Undergraduate Economic Review

Volume 11 | Issue 1 Article 15

2015

The Effect of Terminating Enforcement Actions on the Nation's Problem Banks

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Abstract

This paper examines whether the Federal Deposit Insurance Corporation's supervisory actions promote improved performance at problem banks. I show that during the three-year period following the termination of a supervisory action, return on assets rises by 10 to 20 basis points. The reaction of capital markets to the termination results in a 1.7 basis point increase in return on assets, while management actions post-termination result in a 1.6 basis point decrease in return on assets.

Keywords

FDIC, termination, enforcement, problem bank, FRB, OCC, ROA, bank, consent order, cease and desist order

Cover Page Footnote

Ben Doehr '15 will graduate Grinnell College with a double major in Economics and Chemistry and a concentration in Policy Studies. He would like to thank Caleb Stroup, Assistant Professor of Economics at Grinnell College, for his guidance with this paper.

I. Introduction

The Federal Deposit Insurance Corporation (FDIC) regulates the nation's problem banks using supervisory actions, specifically Consent Orders and Cease & Desist Orders. Whenever a bank or its management is using unsafe and unsound banking practices such that the bank's continued existence is called into question and its CAMELS[1] rating falls to a 4 or below, the FDIC issues a public supervisory action with a list of corrective actions that bank management must take. The banks that are currently under a supervisory action form the 'problem bank list'. When the bank's management has improved the bank's financial position and operating procedures as specified in the enforcement action, the bank is taken off of the list. This chain of events raises the question of whether the bank's management is simply satisfying the conditions of the supervisory action or is internalizing the safe and sound operating procedures developed while under the watchful eye of the FDIC. If the former is the truth, we would expect the bank's condition to quickly deteriorate after removal from the list, while if the latter holds, we would expect a positive effect on the bank's performance in the near future.

CAMELS ratings and FDIC Reports of Examination are nonpublic information, which has limited the scope and volume of prior research about the FDIC. Indeed, according a paper published by Delis et. al. in 2013, "…pending the present paper, no research has gathered raw data on enforcement actions by all three U.S. bank supervisors (FDIC, OCC, FRB) and assessed their correlation with bank behavior after taking into account their classification according to the underlying rationale and their relevance to bank safety and soundness." (Delis, Staikouras, & Tsoumas, 2013). As part of the authors' work, they sort supervisory actions into four classes based on their severity and conduct econometric tests to attempt to recover the causal effect of supervisory actions on bank performance. The authors find that the most severe sanctions (class 1) do result in an overall decline in the risk-weighted assets ratio; however, this comes at the cost of an increased volatility in performance and a heightened risk of insolvency. As the authors state, "class 1 sanctions remain pretty risky." (Delis, Staikouras, & Tsoumas, 2013)

A paper published by the FDIC's Division of Research and Statistics finds that enforcement actions lead to a statistically significant increase in performance of areas over which bank management has control (Curry, O'Keefe, Coburn, & Montgomery, 1999). This report analyzes both the effect of a downgrade to a CAMELS rating of 4 and the effect of a supervisory action on bank performance, as measured by the Provision for Loan and Lease Losses and Net Loan and Lease Charge-offs. CAMELS ratings are nonpublic, so outside researchers are unable to replicate their results. However, their findings with regards to bank performance are in contradiction to those of Delis et. al.

[1] CAMELS stands for the six components that the FDIC rates: Capital, Asset Quality, Management, Earnings, Liquidity and Sensitivity to Market Risk. Each component is rated on a score of 1-5, with 1 being the best and 5 and the worst. A weighted average of the CAMELS score, also on a 1-5 scale, indicates the final rating of a bank's safety and soundness.

The existing papers on the efficacy of the FDIC solely investigate the immediate effect of being placed under a supervisory action. I expand on their research and examine the effect of being removed from a supervisory action on bank performance. I find a statistically significant positive effect of removal from the problem bank list on return on assets up to three years from removal, and a positive but statistically insignificant effect thereafter. Additionally, I recover the causal effect of external capital markets on return on assets, as well as some of the internal management effect. There remains a positive unexplained effect of removal from the problem bank list on bank performance that I leave to further research.

II. Theory & Model

The null hypothesis is that bank management is simply complying with the FDIC's legal requirements while under the effect of a supervisory action and resuming business as usual once the regulators leave. If this hypothesis holds, we would expect to see a negative correlation between being taken off of the problem bank list and a bank's performance. Falling returns on assets (ROAs) are correlated with the advent of a supervisory action (Delis, Staikouras, & Tsoumas, 2013), so the termination of an enforcement action that raised ROA should result in a leveling off and declining ROA. Additionally, if this hypothesis is correct, the most significant predictor of ROA should be the ROA in the prior quarter; thus, I will control for the prior ROA in my regressions.

The alternative hypothesis is that, through some mechanism, the FDIC promotes positive and permanent change in the banks that it engages heavily with while under the effect of a supervisory action. If this hypothesis is correct, terminating the supervisory action will have a positive or neutral effect on the bank's return on assets. If the estimates resulting from the regression support this hypothesis, there are two potential causal channels that could be driving it. First, it could be that management internalizes the safe and sound banking practices enforced by the FDIC while under the supervisory action and continues these practices after the action is lifted. Alternately, the improvement in performance could be entirely due to outside effects; investors and depositors, seeing that the FDIC has effectively 'approved' the current practices of management relative to what they were before the supervisory action, demand less of a risk premium on their deposits and investments.

Distinguishing between the two channels presents an econometric challenge: the majority of banks in the United States are not publicly traded, so obtaining data on corporate governance or other indicators of management's internal performance is difficult or impossible. However, the 'outside effects' channel can be easily be measured by looking at each bank's cost of capital.

Given the constraint that not all of the banks in my sample are publicly traded, I use interest expense as a percent of average assets to control for the cost of capital. If investors and depositors are reacting to the publicly available news that the bank is no longer considered a problem bank, then they should demand less of a risk premium on their deposits and the bank's interest expense should go down, all else equal. If the magnitude of this effect is sufficient to explain most of the variation in ROA under the alternative hypothesis, then I will conclude that the effect of the FDIC on the performance of problem banks works through external rather than internal channels.

