

# Reliance on External Assurance in Bank Monitoring

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## Abstract

We exploit a change to internal control regulation in the banking industry to examine whether and how regulators assess bank risk when they can no longer rely on external assurance. We find that regulators influence banks to report higher non-accrual loans during regulatory examination periods but find no such changes in past due loans, consistent with increased regulator strictness but inconsistent with operational deterioration. We also find that regulators increase the length of internal control-related examinations and downgrade confidential CAMELS ratings following the removal of external assurance for affected banks relative to unaffected banks. Our findings indicate that in the absence of external assurance, regulators increase their rigor, strictness and allocation of resources when reliance on external assurance is no longer available and that external assurance is an imperfect substitute for direct regulatory monitoring.

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# 1 Introduction

Oversight by regulatory agencies is essential to the functioning of capital markets. In the banking industry, a regulatory infrastructure is in place to reduce excessive risk taking and promote the safety and soundness of banks, primarily through periodic bank examinations. As part of this objective, regulatory agencies also mandate that certain banks receive independent audits by external audit firms. Given that there is potential for overlap in certain tasks between examinations and external audits, regulatory agencies recommend that bank examiners incorporate information from external audits when assessing risk during examinations. More broadly, current efforts to reform regulatory oversight of the banking industry include incorporating more external assurance traditionally sourced by regulators. In this paper, we exploit a regulatory change that shifted the threshold for which banks are required to obtain an external audit of internal controls over financial reporting (ICFR) to examine whether and how the absence of external assurance over internal controls affects discretionary components of bank financial reporting and regulatory resource allocation.

The effect of external assurance in regulatory monitoring is not obvious *ex ante*. While regulatory guidance indicates that examiners should consider the work completed by third parties ([FRB, 2018](#)), prior literature documents considerable discretion in regulators' adherence to stated rules and procedures ([Agarwal et al., 2014](#)). Regulators are considered experts in their field and may not be willing to risk sacrificing the quality of their examinations by relying on the work of third parties. Thus, regulators may choose not to rely on external assurance, in which case we would not observe a change in regulator behavior in the absence of assurance provided by the external auditor. However, regulators face resource constraints ([Hirtle et al., 2016](#)). When regulators allocate limited resources across all regulated entities, they have economic incentives to substitute regulatory oversight with information provided by external assurance to help monitor bank risk ([OCC, 2001a](#)). Thus, whether bank examiners change their behavior and adjust resource allocation in the absence of external assurance is an empirical question.

In the case that regulators do rely on the work of auditors, regulators' and auditors' work may not be perfect substitutes because the particular risk-relevant concerns of auditors and regulators

differ. Bank regulators are charged with assessing the safety and soundness of a bank while external auditors are primarily concerned with whether the financial statements are materially correct. For example, while regulators are certainly interested in whether controls are in place to prevent improperly valued loans, the primary concern of regulators is ensuring that the internal controls appropriately constrain the risk-taking of loan underwriters. Thus, while auditors may assess controls over loans as being adequate for financial reporting purposes, regulators may determine that the processes surrounding loan origination allows the bank to take on excessive risk. In this case, a regulator-performed evaluation would lead to a different conclusion about internal controls and the risks surrounding loans compared to an auditor-performed assessment. Thus, if external assurance is an imperfect substitute for regulatory monitoring, then in the absence of external assurance, regulators may discover that the assurance previously provided by external parties was incomplete or insufficient in comparison with the required regulatory tasks. As a result, when external assurance is no longer available, regulators would increase their strictness.

To examine whether the absence of external assurance affects bank regulatory behavior and resource allocation, we exploit an amendment to FDICIA that was passed in 2005 and implemented in 2006, which increased the minimum size threshold for requiring internal control audits from \$500 million to \$1 billion in total assets. A consequence of this change was that regulators lost the ability to rely on external assurance for internal control-related tasks for affected banks (i.e., those banks between \$500 million and \$1 billion in total assets). We utilize a generalized difference-in-differences empirical design, with banks that experience a removal of internal control audit requirements as our treated group and banks that were never subject to internal control audit requirements as our control group. This approach allows us to separate the effects of systemic changes in the economy from the effect of the removal of mandated ICFR audits. With this empirical strategy, we focus on how the change in ICFR audit requirement affects regulator reliance and strictness using three specific sets of outcome variables: (I) the reporting and timing of asset quality ratios, (II) the length (in days) of bank examinations, and (III) supervisory assessments.

We find that bank regulators rely on external assurance and that they adjust their behavior and resource allocation following the removal of the ICFR audit mandate. First, we find evidence of

an increase in regulatory strictness via an increase in the reporting of troubled assets for treated banks. However, changes in asset quality are primarily driven by discretionary classifications of problem assets rather than a deterioration in operational performance or an increase in actual bank risk-taking. Specifically, while non-accrual loans at treated banks increase by approximately 3.0 percent relative to the unconditional mean of the outcome variable, mechanical operational quality measures such as past due loans do not statistically change. If the removal of the ICFR audit mandate leads to decreased asset quality through operational deterioration or increased bank risk-taking, we would expect that decreased asset quality would result in both higher non-accrual and past due loans. Instead, we find null results in changes in performing past due loans which suggests that the increase in non-accrual loans is due to the increase in discretionary classification of loans as non-accrual. Furthermore, we examine a channel by which banks use discretion to change non-accrual loan balances by identifying troubled-debt restructured loans (TDRs) and we find increases in TDRs for treated banks. Overall, our findings related to asset quality are inconsistent with both deterioration in operating quality and increased risk-taking after the removal of mandatory ICFR audits, but rather point to an increase in the reporting of troubled assets.

Next, we examine whether the reporting of troubled assets is a function of changes in regulatory resource allocation. We find that targeted bank examinations, which often focus on control-related issues, are 10.34 days longer for treated banks relative to control banks following the removal of the ICFR audit mandate. The increase in exam days is consistent with examiners increasing effort for banks where the ICFR audit requirement was removed. Additionally, we find that the increase in reported problem assets is concentrated during targeted examination periods. This result provides evidence that the change is due to an increase in regulatory strictness during targeted examinations following the removal of the ICFR audit mandate. We find consistent results when treated banks are compared to a control sample of banks that are larger in asset size, but retain the ICFR audit requirement. While [Hirtle et al. \(2016\)](#) demonstrate that larger banks receive greater supervisory attention, on average, we find that following the removal of external assurance, regulators allocate greater resources to targeted examinations of treated banks relative to the sample of larger banks.

We also find that regulators downgrade their confidential assessments of bank health by roughly

4.5 percent relative to the unconditional mean.<sup>1</sup> A deterioration in regulatory assessments alone does not necessarily indicate an increase in regulator strictness. Managers' operating decisions may have deteriorated after the relaxation of the ICFR audit mandate, leading to mechanical deterioration in examiners' assessment of bank performance. In this case, we would expect that banks' operations deteriorate across all components of regulator ratings. Instead, our results indicate that the relaxation in ICFR audit requirements is associated only with downgrades in asset-quality and management related components, but not in those components tied to bank liquidity and interest rate sensitivity. Collectively, our results indicate that in the absence of external assurance over internal controls, regulators become stricter in their assessment of bank performance and allocate more resources to treated banks.

Despite this evidence, our study is not without caveats. First, we cannot definitively conclude whether bank regulators become more accurate in their regulatory assessments. Rather, we conclude that regulators become stricter and allocate more resources to treated banks in the absence of external assurance over internal controls. Prior research suggests that lenient regulation is associated with worse economic outcomes such as higher bank failure rates as well as increases in bank risk-taking (Agarwal et al., 2014; Buch and DeLong, 2008; Kandrac and Schlusche, 2020). Further, prior research suggests that regulatory strictness improves loan loss provision timeliness, enforcement of accounting rules, and bank lending and loan allocation which result in improved bank transparency (Nicoletti, 2018; Granja and Leuz, 2017; Costello et al., 2018). While regulatory restrictions on bank activities may not improve bank efficiency, higher transparency in financial reporting is associated with higher bank efficiency (Barth et al., 2013). Collectively, these prior studies suggest that increased regulator strictness in the absence of external assurance of ICFR may increase bank efficiency. Second, we acknowledge that the financial crisis of 2007-2009 occurs during the post-period of our analysis. The primary concern with the financial crisis is that the crisis may have had a differential effect on our treated banks relative to the control banks, and that such a differential effect could explain our findings. However, our robust fixed effects structure,

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<sup>1</sup>These confidential assessments are called CAMELS ratings. CAMELS is an acronym and stands for the various components of bank performance that examiners assess: Capital Adequacy (C), Asset Quality (A), Managerial Quality (M), Earnings (E), Liquidity (L), and Sensitivity to Market Risk (S). We discuss this rating system in greater detail in section 2.1.

in combination with robust results when comparing treated banks to sample of both larger and smaller control banks significantly mitigates this concern, as any such crisis effect would have to be similar for control samples of large and small banks, yet different for our treated banks with assets between \$500 million and \$1 billion.

This paper contributes to several streams of literature. We broadly contribute to the literature on the design of regulation and specifically to the literature on regulatory consistency and uncertainty by examining how regulatory bodies rely upon external assurance in the performance of their own duties ([Brennan and Schwartz, 1982](#)). We build upon [Agarwal et al. \(2014\)](#), by introducing a key factor explaining variation in bank regulatory supervision within bank regulatory agencies rather than across agencies. Identifying the factors affecting regulatory variation is important in gaining a complete understanding of the determinants of regulatory quality and is of interest to regulators and parties responsible for regulatory design. We expand the literature on the effect of changes and spillover in regulation by providing insight on how changes in rules related to third party assurance (i.e., the external auditor) may have spillover effects onto regulatory behavior (i.e., bank examiners). Further, we provide evidence that changes in supervisory resource allocation effects bank risk-taking, building upon literature on supervisory changes in supervisory resources. While [Kandrac and Schlusche \(2020\)](#) find that decreases in supervisory oversight cause banks to increase *actual* risky assets, we find that an increase in supervisory resources allocated to a bank results in an increase in the *reporting* of troubled assets.

We also contribute to the literature that examines the effects of ICFR audits in the banking industry. For example, [Altamuro and Beatty \(2010\)](#) show that the establishment of ICFR audit requirements with the passage of FDICIA was associated with greater financial reporting quality. Later studies find that the absence of ICFR audit requirements for certain banks following the 2005 amendment to FDICIA is associated with increases in bank risk indicators and the likelihood of bank failure during the financial crisis of 2007-2009 ([Jin et al., 2013a,b](#)). However, prior studies examining the effect of ICFR audits in the banking industry implicitly hold bank supervision constant and attribute all changes in bank outcomes to mechanical deterioration in operating quality. Using confidential bank examination data, we are able to relax the assumption of a constant level of bank

supervision and examine how the removal of ICFR audit requirements affects bank supervision. Our findings suggest that at least a portion of previously discovered deterioration in operating quality is not mechanical, but is a result of discretionary reporting of problem assets encouraged by the bank examiner. Thus, we also contribute to the banking literature by documenting that non-accrual loans have a discretionary component. Prior literature generally treats non-accrual loans as a classification of loans that is not affected by management discretion; however, through our examination of troubled debt restructures, we provide evidence that non-accrual loans also have an important discretionary component.

While our results are in the context of bank regulatory examinations, they help inform other settings where reliance on other parties is encouraged and occurs. Our unique proprietary data and setting provide more precise measures of our theoretical constructs, which allows us to provide a deeper understanding of the effect of third party reliance on examination outcomes. Our study provides evidence on how government regulators rely on the work of a third-party independent financial statement audit. As regulators like the SEC, PCAOB, and other regulatory agencies continue to encourage examiners and auditors to rely on third parties, our results highlight potential limitations that can arise from reliance on third party information.

