Observing Enforcement: Evidence from Banking[☆]

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Abstract

We find the public disclosure of regulators' actions influences their enforcement behavior. Using a change in regulation regime, which required disclosure of bank enforcement actions (EDOs), we find that regulators start issuing more EDOs, intervening sooner, and relying more on publicly observable signals. The content of EDOs also changes, with documents becoming more complex and boilerplate. Our results suggest regulators respond to the increased public scrutiny of their actions. We also assess the impact of disclosure on bank outcomes and find a decline in deposits and an acceleration of bank failure, despite improvements in banks' capital ratios and asset quality.

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1. Introduction

> *There is now a widespread consensus on the need for regulation, but that still leaves open the question: even if we have good regulations, how do we ensure that they will be enforced? How do we prevent regulatory failure?*
>
> – Joseph Stiglitz, in "Regulation and Failure" (Stiglitz, 2009)

This paper studies the enforcement of regulations. Specifically, we assess whether observing regulators' supervisory actions changes their enforcement behavior. Regulators' supervisory activities allow them to produce otherwise unobserved information. Disclosing this information to the public could reduce information asymmetry between a regulated firm and its stakeholders, thereby improving the informativeness of market prices and the allocation of resources. However, the public disclosure of supervisory actions could also affect regulators' behavior for several reasons. First, it could have a disciplining effect on regulators by affecting their reputation and credibility. Disclosure increases the costs of forbearance, therefore, if regulators were concerned about their reputation and future career prospects, they would become stricter when their supervisory actions are public (Holmström, 1999). Second, once regulators' actions become observable, they might choose to take less contentious actions to reduce the possibility of lawsuits and ensure continued cooperation from the firms they supervise. Third, the disclosure of supervisory actions could lead to the regulator delegating some of the monitoring to the market and, as a result, exerting less effort (Goldstein & Sapra, 2014; Goldstein & Leitner, 2018; Leitner, 2014). Finally, in the banking sector, regulators might be concerned about the effect of disclosing enforcement actions on financial stability because disclosure might lead to a bank run and contagion (Diamond & Dybvig, 1983; He & Manela, 2016; Morris & Shin, 2002).

Although prior literature studies the impact of the disclosure of regulatory information on regulated entities, limited empirical evidence exists on the effect of disclosure on regulators and their incentives (Anbil, 2018; Docking et al., 1997; Jin & Leslie, 2003; Slovin et al., 1999).

One reason for the limited empirical evidence is that regulators' actions are typically unobservable in a non-disclosure regime. In this paper, we exploit the 1989 Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA), which, among other changes, required U.S. banking regulators to publicly disclose their enforcement actions against banks. Prior to the enactment of FIRREA, the presence of an enforcement action was generally private information and not widely disseminated.[1] Therefore, this setting allows us to study changes in regulators' behavior when their actions become observable. A key innovation of our paper is the identification of enforcement actions in the pre-FIRREA or non-disclosure regime by studying documents related to the termination of enforcement actions that were released in the period after the regime change. Termination documents indicate the type of enforcement action, the date of the issuance of the original enforcement action, the name of the bank, and the regulator who issued the action. We also collect a subset of enforcement actions from the pre-disclosure period from the U.S. National Archives and Records Administration. Unlike the post-FIRREA enforcement actions, the pre-FIRREA EDOs were not public in real time.

Enforcement actions (officially referred to as Enforcement Decisions and Orders or EDOs) are an important regulatory tool that bank regulators and supervisors use to require a bank to take corrective actions.[2] These orders provide an early warning sign to stakeholders about issues at the bank and convey information on actions that managers are required to take. Following on-site examinations, bank supervisors issue enforcement actions against a bank and its officers for management or financial problems, including poor loan administration or internal controls; inadequate capital, liquidity, or loan loss reserves; excessive asset growth or concentration; and inaccurate filings. Bank regulators issue formal enforcement orders when less formal methods of supervisory interventions have failed and they need to force a

[1] Publicly listed commercial banks were required to disclose information about enforcement actions in their 8-K filings in the pre-disclosure period. However, public banks represent less than 5% of our sample, and our search of local news produced only one mention of an EDO in the non-disclosure regime.

[2] In line with other research in this domain, we use the terms regulators and supervisors interchangeably.

bank to take corrective actions (Curry et al., 1999; Eisenbach et al., 2017; Hirtle et al., 2019). Violation of an enforcement action is a serious offense and could lead to monetary penalties or the withdrawal of deposit insurance. Although bank regulators have issued enforcement actions since 1966, contemporaneous information on enforcement actions has been publicly disclosed only since August 9, 1989, following the passage of FIRREA.

In our main tests, we study changes to regulators' decisions to issue enforcement actions, as well as changes to the textual content of enforcement orders. We find that, following the public disclosure of enforcement actions, regulators intervene more and rely more on publicly observable signals. For instance, in the non-disclosure regime, a bank in the 75th percentile of non-performing assets is only 1.48 times more likely than a bank in the 25th percentile to receive an EDO. In contrast, in the disclosure regime, a bank in the 75th percentile of non-performing assets is 1.75 times more likely than a bank in the 25th percentile to receive an EDO. Similarly, we find banks' capital ratio and profitability (as measured by return on assets) more strongly affect the regulators' decision to issue enforcement actions after the change in the disclosure regime. We also find that conditional on receiving an EDO, in the disclosure regime, banks receive EDOs faster, implying regulators intervene sooner. Our results are robust to using multiple sample periods and controlling for local macroeconomic conditions.

We analyze the content of enforcement actions and find they become more complex and less informative after the regime change. Specifically, controlling for bank characteristics and local economic conditions, we find EDO documents become longer, with the average number of words increasing by 46%. We also find post-disclosure documents have lower clarity, higher numerical intensity, and require an additional 5.5 years of education to comprehend. Finally, we observe that the use of boilerplate language increases in EDO documents after the regime change, indicating that although these documents become longer and more complex, they are not necessarily more informative.

We conduct additional tests to address concerns that factors other than the *disclosure*

of enforcement actions could explain our results. In particular, our findings could have four potential alternative explanations. First, conditions that led to the enactment of FIRREA, in the wake of the savings and loan (S&L) crisis, could have led to regulators changing their enforcement behavior. This crisis resulted in an unprecedented number of S&L (thrift) failures and cost taxpayers close to $125 billion. The thrift regulator, the Federal Home Loan Bank Board (FHLBB), came under heavy criticism for having allowed insolvent thrifts to continue operating and for lending to them on preferential terms. The Federal Savings and Loan Insurance Corporation (FSLIC), which administered deposit insurance for thrifts, became insolvent. FIRREA was in part meant to address the regulatory forbearance by the thrift regulator. Among other changes, FIRREA abolished the FHLBB and FSLIC, created the Resolution Trust Corporation to close insolvent thrifts, and created a new Treasury bureau (the Office of Thrift Supervision) for regulating thrifts. FIRREA also required thrifts to meet capital requirements similar to banks.[3] The negative publicity following the S&L crisis may naturally make regulators stricter and forbear less regardless of the disclosure of enforcement actions.

Second, FIRREA strengthened regulators' enforcement powers. For example, FIRREA expanded the regulators' ability to charge higher civil monetary penalties on non-complaint banks, promoted the independence of the FDIC, and allowed the FDIC to terminate deposit insurance more expediently. Third, the FDIC Improvement Act (FDICIA) of 1991 further increased the FDIC's enforcement powers. Among other changes, FDICIA introduced Prompt Corrective Action (PCA), which mandated early intervention based on capital levels (Aggarwal & Jacques, 2001; Altamuro & Beatty, 2010). Finally, anticipating stricter enforcement, banks could also have changed their behavior in the post-FIRREA period, making attributing the observed results solely to changes in regulators' incentives difficult.

We rule out these potential alternative explanations through our research design and analyses and conclude the disclosure of enforcement actions played a role in regulators'

[3]For more details, see Black (1990), Kane (1989) and Malloy (1989).

changing behavior, over and above these alternative explanations. Thrifts were at the center of the S&L crisis and the thrift regulator (FHLBB) was censured for its forbearance of risky and insolvent institutions. Figure 1 shows the cost to the deposit insurance fund for thrifts and commercial banks and demonstrates the loss was driven by the failure of thrifts. We exclude thrifts from our sample and focus our analyses on commercial banks, which were not regulated by the FHLBB. Furthermore, we conduct additional tests to rule out the alternative explanations. In particular, we identify situations in which there is variation in the impact of disclosure on regulators' incentives and interact the change in the disclosure regime with the factors that influence regulators' incentives.

We conduct two tests to assess whether negative public opinion in the aftermath of the S&L crisis led to the observed changes in regulators' actions. In the first set of tests, we investigate regulators' response in another crisis period when they faced significant negative public opinion but no change in the disclosure regime of enforcement actions. Specifically, we repeat our main analyses for the period around the financial crisis of 2007–2009. As opposed to our main results, we find regulators were more likely to forbear in the financial crisis. We also investigate whether the textual content of EDOs changes during the financial crisis and find the changes are not consistent with those observed after the change in the disclosure regime. Specifically, we find that during and after the financial crisis, boilerplate language and complexity decrease, whereas readability improves, suggesting EDOs contain more bank-specific information and are clearer. In our second test, we assess the persistence of our main results. The impact of negative public opinion is likely to be short-lived and our results should not be persistent if driven only by public opinion. On the contrary, our main results hold for a longer time frame and well after mentions of the S&L crisis declined in the news media. These results suggest our findings are unlikely to be driven solely by negative public opinion following the S&L crisis.

To tie our findings to the disclosure channel, and rule out the alternative that the increase in enforcement powers might drive our findings, we use differences in news circulation

across U.S. counties. Banks' stakeholders are more likely to learn about enforcement actions in regions with higher news coverage. Therefore, if the public disclosure of EDOs changes regulators' behavior, our findings should be stronger in regions with higher news circulation. However, if increased enforcement powers were driving changes in regulators' behavior post-FIRREA, we should not observe any variation in enforcement across counties with high and low levels of news circulation. The relationship between increased enforcement in the disclosure regime and news circulation also tells us about the particular incentives that drive regulators' behavior. If regulators were more concerned about their credibility and reputation, they would be more likely to enforce in regions with higher news coverage. However, if regulators were, on the margin, more concerned about bank runs and the impact of EDO disclosure on depositors, they would be less likely to enforce in counties with higher news circulation. Consistent with the former argument, we find regulators are 37% more likely to issue enforcement actions in counties with higher news circulation in the disclosure regime than in the non-disclosure regime. We also find regulators intervene sooner in counties with higher news circulation: conditional on receiving an EDO, banks in higher news circulation counties receive an EDO earlier in the disclosure regime. Our results hold after controlling for county-level determinants of news circulation, including the level of urbanization, per capita income, and employment growth. These findings suggest the public disclosure of EDOs drives the change in regulators' behavior, over and above any increases in enforcement capabilities.

A further concern is that FDICIA, introduced in December 1991, or banks changing their behavior in anticipation of regulatory change could explain our results. As described above, FDICIA introduced PCA, which mandated early intervention based on capital levels. The introduction of FDICIA is unlikely to have driven our results for several reasons. First, our reading of enforcement actions and conversations with bank examiners reveal that prior to PCA Orders, Cease and Desist (C&D) Orders contained similar requirements and corrective measures. Furthermore, in our sample, we observe only 12 PCA Orders, and their

exclusion does not change our inferences. Banks changing their behavior in anticipation of increased enforcement is also unlikely to explain our findings, because several of our results are inconsistent with this alternative.[4]

In the remaining part of the paper, we study the impact of the public disclosure of enforcement actions on bank outcomes. Consistent with depositors imposing market discipline after they are able to observe enforcement actions, we find uninsured deposits decline by 9% for banks receiving an EDO in the disclosure regime. Also, greater press coverage of enforcement actions is associated with a significantly larger 13.9% decline in uninsured deposits. This reaction to news coverage confirms the disclosure channel is important to uninsured depositors. We assess the impact of the disclosure of enforcement actions on bank failure and find banks receiving enforcement actions are 39% to 45% more likely to fail in the disclosure regime than in the non-disclosure regime. Also, conditional on failure, banks that receive an EDO in the disclosure regime fail 70% faster than banks that receive an EDO in the non-disclosure regime. This figure translates to an acceleration of nearly nine months, an economically significant effect. Finally, we find that following the change in the disclosure regime, banks receiving enforcement actions improved their capital ratios by 0.3% (9.4% of the sample standard deviation) and improved the quality of their asset portfolios by 0.7% (11.1% of the sample standard deviation) relative to banks not receiving enforcement actions.

Our work broadly contributes to several strands of the literature. First, our study relates to work on regulatory incentives by exploring how the public disclosure of regulators' actions changes their enforcement behavior (Agarwal et al., 2014; Costello et al., 2019; Granja & Leuz, 2019; Kedia & Rajgopal, 2011; Peltzman, 1976; Stigler, 1971). Given that supervisory actions are typically unobservable in a non-disclosure regime, our paper provides a unique opportunity to study changes in regulatory incentives once regulatory effort becomes observable. In particular, we find that when regulatory effort is observable, regulators enforce

[4]We discuss these alternatives further in subsection 5.3 and subsection 5.4.

more, intervene sooner, and rely more on publicly observable signals to issue enforcement actions. We also find the textual content of enforcement actions changes to become more boilerplate. These findings are consistent with Hansen et al. (2017), who analyze the text of the Federal Open Market Committee (FOMC) deliberations and find that career concerns matter for how policy makers respond to disclosure. More generally, the disclosure of supervisory actions could make regulators' more concerned about their reputation and could impose additional costs if they are viewed as incompetent or being too forbearing toward problem banks. These costs include increased public and congressional oversight or limited future career prospects. Our results related to changes in enforcement in higher news circulation counties suggest career concerns, rather than depositors' reactions, influence how regulators respond to increased transparency.

Second, we speak to the literature on the use of disclosure as an enforcement mechanism. The disclosure of supervisory actions is an important tool that regulators use to effectively enforce written rules and change the behavior of regulated entities. For example, Jin & Leslie (2003) find the disclosure of restaurant hygiene cards results in increased consumer sensitivity to hygiene and improved health outcomes. Duro et al. (2019) and Dechow et al. (2016) document the SEC's disclosure of comment letters leads to increased market discipline by investors and changes firm behavior. Similarly, the disclosure of Public Company Accounting Oversight Board (PCAOB) inspection reports and enforcement actions imposes costs on affected firms and results in investor and client reactions (Boone et al., 2015; Dee et al., 2011; DeFond, 2010; Lennox & Pittman, 2010). Consistent with these studies, we find that banks improve faster following the public disclosure of enforcement actions.

Third, our paper contributes to the literature on the role of disclosure of supervisory information as a disciplining device for financial institutions (Acharya & Ryan, 2016; Anbil, 2018; Bushman & Williams, 2012; Flannery, 1998; Flannery et al., 2013). Although the disclosure of supervisory actions has been shown to result in improved outcomes in many industries, banks are different from other regulated entities because they operate in a market

with frictions, and are prone to contagion and bank runs (Diamond & Dybvig, 1983; Granja, 2018; He & Manela, 2016; Morris & Shin, 2002). In the presence of such externalities, more information might lead to unintended consequences and increased costs (Anbil, 2018; Chen et al., 2018; Goldstein & Sapra, 2014; Goldstein & Leitner, 2018; Kleymenova, 2018; Thakor, 2015). We evaluate the impact of disclosure on bank outcomes and find a decline in deposits and acceleration of bank failure, despite improvements in banks' capital ratios and asset quality.

Finally, our study adds to the research investigating mandatory disclosure by bank regulators during the financial crisis, as well as to the literature related to bank enforcement actions (Beatty & Liao, 2014; Bischof & Daske, 2013; Curry et al., 1999; Delis et al., 2016; Ellahie, 2013; Gilbert & Vaughan, 2001; Peristiani et al., 2010; Roman, 2016; Wheeler, 2019). We add to these studies by providing evidence that disclosure of bank enforcement actions improves bank capital and the quality of loan portfolios and also has implications for bank failure. More importantly, we document that disclosure of regulatory actions affects regulatory incentives.

2. Background

Bank supervisory activities are meant to ensure banks follow safe and sound practices and do not engage in overly risky behavior, which could pose a threat to the stability of the banking system. As part of their supervisory activities, regulators issue enforcement actions against banks and their officers. These enforcement actions could be in response to several situations such as inadequate capital, liquidity, loan loss reserves, excessive risk-taking, or poor management. Although bank regulators could issue enforcement actions against banks following the Financial Institution Supervisory Act of 1966 (FISA), only in 1989, after the passage of FIRREA, were these enforcement orders publicly disclosed.

Bank regulators bring enforcement actions against problem banks as a measure of last resort and exercise some discretion in issuing enforcement actions. For instance, bank regula-

tors could adopt informal methods such as bank board resolutions, or issue a memorandum of understanding before resorting to more formal techniques such as a C&D order. The process for issuing an enforcement order starts with bank examiners giving a low CAMELS rating of 4 or 5 at the end of their examination of a bank and making a recommendation to their regional directors to initiate proceedings against a bank.[5]

The primary reason for issuing a formal enforcement order is to force the affected bank to take corrective actions (Curry et al., 1999; Hirtle et al., 2019; Srinivas et al., 2015). Once an enforcement order is issued, the bank has to take the corrective actions specified in the order. Upon successful completion of the required actions and improved CAMELS ratings from bank examiners, a termination order is issued. If a bank fails to satisfy the requirements of the order, the FDIC has the power to enforce it in U.S. district courts or terminate the bank's deposit insurance. If a bank fails, a formal termination order is issued. If a bank is acquired or merges with another bank, the original order remains under the original name of the bank, and the order is only terminated once the regulators are satisfied that the new entity has met the requirements spelled out in the original order. Sometimes, enforcement orders are modified to include additional conditions or requirements. We provide a schematic description of the C&D enforcement order process over time in Appendix A.

The move from a non-disclosing regime to a disclosing regime in 1989 followed a series of events that we summarize in Appendix B. The S&L crisis of the late 1980s and early 1990s sparked a debate regarding the role of market discipline and increased regulation in the banking industry. During this time, several banks failed, leading to a depletion of the FDIC deposit insurance fund. As a result, the FDIC chairman at the time, William M. Isaac, called for a greater role for market discipline in bank regulation and oversight. In 1985,

[5]CAMELS rating is an acronym for composite and component ratings issued by bank examiners at the end of their examination. The components are based on the evaluation of six critical elements of bank operations: capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to risk (market and interest rate). The highest rating is 1 and the lowest is 5. CAMELS ratings are not public and are only communicated to senior bank management and regional and national bank regulators. The examiners recommend issuance of an EDO based on the component ratings.

the FDIC released a proposal to disclose enforcement actions, allowing depositors and other funding providers to monitor banks with more tools at their disposal. However, this proposal received minimal support. Citing the fear of bank runs, banks vocally opposed the proposal: of the 768 comment letters the FDIC received, only 57 were in favor of implementing this change.[6] Most banks and banking associations argued the proposed changes would create bank runs and lead to financial instability.

In 1985, L. William Seidman was appointed chairman of the FDIC. Seidman compellingly argued in congressional testimony that the FDIC should take a leading role in the S&L cleanup, with Congress agreeing to insulate the FDIC chairman and vice-chairman from presidential removal before their appointed terms had finished.[7] The FDIC and other bank regulators were required to disclose final enforcement actions upon the August 1989 implementation of FIRREA, which ordered that "the appropriate Federal banking agency shall publish and make available to the public–(A) any final order issued with respect to any administrative enforcement proceeding initiated by such agency under this section or any other provision of the law; and (B) any modification or termination of any final order."[8]

3. Data and sample

Our data comes from several sources. We focus our empirical analyses on commercial banks and obtain financial data from Call Reports from the Federal Financial Institutions Examination Council (FFIEC). We collect all enforcement actions issued by bank regulators disclosed after the introduction of FIRREA in August 1989 from the S&P Global SNL Financial database. To identify enforcement actions in the pre-FIRREA (non-disclosure) period, we mainly rely on termination documents that were made public in the post-FIRREA (disclosure) period. If a bank received an enforcement order in the pre-FIRREA period, but

[6]See, for example, "FDIC May Delay Public-Disclosure Rule for Banks," *The Wall Street Journal*, December 11, 1985; "F.D.I.C. Decides to Disclose Disciplinary Actions," *The New York Times*, May 5, 1985.

[7]See "F.D.I.C. Chairman Asks Changes in Rescue Plan," *The New York Times*, March 9, 1989; "Bush Plan on Savings is Set Back," *The New York Times*, April 7, 1989.

[8]Section 913—Public Disclosure of Enforcement Actions Required of FIRREA.

this order was terminated after the passing of the Act, a public termination order reveals the identity of the bank that received an enforcement action in the non-disclosure regime as well as the date the enforcement order was originally issued. We also hand-collected a subset of enforcement actions from the pre-disclosure period (1983 and 1984) from the U.S. National Archives.[9]

A drawback of our sampling technique is that, apart from the hand-collected sample for 1983–1984, we observe enforcement orders that were initiated prior to and terminated after FIRREA, leading to potentially missing observations in the earlier years of our pre-disclosure sample. To manage this concern, we only include EDOs that were terminated post-FIRREA if they were issued in 1985–Q2 1989, or 4.5 years before the introduction of the Act. We terminate our sample in 1997 to avoid creating a panel that is more heavily weighted toward the post-FIRREA period. In the (pre-) post-FIRREA period, the mean length of an EDO is (3.5) 2.3 and the median is (3.1) 2.0 years. The longest EDO is (11.3) 11.8 years. Including the hand-collected EDOs for the years 1983–1984 expands our pre-FIRREA sample to years Q1 1983–Q2 1989. In Figure 2, we plot kernel distributions of the length of enforcement actions in the pre- and post-disclosure regimes. As can be seen from the figure, significant overlap exists between the distributions of the length of EDOs issued in the two regimes. In fact, the distributions are very similar for the sample of EDOs that were issued and terminated pre-FIRREA, and those that are issued and terminated post-FIRREA.

