distinctions between thrifts and commercial banks are probably most pronounced (like asset composition), as well as variables that are relevant for outcomes of particular interest in the rest of the paper. The predisparity predictions from the pooled logit model result in a time series of propensity scores for each institution. I apply the trimming to the average of each institution's propensity score time series.

II Heterogeneity in the Effect of the Disparity on Profitability

One advantage of the synthetic control estimates is that they produce an estimated treatment effect for each treated institution. This allows me to analyze the heterogeneity in the estimates among SAIF institutions and understand which institutions were more affected by the disparity. Figure A3 shows a wide degree of heterogeneity in the effect of the disparity on ROA among SAIF institutions.[1] As expected, the ROA of most SAIF institutions is affected negatively, relative to

[1] To ensure that no banks are identified, the points on the figure are perturbed with random noise. Any original unperturbed point, (x,y), is perturbed before being displayed on the figure by the addition of two random numbers, r_x and r_y, to result in displayed point $(x+r_x, y+r_y)$, where $r_i \sim \mathcal{N}(0,(\sigma_i/3)^2)$ and σ_i is the i'th axis sample standard deviation, $i \in \{x,y\}$. A best-fit line for the unperturbed points is displayed on the figure.

BIF institutions. However, Figure A3 shows that the effect is concentrated among the smaller and medium-sized institutions, and is virtually nonexistent among the largest ones.

The heterogeneity in the estimated effect on profitability shown in Figure A3 suggests that risk-based pricing may be less effective for larger institutions than for smaller and medium-sized ones. This is problematic for the insurer, as failures of large institutions can be much more costly than failures of small institutions, though there are many more smaller institutions. The cause of that heterogeneity may be the assessment base that was used in deposit insurance premiums at that time. Because premiums were assessed based on deposits, large institutions might have been less affected simply because they relied less on deposits to begin with. It is also possible that large institutions were more able to engage in arbitrage activities or to shift funding sources to reduce their reliance on deposits. Regardless of the mechanism underlying the heterogeneity between small and large banks, the results highlight the importance of ensuring that the details of the pricing do not allow one class of banks to evade the premiums. If banks in one class can somehow offset the effect of higher premiums on their profitability, charging them higher premiums in a risk-based system may not provide them with sufficient incentives to avoid excessive risk taking. The Dodd-Frank Act of 2010 redefined the assessment base to be average consolidated total assets minus average tangible equity. This change weakened the ability of banks to change their burden by altering their mix of liabilities. The current risk-based pricing system is also more complex and treats small and large banks differently.

III Deposit Migration Through Deposit Sales

Oakar banks had deposits insured by both the BIF and the SAIF. The amount of each Oakar institution's deposits that counted as "SAIF deposits" was called the Adjusted Attributable Deposit Amount (AADA), and it was a derived quantity based on historical acquisitions of SAIF-assessable deposits and periodic "growth" adjustments to that base amount. FIRREA had imposed a minimum floor on the growth rate of institutions' AADA. FDICIA modified the Oakar amendment of FIRREA to abolish that minimum floor and instead let the AADA be adjusted proportional to movements in the institutions' overall deposits. So, for instance, if an Oakar bank's overall deposits shrank by 20% over a six-month period, then the bank's AADA would simply also shrink by 20% from its value at the start of the six-month period.

However, from the buyer's perspective in a deposit-sale transaction, deposit sales by BIF-member Oakar institutions were assumed to be sales of primary fund (BIF) deposits until primary fund deposits were exhausted, in which case deposit sales would be considered sales of secondary fund (SAIF) deposits. In its modifications to the Oakar amendment, FDICIA did not explicitly account for deposit sales in adjustments to the AADA. That is, as a result of FDICIA, the seller's AADA declined the same proportion as any shrinkage in the institution's overall deposits, even if such shrinkage was due to deposit sales and even if such sales had not yet exhausted the institution's primary fund deposits (FDIC 12 CFR 327 1996a). To remedy this asymmetry, the FDIC adopted an interpretive rule in December 1996 that codified the treatment of deposit sales by Oakar institutions and that excluded deposit sales from calculations of institutions' AADA (FDIC 12 CFR 327 1996b). Nevertheless, before the adoption of this rule it was possible for a deposit sale transaction between two BIF institutions to result in a net surplus (from reduced deposit insurance assessments) for the two institutions combined, in which the seller's AADA would decline and the buyer's AADA would either not increase or increase by an amount smaller in magnitude than the change in the seller's AADA; in the process, a portion of the deposits sold would migrate from the SAIF to the BIF.

To illustrate the mechanics of deposit migration through deposit sales, consider a hypothetical scenario in which an Oakar BIF member (Bank A) with $10B in total deposits and an AADA (SAIF-assessable deposits) of $6B sells $5B of its deposits to a non-Oakar BIF member (Bank B). As a result of the sale, Bank A's AADA would be adjusted down by 50%, to $3B, an adjustment proportional to the change in Bank A's overall deposits. Bank B would obtain $5B in deposits, with only $1B counting as "SAIF deposits" because (from the buyer's perspective) such transactions assumed that the seller first exhausts its primary fund (BIF) deposits; thus, Bank B would become an Oakar bank with an AADA of $1B. Consequently, the transaction would result in the permanent migration of $2B from the SAIF to the BIF. Assuming both institutions pay the lowest pre-1997 premium on SAIF deposits and zero premium on BIF deposits, this transaction would result in a net *annual* surplus of $4.6 million in saved SAIF assessments for both institutions combined. If, instead, Bank A had sold $4B in deposits (its entire "BIF deposits" initially), Bank B would not become an Oakar bank as a result of the transaction and would not pay any SAIF

assessments, but Bank A would have reduced its AADA by $2.4B (which would migrate to the BIF), resulting in annual savings for Bank A of at least $5.5 million.

IV Additional Figures and Tables

FIGURE A1. Shifting Composition of Liabilities for SAIF Institutions

The top panel of this figure shows the average ratio of domestic deposits and FHLB advances to liabilities for SAIF members in the trimmed sample described in Section IV of the paper. The bottom panel shows medians calculated for all SAIF members using the public Statistics on Depository Institutions FDIC dataset to avoid identification of individual institutions in the trimmed sample. In both panels, the FHLB advances to liabilities ratio in every quarter is calculated for institutions that report some nonnegative value for FHLB advances. The vertical dashed lines denote the quarter immediately preceding the disparity and the final quarter of the disparity in deposit insurance premiums between the BIF and SAIF funds.