III. Methodology and Data

The estimating equation is:

$$\begin{aligned} ROA_{i,t} = {} & \beta_0 + \beta_1 \boldsymbol{X_{i,t}} + \beta_2 SIZE_{i,t} + \beta_3 ROA_{t-1} + \beta_4 ALLRAT_{i,t} \\ & + \beta_5 NONPERFORMRAT_{i,t} + \beta_6 DEPOSITSRAT_{i,t} \\ & + \beta_7 NONINTRAT_{i,t} + \beta_8 RBC_{i,t} + \beta_9 INTEXP_{i,t} + \tau_i + \gamma_t + \varepsilon_{i,t} \end{aligned}$$

This equation demonstrates the idea that a bank's return on assets should be determined by its previous return on assets, the number of months since it was removed from the problem bank list, bank-specific control variables, and firm and quarter fixed effects. Specifically, ROA (or return on assets) is a bank's net income in quarter *t* divided by its average assets that quarter. **X** represents a vector of quarter dummy variables that indicate how long it has been since the bank was removed from the problem bank list. For example, if a bank *i* was removed from the list in quarter *t-4* and it is currently quarter *t*, the dummy for 'four quarters since removal' would take a 1 and the dummies for all other quarters for that bank *i* would take a value of zero in quarter *t*.

To control for economies of scale in the banking market, I include SIZE, the natural log of the bank's average assets in quarter *t* (Nichols, Wahlen, & Wieland, 2005). Next, I include a lagged return on assets; the previous quarter's return on assets should be positively correlated with both the current return on assets and with being removed from the problem bank list, so including it should reduce any upwards bias of the coefficients of **X**. ALLRAT, or the ratio of the Allowance for Loan Losses to Average Assets, is negatively correlated with return on assets; banks that have to set aside more money to write off bad loans should experience a reduction in performance. Likewise, the current ALL should be negatively correlated with lagged ROA, so including it should result in less downward bias in the coefficient on lagged ROA. NONPERFORMRAT, or the ratio of nonperforming assets to total assets is included for the same reasons as

ALLRAT; it reflects the level of unprofitable loans or other negative effectors of ROA.

RBC, or the risk-based capital ratio, is negatively correlated with return on assets; if a bank is holding more capital, it is not putting that capital to use earning more profits. The direction of the correlation between RBC and being taken off of the problem bank list is not immediately obvious; on one hand, supervisory actions typically require banks to maintain a capital ratio above the legal limit, so being removed from the problem bank list may result in a lower RBC. On the other hand, managers may attempt to continue to maintain or improve their RBC after being taken off of the list if they fear further enforcement actions by the FDIC. This would result in a positive correlation between RBC and ROA. Whichever channel dominates, including RBC in the regression will account for it. DEPOSITSRAT, the ratio of total deposits to total assets, and NONINTRAT, the ratio of noninterest income to total income, are included due to their positive correlations with both current and lagged ROA. Additional motivation for including all of the above controls is seen in Delis et. al. (2013) as these variables "have been shown to have a significant impact on bank capital, risk, and performance measures in the banking literature." I complete the regression with τ_i and γ_t, firm and quarter fixed effects.

I draw the data for bank-level controls from the Call Reports, quarterly statements of financial condition that all U.S. banks file electronically with the Federal Financial Institutions Examination Council (FFIEC). Accompanying the Call Reports are Uniform Bank Performance Reports, or UBPRs; these are standardized reports that include bank-specific performance ratios such as ROA and RBC in an easily accessible format. The FFIEC provides Call Reports and UBPRs for bulk download for every quarter dating back to 2003.

The FDIC provides aggregate information on Enforcement Decisions & Orders for bulk download on its website. While the bulk data do not contain specific details of each supervisory action, the data do indicate the class of the supervisory action was. I limit the dataset to only include the dates of termination of Consent Orders and Cease and Desist Actions, the most severe cases. In doing so, I exclude relatively minor infractions such as penalties for misstatement of the Call Report and penalties for violating the Home Mortgage Disclosure Act. I combine the two datasets by filing date and RSSD ID, a unique identifier permanently attached to each financial institution.

I exclude the bottom and top one percent of ROA from the regressions. As can be seen in Figure 1, the large majority of ROA lies clustered around zero with a few outliers in the tens of thousands; a typically expected ROA is in the range of -3% to 3%. In Figure 2, I graph ROA against assets; the outliers are all clustered around firms that, for a variety of reasons, have a zero or near-zero asset base. As a result, any change in earnings is drastically magnified. These observations are

not indicative of the typical bank, so I exclude the top and bottom 1% of ROA (6,815 observations). I create a new dependent variable, ROArev, with a distribution seen in Figure 3. After accounting for missing items, I am left with an unbalanced panel dataset of 314,456 observations of 9,717 banks from 2003 to 2013; summary statistics for the data are presented in Table 1, with complete variable definitions available in Table 2.