Several types of enforcement actions exist that vary by degree of severity. We restrict our analysis to the most common and severe types of enforcement actions: C&D orders, formal agreements/supervisory agreements, consent orders, and PCA orders. C&D orders are enforceable, injunction-type orders that may be issued to a banking organization when it engages, has engaged, or is about to engage in an unsafe or unsound banking practice or violation of the law. Formal agreements prescribe restrictions, corrective measures, and

[9]Unfortunately, due to confidentiality restrictions, these two years were the only ones for which we were able to retrieve additional EDOs. We have filed additional FOIA requests; however, the expected review time is longer than 30 months given the complexity of the data and confidentiality constraints.

remedies that banks must take to return to a safe and sound condition. PCA orders require banks to take certain corrective measures to protect or raise the level of their regulatory capital. We rely on SNL's classification of orders and verify them with the orders available on banking regulators' websites to ensure classification accuracy. Our main sample consists of 1,823 unique severe enforcement actions issued by all federal bank regulators for years 1983–1997, of which 302 are pre-FIRREA EDOs collected from the National Archives and termination orders.[10]

Since we use a new and comprehensive sample of enforcement actions, we first provide some descriptive evidence about the nature and content of enforcement actions. Table 1 shows the characteristics of enforcement actions issued by the FDIC from 1983 to 2017: their length in terms of the total number of words; the most commonly used phrases found in these enforcement actions (using bigrams); two widely used measures of content readability (Gunning FOG index and Flesch Grade Level readability score), and the usage of boilerplate language.[11]

As Table 1 shows, the focus of enforcement actions changed over time from unsafe and unsound practices to a greater emphasis on fiduciary duty towards depositors and deposit insurance. The years after the financial crisis (as well as 1991 and 1992) had the longest documents, averaging between 542 and 3,308 words. The average length of EDOs is 1,836 words. Due to their complexity, EDOs require on average, more than 17 years of education to understand the documents. The most commonly used phrases over the whole period are "supervisory authorities," "deposit insurance," and "federal deposit," which is not surprising given that we study the most severe enforcement actions from the FDIC. As can be seen from

[10] All federal banking regulators refer to the FDIC, Federal Reserve Bank System, and OCC. These severe EDOs, if issued to state-chartered banks, are jointly issued by the federal and state banking regulators. We checked a sample of EDOs issued only by state regulators and found they were primarily targeted at individual managers or employees at a given bank. As we do not include thrifts in our sample, we exclude enforcement actions issued by the OTS.

[11] We focus our textual analysis on the FDIC's severe actions, because this is the sample for which we were able to collect the most comprehensive set of documents pre- and post-FIRREA. We identified 2,546 severe enforcement actions issued by the FDIC that could be analyzed using textual analysis methods.

the table, the focus and content of EDOs change over time, with "federal deposit insurance" featuring more prominently in later years, especially after the financial crisis.

We provide additional information on the number of EDOs, their severity (measured as the length of time from issuance to resolution), and the name of the regulator issuing EDOs. Figure 3 presents the number and average length of EDOs and shows two distinct periods generated the highest volume of EDOs: during the resolution of the S&L crisis in the early 1990s and following the financial crisis in 2009–2011. The largest number of enforcement actions were issued after the financial crisis, with 2010 being the most active year, generating 874 enforcement actions. EDOs' length in 2017 is truncated because many of the EDOs issued in 2017 are still outstanding. Figure 4 shows the FDIC issues the highest number of EDOs, followed by the Federal Reserve (Fed), and the Office of the Comptroller of the Currency (OCC). The FDIC issued the highest number of EDOs after the financial crisis in 2010, with more than 350 enforcement actions issued that year.

In addition, we analyze the fines that regulators impose on financial institutions as monetary remedies following an enforcement action. These monetary penalties could be levied against a bank, an individual responsible for a particular action (e.g., a bank or a branch manager), or both. As mentioned above, the passage of FIRREA also increased the amount of penalties that regulators could impose on a bank or its managers. However, we find less than a quarter of banks are required to pay a monetary remedy.[12]

Table 2 shows the summary statistics for the full sample. Column (1) presents the means for banks that received an EDO (treated banks) for the quarter in which they received an EDO, and column (2) shows means of the main variables for all other banks that did not receive an EDO. Column (2) does not include any banks that received an EDO at any point in our sample period. Treated banks and other banks have similar levels of deposits. The log level of deposits is 10.8 for treated banks and 10.7 for other banks, which translate to an average of 90.6% of total assets for treated banks and 87.1% for other banks, indicating

[12]We include details related to penalties in Appendix D, Figure D1 and Figure D2.

treated banks are similar to other banks in terms of their reliance on deposit funding. On average, banks that receive an EDO in our sample have 59.3% of assets invested in loans (52.0% for other banks). Treated banks have lower capital ratios than other commercial banks (6.8% relative to 9.6%), higher non-performing loans (6.3% relative to 2.2% of banks without EDOs), lower profitability (with an average ROA being negative 0.6% relative to the positive 0.6% for other banks), and lower liquidity (7.0% relative to 7.6%). Finally, on average, banks that receive an EDO are larger than banks that do not. In our bank outcome tests, we rely on matched samples to minimize the differences in the observable characteristics between treated banks and our control sample.

4. The impact of EDO disclosure on regulators' incentives

In this section, we discuss our main empirical tests and results. We study changes in regulators' incentives in the two regimes and find that in the disclosure regime, regulators enforce more, intervene sooner, and rely more on publicly observable signals to issue enforcement actions. We also analyze the content of enforcement actions and find that following disclosure, enforcement actions become longer, more complex and harder to read, and use more boilerplate language. These changes are consistent with regulators being concerned about their reputation as well as the effect that disclosed EDOs might have on banks and depositors.

4.1. Changes in the determinants of enforcement actions

We begin our analyses by examining the role of bank-specific characteristics and the changing disclosure regime on the likelihood of banks' receiving an enforcement action. We predict the likelihood of a bank receiving an enforcement action in the two regimes by employing a Cox proportional-hazards model with time-varying covariates. Prior literature has used the proportional-hazards model to predict event occurrence, for example, the decision to privatize (Dinc & Gupta, 2011) and bank failure (Lane et al., 1986; Liu & Ngo, 2014). There are two main advantages to using the proportional-hazards model in our setting. First,

the model incorporates both the receipt of an EDO as well as the time of receiving an EDO. Second, the model is flexible because it is robust to a general baseline function which can take any shape necessary to describe the distribution of event occurrence in the population.[13]

The following model estimates the probability that a bank receives an enforcement action in quarter t, given that it has not received an enforcement action up to quarter $t-1$:

$$h(t_{ij}) = h_0(t)exp(\beta_1 Disclosure\ Regime_j + \beta_k X_{ij-1}), \tag{1}$$

where the time of an EDO is determined by the first time the regulator issues an enforcement action. The subscript i represents banks, and subscript j represents time periods allowing for time-varying covariates. The model assumes bank i's hazard rate at event time t_j is the product of some baseline hazard function $h_0(t)$ and risk factors specified by $exp(\beta_k X_{ij-1})$, where X represents the vector of explanatory variables. We adjust for year-specific effects by allowing the baseline hazards to be different for each year (i.e., stratify by year).

Disclosure Regime is an indicator variable that takes the value of 1 post-FIRREA, and 0 otherwise. To account for bank-specific characteristics that influence the probability of receiving an EDO, we control for size, capital ratio, non-performing assets ratio (a proxy for asset quality), return on assets (a proxy for profitability), and liquidity ratio. We expect that banks with higher levels of capital, higher profitability, and more liquid assets are less likely to receive enforcement actions, whereas those with higher values of non-performing assets are more likely to receive such actions. We also include changes in capital, liquidity, and loans. Banks with declining capital and liquidity are more likely to receive an EDO. Regulators might view very high loan growth as risky if banks are not well-diversified.[14] Finally, we include distance from the regulators' regional offices to control for regulatory attention (Gopalan et al., 2017; Kedia & Rajgopal, 2011; Tomy, 2019). In addition, we

[13] See Singer & Willett (2003) for more details related to the Cox model.

[14] In untabulated results, we also include changes in deposits. However, because changes in deposits and capital are highly correlated, we do not include this variable in our main specification.

control for employment growth as local economic conditions could influence the likelihood of receiving an EDO. We lag all explanatory variables by one quarter and provide detailed definitions of the variables in Appendix C.

We restrict our analysis to the years around the change in the regime, namely, 1983 to 1997. This period includes 6.5 years before the change in the regulation (Q1 1983–Q2 1989) and 8 years after the change (Q4 1989–Q4 1997). We remove EDOs that were received in Q3 1989, the quarter in which the disclosure regime changed. We expand the period after the change in regulation to eight years to minimize the impact of the period immediately following 1989, which coincides with the aftermath of the S&L crisis.

Table 3 reports the results of this estimation. Columns (1) and (2) show banks are more likely to receive an enforcement action in the disclosure regime. Column (1) does not adjust for year-specific effects, whereas column (2) allows the baseline hazard to vary by year. Columns (1) and (2) show banks with lower levels of capital, higher non-performing assets, lower profitability, and lower liquidity are more likely to receive enforcement actions. Banks with large negative changes in their capital ratios or loan portfolios also tend to receive enforcement actions with a higher likelihood. The coefficient on the distance to regulators' field offices is positive and statistically significant, suggesting more distant banks are more likely to receive EDOs. Because formal enforcement actions are a measure of last resort, a resource-constrained regulator may be less willing to spend time negotiating with banks that are farther away and more willing to issue enforcement actions against these banks.

In columns (3) to (6), we interact capital ratio, non-performing assets, return on assets, and liquidity with the disclosure-regime indicator. In column (3), a negative and significant coefficient on $Capital\ Ratio \times Disclosure\ Regime$ suggests a bank with a high capital ratio is less likely to receive an EDO in the disclosure regime than in the non-disclosure regime. Interpreting these results in terms of the hazard ratio over the distribution of capital ratio implies a bank in the 75th percentile of *Capital Ratio* is 0.67 times as likely as a bank in the 25th percentile of *Capital Ratio* to receive an EDO in the non-disclosure regime, whereas a

bank in the 75th percentile is only 0.56 times as likely as a bank in the 25th percentile of *Capital Ratio* to receive an enforcement action post-FIRREA.

Column (4) shows that non-performing assets are a significant predictor of EDOs in both regimes. The positive coefficient on *Non-Performing Assets* × *Disclosure Regime* suggests a bank with high non-performing assets is more likely to receive an EDO in the disclosure regime. In terms of magnitude, in the non-disclosure regime, a bank in the 75th percentile of *Non-Performing Assets* is 1.48 times more likely than a bank in the 25th percentile to receive an EDO. In the disclosure regime, this ratio increases to 1.75. We find similar results for return on assets in column (5). A bank in the 75th percentile of *Return On Assets* is 0.88 times as likely as a bank in the 25th percentile to receive an EDO in the non-disclosure regime; however, in the disclosure regime, a bank in the 75th percentile of *Return On Assets* is only 0.75 times as likely to receive an EDO. We do not find the liquidity ratio to be incrementally significant in the disclosure regime. In column (7), we include all four interactions and find the results related to non-performing assets and return on assets continue to hold. We lose significance on the capital ratio interacted with the disclosure-regime indicator.[15]

Finally, in column (8), we estimate an accelerated-time model to ascertain if regulators intervene sooner in the disclosure regime. Specifically, we estimate the following model:

$$log(t_{ij}) = \beta_1 Disclosure\ Regime_j + \beta_k X_{ij-1} + log(\tau_{ij}), \tag{2}$$

where t_{ij} is the survival time for bank i and the residual τ_{ij} is assumed to have a Weibull distribution. The remaining variables are defined above. Column (8) presents the results from the estimation of Equation 2. The coefficient of -1.232 on the disclosure-regime indicator converts to a time ratio of 0.29 ($e^{-1.232}$), which indicates that, conditional on receiving

[15] In untabulated analysis, we find a high degree of correlation between the four interacted variables and the disclosure-regime indicator in column (7), resulting in the risk that multicollinearity could bias our coefficient estimates. We do not find similar high correlations between the explanatory variables in columns (1) to (6), and so, we base our interpretations on the findings in these columns.

a EDO, banks received an enforcement action 71% (1-0.29) faster in the disclosure regime.

The results in columns (1) to (8) of Table 3 indicate that in the disclosure regime relative to the non-disclosure regime, publicly observable signals, such as non-performing assets and return on assets, are stronger determinants of the likelihood of a bank receiving an enforcement action and, conditional on receiving an EDO, regulators intervene sooner.

We conduct several additional analyses to assess the robustness of our findings. The results of these robustness tests are presented in Appendix D and support our main conclusions. First, to address concerns about increasing trends in the dependent variable prior to the regime change, we test for pre-trends between banks that received EDOs and those that did not. A test that the coefficients for the pre-FIRREA years jointly equal zero fails to reject the null of parallel trends. The coefficients plot in Figure D3 of Appendix D shows this result graphically. Second, we repeat our main analysis using a linear probability model, controlling for year-quarter and bank fixed effects. Our main results continue to hold (see Appendix D, Table D1). Third, we conduct additional analyses to address concerns that our method of constructing the pre-FIRREA sample could be biasing our results. As described in Section 3, our sample of pre-FIRREA enforcement actions for 1985–Q2 1989 is biased toward more severe EDOs, which take longer time to resolve. To assess the impact of the missing, shorter in resolution time EDOs on our results, we conduct an additional robustness test by restricting the pre-FIRREA sample to 1983–1984. The sample for these two years is hand-collected from the National Archives and therefore contains shorter EDOs as well. We conduct a rolling-window analysis where for the pre-FIRREA years of 1983–1984, we select all possible consecutive 16-quarter windows in the post-FIRREA period and repeat our main specification. As Appendix D, Figure D4 shows, our results generally hold in these sub-samples, reducing concerns that the missing short EDOs could be biasing our results. Overall, these findings confirm our hypothesis that regulators change their enforcement behavior when their efforts become observable.

4.2. Changes in the content of enforcement actions

Economic theory predicts that although transparency can have a disciplining effect on agents and make them exert more effort when their actions are observable, it can also be detrimental and increase herding and conformity (Holmström, 1999; Prat, 2005). Empirical literature examining transparency of monetary policy deliberations (disclosure of FOMC meetings and discussions) finds disclosure decreases dissent and increases conformity (Meade & Stasavage, 2008) and while both conformity and discipline effects are present, the discipline effect dominates in this setting (Hansen et al., 2017). We investigate whether the content of enforcement actions changes as a result of the change in the disclosure regime, and anticipate that if regulators are concerned about the impact of disclosing EDOs on their reputation, they will provide more legal information and less specific details in the publicly disclosed EDOs, making them more conforming (Hansen et al., 2017). We employ textual analysis techniques and analyze the severe EDOs issued by the FDIC using our hand-collected sample of enforcement actions for 1983–1984 and the publicly disclosed EDOs from Q4 1989–Q4 1997. We control for bank characteristics and the local economic conditions as in our other specifications, but given that we do not observe many banks with multiple enforcement actions in our sample period, we do not include fixed effects. If the change in the disclosure regime affects regulatory incentives, we expect the content of enforcement actions to become less clear and informative and more conforming or boilerplate once it is disclosed publicly. Therefore, we focus our analyses on the measures of complexity, such as the document length (measured as the natural logarithm of the number of words in a document), clarity (measured as the Gunning FOG index), overall document readability (measured as the Flesch Grade Level readability), numerical intensity (the relative percentage of numerical characters in the document), and finally the percentage of boilerplate language used.

We rely on prior studies, which analyze the textual content of public financial disclosures, to identify proxies for document complexity and readability. In particular, document length is computed based on the number of words and has been used as a measure of the quantity of

disclosure (Li, 2008, 2010). Gunning FOG index and the Flesch Grade Level readability index are constructed based on the usage of complex words in sentences and capture the number of years of education required to understand a given body of text (Li, 2008, 2010). These proxies for document readability have been used to evaluate investors' and analysts' understanding of financial disclosures (Lehavy et al., 2011; Miller, 2010). Similarly, numerical intensity has been used as a measure of information content and usefulness to investors (Li, 2010; Bozanic et al., 2018). Finally, financial regulators and accounting standard setters have identified the increased usage of boilerplate language as a potential attempt to reduce legal or reputation exposure rather than provide additional information, making disclosures with boilerplate language less informative (Lang & Stice-Lawrence, 2015). Following Lang & Stice-Lawrence (2015), we define boilerplate language as standardized disclosure that is so prevalent that it is unlikely to be informative. We measure boilerplate language by identifying four-word phrases (tetragrams) that are extremely common across documents in a given year after removing common and stop words such as "federal deposit insurance corporation", "and" or "bank" from the text of EDOs.[16] The measure relies on the assumption that using these most common phrases does not provide new incremental information, because it repeats the language of other EDOs. The measure of the usage of boilerplate language is the percent of words in the text of EDOs that contain at least one of these boilerplate phrases.

Table 4 presents our main findings. Columns (1) and (2) show that following the change in the disclosure regime, EDO documents become longer, with the average number of words increasing by approximately 46%. Columns (3) and (4) show that enforcement actions also become less clear, with the FOG index indicating a significant increase in complexity of the words and structures used. This result is confirmed by our findings in columns (5) and (6) that document a significant increase in the number of years of education required to understand these documents: in the disclosure regime, an additional 5.5 years of education

[16]Only tetragrams that occur in at least 80% of the documents in a given year are considered to be boilerplate.

are required to understand the text of EDOs. In addition to being more complex, EDOs also contain more numerical information following the change in the disclosure regime, with numerical intensity increasing by 1.3 percentage points. Finally, columns (9) and (10) show that in addition to the increased complexity of EDO documents, some of the increase in the length is coming from the use of the boilerplate language. In particular, we find the use of boilerplate language increases by 10%. This increase combined with the increase in document length is indicative of regulators employing more standardized and legal language in enforcement orders.

Overall, our analysis of EDOs' content indicates that following the change in the disclosure regime, publicly disclosed enforcement actions become more complex and difficult to understand. Some of this increase in complexity is due to increased usage of boilerplate language, consistent with regulators trying to protect their reputation and putting more complex boilerplate and legal language into the text of enforcement actions once they become observable.

5. Ruling out alternative explanations

5.1. Negative publicity due to the S&L crisis

As discussed in the introduction, a potential alternative explanation for our findings is that regulators might be responding to the negative publicity following the S&L crisis. Although the negative publicity was driven by the failure of thrifts, and therefore targeted at the thrift regulators, the regulators of commercial banks could have experienced negative spillover effects as well. We exclude thrifts, their regulators, and any enforcement actions they issue from our analyses, and limit our sample to commercial banks throughout.

To assess whether our results are driven by the negative publicity following the S&L crisis, we investigate regulators' response in another crisis period when they faced significant negative public opinion but with no change in the disclosure of enforcement actions. Specifically, we rerun our main analyses for the period around the Great Recession. We use data

from 2003–2017 and run variations of the following model:

$$h(t_{ij}) = h_0(t)exp(\beta_1 Crisis_j + \beta_1 Post\ Crisis_j + \beta_k X_{ij-1}), \tag{3}$$

where *Crisis* is an indicator variable that equals 1 for the quarters during the Great Recession in Q4 2007–Q2 2009, consistent with the NBER dates for the recessionary period, and 0 otherwise. *Post Crisis* is an indicator variable that equals 1 for Q3 2009–Q4 2017, and 0 otherwise. The remaining variables are defined as before. Table 5, Panel A, shows the estimation results. This table is analogous to Table 3 except that the *Disclosure Regime* indicator is replaced with crisis-period indicators. As can be seen from Table 5, Panel A, our main results do not generally hold in this sample. Column (1) estimates Equation 3 without controlling for year effects, whereas column (2) controls for year effects by allowing the baseline hazards to be different for each year. As can be seen from column (2), the insignificant coefficients on *Crisis* and *Post Crisis* indicate that, conditional on covariates, regulators are not more likely to issue enforcement actions in the aftermath of a crisis. In columns (3) to (7), we interact the crisis-period indicators with capital ratio, non-performing assets, return on assets and the liquidity ratio. We assess the results relative to our findings in Table 3. Although we still find a negative and significant coefficient on the capital ratio interacted with crisis-period indicators, we find opposite signs on the interactions with non-performing assets and return on assets. That is, banks with high non-performing assets and low profitability are not more likely to receive an enforcement action. Finally, the results in column (8) are estimates from an accelerated-time model, and show regulators do not intervene sooner to issue EDOs. Overall, these results indicate that, unlike in the disclosure-regime after FIRREA, regulators are in fact more likely to forbear during and after a crisis.

We also investigate whether the content of EDOs changes during and after the financial crisis. Using the same time period and textual analysis variables as described above, we find that during and after the financial crisis, the content of EDOs changes in a different direction

than what we have documented for the change in the disclosure regime. Table 5, Panel B, shows that while the length of EDOs increases during the financial crisis and after the crisis relative to the pre-crisis period, complexity actually decreases significantly and readability improves. The regulators also use less boilerplate language during this time, suggesting that enforcement actions issued and disclosed during and after the financial crisis contain more bank-specific information and are clearer. These findings suggest our main results are unlikely to be driven by negative publicity for regulators in the aftermath of a crisis.