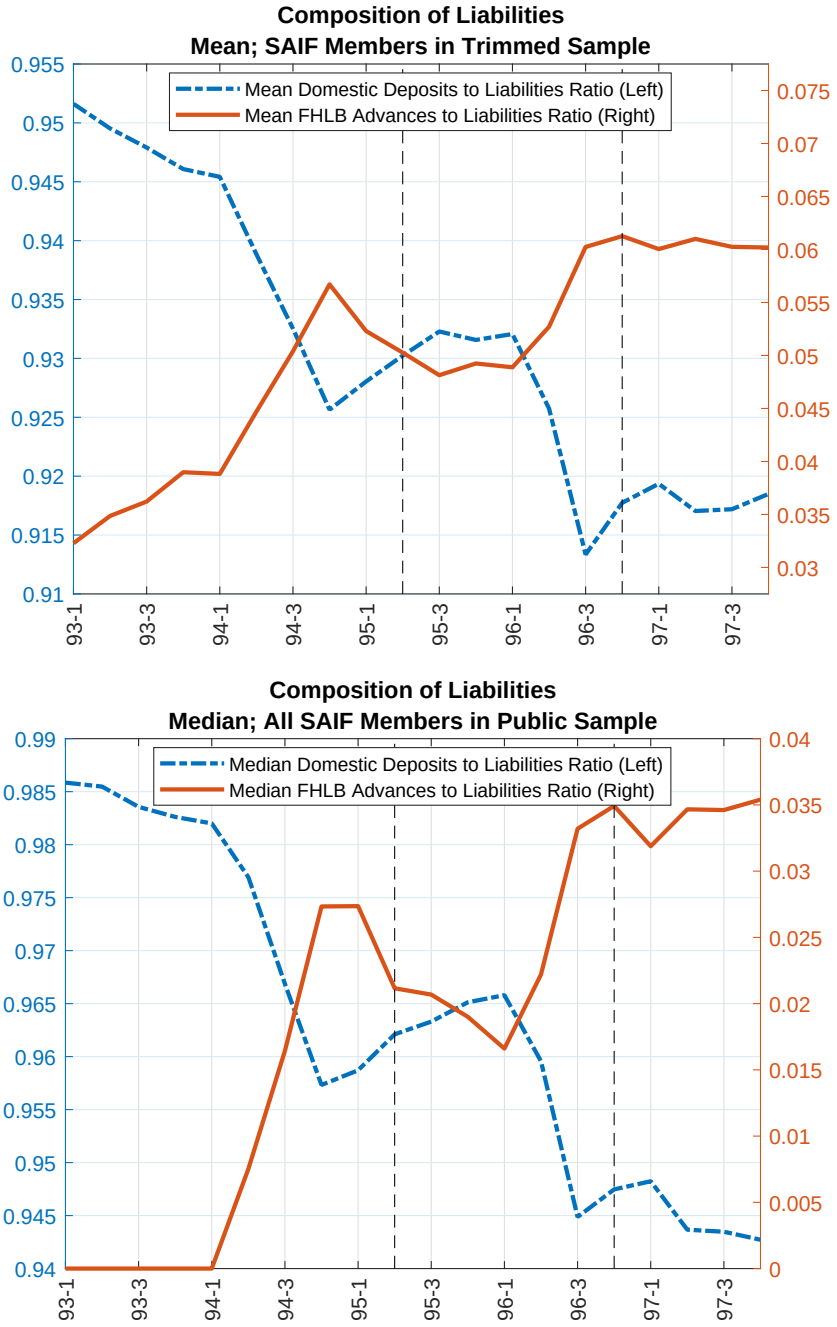

FIGURE A2. Dynamic Effect of the Disparity on Profitability

This figure shows the estimated dynamic effect of being in the SAIF on return on assets using synthetic control methods (specification (4)). The vertical dashed line denotes the quarter immediately preceding the disparity. The sample includes all quarters starting in the first quarter of 1993 through the second quarter of 1996. The dependent variable is the quarterly annualized return on assets. Institution and quarter fixed effects are included, as well as the standard set of controls (see Section V.A). All variables except the composite CAMELS ratings and the log of age are winsorized at the 1% and 99% levels within each quarter. Standard errors are constructed from a bootstrapping procedure (Xu (2017)). The estimated treatment effect of the disparity on SAIF institutions (ATT) is displayed; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

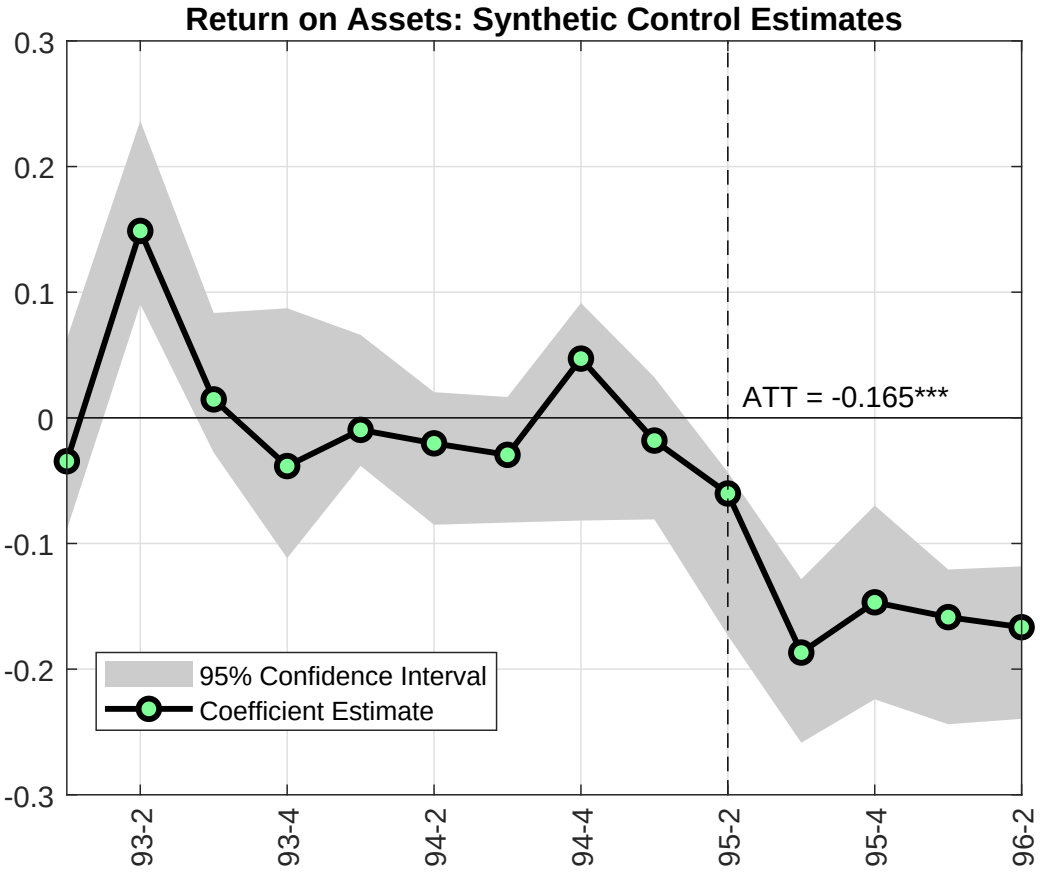

FIGURE A3. Heterogeneity in Estimated Treatment Effects

This figure shows the estimated effect of being a SAIF member in the first year of the disparity for each SAIF institution (from synthetic control specification (4)), plotted against the log of the institution's size as of March 31, 1995, on the horizontal axis. The displayed points are perturbed with random noise to preserve confidentiality: any original unperturbed point, (x,y), is perturbed before being displayed on the figure by adding two random numbers, r_x and r_y to result in displayed point $(x+r_x, y+r_y)$, where $r_i \sim \mathcal{N}(0,(\sigma_i/3)^2)$ and σ_i is the i'th axis sample standard deviation, $i \in \{x,y\}$. The figure shows a least-squares-fit line from the unperturbed data with the slope of the line displayed in the top right corner.