## **2 Background on Bank Regulation and External Assurance**

### **2.1 Bank Regulation**

All banks in the United States are subject to regulatory examinations while only banks above certain size thresholds must be audited by external auditing firms. Figure 1 provides a visualization of the relationship between banks, regulators, and external auditors, which we expand upon below.

Bank regulation in the United States centers around the laws and rules developed and enforced by the three main federal banking regulators: the Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System (FRB), and the Federal Deposit Insurance Corporation (FDIC). While the OCC is the sole safety and soundness regulator for nationally-

chartered banks, the FRB and FDIC share responsibilities for supervising state-chartered commercial banks with state regulatory agencies. The actual process by which banks are supervised is similar across all charter types.<sup>2</sup>

Communication between regulatory agencies and commercial banks include both qualitative guidance and quantitative benchmarks that summarize bank performance (arrow (4) in Figure 1). The primary quantitative classification system that summarizes bank performance is the CAMELS rating system. CAMELS is an acronym that represents the various aspects of bank performance that regulators focus on while they conduct examinations and perform off-site monitoring. The individual components are: capital adequacy (C), asset quality (A), managerial quality (M), earnings (E), liquidity (L), and sensitivity to interest rate risk (S). Each component, as well as the composite CAMELS rating, is rated on an integer scale from 1 to 5. In general, 1-rated banks show low (if any) risks along a particular dimension, while 5-rated banks pose severe risks to their solvency or financial viability (Agarwal et al., 2014; Gopalan, 2018). These ratings are not publicly available, but are informative to management, as well as interested parties such as banks' boards of directors and auditors.<sup>3</sup>

Bank regulators use a combination of off-site monitoring and on-site examinations to decrease the likelihood that banks face solvency risks (arrow (2) in Figure 1). The OCC discusses three basic examination types that are performed within the supervisory cycle. First, full-scope exams are the most common type of examination and occur once every supervisory cycle (generally 12-18 months) and focus on three main areas including the competence of bank management, quality of bank assets, and compliance with federal banking regulations. These exams typically occur on-site at the bank and culminate in the CAMELS ratings discussed above. Second, bank examiners perform targeted examinations of specialty areas to gather information and address identified gaps in regulators' knowledge (Eisenbach et al., 2017). For example, a targeted exam "is performed on an area or risk within the firm and usually entails determining or validating that controls and

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<sup>2</sup>Throughout the paper we refer to bank supervisors/supervision, bank examiners/examinations, and bank regulators interchangeably.

<sup>3</sup>While CAMELS downgrades are not publicly disclosed, continued delayed recognition of asset deterioration or loan losses may prompt public regulatory enforcement actions that curtail lending and other business activities (Wheeler, 2019).



processes for the target area or risk are effective”(FRB, 2019). Finally, regulators perform other exams that may be specific to a particular regulation or legal obligation including, but not limited to, areas such as compliance with the Bank Secrecy Act and with rules surrounding the validity and reliability of a bank’s information technology system.

In addition to, but separate from examinations, some banks are subject to mandatory financial statement audits and audits of internal control over financial reporting. Specifically, FDICIA requires that certain regulated financial institutions provide reports on the effectiveness of internal controls and that third-party auditors attest to the design and operating effectiveness of these banks’ internal controls. At the time of its initial passage, FDICIA required that all banks with greater than \$500 million in assets receive an independent audit of both the financial statements and ICFR (arrow (1) in Figure 1) (Altamuro and Beatty, 2010, section 363 of FDICIA).

As a part of the regulatory examination process, the evaluation of internal controls is essential to assessing bank risk and conducting bank examinations. According to the OCC Comptroller’s Handbook, “The quality and reliability of a bank’s internal control function are a factor in CAMELS ratings ” (OCC, 2001a). Given that certain banks receive an external ICFR audit, regulators are encouraged to rely on the external ICFR audits and to prepare their examinations accordingly (arrow (3) in Figure 1). The OCC states that internal control assessments generated by external auditors “help leverage OCC resources, establish the scopes of other examination activities, and contribute to the developing strategies for future supervisory activities...[D]ocumentation associated with [a bank’s] internal control assessment should provide examiners an excellent resource in determining whether bank management performs a satisfactory assessment of a bank’s control structure.” (OCC, 2001a). Anecdotally, discussions with senior bank examiners indicate that information from internal control audits should be used to substitute for bank examination procedures.

In 2005, section 363 of FDICIA was amended to increase the asset threshold for requiring an independent audit of internal controls from \$500 million to \$1 billion starting from the 2006 calendar year onwards, while leaving the requirement for an audit of financial statements unchanged (FDIC, 2005a). In their proposed regulations the FDIC stated that it “has observed that compliance with the audit and reporting requirements of part 363 has and will continue to become more bur-

densome and costly, particularly for smaller nonpublic covered institutions....The FDIC believes that relieving smaller covered institutions from the burden of internal control assessments, while retaining the financial statement audit and other reporting requirements for all institutions with \$500 million or more in total assets, strikes an appropriate balance in accomplishing this objective” (FDIC, 2005b). In raising the ICFR audit threshold, the goal of the FDIC was to reduce excessive burden on smaller institutions, without sacrificing safety and soundness. Furthermore, the exemption of non-accelerated filers (i.e., firms with public floats of \$75 million or less) from the ICFR audit provisions of Sarbanes Oxley Section 404 provided additional motivation and support for the threshold increase(United States Code, 2002). The amendment removed the external assurance over internal controls provided to bank (arrows (1) and (3) in Figure 1), resulting in a scenario where reliance on such external assurance is no longer possible. Given the extensive lobbying of smaller banks for the removal of the mandate due to their evaluation that the high cost did not outweigh the benefits, we consider it unlikely that banks would retain the external ICFR audit following the amendment. Consistent with this argument related to Sarbanes-Oxley requirements, one survey indicated 80 percent of corporate executives considered the cost of ICFR audits to outweigh the benefits (O’Sullivan, 2006). Furthermore, we note that less than 10 percent of our sample of banks are publicly traded, and all are smaller community banks, thus our sample is not significantly impacted by the the ICFR audit requirements of SOX. To the extent that any banks in our treated sample chose to continue to receive an ICFR audit, this would bias against results given there would be no change in the ICFR audit status.<sup>4</sup>

The internal control audit mandate provided by FDICIA in 1992 had a profound effect on the bank examination process with considerable demand for examiners to place reliance on the external ICFR audit in their risk assessment process. However, the empirical question remains as to what effect the removal of the reliance on external assurance has had on bank examiner behavior.

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<sup>4</sup>Since 2016, the call report field RCON6724 indicates whether the audit includes ICFR. Thus, we remove any banks from our sample that indicate they had a voluntary ICFR audit from years 2016 onward. This further mitigates the likelihood that banks with voluntary audits are driving our results.

## 2.2 Bank Supervision and External Assurance

It is possible that external ICFR audits and the change in requirements associated with external ICFR audit requirements would have no effect on bank examinations. While guidance recommends that regulators rely upon externally generated attestation during bank examinations (OCC, 2001a), prior literature documents considerable discretion in regulators' adherence to stated rules and procedures (Agarwal et al., 2014). Thus, regulators may still perform their own internal control testing, over and above what is recommended by examination guidance. Instead, the attestation provided by an external ICFR audit may be subsumed by the wealth of private information available to regulators, as well as regulators' statutory authority to intervene in bank operations. In this case, removing the mandated ICFR audit would have no effect on regulator strictness or resource allocation.

On the other hand, if regulators do rely on external assurance, such reliance has the potential to affect regulator resource allocation and strictness. Reliance will either affect the level of effort, the allocation of effort, or both, with each possibility having different implications for examination outcomes. If the overall level of effort for a given bank examination remains constant and if examinations and ICFR audits are perfect substitutes, then relying on the ICFR audit work may allow regulators to allocate their resources to higher risk areas of the examination. In this case, bank regulators may effectively use the information provided by the external ICFR audit to better focus their examination procedures, resulting in a more effective and efficient bank examination. Thus, the *removal* of the ICFR audit mandate could reduce examination effectiveness and efficiency because examiners re-allocate resources across all areas of the examination rather than focusing specifically on high risk areas.

Additionally, while regulators face resource constraints, they are required to perform examinations of *all* banks in their portfolios. When allocating limited resources across all bank examinations, regulators have economic incentives to reduce resources allocated to examinations where they can rely on external ICFR audits. If ICFR audits conducted by external auditors and evaluation of ICFR by bank regulators are perfect substitutes, removing the third-party ICFR audit mandate will have no effect on the outcome of bank examinations, but will only affect which party

bears the responsibility for conducting the ICFR evaluation. In either the case of non-reliance or if relied upon tasks are perfect substitutes, the presence or absence of the ICFR audit would have no observable effect on regulator strictness.

One reason evaluation by auditors and examiners may not be perfect substitutes is that effective reliance on the work of external auditors requires regulators to appropriately integrate the information provided by the ICFR audits into their examination procedures. Prior literature suggests that such integration of external information is challenging. Specifically, in examining audits of financial statements, prior literature finds that auditors do not appropriately respond to identified risks and that auditors tend to under-react and insufficiently adjust their testing strategies for changes in inherent, control and fraud risk ([Asare et al., 2013](#)). Additionally, experts do not always respond to external cues from specialists, and may employ a “check the box” mentality rather than carefully considering the implications of the information contained in specialists’ reports (i.e., the independent ICFR audit) ([Griffith et al., 2015](#); [Griffith, 2018](#)).

Another reason evaluation by auditors and regulators may not be perfect substitutes is that the particular risk-relevant concerns of auditors and regulators differ, which could further complicate the integration of external audits of ICFR into bank examinations. While regulators are certainly interested in whether controls are in place to prevent improperly valued loans, the primary concern of regulators is ensuring that the controls appropriately constrain the risk-taking of loan underwriters. Thus, while auditors may assess controls over loans as being adequate for financial reporting purposes, regulators may determine that the processes surrounding loan origination allow the bank to take on excessive risk. In this case, a regulator-performed evaluation would lead to a different conclusion about internal controls and the risks surrounding loans, compared to an auditor-performed assessment. Given that there is significant overlap in procedures to evaluate controls, yet significant differences in the objectives of the control evaluation for regulators and auditors, it is unclear, *ex ante*, whether and how the reliance on external ICFR audits affect bank regulator strictness.

### 3 Sample Selection and Identification Strategy

#### 3.1 Sample Selection

In order to investigate the effect of the amendment to FDICIA that was implemented in 2006 on bank supervision, we construct a panel data set consisting of both publicly-available and proprietary information. Our first data source contains quarterly reports of banks' balance sheets, income statements, asset quality, and capital adequacy. These reports, referred to as the Consolidated Reports of Condition and Income (colloquially referred to as Call reports), are mandatory filings for all regulated financial institutions, regardless of their size, geography, or publicly listed status. These reports are useful for market investors who wish to gather quarterly information on publicly traded banks ([Badertscher et al., 2018](#)), as well as for examiners who use Call reports to determine whether reported bank performance meets or exceeds implicit or explicit risk thresholds ([Costello et al., 2018](#); [Gopalan, 2018](#)). For our purposes, we collect information on size, performance, capital structure, loan portfolios, and asset quality from Call reports.

The second data set we utilize includes confidential supervisory assessments gathered directly from bank regulators. As mentioned in section 2.1, CAMELS ratings are the primary numerical output from periodic, on-site bank examinations. The ratings incorporate qualitative and quantitative information on commercial banks and summarize various components of bank risk into an integer ranging from 1 (lowest risk) to 5 (highest risk). CAMELS ratings are updated every 12 to 18 months, depending upon bank performance and are not publicly revealed. CAMELS ratings are housed in the National Information Center (NIC) database, a confidential information repository maintained by the three primary federal bank regulators (i.e., FDIC, OCC, and FRB). For our analyses, we gather ratings after each on-site examination, as well as the specific dates that examinations occurred.

