# Do Bank Regulation and Supervision Displace Bank Auditing?

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**ABSTRACT:** We hypothesize that bank regulatory and supervisory activities substitute for bank auditing activities, providing auditors with incentives to expend less effort on audits of banks than on audits of similar firms not subject to regulation and supervision. We show that banks exhibit fewer internal control and accounting problems, as measured by the frequencies of disclosed material internal control weaknesses and financial statement restatements, than do similar firms. We show that auditors expend less effort, as indicated by lower audit fees and shorter audit report lags, in audits of banks than in audits of similar firms, more so when bank regulation and supervision are more intense. Lastly, we show that banks are more likely than similar firms to exhibit two types of earnings management that are of minor concern to bank regulators and supervisors but have previously documented capital market consequences: more frequent small positive earnings changes and longer strings of earnings increases.

## 1. Introduction

Auditors of banks face a distinctive benefit-cost trade-off in choosing the audit effort (broadly defined to include personnel time and quality, audit planning, test of controls, and substantive and analytical procedures) sufficient to generate audit evidence that provides the desired level of assurance. On the benefit side, banks' economic complexity and opacity increase investor demand for high quality audits, all else being equal. We expect this "audit demand effect" to increase billed hours, as auditors must work longer to complete higher quality audits, and perhaps also to increase billed hourly rates, as auditors may need to devote personnel with more experience or specialized skills to audit banks. On the cost side, banks' importance to the stability of the financial system ("stability") and the health of the overall economy has given rise to extensive bank regulation and rigorous bank supervision in the United States. Bank regulators and supervisors monitor banks to ensure their safety and soundness, their adherence to regulatory accounting requirements, and the effectiveness of their internal controls. These activities, particularly of bank supervision, overlap considerably with those of bank auditing. For example, bank supervisors and bank auditors both evaluate the adequacy of banks' allowances for loan losses. To the extent that auditors can rely on the activities of bank regulators and supervisors, this overlap yields a "substitution effect" that we expect reduces the audit effort necessary for bank auditors to provide the desired level of assurance.

In this study, we posit that the substitution effect dominates the audit demand effect. We propose and test hypotheses that, relative to two control samples of similar firms not subject to regulation and supervision, banks exhibit fewer internal control and accounting problems and bank auditors expend less effort. In addition, we conduct two sets of tests to provide support for the conclusion that the associations we document are causal. First, we show that increased bank

regulatory and supervisory intensity leads to less audit effort. Second, we show that, relative to similar firms, banks are more likely to report small positive earnings changes and to sustain strings of earnings growth. We conjecture that these types of earnings management typically accumulate to relatively small amounts of retained earnings. If so, these types have relatively minor effects on banks' solvency ratios and so should be of minor concern to bank regulators and supervisors primarily concerned with banks' safety and soundness. While we are unaware of any extant empirical evidence supporting our conjecture, it is consistent with the absence of any mention of these types of earnings management in bank supervisory manuals, including the portions devoted to the evaluation of earnings quality (Comptroller of the Currency 2007, p. 53; Board of Governors of the Federal Reserve System 2017, §4020.3). In contrast, based on the large empirical literature documenting such earnings management by public firms in general and by public banks in particular (Burgstahler and Dichev 1997; Beatty et al. 2002), as well as the capital market consequences of such earnings management (Bartov et al. 2002; Brown and Caylor 2005), we expect these types of earnings management to significantly influence banks' investors and contracting parties and to be of concern to auditors.

Considerable research summarized in Acharya and Ryan (2016) suggests that the quality of banks' financial reporting is central to stability. The traditional view is that transparency enhances stability (Morgan 2002; Nier and Baumann 2006; Acharya and Ryan 2016). Working against realization of the benefits of transparency, however, banks are often viewed as opaque due to their complex and interrelated on- and off-balance sheet exposures (Morgan 2002). The individual and collective value and risk of these exposures are difficult for banks to convey to outsiders and for outsiders to evaluate, especially during periods of financial system stress (Flannery et al. 2013). Moreover, banks are subject to various agency conflicts due to their high

leverage and the existence of information asymmetries between banks and their debt and equity claimants, as well as among these claimants (Beatty and Liao 2014; Acharya and Ryan 2016). These conflicts provide incentives for banks to manage or obscure their accounting information.

Because of banks' complexity, opaqueness, and agency conflicts, bank regulators and supervisors pay close attention to banks' accounting and internal controls. For example, bank regulators specify (a relatively small number of) deviations of regulatory accounting principles ("RAP") from generally accepted accounting principles ("GAAP") when they deem such "prudential filters" to further regulatory goals (Barth and Landsman 2010). For some accounting topics, notably loan losses, bank regulators provide considerably more detailed implementation guidance than is available in GAAP (Ryan 2011). Bank regulators require individual regulated banks and bank holding companies to prepare detailed and standardized regulatory reports each quarter, which the regulators make publicly available on their websites to enhance market discipline of banks (Pettway and Sinkey 1980; Badertscher et al. 2016).

Bank supervisors conduct on-site examinations of banks every twelve to eighteen months, depending on banks' size, supervisory ratings, non-banking activities, and supervisory resource constraints (Nicoletti 2016; Keeley 2017). In these examinations, supervisors primarily evaluate banks' safety and soundness. As central parts of these examinations, supervisors evaluate the adherence of banks' accounting to RAP, the adequacy of banks' allowance for loan losses, banks' earnings quality, and the effectiveness of banks' internal controls. Supervisors report examination results to banks' managements and boards of directors.

Between examinations, bank supervisors conduct ongoing off-site monitoring of banks' safety and soundness using a wide range of information and in the context of banks' most recent

examination results. Supervisors examine banks' quarterly regulatory reports "to monitor the condition, performance, and risk profile of individual institutions and the industry as a whole."[1]

The Federal Deposit Insurance Corporation Improvement Act of 1991 ("FDICIA") imposes two important internal control and accounting requirements on banks with assets above $500 million ($1 billion as of December 2005).[2] First, FDICIA requires these banks to provide the Federal Deposit Insurance Corporation ("FDIC") with externally audited annual financial statements. Second, FDICIA requires bank managements to assess and certify the adequacy of their internal controls.[3]

Auditors provide independent assurance that reporting firms' financial statements faithfully represent their exposures, transactions, and performance in accordance with GAAP (DeFond and Zhang 2014). The demand for high quality audits is larger for firms with higher information risk (Jensen and Meckling 1976; Watts and Zimmerman 1986). Because of banks' complexity, opacity, and agency conflicts, we expect the demand for high quality audits to be greater for banks than for non-banks. The demand for high quality audits should be particularly strong for banks that expand beyond traditional lending and deposit-acceptance activities to engage in derivatives, securities, and other complex transactions (Barth et al. 2009; Acharya 2014; Acharya and Ryan 2016).

[1] https://www.fdic.gov/regulations/resources/call/index.html.

[2] 12 CFR 363, Annual Independent Audits and Reporting Requirements. Part 363 of FDICIA initially specified that these requirements apply to banks holding assets above a threshold of $150 million. The FDIC changed this threshold to $500 million upon its adoption of Part 363 in 1993 to avoid imposing costs on very small banks.

[3] Similar requirements became applicable to non-banks only after Sections 302 and 404 of the Sarbanes-Oxley Act of 2002 ("SOX") became effective for accelerated filers in 2003 and 2004, respectively (Altamuro and Beatty 2010).

However, audits of banks differ from those of similar unregulated firms because the activities of bank regulators and supervisors may complement or substitute for bank auditing activities. For example, complementarity may result from bank regulators and supervisors understanding the economics of individual banks and the banking system better than auditors and/or from auditors understanding the application and limitations of accounting matters better than regulators and supervisors. Substitutability may result from material overlap in the activities of bank regulators and supervisors and bank auditors.

We propose and test two related hypotheses. First, we hypothesize that banks exhibit fewer internal control and accounting problems than do similar firms not subject to regulation and supervision ("control firms"). Second, we hypothesize that auditors expend less effort on audits of banks than on audits of control firms. The principal basis for both hypotheses is that bank supervisors' periodic on-site examinations and ongoing off-site monitoring of banks, as well as their communication of examination results to banks' management and directors, reduce banks' audit risk. In terms of the constructs of the standard audit risk model, we hypothesize that bank supervision reduces both banks' inherent risk, i.e., the likelihood that their financial statements are materially misstated, and banks' control risk, i.e., the likelihood that their internal control systems fail to prevent such material misstatements.

We test both of these hypotheses on a comprehensive sample of publicly traded banks drawn from Annual Bank *Compustat* and two samples of control firms drawn from Annual North American *Compustat*: (1) non-depository credit institutions (two-digit SIC code 61)[4] and (2) all

[4] To be a bank as defined in the Bank Holding Company Act of 1956, an institution must both make loans and accept deposits. Non-depository credit institutions do the former but not the latter. The lack of deposits also exempts these institutions from regulation under the Federal Deposit Insurance Act.

non-banks in the highest five percent of the ratio of accounts receivable (which includes loan and lease receivables) to total assets. We believe the first of these control samples comprises the closest available unregulated firms to banks. We employ the broader and larger second control sample to demonstrate the robustness of our results.

Drawing on prior research, we test the first hypothesis using disclosed material weaknesses in internal control over financial reporting as the proxy for internal control problems (Ashbaugh-Skaife et al. 2007) and restatements of prior period financial statements as the proxy for accounting problems (Palmrose and Scholz 2004; Kinney et al. 2004; Hennes et al. 2014). Consistent with this hypothesis, we find that banks are significantly less likely than control firms to report material weaknesses in internal controls and to restate their financial statements, controlling for other variables that prior research shows to be associated with internal control weaknesses and restatements.

We test the second hypothesis using two measures of audit effort: (1) audit fees (Simunic and Stein 1996) and (2) audit report lag, i.e., the elapsed time between the fiscal year end and the audit report date (Ashton et al. 1987; Bamber et al. 1993; and Ghosh and Tang 2015). Auditing standards require auditors to respond to increases in audit risk by increasing the extent of audit procedures.[5] Prior research shows that more extensive audits require auditors to work more hours, increasing both audit fees (Houston et al. 1999; Bell et al. 2001; Bedard and Johnstone 2004) and audit report lags (Bronson et al. 2011). Consistent with this hypothesis, we find that on average auditors charge significantly less for audits of banks than for audits of control firms and that the

[5] Public Company Accounting Oversight Board (PCOAB), Auditing Standard No. 8, *Audit Risk* (AS 1101 under the PCAOB's December 2016 reorganization of auditing standards); Auditing Standard No. 12, *Identifying and Assessing Risks of Material Misstatement* (AS 2110); and Auditing Standard No. 13, *The Auditor's Responses to the Risks of Material Misstatement* (AS 2301).

average audit report lag is significantly shorter for banks than for control firms, controlling for other variables that prior research shows are associated with audit effort.