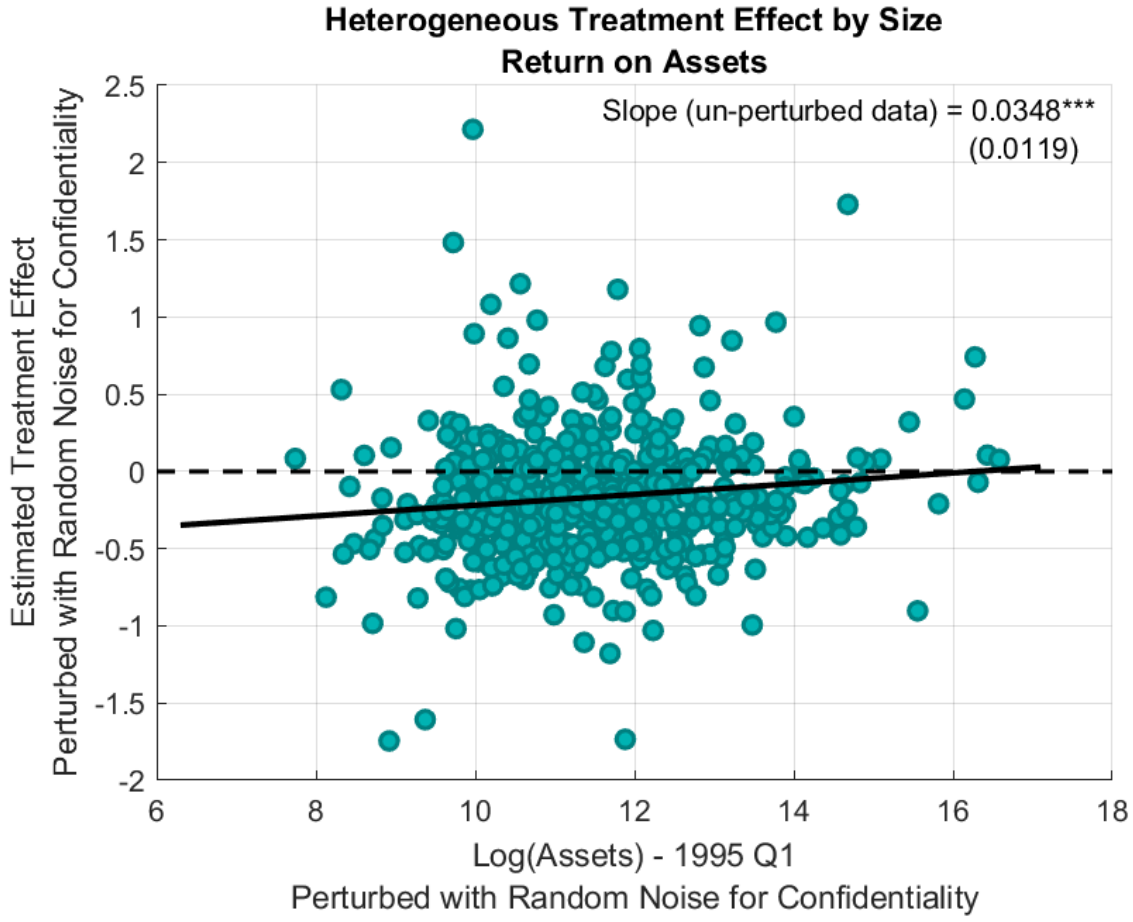

FIGURE A4. Effect of the Disparity on Loans-to-Deposits Ratio, Asset Growth, and Deposit Growth

The vertical dashed lines in all panels of this figure denote the quarter immediately preceding the disparity and the final quarter of the disparity in deposit insurance premiums between the BIF and SAIF funds. The right panels plot the time-dependent coefficient from specification (3). The dependent variable is listed in the title of each panel. Institution and quarter fixed effects are included, as well as the standard set of controls (see Section V.A of the paper). All variables except the composite CAMELS ratings and the log of age are winsorized at the 1% and 99% levels within each quarter. Standard errors are clustered at the institution and state-quarter levels. The left panels plot the mean of the corresponding dependent variable for BIF and SAIF institutions.

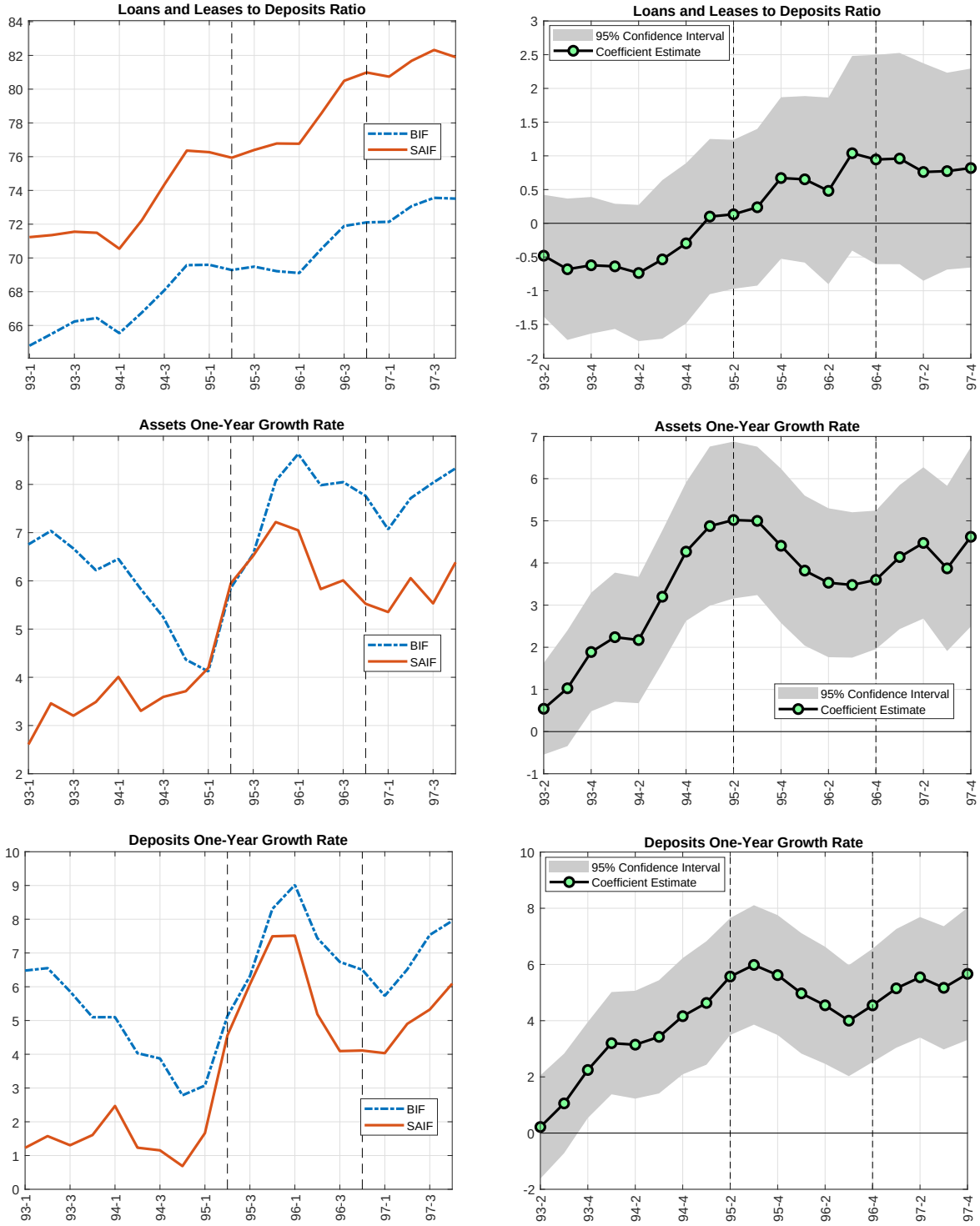

FIGURE A5. Effect of the Disparity on Interest Expense

The vertical dashed lines in all panels of this figure denote the quarter immediately preceding the disparity and the final quarter of the disparity in deposit insurance premiums between the BIF and SAIF funds. The right panels plot the time-dependent coefficient from specification (3). The dependent variable is listed in the title of each panel. Institution and quarter fixed effects are included, as well as the standard set of controls (see Section V.A). All variables except the composite CAMELS ratings and the log of age are winsorized at the 1% and 99% levels within each quarter. Standard errors are clustered at the institution and state-quarter levels. The left panels plot the mean of the corresponding dependent variable for BIF and SAIF institutions.