Our final quarterly panel data set consists of bank-quarter observations of banks with less than \$1 billion in assets from 2000 to 2010. We require that all bank-quarter observations have non-missing total assets at time period  $t$ , as well as three consecutive quarter lags of non-missing total assets. We merge supervisory information into bank-quarter Call report data, resulting in a final

sample of 237,461 bank-quarter observations.<sup>5</sup> Treated bank-quarters comprise 10,025 observations out of this total, while the remainder form bank-quarter observations for our control group.

### 3.2 Identification Strategy

Our empirical strategy relies upon comparing banks that were affected by the amendment (i.e., the removal of the ICFR audit mandate) to FDICIA relative to unaffected banks (i.e., those that were never subject to the ICFR audit mandate). Specifically, we use a generalized difference-in-differences research design to compare bank and supervisory outcomes for banks between \$500 million to \$1 billion in assets at the time of the amendment passage (the treated group) relative to outcomes for banks below \$500 million in assets at the time of the amendment passage (the control banks). We choose banks below \$500 million in assets as the appropriate control group, given that these banks' business models and regulatory oversight most closely resemble those of treated banks. Conversations with senior regulatory personnel at the Federal Reserve also confirm this choice.<sup>6</sup> After grouping commercial banks into these categories, we use the following generalized difference-in-differences model:

$$Outcomes_{it} = \beta Treat_i \times Post_t + \gamma Controls + \alpha_i + \alpha_{st} + \epsilon_{it} \quad (1)$$

In the equation above,  $Outcomes_{it}$  are quarterly outcome variables either generated by banks or bank examiners. Specifically, we investigate performing loans 30-89 days past due  $\left(\frac{Past30_t}{Assets_{t-1}}\right)$ , non-accrual loans  $\left(\frac{NACC_t}{Assets_{t-1}}\right)$ , and the number of examination days ( $Days_{it}$ ). While this particular amendment to FDICIA was passed in 2005, it was only implemented in 2006. Thus, our primary independent variable of interest,  $Treat_i \times Post_t$ , is an indicator variable that equals one for year-quarters in 2006, onwards, for the sample of treated banks that we define in the previous para-

<sup>5</sup>We note that there is some slight variation in sample size reported across different analyses in the paper because Stata's REGHDFE command drops singleton observations within a fixed effect class (e.g., state-year-quarter combination). Dropping of these observations is necessary for our empirical strategy and does not affect inferences from our findings.

<sup>6</sup>Specifically, the FDIC's Community Bank Initiative states that most banks under \$1 billion would be considered "community-focused". We discuss alternative control groups in greater detail in section 5.

graph. We include bank-level control variables for bank loan portfolio size  $\left(\frac{Loans_t}{Assets_{t-1}}\right)$ , asset size  $(Ln[Assets_{t-1}])$ , tier 1 leverage ratio  $\left(\frac{Tier1\ Capital_t}{Avg\ Assets_t}\right)$ , and pre-provision income  $\left(\frac{Pre-Provision\ Income_t}{Assets_{t-1}}\right)$  to mitigate concerns that our results may be driven by changes in bank operations unrelated to the treatment effect.<sup>7</sup>

While the difference-in-difference design helps mitigate concerns about unobservable factors explaining our results, it is still possible that unobservable differences in bank characteristics, local economic trends, and/or changing macroeconomic conditions (e.g., the economic recession) during our sample period might impact our results. To further mitigate this concern, we incorporate two classes of fixed effects to control for unobserved heterogeneity in our sample. The first fixed effect,  $\alpha_i$ , is a bank-specific fixed effect for every financial institution in our sample. The inclusion of bank-level fixed effects allows for a within-bank analysis as it controls for time-invariant bank characteristics. The second fixed effect,  $\alpha_{st}$ , is a state x quarter fixed effect that allows us to examine variation within a given state during a given quarter. Given we include both bank-level and time-level fixed effects, the base variables  $Treat_i$  and  $Post_t$  are absorbed into each respective fixed effect category.

Our difference-in-difference research design incorporating bank and state x quarter fixed effects helps mitigate concerns about endogeneity and the potential for unobserved alternative explanations in several ways. First, with the inclusion of bank-level fixed effects, we control for time-invariant bank characteristics that may affect our inferences. For instance, bank risk-taking may be collinear with size (our forcing variable). Moreover, our model specification restricts the comparison of treated and control banks to be within the same state. If economic conditions vary in severity by particular regions or states at a particular time during our sample period, banks' outcome variables may mechanically deteriorate as conditions worsen. The fixed effects absorb the influence of such regional economic shocks that may bias our results. Thus, the documented effect of  $Treat_i \times Post_t$  is based on a comparison of banks between \$500 million to \$1 billion in assets

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<sup>7</sup>In subsequent analyses examining the relation between mandated ICFR audit removal and supervisory ratings, we include total loan delinquencies  $\left(\frac{Delinquencies_t}{Assets_{t-1}}\right)$  as an additional control variable in order to control for the effect of higher delinquencies on supervisory ratings. All Call Report-based variables are at the bank-quarter level. We omit the "i" subscript when referencing variables for simplicity.

to banks below \$500 million in assets, within the same state in the same quarter.<sup>8</sup> Thus, for an alternative explanation (e.g., economic recession or unobserved differences across banks in a given state) to explain our empirical findings, it would have to differentially affect treatment banks (\$500 million to \$1 billion in assets) relative to control banks (less than \$500 million in assets) located within the same state during the same quarter. Conceptually, we have no reason to believe that is the case.<sup>9</sup>

## 4 Summary Statistics and Results

### 4.1 Summary Statistics

Table 1 presents summary statistics of the bank-quarter observations in our sample. The average bank size in our sample is fairly small: \$175.73 million in total assets. Regulators define community banks as those banks with less than \$10 billion in assets, meaning all banks in our sample would be considered community banks, and 11.1 percent of our sample is comprised of state member banks. Loans comprise a majority of banks' assets. Sample banks are profitable; mean annualized ROA is 0.8 percent and have a low level of loan loss provisions and loan charge-offs, as both annualize to 0.4 percent of lagged assets. Furthermore, our sample banks are well-capitalized; the mean tier 1 leverage ratio is 10.7 percent.<sup>10</sup> In terms of asset quality, our sample banks also appear to perform well overall. The mean loan loss reserve is 0.9 percent and mean delinquent assets is 1.7 percent. Sample banks have a low percentage of past due and non-accrual loans with 0.9 percent of assets with loans that are 30-89 days past due and non-accrual loans at 0.7 percent of total assets. On average, examiners rate the banks in our sample as somewhere between strong (rating of 1) and satisfactory (rating of 2) for all components. The mean composite CAMELS rating is 1.79 and individual CAMELS component ratings means range from 1.57 to 1.99. The 75th percentile for the composite CAMELS rating and for all individual components is 2, suggesting that the majority of banks in our sample have at least a satisfactory rating.

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<sup>8</sup>See section 5 for discussion of additional analyses to support the appropriateness of the control group.

<sup>9</sup>We perform a number of robustness tests to rule out any such alternative explanations, particularly explanations related to the financial crisis. See section 5 for details of analyses.

<sup>10</sup>According to Section 324.10(a) of FDIC rules and regulations, FDIC-supervised institutions must maintain a total risk-based capital ratio of 8 percent and a tier 1 risk-based capital ratio of 6 percent.



Table 2 provides detailed information on the frequency and duration of the three types of regulatory examinations as discussed in section 2.1. Consistent with the full-scope examination being the primary focus of regulators in general, in Panel A we find that 57 percent of examinations are full-scope in nature. Only 5 percent of examinations are targeted, consistent with the specialized and focused nature of these types of examinations. Panel B provides details on the variation in exam type over our sample period. While targeted examinations were relatively rare during the early portion of our sample period, constituting only 2 percent of total exams, we find a substantial uptick in the proportion of targeted examination in 2009 and 2010, to 10 percent and 21 percent of all examinations, respectively. As we expand upon further in section 5, the increase in targeted examination during the crisis period is important for revealing the focus of examiners and their resource allocation decisions when monitoring the safety and soundness of financial institutions. As shown in Table 2, Panel C, the mean target examination duration is 19.0 days, compared to the mean full-scope examination of 32.4 days. Together this descriptive information is consistent with the full-scope examinations being the primary tool of bank regulatory monitoring, and the targeted examinations being an important supplemental and focused tool to address specific areas of potential concern.

## 4.2 Dynamic Regression Results

In order to satisfy the parallel trends identification assumption of the difference-in-differences empirical method, we provide graphical representations of our outcome variables as regressions. Graphical evidence in support of our identification assumption would suggest that prior to 2006, the slopes in outcome variables for our treated and control groups were parallel. We re-estimate equation (1) after splitting  $Post_t$  into indicator variables that represent  $t$  years to or from treatment using the following regression approach:

$$\begin{aligned}
Outcomes_{it} = & \beta_1 Treat_i \times 2001(0, 1) + \beta_2 Treat_i \times 2002(0, 1) + \beta_3 Treat_i \times 2003(0, 1) + \beta_4 Treat_i \times 2005(0, 1) \\
& + \beta_5 Treat_i \times 2006(0, 1) + \beta_6 Treat_i \times 2007(0, 1) + \beta_7 Treat_i \times 2008(0, 1) + \beta_8 Treat_i \times 2009(0, 1) \\
& + \beta_9 Treat_i \times 2010(0, 1) + \alpha_i + \alpha_{st} + \epsilon_{st}
\end{aligned} \tag{2}$$

where  $Outcomes_{it}$  is an outcome variable of interest,  $\alpha_i$  represents bank fixed effects,  $\alpha_{st}$  represents state x year-quarter fixed effects, and the main independent variable  $Treat_i \times Post_t$  is broken into specific indicator variables that equal one for years  $t$  before (or after) 2006. For example, the variable  $Treat_i \times 2001(0, 1)$  equals one for treated banks in the year 2001. It equals zero for treated banks in other years, as well as for non-treated banks. The model includes bank-level and state x quarter fixed effects, in which the year 2004 is left out as the reference year.

In Figure 2, we provide graphical evidence in support of our difference-in-differences identification assumption. We seek to show that coefficients in the pre-period are not statistically different from zero and exhibit little if any trend prior to 2006. In Panel A, we first examine trends in the asset-quality outcome measures. We find no significance differences in performing loans 30-89 days past due (sub figure a) or in total non-accrual loans (sub figure b) in the period leading up to 2006. We do find evidence that after the amendment, the level of non-accrual loans, but not overall past due loans, is greater for the treated banks relative to the control group. The difference in the past due and non-accrual trends will be explored in greater detail in section 4.3.1. In Panel B, sub figure (c) we find no significant difference in the target exam length for treated banks relative to control banks in the period leading up to 2006, but we do find evidence that after the amendment, the targeted exam length starts to increase. In sub figure (d) we do see evidence of a significant difference in the length of non-target exams for treated banks relative to control banks in the pre-period. This pre-existing trend indicates that we should exercise caution in drawing strong conclusions related to non-targeted examination length. However, as discussed in section 2.1, the target exams, rather than the full or other exams are of primary interest in this study as targeted exams are most likely sensitive to changes in internal control-related regulation. Panel C of Figure

2 shows no significant difference in the period leading up to 2006 for either the composite CAMELS rating or any individual components of the rating. However, we do observe an increase in composite CAMELS rating in sub figure (e), and component ratings for the C, A, M and E components in sub figures (f) to (i), but no such pattern in the L and S components after 2006.<sup>11</sup> Together, our evidence suggests that the parallel trends assumption is valid for our outcome variables of interest. Further, the dynamic regression results suggest that the effects of removing mandatory ICFR audits do not immediately appear when the ICFR audit requirement was removed, but only manifest at least two years after our event of interest. This is consistent with the inevitable time lag for some banks between the removal of the ICFR audit requirement and the next regulatory examination. We discuss this delayed response further in section 5.