Figure 1 – Outliers in Return on Assets

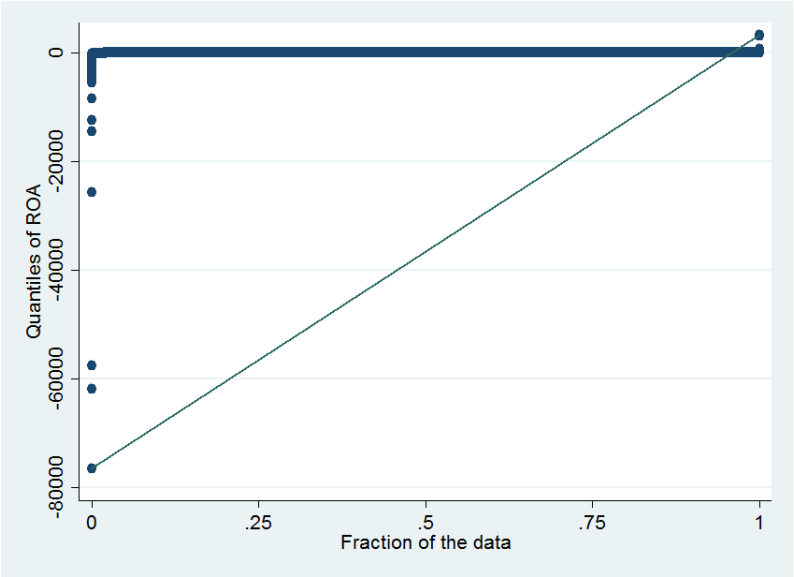


Figure 2 – Return on Assets -v- Assets

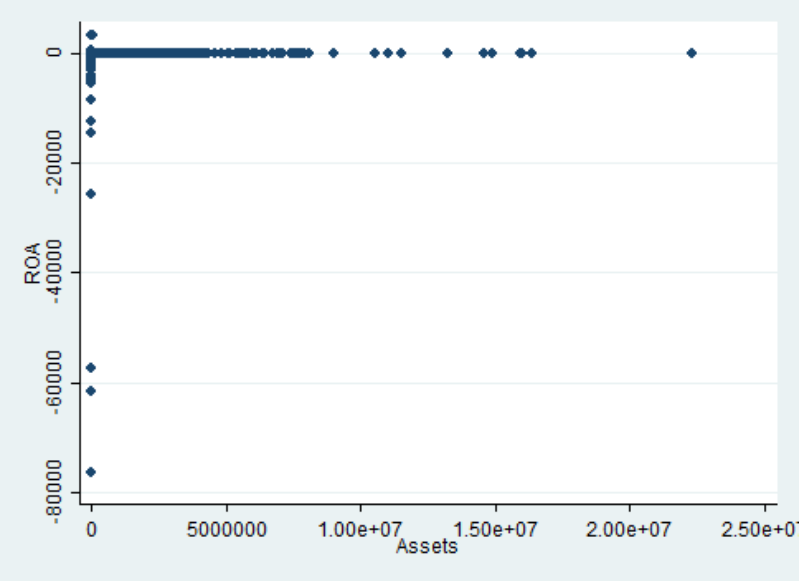


Figure 3 – Revised ROA without Outliers

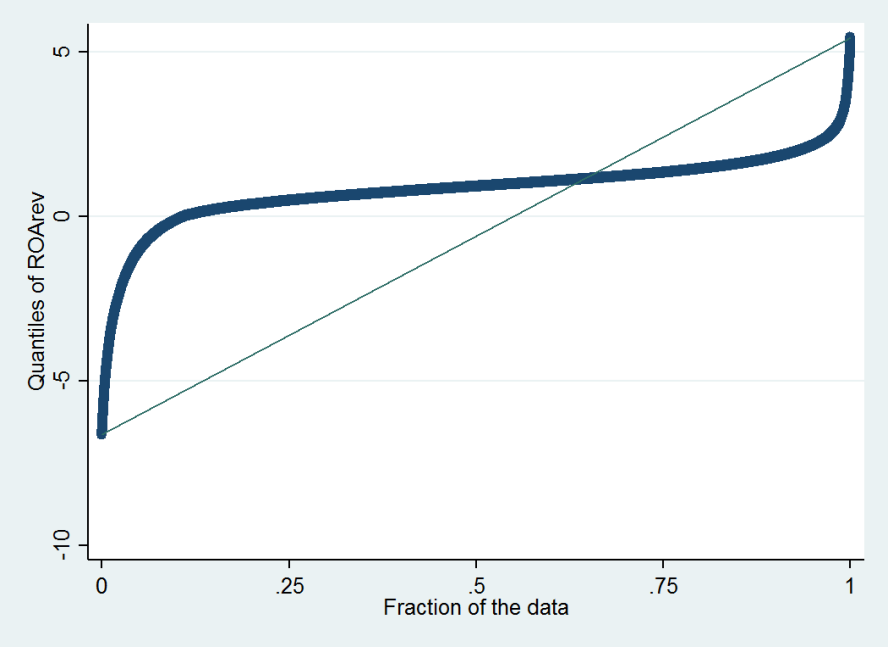


Table 1 – Summary Statistics

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
RBC	339,264	12.24	45.19	-15.32	21,370
ROA	339,263	-0.216	205.2	-76,470	3,350
ALLRAT	334,102	0.519	0.492	0	20.49
SIZE	334,102	8.027	1.497	0	16.92
DEPOSITSRAT	334,102	46.49	42.05	0	14,597
NONINTRAT	339,183	0.135	0.313	-39.48	80.07
NONPERFORMRAT	333,890	1.497	2.847	0	100
ROArev	332,479	0.800	1.103	-6.634	5.420
Number of Obs	9,717	9,717	9,717	9,717	9,717

Table 2 – Data Definitions

Variable Shorthand	Definition	Unit of Measurement	Source
ROA	Return on Assets. Equal to (Net Income) / (Average Assets)	Percent	FFIEC UBPR
ROArev	Equal to ROA with the bottom and top 1% of the distribution dropped.	Percent	FFIEC UBPR
INTEXP	Interest Expense. Equal to (Interest Expense) / (Average Assets)	Percent	FFIEC UBPR
INTEXPrev	Equal to INTEXP with the bottom and top 1% of the distribution dropped.	Percent	FFIEC UBPR
ALLRAT	Allowance for Loan Losses. Equal to (ALL)/(Average Assets)	Percent	FFIEC UBPR
SIZE	Natural log of (Average Assets)	Percent	FFIEC UBPR
DEPOSITSRAT	Deposits Ratio. Equal to (Deposits) / (Average Assets)	Percent	FFIEC Call Report
NONINTRAT	Noninterest Income. Equal to (Noninterest Income)/(Total Income)	Percent	FFIEC Call Report
NONPERFORMRAT	Nonperforming Assets Ratio. Equal to (Nonperforming Assets) / (Average Assets)	Percent	FFIEC Call Report
RBC	Risk-Based Capital Ratio. Equal to (Total Capital) / (Risk-Weighted Assets)	Percent	FFIEC UBPR
RBCrev	Equal to RBC with the bottom and top 1% of the distribution dropped.	Percent	FFIEC UBPR
OffQ#	Dummy variable. Takes a value of 1 during quarter t if bank i was removed from the problem bank list in quarter (t-(#-1)).	Dummy	FDIC ED&O

IV. Empirical Results

There is a statistically significant positive effect of being taken off of the problem bank list on ROA. As Table 3 (see Appendix) shows, there is an average increase in ROA of approximately 10 to 20 basis points in the first three years after being removed from the problem bank list. I include a series of regressions to assess the relative importance of the two causal channels. Regression 1 includes only the vector of quarter dummy variables. Regression 2 adds lagged ROA as a control. Regression 3 adds variables to control for management's effect on ROA, and Regression 4 adds interest expense to control for the market's reaction to a bank's removal from the problem bank list.

I report the results of Regression 2 in Figure 4. I construct a 90% confidence interval using the coefficients on the quarter dummies and their reported standard errors. Polynomial trend lines highlight the movement of the coefficients and the confidence interval. Figure 5 reports the results of adding management controls, and Figure 6 reports the results of adding interest expense. All of the trend lines are reported together in Figure 7 for comparison. Graphs only extend to 30 quarters due to an almost complete lack of significance of coefficients outside of that time horizon.

The lagged value of ROArev has the largest and most statistically significant effect on ROA; including the lag raises the R^2 of the regression from 0.089 with no controls to 0.592. The coefficient on the lagged value of ROArev indicates an average rise of 71 basis points of ROArev for every 100 basis point rise in lagged ROArev. The channel through which RBC affects ROA is unclear; while RBC is significant at the 5% level in the final regression, the estimates indicate only a 0.3 basis point drop in ROArev for every 100 basis point increase in RBC. Interest expense has a negative effect on return on assets: for every 100 basis point rise in interest expense, ROArev drops by 13 basis points on average. Importantly, including interest expense as a control consistently lowers the magnitude of the quarter dummy coefficients by 1-2 basis points.