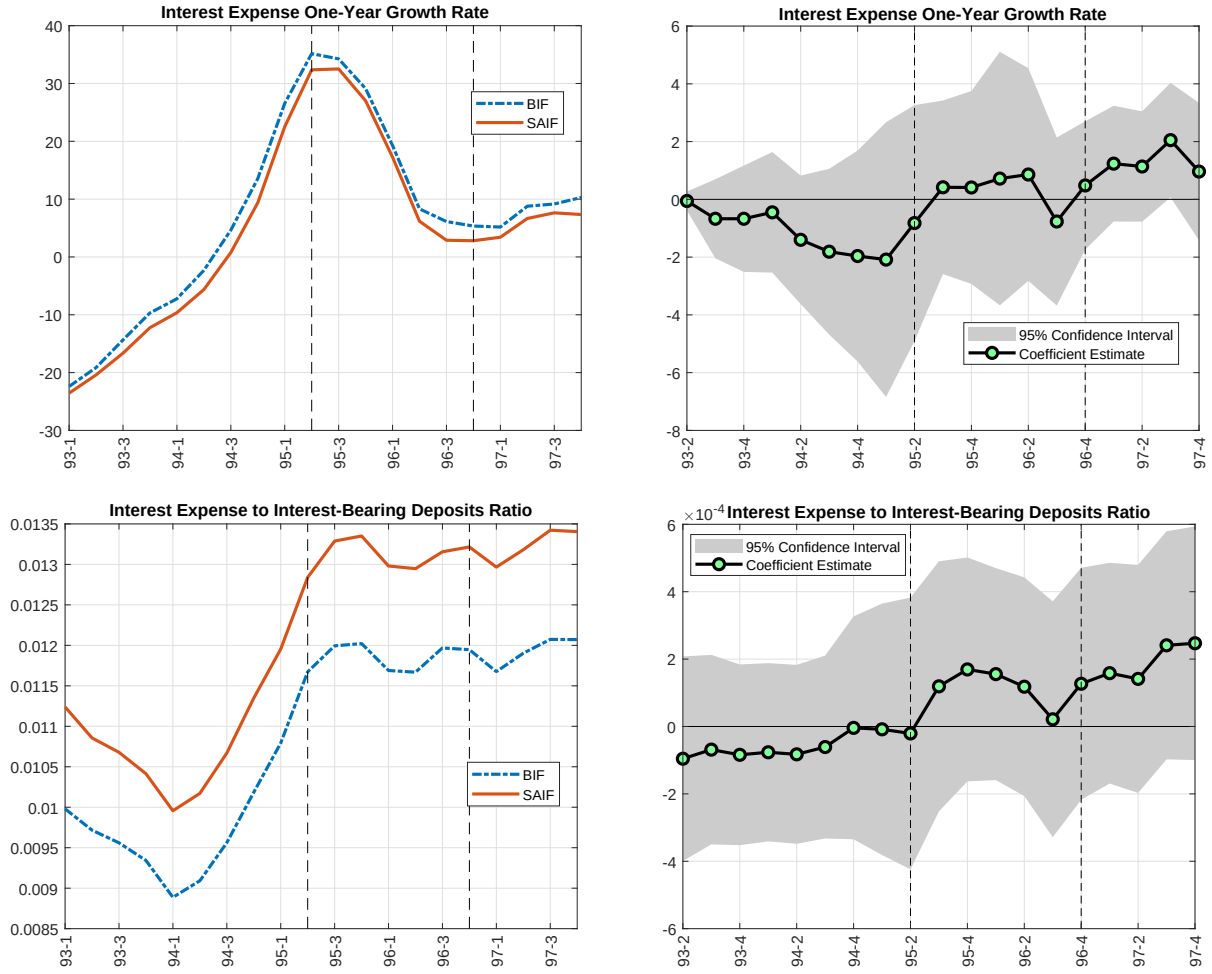

FIGURE A6. Effect of the Disparity on Net Interest Margin

The vertical dashed lines in both panels of this figure denote the quarter immediately preceding the disparity and the final quarter of the disparity in deposit insurance premiums between the BIF and SAIF funds. The top panel plots the time-dependent coefficient from specification (3). The dependent variable is the net interest margin. Institution and quarter fixed effects are included, as well as the standard set of controls (see Section V.A). All variables except the composite CAMELS ratings and the log of age are winsorized at the 1% and 99% levels within each quarter. Standard errors are clustered at the institution and state-quarter levels. The left panels plot the mean of the corresponding dependent variable for BIF and SAIF institutions with BIF measured on the left axis and SAIF on the right axis.

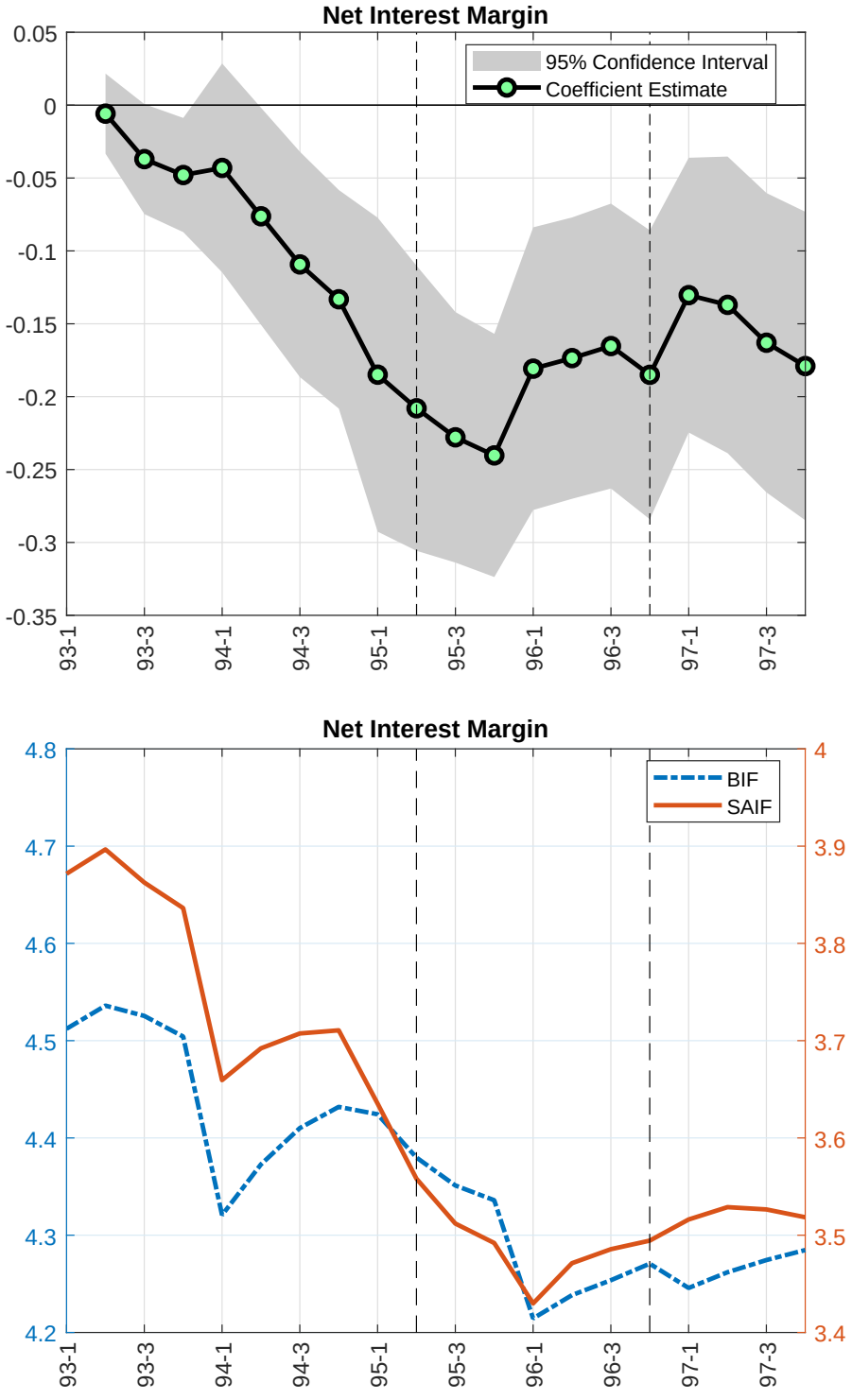

TABLE A1. Effect of the Disparity on Insured Deposits to Liabilities Ratio

Estimates in this table are from specification (2). The dependent variable is the ratio of insured domestic deposits to total liabilities. Columns (1) and (2) include the full sample from the start of 1993 through the end of 1997. Columns (3) and (4) include only the years 1993 and 1997 to provide more-accurate estimates of the effect of the disparity by excluding anticipation effects and by using only 1993 propensity scores to trim the sample. All variables except the composite CAMELS ratings and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
SAIF * Post-1995Q3	-0.006*	-0.008**	-0.008	-0.011**
	(0.003)	(0.003)	(0.005)	(0.005)
Log(Assets)		-0.060***		-0.048***
		(0.014)		(0.014)
1-4 Family Residential Loans/Assets		-0.032		-0.072*
		(0.032)		(0.040)
Commercial and Industrial Loans/Assets		0.097		-0.121
		(0.111)		(0.151)
Credit Card Loans/Assets		0.022		-0.291
		(0.560)		(0.477)
Securities/Assets		-0.041		-0.075*
		(0.032)		(0.044)
Cash/Assets		0.020		-0.025
		(0.040)		(0.062)
Nonperforming Assets/Assets		0.056		0.146
		(0.122)		(0.154)
Total Risk-Based Capital Ratio		-0.001		-0.000
		(0.004)		(0.007)
Tier 1 Risk-Based Capital Ratio		0.001		0.000
		(0.004)		(0.007)
Leverage Ratio		0.004**		0.004
		(0.002)		(0.003)
Composite CAMELS Rating		0.006***		0.005*
		(0.002)		(0.003)
Log(Age)		0.015		0.021
		(0.021)		(0.021)
Observations	22,080	22,080	8,216	8,216
R-squared	0.903	0.910	0.895	0.902
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.00108	0.0698	0.00178	0.0608