### 4.3 Static Regression Results

#### 4.3.1 Asset Quality and Financial Reporting Choices

In our first analysis, we examine whether banks' reported asset quality changes as a result of the FDICIA amendment. For this analysis we estimate equation 1 using the outcome variables of accruing loans 30-89 days past due ( $\frac{Past30_t}{Assets_{t-1}}$ ) and non-accrual loans ( $\frac{NPL_t}{Assets_{t-1}}$ ). Table 3 column (3) shows that the coefficient on  $Treat_i \times Post_t$  is positive and statistically significant below the 0.05 level for non-accrual loans, troubled debt restructurings, and the discretionary component of troubled debt restructurings. Economically, the coefficient of 0.204 in column (4) suggests that non-accrual loans increase by approximately 29.1 percent relative to the unconditional mean of the outcome variable. We find no similar effect exists for past due loans in columns (1) and (2) for accruing loans 30-89 days . These results are consistent with the trends we observe in the dynamic regressions presented in Panel A of Table 2.

#### 4.3.2 Distinguishing Between Two Explanations

##### 4.3.2.1 Operational Deterioration

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<sup>11</sup>We discuss the null results for the L and S components and past-due loans further in sections 4.3.2.1 and 4.4.2.

The results presented in section 4.3.1 show that treated banks reported poorer asset quality from 2006, onwards, relative to our control sample. While we assert that these results are consistent with stricter bank supervision as a consequence of regulators' inability to rely upon external assurance (arrow (3) of Figure 1), deteriorating bank operations may be an alternative explanation for poorer reported asset quality (arrow (1) of Figure 1). Alternatively stated, instead of bank examiners compelling treated banks to recognize more bad assets, the removal of mandatory ICFR audits may have weakened internal controls, thereby weakening operational decision-making. Poorer operational decision-making may then lead to CAMELS downgrades and lower asset quality. This alternative explanation is supported by evidence presented in prior research such as Jin et al. (2013a) and Jin et al. (2013b), which finds that banks subject to mandatory ICFR audits have lower risk-taking in the pre-crisis period and that those banks no longer subject to the ICFR audit mandate make riskier loans and are more likely to fail.

A prediction consistent with deterioration in operational decision-making quality is that poor loan origination decisions would manifest in lower asset quality ratios and increases in loan delinquencies. While we do find economically meaningful increases in non-accrual loans in Table 3, we find no such increases in past due loans. This is an important distinction, because deterioration in loan quality should ordinarily cycle through past due loans before affecting the non-accrual loan balance. While bright line rules require banks place loans in non-accrual status once a loan is 90 days or more past due, opportunities for significant bank discretion in the determination of non-accrual loans still exists. According to regulatory guidance, loans are not required to be past due by 90 or more days in order to be classified as non-accrual, but rather loans should be classified as a non-accrual loan once reasonable doubt exists regarding the ultimate collectability of the loan (FFIEC, 2019; OCC, 2001b). The results suggest that increases in non-accrual loans may be driven by discretionary re-classifications, rather than through operational deterioration in bank performance. We explore this channel further by investigating discretion in determining accrual status in a specific class of loans, troubled debt restructures.

#### 4.3.2.2 Troubled Debt Restructures

Prior literature generally assumes that non-accrual loans are non-discretionary. One area that

highlights potential discretion involved in determining the accrual status of a loan is the case of loans classified as troubled debt restructures (TDRs). The Bank Accounting Advisory Series states, “Under GAAP, a modification of a loan’s terms constitutes a TDR if the creditor for economic or legal reasons related to the debtor’s financial difficulties grants a concession to the debtor that it would not otherwise consider” (OCC, 2018, p 22). While there is guidance on the nature of a restructuring that would classify as a TDR, the discretionary nature of this determination is highlighted in the intensity of debate that often occurs among bank management, auditors, and regulators as to whether a loan does or does not constitute a TDR. Once the decision is made to classify a loan as a TDR it is expected to be classified as a non-accrual loan until a period of satisfactory performance by the borrower has passed. Bank guidance references accounting standard ASC 942-310-35, and suggests that the period of satisfactory performance be at least 6 months for a monthly amortizing loan. The guidance states, that “neither 942-310-35 nor regulatory policy, however, specify a particularly period of performance. This will depend on the individual facts and circumstances of each case” (OCC, 2018, p 27). Thus, there are two distinct points of discretion involved in determining the accrual status of restructured loans: 1) whether the loan should be classified as a troubled debt restructure, and 2) whether the borrower has exhibited satisfactory performance to allow for the return of the loan to accruing status. The discretionary nature of TDR classification provides an opportunity to examine whether the observed increase in non-accrual loans is due to discretionary or non-discretionary classification.

To examine the discretionary nature of non-accrual TDR classifications, we estimate equation (1) first using the outcome variable of total non-accrual TDRs scaled by lagged assets ( $\frac{NP TDR_t}{Assets_{t-1}}$ ), and second using a measure of discretionary non-accrual TDRs ( $\frac{Disc NP TDR_t}{Assets_{t-1}}$ ), which are TDRs that are on non-accrual status, but are not greater than 90 days past due.<sup>12</sup> Table 3, columns (6) and (8) show the coefficients on  $Treat_i \times Post_t$  are positive and statistically significant below the 0.05 level, indicating higher levels of total and discretionary TDRs for the treated banks relative to the control banks following the removal of the ICFR audit mandate, which is consistent with higher levels of discretionary TDR classification by banks in the post period. This increase is economically

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<sup>12</sup>Given the explicit regulatory guidance indicating loans greater than 90 days past due should be placed on non-accrual status, we consider the classification of any non-accrual TDR loan under 90 days to be a discretionary decision.

significant, with the coefficient on discretionary non-accrual TDRs in column (8) representing a 160 percent increase relative to the unconditional mean. Thus, we show that in areas where regulators can affect bank reporting (discretionary TDRs) treated banks' discretionary TDR classifications increase for the treated group compared to the control group. This finding is an important contribution to the literature because prior literature generally treats non-accrual loans as a classification of loans that is not affected by management discretion; however, through our examination of troubled debt restructures, we provide evidence that non-accrual loans also have an important discretionary component.

#### 4.4 Regulatory Resource Allocation

We next examine whether regulators alter their resource allocation as a mechanism to increase scrutiny of treated banks. As discussed in section 2.1, examinations can be either full-scope, targeted or specific to a particular regulation (e.g., Bank Secrecy Act). Full scope examinations occur on a routine basis based on asset size and the complexity of the bank. A targeted exam "is performed on an area or risk within the firm and usually entails determining or validating that controls and processes for the target area or risk are effective" (FRB, 2019). If there is an increase in examiner effort as a result of the removal of the ICFR audit mandate, we predict an increase in the length of examinations, particularly for targeted examinations as those exams are likely to be aimed at addressing internal control risks. In order to empirically test whether bank examiners increase effort for banks no longer subject to the ICFR mandate, we estimate the following OLS model:

$$\begin{aligned} Days_{it} = & Treat_i \times Post_t \times Targeted Exam_{it} + Treat_i \times Post_t \times Full Exam_{it} \\ & + Treat_i \times Post_t \times Other Exam_{it} + \gamma Controls + \alpha_i + \alpha_{st} + \alpha_e + \epsilon_{it} \end{aligned} \quad (3)$$

where we include controls consistent with equation (1). Furthermore, we include exam type fixed effects ( $\alpha_e$ ) that capture the base effect of each examination. In Table 4 columns (1) and (2), we find that the coefficient on  $Treat_i \times Post_t$  is insignificant when estimating (3), suggesting that

there is no evidence of an increase in overall days spent on site during the examination period for the treatment group relative to the control group across all exam types combined. However, in columns (3) and (4) of Table 4, we find that the coefficient on  $Treat_i \times Post_t \times Targeted Exam_{it}$  is positive and statistically significant below the 0.10 level. Our interpretation of this coefficient is that treated banks' number of days associated with targeted exams increase by approximately 10.34 days in the post period relative to control banks following the removal of the ICFR audit mandate. This finding is consistent with regulators increasing their scrutiny of treated banks through more intense targeted examinations following the removal of the ICFR audit mandate. These results provide strong evidence of regulator reliance on the work of the external auditor in the pre-period, resulting in an increase in examiner effort, particularly in exams likely to be targeting internal control assessment, following the removal of the ICFR audit mandate.

In addition to clear evidence of an increase in the number of days spent on site during the targeted examinations (i.e., the intensive margin of the exam), in untabulated analyses we also find evidence that there is an increase in the likelihood of a targeted exams (i.e., the extensive margin of the exam) for treated banks relative to control banks. This is consistent with the story that regulatory scrutiny increases for these types of banks. However, in further robustness tests, we find that in contrast with our results related to the asset quality and days spent on location, the likelihood of a targeted exam taking place appears to be correlated with a bank's size<sup>13</sup>. This finding is consistent with regulators generally directing resources to the largest financial institutions when determining the extensive margin of examinations and the specific banks which will receive targeted attention; however, it appears that the nature of the onsite work performed by examiners changes for our treated banks relative to the control banks as the intensity of the targeted examinations is increased.

#### 4.4.1 Exam Period Effect

The results from Section 4.3 suggest that the change in reported asset quality is not driven by deteriorating operations, but rather by an increase in discretionary classification of troubled as-

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<sup>13</sup>See section 5 for extended discussion of our consideration of bank size and analyses performed to mitigate concerns that bank size explains our primary results.

sets as a result of increased regulatory strictness during targeted examinations. To provide further evidence that the higher levels of reported problem assets are driven by increased regulator strictness, we examine whether asset quality changes differentially around examination dates. These dates provide an indication of when bank examiners are on-site at bank headquarters, examining the banks' loan portfolios, and discussing issues with bank management. If our results are driven by a general decline in bank operations, we would expect to see an increase in problem assets during both exam and non-exam periods. On the other hand, if our results stem from increased regulator strictness, then we expect a stronger association between our main variable of interest ( $Treat_i \times Post_t$ ) and our outcome variables during the target exam period, compared to the non-exam periods. In order to empirically test whether increases in reported non-accruals are greater during periods of regulatory scrutiny, we use confidential data on specific examination dates and we partition equation (1) into examination and non-examination windows by estimating the following regression:

$$Outcomes_{it} = Exam_{it} + Treat_i \times Post_t + Treat_i \times Post_t \times TargetedExam_{it} + \gamma Controls + \alpha_i + \alpha_{st} + \epsilon_{it} \quad (4)$$

in which  $TargetExam_{it}$  is an indicator variable equal to one when the bank-quarter observation occurs in quarters  $t-1$ ,  $t$ , or  $t+1$  relative to quarters of any examination period, and zero otherwise. We then interact the  $TargetedExam_{it}$  indicator variable with  $Treat_i \times Post_t$ . As before, we include control variables consistent with equation (1). In Table 5, columns (3) through (8) we find positive and significant coefficients on  $Treat_i \times Post_t$ . These results are consistent with a general increase in non-accrual loans for treated firms in the post period, relative to the control firms. In columns (3) and (4) we find a positive and significant coefficient on  $Treat_i \times Post_t \times TargetedExam_{it}$ , indicating the increase in non-accrual loans is greater during exam periods relative to non-exam periods. We also find positive, and significant coefficients on  $Treat_i \times Post_t \times TargetExam_{it}$ , in columns (5) through (8), indicating that the increase in reported TDRs is significantly greater during a targeted exam period. These results suggest that while there is a general increase in



non-accrual loans and discretionary TDRs outside of the targeted exam period for treated firms in the post period, relative to the control firms, this increase is significantly greater during targeted examination periods relative to non-targeted exam periods. The result is consistent with increased regulator strictness during targeted examinations resulting in higher reported non-accrual loans and TDRs. Furthermore, as we documented in Table 3, we find no incremental association between the removal of the ICFR audit mandate and past due loans during examination periods.