The primary threat to inference in our study is the possibility that factors other than bank regulation and supervision might explain why audits of banks pose less audit risk than do audits of control firms. Although we cannot rule out this possibility altogether, we conduct two analyses to provide support for bank regulation and supervision as causally explaining the reduced audit effort in audits of banks that we document. First, motivated by prior research evidence that (less stringent) bank supervisors (are more likely to) exercise accounting-related forbearance (Gallemore 2016; Costello et al., 2016), we test whether bank auditors expend less effort when bank regulation and supervision are more intense. We employ two time-series measures (a numerical index of restrictions in the text of banking regulations and the natural logarithm of the annual budget of federal regulators) and one cross-sectional measure (Agarwal et al.'s 2014 estimate of the difference in the supervisory ratings received by state-chartered banks in alternating examinations from their state supervisors versus from on-average more stringent federal supervisors[6]) of the intensity of bank regulation and supervision. We find that auditor effort in audits of banks is lower when bank regulation and supervision are more intense.

Second, we examine two types of earnings management that we conjecture, for reasons discussed above, are unlikely to concern bank regulators and supervisors and that are more likely to occur as auditor effort decreases: (1) the frequency of reporting small positive earnings changes and (2) the length of strings of consecutive earnings increases. We find that banks are more likely than control firms to exhibit both of these types of earnings management.

[6] We thank Amit Seru for graciously providing us with this measure.

To summarize, we contribute to the banking and auditing literatures by providing evidence consistent with auditors expending less effort in auditing banks than in auditing similar unregulated firms, due to the overlap of the activities of bank regulators and supervisors with those of auditors. We emphasize that our evidence does not suggest that the aggregate monitoring of banks' financial reporting by bank regulators, supervisors, and auditors differs from the monitoring of similar firms' financial reporting by auditors alone, it only suggests that the monitoring conducted by bank auditors is less. Because of the importance of banks to stability and overall economic health, a compelling question is what incremental costs arise when bank auditors, as financial reporting specialists, expend less effort on bank audits due to the existence of bank regulation and supervision. We provide evidence that this reduced effort leads to types of earnings management that likely have minor effects on banks' solvency ratios but have capital market consequences documented by prior research. The types of earnings management may lead to reduced market discipline over banks. We expect these results to be of interest to bank and auditing policymakers.

In the remainder of the paper, Section 2 develops the hypotheses. Sections 3 and 4 describe the empirical models and variables and the data sources and sample selection, respectively. Sections 5 present the empirical results and Section 6 concludes.

## 2. Background and Hypothesis Development

### 2.1 Banking Background[7]

[7] Much of the discussion in this section is drawn from Board of Governors of the Federal Reserve System (2017). To avoid clutter, we only cite material from this document that is not widely available from other sources.

### *2.1.1. Bank Regulation and Regulators*

In the United States, banks are subject to a complex set of laws and regulations that restrict their allowed activities, specify minimum capital and liquidity levels, and govern other matters. These laws and regulations exhibit cycles in stringency over time (Ryan 2007). For example, during the regulatory period from the Great Depression to the 1970s, the Banking Act of 1933 prohibited bank holding companies from owning or being owned by nonfinancial companies and from underwriting most securities. During the deregulatory period in the early to mid-1980s, the Depository Institutions and Monetary Control Act of 1980 phased out interest rate ceilings and allowed thrift institutions to expand their activities significantly. During the regulatory period in the late 1980s and early 1990s, FDICIA required regulators to take prompt corrective action when banks' leverage capital ratios fall below the levels deemed well-capitalized. FDICIA also includes various requirements regarding banks' financial reporting, auditing, and internal control discussed in the introduction.

During the deregulatory period in the late 1990s, the Gramm-Leach-Bliley Act of 1999 allowed subsidiaries of regulated banks to underwrite securities and financial holding companies to perform essentially all types of financial services somewhere within their corporate structures. During the post-financial-crisis regulatory period, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 imposed many prudential regulations on large bank holding companies, including increased risk-based capital and liquidity requirements, credit exposure concentration limits and reporting requirements, periodic stress tests, requirements to plan for rapid and orderly resolution of the institution in the event of financial distress or failure, requirements to establish risk committees, and enhanced public disclosure requirements. Efforts

to roll back Dodd-Frank and other bank regulations are currently underway in Congress (Richardson et al. 2017).

FDICIA's requirement that a bank's management assess and certify the effectiveness of the bank's internal controls is of particular relevance to this study. Control risk is a key component of audit risk. Particularly prior to the effective dates of Sections 302 and 404 of SOX, FDICIA's requirements should reduce the internal control risk of banks relative to that of non-banks (Altamuro and Beatty 2010). Moreover, we expect bank supervisors to require banks with identified internal control deficiencies to remediate those deficiencies promptly, further reducing banks' control risk.

Even the most stringent banking laws and regulations can have the intended effects only if bank regulators and supervisors adequately enforce banks' adherence to these rules. Under the "dual banking system," individual banks may be nationally or state chartered, and bank regulation and supervision is conducted by overlapping sets of federal regulators and state banking departments. National banks are primarily supervised by the Office of the Comptroller of the Currency ("OCC"), a federal regulator. State banks that elect to become members of the Federal Reserve System (state member banks) are primarily supervised by the Federal Reserve, a federal regulator, and their state banking departments. State banks that are not members of the Federal Reserve System (state nonmember banks) are primarily supervised by the FDIC, a federal regulator, and their state banking departments. All banks accepting insured deposits are also supervised by the FDIC.[8]

[8] Recognizing that the dual banking system and multiple federal bank regulators could lead to inconsistencies in bank regulation and supervision, in 1978 Congress created the Federal Financial Institutions Examination Council ("FFIEC"), an interagency body, to promote consistency in these activities. The FFIEC currently is composed of the chairs of the FDIC and the National Credit Union Administration, the Comptroller of the Currency, a governor of the Federal Reserve, a state banking

Individual banks may be owned by bank holding companies, which may apply and qualify to be financial holding companies. Bank holding companies typically engage in lending, deposit acceptance, and any other allowed activities through their individual bank subsidiaries. Financial holding companies may engage in activities not allowed in individual banks, such as insurance underwriting and merchant banking, through non-bank subsidiaries (Ryan 2007; Avraham et al. 2012). The Federal Reserve has supervisory authority over all bank holding companies, regardless of how their subsidiary banks are chartered and supervised.

### *2.1.2 Bank Supervision*

Bank supervision involves the periodic on-site examination and ongoing off-site monitoring of banks' financial condition and risks; the adequacy of banks' accounting, internal control, and risk management systems; and banks' compliance with applicable laws and regulations. The main goal of supervision is to ensure the safety and soundness of individual banks and especially of the banking system.

Bank supervision shares many similarities with (bank) auditing. For example, much like auditors' risk-based approach to auditing, the Federal Reserve indicates that it employs a risk-focused approach to supervision (Board of Governors of the Federal Reserve System 2017). Under this approach, the Federal Reserve first identifies the primary risks faced by a bank. The Federal Reserve then assesses the bank's ability to measure, monitor, and control those risks given its (1) board and senior management oversight; (2) policies, procedures, and risk limits; (3) risk monitoring and management information systems; and (4) internal controls.

director, and the director of the Consumer Financial Protection Bureau. The FFIEC has developed uniform examination principles and standards as well as uniform regulatory reporting forms and systems for federally supervised banks.

On-site examinations of individual banks and bank holding companies generally occur every 12 to 18 months, depending on the organization's size, supervisory rating, and extent of non-banking assets, as well as supervisory resource constraints. For state banks, the primary federal supervisor coordinates its on-site examinations with the state supervisor, with the two supervisors generally conducting examinations in rotation under the "alternating examination program" (Agarwal et al. 2014). The results of an examination, which include a confidential supervisory rating of the bank's overall condition, are reported to the bank's board of directors and management. The supervisory rating system is referred to as CAMELS, an acroynm for its six components: (1) capital adequacy, (2) asset quality, (3) management and administration, (4) earnings, (5) liquidity, and (6) sensitivity to market risk. The overall and component CAMELS ratings efficiently communicate supervisors' overall assessments of banks as well as any specific issues that raise concern or require attention.

Between examinations, bank supervisors use many sources of financial and other information, most importantly banks' quarterly regulatory reports, to monitor banks. The primary report for individual banks is the Consolidated Reports of Condition and Income ("Call Reports"). These reports provide the raw data for the Uniform Bank Performance Report, which presents ratios that can be compared across banks and time to detect unusual levels of or significant changes in a bank's financial condition. The primary report for bank holding companies is the Consolidated Financial Statements for Bank Holding Companies (FR Y-9C). The Federal Reserve indicates it uses an automated system to estimate an organization's CAMELS rating based on its prior examination results and subsequent quarterly Call Report or FR Y-9C filings (Board of Governors of the Federal Reserve System 2017).

If a supervisor determines that a bank or bank holding company has problems that affect its safety and soundness, the supervisor may take a variety of formal or informal actions to ensure that the organization's management and directors undertake measures to address the problems (Keeley 2017). For example, the supervisor may enter into a written agreement with, issue a cease-and-desist order or prompt-corrective-action directive to, or levy a fine against the organization.

### 2.2. Bank Complexity and Opacity

Although a debate exists as to whether stability is enhanced by bank transparency or bank opacity, the traditional and still dominant view is that transparency enhances stability (Morgan 2002; Nier and Baumann 2006; Acharya and Ryan 2016).[9] Prior theoretical and empirical research provides numerous bases for this view. For example, banks' effectiveness as monitors provides them with comparative advantages in lending to information-sensitive borrowers (Diamond 1984). Banks' high leverage multiplies their risk and exacerbates various agency problems, such as asset substitution (Jensen and Meckling 1976) and underinvestment when the benefits of investment primarily accrue to debtholders (Myers 1977). Such agency problems are exacerbated further by information asymmetries between banks and their debt and equity claimants, as well as among these claimants (Beatty and Liao 2014; Acharya and Ryan 2016).

Despite the perceived benefits of bank transparency, banks are often viewed as opaque due to their complex and interrelated on- and off-balance sheet exposures. The individual and collective values and risk of these exposures are inherently difficult for banks to convey to outsiders and for outsiders to evaluate. This difficulty likely enhances banks' ability to manage or obscure their accounting numbers.

[9] See Dang et al. (2014), Holmström (2015), and Acharya and Ryan (2016) for discussion of the opposing view that bank opacity enhances stability.

Prior empirical research provides evidence that banks are more opaque than non-banks and about the determinants of banks' opacity. Morgan (2002) shows that banks receive more split credit ratings (i.e., different bond ratings from different rating agencies) than do non-banks, a result he attributes to banks' greater opacity. He further shows that banks' opacity varies with their asset composition, increasing with their proportions of loans and trading assets. Flannery et al. (2013) provide evidence that bank opacity increases during periods of financial system stress, when the valuations of financial assets become harder to determine and more strongly correlated.