TABLE A2. Risk-Taking and Profitability —BIF Members

This table shows estimates from specification (5), in which the dependent variable is quarterly annualized return on assets. The sample of this regression includes only BIF members, excludes all quarters after the second quarter of 1995, and excludes bank-quarter observations where the bank's deposit insurance premium was higher than 23 basis points. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
Log(Assets)	0.249**	0.249**	0.344***	0.203*
	(0.114)	(0.114)	(0.125)	(0.106)
1-4 Family Residential Loans/Assets	0.930**	0.931**	0.949**	0.914**
	(0.443)	(0.444)	(0.468)	(0.444)
Commercial and Industrial Loans/Assets	0.297	0.285	0.108	-0.009
	(1.045)	(1.043)	(0.970)	(1.031)
Credit Card Loans/Assets	-4.475	-4.405	-4.865**	-4.622
	(2.821)	(2.836)	(2.134)	(3.155)
Securities/Assets	0.859**	0.858**	1.083***	1.052***
	(0.333)	(0.334)	(0.316)	(0.315)
Cash/Assets	-0.294	-0.294	0.067	-0.153
	(0.579)	(0.579)	(0.520)	(0.588)
Nonperforming Assets/Assets	-5.816*	-5.798*	-5.660*	-5.660*
	(3.042)	(3.044)	(3.055)	(3.103)
Log(Age)	0.491	0.490	0.582*	0.449
	(0.300)	(0.300)	(0.305)	(0.296)
Total Risk-Based Capital Ratio	0.013			
	(0.009)			
Tier 1 Risk-Based Capital Ratio		0.013		
		(0.009)		
Leverage Ratio			0.087***	
			(0.023)	
Composite CAMELS Rating = 2				-0.028
				(0.036)
Observations	4,448	4,448	4,448	4,448
R-squared	0.557	0.557	0.562	0.556
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.0141	0.0141	0.0244	0.0120

TABLE A3. Risk-Taking and Profitability —SAIF Members

This table shows estimates from specification (5), in which the dependent variable is quarterly annualized return on assets. The sample of this regression includes only SAIF members, excludes all quarters after the second quarter of 1995, and excludes bank-quarter observations where the bank's deposit insurance premium was higher than 23 basis points. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
Log(Assets)	0.504	0.493	0.785**	0.230
	(0.312)	(0.310)	(0.374)	(0.309)
1-4 Family Residential Loans/Assets	0.648	0.632	0.548	0.611
	(0.593)	(0.596)	(0.625)	(0.582)
Commercial and Industrial Loans/Assets	1.311	1.328	1.269	1.295
	(1.226)	(1.226)	(1.253)	(1.244)
Credit Card Loans/Assets	9.935*	9.937*	7.842	9.739*
	(5.355)	(5.378)	(5.195)	(5.414)
Securities/Assets	-0.570	-0.574	-0.361	-0.262
	(0.603)	(0.613)	(0.523)	(0.497)
Cash/Assets	-0.792	-0.798	-0.423	-0.523
	(0.684)	(0.692)	(0.615)	(0.621)
Nonperforming Assets/Assets	-6.566**	-6.499**	-7.568***	-6.836***
	(2.677)	(2.692)	(2.553)	(2.623)
Log(Age)	0.272	0.268	0.220	0.361
	(0.694)	(0.695)	(0.688)	(0.771)
Total Risk-Based Capital Ratio	0.021			
	(0.015)			
Tier 1 Risk-Based Capital Ratio		0.021		
		(0.015)		
Leverage Ratio			0.106**	
			(0.043)	
Composite CAMELS Rating = 2				0.059*
				(0.030)
Observations	4,556	4,556	4,556	4,556
R-squared	0.529	0.529	0.536	0.526
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.0187	0.0180	0.0315	0.0123

TABLE A4. Robustness: No Filtering, Default Propensity Score Trimming Primary Effects of Interest

Several of the paper's main results were estimated on a sample constructed by first dropping institutions that did not satisfy certain filtering criteria, and then restricting the sample further through propensity score trimming (see Section IV for details). This table shows the effect of expanding the sample by eliminating the filtering criteria while keeping the propensity score trimming in place. The columns show the effect of the disparity on the primary variables to which the filtering and trimming were applied in the paper's analysis. Dependent variables are listed in the column titles. Column (2) includes only the years of 1993 and 1997 to account for the anticipation effects on the shifting of funding sources. Column (3) eliminates quarters after 1996 Q2 to isolate the effects of the disparity on profitability from the one-time special assessment paid by SAIF members in 1996 Q3. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)	(5)
	Domestic Deposits to Liabilities Ratio		ROA	One-Year Growth Rate	
				Loans & Leases	Securities
SAIF * Post-1995Q3	-0.016***	-0.022***	-0.180***	1.733***	-8.878***
	(0.003)	(0.005)	(0.021)	(0.575)	(1.766)
Log(Assets)	-0.026**	-0.034***	0.013	-0.613	-1.419
	(0.010)	(0.010)	(0.088)	(1.396)	(4.027)
1-4 Family Residential Loans/Assets	0.010	-0.068*	0.907***	43.798***	2.697
	(0.034)	(0.038)	(0.300)	(4.868)	(15.083)
Commercial and Industrial Loans/Assets	0.088	0.032	0.088	91.931***	-77.463**
	(0.064)	(0.076)	(0.603)	(13.350)	(37.279)
Credit Card Loans/Assets	0.091	-0.391	-0.321	55.354	-22.445
	(0.263)	(0.258)	(2.310)	(70.937)	(144.138)
Securities/Assets	-0.018	-0.046	0.435	-21.081***	224.904***
	(0.037)	(0.042)	(0.330)	(4.736)	(15.355)
Cash/Assets	0.162***	0.095*	-0.319	-63.677***	16.080
	(0.046)	(0.056)	(0.441)	(6.892)	(21.702)
Nonperforming Assets/Assets	-0.024	0.011	-9.274***	-158.578***	579.704***
	(0.095)	(0.132)	(1.364)	(19.848)	(80.641)
Total Risk-Based Capital Ratio	0.000	0.000	-0.003	-1.583***	4.277***
	(0.003)	(0.005)	(0.018)	(0.460)	(1.371)
Tier 1 Risk-Based Capital Ratio	-0.002	-0.001	0.002	1.228***	-4.930***
	(0.003)	(0.005)	(0.019)	(0.468)	(1.363)
Leverage Ratio	0.003**	0.001	0.037***	0.738***	1.318**
	(0.001)	(0.002)	(0.011)	(0.196)	(0.574)
Composite CAMELS Rating	0.001	-0.001	-0.101***	-0.277	1.997*
	(0.002)	(0.002)	(0.018)	(0.363)	(1.135)
Log(Age)	0.022**	0.037**	0.642***	-20.841***	-12.695
	(0.011)	(0.017)	(0.123)	(2.956)	(8.073)
Assets, One-Year Growth Rate				0.762***	1.410***
				(0.025)	(0.070)
Observations	40,736	14,840	29,397	40,354	40,126
R-squared	0.831	0.828	0.485	0.642	0.383
Bank FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
Years Included	1993-1997	1993 and 1997	1993-1996Q2	1993-1997	1993-1997
R-squared (Adjusted, Within)	0.0341	0.0514	0.0332	0.401	0.194

TABLE A5. Robustness: No Filtering, Default Propensity Score Trimming
Effect of Risk-Taking on Profitability