Overall, the results are consistent with regulators increasing their examination efforts for treated banks relative to control banks following the removal of the ICFR audit mandate and the channel of this increased effort is through longer duration and more intense targeted examinations. We find that our primary outcome variables of non-accrual loans and discretionary TDRs are both higher during the targeted examinations, consistent with increased regulator strictness resulting in banks reporting higher levels of problem assets. While examination time periods, regardless of when they occur relative to our event may be correlated with increased strictness, our results show that examiners are differentially stricter towards treated banks in the post period than in the pre-period, relative to control banks.

#### **4.4.2 Supervisory Ratings**

If examiners are indeed increasing their strictness in evaluating treated banks relative to control banks, we would expect to see the increased strictness reflected in bank supervisory ratings. As previously mentioned, CAMELS ratings are a summary benchmark produced by bank examiners after the completion of on-site bank examinations. Banks with CAMELS ratings of 5 are on the verge of FDIC receivership, while 1-rated banks exhibit few (if any) signs of weakness. Conversations with bank examiners reveal that rating changes not only reflect prior performance but also can be used to induce changes in banks that are likelier to face distress. For example, if a bank is found to be deficient in capital to absorb unexpected loan losses, examiners can downgrade banks' composite (and component) ratings in order to elicit changes in bank behavior. Table 6 presents results from investigating the relation between the removal of the mandatory ICFR audit requirement and CAMELS composite and component ratings.

The results from Table 6, Panel A show that our variable of interest,  $Treat_i \times Post_t$ , is positive and statistically significant below the 0.05 level across both regression specifications. In other words, after the removal of the ICFR audit mandate, treated banks' CAMELS composite ratings incrementally deteriorate relative to those of the control group. The effect is also economically significant. The coefficient 0.087 in column (2) represents a 4.85 percent increase in CAMELS composite ratings relative to the unconditional mean of the outcome variable.

Panel B of Table 6 presents results from investigating the relation between the removal of the ICFR audit mandate and individual CAMELS component ratings. While the individual component ratings aggregate to the composite rating, the weights that examiners place on specific components are unknown. The coefficient on  $Treat_i \times Post_t$  is positive and statistically significant below the 0.10 level for the C, A, and M components, while  $Treat_i \times Post_t$  is positive and statistically significant below the 0.10 level for the E component, but only in the specification that does not include control variables. The results suggest that in response to the 2005 amendment to FDICIA, examiners downgrade assessments of capital, asset quality, management, and earnings.<sup>14</sup> Economically, the coefficients 0.060, 0.104, and 0.096 in columns (2), (4), (6) respectively suggest that C, A, and M component ratings deteriorate by 3.8 percent, 6.1 percent, and 5.2 percent, respectively, relative to the unconditional mean of each outcome variable. In contrast, we do not find consistent evidence of deterioration in the E, L, and S component ratings in the post period.

The results suggest that examiners downgrade treated banks' ratings in the post period, relative to control banks. Downgrades in bank CAMELS ratings occur even after including control variables for common credit risk determinants and including bank-level and state-time level fixed effects, which absorb the effects of latent bank characteristics and region-by-region economic trends.<sup>15</sup>

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<sup>14</sup>Results on liquidity are inconclusive, given that we find no statistically meaningful results in a dynamic regression format in Figure 2, sub figure (1). We acknowledge that there is some marginal evidence of deterioration in the L component in column (10); however, in contrast with the other components, this deterioration is sensitive to the inclusion of additional control variables. Based on this, we do not draw strong conclusions related to the L component of regulatory ratings.

<sup>15</sup>One possibility is that variation in the type or agency of the regulator performing the exam could explain our results. In untabulated analyses, we compare the relative reaction of banks that are examined by a state regulatory agency to how the same bank reacted when examined by a federal regulatory agency. We do not find any incremental reaction to the change in the ICFR mandate based on the regulatory agency involved, suggesting that our results are not driven by the regulatory agency involved.

## 5 Robustness and assessing alternative explanations

As discussed in Section 3, we utilize a difference-in-difference research design that also implements bank fixed effects and state x quarter fixed effects. Again, the strength of our research design is for alternative explanations (e.g., economic recession or unobserved differences across banks in a given state) to explain our empirical findings, they would have to differentially affect treatment banks (\$500 million to \$1 billion in assets) relative to control banks (less than \$500 million in assets) located within the same state during the same quarter. We have no reason to believe this is the case in our sample of banks, as we exclude the very largest bank-year observations. However, prior literature suggests that there could be variation in supervisory resource allocation based on bank size among the largest financial institutions within a given supervisory region (Hirtle et al. 2020), thus in this section we perform additional robustness tests to determine if sample composition, definition of the treatment group, and other observable differences in economic factors between treatment and control banks impact our primary findings.<sup>16</sup>

First, within our control group of banks with less than \$500 million of assets, 40 percent have total assets less than \$100 million. Therefore, in sensitivity analyses we dropped all banks below \$100 million in total assets to better align the asset size of the control and treatment samples. We continue to find consistent results with our primary analyses related to an increase in non-accrual loans and targeted examination days.

Second, we compare the sample of treated banks to a control sample of banks with between \$1 billion and \$1.5 billion in assets. In Table 7, panel A, we do not find a significant change in past-due, non-accrual, or TDRs for treated banks relative to the sample of control banks with between \$1 billion and \$1.5 billion in assets. However, when we analyze the specifics of the regulatory resource allocation in Table 7, panel B, we find that targeted examinations are significantly greater (11.07 days) for treated banks relative to control banks. Furthermore, while we do not find a significant difference in the level of non-accrual loans for treated banks overall, in Panel C, column (3) we

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<sup>16</sup>We note that the smallest of the banks examined in Hirtle et al. (2020) is 2.6 times larger than the biggest bank in our treated sample. Thus, it is unclear whether the differences in supervisory resource allocation to the very top banks in a region would necessarily indicate that supervisory resource allocation varies based on bank size within a sample of community banks with under \$1 billion in assets.

do find a significantly higher level of non-accrual loans reported during the examination period for treated banks relative to control banks. Finally, while insignificant at conventional levels for a two-tailed test, the coefficients on  $Treat_i \times Post_t \times Targeted Exam_{it}$  for TDRs in columns (4) and (5) in panel C are positive and are significant at the 10 percent level in a one-tailed test, consistent with the results presented in Table 5.

There are several reasons why we may not see different results during the examination period relative to the non-exam period for the treated banks relative to the control sample of larger banks. First, as noted earlier, the nature of regulatory oversight differs for banks larger than \$1 billion relative to banks in our sample. This is one of the primary reasons that we focus our analysis using a control sample of banks of less than \$1 billion, as it provides for more homogeneous ex ante regulatory scrutiny. For larger banks, regulators perform more continuous monitoring activities, and this difference in general regulatory oversight provides an explanation for the marginal difference in reported non-accrual loans, on average. However, the fact that we see a significant increase in the days of targeted examinations and a significant increase in reported non-accrual loans during targeted examination periods for treated banks relative to the control sample of larger banks (unabulated) presents compelling evidence that there was a shift in regulatory resource allocation for the treated banks following the removal of the ICFR mandate. Collectively, the results of the analysis using a control sample of larger banks is inconsistent with size being the driver of our results, and is consistent with a shift in regulatory resources and increase in regulatory strictness during targeted examinations and exam periods for treated banks relative to control banks.

We acknowledge that the financial crisis of 2007-2009 occurs during the post-period of our analysis. The primary concern with the financial crisis is that the crisis may have had a differential effect on our treated banks relative to the control banks, and that such a differential effect could explain our findings. However, the fact that our results are robust to comparing treated banks to sample of both larger and smaller control banks significantly mitigates this concern, as any such crisis effect would have to be similar for control samples of large and small banks, yet different for our treated banks with assets between \$500 million and \$1 billion. It is difficult to imagine a confounding factor that has this specific pattern.

## 6 Conclusion

In this study we examine how regulatory behavior changes when the option to rely on external assurance is removed by utilizing change in internal control regulation in the banking industry. As the bank examination is separate from the external assurance of internal controls, it is possible that bank examiners never relied on the external assurance over internal controls, thus the elimination of the ICFR audit requirement may not have an effect on bank examiners' risk assessment process. However, to the extent that bank examiners relied on information from the third party assurance, removing the option to rely on such assurance would likely result in the bank examiner performing more procedures to assess ICFR quality and potentially increasing detailed testing procedures. If the relied upon external assurance procedures are perfect substitutes for the bank examination procedures, then we would expect only a change in the resources allocated to the bank examination. However, if the relied upon ICFR procedures and bank examination procedures are imperfect substitutes, then we would expect the rigor and strictness of bank examinations to increase after the removal of the ICFR mandate.

We find that non-accrual loans increase for affected banks relative to unaffected banks after the removal of the ICFR audit mandate. Additionally, we find that examiners increase the length of targeted examinations for affected banks, indicating an increase in regulatory rigor after the removal of the mandate. While these results may be an indication of operational deterioration, we find no increases in past due loans or downgrades in liquidity and interest rate sensitivity component ratings. Instead, our effects are concentrated in discretionary portions of non-accrual loans (specifically troubled debt restructurings) and in ratings related to capital adequacy, asset, management, and earnings quality. Finally, we find that our results are concentrated during periods of heightened supervisory scrutiny. Overall, our results indicate that bank examiners increase their rigor, strictness and allocation of resources for banks where they are no longer able to rely on external assurance of internal controls.

Our findings have important implications for the academic literature and for regulators. With respect to the banking literature, we provide evidence that elimination of the external ICFR audit mandate for banks between \$500 million to \$1 billion in total assets resulted in an increase in the

strictness of bank examinations and constrained some discretionary aspects of financial reporting provided by bank management. This suggests that external assurance is an imperfect substitute to bank regulatory oversight. We provide evidence on how regulators alter resource allocation after changes in regulation and insight into how the elimination of the ICFR mandate impacted banks. While prior research has suggested that eliminating the ICFR audit mandate resulted in poorer operations of banks (i.e., issuing lower quality loans), our results show that the deterioration of CAMELS ratings is at least partially due to stricter regulator behavior. The results from this study are informative for discussions related to regulatory design by providing evidence on how the information from third parties affects the strictness of regulatory examinations and the allocation of regulatory resources.

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## Appendix A: Variable Definitions

Income statement variables are converted from year-to-date to quarterly values.