V. Discussion

The estimation results indicate that on average, ROA remains 10 to 20 basis points higher than it would otherwise be for the first 3 years following the termination of a supervisory action against a problem bank. For the first three years following the termination of a supervisory action, the positive direction of the coefficients and their significance are robust to including both management and capital markets controls. The regression estimates do not clearly indicate the causal channel through which ROA is increased at banks that were once on the problem bank list.

Figure 4 – The Effect of Termination of a Supervisory Action on Return on Assets
Lagged ROA and Quarter Dummies

This figure reports the both the 90% confidence intervals and coefficients of the quarter dummies indicating how long it has been since the removal of a bank from the problem bank list. This regression includes only the quarter dummies and lagged ROA as predictors of ROA. A lower bound on the confidence interval above zero indicates statistical significance at the 10% level.

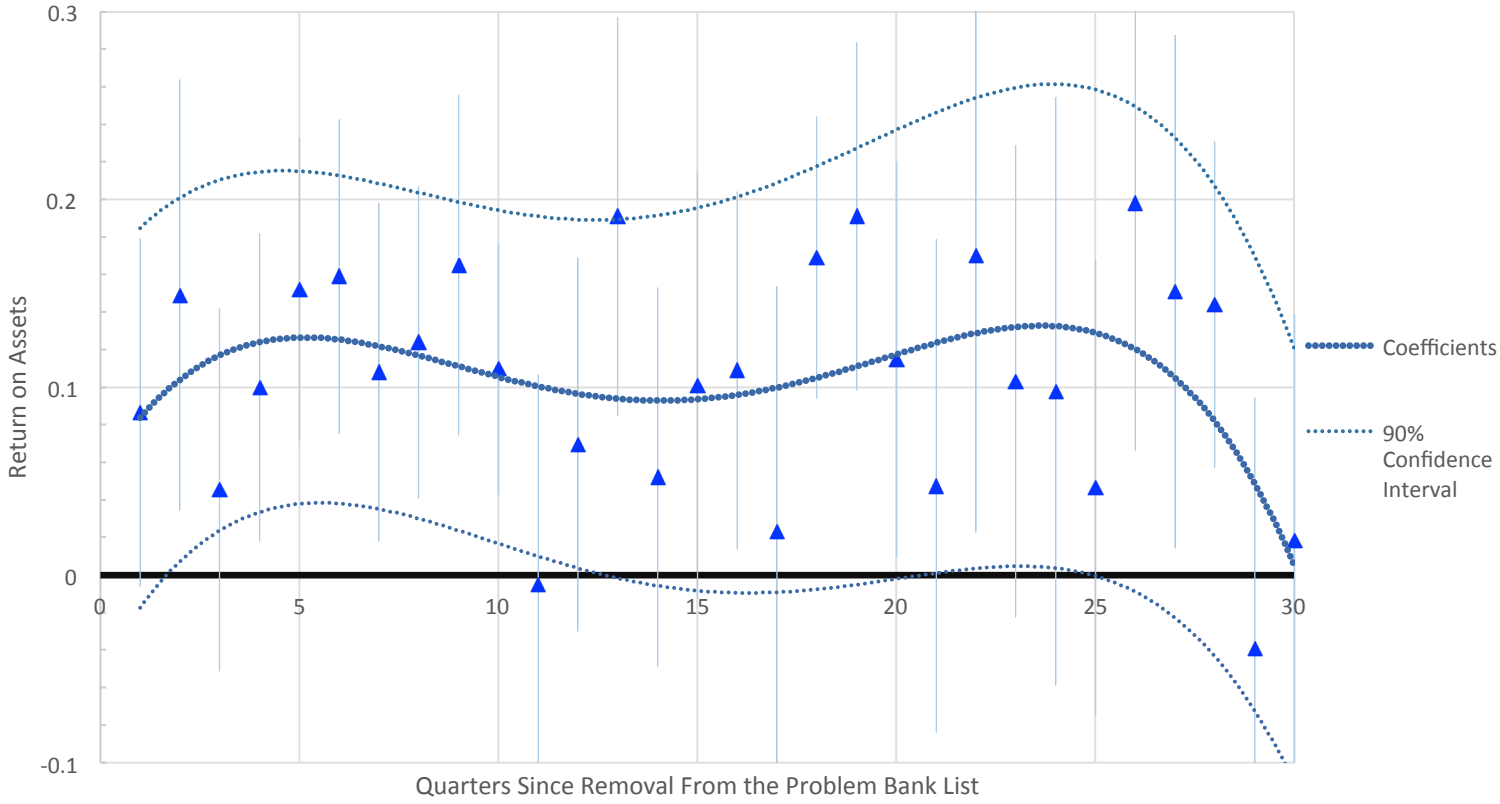


Figure 5 – The Effect of Termination of a Supervisory Action on Return on Assets
Lagged ROA, Management Controls, Quarter Dummies

This figure reports the both the 90% confidence intervals and coefficients of the quarter dummies indicating how long it has been since the removal of a bank from the problem bank list. This regression includes the quarter dummies, lagged ROA, and management controls as predictors of ROA. A lower bound on the confidence interval above zero indicates statistical significance at the 10% level.