A concern with the above tests is that the financial crisis of 2007–2009 occurred in a different time period and many factors could have changed, which may be driving the difference in our findings. Therefore, we devise a second test to assess whether our results are driven by negative public opinion. Specifically, we test whether our main findings persist in a longer, non-crisis time frame. If negative publicity following the S&L crisis were driving our results, we should not observe persistent effects, but rather short-lived effects around the time when the negative public opinion against bank regulators was at its peak. We use news coverage of the S&L crisis as a measure of public opinion. Figure 6 shows the number of articles in the Dow Jones news database *Factiva* that are related to variations of the search terms *S&L crisis*, *savings and loan crisis*, or *thrift failure*. As the figure shows, the press coverage of the crisis was at its peak in 1988–1991. Our sample already extends to 1997. As an additional robustness, we expand our sample to 1983–2007 and include indicator variables for Q4 1989–Q4 1997 and 1998–2007. We find our main results hold in both periods, confirming that our findings are persistent over a longer time horizon, and therefore are unlikely to be driven by negative public opinion following the S&L crisis. These results are presented in Appendix D, Table D2. As a further check of the robustness of our results, we re-estimate our main model (Equation 1) for consecutive 16-quarter windows in the pre- and post-FIRREA periods after expanding the sample to 1983–2007. We find consistent results over this larger time frame. This last set of tests is discussed in greater detail in subsection 6.4 below. Overall, the results discussed in this section allow us to

conclude that our findings are unlikely to be driven by negative publicity related to the S&L crisis.

5.2. Regulators' increased enforcement powers

We next address whether the change in regulators' enforcement powers could potentially explain our results. We tie changes in regulators' actions to the disclosure channel by exploring the impact of news circulation on regulators' enforcement activities in the two regimes. If public disclosure of EDOs influenced regulators' incentives, higher news circulation would influence regulators' behavior, because banks' stakeholders would be more likely to learn about the enforcement action in regions with higher news coverage. However, if increased enforcement powers were driving changes in regulators' behavior in the disclosure regime, we should not observe any variation in enforcement across regions with high and low levels of news circulation. The relationship between increased enforcement in the disclosure regime and news circulation also tells us about the particular incentives that drive regulators' behavior. If regulators were more concerned about their credibility and reputation, they would be more likely to enforce in regions with higher news coverage, consistent with the argument that transparency disciplines regulators. However, if regulators were, on the margin, more concerned about bank runs and the impact of EDO disclosure on depositors, they would be less likely to enforce in regions with higher news circulation.

To test the incremental impact of news circulation on changes in regulators' behavior in the two regimes, we estimate the following Cox proportional-hazards model:

$$\begin{aligned} h(t_{ijc}) = h_0(t) exp(&\beta_1 Disclosure\ Regime_j + \beta_2 News\ Circulation_c \\ &+ \beta_3 Disclosure\ Regime_j \times News\ Circulation_c + \beta_k X_{ij-1}), \end{aligned} \tag{4}$$

where $News\ Circulation$ is a county-level (c) measure of newspaper readership. Following Gentzkow et al. (2011), we define newspaper circulation as the number of newspaper copies

scaled by the population of the county.[17] The remaining variables are defined above.

A potential concern is that news circulation could be confounded by other factors that are related to the probability of receiving an enforcement action. For example, county characteristics such as per capita income or the employment rate could drive both news circulation and the likelihood of banks receiving enforcement actions (if regulators paid differential attention to high- and low-income counties). We follow prior literature on news circulation and control for variables that are likely to be correlated (Bishop et al., 1980). These variables include urbanization and per capita income in a county. Furthermore, our specification estimates the incremental effect of disclosure in high-news-circulation counties.

We also estimate an accelerated-time model to assess whether regulators intervene sooner in counties with high or low news circulation, using the following specification:

$$\begin{aligned} log(t_{ij}) = {} & \beta_1 Disclosure\ Regime_j + \beta_2 News\ Circulation_{ijc} \\ & + \beta_3 Disclosure\ Regime_j \times News\ Circulation_{ijc} \\ & + \beta_k X_{ij-1} + log(\tau_{ij}), \end{aligned} \tag{5}$$

where t_{ij} is the time to receiving an EDO for bank i at time j, and the residual τ_{ij} is assumed to have a Weibull distribution. The remaining variables are defined above.

We present results from the estimation of Equation 4 and Equation 5 in Table 6. Columns (3), (6), and (9) present the results from the estimation of the accelerated-time model (Equation 5), whereas the remaining columns present the results from the Cox model (Equation 4).

In columns (1), (2), and (3), we define *News Circulation* as an indicator variable that equals 1 for counties in the highest quintile of newspaper circulation and 0 otherwise. Column (1) does not control for year effects, whereas columns (2) and (3) control for year

[17] The county-level news-circulation measure is available for the presidential election years of 1984, 1988, 1992, and 1996. We interpolate the data for the missing years. This measure does not vary significantly over time in our sample period. For example, the Pearson (Spearman) correlation between news circulation in 1984 and 1996 is 0.807 (0.883) with p-value < 0.0001. We plot kernel densities for the measure in these two years and find similar distributions.

effects by allowing different baseline hazards for each year. The positive coefficient of *Disclosure Regime* × *News Circulation* in columns (1) and (2) suggest counties in the highest quintile of *News Circulation* are more likely to receive an enforcement action in the disclosure regime. Column (3) presents results for the accelerated-time model (Equation 5). The negative coefficient on *Disclosure Regime* × *News Circulation* indicates regulators intervene sooner in counties with high news circulation. Results in these columns suggest a strong relation between changes in regulators' enforcement in the disclosure regime and news circulation.

In columns (4)–(6) of Table 6, we use a continuous measure of news circulation. Column (4) presents the results from the estimation without accounting for year effects, whereas columns (5) and (6) control for year-specific effects. In columns (4) and (5), although the coefficient of the interaction of news circulation with the disclosure-regime indicator is positive, it is no longer statistically significant. Column (6) presents results for the accelerated-time model, and as before, the results suggest regulators intervene sooner in counties with high news circulation.

Our findings of significant results when using an indicator variable for the highest quintile of news circulation but not a continuous measure suggests a non-linear relationship, and that the effect of news circulation increases with its level. Therefore, in columns (7)–(9), we include $News\ Circulation^2$ as a control variable. Results in columns (7) and (8) show a positive and significant coefficient on *Disclosure Regime* × *News Circulation*. The coefficient of 0.317 in column (8) suggests regulators are 37% more likely to issue an EDO in counties with high news circulation in the disclosure regime, relative to the non-disclosure regime.[18] Finally, column (9) presents the results from the accelerated-time model. The coefficient of −0.355 on *Disclosure Regime* × *News Circulation* converts to a time ratio of 0.70 ($e^{-0.355}$), which indicates that, conditional on receiving an EDO, banks in high-news-circulation counties received an EDO 30% (1-0.70) faster in the disclosure regime. These

[18] Calculation: $(e^{0.317} - 1) * 100 = 37\%$.

results confirm our main findings that regulators intervene faster in the disclosure regime, and that the disclosure of enforcement actions drives their incentives. Overall, the results in this section provide evidence of the link between the disclosure channel and regulators' changing incentives.

5.3. Impact of FDICIA

The FDICIA introduced in December 1991 led to the adoption of prompt corrective action. PCA classifies banks into five categories (from well capitalized to critically undercapitalized) based on their capital levels, and requires regulators to intervene and apply increasingly stringent restrictions if capital falls below certain thresholds. The adoption of FDICIA only two years after FIRREA introduces the concern that our results could be driven by early intervention by regulators because of PCA. Due to the characteristics of our sample and findings, FDICIA is unlikely to explain all of our results. First, our sample contains only 12 PCA orders and removing these does not qualitatively change our results. Second, our reading of enforcement actions and conversations with bank examiners reveal that C&D orders contained PCA-type requirements even before the introduction of FDICIA. For example, an enforcement action issued by the FDIC to Farmers State Bank, Ludell, Kansas, on October 13, 1989, states "No more than 90 days from the effective date of this ORDER, the Bank shall have equity capital, exclusive of the allowance for loan and lease losses, at or in excess of 6 percent of the Bank's average total assets ("equity capital ratio") and shall thereafter maintain its equity capital ratio at or in excess of such level as calculated herein while this ORDER is in effect." Finally, our results related to regulators' relying more on publicly observable signals, enforcing more in counties with high news circulation, and changes in the textual content of EDOs cannot easily be explained by early intervention due to prompt corrective actions.

5.4. Banks changing behavior in anticipation of the change in the disclosure regime

An additional concern is that banks may be changing their behavior in anticipation of increased enforcement in the new regime. Although disentangling the effect of changes in the behavior of banks from that of regulators is difficult, we argue our results are unlikely to be driven by banks changing their conduct in anticipation. We find that after the regime change, regulators issue more EDOs, intervene sooner, and rely more on publicly observable signals. These results are inconsistent with banks changing their behavior in anticipation of the regime change. For example, if banks improved their quality post-FIRREA, regulators would issue fewer EDOs, not more. Also, the first mention of public disclosure of EDOs occurred on February 11, 1985.[19] Our results hold on restricting the pre-FIRREA sample to 1983–1984, or before the first mention of public disclosure of EDOs.[20] Furthermore, our results related to changes in the textual content of EDOs, with these documents becoming more complex and boilerplate, cannot be reconciled with the alternative that banks changing their behavior in anticipation of regulatory change drive our results.

6. Additional analyses and robustness

6.1. Impact of EDO disclosure on depositors

If the disclosure of enforcement actions leads to depositors exercising market discipline and withdrawing their funds, we would expect the change in the disclosure regime to result in higher withdrawals from depositors at banks that receive an EDO. We start by assessing the potential impact on all deposits, and then delineate between deposits that are covered by the FDIC deposit insurance. Because the uninsured deposits are at a higher risk were a bank to fail, we expect uninsured depositors to withdraw funds more quickly if they are concerned about the soundness of a bank receiving an EDO.

[19] See Appendix B for a timeline of events leading up to FIRREA.
[20] These results are presented in Appendix D, Figure D4.

We split deposits between FDIC insured and uninsured (more at-risk deposits) for a subset of banks in the disclosure regime. We match banks that receive an EDO and those that do not based on their size (total assets) and geographic location (county) to control for bank characteristics and changes in local economic conditions.[21] We estimate the following model:

$$\begin{aligned} Y_{it} = \beta_0 + \beta_1 Treatment_i + \beta_2 Post\ EDO_{i\tau} \\ + \beta_3 Post\ EDO_{i\tau} \times Treatment_i + \gamma X_{i\tau-1} + \alpha_i + \delta_t + \epsilon_{it}, \end{aligned} \tag{6}$$

where Y_{it} refers to total deposits, insured deposits, and uninsured deposits, measured as natural logarithms. *Treatment* is an indicator that takes the value of 1 for banks that receive an EDO, and 0 otherwise. *Post EDO* takes the value of 1 for the 12 quarters after the EDO has been received, and 0 for the 12 quarters prior to the receipt of an EDO. We restrict the sample to these 24 quarters. $X_{i\tau-1}$ is a vector of control variables including bank size (natural logarithm of total assets), profitability (measured as the return on assets), and bank liquidity (measured as the ratio of liquid assets relative to total assets). We also include a control for local economic conditions using county-level employment growth. Bank-specific control variables are lagged by one quarter. We define the variables in more detail in Appendix C. α_i and δ_t are bank and year-quarter fixed effects, respectively. With the full set of fixed effects, the main effect on the *Treatment* indicator is subsumed. Our main coefficient of interest is β_3, which measures the effect of receiving an EDO on deposits in the disclosure regime.

We present our findings in Table 7, Panel A, which shows total deposits decrease by 3.8%. The decrease in uninsured deposits, which decline by 9.0% (column 9) drives this decrease. This finding is consistent with uninsured depositors responding to enforcement actions once they have been disclosed publicly, and suggests depositors and, more specifically, uninsured depositors impose market discipline on affected banks. Overall, our results are in line with

[21] In this analysis, we are unable to match on additional bank characteristics because of the number of banks in a given county. We limit our analyses of insured and uninsured deposits to the disclosure regime due to limited data availability in our pre-FIRREA period.

Anbil (2018) and Chen et al. (2018), who find uninsured depositors respond to the disclosure of bad news by withdrawing their funds.

To address the potential concern that depositors might not know about the existence of enforcement actions, and to tie the *disclosure* of enforcement actions to bank outcomes, we investigate the press coverage of enforcement actions in the disclosure regime once EDOs become publicly observable. We manually search the NewsBank archives for local newspapers covering all banks that receive EDOs in our sample across all U.S. states and identify whether the news of an EDO is covered by the media. Figure 7 shows significant variation across years in the news coverage of EDOs. We construct an indicator variable, *News Coverage*, which takes the value of 1 if an EDO receives news coverage by local media, and 0 otherwise, and interact it with our *Post EDO* indicator. Similar to the above, we control for bank characteristics and changes in the local economic conditions, and include bank and year-quarter fixed effects. With the inclusion of bank fixed effects, the main effect on the *News Coverage* indicator is subsumed.

We present our findings for banks that receive EDOs in Table 7, Panel B. Column (9) shows the results of our main specification for uninsured deposits, which decrease by 13.9% for banks whose EDOs are covered by the local news relative to the uninsured deposits of EDO banks whose enforcement actions do not receive media coverage. We do not find a statistically significant difference in the log levels of total and insured deposits between EDO banks based on their local news coverage. These findings suggest uninsured depositors are more likely to monitor banks and respond to the public news coverage of their banks' EDOs.

6.2. Impact of EDO disclosure on bank failure

Next, we assess the impact of the disclosure of enforcement actions on bank failure by estimating hazard models of failure time. If regulators are more concerned about their reputation in the disclosure regime, they are more likely to issue EDOs to failing banks. As our findings above suggest, in the disclosure regime, depositors view the issuance of an EDO as an early warning signal. Bank failure without this early warning would bring into

question the credibility of the regulator. We use bank-failure data and a hazard model to estimate the probability that a bank fails in quarter t given that it has survived until quarter $t-1$. Our main specification is as follows:

$$\begin{aligned} h(t_{ij}) = h_0(t) exp(&\beta_1 Disclosure\ Regime_j + \beta_2 Treatment_i \\ &+ \beta_3 Treatment_i \times Disclosure\ Regime_j + \beta_k X_{ij-1}), \end{aligned} \tag{7}$$

where $Treatment$ is an indicator variable that takes the value of 1 for banks that received an enforcement action, and 0 otherwise. *Disclosure Regime* is an indicator variable that equals 1 in the period after the change in regulation, and 0 otherwise. The subscript i represents a bank, and j allows for the incorporation of time-varying covariates. X_{ij-1} is a vector of k control variables based on prior literature and includes size, capital ratio, non-performing assets, liquidity ratio, interest on deposits, portfolio composition, and employment growth (Lane et al., 1986). We define our variables in more detail in Appendix C. We estimate semi-parametric (Cox hazard) and parametric (Weibull) variations of Equation 7.[22]

Table 8, columns (1)–(4), presents our findings. In columns (1) and (2), we include the interaction of $Treatment$ with the disclosure-regime indicator. Column (1) presents the results from the semi-parametric (Cox hazard) model, and column (2) from the parametric (Weibull) model. The coefficient on the $Treatment \times Disclosure\ Regime$ indicator is positive and significant with similar magnitudes of 2.113 and 2.190, suggesting that failing banks are more likely to receive enforcement actions in the disclosure regime. In columns (3) and (4), we introduce several control variables and find similarly positive and significant coefficients with magnitudes of 1.394 and 1.449. As before, we find the magnitude of coefficients is similar for the semi-parametric and parametric specifications, suggesting the Weibull distribution is a reasonable assumption for the functional form of $h_0(t)$. The results

[22]The Cox hazard model is generalizable for any baseline hazard function $h_0(t)$. The Weibull model assumes a parametric baseline hazard of the form $h_0(t) = pt^{p-1}exp(\beta_0)$, where p is the shape parameter and $exp(\beta_0)$ is the scale parameter.

in columns (3) and (4) indicate banks that received enforcement actions have a hazard of failure that is 39% to 45% higher in the disclosure regime. Our results are consistent with the explanation that regulators care about the public perception of their actions, target EDOs at problem banks, and intervene at a later stage when banks are closer to failure.

One reason for bank failure is depositors withdrawing their funds from the bank. In subsection 6.1, we show depositors react to the information about enforcement actions. Therefore, the disclosure of EDOs could accelerate bank failure and lead to the failure of a bank that would otherwise have recovered in the non-disclosure regime. Regulators face the trade-off between intervening and accelerated bank failure due to depositors withdrawing their funds. To assess whether the disclosure of EDOs accelerates bank failure, we estimate accelerated failure-time models of the following form:

$$log(t_{ij}) = \beta_k X_{ij-1} + log(\tau_{ij}), \tag{8}$$

where t_{ij} is the survival time for bank i, and the residual τ_{ij} is assumed to have a Weibull distribution. Coefficient estimates β_k will allow us to assess the impact of covariates on logged survival times. X_{ij-1} represents the vector of control variables.

Results from the estimation of Equation 8 are presented in column (5) of Table 8. The coefficient of -1.196 on $Treatment \times Disclosure\ Regime$ converts to a time ratio of 0.30 ($e^{-1.196}$). The exponentiated coefficient of 0.30 implies that conditional on failure, banks that received an EDO in the disclosure regime failed 70% $(1 - 0.30)$ faster than banks that received an EDO in the non-disclosure regime. This figure translates to an acceleration of approximately nine months.[23] The signs of the coefficients indicate how the covariates affect logged survival times. For instance, a positive coefficient on *Capital Ratio* indicates banks with higher capital ratios have higher logged survival times. Results in this section suggest

[23]The unconditional average number of months between receiving an EDO and bank failure is 29 months in the pre-disclosure period for EDOs issued and terminated in the pre-disclosure period. In the disclosure regime, this average falls to 15 months.

EDOs are more strongly associated with bank failure in the disclosure regime, and conditional on failure, the disclosure of EDOs accelerates bank failure. Our results are consistent with the hypothesis that regulators face reputation costs in the disclosure regime and, therefore, when facing a trade-off between accelerated bank failure and intervening, they choose to intervene.

6.3. Impact of EDO disclosure on other bank outcomes

In this section, we investigate whether the change in the regulators' incentives and resulting increased oversight affect banks' ability to lend and improve capital and asset quality. To account for changes in the macroeconomic and enforcement environments, we create a matched control sample (as described below) that consists of banks similar to treated banks based on observable characteristics. Banks that receive an EDO at a point in time form our treatment sample, and banks that do not receive an EDO form our control sample. Using matched banks, we create a stacked panel in which each EDO bank and its control bank have 24 quarters of data: 12 quarters before the receipt of an EDO and 12 quarters after, including the quarter when an EDO is received (*Post EDO*). We introduce an indicator variable for banks that receive an EDO (*Treatment*) and estimate the following model:

$$\begin{aligned} Y_{it} = {} & \theta_0 + \theta_1 Treatment_i + \theta_2 Post\ EDO_{i\tau} \\ & + \theta_3 Treatment_i \times Post\ EDO_{i\tau} \\ & + \theta_4 Treatment_i \times Disclosure\ Regime_t \\ & + \theta_5 Post\ EDO_{i\tau} \times Disclosure\ Regime_t \\ & + \theta_6 Treatment_i \times Post\ EDO_{i\tau} \times Disclosure\ Regime_t \\ & + \gamma X_{i\tau-1} + \alpha_i + \delta_t + \epsilon_{it}, \end{aligned} \tag{9}$$

where Y_{it} corresponds to the ratio of loans to total deposits (*Loans*), total equity to total assets (*Capital Ratio*), and total non-performing assets to total assets (*Non-Performing Assets*). θ_6 is the parameter of interest, which measures the effect of the change in the

disclosure regime on banks that receive an EDO relative to control banks. We expect θ_6 to be significant if disclosure affects our outcome variables. We include the same control variables, and use year-quarter and bank-level fixed effects to account for unobserved heterogeneity. We include bank and year-quarter fixed effects. The main effect on *Treatment* is subsumed with the inclusion of bank-level fixed effects. We present our findings in Table 9.

To create the control sample, we use a two-step matching procedure using entropy balancing, a multivariate reweighing method that allows users to reweigh a dataset in such a way that the covariate distribution in the reweighed data satisfies a specified set of moment conditions (Hainmueller, 2010). We construct our subsample to achieve covariate balance between treatment and control banks in the pre- and post-disclosure periods using size (natural logarithm of total assets), profitability (ROA), capital ratio, and liquidity ratio as observable characteristics, and requiring covariate balance to be achieved on the first two moments.[24] Table 9, Panel A, shows we indeed achieve covariate balance and the first two moments of treatment and control samples are not significantly different from each other. After this first data-processing step, we use propensity score matching to construct our final matched sample. Table 9, Panel B, shows the results of our estimation using the matched sample. We find that affected banks experience a relative 1.8% decline in total loans (column 3) and a 0.9% decline in total deposits (column 6), and improve their capital ratios relative to control banks by 1.0% (column 9). Overall, we find that relative to other similar banks not subject to an enforcement action, EDO banks significantly improve their capital ratios after the change in the disclosure regime.

6.4. Economic trends

We assess the impact of changing economic trends on our results related to changes in regulators' incentives. We expand the post-FIRREA period to 2007 (prior to the Great Recession) and re-estimate models (2)–(5) of Table 3 for consecutive 16-quarter windows in

[24] In untabulated analyses, we use other matching techniques to construct alternative matched samples. Our main findings remain robust to these alternative matching techniques.

the pre- and post-FIRREA periods. Specifically, we conduct a rolling-window analysis where, for each 16-quarter window in the pre-disclosure period, we select all possible consecutive 16-quarter windows in the disclosure period. We then re-estimate the Cox hazard models for all possible combinations of pre- and post-FIRREA periods.[25]

The results of this analysis are presented in Figure 8. Plots of coefficients of the *Disclosure Regime* indicator are presented in Panel A. The coefficient values are consistently positive over the entire sample period, suggesting that, controlling for covariates, regulators are more likely to issue enforcement actions in the disclosure regime than in the non-disclosure regime. Panel B, Panel C and Panel D plot the coefficients of *Capital Ratio*×*Disclosure Regime*, *Non-performing Assets*×*Disclosure Regime*, and *Return On Assets*×*Disclosure Regime*. Although the plots show a trend over time, the figures are consistent with our findings that relative to the non-disclosure regime, regulators in the disclosure regime are more likely to issue enforcement actions against banks that have lower capital ratios, higher non-performing assets, and lower profitability.