This table shows the effect of risk-taking on profitability if the sample used for the analogous analysis in the paper (Table 6) is expanded by eliminating the basic filtering criteria while keeping the propensity score trimming. The dependent variable is quarterly annualized return on assets. The sample of this regression excludes all quarters after the second quarter of 1995, and excludes bank-quarter observations where the bank's deposit insurance premium was higher than 23 basis points. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
Log(Assets)	0.062	0.061	0.113	0.027
	(0.133)	(0.132)	(0.143)	(0.135)
1-4 Family Residential Loans/Assets	1.217***	1.216***	1.220***	1.177***
	(0.465)	(0.465)	(0.457)	(0.450)
Commercial and Industrial Loans/Assets	0.198	0.192	0.099	-0.009
	(0.820)	(0.822)	(0.831)	(0.825)
Credit Card Loans/Assets	3.034	3.042	3.159	2.842
	(2.755)	(2.758)	(2.718)	(2.770)
Securities/Assets	0.971**	0.972**	1.041**	1.025**
	(0.443)	(0.443)	(0.439)	(0.425)
Cash/Assets	0.167	0.167	0.302	0.195
	(0.619)	(0.618)	(0.623)	(0.607)
Nonperforming Assets/Assets	-5.028***	-5.016***	-5.207***	-4.898**
	(1.888)	(1.888)	(1.909)	(1.900)
Log(Age)	0.533**	0.532**	0.548**	0.523**
	(0.214)	(0.214)	(0.216)	(0.212)
Total Risk-Based Capital Ratio	0.005			
	(0.005)			
Tier 1 Risk-Based Capital Ratio		0.004		
		(0.005)		
Leverage Ratio			0.033***	
			(0.009)	
Composite CAMELS Rating = 2				-0.017
				(0.023)
Observations	17,289	17,289	17,289	17,289
R-squared	0.516	0.516	0.518	0.516
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.0113	0.0113	0.0150	0.0107

TABLE A6. Robustness: No Filtering, No Propensity Score Trimming Primary Effects of Interest

Several of the paper's main results were estimated on a sample constructed by first dropping institutions that did not satisfy certain filtering criteria, and then restricting the sample further through propensity score trimming (see Section IV for details). This table shows the effect of expanding the sample by eliminating both the filtering criteria and the propensity score trimming. The columns show the effect of the disparity on the primary variables to which the filtering and trimming were applied in the paper's analysis. Dependent variables are listed in the column titles. Column (2) includes only the years of 1993 and 1997 to account for the anticipation effects on the shifting of funding sources. Column (3) eliminates quarters after 1996 Q2 to isolate the effects of the disparity on profitability from the one-time special assessment paid by SAIF members in 1996 Q3. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)	(5)
	Domestic Deposits to Liabilities Ratio		ROA	One-Year Growth Rate	
				Loans & Leases	Securities
SAIF * Post-1995Q3	-0.019***	-0.032***	-0.238***	2.361***	-15.327***
	(0.002)	(0.003)	(0.017)	(0.320)	(1.249)
Log(Assets)	-0.018***	-0.022***	0.022	-0.225	-0.444
	(0.004)	(0.004)	(0.032)	(0.503)	(1.350)
1-4 Family Residential Loans/Assets	0.017	-0.002	0.732***	48.646***	12.260*
	(0.015)	(0.017)	(0.122)	(2.657)	(7.238)
Commercial and Industrial Loans/Assets	0.025*	0.038***	0.518***	55.444***	18.430**
	(0.013)	(0.014)	(0.163)	(3.010)	(7.583)
Credit Card Loans/Assets	-0.017	0.041	-0.623	45.982***	-30.008
	(0.105)	(0.139)	(0.792)	(17.762)	(46.452)
Securities/Assets	-0.004	0.003	0.353***	-13.629***	236.429***
	(0.012)	(0.013)	(0.094)	(1.803)	(5.879)
Cash/Assets	0.084***	0.047**	-0.395**	-47.967***	48.730***
	(0.016)	(0.020)	(0.162)	(2.767)	(9.812)
Nonperforming Assets/Assets	0.077**	0.096**	-10.214***	-186.075***	436.006***
	(0.030)	(0.044)	(0.744)	(7.992)	(28.559)
Total Risk-Based Capital Ratio	-0.001	-0.003*	-0.006	-2.020***	2.014***
	(0.001)	(0.002)	(0.013)	(0.249)	(0.716)
Tier 1 Risk-Based Capital Ratio	0.000	0.003	-0.004	1.286***	-2.553***
	(0.001)	(0.002)	(0.014)	(0.252)	(0.727)
Leverage Ratio	0.001*	0.001	0.073***	1.429***	0.671***
	(0.001)	(0.001)	(0.006)	(0.102)	(0.244)
Composite CAMELS Rating	0.000	-0.000	-0.076***	-1.363***	3.963***
	(0.000)	(0.001)	(0.009)	(0.136)	(0.416)
Log(Age)	0.010***	0.015***	0.876***	-8.786***	-25.799***
	(0.004)	(0.005)	(0.062)	(1.145)	(3.373)
Assets, One-Year Growth Rate				0.757***	1.269***
				(0.010)	(0.028)
Observations	235,126	91,822	169,553	234,331	233,291
R-squared	0.858	0.846	0.484	0.641	0.392
Bank FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
Years Included	1993-1997	1993 and 1997	1993-1996Q2	1993-1997	1993-1997
R-squared (Adjusted, Within)	0.0237	0.0434	0.0394	0.412	0.211

TABLE A7. Robustness: No Filtering, No Propensity Score Trimming Effect of Risk-Taking on Profitability

This table shows the effect of risk-taking on profitability if the sample used for the analogous analysis in the paper (Table 6) is expanded by eliminating both the basic filtering criteria and the propensity score trimming. The dependent variable is quarterly annualized return on assets. The sample of this regression excludes all quarters after the second quarter of 1995, and excludes bank-quarter observations where the bank's deposit insurance premium was higher than 23 basis points. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
Log(Assets)	-0.019	-0.019	0.048	-0.051
	(0.047)	(0.047)	(0.051)	(0.046)
1-4 Family Residential Loans/Assets	0.827***	0.829***	0.842***	0.793***
	(0.165)	(0.166)	(0.164)	(0.163)
Commercial and Industrial Loans/Assets	0.799***	0.799***	0.709***	0.688***
	(0.185)	(0.185)	(0.188)	(0.187)
Credit Card Loans/Assets	1.103	1.111	0.931	1.010
	(1.055)	(1.056)	(1.045)	(1.054)
Securities/Assets	0.171	0.171	0.273**	0.267**
	(0.118)	(0.118)	(0.112)	(0.109)
Cash/Assets	-0.648***	-0.649***	-0.552***	-0.600***
	(0.201)	(0.201)	(0.203)	(0.198)
Nonperforming Assets/Assets	-6.544***	-6.535***	-6.574***	-6.545***
	(0.720)	(0.720)	(0.719)	(0.720)
Log(Age)	0.888***	0.889***	0.946***	0.859***
	(0.083)	(0.083)	(0.086)	(0.081)
Total Risk-Based Capital Ratio	0.006**			
	(0.003)			
Tier 1 Risk-Based Capital Ratio		0.006**		
		(0.003)		
Leverage Ratio			0.042***	
			(0.005)	
Composite CAMELS Rating = 2				-0.006
				(0.008)
Observations	107,307	107,307	107,307	107,307
R-squared	0.507	0.507	0.509	0.507
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.0138	0.0139	0.0177	0.0132