We expect that the difference in opacity between banks and non-banks has widened over time, as banks have shifted their activities from relatively understandable deposit-acceptance and lending activities, i.e., traditional financial intermediation, to less easily understandable nontraditional activities such as derivatives trading, securitization, and the provision of various forms of contingent financing. Banks' economic exposures resulting from these activities often exhibit concentrated or correlated risks or state-contingent liquidity requirements, and these exposures often are partly or wholly off-balance sheet (Barth et al. 2009; Acharya 2014; Acharya and Ryan 2016).[10]

Banks' increasing economic complexity has been accompanied by increasing length and complexity of their financial reports. Accounting standard setters have written many complex and lengthy standards for financial instruments and transactions to try to adequately portray their

[10] In large part reflecting the income generated by these nontraditional activities, the average bank's noninterest revenues as a percentage of net operating revenues increased from below 20% in the 1970s to around 50% by 2009 (Barth et al. 2009). A portion of this increase is attributable to generally declining interest rates from 1981 to 2009, however.

economics.[11] Despite banks' provision of far more extensive financial report information in compliance with the requirements of these standards (Guay et al. 2016), we expect the individual and collective values and risk of banks' exposures to have become more difficult for banks to convey to outsiders and for outsiders to evaluate.

## 2.3. Hypotheses and Empirical Proxies

### *2.3.1. Engagement and Audit Risks*

Auditors' decisions whether to bid for potential engagements, the prices at which to bid, and the effort needed to provide the desired level of assurance depend on the risks the engagements pose for them (Bedard and Johnstone 2004). Overall engagement risk has three interrelated components: (1) clients' business risk, i.e., the possibility that clients' financial condition deteriorates, in the limit leading to firm failure; (2) auditors' business risk, i.e., the possibility of litigation or reputational costs to auditors from their associations with clients; and (3) audit risk, i.e., the possibility that auditors fail to detect material misstatements in financial statements due to error or fraud. In our investigation of whether bank regulation and supervision displace auditing, we focus on audit risk, because it is the component of engagement risk that is most directly reduced by audit effort.

In the standard (textbook) model, audit risk has three, by construction distinct, components: (1) inherent risk, i.e., the likelihood that material misstatements of clients' financial statements exist prior to the operation of their internal control systems; (2) control risk, i.e., the likelihood that clients' internal control systems fail to prevent material misstatements; and (3) detection risk, i.e.,

[11] Notable examples of these standards include FAS 133 (1998) and FAS 161 (2009) for derivatives (Accounting Standard Codification Section 815) and FAS 140 (2000), FIN 46(R) (2003), FAS 166 (2009), and FAS 167 (2009) for securitizations (Accounting Standards Codification Sections 860 and 810).

the likelihood the auditor fails to detect material misstatements not prevented by clients' internal control systems. We expect bank regulation and supervision to reduce the inherent risk and control risk components of audit risk, and thus to reduce the incentive for auditors to expend effort on audits of banks.

*2.3.2. Frequency of Internal Control and Accounting Problems*

Bank supervisors monitor banks' internal control and accounting systems through periodic on-site examinations and ongoing off-site monitoring. We expect this scrutiny to reduce the inherent risk and control risk components of audit risk for audits of banks relative to audits of control firms. We formally state this hypothesis in the alternative as:

> **Hypothesis 1:** *Banks exhibit fewer internal control and accounting problems than do control firms.*

*2.3.3. Audit Effort*

It is theoretically unclear whether auditors should expend more or less effort on audits of banks than on audits of control firms. A primary reason why auditors would work more on audits of banks is that banks' greater complexity and opacity lead to their investors and contracting parties more strongly benefiting from higher quality audits that increase the informativeness and reliability of banks' financial statements. Due to this audit-demand effect, higher quality audits more strongly reduce the need for firms' investors and contracting parties to protect themselves against uninformative or unreliable financial statement numbers by reducing the prices they are willing to pay for firms' securities and by requiring contractual protections such as collateral, respectively. To satisfy the demand for higher audit quality for audits of banks than for audits of control firms, auditors of banks must expend more effort by increasing the number of billed hours

and/or by devoting more experienced and/or specialized staff to engagements, increasing the average billed hourly fee.

A primary reason why auditors would work less on audits of banks than on audits of control firms is the overlap of the activities of bank regulators and supervisors, particularly supervisors' periodic examination and ongoing monitoring of banks, with the activities of bank auditors. Due to this substitution effect, auditors of banks need to perform less extensive audit planning and substantive testing than do auditors of control firms to provide any given level of assurance. We expect the substitution effect to be more likely to dominate the audit-demand effect when bank regulation and supervision are more intense, for example, when regulators and supervisors use more sophisticated or sensitive approaches such as the Federal Reserve's risk-focused approach (Board of Governors of the Federal Reserve System 2017).

Although the two effects yield opposing predictions, we expect that the substitution effect generally dominates the audit demand effect because of substantial extent of the overlap of the activities of bank regulators and particularly supervisors with those of auditors. Relatedly, many aspects of bank regulation and supervision reduce the inherent and control risk components of audit risk. For example, when bank supervisors determine that banks exhibit inadequate solvency or other problems, they convey the banks' deficient CAMELS ratings to the banks' management and boards of directors, who are responsible for resolving these problems. This expectation yields our second hypothesis stated in the alternative:

> **Hypothesis 2:** *Auditors exert lower effort on audits of banks than on audits of control firms.*

## 3. Empirical Models and Variables

### 3.1. Frequencies of Internal Control and Accounting Problems

We employ two dependent variables in our tests of Hypothesis 1. First, we proxy for problems in banks' internal control using an indicator for material weaknesses in internal control (Ashbaugh et al. 2007). Naturally, we can only observe such weaknesses if firms identify and disclose them, as FDICIA requires for banks and Sections 302 and 404 of SOX require for all firms. *INTERNAL_WEAKNESS* denotes firm-years with disclosed material internal control weaknesses. Second, we proxy for problems in banks' accounting using an indicator for financial statement restatements, which arise from GAAP violations and thus suggest audit failures (Palmrose and Scholz 2004; Kinney et al., 2004; Hennes et al. 2014).[12] *ACC_RESTATEMENT* denotes firm-years with restatements of financial statements.[13] We denote *INTERNAL_WEAKNESS* and *ACC_RESTATEMENT* collectively by *Y*.

The main test variable in our tests of Hypothesis 1 is an indicator for banks, denoted *BANK*. As discussed below, we control for numerous client and auditor characteristics that prior research finds are associated with internal control and accounting problems. In addition, when the dependent variable *Y* is *INTERNAL_WEAKNESS* (*ACC_RESTATEMENT*), we control for *ACC_RESTATEMENT* (*INTERNAL_WEAKNESS*). We denote the *Y* variable that is controlled for in a given model by *Y_CONTROL*.

[12] In untabulated analysis, we also proxy for both internal control and accounting problems using auditor resignations (Krishnan and Krishnan 1997; Shu 2000; Hennes et al. 2014). If banks exhibit fewer internal control and accounting problems than do control firms, bank auditors have fewer reasons to resign from audit engagements. However, compared to the proxies for these problems in the tabulated analyses, auditor resignations are more likely to capture the components of engagement risk other than audit risk. For example, prior research shows that auditors are more likely to resign when clients exhibit greater financial distress (Schwartz and Soo 1995), more corporate governance problems (Lee et al. 2004), and greater litigation risk (Krishnan and Krishnan 1997; Simunic and Stein 1996).

[13] All indicator variables in the paper take a value of one when a firm or firm-year exhibits the specified condition and zero otherwise.

Based on prior empirical research examining internal control weaknesses (Altamuro and Beatty 2010)[14] and financial statement restatements (Palmrose and Scholz 2004; Kinney et al. 2004; Hennes et al. 2008), we use the following logistic model to explain the probability that *Y* equals one, denoted Prob(*Y* = 1), in terms of *BANK* and control variables (collectively denoted *X*).[15]

$$\text{Prob}(Y = 1) = e^{X\beta} / (1 + e^{X\beta}), \text{ where}$$

$$\begin{aligned} X\beta = {} & \beta_0 + \beta_1 BANK + \beta_2 LogASSETS + \beta_3 ROA + \beta_4 LOSS + \beta_5 LEVERAGE \\ & + \beta_6 GOODWILL + \beta_7 M\&A + \beta_8 FOREIGN + \beta_9 MTB \\ & + \beta_{10} GOING\_CONCERN + \beta_{11} Y\_CONTROL + \beta_{12} BUSY\_MONTH \\ & + \beta_{13} BIG4 + \beta_{14} ISPEC + \text{year fixed effects.} \end{aligned} \quad (1)$$

Because Prob(*Y* = 1) is not directly observable, we estimate equation (1) with *Y* as the dependent variable. Hypothesis 1 predicts that the coefficient $\beta_1$ on *BANK* is negative.

Equation (1) controls for numerous client characteristics. We selected these characteristics based on prior research findings that firms that have less resources to invest in internal control systems, have undergone major organizational changes, and are more complex or otherwise stress auditors' capabilities exhibit more frequent internal control and accounting problems (e.g., Ge and McVay 2005; Ashbaugh-Skaife et al. 2007; Doyle et al. 2007a,b).

We control for the resources that clients have available to establish effective internal control systems using the natural logarithm of total assets (*LogASSETS*), net income divided by total assets (*ROA*), an indicator variable for negative net income (*LOSS*), and the ratio of total

[14]Altamuro and Beatty (2010) show how FDICIA's (1991) internal control requirements affected insured depository institutions with assets of $500 million or above. They do not compare the internal control quality of banks and non-banks.

[15] Throughout the paper, we omit firm and year subscripts for brevity.

liabilities to total assets (*LEVERAGE*). We control for clients' organizational changes associated with business acquisitions using the ratio of goodwill to total assets (*GOODWILL*) and an indicator variable that equals one when goodwill increases by more than $1 million (*M&A*). We control for other determinants of audit complexity using the proportion of foreign sales for control firms and the proportion of foreign commercial loans for banks (*FOREIGN*), the ratio of market value of equity to book value of equity (*MTB*), an indicator variable for the auditor rendering a going-concern opinion (*GOING_CONCERN*), and *Y_CONTROL*.

We control for three auditor characteristics: an indicator for December fiscal year end (*BUSY_MONTH*), an indicator variable for Big-Four auditor (*BIG4*), and the auditor's market share in the industry (*ISPEC*). Lastly, we include fixed year effects to capture unobserved time-related factors for both clients and auditors.

Because the effects of client size may be nonlinear, in tabulated specification analyses we include indicator variables for client total assets in the following categories: up to $10 billion (this indicator is omitted, as one must be), from above $10 to $50 billion (*B10_50*), from above $50 to $100 billion (*B50_100*), from above $100 to $500 billion (*B100_500*), and above $500 billion (*B500*). Moreover, because the effects of size may vary for banks versus control firms, we also include the interactions of these size indicators with *BANK*.

### 3.2. Audit Effort

We test Hypothesis 2 using two dependent variables that prior research indicates proxy for auditor effort: audit fees (Simunic and Stein 1996) and audit report lag (Ashton et al. 1987; Bamber et al. 1993; and Ghosh and Tang 2015). Audit fees equal the number of hours worked times the average fee per hour worked. *LogFEE* denotes the natural logarithm of the sum of audit and audit-related fees. Auditors working more hours is positively associated with audit report lags (Bronson

et al. 2011). *LogREPORT_LAG* denotes the natural logarithm of one plus the number of days between the fiscal year end and the audit report signature date.