7. Conclusion

Following the financial crisis of 2007–2009, banking regulators were called to increase the transparency of their regulatory and supervisory actions and to release more information. However, the debate regarding whether more information is necessarily better in the setting of interconnected banks prone to runs and contagion has not yet been settled. Although proponents of increased regulatory disclosure argue it facilitates market discipline and improves bank monitoring, critics say that in the presence of negative externalities and the risk of contagion, increased transparency might lead to an inefficient allocation of resources and bank runs. Moreover, the disclosure of regulatory actions makes regulatory effort observable and, as a result, might change regulators' incentives.

[25] In this analysis, we drop year indicators from the model because our objective is to assess the variation in coefficients over time.

In this paper, we find that observing regulators' supervisory actions changes their enforcement behavior. We use the setting of the 1989 Financial Institutions Reform, Recovery, and Enforcement Act, which mandated public disclosure of bank enforcement actions, and a novel sample of pre-disclosure enforcement actions, to study how regulators' respond to the public scrutiny of their actions. We find that in the disclosure regime, regulators are more likely to issue enforcement actions, intervene sooner, and rely more on publicly observable signals to issue enforcement actions. Using textual analysis methods, we also find evidence of regulators using more conforming, complex and boilerplate language in the text of their enforcement decisions. Taken together, our results suggest that regulators care about the public perception of their actions and change their behavior in response.

There are several reasons for regulators to change their behavior in response to public scrutiny, and an understanding of these reasons would contribute to our knowledge of the effectiveness of disclosure as an enforcement tool. One explanation is that disclosure disciplines regulators who are driven by reputation concerns and future career prospects, and would take the actions necessary to protect their credibility and reputation. Another reason is that regulators may be worried about the disclosure of enforcement actions creating a bank run and leading to contagion and financial instability, and would therefore modify their actions to minimize this possibility. Our findings suggest that supervisors take into account the trade-off between regulatory incentives and the impact of providing more information on banks and depositors. For instance, although we find that regulators increase enforcement and intervene sooner in regions where banks' stakeholders are more likely to learn about the enforcement action (suggesting a reputation-channel), they also make the text of enforcement actions less informative in the disclosure period, consistent with a concern about causing panic among depositors that could lead to a bank run.

We also assess whether the disclosure of enforcement actions improves bank outcomes. We find that banks' asset quality and capital ratios improve faster after disclosure, however, there is a decline in deposits and an acceleration of bank failure. We conduct analyses to

assess the robustness of our results, and tie our findings to the disclosure channel.

Overall, our paper contributes to the ongoing debate about the impact of disclosure of supervisory actions on regulators, depositors, and banks. The main policy implication of our findings is that bank regulators and supervisors take into account the trade-off between regulatory incentives and the impact of providing more information on banks and depositors. While we address potential alternative explanations and show that our findings are robust, our results are still limited to the sample period we study and are based on the sample of enforcement actions we could identify.

References

Acharya, V. V., & Ryan, S. G. (2016). Banks' financial reporting and financial system stability. *Journal of Accounting Research*, *54*, 277–340.

Agarwal, S., Lucca, D., Seru, A., & Trebbi, F. (2014). Inconsistent regulators: Evidence from banking. *The Quarterly Journal of Economics*, *129*, 889–938.

Aggarwal, R., & Jacques, K. T. (2001). The impact of FDICIA and prompt corrective action on bank capital and risk: Estimates using a simultaneous equations model. *Journal of Banking & Finance*, *25*, 1139–1160.

Altamuro, J., & Beatty, A. (2010). How does internal control regulation affect financial reporting? *Journal of Accounting and Economics*, *49*, 58–74.

Anbil, S. (2018). Managing stigma during a financial crisis. *Journal of Financial Economics*, *130*, 166–181.

Balakrishnan, K. (2018). Information costs and financial reintermediation: Evidence from corporate frauds. Working paper.

Beatty, A., & Liao, S. (2014). Financial accounting in the banking industry: A review of the empirical literature. *Journal of Accounting and Economics*, *58*, 339–383.

Bischof, J., & Daske, H. (2013). Mandatory disclosure, voluntary disclosure, and stock market liquidity: Evidence from the EU bank stress tests. *Journal of Accounting Research*, *51*, 997–1029.

Bishop, R. L., Sharma, K., & Brazee, R. J. (1980). Determinants of newspaper circulation: A pooled cross-sectional time-series study in the United States, 1850-1970. *Communication Research*, *7*, 3–22.

Black, W. K. (1990). Ending our forebearers' forbearances: FIRREA and supervisory goodwill. *Stanford Law & Policy Review*, *2*, 102–116.

Boone, J., Khurana, I., & Raman, K. K. (2015). Did the 2007 PCAOB disciplinary order against Deloitte impose actual costs on the firm or improve audit quality? *The Accounting Review*, *90*, 405–441.

Bozanic, Z., Roulstone, D., & Van Buskirk, A. (2018). Management earnings forecasts and other forward-looking statements. *Journal of Accounting and Economics*, *65*, 1–20.

Bushman, R. M., & Williams, C. D. (2012). Accounting discretion, loan loss provisioning, and discipline of banks' risk-taking. *Journal of Accounting and Economics*, *54*, 1–18.

Chen, Q., Goldstein, I., Huang, Z., & Vashishtha, R. (2018). Bank transparency and deposit flows. Working paper.

Costello, A. M., Granja, J., & Weber, J. (2019). Do strict regulators increase the transparency of banks? *Journal of Accounting Research*, *57*, 603–637.

Curry, T. J., O'Keefe, J. P., Coburn, J., & Montgomery, L. (1999). Financially distressed banks: How effective are enforcement actions in the supervision process? *FDIC Banking Review*, *12*, 1–18.

Dechow, P., Lawrence, A., & Ryans, J. (2016). SEC comment letters and insider sales. *The Accounting Review*, *91*, 401–439.

Dee, C., Lulseged, A., & Zhang, T. (2011). Client stock market reaction to PCAOB sanctions agains a Big 4 auditor. *Contermporary Accounting Research*, *28*, 263–291.

DeFond, M. (2010). How should the auditors be audited? Comparing the PCAOB inspections with the AICPA peer reviews. *Journal of Accounting and Economics*, *49*, 104–108.

Delis, M. D., Staikouras, P. K., & Tsoumas, C. (2016). Formal enforcement actions and bank behavior. *Management Science*, *63*, 959–987.

Diamond, D., & Dybvig, P. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, *91*, 401–419.

Dinc, I. S., & Gupta, N. (2011). The decision to privatize: Finance and politics. *Journal of Finance*, *66*, 241–269.

Docking, D. S., Hirschey, M., & Jones, E. (1997). Information and contagion effects of bank loan-loss reserve announcements. *Journal of Financial Economics*, *43*, 219–239.

Duro, M., Heese, J., & Ormazabal, G. (2019). The effect of enforcement transparency: Evidence from SEC comment-letter reviews. *Review of Accounting Studies*, *24*, 780–823.

Eisenbach, T. M., Haughwout, A., Hirtle, B., Kovner, A., Lucca, D. O., & Plosser, M. C. (2017). Supervising large, complex financial institutions: What do supervisors do? Working paper.

Ellahie, A. (2013). Capital market consequences of EU bank stress tests. Working paper.

Flannery, M. J. (1998). Using market information in prudential bank supervision: A review of the U.S. empirical evidence. *Journal of Money, Credit and Banking*, *30*, 273–305.

Flannery, M. J., Kwan, S. H., & Nimalendran, M. (2013). The 2007–2009 financial crisis and bank opaqueness. *Journal of Financial Intermediation*, *22*, 55–84.

Gentzkow, M., Shapiro, J. M., & Sinkinson, M. (2011). The effect of newspaper entry and exit on electoral politics. *American Economic Review*, *101*, 2980–3018.

Gilbert, R. A., & Vaughan, M. D. (2001). Do depositors care about enforcement actions? *Journal of Economics and Business*, *53*, 283–311.

Goldstein, I., & Leitner, Y. (2018). Stress tests and information disclosure. *Journal of Economic Theory*, *177*, 34–69.

Goldstein, I., & Sapra, H. (2014). Should banks' stress test results be disclosed? An analysis of the costs and benefits. *Foundations and Trends in Finance*, *8*, 1–54.

Gopalan, Y., Kalda, A., & Manela, A. (2017). Hub-and-spoke regulation and bank leverage. Working paper.

Granja, J. (2018). Disclosure regulation in the commercial banking industry: Lessons from the national banking era. *Journal of Accounting Research*, *56*, 173–216.

Granja, J., & Leuz, C. (2019). The death of a regulator: Strict supervision, bank lending and business activity. Working paper.

Hainmueller, J. (2010). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political Analysis*, *20*, 25–46.

Hansen, S., McMahon, M., & Prat, A. (2017). Transparency and deliberation within the FOMC: A computational linguistics approach. *The Quarterly Journal of Economics*, *133*, 801–870.

He, Z., & Manela, A. (2016). Information acquisition in rumor-based bank runs. *Journal of Finance*, *71*, 1113–1158.

Hirtle, B., Kovner, A., & Plosser, M. (2019). The impact of supervision on bank performance. Federal Reserve Bank of New York Staff Report No. 768.

Holmström, B. (1999). Managerial incentive problems: A dynamic perspective. *The Review of Economic Studies*, *66*, 169–182.

Jin, G. Z., & Leslie, P. (2003). The effect of information on product quality: Evidence from restaurant hygiene grade cards. *The Quarterly Journal of Economics*, *118*, 409–451.

Kane, E. J. (1989). The high cost of incompletely funding the FSLIC shortage of explicit capital. *Journal of Economic Perspectives*, *3*, 31–47.

Kedia, S., & Rajgopal, S. (2011). Do the SEC's enforcement preferences affect corporate misconduct? *Journal of Accounting and Economics*, *51*, 259–278.

Kleymenova, A. (2018). Consequences of mandated bank liquidity disclosures. Working paper.

Lane, W. R., Looney, S. W., & Wansley, J. W. (1986). An application of the Cox proportional hazards model to bank failure. *Journal of Banking & Finance*, *10*, 511–531.

Lang, M., & Stice-Lawrence, L. (2015). Textual analysis and international financial reporting: Large sample evidence. *Journal of Accounting and Economics*, *60*, 110–135.

Lehavy, R., Feng, L., & Merkley, K. (2011). The effect of annual report readability on analyst following and the properties of their forecasts. *The Accounting Review*, *86*, 1087–1115.

Leitner, Y. (2014). Should regulators reveal information about banks? *Federal Reserve Bank of Philadelphia Business Review*, *Third Quarter*.

Lennox, C., & Pittman, J. (2010). Auditing the auditors: Evidence on the recent reforms to external monitoring of audit firms. *Journal of Accounting and Economics*, *49*, 84–103.

Li, F. (2008). Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics*, *45*, 221–247.

Li, F. (2010). Textual analysis of corporate disclosures: A survey of the literature. *Journal of Accounting Literature*, *29*, 143–165.

Liu, W.-M., & Ngo, P. T. (2014). Elections, political competition and bank failure. *Journal of Financial Economics*, *112*, 251–268.

Malloy, M. P. (1989). Nothing to fear but FIRREA itself: Revising and reshaping the enforcement process of federal bank regulation. *Ohio State Law Journal*, *50*, 1117–1157.

Meade, E. E., & Stasavage, D. (2008). Publicity of debate and the incentive to dissent: Evidence from the US Federal Reserve. *The Economic Journal*, *118*, 695–717.

Miller, B. (2010). The effect of reporting complexity on small and large investor trading. *The Accounting Review*, *85*, 2107–2143.

Morris, S., & Shin, H. S. (2002). Social value of public information. *American Economic Review*, *92*, 1521–1534.

Peltzman, S. (1976). Toward a more general theory of regulation. *The Journal of Law and Economics*, *19*, 211–240.

Peristiani, S., Morgan, D. P., & Savino, V. (2010). The information value of the stress test and bank opacity. Working paper.

Prat, A. (2005). The wrong kind of transparency. *American Economic Review*, *95*, 862–877.

Roman, R. A. (2016). Enforcement actions and bank loan contracting. *Economic Review (Kansas City)*, *101*, 69–101.

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford university press.

Slovin, M. B., Sushka, M. E., & Polonchek, J. A. (1999). An analysis of contagion and competitive effects at commercial banks. *Journal of Financial Economics*, *54*, 197–225.

Srinivas, V., Byler, D., Wadhwani, R., Ranjan, A., & Krishna, V. (2015). Enforcement actions in the banking industry: Trends and lessons learned. Deloitte University Press.

Stigler, G. J. (1971). The theory of economic regulation. *The Bell Journal of Economics and Management Science*, *2*, 3–21.

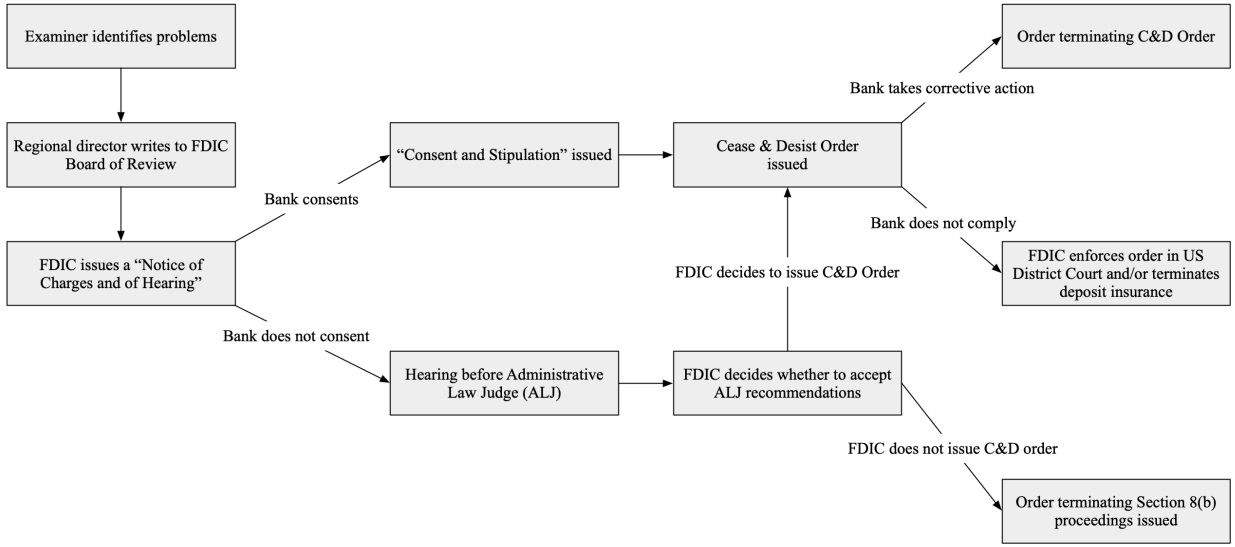
Stiglitz, J. (2009). Regulation and failure. *New Perspectives on Regulation*, (pp. 13–25).

Thakor, A. (2015). Strategic information disclosure when there is fundamental disagreement. *Journal of Financial Intermediation*, *24*, 131–153.

Tomy, R. E. (2019). Threat of entry and the use of discretion in banks' financial reporting. *Journal of Accounting and Economics*, *67*, 1–35.

Wheeler, P. B. (2019). Loan loss accounting and procyclical bank lending: The role of direct regulatory actions. *Journal of Accounting and Economics*, *67*, 463–495.

Appendix A. FDIC's process for issuing Cease and Desist orders



Source: "FDIC Enforcement Decisions" Volume I published by Prentice Hall (1988), authors' reading of enforcement actions and interviews.

Appendix B. Events leading up to the disclosure of enforcement actions

August 1981	Ronald Reagan appoints William M. Isaac as chairman of the FDIC. In his first 10 months (August 1981–June 1982), Isaac oversees the disbursement of over $1.5 billion in deposit insurance, three times as much as the FDIC had paid out in its first 47 years of existence. [1]
April 3, 1983	In an environment of mounting bank failures, William M. Isaac argues for regulatory reform through informed investors wielding information regarding banks' problem loans and interest rate vulnerability. [2]
May 1984	Continental Illinois National Bank, with $40 billion in assets, fails. It is the largest bank failure in the FDIC's history at the time. [3]
February 11, 1985	The FDIC proposes making weekly disclosure of the names of banks and employees cited in enforcement actions taken against the 8,850 banks it regulates and solicits comments from the public. [4]
February - May 1985	The FDIC receives 768 comment letters regarding the February proposal, with only 57 favoring the agency's plan. [5]
May 6, 1985	The FDIC votes unanimously to disclose when the FDIC enters a final enforcement action against a bank, rolling back, in part, its February plan. The new rule is set to take effect on January 1, 1986. [6]
October 1, 1985	William M. Isaac leaves the FDIC; L. William Seidman is appointed as chairman. [7]
December 11, 1985	The FDIC prepares a proposal to defer the January 1, 1986, implementation of disclosure policy. Seidman favors postponement in order to move forward in conjunction with the Comptroller of the Currency and the Federal Reserve Board. [8]

March 8, 1989	FDIC Chairman L. William Seidman testifies before the House Banking Committee's Subcommittee on Financial Institutions, stating that the proposed Bush bailout plan for savings institutions does not give the FDIC enough power to act expediently in revoking deposit insurance of member banks, nor does it provide enough independence to the FDIC since the plan gives the President authority to remove the FDIC's chairman and vice chairman at will. [9]
April 6, 1989	The House Banking subcommittee amends the Bush Administration's rescue plan for the savings industry, expanding the FDIC's jurisdiction and insulating it from White House intervention by prohibiting the President from removing the chairman before his four-year term expires. [10]
August 9, 1989	George H.W. Bush signs the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) of 1989. FIRREA expands the enforcement authority of bank regulators, giving regulators expanded cease-and-desist authority and the authority to terminate insured banks' coverage more expediently. Regulators are also given the authority to temporarily suspend deposit insurance to a bank with no tangible capital. Enforcement actions were made public under this regulation. [11]

[1] Jack Anderson and Dale Van Atta, "Heroics at the FDIC," *The Washington Post*, August 4, 1985.

[2] William M. Isaac, "Forum: A Challenge for Financial Regulators Instilling Discipline in Banks," *The New York Times*, April 3, 1983.

[3] "Federal Deposit Insurance Corporation Historical Timeline." FDIC.

[4] Monica Langley, "FDIC Proposes Full Disclosure of Enforcement," *The Wall Street Journal*, February 12, 1985.

[5] Nathaniel C. Nash, "FDIC Decides to Disclose Disciplinary Actions," *The New York Times*, May 7, 1985.

[6] Nathaniel C. Nash, "FDIC Decides to Disclose Disciplinary Actions," *The New York Times*, May 7, 1985.

[7] Kenneth N. Gilpin and Eric Schmitt, "Ex-F.D.I.C. Chairman Said to Form New Firm," *The New York Times*, January 7, 1986.

[8] Monica Langley, "FDIC May Delay Public-Disclosure Rule for Banks," *The Wall Street Journal*, December 11, 1985.

[9] Nathaniel C. Nash, "FDIC Chairman Asks Changes in Rescue Plan," *The New York Times*, March 9, 1989.

[10] Nathaniel C. Nash, "Bush Plan On Savings Is Set Back," *The New York Times*, April 7, 1989.

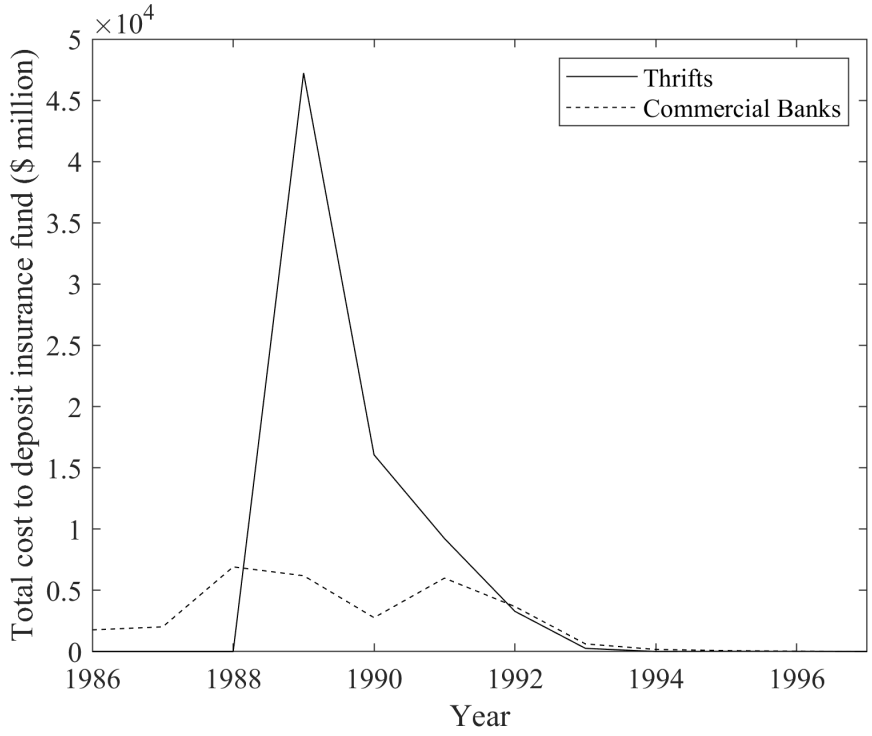
[11] Federal Deposit Insurance Corporation. Division of Research and Statistics. History of the Eighties: Lessons for the Future. (Washington, District of Columbia: Federal Deposit Insurance Corporation, 1997), 101-102.