### Balance Sheet-based Variables

- $\ln(Assets_{t-1})$  ( $RCFD2170_{t-1}$ ): The natural log of beginning-of-period total assets.
- $\frac{Loans_t}{Assets_{t-1}} \left( \frac{RCFD2122_t}{RCFD2170_{t-1}} \right)$ : Total loans outstanding at quarter-end scaled by beginning-of-period total assets.
- Tier 1 Leverage Ratio  $\left( \frac{Tier\ 1\ Capital_t}{Avg\ Assets_t} \right)$  ( $RCFD7204$ ): Tier 1 capital divided by adjusted total assets.
- $\frac{Delinquencies_t}{Assets_{t-1}} \left( \frac{RCFD1406+RCFD1407+RCFD1403}{RCFD2170_{t-1}} \right)$ : Total loan delinquencies scaled by beginning-of-period assets.
- $\frac{Past\ 30_t}{Assets_{t-1}} \left( \frac{RCFD1406_t}{RCFD2170_{t-1}} \right)$ : Loans 30 - 89 days past due and still accruing scaled by beginning-of-period assets.
- $\frac{NPL_t}{Assets_{t-1}} \left( \frac{RCFD1403_t}{RCFD2170_{t-1}} \right)$ : Non-performing (Non-accrual) loans scaled by beginning-of-period assets.
- $\frac{NP\ TDR_t}{Assets_{t-1}}$ : Total performing troubled debt restructured (TDR) loans on non-accrual status scaled by beginning-of-period assets.
- $\frac{Disc\ NP\ TDR_{it}}{Assets_{it-1}}$ : TDR loans that are non-accrual but NOT 90+ days past due (i.e., discretionary) scaled by beginning-of-period assets.

### Income Statement-based Variables:

- $\frac{Pre-Provision\ Income_t}{Assets_{t-1}} \left( \frac{RIAD4340_t+RIAD4230_t}{RCFD2170_{t-1}} \right)$ : Quarterly net income + loan loss provisions scaled by beginning-of-period assets.

### Supervisory Variables:

- CAMELS: CAMELS composite rating outstanding at quarter-end
- C: Capital adequacy component rating outstanding at quarter-end.
- A: Asset quality component rating outstanding at quarter-end.
- M: Managerial quality component rating outstanding at quarter-end.
- E: Earnings component rating outstanding at quarter-end.
- L: Liquidity component rating outstanding at quarter-end.
- S: Sensitivity to interest rate risk component rating outstanding at quarter-end.
- $Exam_i$ : An indicator variable that equals 1 for the quarter before, quarter of, and quarter after on-site bank examinations. It equals zero in all other time periods.
- $Targeted\ Exam_t$ : An indicator variable that equals one for the quarter before, quarter of, and quarter after on-site targeted bank examinations. It equals zero in all other time periods.

- *Other Exam<sub>t</sub>*: An indicator variable that equals one for the quarter before, quarter of, and quarter after all other on-site bank examinations. It equals zero in all other time periods.
- *Days<sub>t</sub>*: The number of days (duration) of the examination.
- $M \leq 2$  : An indicator variable that equals one if, at the time of treatment, bank *i* has a satisfactory CAMELS M rating. It equals zero otherwise.
- $CAMELS \leq 2$  : An indicator variable that equals one if, at the time of treatment, bank *i* has a satisfactory CAMELS composite rating. It equals zero otherwise.

### Empirical Design-related Variables:

- *Treat<sub>i</sub>*: An indicator that equals one if, at the end of 2005, \$500 million < RCFD2170 < \$1 billion for bank *i*. It equals zero otherwise.
- *Post<sub>t</sub>*: An indicator variable that equals one for all year-quarters after 2005. It equals zero otherwise.
- $Treat_i \times Post_t$  : An indicator variable that equals 1 in the post period for banks that had between \$500 million and \$1 billion in total assets at the end of 2005. It equals zero otherwise.

### Audit Expertise Variables:

- *Audit Expert Count 75*: indicator variable that equals 1 if the auditor is in the top quartile by number of banks audited in year *t*. It equals zero otherwise.

Figure 1: **Conceptual Diagram of Research Setting**

This figure provides a schematic of how examiners develop assessments of bank risks.

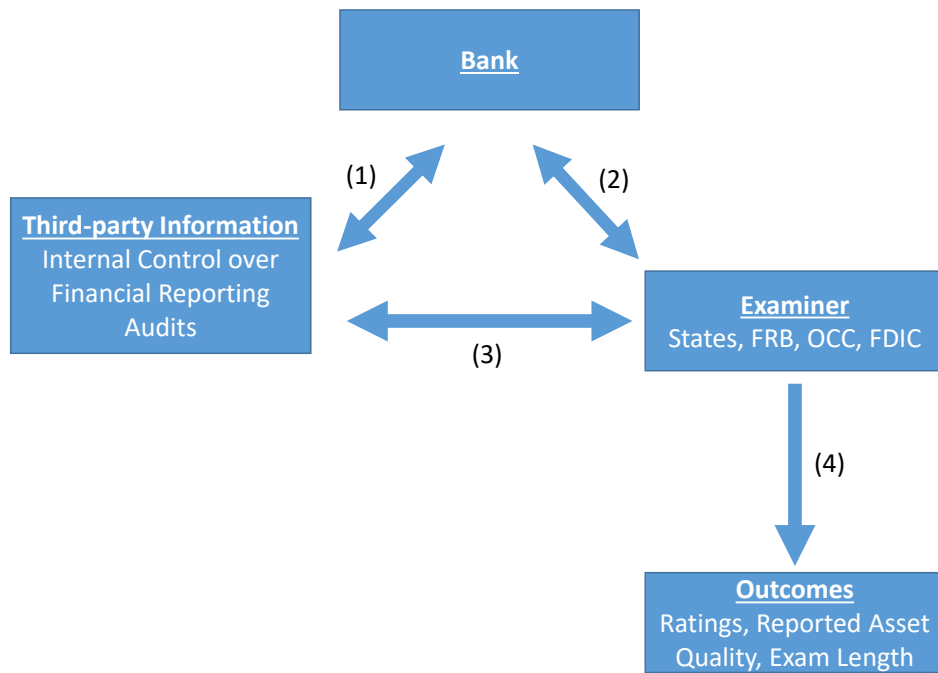


Figure 2: Trends in Outcome Variables

**Panel A: Dynamic Regression Plots - Asset Quality**

This figure plots the dynamics of the regression estimates that examine the relation between the removal of the internal control audit mandate and asset quality ratios. Observations are at the bank-quarter level. No control variables are included other than bank and state x year-quarter fixed effects. Standard errors are clustered at the state and year-quarter level.

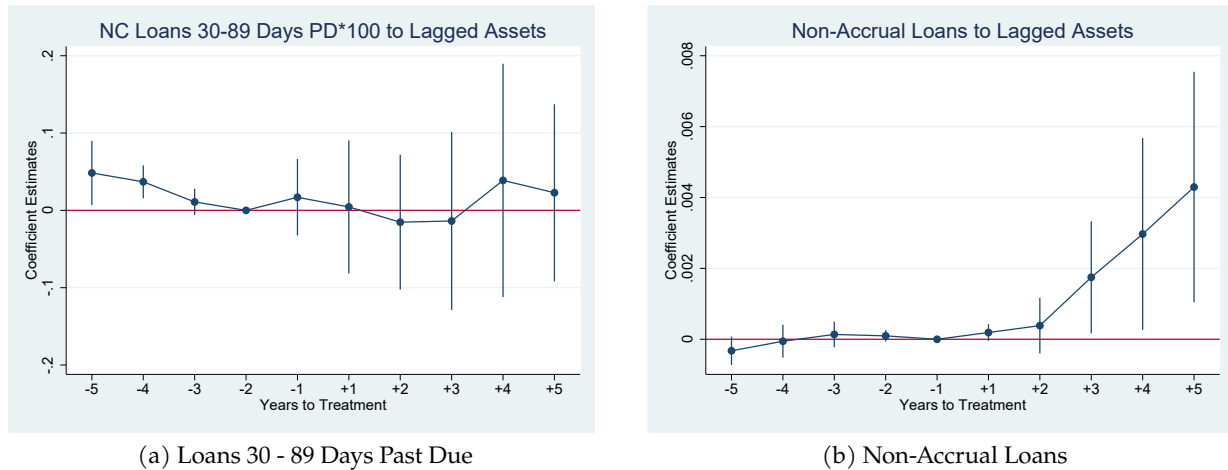


Figure 2 (Continued)

**Panel B: Dynamic Regression Plots - Exam Duration**

This figure plots the dynamics of the regression estimates that examine the relation between the removal of the internal control audit mandate and exam duration. Observations are at the bank-quarter level. No control variables are included other than bank and state x year-quarter fixed effects. Standard errors are clustered at the state and year-quarter level.

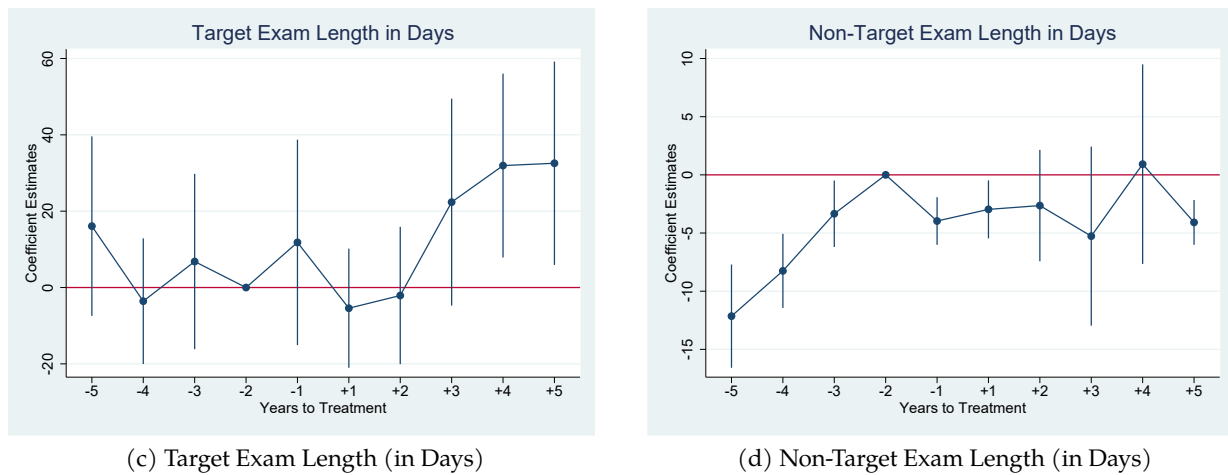
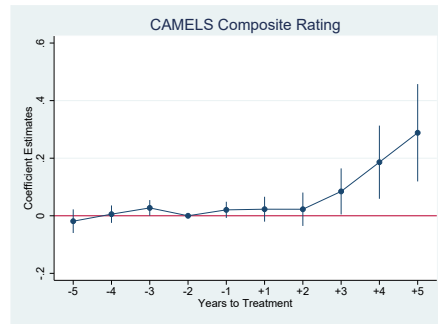


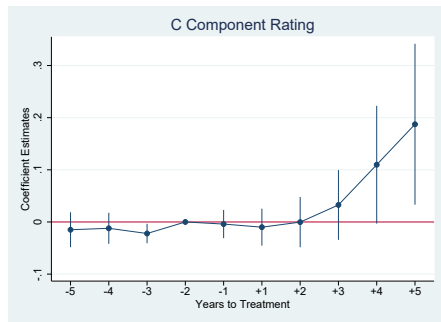
Figure 2 (Continued)

**Panel C: Dynamic Regression Plots - CAMELS Ratings**

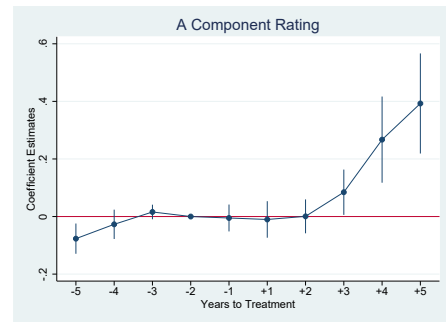
This figure plots the dynamics of the regression estimates that examine the relation between the removal of the internal control audit mandate and CAMELS component ratings. Observations are at the bank-quarter level. No control variables are included other than bank and state  $\times$  year-quarter fixed effects. Standard errors are clustered at the state and year-quarter level.