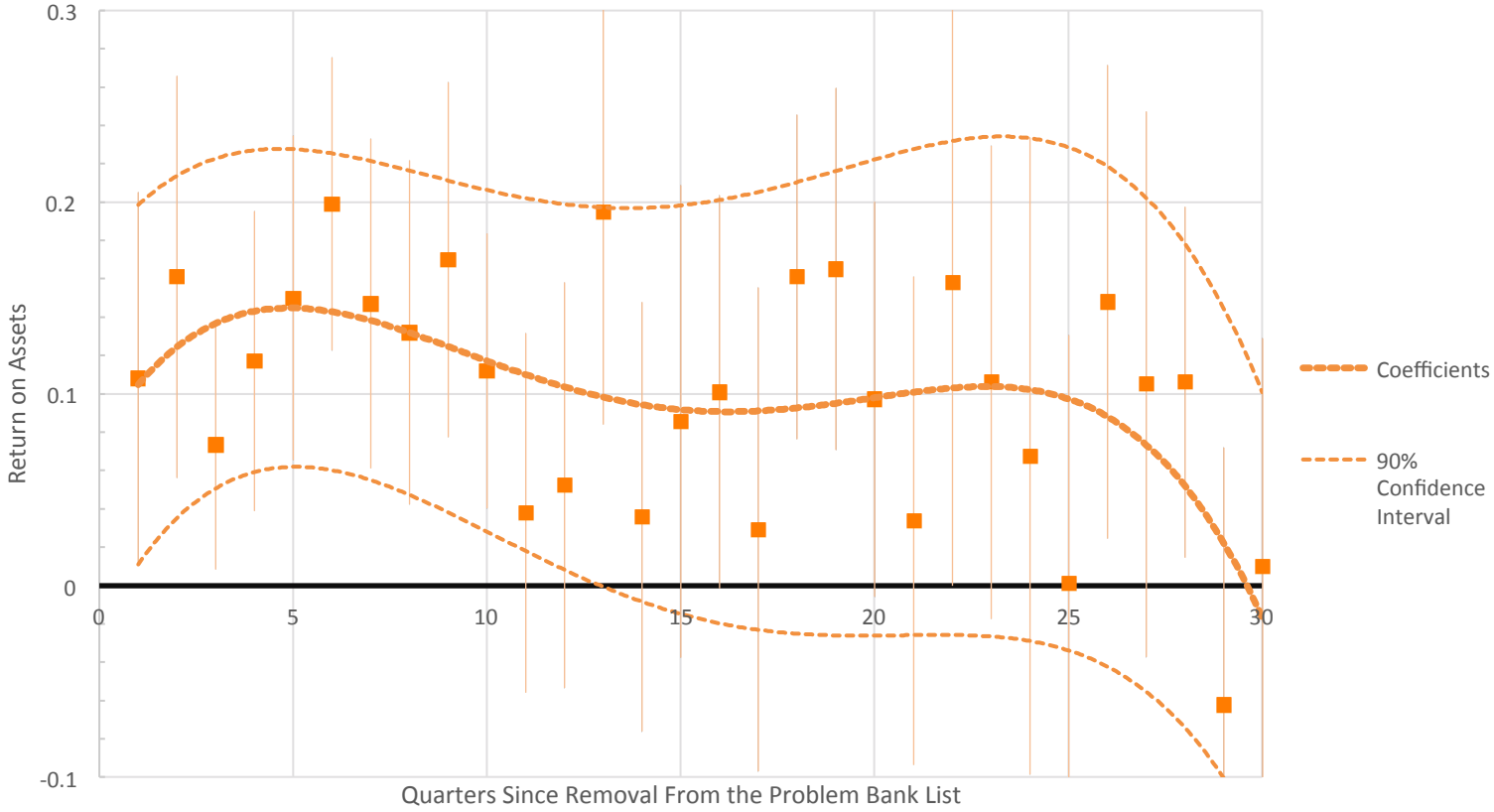


Figure 6 – The Effect of Termination of a Supervisory Action on Return on Assets
Lagged ROA, Management Controls, Interest Expense, Quarter Dummies

This figure reports the both the 90% confidence intervals and coefficients of the quarter dummies indicating how long it has been since the removal of a bank from the problem bank list. This regression includes the quarter dummies, lagged ROA, management controls, and interest expense as predictors of ROA. A lower bound on the confidence interval above zero indicates statistical significance at the 10% level.