Based on prior models for audit fees (Simunic 1980; Ghosh and Tang 2015), we use the following model to explain *LogFEE*:

$$\begin{aligned} LogFEE = {} & \beta_0 + \beta_1 BANK + \beta_2 LogASSETS + \beta_3 ROA + \beta_4 LOSS + \beta_5 SPECIAL\_ITEMS \\ & + \beta_6 DISCONTINUED + \beta_7 LEVERAGE + \beta_8 INVENTORY + \beta_9 INTANGIBLES \\ & + \beta_{10} GOODWILL + \beta_{11} M\&A + \beta_{12} NEG\_EQUITY + \beta_{13} FIRM\_AGE \\ & + \beta_{14} ACCEL\_FILER + \beta_{15} INTERNAL\_WEAKNESS + \beta_{16} MTB + \beta_{17} RETURN \\ & + \beta_{18} STD\_RETURN + \beta_{19} GOING\_CONCERN + \beta_{20} BUSY\_MONTH \\ & + \beta_{21} BIG4 + \beta_{22} ISPEC + \text{year fixed effects.} \end{aligned} \quad (2)$$

Based on prior models for audit report lag (Ashton et al. 1987; Bamber et al. 1993; Bronson et al. 2011; Ghosh and Tang 2015), we use the following model to explain *LogREPORT_LAG*:

$$\begin{aligned} LogREPORT\_LAG = {} & \beta_0 + \beta_1 BANK + \beta_2 LogASSETS + \beta_3 ROA + \beta_4 LOSS \\ & + \beta_5 DISCONTINUED + \beta_6 EXTRA\_ITEMS + \beta_7 ABS\_ACCRUALS \\ & + \beta_8 LEVERAGE + \beta_9 INVENTORY + \beta_{10} FOREIGN + \beta_{11} FIRM\_AGE \\ & + \beta_{12} INTERNAL\_WEAKNESS + \beta_{13} AUDITOR\_TURNOVER \\ & + \beta_{14} GOING\_CONCERN + \beta_{15} BUSY\_MONTH + \beta_{16} BIG4 \\ & + \text{year fixed effects.} \end{aligned} \quad (3)$$

As in equation (1), the main test variable in equations (2) and (3) is *BANK*. Hypothesis 2 predicts that the coefficient $\beta_1$ on *BANK* is negative in both equations.

Equations (2) and (3) control for numerous client and auditor characteristics that prior research finds are associated with audit fees or audit report lag, respectively. Many of the control variables included in Equations (2) and (3) also appear in Equation (1) and are defined above. Equation (2) and/or equation (3) include the following additional client characteristics.[16] Special

[16] The sets of control variables in equations (2) and (3) are not identical, consistent with the models estimated in prior research.

items divided by total assets (*SPECIAL_ITEMS*), an indicator for absolute value of discontinued operations above $1 million (*DISCONTINUED*), and an indicator for absolute value of extraordinary items above $1 million (*EXTRA_ITEMS*) capture transitory earnings items. The absolute value of accruals divided by total assets (*ABS_ACCRUALS*) captures other dimensions of earnings quality. The ratio of inventory to total assets (*INVENTORY*) and the ratio of intangible assets to total assets (*INTANGIBLES*) capture balance sheet composition. An indicator for negative common equity (*NEG_EQUITY*) and the number of years the firm is listed on Compustat (*FIRM_AGE*) capture early-stage or otherwise risky firms. An indicator for accelerated filer (*ACCEL_FILER*) and an indicator for auditor turnover during the year (*AUDITOR_TURNOVER*) capture other auditing stresses. Fiscal year stock return (*RETURN*) and the standard deviation of monthly stock returns (*STD_RETURN*) capture the aggregate level and the volatility, respectively, of exogenous shocks occuring during the fiscal year.

As for equation (1), in tabulated specification analyses we include indicator variables for client total assets in the various size categories, and we also include the interactions of these size indicators with *BANK*.

### 3.3. Earnings Management of Minor Concern to Bank Regulators and Supervisors

As discussed in the introduction, we expect bank regulators and supervisors to be relatively unconcerned about types of earnings management that accumulate to relatively small amounts of retained earnings. Such earnings management has minor effects on banks' solvency ratios and so should not appreciably affect supervisors' evaluations of banks' safety and soundness. We expect that, if bank regulation and supervision leads to lower audit effort in audits of banks than in audits of control firms, as predicted in Hypothesis 2, banks engage more in these types of earnings

management than do control firms. Motivated by Burgstahler and Dichev (1997), Beatty et al. (2002), and Graham et al. (2005), we examine two proxies for such earnings management.

First, we examine the frequency of small (from 0 to 0.01) increases in return on equity (*SMALL_POS*).[17] Based on Beatty et al. (2002), we use the following logistic model to explain *SMALL_POS*:

$$\text{Prob}(SMALL\_POS = 1) = e^{X\beta} / (1 + e^{X\beta}), \text{ where}$$

$$X\beta = \beta_0 + \beta_1 BANK + \beta_2 LogASSETS + \beta_3 LEVERAGE + \beta_4 MTB + \beta_5 ACCEL\_FILER + \beta_6 BIG4 + \text{year fixed effects.} \quad (4)$$

We expect the coefficient $\beta_1$ on *BANK* to be positive.

Second, we examine the length of the longest string of consecutive earnings increases for each firm (*STRING*). Based on Beatty et al. (2002), we use the following Cox proportional hazard model to explain *STRING*:

$$h(STRING|X) = h_0(STRING)\, e^{X\beta}, \text{ where}$$

$$X\beta = \beta_0 + \beta_1 BANK + \beta_2 LogASSETS + \beta_3 LEVERAGE + \beta_4 MTB + \beta_5 ACCEL\_FILER + \beta_6 INTERNAL\_WEAKNESS + \beta_7 BIG4 + \text{year fixed effects.} \quad (5)$$

*h(STRING|X)* denotes the hazard function and $h_0$(*STRING*) denotes the baseline hazard function. We expect the coefficient $\beta_1$ on *BANK* to be positive.

[17] Specifically, we compute return on equity (ROE) as net income divided by common equity. *SMALL_POS* takes a value of one if the change in ROE is greater than zero but smaller than or equal to 0.01 and zero otherwise.

## 4. Data and Sample Selection

### 4.1 Data

We obtain audit fee, audit report signature date, auditor change, internal control weakness, and restatement data from *Audit Analytics*. We obtain financial statement data from *Compustat*'s annual Bank and North American files. We obtain geographic and foreign segment data from *Compustat*'s Segment file. If a given firm-year is available in *Compustat*'s Bank file, we classify the firm-year observation as a bank.

Our sample covers the fifteen-year period from 2000 to 2014. The sample period begins in 2000, because audit fees are unavailable prior to that year. Because SOX-mandated internal control weakness data become available in 2004, our analysis of internal control weaknesses is limited to the eleven-year period from 2004 to 2014. We restrict the sample to firm-year observations with complete data on audit fees, auditor identification, and audit report signature date from *Audit Analytics* as well as on total assets (item AT), total liabilities (item LT), total common equity (item CEQ), net income (item NI), closing price (item PRCC), and common shares outstanding (item CSHO) from *Compustat*. These data requirements yield 7,914 bank-year observations (965 unique banks), 671 firm-year observations in SIC 61 (104 unique firms), and 3,111 firm-year observations in the top five percent of the ratio of accounts receivable to total assets (812 unique firms) from 2000–2014. The internal control weakness sample includes 5,581 bank-year observations, 483 firm-year observations for the SIC 61 control sample, and 2,254 firm-year observations for the top five percent of the ratio of accounts receivable to total assets control sample from 2004–2014.

### 4.2 Descriptive Statistics

Table 1 reports means for each of the dependent variables (above the line) and each of the independent variables (below the line) in equations (1)-(5) for the bank sample, SIC 61 control

sample, and highest 5% ratio of accounts receivable to assets control sample. Significant differences of the means for the bank sample versus the SIC 61 control sample and for the bank sample versus the highest 5% ratio of accounts receivable to assets control sample are indicated in the columns for the control samples.

The differences of the means for the dependent variables are uniformly significant and consistent with our hypotheses that banks exhibit fewer internal control and accounting problems than do control sample firms as well as our expectations that banks engage in more of certain types of earnings management than do control sample firms. Consistent with Hypothesis 1, banks are less likely than both control samples to disclose material internal control weaknesses (*INTERNAL_WEAKNESS*) and to restate their financial statements (*ACC_RESTATEMENT*). Consistent with Hypothesis 2, on average audit fees (*FEE*) are lower and audit report lags (*REPORT_LAG*) are shorter for banks than for both control samples. Consistent with our expectations for earnings management, banks are more likely to report small positive earnings changes (*SMALL_POS*) and on overage report longer strings of positive earnings (*STRING*).

Most of the differences of the means for the independent variables are also significant. For most of these variables, the means for banks are closer to those of the *a priori* more analogous SIC 61 control sample than to those of the highest 5% ratio of accounts receivable to assets control sample. Accordingly, we discuss only the former mean differences. Compared to the SIC 61 control sample, on average banks: are smaller (*ASSETS*); are more profitable (*ROA*) and have fewer losses (*LOSS*); have fewer transitory earnings items (*SPECIAL_ITEMS*, *DISCONTINUED*, and *EXTRA_ITEMS*) and lower absolute accruals (*ABS_ACCRUALS*); have higher financial leverage (*LEVERAGE*); have lower non-financial assets (*INVENTORY*, *INTANGIBLES*, and *GOODWILL*), despite engaging in more mergers and acquisitions (*M&A*); are less likely to have

negative equity (*NEG_EQUITY*) or foreign operations (*FOREIGN*); have insignificantly different age (*AGE*); have lower expected growth (*MTB*); experience lower exogenous shocks (*RETURN* and *STD_RETURN*); and receive fewer going-concern opinions (*GOING_CONCERN*).

Compared to the SIC 61 control sample, on average banks exhibit one characteristic that stress auditors' capabilities, more frequent December fiscal year-ends (*BUSY_MONTH*). However, on average banks are less likely to be accelerated filers (*ACCEL_FILER*); are less likely to be audited by a Big 4 auditor (*BIG4*); are less likely to have auditors with high relative industry market share (*ISPEC*); and experience less auditor turnover (*AUDITOR_TURNOVER*).

## 5. Empirical Results

### 5.1. Frequencies of Internal Control and Accounting Problems

Hypothesis 1 predicts that, due to bank regulation and supervision, banks exhibit fewer internal control and accounting problems than do similar unregulated firms. To test this hypothesis, Tables 2 and 3 report logistic estimations of equation (1) with the dependent variables *INTERNAL_WEAKNESS* and *ACC_RESTATEMENT*, respectively.[18] We report the estimation of each model for the combined bank sample and SIC 61 control sample in the left column of the table and for the combined bank sample and highest 5% ratio of accounts receivable to assets control sample in the right column of the table.

We estimate each model in two different ways. Panel A of each table reports the estimation of the base model. To better control for size differences between the bank and control samples, Panel B of each table reports estimations of the equations replacing *LogASSETS* with the client

[18] In untabulated analyses, we also examine adverse restatements that reduce owners' equity and auditor resignations. We find results consistent with those reported in the paper.

size category indicators (*B10_50*, *B50_100*, *B100_500*, and *B500*) both separately and interacted with *BANK*. The coefficient on *BANK* captures the total effect for the smallest banks (assets less than $10 billion). The coefficient on the interaction of *BANK* with a given size category indicator captures the effect for the banks in that size category incremental to the effect for the smallest banks. The sum of the coefficients on *BANK* and on the interaction of *BANK* with a given size category indicator captures the total effect for the banks in that size category.