TABLE A8. Robustness: No Propensity Score Trimming Primary Effects of Interest

The paper's main analysis excluded institutions with propensity scores outside the range of [0.1,0.9]. This table shows the effect of eliminating the propensity score trimming step, resulting in a larger, more-inclusive sample. The columns show the effect of the disparity on the primary variables to which the trimming was applied in the paper's analysis. Dependent variables are listed in the column titles. Column (2) includes only the years of 1993 and 1997 to account for the anticipation effects on the shifting of funding sources. Column (3) eliminates quarters after 1996 Q2 to isolate the effects of the disparity on profitability from the one-time special assessment paid by SAIF members in 1996 Q3. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)	(5)
	Domestic Deposits to Liabilities Ratio		ROA	One-Year Growth Rate	
				Loans & Leases	Securities
SAIF * Post-1995Q3	-0.011***	-0.019***	-0.238***	2.258***	-15.964***
	(0.002)	(0.003)	(0.019)	(0.372)	(1.579)
Log(Assets)	-0.025***	-0.025***	0.167***	-0.588	-3.051*
	(0.004)	(0.004)	(0.042)	(0.769)	(1.631)
1-4 Family Residential Loans/Assets	-0.029**	-0.028**	0.559***	42.136***	22.615***
	(0.012)	(0.014)	(0.150)	(2.937)	(8.401)
Commercial and Industrial Loans/Assets	-0.002	-0.002	0.522***	46.928***	26.142***
	(0.011)	(0.012)	(0.181)	(3.388)	(8.157)
Credit Card Loans/Assets	-0.068	-0.087	-1.486	19.329	7.548
	(0.089)	(0.121)	(1.056)	(28.891)	(54.251)
Securities/Assets	-0.047***	-0.033***	0.144	-10.985***	226.328***
	(0.009)	(0.011)	(0.088)	(2.025)	(6.517)
Cash/Assets	0.017	-0.004	-0.477***	-42.985***	44.638***
	(0.011)	(0.016)	(0.158)	(3.137)	(10.733)
Nonperforming Assets/Assets	0.076***	0.062	-10.081***	-196.313***	392.559***
	(0.027)	(0.041)	(0.750)	(8.908)	(29.612)
Total Risk-Based Capital Ratio	-0.002*	-0.002	-0.010	-1.729***	1.061
	(0.001)	(0.002)	(0.014)	(0.248)	(0.745)
Tier 1 Risk-Based Capital Ratio	0.003**	0.003*	0.005	0.849***	-1.695**
	(0.001)	(0.002)	(0.014)	(0.254)	(0.754)
Leverage Ratio	-0.000	0.001	0.100***	1.511***	0.269
	(0.000)	(0.001)	(0.007)	(0.129)	(0.287)
Composite CAMELS Rating	0.001**	0.001*	-0.042***	-1.539***	3.858***
	(0.000)	(0.001)	(0.009)	(0.154)	(0.445)
Log(Age)	0.018***	0.020***	0.698***	-2.875**	-23.282***
	(0.005)	(0.005)	(0.085)	(1.416)	(4.148)
Assets, One-Year Growth Rate				0.671***	1.268***
				(0.012)	(0.033)
Observations	151,053	60,417	105,735	151,044	150,169
R-squared	0.880	0.862	0.487	0.577	0.378
Bank FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
Years Included	1993-1997	1993 and 1997	1993-1996Q2	1993-1997	1993-1997
R-squared (Adjusted, Within)	0.0346	0.0424	0.0394	0.339	0.208

TABLE A9. Robustness: No Propensity Score Trimming
Effect of Risk-Taking on Profitability

This table shows the effect of risk-taking on profitability if the sample used for the analogous analysis in the paper (Table 6) is expanded by eliminating the propensity score trimming step. The dependent variable is quarterly annualized return on assets. The sample of this regression excludes all quarters after the second quarter of 1995, and excludes bank-quarter observations where the bank's deposit insurance premium was higher than 23 basis points. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
Log(Assets)	0.030	0.031	0.195***	-0.072
	(0.052)	(0.052)	(0.058)	(0.048)
1-4 Family Residential Loans/Assets	0.604***	0.605***	0.606***	0.619***
	(0.169)	(0.169)	(0.171)	(0.167)
Commercial and Industrial Loans/Assets	0.742***	0.740***	0.500***	0.479**
	(0.188)	(0.188)	(0.186)	(0.185)
Credit Card Loans/Assets	-0.941	-0.918	-1.226	-1.252
	(1.133)	(1.132)	(1.100)	(1.158)
Securities/Assets	-0.154	-0.162	0.209**	0.172*
	(0.116)	(0.116)	(0.099)	(0.101)
Cash/Assets	-0.955***	-0.956***	-0.715***	-0.767***
	(0.180)	(0.180)	(0.177)	(0.178)
Nonperforming Assets/Assets	-6.982***	-6.944***	-7.016***	-7.113***
	(0.812)	(0.812)	(0.801)	(0.812)
Log(Age)	0.701***	0.703***	0.784***	0.668***
	(0.106)	(0.107)	(0.113)	(0.105)
Total Risk-Based Capital Ratio	0.020***			
	(0.003)			
Tier 1 Risk-Based Capital Ratio		0.020***		
		(0.003)		
Leverage Ratio			0.093***	
			(0.008)	
Composite CAMELS Rating = 2				0.008
				(0.009)
Observations	67,150	67,150	67,150	67,150
R-squared	0.509	0.510	0.514	0.508
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.0114	0.0116	0.0203	0.00762

TABLE A10. Robustness: More-Relaxed Propensity Score Trimming Primary Effects of Interest

The paper's main analysis excluded institutions with propensity scores outside the range of [0.1,0.9]. This table shows the effect of changing those thresholds to [0.05,0.95], resulting in fewer institutions being excluded. The columns show the effect of the disparity on the primary variables to which the trimming was applied in the paper's analysis. Dependent variables are listed in the column titles. Column (2) includes only the years of 1993 and 1997 to account for the anticipation effects on the shifting of funding sources. Column (3) eliminates quarters after 1996 Q2 to isolate the effects of the disparity on profitability from the one-time special assessment paid by SAIF members in 1996 Q3. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)	(5)
	Domestic Deposits to Liabilities Ratio		ROA	One-Year Growth Rate	
				Loans & Leases	Securities
SAIF * Post-1995Q3	-0.009***	-0.015***	-0.195***	1.892***	-12.488***
	(0.002)	(0.004)	(0.021)	(0.553)	(1.965)
Log(Assets)	-0.039***	-0.037***	0.289***	-3.130*	-3.116
	(0.008)	(0.010)	(0.094)	(1.705)	(3.808)
1-4 Family Residential Loans/Assets	-0.045*	-0.052	0.692**	37.984***	34.225**
	(0.026)	(0.034)	(0.269)	(4.720)	(14.885)
Commercial and Industrial Loans/Assets	0.107*	0.079	1.070**	81.221***	-20.226
	(0.057)	(0.070)	(0.491)	(13.600)	(39.965)
Credit Card Loans/Assets	-0.056	-0.477	1.058	-1.101	-194.716
	(0.265)	(0.309)	(3.136)	(98.590)	(178.863)
Securities/Assets	-0.071***	-0.066**	0.005	-13.959***	231.113***
	(0.023)	(0.031)	(0.212)	(4.634)	(12.763)
Cash/Assets	0.047*	0.019	-0.186	-55.683***	26.396
	(0.026)	(0.037)	(0.284)	(6.718)	(18.851)
Nonperforming Assets/Assets	0.105	0.125	-11.312***	-163.928***	456.951***
	(0.082)	(0.116)	(1.468)	(19.585)	(81.248)
Total Risk-Based Capital Ratio	0.001	0.004	-0.016	-0.981*	4.658***
	(0.003)	(0.004)	(0.020)	(0.566)	(1.495)
Tier 1 Risk-Based Capital Ratio	-0.000	-0.003	0.014	0.598	-5.038***
	(0.003)	(0.005)	(0.020)	(0.573)	(1.484)
Leverage Ratio	0.002	0.001	0.086***	0.646**	0.165
	(0.001)	(0.002)	(0.015)	(0.257)	(0.759)
Composite CAMELS Rating	0.002	0.001	-0.052***	-0.320	2.931**
	(0.001)	(0.002)	(0.019)	(0.356)	(1.202)
Log(Age)	0.026*	0.025*	0.433**	-14.598***	-3.977
	(0.015)	(0.014)	(0.173)	(3.324)	(9.957)
Assets, One-Year Growth Rate				0.717***	1.288***
				(0.027)	(0.080)
Observations	31,920	11,840	22,344	31,913	31,428
R-squared	0.871	0.841	0.505	0.583	0.331
Bank FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
Years Included	1993-1997	1993 and 1997	1993-1996Q2	1993-1997	1993-1997
R-squared (Adjusted, Within)	0.0586	0.0528	0.0423	0.344	0.151