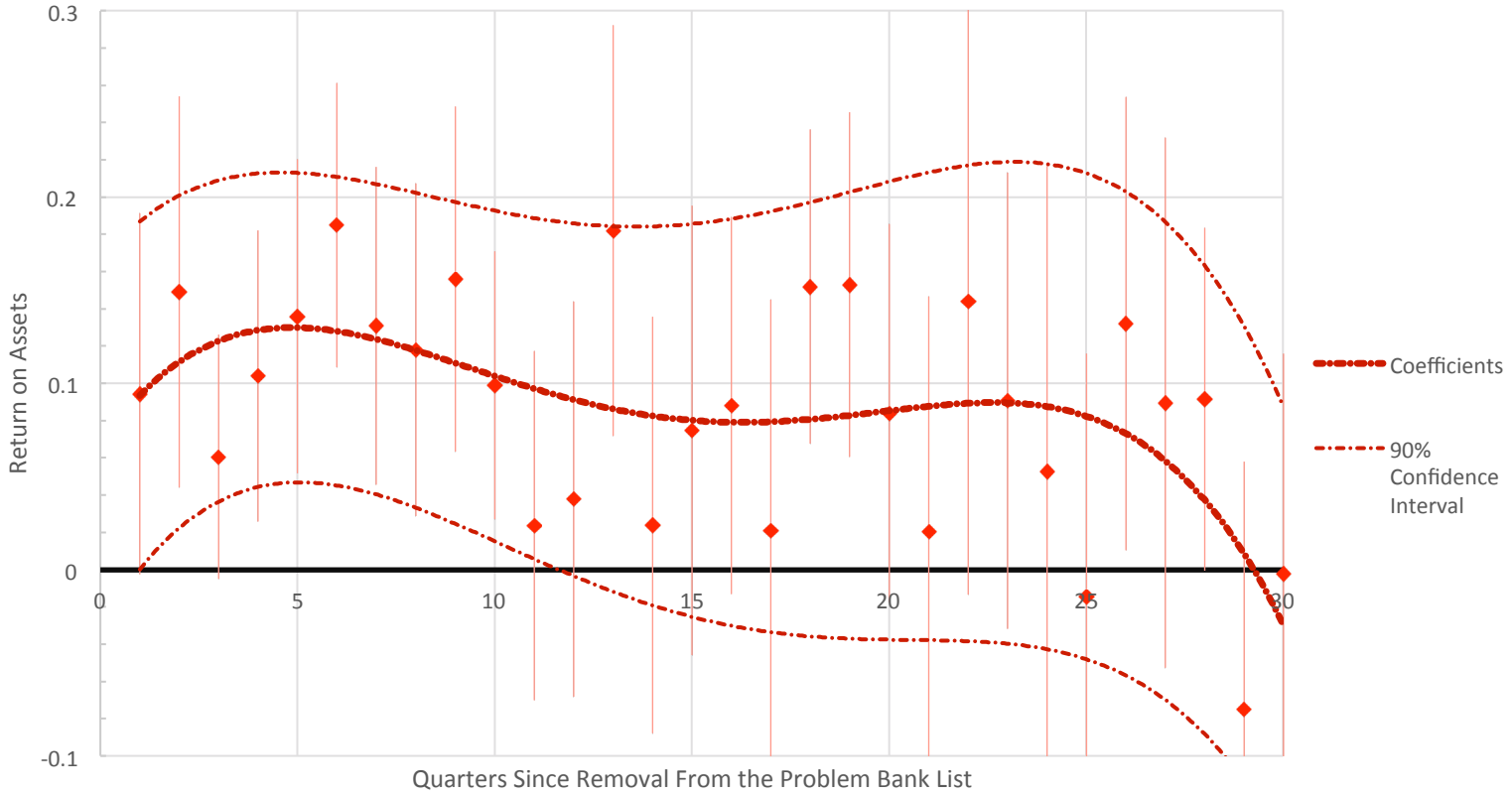
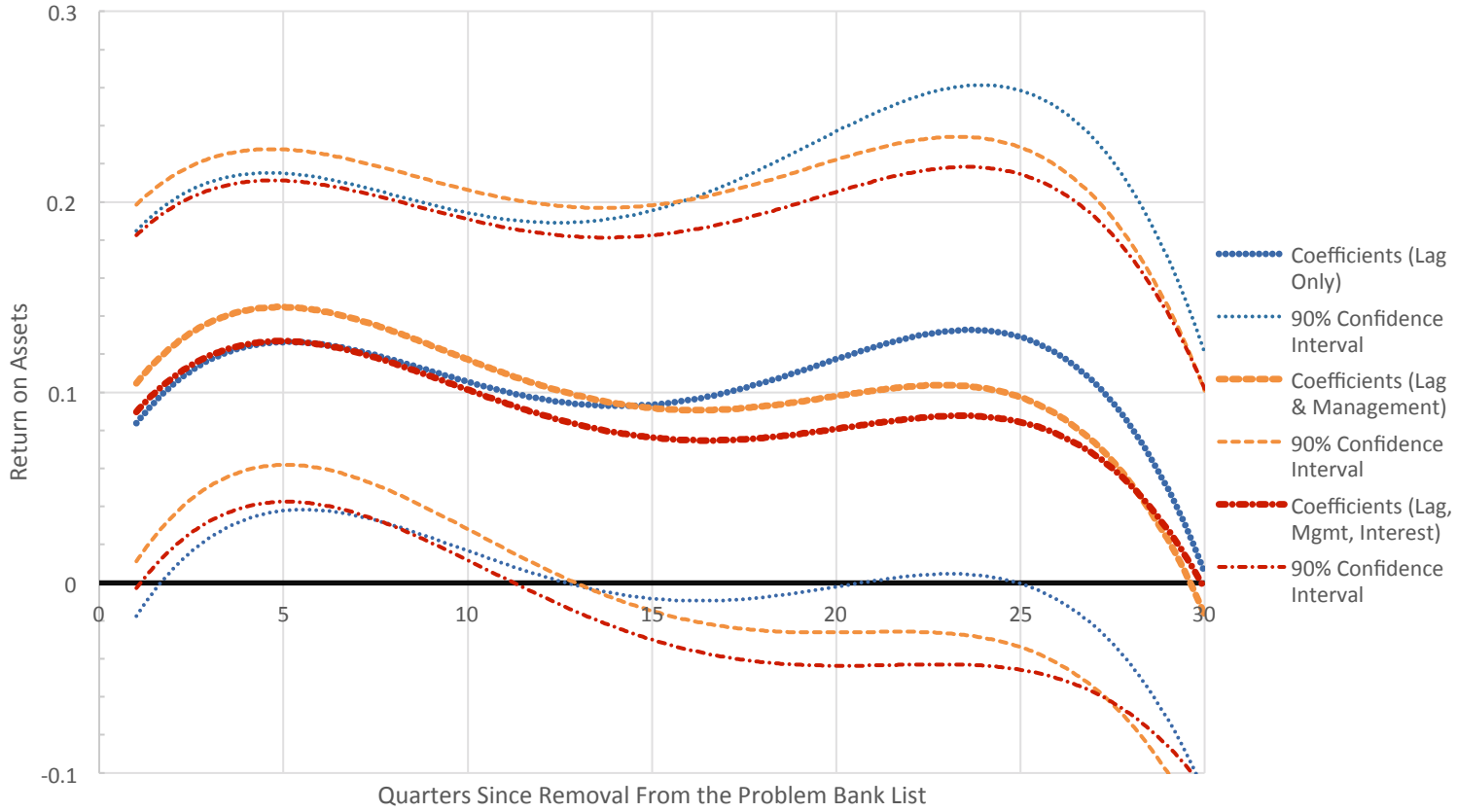


Figure 7 – The Effect of Termination of a Supervisory Action on Return on Assets
All Regressions Combined

This figure reports the both the 90% confidence intervals and coefficients of the quarter dummies indicating how long it has been since the removal of a bank from the problem bank list. The trend lines from Figures 4, 5, and 6 are reported together for comparison.



As demonstrated in Figure 7, including a battery of bank-specific controls as a proxy for bank management's actions in regression 3 has an ambiguous effect on the coefficients of the quarter variables. The coefficients rise by 1-3 basis points during the first 15 quarters since removal from the problem bank list, but drop by 1-3 basis points during the second 15 quarters. The coefficients' statistical significance stays approximately the same, becoming insignificant at the 10% level after approximately 12 quarters. Over the time range when the coefficients are significant, controlling for management actions results in an increase in the coefficients. The average rise in coefficients on quarter dummies resulting from controlling for management effects in the first 12 quarters since removal from the problem bank list is 1.64 basis points, or 15.5% of the average coefficient. Over a thirty-quarter time horizon, the average rise is only 0.96 basis points, or 8.8% of the average coefficient for the same time frame.