The model fits and the coefficients on the control variables generally are as expected based on prior research. For simplicity, we primarily discuss the statistical and economic significance of the coefficient $\beta_1$ on *BANK* estimated on the combination of the bank sample and the more analogous SIC 61 control sample reported in the left column of Panel A of the tables. We point out any notable differences of the results for the other models. All of these differences pertain to the coefficients on *BANK* and the interactions of *BANK* with the size category indicators in Panel B, which typically indicate that the effects we document are limited to certain size categories. In particular, no notable differences arise from the use of different control samples in the estimations reported in the left and right columns of the tables. In discussing economic significance, we focus on $e^{\beta_1}$, the differential frequency of internal control and accounting problems for banks versus non-banks.

Examining the estimation of equation (1) with dependent variable *INTERNAL_WEAKNESS* reported in the left column of Panel A of Table 2, we find that the coefficient on *BANK* is negative (-0.781) and significant at the 1% level. This coefficient implies that banks disclose material internal control weaknesses with only 46% of the frequency of SIC control sample firms, controlling for other factors that prior research finds are associated with

internal control weaknesses. These results are consistent with Hypothesis 1 that bank regulation and supervision reduce the frequency of banks' internal control problems.

In left column of Panel B of Table 2, the coefficient on *BANK* is negative as expected but insignificant. Notice, however, that the coefficients on the interactions of *BANK* with all of the size category indicators are also negative, with these coefficients being significant at the 1% and 10% levels for the interactions of *BANK* with *B10_50* and *B50_100*, respectively. The sum of the coefficients on *BANK* and *BANK*×*B10_50* is significantly negative at the 1% level and the sum of the coefficients on *BANK* and *BANK*×*B50_100* is significantly negative at the 10% level. These results imply that banks with assets from $10 billion to $100 billion disclose significantly fewer internal control weaknesses than do similarly sized control firms, consistent with Hypothesis 1, whereas banks in other size categories disclose internal control weaknesses with insignificantly different frequency.

Examining the estimation of equation (1) with dependent variable *ACC_RESTATEMENT* reported in the left column of Panel A of Table 3, we find that the coefficient on *BANK* is negative (-1.075) and significant at the 1% level. This coefficient implies that banks report financial statement restatements with only 34% of the frequency of SIC 61 control sample firms, controlling for other factors that prior research finds are associated with restatements. These results are consistent with Hypothesis 1 that bank regulation and supervision reduce the frequency of banks' accounting problems.

In the left column of Panel B of Table 3, the coefficient on *BANK* is negative as expected but insignificant. Again notice, however, that the coefficients on the interactions of *BANK* with all of the size category indicators are also negative, with the coefficient on the interaction of *BANK* with *B10_50* significant at the 5% level. The sum of the coefficients on *BANK* and its interaction

with *B10_50* is significantly negative at the 1% level and the sum of the coefficients on *BANK* and its interaction with *B100_500* is significantly negative at the 10% level. These results imply that banks with assets from $10 billion to $50 billion and from $100 billion to $500 billion report significantly fewer accounting restatements than similarly sized control firms, consistent with Hypothesis 1, whereas banks in other size categories report accounting restatements with insignificantly different frequency.

Collectively, the results reported in Tables 2 and 3 for disclosed material internal control weaknesses and accounting restatements are consistent with bank regulation and supervision rendering engagements for audits banks less risky than for audits of control sample firms for some size categories, and insignificantly differently risky for other size categories.

5.2. Audit Effort

Hypothesis 2 predicts that bank regulation and supervision lead bank auditors to expend less effort. We proxy for (lower) audit effort using (lower) audit fees and (shorter) audit report lags. To test this hypothesis, Table 4 reports OLS estimations of equation (2) that explain the natural logarithm of audit fees (*LogFEE*), while Table 5 reports OLS estimations of equation (3) that explain the natural logarithm of the number of days between the fiscal year end and the audit report signature date (*LogREPORT_LAG*). The structures of Tables 4 and 5 are the same as those of Tables 2 and 3. The left columns of the tables report the estimations for the combined bank sample and SIC 61 control sample. The right columns of the tables report the estimations for the combined bank sample and highest 5% ratio of accounts receivable to assets control sample. Panel A of the tables report the estimation of the base model and Panel B of the tables report the estimation of the models that include the size category indicators both separately and interacted with *BANK*. As for the analyses of internal control and accounting problems discussed in Section

5.1, the model fits and the coefficients on the control variables generally are as expected based on prior literature, so we discuss only the statistical and economic significance of the coefficients $\beta_1$ on *BANK* in Panel A and of the coefficients on *BANK* and the interactions of *BANK* with the size category indicators in Panel B.

Examining the estimation of equation (2) with dependent variable *LogFEE* reported in the left column of Panel A of Table 4, we find that the coefficient on *BANK* is negative (-0.705) and significant at the 1% level. This coefficient implies that on average audit fees for banks are only 49% of that for SIC 61 control sample firms, controlling for other factors that prior research finds are associated with audit fees. These results are consistent with Hypothesis 2's prediction that bank regulation and supervision lead to reduced audit effort.

In both columns of Panel B of Table 4, the coefficient on *BANK* is significantly negative as expected. However, the coefficient on the interactions of *BANK* with the largest size category *B500* is significantly positive and of similar absolute magnitude as the coefficient on *BANK*. As a result, the coefficient on the sum of *BANK* and its interaction with *B500* is insignificantly different from zero, whereas the sum of the coefficients on *BANK* and its interactions with each of the other size indicators is significantly negative. These results imply that, relative to similarly sized control firms, audit effort is lower for banks with assets up to $500 billion, and audit effort is insignificantly different for banks with assets exceeding $500 billion. The latter result is consistent with the (relatively few) banks in the largest (money center) size category experiencing elevated audit fees compared to non-banks of the same size.

Examining the estimation of equation (2) with dependent variable *LogREPORT_LAG* reported in the left column of Panel A of Table 5, we find that the coefficient on *BANK* is negative (-0.101) and significant at the 1% level. This coefficient implies that on average audit report lag

for banks is only 90% of that for SIC 61 control sample firms, controlling for other factors that prior research finds are associated with audit report lag. These results are consistent with Hypothesis 2's prediction that bank regulation and supervision lead to reduced audit effort.

In both columns of Panel B of Table 5, the coefficient on *BANK* is significantly negative as expected. However, the coefficients on the interactions of *BANK* with all of the size categories are positive, often significantly so, and of similar absolute magnitude as the coefficient on *BANK*. As a consequence, none of the sums of the coefficients on *BANK* and its interactions with the size category indicators is significant. These results imply that, relative to similarly sized control firms, audit report lag is shorter and thus audit effort is lower for banks with assets up to $10 billion, and audit report lag is insignificantly different for banks with assets exceeding $10 billion.

Collectively, the audit fee and audit report lag estimation results reported in Tables 4 and 5 provide evidence consistent with bank regulation and supervision leading auditors to expend lower audit effort on audits of banks in certain size categories.

### 5.3 Identification Tests for the Audit Fee Model

To provide support for bank regulation and supervision as causally explaining the reduced audit effort in bank audits that we document in Tables 4 and 5, we estimate expansions of equation (2) explaining the natural logarithm of audit fees and equation (3) explaining the natural logarithm of log audit report lag that include time-series or cross-sectional proxies for the intensity of bank regulation, and we test whether audit effort is lower when regulatory intensity is higher. As the inferences generated are similar, to conserve space we tabulate and discuss only the results for the expanded audit fee model.

Table 6 reports OLS estimations of equation (2) with *LogFEE* as the dependent variable expanded to include one of two measures of time-series measures of bank regulation intensity. The

sample is limited to 7,914 bank-year observations (965 unique banks) from 2000 to 2014, so *BANK* is dropped from the equation. The first bank regulation intensity measure is based on RegData, an industry- and year-specific regulation index constructed by Al-Ubaydli and McLaughlin (2017) from textual analysis of the number of constraints (the strings "shall," "must," "may not," "prohibited," and "required") in the Code of Federal Regulations (CFR). The measure used is the natural logarithm of the number of constraints in CFR Title 12 for the banking industry each year (*LogRESTRICTIONS*). The second measure is the natural logarithm of the annual budget (in $ millions) of the "finance and banking" subcategory (which includes the Comptroller of the Currency, Federal Deposit Insurance Corporation, and Securities and Exchange Commission) from Regulatory Reports available at https://wc.wustl.edu/regulatory_reports (*LogBUDGET*). Figure 1 depicts the evolutions of *LogRESTRICTIONS* and *LogBUDGET* from 2000-2014. Panel A of Table 6 reports descriptive statistics of the two measures of bank regulation intensity.

The left (right) columns of Table 6 report the estimation of equation (2) adding *LogBUDGET* (*LogRESTRICTIONS*) to the model. The coefficients on *LogBUDGET* and *LogRESTRICTIONS* are both significantly negative at the 1% level, consistent with more intense bank regulation leading to lower audit fees.

Table 7 reports the OLS estimations of equation (2) with *LogFEE* as the dependent variable expanded to include Agarwal et al.'s (2014) measure of regulatory leniency (i.e., inverse intensity) across state-chartered banks (*STATE_REG*). This measure is based on the "alternating examination program" in which state-chartered banks are examined by (more stringent) federal supervisors (the FDIC or Federal Reserve) and state supervisors in rotation. Using a proprietary database, Agarwal et al. (2014) estimate the differential examination stringency of federal supervisors versus 44 state supervisors. The left column reports the estimation of an expanded model that includes

*STATE_REG* linearly. This model is estimated on 5,679 state bank–year observations (738 unique banks) from 2000 to 2014. The right column reports the estimation of an expanded model that includes *STATE_REG* both linearly and interacted with an indicator for state-chartered banks (*STATE_BANK*) obtained from the FDIC website (https://www5.fdic.gov/idasp/advSearchLanding.asp). This model is estimated on 7,340 (federal and state) bank–year observations (903 unique banks) from 2000 to 2014. The coefficient on *STATE_REG* in the left column and the coefficient on *STATE_REG*×*STATE_BANK* in the right column of the table are both significant positive at the 5% level, consistent with more lenient state regulation yielding higher audit fees.

Overall, the expanded audit fee model estimation results reported Tables 6 and 7 provide evidence consistent with (more intense) bank regulation and supervision causally explaining the (more strongly) reduced audit effort in bank audits that we document in Tables 4 and 5.