Appendix C. Variable definitions

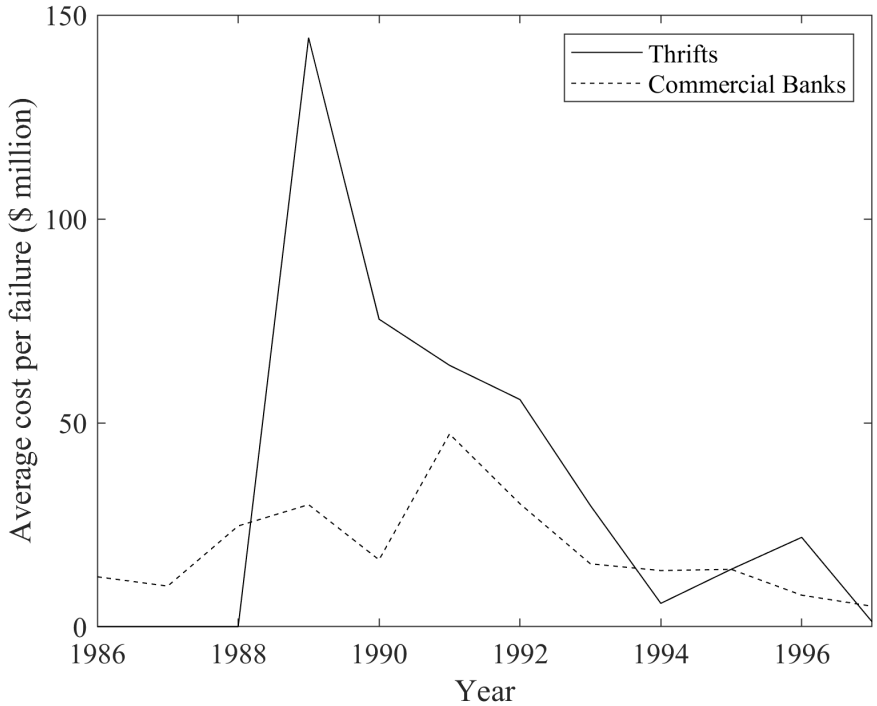
Variable	Definition	Source	Code
Boilerplate	Percentage of boilerplate words relative to total number of words in a document based on identifying 4-word phrases (tetragrams) that are extremely common across documents (usage of more than 80%) in a given year after removing common and stop words (Lang & Stice-Lawrence, 2015)	SNL, National Archives and authors' calculations	
Capital Ratio	Total equity as a proportion of total assets.	Call Reports	RCFD3210 / RCFD2170
Commercial and Industrial Loans	Ratio of commercial and industrial loans to net total loans.	Call Reports	RCFD1766 / (RCFD1400 - RCFD3123 - RCFD2123)
Crisis	Indicator variable which takes the value of 1 for quarters during the Great Recession (2007Q4–2009Q2) and 0 otherwise.	NBER	
Disclosure Regime	Indicator variable which takes the value of 1 for the period after 1989 Q3 and 0 otherwise.		
Distance	Natural logarithm of the physical distance between the regional functional regulator's office and the bank's headquarters.	SNL and authors' calculations	
Employment Growth	The growth of employment level (Total employment is defined as the number of jobs)	Bureau of Economic Analysis	(Total Employment - Lagged Total Employment) / Lagged Total Employment
Failure	Indicator variable which takes the value of 1 for banks identified by the FDIC as failed banks.	FDIC	
Flesch Grade Level Readability	Readability score computed using sentence length and word complexity in a given document. It corresponds to the number of years of education required to understand a given document.	SNL, National Archives and authors' calculations	(0.39 x average sentence length) + (11.8 x average number of syllables per word) - 15.59
Gunning FOG Index	Readability index corresponds to the number of years of education required to understand a given document (Li, 2008).	SNL, National Archives and authors' calculations	(Average words per sentence + percent of complex words) x 0.4

Insured Deposits	Natural logarithm of FDIC-insured deposits (based on Chen et al. (2018) and Balakrishnan (2018)).	Call Reports and authors' calculations	log(RCON2702)
Interest on Deposits	Ratio of interest on deposits to average deposits.	Call Reports	RIAD4170 / RCFD2200
Liquidity Ratio	Ratio of cash and cash equivalents to lagged total assets, where cash is defined as the sum of interest-bearing balances, non-interest bearing balances and currency and coin.	Call Reports	(RCFD0071 + RCFD0081) / RCFD2170
Loans	Net total loans scaled by lagged total assets.	Call Reports	(RCFD1400 - RCFD3123 - RCFD2123) / RCFD2170
News Circulation	The number of newspaper copies divided by the total population at the county level.	Gentzkow et al. (2011)	
News Coverage	Indicator variable which takes the value of 1 if an EDO for a given bank is covered by the local media and 0 otherwise.	NewsBank	
Non-Performing Assets Ratio (NPA)	The sum of non-accruing loans and loans past 90 days but still accruing divided by lagged net total loans.	Call Reports	(RCFD1403+RCFD1407) / (RCFD1400 - RCFD3123 - RCFD2123)
Number of words	Natural logarithm of the total number of words in a document	SNL, National Archives and authors' calculations	
Numeric intensity	Ratio of numerical characters in a document relative to the number of alphabetical characters (Li, 2010).	SNL, National Archives and authors' calculations	Total numerical characters/total alphabetical characters
Per Capita Income	Natural logarithm of the level of per capital personal income	Bureau of Economic Analysis	log(Per capita personal income)
Post Crisis	Indicator variable which takes the value of 1 for quarters after the Great Recession (2009Q3–2017Q4) and 0 otherwise.	NBER	

Post EDO	Indicator variable which takes the value of 1 for 12 quarters after the EDO was received for treatment banks and matched control banks and 0 for the 12 quarters prior.	SNL and authors' calculations	
Real Estate Loans	Ratio of real estate loans to net total loans.	Call Reports	RCFD1410 / (RCFD1400 - RCFD3123 - RCFD2123)
Return on Assets (ROA)	Net income divided by average total assets.	Call Reports	RIAD4340 / RCFD2170
Size	Total assets of the bank (or natural log of total assets)	Call Reports	RCFD2170
Total Deposits	Natural log of total deposits.	Call Reports	log(RCFD2200)
Treatment	Indicator variable which takes the value of 1 if a bank has received an EDO and 0 otherwise	SNL and authors' calculations	
Uninsured Deposits	Natural log of deposits not covered by the FDIC insurance (based on Chen et al. (2018) and Balakrishnan (2018)).	Call Reports and authors' calculations	log(RCFD2200 - RCON2702)
Urbanization	The ratio of nonagricultural population	1990 Decennial Census	P0060004 (Rural: Farm) / P0010001 (Persons Total)



Panel A



Panel B

Figure 1: Cost of thrift/bank failure to deposit insurance fund

This figure shows the total (Panel A) and average (mean) (Panel B) cost of thrift and bank failure to the deposit insurance fund for the years 1986–1997. Data is from the FDIC's *Bank Failures and Assistance Dataset*. 1986 is the earliest year for which data is available.

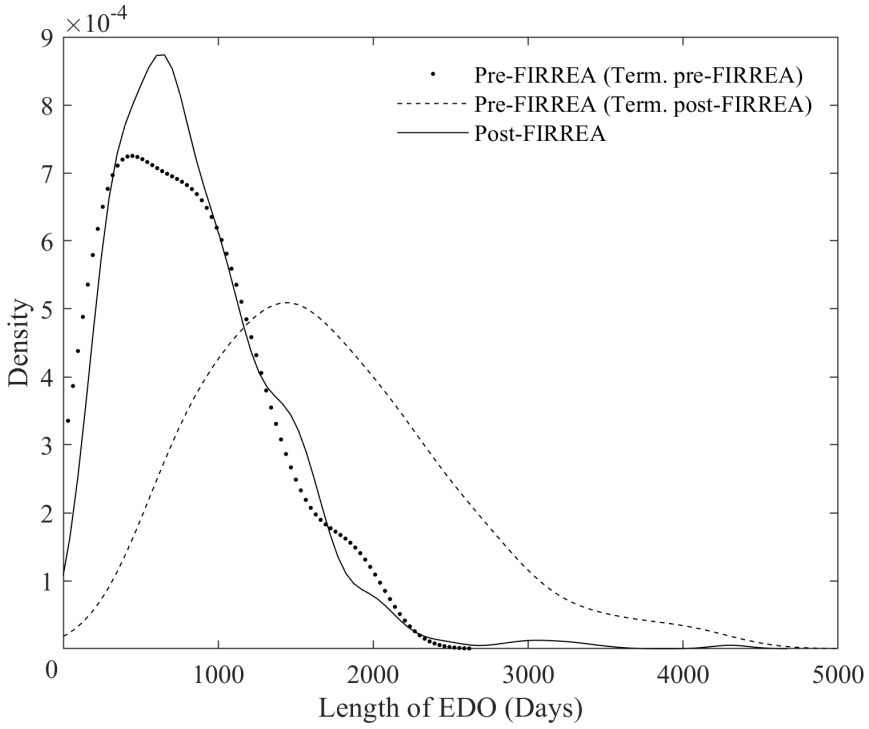


Figure 2: Distribution of EDO length

This figure shows the kernel density function for the length of an EDO in the pre- and post-disclosure regimes. Length of an EDO is defined as the number of days from the issuance of an EDO to its termination. The dotted line represents EDOs that were issued and terminated in the pre-disclosure regime. The dashed line represents EDOs that were issued in the pre-disclosure regime but terminated post-disclosure. The solid line represents EDOs issued and terminated in the disclosure regime.

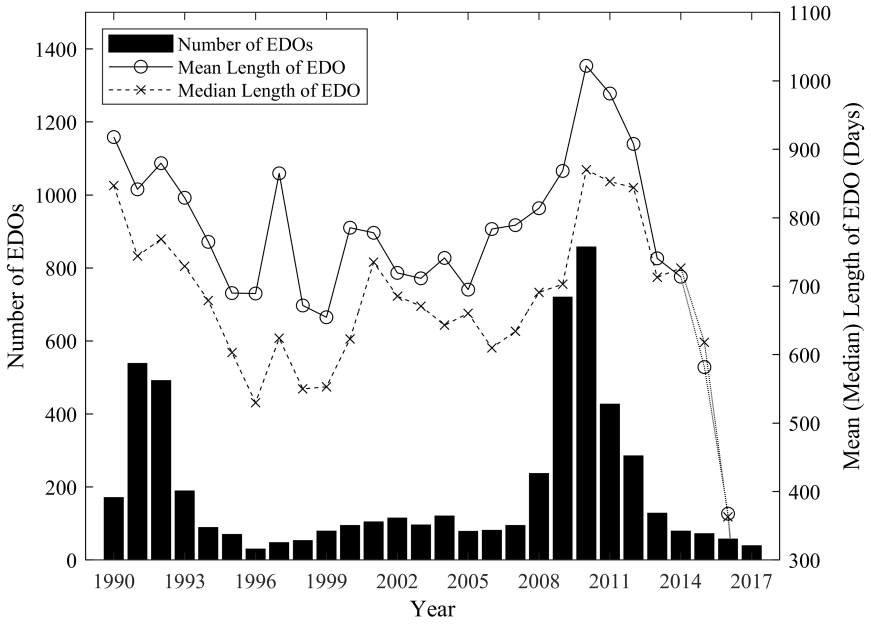


Figure 3: Number and the average length of enforcement actions (EDO)

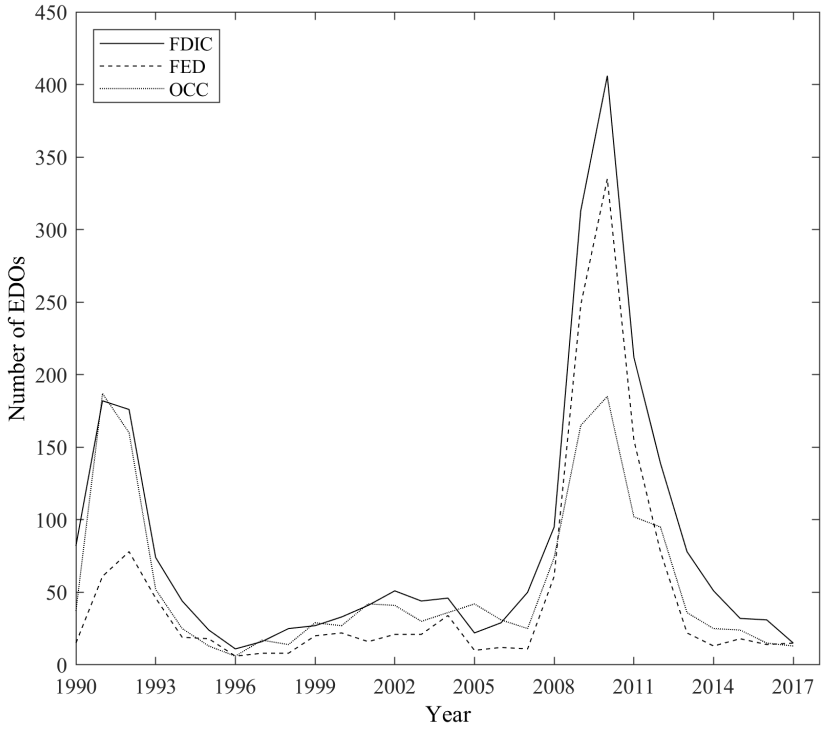


Figure 4: Number of enforcement actions by primary regulator

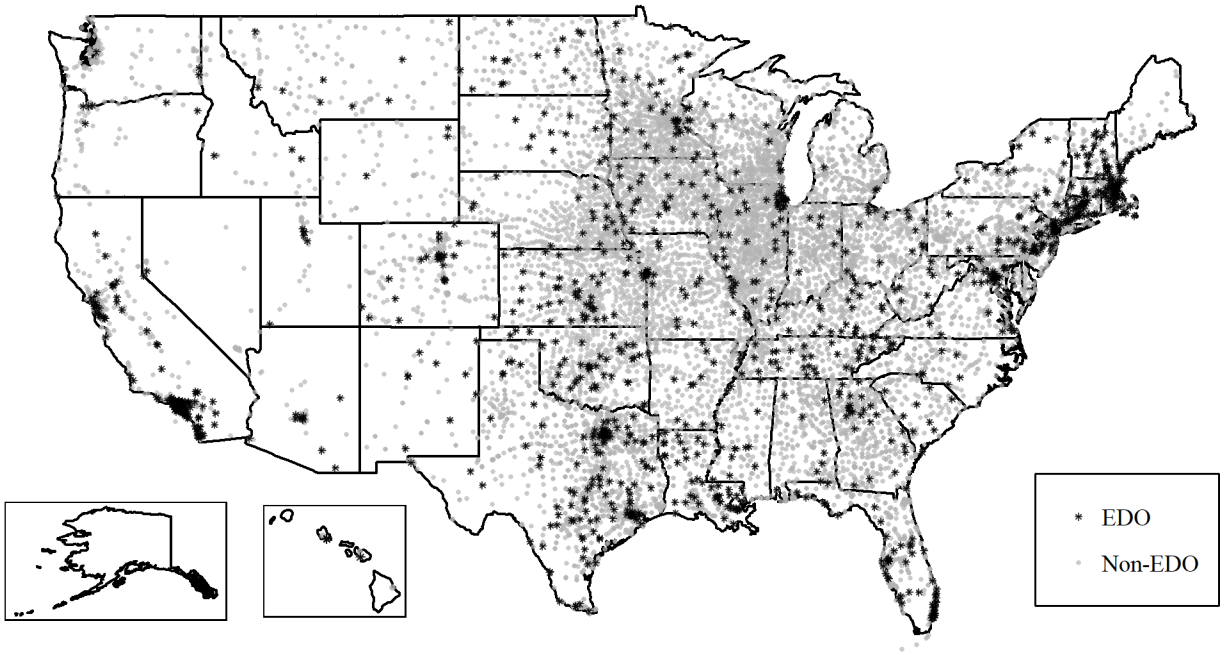


Figure 5: Geographic distribution of EDO and non-EDO banks in the sample

This figure shows the geographic distribution of banks that receive an EDO (*EDO*) relative to banks that do not receive EDOs (*non-EDO*) during our sample period of 1983 to 1997.

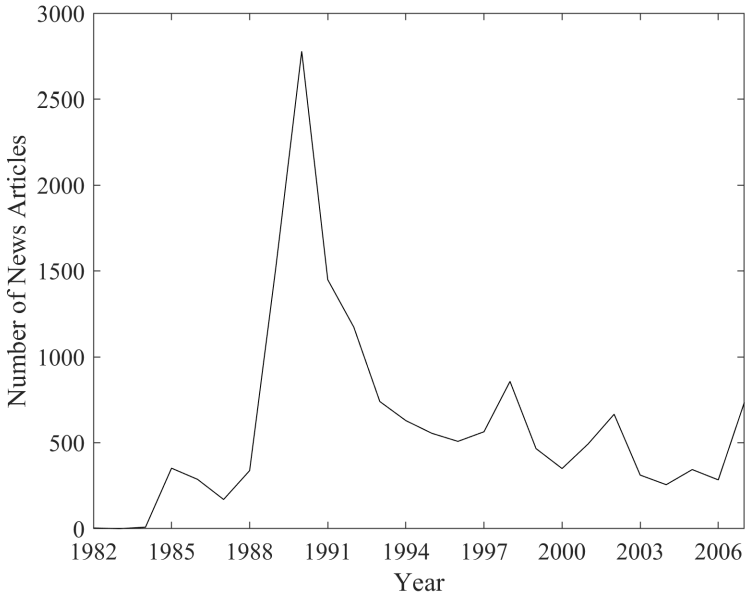


Figure 6: Number of news articles related to the S&L crisis

This figure shows shows the number of articles in the Dow Jones Factiva news database related to the variations of the following search terms: *S&L crises*, *savings and loan crises*, or *thrift failure*.

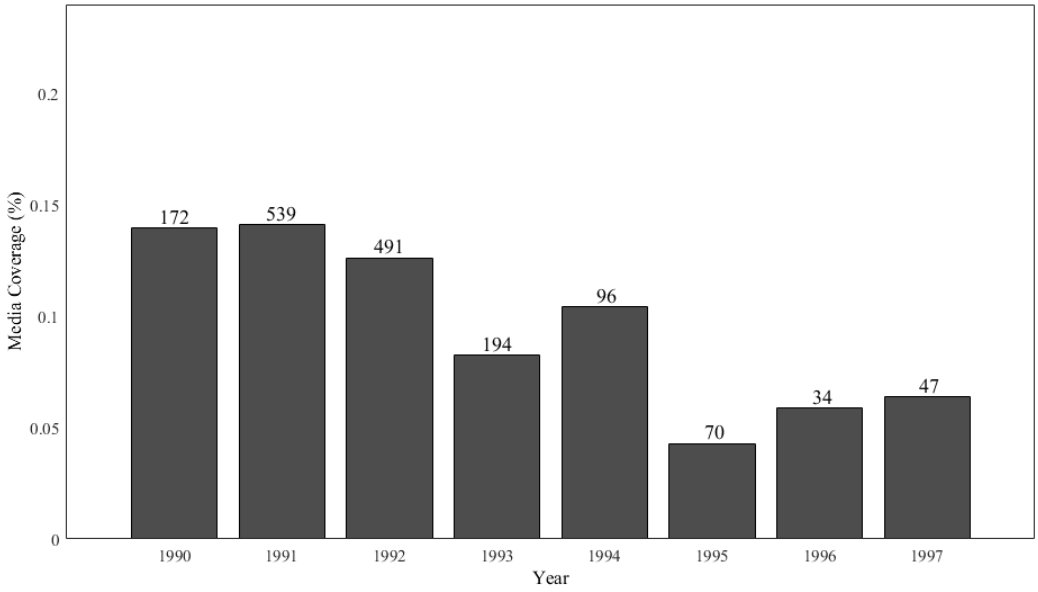
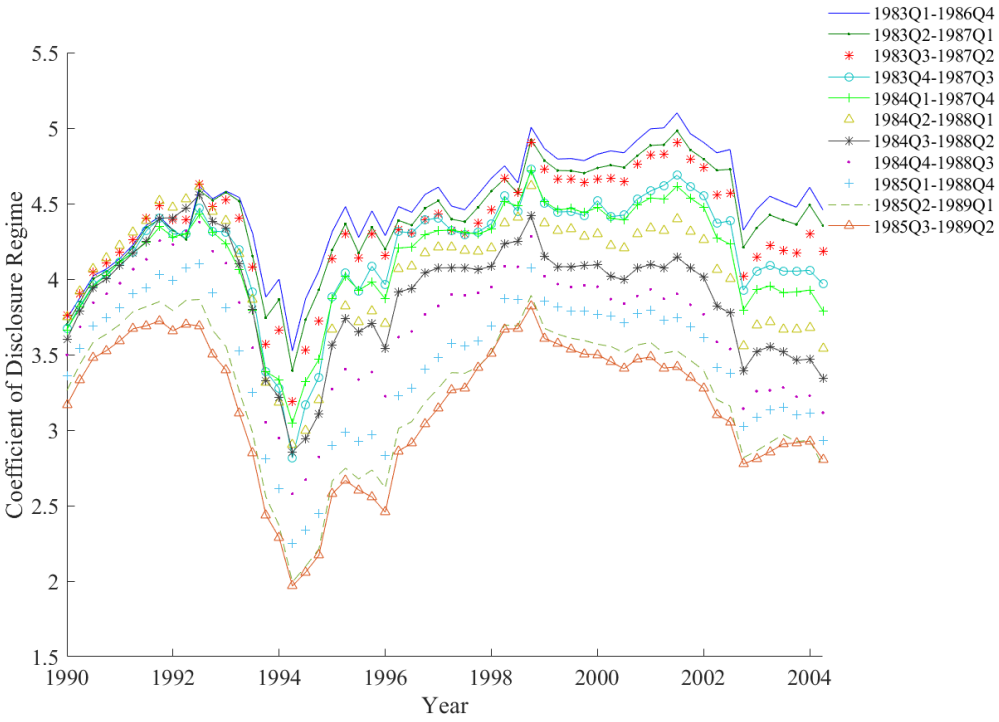
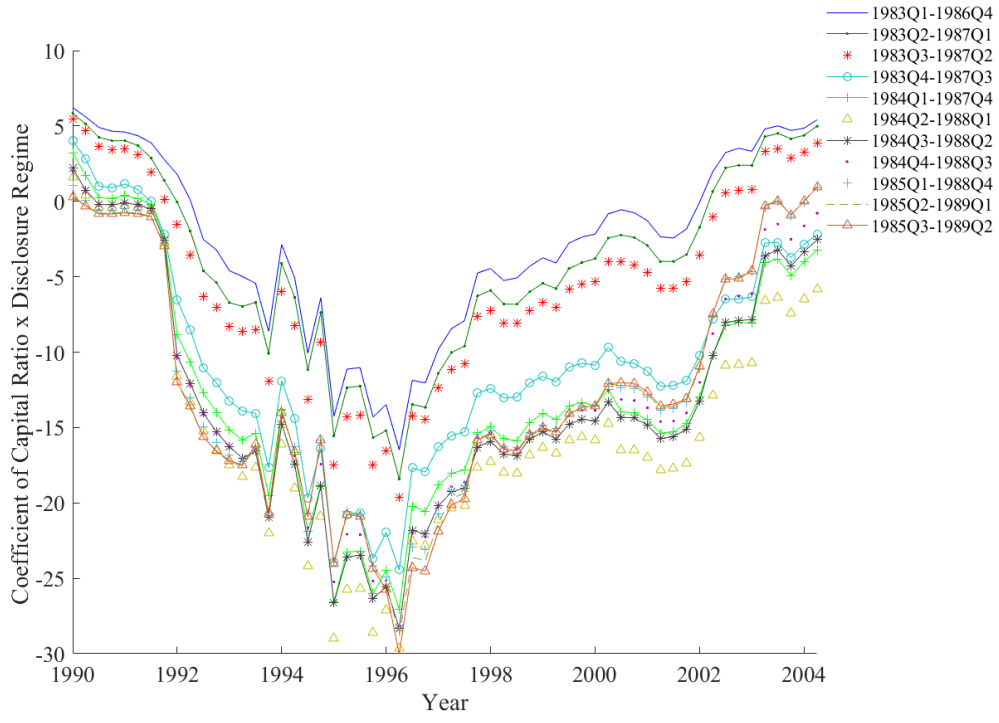