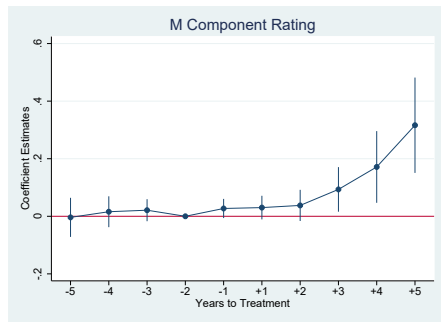
(e) CAMELS Composite Ratings



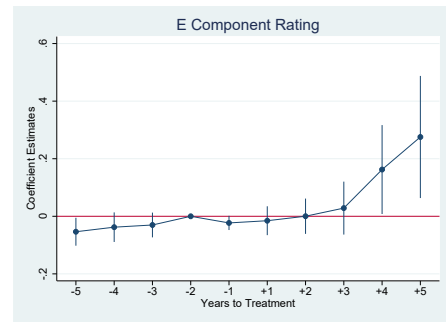
(f) C Component Ratings



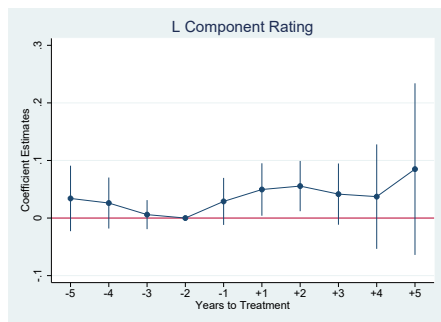
(g) A Component Ratings



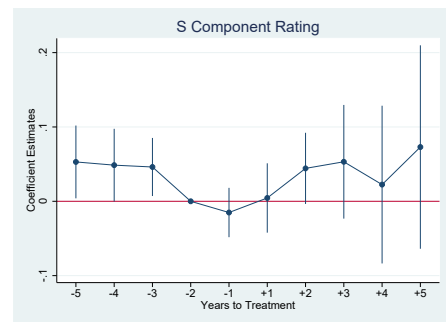
(h) M Component Ratings



(i) E Component Ratings



(j) L Component Ratings



(k) S Component Ratings

Table 1: Summary Statistics

	N	Mean	SD	P25	P50	P75
Total Assets (\$millions)	237,461	175,730	189,130	50,937	103,879	224,291
$\frac{Loans_t}{Assets_{t-1}}$	237,461	0.655	0.174	0.558	0.678	0.776
$\frac{Net\ Income_t}{Assets_{t-1}}$	237,461	0.002	0.003	0.001	0.002	0.004
$\frac{Provisions_t}{Assets_{t-1}}$	237,461	0.001	0.002	0.000	0.000	0.001
$\frac{Charge-offs_t}{Assets_{t-1}}$	237,461	0.001	0.002	0.000	0.000	0.001
$\frac{Tier\ 1\ Capital_t}{Avg\ Assets_t}$	237,461	0.107	0.044	0.082	0.094	0.116
$\frac{LLR_t}{Assets_{t-1}}$	237,461	0.009	0.005	0.006	0.009	0.011
$\frac{Delinquencies_t}{Assets_{t-1}}$	237,461	0.017	0.017	0.005	0.012	0.023
$\frac{Past\ 30_t}{Assets_{t-1}}$	237,461	0.009	0.009	0.002	0.006	0.012
$\frac{NPL_t}{Assets_{t-1}}$	237,461	0.007	0.010	0.000	0.002	0.008
$\frac{PD\ TDRs_t}{Assets_{t-1}}$	237,461	0.000	0.000	0.000	0.000	0.000
$\frac{NPTDR_t}{Assets_{t-1}}$	237,461	0.000	0.001	0.000	0.000	0.000
$\frac{Disc\ NPTDR_t}{Assets_{t-1}}$	237,461	0.000	0.001	0.000	0.000	0.000
$CAMELS_t$	237,461	1.792	0.702	1.000	2.000	2.000
$C_t$	237,461	1.599	0.680	1.000	2.000	2.000
$A_t$	237,461	1.711	0.813	1.000	2.000	2.000
$M_t$	237,461	1.849	0.710	1.000	2.000	2.000
$E_t$	237,461	1.988	0.863	1.000	2.000	2.000
$L_t$	237,461	1.570	0.638	1.000	2.000	2.000
$S_t$	237,461	1.723	0.593	1.000	2.000	2.000

Table 2: Exam-Related Summary Statistics

**Panel A: Proportion of Exams at the Examination Observation Level**

	N	Mean	SD	P25	P50	P75
Target	59,425	0.05	0.22	0	0	0
Full Exam	59,425	0.57	0.49	0	1	1
Other Exam	59,425	0.37	0.48	0	0	1

**Panel B: Proportion of Exam-Type Over Time in Sample**

Year	# Exams	Target (0,1)	Full Exam (0,1)	Other Exam (0,1)
2001	9,917	0.02	0.52	0.46
2002	9,623	0.02	0.47	0.50
2003	6,874	0.03	0.57	0.40
2004	5,050	0.03	0.56	0.41
2005	4,786	0.02	0.56	0.41
2006	4,610	0.02	0.58	0.40
2007	4,341	0.02	0.60	0.38
2008	4,331	0.05	0.75	0.20
2009	4,816	0.1	0.68	0.19
2010	5,077	0.21	0.62	0.17

**Panel C: Exam Duration at the Examination Observation Level**

	N	Mean	SD	P25	P50	P75
Days (All Exams)	57,622	35.25	39.98	13	23	39
Days (Target Exams)	1,237	18.97	22.45	4	12	25
Days (Full Exams)	34,164	32.44	30.15	16	24	38
Days (Other Exams)	22,221	40.47	51.37	7	20	53

**Panel D: Exam Duration at the Bank-Quarter Observation Level**

	N	Mean	SD	P25	P50	P75
Days (All Exams)	233,490	35.20	38.59	15	23	38
Days (Target Exams)	2,348	18.41	22.24	3	11	24
Days (Full Exams)	160,324	28.37	25.58	15	22	32
Days (Other Exams)	70,818	51.22	55.13	15	25	77

Table 3: The Effect of Removing the ICFR Audit Mandate on Bank Asset Quality

Dep. Variable	$\frac{Past\ 30_t \times 100}{Assets_{t-1}}$		$\frac{NPL_t \times 100}{Assets_{t-1}}$		$\frac{NP\ TDR_t \times 100}{Assets_{t-1}}$		$\frac{Disc\ NP\ TDR_t \times 100}{Assets_{t-1}}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Treat_i \times Post_t$	-0.027 (-0.66)	-0.014 (-0.36)	0.183** (2.26)	0.204** (2.47)	0.032** (2.59)	0.032** (2.61)	0.031** (2.58)	0.032** (2.59)
$\frac{Loans_t}{Assets_{t-1}}$		0.927*** (9.87)		0.00697 (0.05)		-0.030*** (-2.74)		-0.030*** (-2.75)
$\frac{Tier\ 1\ Capital_t}{Avg\ Assets_t}$		-1.398*** (-5.41)		-2.429*** (-6.42)		-0.005 (-0.09)		-0.007 (-0.13)
$\frac{Pre-Provision\ Income_t}{Assets_{t-1}}$		-1.288 (-0.51)		-46.27*** (-7.04)		-2.419*** (-3.73)		-2.341*** (-3.72)
$Ln(Assets_{t-1})$		0.108*** (3.66)		0.219*** (5.49)		0.011*** (2.82)		0.010*** (2.76)
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ
N	237,288	237,288	237,286	237,286	Yes	Yes	Yes	Yes
adj. R-sq	0.464	0.471	0.502	0.511	0.284	0.286	0.282	0.283

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on bank asset quality ratios. The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion for all year-quarters after 2005, zero otherwise. Banks below \$500 million comprise the control group. A full list of variable definitions, including Call Report line items, are in Appendix A. Dependent variables are multiplied by 100 to facilitate coefficient interpretation. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.



Table 4: The Effect of Removing the ICFR Audit Mandate on Exam Length (in Days)

Dep. Variable	$Days_{it}$	$Days_{it}$	$Days_{it}$	$Days_{it}$
	(1)	(2)	(3)	(4)
$Treat_i \times Post_t$	0.596 (0.32)	0.847 (0.44)		
$Treat_i \times Post_t \times Full Exam_{it}$			-0.990 (-0.59)	-0.702 (-0.40)
$Treat_i \times Post_t \times Targeted Exam_{it}$			10.94* (1.88)	10.34* (1.89)
$Treat_i \times Post_t \times Other Exam_{it}$			2.792 (0.77)	3.017 (0.84)
$\frac{Loans_t}{Assets_{t-1}}$		-5.584*** (-2.84)		-5.626*** (-2.88)
$\frac{Tier 1 Capital_t}{Avg Assets_t}$		-0.439 (-0.06)		-0.385 (-0.06)
$\frac{Delinquencies_t}{Assets_{t-1}}$		156.60*** (12.10)		156.50*** (12.08)
$\frac{Pre-Provision Income_t}{Assets_{t-1}}$		-165.2** (-2.29)		-164.90** (-2.28)
$Ln(Assets_{t-1})$		5.694*** (7.15)		5.691*** (7.15)
$TP \times Targeted Exam - TP \times Full$			11.93** (2.13)	11.04** (2.09)
$TP \times Targeted Exam - TP \times Other Exam$			8.15 (1.30)	7.32 (1.21)
$TP \times Other Exam - TP \times Full Exam$			3.78 (1.05)	
Bank Fixed Effects	Yes	Yes	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes
Exam Type Fixed Effects	Yes	Yes	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ	State, YQ	State, YQ
N	233,166	233,157	233,166	233,157
adj. R-sq	0.614	0.618	0.615	0.618

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on exam duration (in days). The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion for all year-quarters after 2005, zero otherwise. Banks below \$500 million comprise the control group. Columns (3) and (4) separate  $Treat_i \times Post_t$  by exam type. Because exam type fixed effects are included in this regression, we do not include the base exam type variables. The rows  $TP \times Targeted Exam - TP \times Full Exam$ ,  $TP \times Targeted Exam - TP \times Other Exam$ ,  $TP \times Other Exam - TP \times Full Exam$  display the statistical significance between the three main independent variables of interest. A full list of variable definitions, including Call Report line items, are in Appendix A. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5: The Effect of Removing the ICFR Audit Mandate on Bank Asset Quality by Exam Period

Dep. Variable	$\frac{Past\ 30_t \times 100}{Assets_{t-1}}$		$\frac{NPL_t \times 100}{Assets_{t-1}}$		$\frac{NP\ TDR_t \times 100}{Assets_{t-1}}$		$\frac{Disc\ NP\ TDR_t \times 100}{Assets_{t-1}}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Exam_{it}$	0.061 (0.98)	0.063 (1.02)	0.237** (2.48)	0.242** (2.53)	0.164 (1.24)	0.017 (1.24)	0.016 (1.24)	0.016 (1.25)
$Treat_i \times Post_t$	-0.028 (-0.67)	-0.015 (-0.40)	0.164** (2.16)	0.185** (2.38)	0.028** (2.55)	0.029** (2.57)	0.028** (2.55)	0.029** (2.57)
$Treat_i \times Post_t \times Target\ Exam_{it}$	-0.054 (-0.44)	-0.041 (-0.34)	0.397* (1.85)	0.412* (1.96)	0.108** (2.13)	0.109** (2.16)	0.104** (2.07)	0.104** (2.09)
$\frac{Loans_t}{Assets_{t-1}}$		0.951*** (10.21)		0.097 (0.69)		-0.025** (-2.48)		-0.025** (-2.50)
$\frac{Tier\ 1\ Capital_t}{Avg\ Assets_t}$		-1.336*** (-5.21)		-2.161*** (-6.50)		0.0129 (0.25)		0.0106 (0.21)
$\frac{Pre-Provision\ Income_t}{Assets_{t-1}}$		0.017 (0.01)		-40.45*** (-7.14)		-2.058*** (-3.74)		-1.984*** (-3.73)
$Ln(Assets_{t-1})$		0.110*** (3.61)		0.225*** (5.78)		0.0112*** (2.98)		0.0109*** (2.92)
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ
N	237,148	237,148	237,146	237,146	237,148	237,148	237,148	237,148
adj. R-sq	0.464	0.472	0.518	0.526	0.289	0.290	0.287	0.288