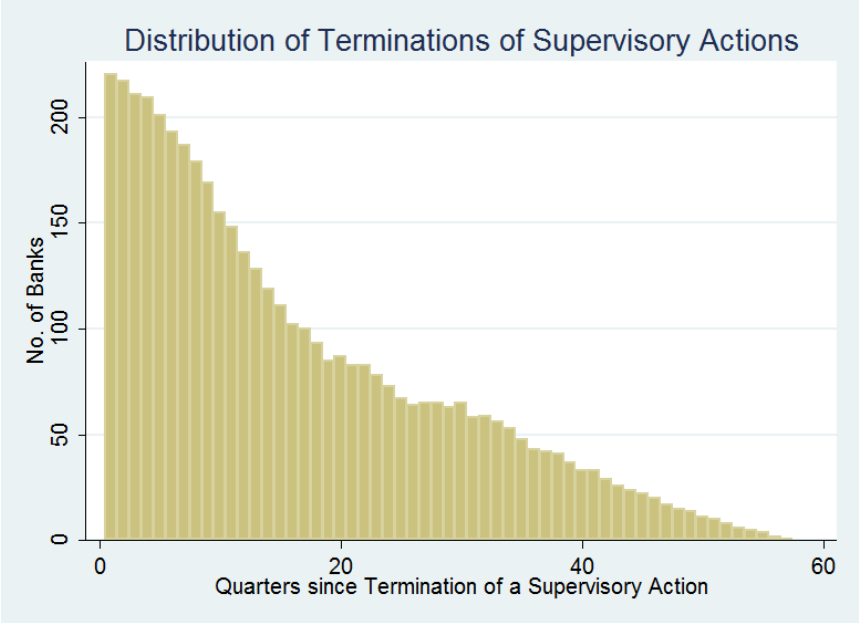
Interest expense is not a perfect proxy for the cost of capital for non-publicly traded banks. The fact that the FDIC insures all deposits to $250,000 means that bank deposits are a risk-free investment. However, for purposes of this regression, I treat the risk premium asked by depositors at problem banks as an annoyance premium. While it is true that no one will lose their money at a bank that fails, there is a cost in terms of time and effort in dealing with a failed bank. The rational consumer should, all else equal, demand an interest rate premium in exchange for the possibility that they will have to go through the trouble of changing all of their deposit accounts to a new bank and deal with getting their money back. The interest expense ratio also includes interest that banks pay on non-deposit funding sources such as bonds. As such, the interest expense ratio adequately reflects the cost of capital.

Including interest expense in the regression consistently lowers the coefficients on the quarter dummies by 1-2 basis points, as seen in Figure 7. This is consistent with the hypothesis that depositors and holders of bank debt take the removal from the problem bank list as a signal that the FDIC has effectively certified the safety and soundness of the bank's operations. Depositors and holders of bank debt demand less of a risk premium on their holdings with the bank, and so interest expense falls. By controlling for interest expense in regression 4 but not regression 3, I estimate the effect that the change in the risk premium has on ROA for banks that are removed from the problem bank list. The average drop in coefficients for the first 12 quarters since removal from the problem bank list is 1.68 basis points, or 13.9% of the average coefficient on the quarter dummy variables for the same time period. Over a thirty-quarter horizon, the average drop in coefficients is 1.39 basis points, or 12.8% of the average coefficient on the quarter dummy variables for the thirty-year period.

VI. Conclusion

Coming off of the FDIC's problem bank list is associated with a 10-20 basis point increase in return on assets for approximately three years. These results are robust to including a variety of control variables, including management actions and capital markets reactions. Post-removal capital markets reactions result in an average 1.7 basis points increase in return on assets, consistent with the hypothesis that depositors and investors are lowering the risk premium that they demand on deposits. Post-removal management actions result in an average 1.6 basis points decrease in return on assets in the three years following removal from the problem bank list, which may indicate that management has not fully internalized safe and sound operating procedures.

Figure 8 – Distribution of Duration Since Termination of a Supervisory Action



Further research should seek to identify more firm-specific characteristics that account for the remainder of the unexplained change in return assets following the removal from the problem bank list. A longer timeframe may also indicate that this unexplained effect lasts for a longer period of time. Figures 4 through 6 show that the drop in significance of the coefficients on the quarter dummies is primarily due to increasing standard errors, not decreasing coefficients. Figure 8 illustrates the distribution of quarter dummy variables that take a value of 1. The terminations of enforcement actions are semi-randomly

distributed throughout the timeframe of the data set, and so there are many more banks that have been off of the problem bank list for a short period of time than there are banks that have been off of the list for a long period of time. Performing the same regressions over a longer period of time will result in more banks that have been off of the list for a longer period of time. This larger sample size will lead to smaller standard errors, which may increase the significance of the coefficients on the quarter dummy variables over a longer timeframe than is presented here.

VII. Disclosures

The author completed an internship for the Federal Deposit Insurance Corporation (FDIC) during the summer of 2014, and remains an employee of the FDIC. No confidential or non-public information gained through affiliation with the FDIC was used in the research presented here. The views and findings of this article are solely those of the author and are not sanctioned by the FDIC.

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IX. Appendix

Table 3 –Regression Results: The Effect of Termination of a Supervisory Action on Return on Assets

This table provides regression results for the primary regression in this paper: the effect of being removed from the problem bank list on return on assets. Regression (1) uses only the dummy variables that indicate how long a bank has been off of the problem bank list to predict ROA. The dummy variable OffQ# takes a value of 1 if bank i was removed from the list in quarter t -(#-1). (2) adds lagged return on assets, and (3) adds bank-level controls to control for management actions. (4) adds interest expense to control for capital markets reactions. Robust standard errors appear in parentheses below the coefficient estimates. *, **, and *** denote statistical significance at the 10, 5, and 1 percent levels, respectively.

	(1)	(2)	(3)	(4)
VARIABLES	No Controls	No Controls Lag	Controls Lag	With Interest Expense
L.ROArev		0.712***	0.664***	0.658***
		(0.00341)	(0.00500)	(0.00504)
INTEXPrev				-0.134***
				(0.00630)
RBCrev			0.00124	-0.00325**
			(0.00138)	(0.00139)
ALLRAT			-0.126***	-0.132***
			(0.0178)	(0.0179)
SIZE			0.0255***	0.0407***
			(0.00904)	(0.00912)
DEPOSITSRAT			0.00127***	0.00148***
			(0.000185)	(0.000191)
NONINTRAT			0.247***	0.243**
			(0.0943)	(0.0951)
NONPERFORMRAT			-0.0454***	-0.0453***
			(0.00556)	(0.00560)
OffQ2	0.204**	0.0865	0.108*	0.0892
	(0.0929)	(0.0564)	(0.0590)	(0.0588)
OffQ3	0.290***	0.149**	0.161**	0.146**
	(0.0947)	(0.0697)	(0.0638)	(0.0643)
OffQ4	0.264***	0.0453	0.0734*	0.0588