TABLE A11. Robustness: More-Relaxed Propensity Score Trimming Effect of Risk-Taking on Profitability

This table shows the effect of risk-taking on profitability if the sample used for the analogous analysis in the paper (Table 6) is expanded by excluding institutions with propensity scores outside the range of [0.05,0.95] (the thresholds used in the paper's analysis are [0.1,0.9]). The dependent variable is quarterly annualized return on assets. The sample of this regression excludes all quarters after the second quarter of 1995, and excludes bank-quarter observations where the bank's deposit insurance premium was higher than 23 basis points. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
Log(Assets)	0.162	0.161	0.328***	0.095
	(0.102)	(0.102)	(0.119)	(0.099)
1-4 Family Residential Loans/Assets	0.767***	0.767***	0.719**	0.756***
	(0.288)	(0.289)	(0.301)	(0.289)
Commercial and Industrial Loans/Assets	0.856	0.851	0.855	0.565
	(0.659)	(0.658)	(0.614)	(0.651)
Credit Card Loans/Assets	2.522	2.557	1.631	2.459
	(3.270)	(3.271)	(2.919)	(3.395)
Securities/Assets	0.119	0.121	0.308	0.287
	(0.260)	(0.261)	(0.229)	(0.228)
Cash/Assets	-0.583*	-0.583*	-0.327	-0.473
	(0.345)	(0.346)	(0.326)	(0.338)
Nonperforming Assets/Assets	-7.483***	-7.448***	-7.828***	-7.549***
	(1.832)	(1.838)	(1.818)	(1.829)
Log(Age)	0.460	0.458	0.503*	0.451
	(0.295)	(0.295)	(0.297)	(0.300)
Total Risk-Based Capital Ratio	0.011*			
	(0.007)			
Tier 1 Risk-Based Capital Ratio		0.011*		
		(0.007)		
Leverage Ratio			0.085***	
			(0.019)	
Composite CAMELS Rating = 2				0.007
				(0.021)
Observations	13,268	13,268	13,268	13,268
R-squared	0.550	0.550	0.555	0.549
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.0103	0.0102	0.0205	0.00834

TABLE A12. Robustness: More-Strict Propensity Score Trimming Primary Effects of Interest

The paper's main analysis excluded institutions with propensity scores outside the range of [0.1,0.9]. This table shows the effect of changing those thresholds to [0.15,0.85], resulting in more institutions being excluded. The columns show the effect of the disparity on the primary variables to which the trimming was applied in the paper's analysis. Dependent variables are listed in the column titles. Column (2) includes only the years of 1993 and 1997 to account for the anticipation effects on the shifting of funding sources. Column (3) eliminates quarters after 1996 Q2 to isolate the effects of the disparity on profitability from the one-time special assessment paid by SAIF members in 1996 Q3. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)	(5)
	Domestic Deposits to Liabilities Ratio		ROA	One-Year Growth Rate	
				Loans & Leases	Securities
SAIF * Post-1995Q3	-0.007**	-0.012**	-0.181***	1.642**	-8.484***
	(0.003)	(0.005)	(0.029)	(0.792)	(2.471)
Log(Assets)	-0.039***	-0.025*	0.325**	-3.005	-10.187*
	(0.011)	(0.013)	(0.137)	(2.445)	(5.744)
1-4 Family Residential Loans/Assets	-0.054	-0.058	0.662*	34.260***	53.607***
	(0.033)	(0.044)	(0.366)	(6.434)	(19.049)
Commercial and Industrial Loans/Assets	0.140	0.116	0.336	58.906***	-15.481
	(0.101)	(0.093)	(0.869)	(20.039)	(78.214)
Credit Card Loans/Assets	0.032	-0.510	-3.184	113.087	-9.547
	(0.407)	(0.456)	(3.069)	(112.297)	(290.775)
Securities/Assets	-0.097***	-0.071*	-0.185	-20.122***	229.352***
	(0.031)	(0.042)	(0.305)	(6.379)	(18.097)
Cash/Assets	0.053	0.003	-0.238	-62.969***	9.382
	(0.036)	(0.057)	(0.410)	(9.973)	(25.048)
Nonperforming Assets/Assets	0.043	0.047	-11.333***	-148.764***	442.448***
	(0.117)	(0.156)	(1.881)	(24.984)	(91.921)
Total Risk-Based Capital Ratio	0.002	0.007	0.018	-0.394	5.481**
	(0.004)	(0.006)	(0.028)	(0.782)	(2.258)
Tier 1 Risk-Based Capital Ratio	-0.002	-0.007	-0.016	0.011	-5.545**
	(0.004)	(0.006)	(0.027)	(0.795)	(2.218)
Leverage Ratio	0.003*	0.001	0.079***	0.466	-0.508
	(0.002)	(0.002)	(0.019)	(0.403)	(1.058)
Composite CAMELS Rating	0.003	-0.001	-0.012	0.017	2.862*
	(0.002)	(0.003)	(0.024)	(0.469)	(1.608)
Log(Age)	0.028	0.025	0.327	-17.108***	14.880
	(0.020)	(0.019)	(0.241)	(4.642)	(12.654)
Assets, One-Year Growth Rate				0.676***	1.486***
				(0.038)	(0.119)
Observations	17,160	6,384	12,012	17,154	16,918
R-squared	0.866	0.845	0.507	0.584	0.339
Bank FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
Years Included	1993-1997	1993 and 1997	1993-1996Q2	1993-1997	1993-1997
R-squared (Adjusted, Within)	0.0676	0.0377	0.0397	0.330	0.160

TABLE A13. Robustness: More-Strict Propensity Score Trimming Effect of Risk-Taking on Profitability

This table shows the effect of risk-taking on profitability if the sample used for the analogous analysis in the paper (Table 6) is restricted further by excluding institutions with propensity scores outside the range of [0.15,0.85] (the thresholds used in the paper's analysis are [0.1,0.9]). The dependent variable is quarterly annualized return on assets. The sample of this regression excludes all quarters after the second quarter of 1995, and excludes bank-quarter observations where the bank's deposit insurance premium was higher than 23 basis points. All variables except the composite CAMELS rating and the log of age are winsorized at the 1% and 99% levels within each quarter. Robust standard errors clustered at the institution and state-quarter levels in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

	(1)	(2)	(3)	(4)
Log(Assets)	0.388**	0.385**	0.536***	0.275*
	(0.161)	(0.160)	(0.192)	(0.148)
1-4 Family Residential Loans/Assets	1.119***	1.116***	1.013**	1.081***
	(0.385)	(0.386)	(0.412)	(0.390)
Commercial and Industrial Loans/Assets	1.192	1.170	0.936	0.772
	(0.826)	(0.824)	(0.752)	(0.830)
Credit Card Loans/Assets	0.247	0.316	-0.086	0.037
	(3.508)	(3.516)	(3.265)	(3.748)
Securities/Assets	0.460	0.461	0.682**	0.688**
	(0.382)	(0.386)	(0.332)	(0.330)
Cash/Assets	-0.250	-0.252	0.062	-0.043
	(0.489)	(0.492)	(0.449)	(0.464)
Nonperforming Assets/Assets	-6.669***	-6.600***	-7.112***	-6.601***
	(2.388)	(2.402)	(2.405)	(2.410)
Log(Age)	0.169	0.164	0.202	0.144
	(0.429)	(0.429)	(0.424)	(0.444)
Total Risk-Based Capital Ratio	0.019*			
	(0.012)			
Tier 1 Risk-Based Capital Ratio		0.019		
		(0.012)		
Leverage Ratio			0.092***	
			(0.032)	
Composite CAMELS Rating = 2				0.030
				(0.026)
Observations	7,001	7,001	7,001	7,001
R-squared	0.545	0.545	0.549	0.543
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
R-squared (Adjusted, Within)	0.0164	0.0160	0.0253	0.0111

REFERENCES

FDIC 12 CFR 327 (1996a) "Assessments: Proposed Rule," *Federal Register*, 61, 34751.

_____ (1996b) "Assessments: Final Rule," *Federal Register*, 61, 64960.

Xu, Y. (2017) "Generalized Synthetic Control Method: Causal Inference with Interactive Fixed Effects Models," *Political Analysis*, 25, 57–76.