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on asset quality ratios by target examination periods. The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion for all year-quarters after 2005, zero otherwise. Banks below \$500 million comprise the control group. It is then separated out by examination type. A full list of variable definitions, including Call Report line items, are in Appendix A. Dependent variables are multiplied by 100 to facilitate coefficient interpretation. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6: The Effect of Removing the ICFR Audit Mandate on Supervisory Assessments

Panel A: Composite Ratings		
Dep. Variable	$CAMELS_{it}$	$CAMELS_{it}$
	(1)	(2)
$Treat_i \times Post_t$	0.102** (2.61)	0.087** (2.62)
$\frac{Loans_t}{Assets_{t-1}}$		-0.542*** (-7.62)
$\frac{Tier\ 1\ Capital_t}{Avg\ Assets_t}$		-2.009*** (-7.14)
$\frac{Delinquencies}{Assets_{t-1}}$		11.80*** (13.02)
$\frac{Pre-Provision\ Income_t}{Assets_{t-1}}$		-29.33*** (-8.84)
$Ln(Assets_{t-1})$		-0.0503 (-1.60)
Bank Fixed Effects	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ
N	237,286	237,286
adj. R-sq	0.615	0.667

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on CAMELS composite ratings. The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion for all year-quarters after 2005, zero otherwise. Banks below \$500 million comprise the control group. A full list of variable definitions, including Call Report line items, are in Appendix A. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6 (Continued)

Panel B: Component Ratings

Dep. Variable	$C_{it}$	$C_{it}$	$A_{it}$	$A_{it}$	$M$	$M_{it}$	$E_{it}$	$E_{it}$	$L_{it}$	$L_{it}$	$S_{it}$	$S_{it}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$Treat_i \times Post_t$	0.060*	0.059**	0.136***	0.122	0.104***	0.091***	0.096*	0.064	0.032	0.034	0.011	0.004
	(1.80)	(2.10)	(2.80)	(3.26)	(2.91)	(2.79)	(1.92)	(1.52)	(1.15)	(1.57)	(0.35)	(0.13)
$\frac{Loans_t}{Assets_{t-1}}$		-0.468***		-0.735***		-0.545***		-0.581***		0.393***		-0.458***
		(-8.27)		(-9.30)		(-7.64)		(-5.52)		(5.77)		(-7.16)
$\frac{Tier\ 1\ Capital_t}{Avg\ Assets_t}$		-4.328***		-1.286***		-1.401***		-2.643***		-1.822***		-1.615***
		(-10.68)		(-4.43)		(-6.29)		(-6.62)		(-6.76)		(-6.46)
$\frac{Delinquencies}{Assets_{t-1}}$		10.31***		17.37***		11.22***		10.56***		7.879***		4.903
		(10.97)		(18.59)		(12.98)		(10.79)		(9.65)		(7.32)
$\frac{Pre-Provision\ Income_t}{Assets_{t-1}}$		-25.27***		-22.30***		-25.09***		-55.23		-20.29***		-23.66***
		(-7.38)		(-8.77)		(-8.46)		(-10.41)		(-6.76)		(-8.91)
$Ln(Assets_{t-1})$		-0.001		0.058*		-0.015		-0.261***		0.096		-0.0532
		(-0.31)		(1.82)		(-0.51)		(-6.18)		(3.40)		(-2.18)
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ
N	237,286	237,286	237,286	237,286	237,286	237,286	237,286	237,286	237,286	237,286	237,286	237,286
adj. R-sq	0.611	0.666	0.581	0.653	0.572	0.615	0.631	0.672	0.608	0.641	0.556	0.577

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on CAMELS component ratings. The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion for all year-quarters after 2005, zero otherwise. Banks below \$500 million comprise the control group. A full list of variable definitions, including Call Report line items, are in Appendix A. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7: The Effect of Removing the ICFR Audit Mandate on Bank Asset Quality

Panel A: By Examination Period								
Dep. Variable	$\frac{Past\ 30_t \times 100}{Assets_{t-1}}$	$\frac{NPL_t \times 100}{Assets_{t-1}}$	$\frac{NPTDR_t \times 100}{Assets_{t-1}}$	$\frac{Disc\ NPTDR_t \times 100}{Assets_{t-1}}$				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Treat_i \times Post_t$	-0.011 (-0.27)	-0.035 (-0.90)	-0.081 (-1.12)	-0.102 (-1.46)	-0.005 (-0.45)	-0.005 (-0.44)	-0.006 (-0.47)	-0.005 (-0.46)
$\frac{Loans_t}{Assets_{t-1}}$		0.955*** (4.50)		0.254 (0.84)		-0.030 (-0.77)		-0.028 (-0.72)
$\frac{Tier\ 1\ Capital_t}{Avg\ Assets_t}$		-1.180 (-1.45)		-7.925*** (-3.84)		-0.279 (-1.09)		-0.267 (-1.06)
$\frac{Pre-Provision\ Income_t}{Assets_{t-1}}$		2.405 (0.51)		-31.71** (-2.42)		-4.932** (-2.55)		-4.758 (-2.51)
$Ln(Assets_{t-1})$		-0.078 (-0.86)		-0.494*** (-4.13)		-0.047 (-2.26)		-0.046** (-2.23)
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ
N	23,837	23,837	23,837	23,837	23,837	23,837	23,837	23,837
adj. R-sq	0.597	0.603	0.678	0.686	0.458	0.461	0.452	0.455

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on bank asset quality ratios. The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion in assets for all year-quarters after 2005, zero otherwise. Banks with between \$1 billion and \$1.5 billion in assets comprise the control group. A full list of variable definitions, including Call Report line items, are in Appendix A. Dependent variables are multiplied by 100 to facilitate coefficient interpretation. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7 (Continued)

## Panel B: The Effect of Removing the ICFR Audit Mandate on Exam Length (in Days)

Dep. Variable	$Days_{it}$	$Days_{it}$	$Days_{it}$	$Days_{it}$
	(1)	(2)	(3)	(4)
$Treat_i \times Post_t$	0.323 (0.11)	0.973 (0.36)		
$Treat_i \times Post_t \times Full Exam_{it}$			-2.215 (-1.07)	-1.471 (-0.74)
$Treat_i \times Post_t \times Targeted Exam_{it}$			11.61** (2.10)	11.07** (2.08)
$Treat_i \times Post_t \times Other Exam_{it}$			4.921 (0.87)	5.449 (0.99)
$\frac{Loans_t}{Assets_{t-1}}$		-1.378 (-0.14)		-1.755 (-0.18)
$\frac{Tier 1 Capital_t}{Avg Assets_t}$		-58.31 (-1.50)		-56.93 (-1.48)
$\frac{Delinquencies_t}{Assets_{t-1}}$		252.1*** (6.62)		249.6*** (6.53)
$\frac{Pre-Provision Income_t}{Assets_{t-1}}$		-408.0*** (-2.78)		-400.7*** (-2.75)
$Ln(Assets_{t-1})$		5.694 (1.21)		5.741 (1.24)
$TP \times Targeted Exam - TP \times Full$			13.822*** (2.98)	12.540*** (2.79)
$TP \times Targeted Exam - TP \times Other Exam$			6.685 (1.09)	5.620 (0.97)
$TP \times Other Exam - TP \times Full Exam$			7.137 (1.49)	6.920 (1.46)
Bank Fixed Effects	Yes	Yes	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes
Exam Type Fixed Effects	Yes	Yes	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ	State, YQ	State, YQ
N	23,303	23,302	23,303	23,302
adj. R-sq	0.640	0.642	0.640	0.643

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on exam duration (in days). The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion in assets for all year-quarters after 2005, zero otherwise. Banks with between \$1 billion and \$1.5 billion in assets comprise the control group. Columns (3) and (4) separate  $Treat_i \times Post_t$  by exam type. Because exam type fixed effects are included in this regression, we do not include the base exam type variables. The rows  $TP \times Targeted Exam - TP \times Full Exam$ ,  $TP \times Targeted Exam - TP \times Other Exam$ ,  $TP \times Other Exam - TP \times Full Exam$  display the statistical significance between the three main independent variables of interest. A full list of variable definitions, including Call Report line items, are in Appendix A. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7 (Continued)

**Panel C: The Effect of Removing the ICFR Audit Mandate on Bank Asset Quality by Exam Period**

Dep. Variable	$\frac{Past\ 30_t \times 100}{Assets_{t-1}}$		$\frac{NPL_t \times 100}{Assets_{t-1}}$		$\frac{NP TDR_t \times 100}{Assets_{t-1}}$		$\frac{Disc\ NP TDR_t \times 100}{Assets_{t-1}}$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$Exam\ Target_{it}$	0.088 (1.30)	0.079 (1.22)	0.076 (0.41)	0.099 (0.57)	0.010 (0.24)	0.014 (0.34)	0.013 (0.30)	0.017 (0.39)
$Treat_i \times Post_t$	-0.016 (-0.38)	-0.039 (-0.98)	-0.087 (-1.34)	-0.106 (-1.68)	-0.007 (-0.62)	-0.006 (-0.59)	-0.007 (-0.63)	-0.007 (-0.61)
$Treat_i \times Post_t \times Exam\ Target_{it}$	0.099 (0.98)	0.0872 (0.89)	0.516*** (2.85)	0.438** (2.63)	0.056 (1.51)	0.050 (1.34)	0.055 (1.54)	0.049 (1.37)
$\frac{Loans_t}{Assets_{t-1}}$		0.958*** (4.52)		0.303 (1.01)		-0.028 (-0.73)		-0.025 (-0.67)
$\frac{Tier\ 1\ Capital_t}{Avg\ Assets_t}$		-1.069 (-1.37)		-7.287*** (-3.78)		-0.218 (-0.85)		-0.206 (-0.81)
$\frac{Pre-Provision\ Income_t}{Assets_{t-1}}$		3.290 (0.67)		-27.24** (-2.19)		-4.495** (-2.36)		-4.320** (-2.32)
$Ln(Assets_{t-1})$		-0.0725 (-0.80)		-0.460*** (-4.01)		-0.0448** (-2.25)		-0.0430** (-2.20)
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Std Errors Clustered at	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ	State, YQ
N	23,823	23,823	23,823	23,823	23,823	23,823	23,823	23,823
adj. R-sq	0.598	0.604	0.686	0.693	0.461	0.463	0.455	0.458

This table presents the static difference-in-differences regression estimates for the effect of removing the internal control audit mandate on asset quality ratios by target examination periods. The main variable of interest,  $Treat_i \times Post_t$  is an indicator that equals one for banks between \$500 million and \$1 billion in assets for all year-quarters after 2005, zero otherwise. Banks with between \$1 billion and \$1.5 billion in assets comprise the control group. It is then separated out by examination type. A full list of variable definitions, including Call Report line items, are in Appendix A. Dependent variables are multiplied by 100 to facilitate coefficient interpretation. Standard errors are double clustered at the state and year-quarter level. T-statistics are reported in parentheses. The symbols \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.