	(0.0956)	(0.0587)	(0.0396)	(0.0400)
OffQ5	0.304***	0.100**	0.117**	0.0993**
	(0.0840)	(0.0499)	(0.0475)	(0.0479)
OffQ6	0.366***	0.152***	0.150***	0.136***
	(0.0854)	(0.0488)	(0.0514)	(0.0514)
OffQ7	0.446***	0.159***	0.199***	0.183***
	(0.0894)	(0.0509)	(0.0464)	(0.0470)
OffQ8	0.384***	0.108**	0.147***	0.123**
	(0.0940)	(0.0547)	(0.0522)	(0.0525)
OffQ9	0.447***	0.124**	0.132**	0.118**
	(0.101)	(0.0506)	(0.0545)	(0.0545)
OffQ10	0.514***	0.165***	0.170***	0.152***
	(0.106)	(0.0550)	(0.0563)	(0.0575)
OffQ11	0.472***	0.110***	0.112**	0.0950**
	(0.0943)	(0.0407)	(0.0436)	(0.0442)
OffQ12	0.353***	-0.00509	0.0378	0.0220
	(0.114)	(0.0680)	(0.0570)	(0.0584)
OffQ13	0.343***	0.0695	0.0524	0.0347
	(0.128)	(0.0605)	(0.0643)	(0.0654)
OffQ14	0.500***	0.191***	0.195***	0.180***
	(0.123)	(0.0646)	(0.0676)	(0.0678)
OffQ15	0.409***	0.0521	0.0359	0.0177
	(0.145)	(0.0613)	(0.0681)	(0.0685)
OffQ16	0.442***	0.101	0.0855	0.0711
	(0.148)	(0.0688)	(0.0749)	(0.0738)
OffQ17	0.484***	0.109*	0.101	0.0849
	(0.127)	(0.0579)	(0.0623)	(0.0620)
OffQ18	0.345**	0.0232	0.0292	0.0154
	(0.145)	(0.0793)	(0.0767)	(0.0759)
OffQ19	0.459***	0.169***	0.161***	0.151***
	(0.117)	(0.0455)	(0.0515)	(0.0516)
OffQ20	0.405**	0.191***	0.165***	0.149***
	(0.157)	(0.0562)	(0.0574)	(0.0569)
OffQ21	0.309*	0.115*	0.0972	0.0799
	(0.175)	(0.0640)	(0.0627)	(0.0616)
OffQ22	0.365**	0.0475	0.0338	0.0159
	(0.170)	(0.0799)	(0.0774)	(0.0764)
OffQ23	0.452**	0.170*	0.158	0.138
	(0.182)	(0.0896)	(0.0962)	(0.0958)
OffQ24	0.413**	0.103	0.106	0.0928
	(0.182)	(0.0763)	(0.0751)	(0.0753)

OffQ25	0.395**	0.0978	0.0674	0.0535
	(0.156)	(0.0952)	(0.101)	(0.101)
OffQ26	0.236	0.0467	0.00120	-0.0166
	(0.168)	(0.0735)	(0.0787)	(0.0803)
OffQ27	0.442***	0.198**	0.148**	0.137*
	(0.140)	(0.0801)	(0.0751)	(0.0745)
OffQ28	0.508***	0.151*	0.105	0.0911
	(0.162)	(0.0830)	(0.0865)	(0.0873)
OffQ29	0.494***	0.144***	0.106*	0.0928*
	(0.141)	(0.0527)	(0.0556)	(0.0561)
OffQ30	0.286*	-0.0391	-0.0623	-0.0196
	(0.160)	(0.0811)	(0.0816)	(0.0614)
OffQ31	0.269	0.0184	0.0101	0.00619
	(0.174)	(0.0731)	(0.0723)	(0.0716)
OffQ32	0.238	0.0778	0.0550	0.0360
	(0.183)	(0.0905)	(0.0942)	(0.0957)
OffQ33	0.286*	0.111*	0.0956	0.0772
	(0.160)	(0.0619)	(0.0628)	(0.0649)
OffQ34	0.366**	0.179**	0.144*	0.123
	(0.167)	(0.0791)	(0.0787)	(0.0794)
OffQ35	0.469***	0.181**	0.168**	0.155**
	(0.170)	(0.0738)	(0.0754)	(0.0763)
OffQ36	0.450***	0.126**	0.140***	0.127***
	(0.159)	(0.0572)	(0.0485)	(0.0490)
OffQ37	0.321*	-0.0213	-0.0331	-0.0447
	(0.169)	(0.0842)	(0.0830)	(0.0809)
OffQ38	0.178	-0.0419	-0.0635	-0.0758
	(0.195)	(0.130)	(0.137)	(0.136)
OffQ39	0.196	0.0883	0.0535	0.0401
	(0.179)	(0.0765)	(0.0788)	(0.0783)
OffQ40	0.162	0.0905	0.0480	0.0354
	(0.185)	(0.0835)	(0.0853)	(0.0864)
OffQ41	0.0922	0.00127	-0.00432	-0.0196
	(0.236)	(0.115)	(0.123)	(0.125)
OffQ42	0.0865	0.0465	0.0499	0.0338
	(0.215)	(0.0759)	(0.0732)	(0.0722)
OffQ43	0.329	0.155*	0.192*	0.183*
	(0.217)	(0.0855)	(0.101)	(0.104)
OffQ44	0.342	0.149	0.0975	0.0942
	(0.216)	(0.105)	(0.0918)	(0.0923)
OffQ45	0.187	-0.0424	-0.0137	-0.0161

	(0.193)	(0.0986)	(0.106)	(0.106)
OffQ46	-0.0331	-0.0424	0.227	0.220
	(0.332)	(0.294)	(0.169)	(0.176)
OffQ47	-0.321	-0.163*	-0.142	-0.148
	(0.346)	(0.0974)	(0.0955)	(0.0971)
OffQ48	-0.519	-0.183	-0.0759	-0.0752
	(0.390)	(0.180)	(0.122)	(0.125)
OffQ49	-0.365	0.135	0.251	0.246
	(0.429)	(0.211)	(0.187)	(0.182)
OffQ50	-0.192	0.123	0.245	0.239
	(0.399)	(0.186)	(0.154)	(0.153)
OffQ51	0.0610	0.0164	0.0413	0.0345
	(0.222)	(0.0820)	(0.0739)	(0.0752)
OffQ52	-0.0483	0.00682	0.0238	0.0140
	(0.214)	(0.0721)	(0.0654)	(0.0622)
OffQ53	-0.317	-0.168	-0.137	-0.150
	(0.277)	(0.223)	(0.287)	(0.298)
OffQ54	0.00773	0.231	0.294	0.287*
	(0.250)	(0.180)	(0.182)	(0.174)
OffQ55	0.134	0.124	0.121	0.118
	(0.270)	(0.138)	(0.133)	(0.136)
OffQ56	0.0615	0.0298	0.0334	0.0390
	(0.386)	(0.164)	(0.197)	(0.185)
OffQ57	0.193	0.00787	0.0913	0.0667
	(0.172)	(0.0416)	(0.0726)	(0.0643)
Constant	1.028***	0.335***	0.183**	0.349***
	(0.00844)	(0.00508)	(0.0751)	(0.0750)
Observations	332,479	321,579	311,643	308,560
R-squared	0.089	0.592	0.606	0.607
Number of certno	9,983	9,888	9,628	9,627
Bank FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1