Figure 7: News coverage of EDOs

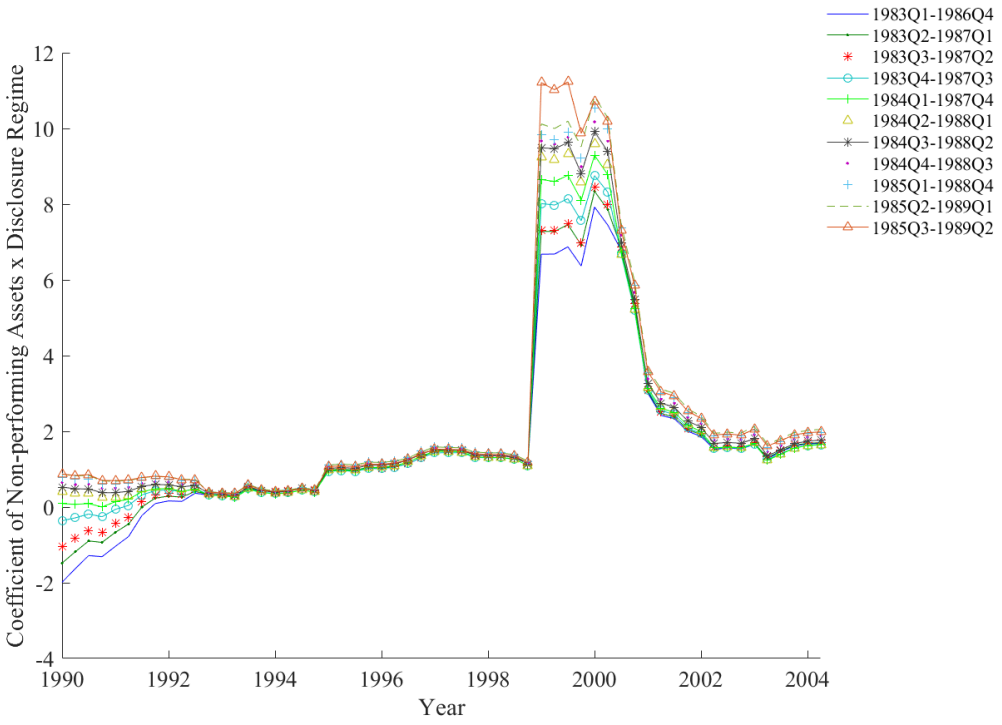
This figure shows the news coverage of EDOs for banks that received an EDO during the sample period of 1990 to 1997. The bars refer to the percentage of EDOs that received news coverage in a given year. The numbers above the bars represent the total number of EDOs received by banks in that year.



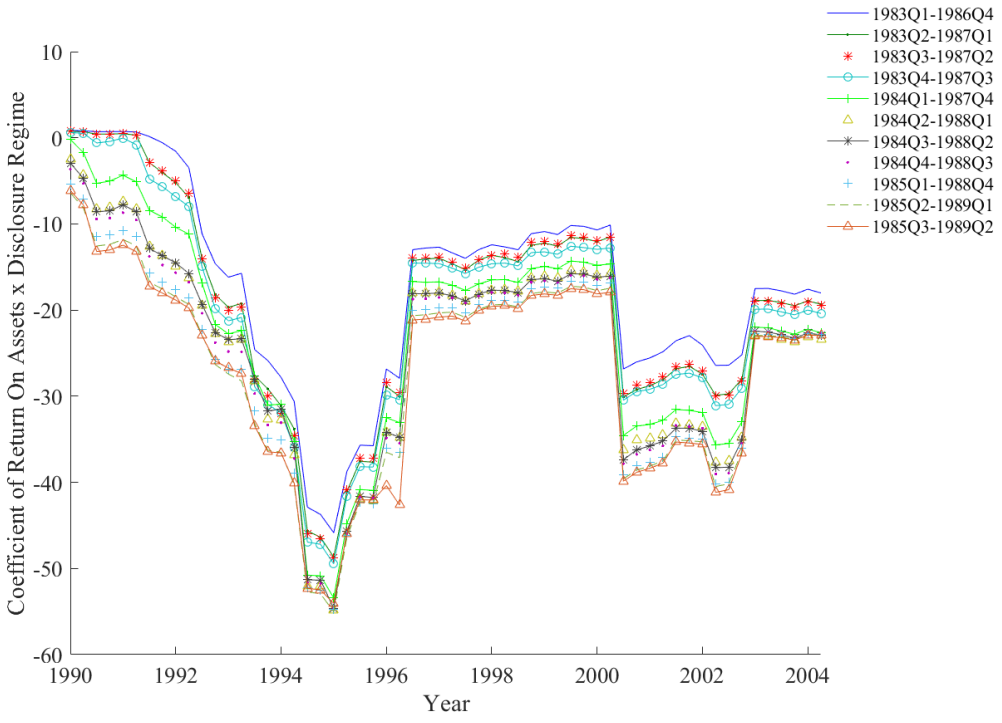
Panel A



Panel B



Panel C



Panel D

Figure 8: Time trend of coefficients

This figure shows the time trend of coefficients of *Disclosure Regime* (Panel A), *Capital Ratio* × *Disclosure Regime* (Panel B), *Non-performing Assets* × *Disclosure Regime* (Panel C) and *Return On Assets* × *Disclosure Regime* (Panel D) from the estimation of Equation 1 (excluding year indicators). The legend indicates pre-FIRREA quarters selected. Details of the estimation are described in subsection 6.4.

Table 1: Bigrams and textual characteristics of enforcement actions' content

This table presents descriptive evidence of the content and textual characteristics of severe enforcement actions received by banks from the FDIC in 1983–1984 and Q3 1989–2017. Columns (2) to (4) show the most commonly used two-word phrases in a given year (bigrams) and their corresponding frequencies. Column (5) shows the total number of documents that could be read using machine reading techniques. Column (6) shows the average number of words per document. Column (7) presents the average FOG index for EDOs in a given year, with higher values indicating more complexity. Column (8) shows the average values of the Flesch Grade Level readability index corresponding to the years of education required to understand a given body of text. Column (9) shows the average percentage of boilerplate language used.

Year	Most Common Phrases (Rank 1)		Most Common Phrases (Rank 2)		Most Common Phrases (Rank 3)		Total number of documents	Average Words per Document	Average Gunning-FOG Index	Average Flesch Grade Level Readability	Average Boilerplate
(1)	(2)		(3)		(4)		(5)	(6)	(7)	(8)	(9)
1983	banking practices	0.84%	assets classified	0.76%	equity capital	0.75%	116	1,774	14.56	11.36	0.5916
1984	assets classified	0.90%	equity capital	0.84%	banking practices	0.75%	14	1,916	15.93	12.68	0.6002
1989	primary capital	1.30%	total assets	0.74%	equity capital	0.74%	11	1,688	21.11	17.58	0.6518
1990	primary capital	0.71%	equity capital	0.69%	unsafe unsound	0.68%	31	1,838	22.13	18.77	0.5993
1991	unsafe unsound	0.98%	insured institution	0.87%	unsound banking	0.59%	62	2,548	19.20	16.06	0.6121
1992	tier capital	0.75%	unsafe unsound	0.60%	operating inadequate	0.55%	116	1,437	21.27	18.02	0.5776
1993	unsafe unsound	0.61%	tier capital	0.59%	federal deposit	0.58%	110	1,238	19.36	16.35	0.5266
1994	federal deposit	1.04%	deposit insurance	1.03%	unsafe unsound	0.70%	119	650	16.62	13.93	0.5953
1995	federal deposit	0.83%	deposit insurance	0.83%	laws regulations	0.76%	74	792	20.52	17.59	0.5327
1996	federal deposit	1.13%	deposit insurance	1.13%	tier capital	0.84%	31	542	19.36	16.79	0.5554
1997	information systems	1.94%	electronic information	1.63%	unsafe unsound	0.85%	16	1,999	22.53	19.14	0.6188
1998	tier capital	0.76%	unsafe unsound	0.66%	superintendent regional	0.64%	24	1,841	21.35	18.18	0.6038
1999	processing fee	0.96%	finance charge	0.79%	unsafe unsound	0.57%	20	2,145	16.98	14.25	0.6411
2000	insured institution	1.53%	unsafe unsound	0.73%	insured institutions	0.64%	27	2,080	21.26	18.36	0.5355
2001	insured institution	0.89%	tier capital	0.69%	unsafe unsound	0.58%	23	2,139	20.84	17.92	0.5634
2002	tier capital	0.61%	rules regulations	0.55%	loan lease	0.52%	41	2,622	20.47	17.27	0.6033
2003	unsafe unsound	0.62%	banking practices	0.58%	insured institution	0.54%	49	1,537	20.29	17.34	0.5398
2004	rules regulations	0.90%	banking practices	0.66%	unsafe unsound	0.61%	25	1,619	20.07	17.21	0.5523
2005	federal deposit	1.18%	deposit insurance	1.18%	civil money	1.15%	30	759	18.72	16.68	0.6378
2006	rules regulations	0.82%	banking practices	0.79%	unsafe unsound	0.70%	23	1,982	20.96	18.11	0.6119
2007	insured institution	1.66%	insured institutions	0.91%	deposit insurance	0.68%	46	2,085	21.98	19.22	0.4516
2008	banking practices	0.60%	rules regulations	0.53%	deposit insurance	0.50%	86	3,308	21.60	18.45	0.5955
2009	supervisory authorities	0.84%	banking practices	0.60%	tier capital	0.59%	310	2,984	20.45	17.45	0.6652
2010	supervisory authorities	1.05%	deposit insurance	0.56%	federal deposit	0.56%	424	2,926	20.56	17.70	0.6464
2011	supervisory authorities	0.92%	deposit insurance	0.56%	federal deposit	0.56%	220	2,958	20.95	18.13	0.5981
2012	supervisory authorities	1.18%	deposit insurance	0.88%	federal deposit	0.87%	178	1,909	20.48	17.80	0.4718
2013	federal deposit	1.04%	deposit insurance	1.03%	supervisory authorities	0.77%	107	1,457	20.44	17.83	0.3711
2014	federal deposit	0.84%	deposit insurance	0.83%	insurance corporation	0.59%	79	1,780	18.63	16.27	0.4641
2015	federal deposit	0.94%	deposit insurance	0.93%	insurance corporation	0.67%	54	1,640	19.48	17.13	0.4278
2016	deposit insurance	0.89%	federal deposit	0.88%	insurance corporation	0.61%	41	1,603	18.43	15.95	0.4350
2017	supervisory authorities	1.32%	federal deposit	1.03%	deposit insurance	0.98%	25	1,127	19.50	17.23	0.3468
Total	**supervisory authorities**	**0.68%**	**deposit insurance**	**0.62%**	**federal deposit**	**0.62%**	**2,546**	**1,836**	**19.80**	**16.90**	**0.5556**

Table 2: Descriptive statistics

This table presents financial characteristics for our sample of banks, conditional on receiving an EDO from 1983 to 1997. The variables are measured on a quarterly basis. Differences in characteristics are tested using t-tests of the means. All variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. Variable definitions are provided in Appendix C. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

	EDO bank-quarters			Non-EDO bank-quarters				
Variable	N	Mean	Sd	N	Mean	Sd	Difference	(t-statistic)
		(1)			(2)		(1) - (2)	
Total Deposits	1,182	10.821	1.249	671,485	10.673	1.273	0.148***	(4.073)
Loans to Total Assets Ratio	1,182	0.593	0.126	672,213	0.520	0.149	0.073***	(19.852)
Capital Ratio	1,182	0.068	0.032	672,216	0.096	0.057	-0.028***	(-30.151)
Non-Performing Assets Ratio	1,182	0.063	0.063	670,703	0.022	0.040	0.041***	(22.491)
Size	1,182	10.922	1.264	672,216	10.821	1.270	0.101***	(2.736)
Return On Assets	1,182	-0.006	0.017	669,464	0.006	0.015	-0.012***	(-23.967)
Liquidity Ratio	1,182	0.070	0.044	672,213	0.076	0.064	-0.006***	(-4.375)
Insured Deposits	729	10.771	1.150	258,800	10.653	1.259	0.118***	(2.776)
Uninsured Deposits	728	9.441	1.585	257,520	9.253	1.584	0.188***	(3.197)

Table 3: Likelihood of receiving an enforcement action

This table presents the coefficients from estimating models of the regulators' decision to issue an enforcement action during the period of 1983 to 1997. Columns (1)–(7) present the results from the estimation of a Cox proportional-hazards model. Column (8) presents the results from the estimation of an accelerated-time model. *Disclosure Regime* takes the value of 1 for the quarters after the introduction of FIRREA in Q3 1989 and 0 otherwise. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. All variables are lagged by one quarter and are defined in Appendix C. z-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disclosure Regime	3.178***	1.786***	2.050***	1.156*	1.394**	1.735***	0.850	-1.232***
	(22.668)	(2.820)	(3.181)	(1.725)	(2.085)	(2.712)	(1.184)	(-4.039)
Size	-0.024	-0.031	-0.029	-0.034	-0.033	-0.030	-0.036	0.011
	(-1.022)	(-1.279)	(-1.205)	(-1.392)	(-1.363)	(-1.248)	(-1.445)	(0.709)
Capital Ratio	-16.761***	-17.104***	-12.300***	-16.913***	-16.906***	-17.098***	-19.846***	11.409***
	(-9.045)	(-9.248)	(-4.973)	(-9.255)	(-9.202)	(-9.244)	(-5.962)	(6.883)
Non-Performing Assets	19.873***	20.678***	20.724***	16.098***	20.774***	20.663***	17.683***	-15.660***
	(19.073)	(19.485)	(19.630)	(11.344)	(19.855)	(19.437)	(10.146)	(-11.457)
Return On Assets	-33.460***	-34.104***	-34.486***	-34.528***	-19.384***	-34.109***	-22.520***	28.556***
	(-10.037)	(-10.014)	(-10.229)	(-10.269)	(-4.149)	(-10.015)	(-3.815)	(9.208)
Liquidity Ratio	-1.820***	-1.763***	-1.744***	-1.917***	-1.811***	-2.157**	-2.281**	0.900*
	(-2.825)	(-2.649)	(-2.613)	(-2.859)	(-2.711)	(-1.989)	(-2.141)	(1.900)
Change in Capital Ratio	-0.394**	-0.397**	-0.444**	-0.427**	-0.428**	-0.399**	-0.418**	0.649***
	(-2.234)	(-2.257)	(-2.493)	(-2.414)	(-2.423)	(-2.266)	(-2.357)	(4.161)
Change in Liquidity Ratio	0.091	0.079	0.078	0.081	0.077	0.082	0.082	-0.044
	(1.365)	(1.164)	(1.130)	(1.183)	(1.122)	(1.193)	(1.189)	(-0.919)
Change in Loans	-0.952***	-0.931***	-0.924***	-0.885***	-0.899***	-0.929***	-0.879***	0.497***
	(-3.863)	(-3.782)	(-3.771)	(-3.646)	(-3.692)	(-3.772)	(-3.623)	(2.814)
log(Distance)	0.135***	0.133***	0.135***	0.140***	0.136***	0.133***	0.139***	-0.084***
	(4.756)	(4.768)	(4.802)	(4.952)	(4.835)	(4.767)	(4.913)	(-4.120)
Employment Growth	-3.894***	-3.073***	-3.017***	-3.079***	-3.004***	-3.075***	-3.062***	1.530**
	(-3.811)	(-2.823)	(-2.765)	(-2.799)	(-2.732)	(-2.824)	(-2.773)	(2.022)
Capital Ratio x Disclosure Regime			-5.884**				3.635	
			(-2.206)				(0.970)	
Non-Performing Assets x Disclosure Regime				7.032***			4.670**	
				(4.731)			(2.283)	
Return On Assets x Disclosure Regime					-22.688***		-17.733***	
					(-4.847)		(-2.595)	
Liquidity Ratio x Disclosure Regime						0.566	0.527	
						(0.433)	(0.404)	
Observations	685,346	685,346	685,346	685,346	685,346	685,346	685,346	685,346
Wald χ^2	3214***	2828***	2940***	2989***	2989***	2828***	3074***	1557***
Reg Type	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Weibull AFT
Strata	None	Year	Year	Year	Year	Year	Year	Year
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97
Period	All	All	All	All	All	All	All	All

Table 4: Changes in textual content of enforcement actions

This table presents the results of the impact of the change in the disclosure regime on the content of enforcement actions using textual analysis of severe enforcement actions issued by the FDIC for the period 1983–1984 and Q3 1989–1997. *Disclosure Regime* takes the value of 1 for the quarters after the introduction of FIRREA in Q3 1989 and 0 otherwise. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. All variables are lagged by one quarter and are defined in Appendix C. t-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

	Number of Words	Number of Words	Gunning FOG	Gunning FOG	Flesch Grade Level Readability	Flesch Grade Level Readability	Numeric Intensity	Numeric Intensity	Boilerplate	Boilerplate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Disclosure Regime	0.440***	0.462***	7.025***	7.023***	5.483***	5.460***	1.240***	1.278***	0.095***	0.098***
	(3.618)	(4.317)	(15.802)	(15.331)	(12.961)	(12.490)	(5.582)	(7.905)	(7.743)	(8.645)
Size	-0.008	-0.018	-0.045	-0.058	-0.020	-0.043	0.128	0.161	-0.010	-0.009
	(-0.136)	(-0.294)	(-0.178)	(-0.204)	(-0.092)	(-0.176)	(1.339)	(1.524)	(-1.331)	(-0.966)
Return On Assets	-2.819	-2.961	-3.882	-4.711	-3.954	-4.747	3.453	3.607	0.635	0.664
	(-0.661)	(-0.712)	(-0.322)	(-0.392)	(-0.345)	(-0.426)	(0.552)	(0.594)	(1.653)	(1.589)
Liquidity Ratio	1.071	1.089	9.588**	9.003*	8.706**	7.873*	-6.134**	-5.436**	0.555	0.603*
	(0.946)	(1.111)	(3.095)	(2.189)	(2.948)	(2.068)	(-2.857)	(-2.811)	(1.796)	(1.852)
Employment Growth		-1.588		-5.711		-13.548		20.821**		1.067
		(-0.307)		(-0.156)		(-0.420)		(2.993)		(0.903)
Intercept	7.381***	7.473***	15.662***	15.829***	12.316***	12.637***	1.266	0.800	0.471***	0.448***
	(11.525)	(11.682)	(5.586)	(4.853)	(5.032)	(4.427)	(1.389)	(0.781)	(4.966)	(3.986)
Observations	301	297	301	297	301	297	301	297	300	296
Adjusted R-squared	0.037	0.039	0.408	0.403	0.317	0.313	0.134	0.152	0.097	0.104
Reg Type	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Year-Quarter FE	No	No	No	No	No	No	No	No	No	No
Bank FE	No	No	No	No	No	No	No	No	No	No
Cluster	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
Years	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97
Period	All	All	All	All	All	All	All	All	All	All

Table 5: Changes in enforcement during a crisis period

This table presents the coefficients from estimating models of the regulators' decision to issue an enforcement action during the period of 2003 to 2017 in Panel A and the change in the content of enforcement orders using an OLS model in Panel B. In Panel A, columns (1)–(7) present the results from the estimation of a Cox proportional-hazards model, while column (8) presents the results from the estimation of an accelerated-time model. *Crisis* takes the value of 1 for the quarters during the Great Recession in Q4 2007–Q2 2009 and 0 otherwise. *After Crisis* is an indicator variable that equals to 1 in Q3 2009–2017 and 0 otherwise. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. All variables are lagged by one quarter and are defined in Appendix C. z-statistics for Panel A and t-statistics for Panel B are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