5.3. Types of Earnings Management of Minor Concern to Bank Regulators and Supervisors

If bank regulation and supervision leads to lower audit effort, banks should have more ability to exercise accounting discretion to manage accounting numbers in ways that do not significantly concern bank regulators and supervisors. Drawing on Beatty et al. (2002), we examine two types of earnings management: the frequency of small positive earnings (*SMALL_POS*) and the length of the longest string of consecutive earnings increases (*STRING*).[19] We conjecture that these types of earnings management typically accumulate to relatively small amounts of retained earnings. If so, these types have relatively minor effects on banks' solvency

[19] A side benefit of our use of these earnings management measures is that they are just as naturally applied to banks as to non-banks. In contrast, the most commonly used measures of earnings management in the literature (Jones 1991; Dechow and Dichev 2002) are not as naturally applied to banks.

ratios and so should be of minor concern to bank regulators and supervisors primarily concerned with banks' safety and soundness. While we are unaware of any supporting empirical evidence for our conjecture, it is consistent with the absence of any mention of these types of earnings management in bank supervisory manuals, including the portions devoted to the evaluation of earnings quality (Comptroller of the Currency 2007, p. 53; Board of Governors of the Federal Reserve System 2017, §4020.3). In contrast, based on the large empirical literature documenting such earnings management and its capital market consequences by public firms in general and by public banks in particular (Burgstahler and Dichev 1997; Beatty et al. 2002; Bartov et al. 2002; Brown and Caylor 2005), we expect these types of earnings management to significantly influence banks' investors and contracting parties and to be of concern to auditors.

To test for differences in *SMALL_POS* for banks versus the firms in the control samples, Table 8 reports the logistic estimation of equation (4) with *SMALL_POS* as the dependent variable for the combined *BANK* sample and SIC 61 control sample (left column) and for the combined *BANK* sample and highest 5% ratio of accounts receivable to assets control sample (right column). A positive coefficient $\beta_1$ on *BANK* implies that banks exhibit more frequent small positive earnings changes than do control firms, consistent with bank regulation and supervision leading to lower bank audit effort. In both columns, the coefficient on *BANK* is significantly positive at the 1% level. The coefficient in the left (right) column implies that banks report small positive earnings 4.4 (2.5) times as frequently as the corresponding control sample firms, controlling for other variables that prior research shows are associated with the frequency of small positive earnings.

To test for differences in *STRING* for banks versus control firms, Table 9 reports the estimation of equation (3) using the Cox proportional hazard approach for the combined *BANK* sample and SIC 61 control sample (left column) and for the combined *BANK* sample and highest

5% ratio of accounts receivable to assets control sample (right column). The Cox proportional hazard approach accounts for the right-censoring of *STRING* arising from our sample ending in 2014. A positive coefficient $\beta_1$ on *BANK* implies that banks exhibit earnings strings with incrementally longer length than do control firms, consistent with bank regulation and supervision leading to lower bank audit effort. In both columns, the coefficient on *BANK* is significantly positive at the 1% level. The coefficient in the left (right) column implies that banks report strings of positive earnings that are 47% (94%) longer than the corresponding control sample firms, controlling for other variables that prior research shows are associated with the length of earnings strings.

Collectively, the results from Tables 8 and 9 indicate that, compared to control firms, banks are more likely to engage in types of earnings management of minor concern to bank regulators and supervisors, consistent with bank regulation and supervision leading to lower audit effort in audits of banks.

## 6. Conclusion

A central feature of banks is they are regulated and supervised under numerous banking laws and regulations. Moreover, bank supervision involves periodic on-site examinations and off-site monitoring activities that overlap considerably with auditing activities. In this paper, we examine whether bank regulation and supervision displace bank auditing, leading to lower audit effort in audits of banks than in audits of two control samples of similar unregulated firms: (1) non-depository credit institutions (two-digit SIC code 61) and (2) all non-banks in the highest five percent of the ratio of accounts receivable (which includes loan and lease receivables) to total assets. Our results are consistent with bank regulation and supervision substituting for auditing,

i.e., with audit effort being significantly lower in audits of banks than in audits of control sample firms.

We first provide evidence that banking engagements pose less risk to auditors. We show that banks are significantly less likely than control sample firms to disclose material weaknesses in internal controls and to restate their financial statements, controlling for the variables that prior research shows to be associated with material internal control weaknesses and restatements. We then provide evidence consistent with auditors exerting less effort on audits of banks than on audits of control sample firms. We show that banks exhibit statistically and economically lower audit fees and shorter audit report lags than do control sample firms, controlling for the variables that prior research shows to be associated with audit fees and audit report lags.

We acknowledge that the primary threat to inference in our study is the possibility that factors other than bank regulation and supervision might explain why audits of banks pose less audit risk than do audits of control firms. Although we cannot rule out this possibility altogether, we conduct two sets of tests to provide support for the conclusion that the associations we document are causal. First, we provide evidence that bank auditors expend less effort when bank regulation and supervision are more intense. We use two time-series measures based on the text of banking regulations and the annual budget of federal regulators and one cross-sectional measure based on Agarwal et al. (2014) of the intensity of bank regulation and supervision. Second, we provide evidence that banks are more likely to engage in two types of earnings management that are of minor concern to bank regulators and supervisors but that prior research shows have capital market consequences (Bartov et al. 2002; Brown and Caylor 2005). We find that banks report more frequent small positive earnings and longer strings of earnings increases than do similar firms.

We contribute to the banking and auditing literatures by providing evidence consistent with auditors expending less effort in auditing banks than in auditing control sample firms, due to the overlap of the activities of bank regulators and supervisors with those of auditors. We emphasize that our evidence does not suggest that the aggregate monitoring of banks' financial reporting by bank regulators, supervisors, and auditors differs from the monitoring of similar firms' financial reporting by auditors alone, it only suggests that the monitoring conducted by bank auditors is less. Because of the importance of banks to stability and overall macroeconomic health, a compelling question is what incremental costs arise when bank auditors, as financial reporting specialists, expend less effort on bank audits due to the existence of bank regulation and supervision. We provide evidence that this reduced effort leads to types of earnings management that likely have minor effects on banks' solvency ratios but have capital market consequences documented by prior research that may lead to reduced market discipline over banks. We expect these results to be of interest to bank and auditing policymakers.

## References


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

Acharya, V. 2014. A transparency standard for derivatives. Chapter 6 in *Risk Topography: Systematic Risk and Macro Modeling*, edited by M. Brunnermeier and A. Krishnamurthy, National Bureau of Economic Research, University of Chicago Press 2014.

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

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

Al-Ubaydli, O., and P. McLaughlin. 2017. RegData: A numerical database on industry-specific regulations for all United States industries and federal regulations, 1997-2012. *Regulation & Governance* 11: 109-123.

Ashbaugh-Skaife, H., D. Collins, and W. Kinney Jr. 2007. The discovery and reporting of internal control deficiencies prior to SOX-mandated audits. *Journal of Accounting and Economics* 44: 166–192.

Ashton, R., J. Willingham, and R. Elliot. 1987. An empirical analysis of audit delay. *Journal of Accounting Research* 25: 275–292.

Avraham, D., P. Selvaggi, and J. Vickrey. 2012. A structural view of US bank holding companies. *Federal Reserve Bank of New York Economic Policy Review* 18: 65–81.

Badertscher, B., J. Burks, and P. Easton. 2016. The market reaction to bank regulatory filings. Working paper, University of Notre Dame.

Bamber, E., L. Bamber, and M. Schoderbek. 1993. Audit structure and other determinants of audit report lag: An empirical analysis. *Auditing: A Journal of Practice and Theory* 12: 1–23.

Barth, J., T. Li, and W. Lu. 2009. Bank regulation in the United States. *CESifo Economic Studies* 10: 2–29.

Barth, M., and W. Landsman. 2010. How did financial reporting contribute to the financial crisis? *European Accounting Review* 19: 399-433.

Bartov, E., D. Givoly, and C. Hayn. 2002. The rewards to meeting or beating earnings expectation. *Journal of Accounting and Economics* 33 (2): 173-204.

Beatty, A., B. Ke, and K. Petroni. 2002. Earnings management to avoid earnings declines across publicly and privately held banks. *The Accounting Review* 77: 547–570.

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

Bedard, J., and K. Johnstone. 2004. Earnings manipulation risk, corporate governance risk, and auditors' planning and pricing decisions. *The Accounting Review* 79: 277–304.

Bell, T., W. Landsman, and D. Shackelford. 2001. Auditors' perceived business risk and audit fees: Analysis and evidence. *Journal of Accounting Research* 39: 35–43.

Board of Governors of the Federal Reserve Board System. 2017. Bank Holding Company Supervision Manual, Division of Banking Supervision and Regulation, https://www.federalreserve.gov/publications/supervision_bhc.htm.

Bronson, S., C. Hogan, M. Johnson, and K. Ramesh. 2011. The unintended consequences of PCAOB auditing standard nos. 2 and 3 on the reliability of preliminary earnings releases. *Journal of Accounting and Economics* 51: 95–114.

Brown, L., and M. Caylor. 2005. A temporal analysis of quarterly earnings thresholds: Propensities and valuation consequences. *The Accounting Review* 80 (2): 423-440.

Burgstahler, D., and I. Dichev. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24: 99–126.

Comptroller of the Currency. 2007 (last updated 2017). Bank supervision process: Comptroller's handbook.

Costello, A., J. Granja, and J. Weber. 2016. Do strict regulators increase the transparency of the banking system? Working paper, Massachusetts Institute of Technology.

Dang, T., G. Gorton, B. Holmström, and Ordoñez, G. 2014. Banks as secret keepers. PIER working paper no. 14-022.

Dechow, P., and I. Dichev. 2002. The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review* 77: 35–59.

DeFond, M., and J. Zhang. 2014. A review of archival auditing research. *Journal of Accounting and Economics* 58: 275–326.

Diamond, D. 1984. Financial intermediation and delegated monitoring. *Review of Economic Studies* 51: 393–414.

Doyle, J., W. Ge, and S. McVay. 2007a. Accruals quality and internal control over financial reporting. *The Accounting Review* 82: 1141–1170.

Doyle, J., W. Ge, and S. McVay. 2007b. Determinants of weaknesses in internal control over financial reporting. *Journal of Accounting and Economics* 44: 193–223.

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

Francis, J., E. Maydew, and H. Sparks. 1999. The role of big 6 auditors in the credible reporting of accruals. *Auditing: A Journal of Practice and Theory* 18: 17–34.

Gallemore, J. 2016. Bank financial reporting opacity and regulatory intervention. Working paper, University of Chicago.

Ge, W., and S. McVay. 2005. The disclosure of material weaknesses in internal control after the Sarbanes-Oxley Act. *Accounting Horizons* 19: 137–158.

Ghosh, A., and C. Tang. 2015. Assessing financial reporting quality of family firms: The auditors' perspective. *Journal of Accounting and Economics* 60: 95–116.

Graham, J., C. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40: 3–73.

Guay, W., D. Samuels, D. Taylor. 2016 Guiding through the fog: Financial statement complexity and voluntary disclosure. *Journal of Accounting and Economics* 62: 234–269.

Hennes, K., A. Leone, and B. Miller. 2014. Determinants and market consequences of auditor dismissals after accounting restatements. *The Accounting Review* 89: 1051–1082.

Holmström, B. 2015. Understanding the role of debt in the financial system. BIS working paper no. 479.

Houston, R., M. Peters, and J. Pratt. 1999. The audit risk model, business risk and audit-planning decisions. *The Accounting Review* 74: 281–298.

Jensen, M., and W. Meckling. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3: 305–360.

Jones, J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research* 29: 193–228.

Keeley, J. 2017. The impact of regulatory enforcement on bank risk. Working paper, New York University.

Kinney, W., Palmrose, Z., and S. Scholz. 2004. Auditor independence, non-audit services, and restatements: Was the U.S. government right? *Journal of Accounting Research* 42: 561–588.

Krishnan, J., and J. Krishnan. 1997. Litigation risk and auditor resignations. *The Accounting Review* 72: 539–560.

Lee, H., V. Mande, and R. Ortman. 2004. The effect of audit committee and board of director independence on auditor resignation. *Auditing: A Journal of Practice and Theory* 23 (2): 131–146.

Morgan, D. 2002. Rating banks: Risk and uncertainty in an opaque industry. *The American Economic Review* 92: 874–888.

Myers, S. 1977. Determinants of corporate borrowing. *Journal of Financial Economics* 5: 147-175.

Nicoletti, A. 2016. The effects of auditors and regulators on bank financial reporting: Evidence from loan loss provisions. Doctoral dissertation, Ohio State University.

Nier, E., and U. Baumann. 2006. Market discipline, disclosure and moral hazard in banking. *Journal of Financial Intermediation* 15: 332–361.

Palmrose, Z, and S. Scholz. 2004. The circumstances and legal consequences of non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research* 21: 139–180.

Pettway, R., and J. Sinkey. 1980. Establishing on-site bank examination priorities: An early-warning system using accounting and market information. *Journal of Finance* XXXV: 137–150

Public Company Accounting Oversight Board (PCAOB). Auditing Standard No. 8: Audit Risk. Washington, D.C.: PCAOB.

Public Company Accounting Oversight Board (PCAOB). Auditing Standard No. 12: Identifying and Assessing Risks of Material Misstatement. Washington, D.C.: PCAOB.

Public Company Accounting Oversight Board (PCAOB). Auditing Standard No. 13: The Auditor's Responses to the Risks of Material Misstatement. Washington, D.C.: PCAOB.

Richardson, M., K. Schoenholtz, B. Tuckman, and L. White, eds. 2017. *Regulating Wall Street: CHOICE Act vs. Dodd-Frank*. New York: Center for Global Economy and Business, NYU Stern School of Business.

Ryan, S. 2007. *Financial Instruments and Institutions: Accounting and Disclosure Rules*. Second edition, John Wiley and Sons, Hoboken, NJ.

Ryan, S. 2011. Financial reporting for financial instruments. *Foundations and Trends in Accounting* 6: 187–354.

Schwartz, K., and B. Soo. 1995. An analysis of Form 8-K disclosures of auditor changes by firms approaching bankruptcy. *Auditing: A Journal of Practice and Theory* 14: 124–136.

Shu, S. Auditor resignations: Clientele effects and legal liability. *Journal of Accounting and Economics* 29: 173-205.

Simunic, D. 1980. The pricing of audit services: Theory and evidence. *Journal of Accounting Research* 18: 161–190.

Simunic, D., and M. Stein. 1996. The impact of litigation risk on audit pricing: A review of the economics and the evidence. *Auditing: A Journal of Practice and Theory* 15 (Supplement): 119–134.

Watts, R. L., and J. L. Zimmerman. 1986. *Positive Accounting Theory*. Prentice-Hall Inc.

**Table 1**

Variable means for banks versus control firms

| | | *CONTROL* | | | |
|---|---|---|---|---|---|
| | *BANK* | *SIC61* | | *High REC/AT* | |
| | Mean | Mean | Difference | Mean | Difference |
| *INTERNAL_WEAKNESS* | 0.024 | 0.051 | 0.026*** | 0.066 | 0.042*** |
| *ACC_RESTATEMENT* | 0.006 | 0.022 | 0.016*** | 0.020 | 0.014*** |
| *FEE ($ million)* | 1.643 | 6.199 | 4.555*** | 3.119 | 1.476*** |
| *REPORT_LAG* | 59.325 | 68.854 | 9.530*** | 68.110 | 8.785*** |
| *SMALL_POS* | 0.174 | 0.063 | –0.111*** | 0.063 | –0.110*** |
| *STRING* | 5.608 | 4.500 | –1.108*** | 3.347 | –2.261*** |
| *ASSETS* ($ billion) | 39.135 | 102.555 | 63.420*** | 30.418 | 8.717** |
| *ROA* | 0.006 | –0.006 | –0.012* | –0.008 | –0.014*** |
| *LOSS* | 0.108 | 0.249 | 0.141*** | 0.274 | 0.167*** |
| *SPECIAL_ITEMS* | –0.001 | –0.015 | –0.015** | –0.020 | –0.019*** |
| *DISCONTINUED* | 0.029 | 0.162 | 0.134*** | 0.105 | 0.077*** |
| *EXTRA_ITEMS* | 0.011 | 0.048 | 0.036*** | 0.031 | 0.019*** |
| *ABS_ACCRUALS* | 0.027 | 0.092 | 0.065*** | 0.107 | 0.080*** |
| *LEVERAGE* | 0.902 | 0.722 | –0.180*** | 0.610 | –0.292*** |
| *INVENTORY* | 0.013 | 0.056 | 0.043*** | 0.071 | 0.058*** |
| *INTANGIBLES* | 0.012 | 0.039 | 0.026*** | 0.074 | 0.061*** |
| *GOODWILL* | 0.010 | 0.019 | 0.010*** | 0.056 | 0.047*** |
| *M&A* | 0.198 | 0.152 | –0.046*** | 0.228 | 0.030*** |
| *NEG_EQUITY* | 0.003 | 0.025 | 0.023*** | 0.038 | 0.035*** |
| *FOREIGN* | 0.040 | 0.121 | 0.081*** | 0.193 | 0.153*** |
| *FIRM_AGE* | 14.340 | 14.735 | 0.395 | 18.011 | 3.671*** |
| *ACCEL_FILER* | 0.626 | 0.689 | 0.063*** | 0.608 | –0.018* |
| *MTB* | 1.437 | 1.700 | 0.263*** | 2.601 | 1.164*** |
| *RETURN* | 0.106 | 0.171 | 0.065** | 0.179 | 0.073*** |
| *STD_RETURN* | 0.084 | 0.144 | 0.060*** | 0.154 | 0.070*** |
| *GOING_CONCERN* | 0.006 | 0.015 | 0.009* | 0.028 | 0.022*** |
| *BUSY_MONTH* | 0.879 | 0.790 | –0.089*** | 0.715 | –0.164*** |
| *BIG4* | 0.444 | 0.668 | 0.224*** | 0.630 | 0.185*** |
| *ISPEC* | 0.115 | 0.166 | 0.051*** | 0.162 | 0.046*** |
| *AUDITOR_TURNOVER* | 0.072 | 0.079 | 0.007 | 0.093 | 0.021*** |

This table reports variable means for the *BANK* and two *CONTROL* samples as well as the differences of variable means across the BANK and each CONTROL sample over the period 2000–2014. Inclusion in the *BANK* sample is based on inclusion in the *Compustat* Bank file (7,914 bank-year observations). The *SIC61* sample includes non-depository credit institutions with two-digit standard industry classification (SIC) code 61 on the *Compustat* Annual North American file (671

firm-year observations). The *High REC/TA* control sample includes non-bank firms with a ratio of accounts receivable to total assets in the top 5% of the *Compustat* Annual North American file (3,110 firm-year observations). All variables are measured for a given firm-year unless indicated otherwise. The dependent variables are reported above the line in the table and are defined as follows. *INTERNAL_WEAKNESS* = 1 if the firm disclosed internal control deficiencies and 0 otherwise. *ACC_RESTATEMENT* = 1 if the firm subsequently restated its 10-K filing for the fiscal year and 0 otherwise. *FEE* = the sum of audit fees and audit-related fees in $ millions. *REPORT_LAG* = the number of days between the fiscal year-end date and auditor signature date (the natural logarithm of this variable is used in the regression analyses). *SMALL_POS* = 1 if a small ROE increase ($0.00<\Delta ROE\leq 0.01$) is reported. *STRING* = the duration of the longest string of consecutive annual earnings increases for the firm. The control variables are reported below the line in the table and are defined as follows. *ASSETS* = total assets. *ROA* = net income divided by total assets. *LOSS* = 1 if the firm reports negative net income and 0 otherwise. *SPECIAL_ITEMS* = special items divided by total assets. *DISCONTINUED* = 1 if discontinued operations exceeds $1 million and 0 otherwise. *EXTRA_ITEMS* = 1 if (absolute) extraordinary items exceeds $1 million and 0 otherwise. *ABS_ACCRUALS* = absolute value of accruals divided by total assets. *LEVERAGE* = total liabilities divided by total assets. *INVENTORY* = inventory divided by total assets. *INTANGIBLES* = intangibles assets divided by total assets. *GOODWILL* = goodwill divided by total assets. *M&A* = 1 if goodwill increases by more than $1 million and 0 otherwise. *NEG_EQUITY* = 1 if common equity is negative and 0 otherwise. *FOREIGN* = 1 if a company reports non-zero foreign exchange income and 0 otherwise. *FIRM_AGE* = the number of years a company is listed in *Compustat*. *ACCEL_FILER* = 1 if the company is an accelerated filer and 0 otherwise. *MTB* = market value of equity divided by book value of equity. *RETURN* = fiscal year stock return. *STD_RETURN* = standard deviation of monthly stock returns. *GOING_CONCERN* = 1 if the firm received a going–concern modified opinion and 0 otherwise. *BUSY_MONTH* = 1 if the fiscal year-end month is December and 0 otherwise. *BIG4* = 1 if the company is audited by one of the Big-Four auditors and 0 otherwise. *ISPEC* = auditor's relative market share of audit fees in the client's Fama–French 48 industry classification. *AUDITOR_TURNOVER* = 1 if the firm's auditor changed during the year and 0 otherwise. ***, **, and * denote significantly different variable means for the BANK and each CONTROL sample at the 1%, 5%, and 10% levels, respectively.