Panel A: Likelihood of receiving an enforcement action during a crisis (EDO and non-EDO banks)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crisis	0.970***	0.169	1.129	0.486	0.072	0.231	1.014	0.087
	(4.958)	(0.189)	(1.101)	(0.597)	(0.087)	(0.256)	(1.134)	(0.548)
Post Crisis	1.398***	-0.099	0.309	0.952	0.166	-0.045	1.494*	-0.222
	(8.561)	(-0.104)	(0.303)	(1.074)	(0.186)	(-0.047)	(1.667)	(-1.075)
Size	0.112***	0.115***	0.114***	0.136***	0.129***	0.116***	0.141***	-0.133***
	(4.862)	(4.893)	(4.862)	(5.937)	(5.575)	(4.932)	(6.138)	(-6.102)
Capital Ratio	-11.357***	-11.606***	-8.274***	-12.630***	-12.018***	-11.605***	-7.166***	7.957***
	(-8.747)	(-9.090)	(-2.891)	(-9.680)	(-9.339)	(-9.094)	(-2.815)	(5.543)
Non-Performing Assets	15.167***	15.272***	15.305***	46.141***	15.745***	15.281***	37.835***	-16.874***
	(18.448)	(18.469)	(18.613)	(16.374)	(19.367)	(18.475)	(11.165)	(-9.898)
Return On Assets	-26.010***	-24.606***	-24.570***	-24.474***	-96.216***	-24.606***	-73.577***	26.499***
	(-10.000)	(-9.260)	(-9.269)	(-9.505)	(-14.279)	(-9.258)	(-9.178)	(7.815)
Liquidity Ratio	-0.413	-0.388	-0.365	-0.199	-0.292	1.112	-0.162	0.451
	(-0.839)	(-0.790)	(-0.747)	(-0.433)	(-0.625)	(0.747)	(-0.103)	(1.181)
Change in Capital Ratio	-0.549**	-0.476**	-0.447**	-0.504**	-0.508**	-0.477**	-0.473**	0.776***
	(-2.445)	(-2.150)	(-1.997)	(-2.339)	(-2.366)	(-2.155)	(-2.214)	(3.827)
Change in Liquidity Ratio	0.046***	0.039**	0.038**	0.036**	0.040***	0.039**	0.040**	-0.058***
	(2.938)	(2.430)	(2.386)	(2.358)	(2.601)	(2.445)	(2.567)	(-3.466)
Change in Loans	-1.186***	-1.305***	-1.287***	-1.083***	-1.291***	-1.301***	-1.100***	0.841***
	(-3.706)	(-4.263)	(-4.196)	(-3.801)	(-4.591)	(-4.256)	(-4.041)	(3.290)
log(Distance)	0.031	0.032	0.033	0.035	0.040*	0.032	0.040*	-0.028
	(1.293)	(1.311)	(1.375)	(1.499)	(1.665)	(1.311)	(1.677)	(-1.435)
Employment Growth	-2.720**	-1.184	-1.099	-0.442	-0.890	-1.175	-0.444	-0.300
	(-2.489)	(-1.043)	(-0.969)	(-0.404)	(-0.795)	(-1.036)	(-0.403)	(-0.362)
Capital Ratio x Crisis			-9.504*				-6.083	
			(-1.945)				(-1.363)	
Capital Ratio x Post Crisis			-2.959				-6.686**	
			(-0.922)				(-2.262)	
Non-Performing Assets x Crisis				-23.946***			-16.324***	
				(-7.831)			(-4.313)	
Non-Performing Assets x Post Crisis				-32.820***			-23.970***	
				(-11.495)			(-6.962)	
Return On Assets x Crisis					60.205***		45.612***	
					(7.863)		(4.702)	
Return On Assets x Post Crisis					79.444***		53.697***	
					(11.354)		(6.411)	
Liquidity Ratio x Crisis						-1.723	-1.195	
						(-0.878)	(-0.558)	
Liquidity Ratio x Post Crisis						-1.581	0.097	
						(-1.011)	(0.059)	
Observations	331,153	331,153	331,153	331,153	331,153	331,153	331,153	331,153
Wald χ^2	3228***	2182***	2220***	2737***	2657***	2204***	2891***	805.2***
Reg Type	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Weibull AFT
Strata	None	Year	Year	Year	Year	Year	Year	Year
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17
Period	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure

Table 5: Changes in enforcement during a crisis period, continued

Panel B: Changes in the textual content of enforcement actions during a crisis (EDO-banks only)

	Number of Words	Number of Words	Gunning FOG	Gunning FOG	Flesch Grade Level Readability	Flesch Grade Level Readability	Numeric Intensity	Numeric Intensity	Boilerplate	Boilerplate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Crisis	0.786***	0.800***	-0.958***	-0.741***	-1.031***	-0.811***	-0.741	-0.453	-0.085***	-0.086***
	(4.610)	(4.644)	(-5.137)	(-4.135)	(-5.244)	(-4.125)	(-0.950)	(-0.456)	(-3.265)	(-3.297)
Post Crisis	0.617***	0.613***	-1.254***	-1.153***	-1.249***	-1.141***	-1.885	-1.759	-0.090**	-0.089**
	(3.373)	(3.299)	(-6.281)	(-5.750)	(-5.815)	(-5.605)	(-1.551)	(-1.481)	(-3.057)	(-3.021)
Size	-0.034	-0.043*	0.317***	0.275**	0.345***	0.311***	0.085	0.092	0.004*	0.005**
	(-1.664)	(-1.932)	(3.337)	(3.083)	(3.454)	(3.323)	(0.750)	(0.805)	(2.024)	(2.565)
Return On Assets	-0.960	-0.903	3.256	3.470	3.735	3.852	29.324	28.646	0.001	-0.019
	(-0.376)	(-0.352)	(1.143)	(1.242)	(1.525)	(1.558)	(0.797)	(0.791)	(0.002)	(-0.045)
Liquidity Ratio	-1.250**	-1.242**	-2.560	-2.774	-2.731	-2.942*	62.399	62.297	0.138*	0.138*
	(-2.665)	(-2.663)	(-1.539)	(-1.585)	(-1.757)	(-1.805)	(0.978)	(0.977)	(1.873)	(1.856)
Employment Growth		-0.737		14.041**		14.422**		14.486		0.204
		(-0.467)		(2.718)		(2.751)		(0.847)		(0.755)
Intercept	7.910***	8.016***	20.893***	21.399***	15.951***	16.362***	-1.723	-1.855	0.119***	0.106**
	(24.324)	(23.326)	(19.238)	(21.679)	(14.032)	(15.855)	(-0.405)	(-0.441)	(3.357)	(2.936)
Observations	1,144	1,136	1,144	1,136	1,144	1,136	1,144	1,136	1,144	1,136
Adjusted R-squared	0.055	0.058	0.039	0.042	0.046	0.049	0.040	0.039	0.050	0.053
Reg Type	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Year-Quarter FE	No	No	No	No	No	No	No	No	No	No
Bank FE	No	No	No	No	No	No	No	No	No	No
Cluster	Year	Year	Year	Year	Year	Year	Year	Year	Year	Year
Years	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17	2003-17
Period	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure

Table 6: Impact of news circulation on the likelihood of receiving an enforcement action

This table presents the coefficients from estimating models of the regulators' decision to issue an enforcement action during the period of 1983 to 1997. Columns (3), (6) and (9) present the results from estimating an accelerated-time model, while the remaining columns present the results from estimating a Cox proportional-hazards model. *Disclosure Regime* takes the value of 1 for the quarters after the introduction of FIRREA in Q3 1989 and 0 otherwise. In columns (1)–(3), *News Circulation* is defined an indicator variable that equals to 1 for banks located in counties in the highest quintile of news circulation and 0 otherwise. In columns (4)–(9), *News Circulation* is a continuous measure of the county-level newspaper readership. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. All variables are lagged by one quarter and are defined in Appendix C. z-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Disclosure	2.700***	1.613***	-1.024***	2.600***	1.524**	-0.880***	2.604***	1.521**	-0.896***
	(18.169)	(2.663)	(-3.745)	(13.776)	(2.469)	(-3.022)	(15.146)	(2.480)	(-3.057)
News Circulation	-0.500**	-0.500**	0.404***	-0.204	-0.220	0.298**	-0.263	-0.303	0.313**
	(-2.205)	(-2.212)	(2.649)	(-1.092)	(-1.144)	(2.100)	(-1.411)	(-1.563)	(2.196)
Disclosure x News Circulation	0.763***	0.736***	-0.566***	0.317	0.310	-0.378**	0.312**	0.317**	-0.355**
	(3.168)	(3.051)	(-3.527)	(1.590)	(1.503)	(-2.557)	(2.037)	(2.007)	(-2.376)
Size	-0.123***	-0.107***	0.072***	-0.118***	-0.102***	0.070***	-0.118***	-0.101***	0.069***
	(-4.522)	(-3.836)	(4.128)	(-4.360)	(-3.683)	(3.988)	(-4.338)	(-3.656)	(3.973)
Capital Ratio	-16.684***	-17.012***	9.993***	-16.544***	-16.871***	9.985***	-16.528***	-16.843***	9.987***
	(-9.091)	(-9.273)	(6.824)	(-9.032)	(-9.216)	(6.801)	(-9.029)	(-9.210)	(6.800)
Non-Performing Assets	19.712***	20.383***	-13.931***	19.816***	20.483***	-14.079***	19.786***	20.451***	-14.081***
	(18.956)	(19.184)	(-11.639)	(19.075)	(19.297)	(-11.706)	(19.019)	(19.258)	(-11.700)
Return On Assets	-30.762***	-32.064***	24.015***	-30.978***	-32.301***	24.415***	-30.984***	-32.323***	24.479***
	(-9.428)	(-9.464)	(8.940)	(-9.491)	(-9.528)	(9.057)	(-9.496)	(-9.534)	(9.053)
Liquidity Ratio	-2.303***	-2.118***	1.295***	-2.432***	-2.245***	1.384***	-2.457***	-2.274***	1.401***
	(-3.474)	(-3.109)	(2.803)	(-3.657)	(-3.279)	(2.959)	(-3.698)	(-3.323)	(2.992)
Change in Capital Ratio	-0.379**	-0.385**	0.561***	-0.376**	-0.384**	0.561***	-0.376**	-0.384**	0.563***
	(-2.219)	(-2.229)	(4.146)	(-2.207)	(-2.218)	(4.120)	(-2.209)	(-2.221)	(4.120)
Change in Liquidity Ratio	0.105	0.089	-0.052	0.111*	0.094	-0.054	0.112*	0.096	-0.055
	(1.576)	(1.303)	(-1.208)	(1.658)	(1.375)	(-1.237)	(1.675)	(1.395)	(-1.254)
Change in Loans	-0.982***	-0.933***	0.446***	-0.986***	-0.936***	0.452***	-0.988***	-0.937***	0.453***
	(-4.080)	(-3.864)	(2.942)	(-4.096)	(-3.870)	(2.956)	(-4.103)	(-3.877)	(2.956)
log(Distance)	0.176***	0.162***	-0.097***	0.181***	0.166***	-0.100***	0.182***	0.167***	-0.101***
	(6.263)	(5.703)	(-5.245)	(6.414)	(5.837)	(-5.378)	(6.448)	(5.872)	(-5.393)
Employment Growth	-3.885***	-2.908***	1.338*	-4.090***	-3.126***	1.439**	-4.105***	-3.142***	1.445**
	(-3.728)	(-2.619)	(1.885)	(-3.971)	(-2.854)	(2.032)	(-3.992)	(-2.874)	(2.038)
Per Capita Income (log)	0.613***	0.419***	-0.253***	0.676***	0.477***	-0.290***	0.686***	0.490***	-0.296***
	(4.152)	(2.704)	(-2.663)	(4.608)	(3.088)	(-3.056)	(4.665)	(3.161)	(-3.094)
Urbanization	2.362***	1.968***	-2.152***	2.447***	2.032***	-2.230***	2.437***	2.019***	-2.230***
	(3.323)	(2.773)	(-4.344)	(3.466)	(2.885)	(-4.510)	(3.454)	(2.868)	(-4.509)
News Circulation^2							0.013	0.016	-0.008
							(1.208)	(1.500)	(-0.689)
Observations	685,338	685,338	685,338	685,338	685,338	685,338	685,338	685,338	685,338
Wald χ^2	3279***	2878***	1631***	3340***	2923***	1665***	3346***	2927***	1665***
Reg Type	Cox Hazard	Cox Hazard	Weibull AFT	Cox Hazard	Cox Hazard	Weibull AFT	Cox Hazard	Cox Hazard	Weibull AFT
Strata	None	Year	Year	None	Year	Year	None	Year	Year
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97
Period	All	All	All	All	All	All	All	All	All

Table 7: Impact of the receipt of EDOs on bank deposits

This table presents the results of the impact of the change in the disclosure regime on banks' deposits. Panel A shows total, insured and uninsured deposits using a difference-in-differences research design and a control sample of non-EDO banks matched on size and geography. Panel B presents the impact of news coverage for banks that receive an EDO for the sample of EDO banks in the post-disclosure period. *News Coverage* is an indicator variable that takes the value of 1 for banks whose EDOs were covered in the local media and 0 otherwise. *Treatment* is an indicator variable that takes the value of 1 for banks that receive an EDO and 0 otherwise. *Post EDO* takes the value of 1 for 12 quarters after the EDO was received for treatment banks and for the same quarters for matched banks and 0 for the 12 quarters prior. Bank-level control variables are lagged by one quarter. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. The sample period is Q4 1989–1997 (post-disclosure period). All variables are defined in Appendix C. t-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

Panel A: Impact of the receipt of EDOs on bank deposits

	Total Deposits	Total Deposits	Total Deposits	Insured Deposits	Insured Deposits	Insured Deposits	Uninsured Deposits	Uninsured Deposits	Uninsured Deposits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment x Post EDO	-0.211***	-0.203***	-0.038***	-0.141**	-0.163***	-0.001	-0.354***	-0.287***	-0.090***
	(-3.386)	(-9.143)	(-2.699)	(-2.361)	(-8.199)	(-0.104)	(-4.495)	(-9.055)	(-4.072)
Size			0.855***			0.810***			1.009***
			(19.176)			(16.516)			(25.481)
Return On Assets			0.357			-0.341			1.924***
			(1.215)			(-1.080)			(3.681)
Liquidity Ratio			0.026			-0.367**			0.251
			(0.312)			(-2.510)			(1.396)
Employment Growth			-0.029			-0.058			-0.125
			(-0.388)			(-0.658)			(-0.657)
Observations	24,055	24,055	23,979	24,031	24,031	23,957	23,943	23,943	23,871
Adjusted R-squared	0.004	0.972	0.991	0.003	0.970	0.988	0.011	0.946	0.962
Reg Type	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97
Period	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure

Table 7: Impact of the receipt of EDOs on bank deposits, continued

Panel B: Impact of news coverage on bank deposits

	Total Deposits	Total Deposits	Total Deposits	Insured Deposits	Insured Deposits	Insured Deposits	Uninsured Deposits	Uninsured Deposits	Uninsured Deposits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Post EDO x News Coverage	0.155	0.149	-0.004	0.189	0.184	0.029	-0.013	-0.027	-0.139***
	(1.127)	(1.075)	(-0.381)	(1.464)	(1.412)	(1.556)	(-0.073)	(-0.154)	(-3.275)
Size			0.906***			0.845***			1.075***
			(28.471)			(12.093)			(18.340)
Return On Assets			0.173			-0.624*			2.485***
			(0.592)			(-1.774)			(3.753)
Liquidity Ratio			0.029			-0.378**			0.589**
			(0.276)			(-2.411)			(2.268)
Employment Growth			0.012			0.035			0.070
			(0.176)			(0.379)			(0.250)
Observations	12,067	12,067	12,055	12,066	12,066	12,054	12,012	12,012	12,000
Adjusted R-squared	0.026	0.025	0.993	0.027	0.025	0.990	0.023	0.025	0.960
Reg Type	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Year-Quarter FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Bank FE	No	No	Yes	No	No	Yes	No	No	Yes
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97	Q4 1989-97
Period	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure	After Disclosure

Table 8: Impact of disclosure of enforcement actions on bank failure

This table presents the coefficients from estimating hazard models of time to bank failure. *Disclosure Regime* takes the value of 1 for the quarters after the introduction of FIRREA in Q3 1989 and 0 otherwise. *Treatment* takes the value of 1 for banks that received an EDO, and 0 otherwise. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. The full sample period is 1983–1997. All variables are lagged by one quarter and are defined in Appendix C. z-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

	(1)	(2)	(3)	(4)	(5)
Disclosure Regime	-0.763	-0.494***	0.279	0.308*	-0.254*
	(-1.642)	(-2.652)	(1.052)	(1.843)	(-1.784)
Treatment	-0.941***	-0.925***	-1.446***	-1.464***	1.209***
	(-5.869)	(-5.783)	(-6.887)	(-6.975)	(5.495)
Treatment x Disclosure Regime	2.113***	2.190***	1.394***	1.449***	-1.196***
	(10.968)	(11.526)	(6.129)	(6.369)	(-5.148)
Size			-0.215***	-0.241***	0.199***
			(-8.449)	(-9.412)	(6.727)
Capital Ratio			-79.256***	-80.616***	66.562***
			(-30.848)	(-31.802)	(8.870)
Non-performing Assets			13.654***	13.650***	-11.270***
			(17.746)	(18.102)	(-7.881)
Return on Assets			-19.699***	-17.708***	14.621***
			(-8.207)	(-8.287)	(6.233)
Liquidity Ratio			-3.355***	-3.572***	2.949***
			(-5.589)	(-5.869)	(4.743)
Interest on Deposits			-1.996	-7.777***	6.421***
			(-0.755)	(-3.866)	(3.551)
Commercial and Industrial Loans			0.219***	0.248***	-0.205***
			(5.189)	(6.954)	(-5.486)
Real Estate Loans			-0.597***	-0.445***	0.367**
			(-3.617)	(-2.649)	(2.569)
Employment Growth			-2.998***	-2.861***	2.362***
			(-3.660)	(-3.568)	(3.265)
Observations	730,270	730,270	653,555	653,555	653,555
Wald χ^2	658.9***	846.5***	5906***	9360***	562.8***
Reg Type	Cox Hazard	Weibull Hazard	Cox Hazard	Weibull Hazard	Weibull AFT
Year FE	Yes	Yes	Yes	Yes	Yes
Cluster	Bank	Bank	Bank	Bank	Bank
Years	1983-97	1983-97	1983-97	1983-97	1983-97
Period	All	All	All	All	All

Table 9: Impact of the disclosure regime on banks (matched sample)

This table presents the results of the impact of the change in the disclosure regime for the full sample of banks that received an EDO (*Treatment*) and those that did not (matched control banks). *Post EDO* takes the value of 1 for 12 quarters after the EDO was received for treatment banks and for the same quarters for matched banks, and 0 for the 12 quarters prior. *Disclosure Regime* takes the value of 1 for the quarters after the introduction of FIRREA in Q3 1989. Panel A shows the covariate balance for treatment (EDO banks) and control (non-EDO banks) using a two-step matching procedure: entropy balance using four quarters prior to the receipt of an EDO for treatment banks followed by propensity score matching (nearest neighbor). Panel B presents the results of the estimation using the matched control sample. Bank-level control variables are lagged by one quarter. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. The full sample period is 1983–1997. All variables are defined in Appendix C. t-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

Panel A: Entropy-matched covariate balance

	Before Disclosure Regime (Entropy Matched)								After Disclosure Regime (Entropy Matched)							
	EDO Banks			Non-EDO banks					EDO Banks			Non-EDO banks				
Variable	N	Mean	Sd	N	Mean	Sd	Difference	(t-statistic)	N	Mean	Sd	N	Mean	Sd	Difference	(t-statistic)
		(1)			(2)		(1) - (2)			(3)			(4)		(3) - (4)	
Size	1,049	10.2800	1.0035	1,049	10.2700	1.0035	0.010	(0.228)	3,564	11.1200	1.2418	3,564	11.1200	1.2418	0.0000	(0.000)
Return On Assets	1,049	-0.0050	0.0136	1,049	-0.0050	0.0136	0.0000	(0.003)	3,564	-0.0025	0.0108	3,564	-0.0025	0.0108	0.0000	(0.043)
Capital Ratio	1,049	0.0673	0.0227	1,049	0.0674	0.0229	-0.0001	(-0.081)	3,564	0.0736	0.0329	3,564	0.0737	0.0330	0.0000	(-0.026)
Liquidity Ratio	1,049	0.0795	0.0434	1,049	0.0795	0.0434	0.0000	(-0.005)	3,564	0.0674	0.0422	3,564	0.0674	0.0422	0.0000	(-0.010)

Table 9: Impact of the disclosure regime on banks (matched sample), continued

Panel B: Impact of the disclosure regime (entropy and propensity-score matched sample)

	Loans	Loans	Loans	Total Deposits	Total Deposits	Total Deposits	Capital Ratio	Capital Ratio	Capital Ratio	Non-Performing Assets	Non-Performing Assets	Non-Performing Assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Treatment x Post EDO	-0.047***	-0.047***	-0.035***	-0.524***	-0.184***	-0.006	-0.004	-0.011***	-0.014***	0.027***	0.013***	0.009***
	(-4.433)	(-6.311)	(-4.941)	(-4.974)	(-9.489)	(-1.280)	(-1.557)	(-6.056)	(-7.771)	(8.219)	(3.779)	(2.885)
Treatment x Disclosure Regime	0.029***	-0.002	-0.002	0.445***	-0.020	-0.005	-0.011***	-0.012***	-0.011***	-0.002	0.008***	0.005***
	(3.244)	(-0.345)	(-0.331)	(5.559)	(-1.174)	(-0.849)	(-5.112)	(-7.411)	(-8.385)	(-0.801)	(4.567)	(3.230)
Post EDO x Disclosure Regime	0.003	0.008	0.009	-0.176*	-0.020	0.003	0.005**	-0.001	-0.002	0.004**	-0.001	-0.002
	(0.302)	(1.146)	(1.492)	(-1.910)	(-1.040)	(0.758)	(2.251)	(-0.960)	(-1.467)	(2.045)	(-0.620)	(-0.970)
Treatment x Post EDO x	-0.028**	-0.017**	-0.018**	0.315***	0.005	-0.009*	0.002	0.012***	0.010***	-0.021***	-0.009**	-0.005
Disclosure Regime	(-2.227)	(-2.000)	(-2.254)	(2.674)	(0.222)	(-1.758)	(0.840)	(5.830)	(5.187)	(-6.203)	(-2.491)	(-1.446)
Size			0.039***			0.910***			-0.028***			0.005***
			(5.534)			(50.247)			(-11.854)			(3.499)
Return On Assets			0.263***			0.197			0.410***			-0.852***
			(3.401)			(1.513)			(16.092)			(-27.035)
Liquidity Ratio			-0.296***			-0.087**			0.009			-0.004
			(-9.593)			(-2.534)			(1.072)			(-0.559)
Employment Growth			-0.071***			0.079***			-0.004			-0.090***
			(-3.224)			(3.264)			(-0.821)			(-8.946)
Observations	47,548	47,548	47,268	47,543	47,543	47,264	47,548	47,548	47,268	47,530	47,530	47,253
Adjusted R-squared	0.078	0.807	0.827	0.034	0.973	0.995	0.124	0.775	0.823	0.228	0.576	0.616
Reg Type	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97
Period	All	All	All	All	All	All	All	All	All	All	All	All

Appendix D. Online Appendix

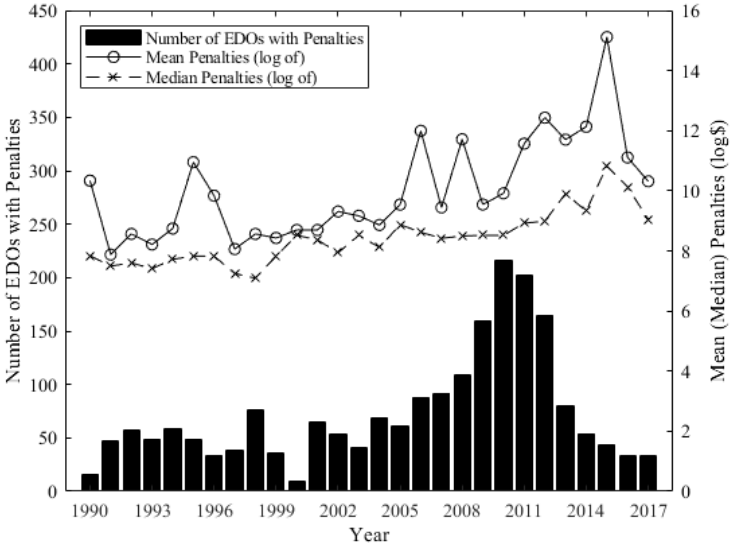


Figure D1: Number of EDOs with penalties and mean (median) penalties by year

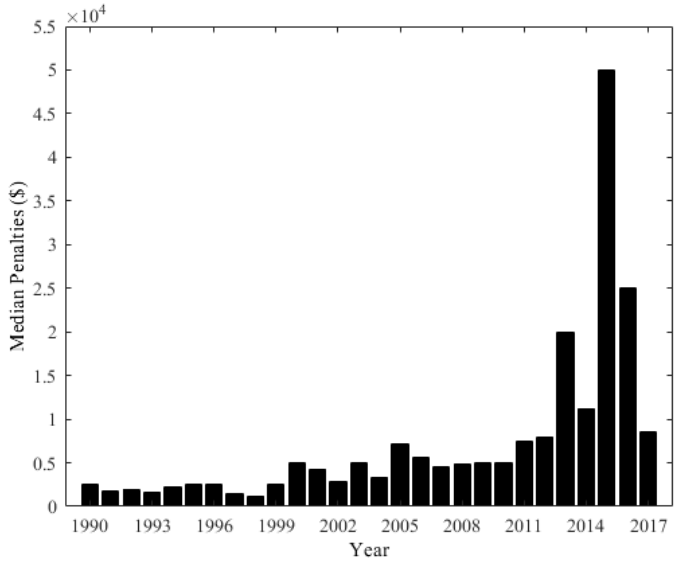


Figure D2: Median values of penalties by year (in $)

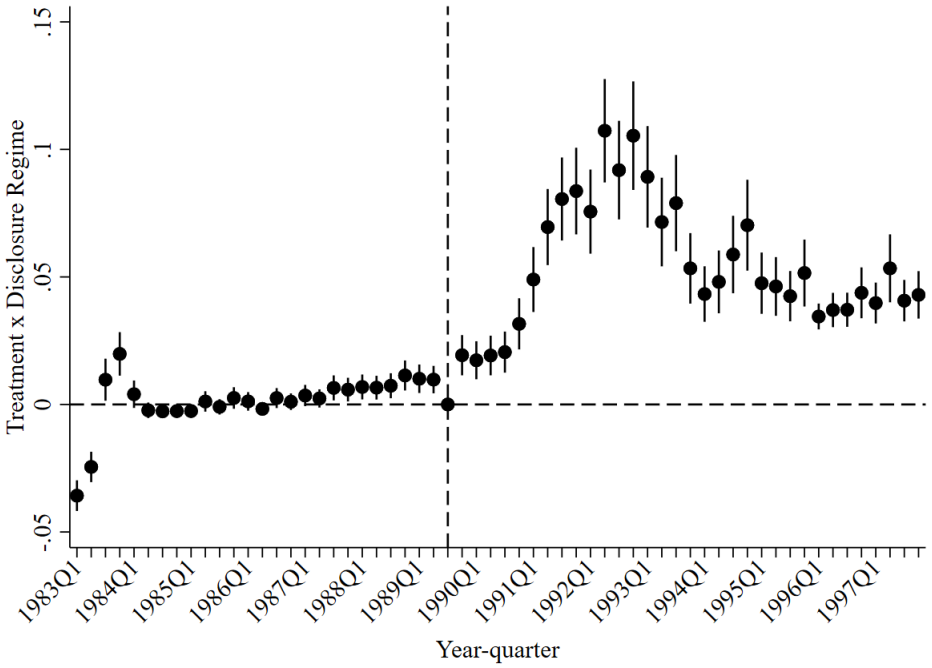
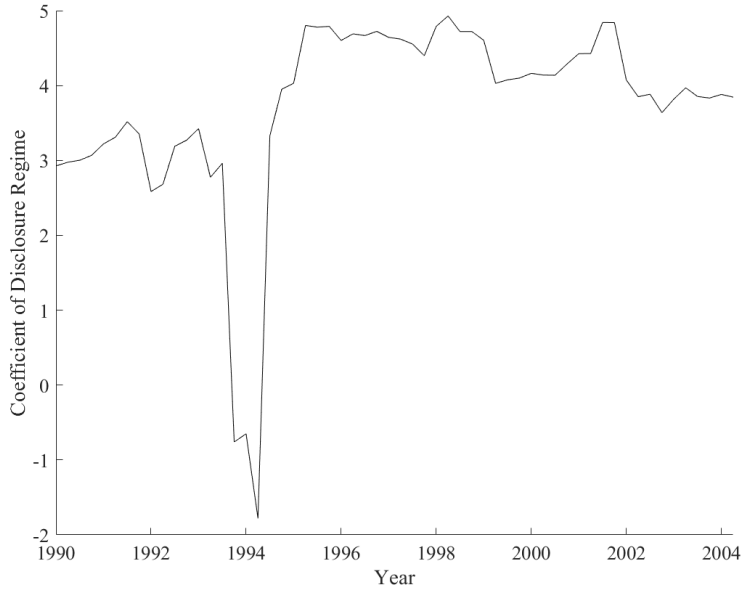
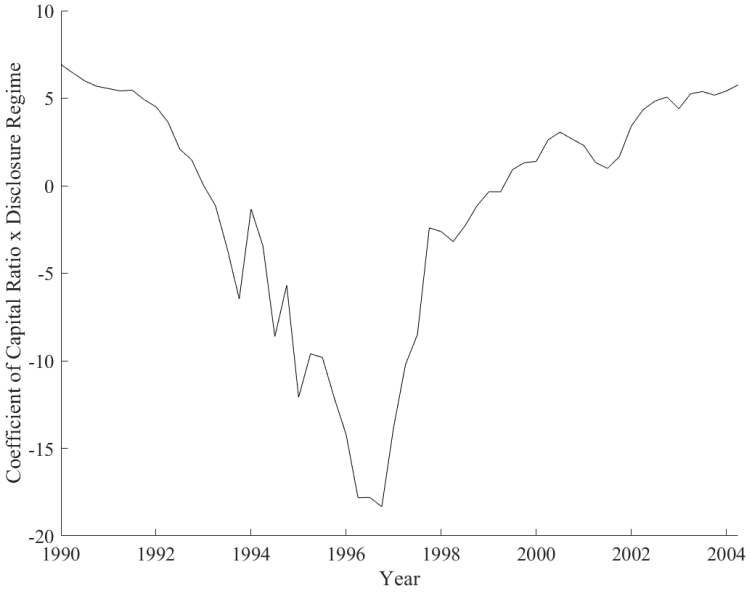


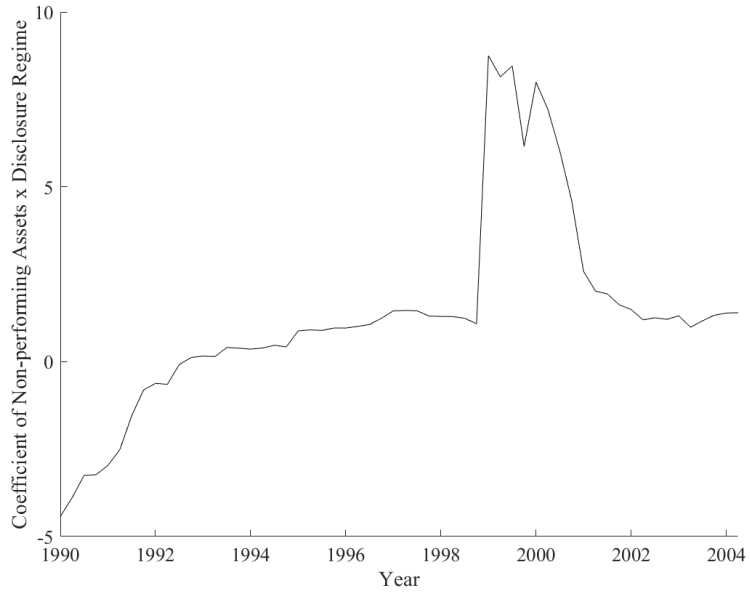
Figure D3: Coefficient plot to assess pre-trends



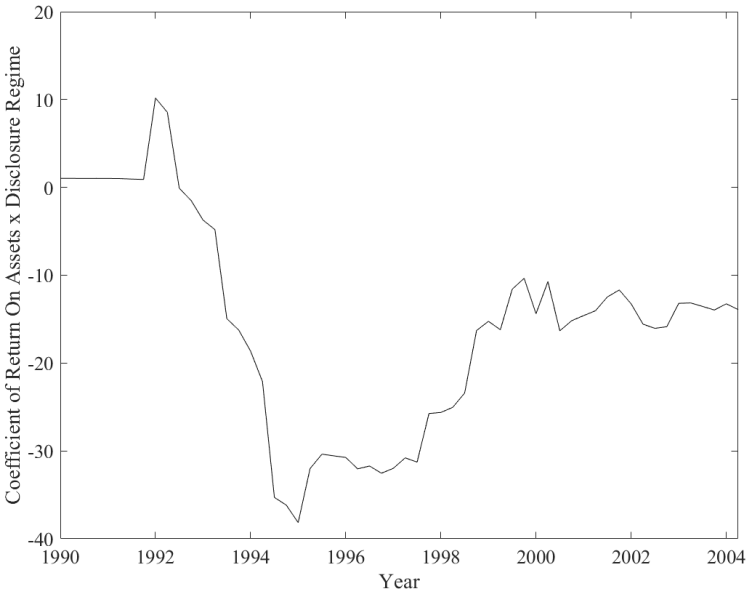
Panel A



Panel B



Panel C



Panel D

Figure D4: Time trend of coefficients

This figure shows the time trend of coefficients of *Disclosure Regime* (Panel A), *Capital Ratio* × *Disclosure Regime* (Panel B), *Non-performing Assets* × *Disclosure Regime* (Panel C) and *Return On Assets* × *Disclosure Regime* (Panel D) from the estimation of Equation 1 (excluding year indicators). The pre-FIRREA sample consists of the years 1983–1984 whereas the post-FIRREA sample consists of all possible consecutive 16-quarter windows.

Table D1: Likelihood of receiving an enforcement action

This table presents the coefficients from estimating a linear probability model of the regulators' decision to issue an enforcement action during the period of 1983 to 1997. *Disclosure Regime* takes the value of 1 for the quarters after the introduction of FIRREA in Q3 1989 and 0 otherwise. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. All variables are lagged by one quarter and are defined in Appendix C. t-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

	(1)	(2)	(3)	(4)	(5)	(6)
Treatment x Disclosure Regime	0.050***	0.100***	0.021***	0.062***	0.052***	0.077***
	(29.457)	(18.156)	(9.238)	(30.062)	(18.535)	(13.494)
Size	-0.002***	-0.002***	-0.001***	-0.002***	-0.002***	-0.001***
	(-7.223)	(-7.826)	(-4.978)	(-6.858)	(-7.262)	(-5.624)
Capital Ratio	-0.039***	0.030***	-0.036***	-0.033***	-0.039***	0.004**
	(-9.935)	(11.286)	(-9.453)	(-8.543)	(-9.947)	(2.351)
Non-Performing Assets	0.043***	0.045***	-0.029***	0.045***	0.043***	-0.004***
	(9.488)	(9.951)	(-13.130)	(10.382)	(9.485)	(-5.066)
Return On Assets	-0.155***	-0.155***	-0.151***	0.109***	-0.155***	0.022***
	(-7.607)	(-7.654)	(-7.502)	(11.505)	(-7.603)	(3.693)
Liquidity Ratio	-0.001	0.000	-0.001	0.000	-0.000	0.001
	(-0.885)	(0.158)	(-0.580)	(0.230)	(-0.156)	(1.194)
Change in Capital Ratio	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***
	(-3.840)	(-3.995)	(-4.152)	(-3.804)	(-3.825)	(-3.898)
Change in Liquidity Ratio	0.000	-0.000	-0.000	-0.000	0.000	-0.000
	(0.176)	(-0.100)	(-0.008)	(-0.295)	(0.193)	(-0.330)
Change in Loans	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.002***
	(-11.672)	(-9.412)	(-10.990)	(-10.081)	(-11.686)	(-8.940)
log(Distance)	0.001**	0.001**	0.001***	0.001**	0.001**	0.001**
	(2.229)	(2.200)	(2.675)	(2.151)	(2.233)	(2.313)
Employment Growth	-0.005**	-0.003	-0.004*	-0.004*	-0.005**	-0.003
	(-2.349)	(-1.456)	(-1.880)	(-1.723)	(-2.387)	(-1.293)
Capital Ratio x Disclosure Regime		-0.023***				-0.005***
		(-14.335)				(-6.324)
Treatment x Capital Ratio		-0.390***				-0.216***
		(-9.399)				(-5.818)
Treatment x Capital Ratio x Disclosure Regime		-0.596***				-0.429***
		(-10.270)				(-8.101)
Non-Performing Assets x Disclosure Regime			0.010***			0.004**
			(6.328)			(2.544)
Treatment x Non-Performing Assets			0.250***			0.146***
			(7.779)			(4.516)
Treatment x Non-Performing Assets x Disclosure Regime			1.058***			0.834***
			(12.669)			(9.870)
Return On Assets x Disclosure Regime				-0.085***		-0.055***
				(-5.668)		(-3.511)
Treatment x Return On Assets				-0.890***		-0.735***
				(-7.089)		(-5.687)
Treatment x Return On Assets x Disclosure Regime				-3.035***		-1.518***
				(-11.538)		(-5.395)
Liquidity Ratio x Disclosure Regime					0.002***	0.006***
					(3.394)	(10.007)
Treatment x Liquidity Ratio					-0.013	0.009
					(-0.914)	(0.679)
Treatment x Liquidity Ratio x Disclosure Regime					-0.031	-0.121***
					(-1.100)	(-4.362)
Observations	685,346	685,346	685,346	685,346	685,346	685,346
Adjusted R-squared	0.077	0.087	0.096	0.094	0.078	0.107
Reg Type	OLS	OLS	OLS	OLS	OLS	OLS
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Bank	Bank	Bank	Bank	Bank	Bank
Years	1983-97	1983-97	1983-97	1983-97	1983-97	1983-97
Period	All	All	All	All	All	All

Table D2: Persistence of main results

This table presents the coefficients from estimating a Cox proportional-hazards model of the regulators' decision to issue an enforcement action during the period of 1983 to 2007. *Disclosure Regime (Q4 1989–1997)* takes the value of 1 for the quarters after the introduction of FIRREA from Q4 1989–Q4 1997 and 0 otherwise. *Disclosure Regime (1998–2007)* takes a value of 1 for the years 1998–2007 and 0 otherwise. To mitigate the effects of extreme observations, all continuous variables are winsorized at the 1% and 99% tails of their respective distributions in each sample year. All variables are lagged by one quarter and are defined in Appendix C. z-statistics are presented in parentheses. $^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$ (two-tailed).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Disclosure Regime (Q4 1989-1997)	3.276***							-2.159***
	(23.638)							(-4.184)
Disclosure Regime (1998-2007)	3.994***							-1.415***
	(25.160)							(-3.238)
Size	-0.007	-0.015	-0.013	0.007	-0.000	-0.013	0.007	-0.030
	(-0.319)	(-0.711)	(-0.616)	(0.321)	(-0.010)	(-0.624)	(0.340)	(-1.418)
Capital Ratio	-12.519***	-12.640***	-6.227***	-13.833***	-13.102***	-12.684***	-18.297***	13.038***
	(-8.941)	(-8.971)	(-2.815)	(-9.442)	(-9.141)	(-9.006)	(-5.617)	-7.687
Non-Performing Assets	21.778***	22.514***	22.568***	14.570***	23.152***	22.516***	17.805***	-28.400***
	(22.668)	(22.971)	(23.048)	(10.409)	(24.351)	(22.918)	(10.304)	(-12.502)
Return On Assets	-45.414***	-46.064***	-46.450***	-45.319***	-16.458***	-46.039***	-22.052***	55.072***
	(-14.626)	(-14.054)	(-14.375)	(-14.369)	(-3.619)	(-14.042)	(-3.730)	-12.159
Liquidity Ratio	-1.551***	-1.583***	-1.572***	-1.725***	-1.664***	-2.374**	-2.509**	1.586**
	(-2.685)	(-2.637)	(-2.614)	(-2.880)	(-2.789)	(-2.125)	(-2.350)	-2.478
Change in Capital Ratio	-0.374**	-0.418***	-0.476***	-0.556***	-0.575***	-0.416***	-0.565***	1.012***
	(-2.360)	(-2.607)	(-2.873)	(-3.325)	(-3.479)	(-2.590)	(-3.364)	-4.749
Change in Liquidity Ratio	0.155***	0.146***	0.144***	0.134**	0.120**	0.143***	0.120**	-0.158***
	(2.832)	(2.655)	(2.611)	(2.411)	(2.165)	(2.594)	(2.149)	(-2.790)
Change in Loans	-1.081***	-1.059***	-1.062***	-0.918***	-1.094***	-1.056***	-0.969***	0.802***
	(-5.359)	(-5.272)	(-5.269)	(-4.784)	(-5.777)	(-5.261)	(-5.233)	-3.696
log(Distance)	0.120***	0.117***	0.119***	0.120***	0.118***	0.116***	0.120***	-0.109***
	(4.889)	(4.878)	(4.918)	(5.004)	(4.918)	(4.822)	(4.995)	(-4.107)
Employment Growth	-2.613***	-1.666*	-1.613*	-1.669*	-1.684*	-1.671*	-1.752*	0.565
	(-3.078)	(-1.875)	(-1.812)	(-1.846)	(-1.864)	(-1.881)	(-1.919)	-0.655
Capital Ratio x Disclosure Regime (Q4 1989-1997)			-7.676***				3.002	
			(-3.109)				(0.814)	
Capital Ratio x Disclosure Regime (1998-2007)			-6.628**				8.096**	
			(-1.968)				(2.069)	
Non-Performing Assets x Disclosure Regime (Q4 1989-1997)				7.147***			4.450**	
				(4.693)			(2.169)	
Non-Performing Assets x Disclosure Regime (1998-2007)				34.797***			23.138***	
				(15.354)			(7.860)	
Return On Assets x Disclosure Regime (Q4 1989-1997)					-22.787***		-17.383**	
					(-4.876)		(-2.534)	
Return On Assets x Disclosure Regime (1998-2007)					-90.477***		-65.597***	
					(-15.381)		(-8.053)	
Liquidity Ratio x Disclosure Regime (Q4 1989-1997)						0.433	0.743	
						(0.321)	(0.567)	
Liquidity Ratio x Disclosure Regime (1998-2007)						2.507	1.576	
						(1.601)	(0.971)	
Observations	961,837	961,837	961,837	961,837	961,837	961,837	961,837	961,837
Wald chi2	3731***	2957***	3130***	4085***	4345***	2965***	4620***	1433***
Reg Type	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Cox Hazard	Weibull AFT
Strata	None	Year	Year	Year	Year	Year	Year	Year
Cluster	Bank	Bank	Bank	Bank	Bank	Bank	Bank	Bank
Years	1983-07	1983-07	1983-07	1983-07	1983-07	1983-07	1983-07	1983-07
Period	All	All	All	All	All	All	All	All