**Table 2**

Likelihood of material internal control weaknesses for banks versus control firms

| *Panel A: Logistic estimation of likelihood of material internal control weaknesses* | | | | |
|---|---|---|---|---|
| | *CONTROL* | | | |
| | *SIC61* | | *High REC/TA* | |
| *BANK* | –0.781 | (0.002) | –0.556 | (0.001) |
| *LogASSETS* | 0.053 | (0.301) | 0.014 | (0.681) |
| *ROA* | 1.208 | (0.441) | 0.138 | (0.718) |
| *LOSS* | 1.469 | (0.000) | 1.335 | (0.000) |
| *LEVERAGE* | 0.663 | (0.435) | –0.816 | (0.017) |
| *GOODWILL* | 2.950 | (0.215) | 1.048 | (0.206) |
| *M&A* | 0.058 | (0.767) | 0.194 | (0.187) |
| *FOREIGN* | –0.561 | (0.160) | 0.463 | (0.004) |
| *MTB* | 0.030 | (0.536) | –0.041 | (0.091) |
| *GOING_CONCERN* | 2.034 | (0.000) | 1.324 | (0.000) |
| *ACC_RESTATEMENT (Y_CONTROL)* | –0.076 | (0.917) | 0.266 | (0.574) |
| *BUSY_MONTH* | –0.020 | (0.929) | 0.187 | (0.203) |
| *BIG4* | –1.259 | (0.029) | –0.863 | (0.001) |
| *ISPEC* | 4.431 | (0.036) | 2.211 | (0.008) |
| Intercept | –3.940 | (0.001) | –1.463 | (0.002) |
| Year fixed effects | Yes | | Yes | |
| Observations | 6,064 | | 7,834 | |
| McFadden's $R^2$ | 8.27% | | 9.52% | |
| *Panel B: Incorporating bank size categories* | | | | |
| | *SIC61* | | *High REC/TA* | |
| Intercept | –4.564 | (0.000) | –1.942 | (0.000) |
| *B10_50* | 1.167 | (0.041) | –0.047 | (0.896) |
| *B50_100* | 0.308 | (0.731) | –0.340 | (0.666) |
| *B100_500* | –0.729 | (0.527) | –14.727 | (0.983) |
| *B500* | 0.032 | (0.969) | –0.465 | (0.444) |
| *BANK* | –0.014 | (0.968) | –0.499 | (0.007) |
| *BANK*B10_50* | –1.704 | (0.005) | –0.256 | (0.551) |
| *BANK*B50_100* | –2.210 | (0.093) | –1.468 | (0.246) |
| *BANK*B100_500* | –1.369 | (0.296) | 12.904 | (0.985) |
| *BANK*B500* | –15.538 | (0.978) | –13.901 | (0.971) |
| Control variables | Yes | | Yes | |
| Year fixed effects | Yes | | Yes | |
| Observations | 6,064 | | 7,834 | |
| McFadden's $R^2$ | 9.84% | | 10.48% | |

The table reports the logistic estimation of the likelihood of a firm reporting a material weakness in internal control over financial reporting. The dependent variable *INTERNAL_WEAKNESS* = 1 if the firm disclosed a material internal control deficiency and 0 otherwise. The main test variable *BANK* = 1 if the firm is on Bank *Compustat* and 0 otherwise. We estimate the model on the combined BANK sample and one of two control samples of firms that are similar to banks but unregulated: (1) The *SIC61* control sample comprises non-depository credit institutions with two-digit standard industry classification (SIC) code 61 on Annual North American *Compustat*; (2) the *High REC/TA* control sample comprises non-banks with the top 5% of receivable to assets ratio on Annual North American *Compustat*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *ROA* = net income divided by total assets. *LOSS* = 1 if the firm reports negative net income and 0 otherwise. *LEVERAGE* = total liabilities divided by total assets. *GOODWILL* = goodwill divided by total assets. *M&A* = 1 if the firm's goodwill increases by more than $1 million and 0 otherwise. *FOREIGN* = 1 if a firm reports non-zero foreign exchange income and 0 otherwise. *MTB* = market value of equity divided by book value of equity. *GOING_CONCERN* = 1 if a firm receives a going concern modified opinion and 0 otherwise. *ACC_RESTATEMENT* = 1 if the firm subsequently restates its current period Form 10-K filing for the fiscal year. *BUSY_MONTH* = 1 if the fiscal year-end is December and 0 otherwise. *BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. *ISPEC* = auditor's relative market share of

audit fees in the client's Fama–French 48 industry classification. Panel A reports the base model estimation. Panel B reports the estimation of an expanded model which includes firm size indicators and their interactions with *BANK*. The firm size indicators are denoted *Bj_k*=1 if total assets are between j and k $ billion, for j=10, 50, or 100 and for k=50, 100, or 500 and are denoted *B500*=1 if total assets exceed $500 billion. *p*-values are reported in parentheses.

**Table 3**

Likelihood of financial statement restatements for banks versus control firms

| *Panel A: Logistic estimation of restatements* | | | | |
|---|---|---|---|---|
| | *CONTROL* | | | |
| | *SIC61* | | *High REC/TA* | |
| *BANK* | –1.075 | (0.005) | –1.520 | (0.000) |
| *LogASSETS* | 0.006 | (0.947) | 0.082 | (0.134) |
| *ROA* | 0.155 | (0.934) | –0.815 | (0.242) |
| *LOSS* | 0.271 | (0.451) | 0.359 | (0.167) |
| *LEVERAGE* | –0.755 | (0.518) | 0.890 | (0.157) |
| *GOODWILL* | –13.070 | (0.151) | –5.891 | (0.014) |
| *M&A* | 0.569 | (0.095) | 0.527 | (0.036) |
| *FOREIGN* | –0.678 | (0.295) | –0.817 | (0.026) |
| *MTB* | –0.050 | (0.748) | 0.049 | (0.084) |
| *GOING_CONCERN* | –13.976 | (0.992) | –14.082 | (0.979) |
| *INTERNAL_WEAKNESS (Y_CONTROL)* | –0.218 | (0.768) | 0.017 | (0.972) |
| *BUSY_MONTH* | –0.023 | (0.952) | –0.439 | (0.058) |
| *BIG4* | 1.087 | (0.100) | 0.635 | (0.111) |
| *ISPEC* | –2.067 | (0.399) | –1.643 | (0.258) |
| Intercept | –4.288 | (0.000) | –5.118 | (0.000) |
| Year fixed effects | Yes | | Yes | |
| Observations | 8,585 | | 11,024 | |
| McFadden's $R^2$ | 7.65% | | 9.02% | |
| *Panel B: Incorporating bank size into the analyses* | | | | |
| | *SIC61* | | *High REC/TA* | |
| Intercept | –5.023 | (0.000) | –5.551 | (0.000) |
| *B10_50* | 0.512 | (0.550) | –0.022 | (0.962) |
| *B50_100* | –0.080 | (0.950) | –0.728 | (0.510) |
| *B100_500* | 0.568 | (0.609) | –0.476 | (0.584) |
| *B500* | –14.268 | (0.984) | –1.148 | (0.223) |
| *BANK* | –0.552 | (0.294) | –1.349 | (0.000) |
| *BANK*B10_50* | –2.798 | (0.029) | –2.119 | (0.053) |
| *BANK*B50_100* | –13.314 | (0.978) | –13.363 | (0.986) |
| *BANK*B100_500* | –0.962 | (0.359) | 0.307 | (0.743) |
| *BANK*B500* | –0.169 | (1.000) | –13.623 | (0.985) |
| Control variables | Yes | | Yes | |
| Year fixed effects | Yes | | Yes | |
| Observations | 8,585 | | 11,024 | |
| McFadden's $R^2$ | 10.29 | | 10.35% | |

The table reports the logistic estimation of the likelihood of a firm reporting a financial statement restatement. The dependent variable *ACC_RESTATEMENT* = 1 if the firm subsequently restated its 10-K filing for the fiscal year and zero otherwise. The main test variable *BANK* = 1 if the firm is on Bank *Compustat* and 0 otherwise. We estimate the model on the combined BANK sample and one of two control samples of firms that are similar to banks but unregulated: (1) The *SIC61* control sample comprises non-depository credit institutions with two-digit standard industry classification (SIC) code 61 on Annual North American *Compustat*; (2) the *High REC/TA* control sample comprises non-banks with the top 5% of receivable to assets ratio on Annual North American *Compustat*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *ROA* = net income divided by total assets. *LOSS* = 1 if the firm reports negative net income and 0 otherwise. *LEVERAGE* = total liabilities divided by total assets. *GOODWILL* = goodwill divided by total assets. *M&A* = 1 if the firm's goodwill increases by more than $1 million and 0 otherwise. *FOREIGN* = 1 if a firm reports non-zero foreign exchange income and 0 otherwise. *MTB* = market value of equity divided by book value of equity. *GOING_CONCERN* = 1 if a firm receives a going concern modified opinion and 0 otherwise. *INTERNAL_WEAKNESS*= 1 if the firm disclosed internal control deficiencies and 0 otherwise. *BUSY_MONTH* = 1 if the fiscal year-end is December and 0 otherwise. *BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. *ISPEC* = auditor's relative market share of audit fees in the client's Fama–French

48 industry classification. Panel A reports the base model estimation. Panel B reports the estimation of an expanded model which includes firm size indicators and their interactions with *BANK*. The firm size indicators are denoted *Bj_k*=1 if total assets are between j and k $ billion, for j=10, 50, or 100 and for k=50, 100, or 500 and are denoted *B500*=1 if total assets exceed $500 billion. *p*-values are reported in parentheses.

**Table 4**

Audit fees for banks versus control firms

| *Panel A: OLS estimation of audit fees* | | | | |
|---|---|---|---|---|
| | *CONTROL* | | | |
| | *SIC61* | | *High REC/TA* | |
| *BANK* | –0.705 | (0.000) | –0.954 | (0.000) |
| *LogASSETS* | 0.601 | (0.000) | 0.552 | (0.000) |
| *ROA* | –0.754 | (0.003) | –0.768 | (0.000) |
| *LOSS* | 0.178 | (0.000) | 0.196 | (0.000) |
| *SPECIAL_ITEMS* | 0.488 | (0.003) | 0.072 | (0.652) |
| *DISCONTINUED* | 0.286 | (0.000) | 0.228 | (0.000) |
| *LEVERAGE* | –1.496 | (0.000) | –0.627 | (0.000) |
| *INVENTORY* | 0.291 | (0.177) | 0.729 | (0.000) |
| *INTANGIBLES* | 2.637 | (0.002) | 2.404 | (0.000) |
| *GOODWILL* | –2.665 | (0.046) | –0.609 | (0.297) |
| *M&A* | 0.081 | (0.000) | 0.092 | (0.000) |
| *NEG_EQUITY* | 0.222 | (0.094) | 0.466 | (0.000) |
| *FIRM_AGE* | 0.004 | (0.084) | 0.007 | (0.000) |
| *ACCEL_FILER* | –0.004 | (0.902) | 0.029 | (0.307) |
| *INTERNAL_WEAKNESS* | 0.254 | (0.000) | 0.260 | (0.000) |
| *MTB* | –0.008 | (0.598) | 0.021 | (0.004) |
| *RETURN* | –0.035 | (0.048) | –0.001 | (0.936) |
| *STD_RETURN* | 0.802 | (0.000) | 0.780 | (0.000) |
| *GOING_CONCERN* | 0.048 | (0.602) | 0.055 | (0.473) |
| *BUSY_MONTH* | 0.106 | (0.014) | 0.038 | (0.286) |
| *BIG4* | 0.322 | (0.000) | 0.327 | (0.000) |
| *ISPEC* | 0.087 | (0.712) | 0.240 | (0.141) |
| Year fixed effects | Yes | | Yes | |
| Observations | 8,585 | | 11,024 | |
| Adjusted $R^2$ | 90.24% | | 88.54% | |
| *Panel B: Incorporating firm size into the analyses* | | | | |
| | *SIC61* | | *High REC/TA* | |
| *B10_50* | –0.215 | (0.268) | 0.013 | (0.935) |
| *B50_100* | 0.283 | (0.074) | 0.283 | (0.010) |
| *B100_500* | 0.215 | (0.488) | 0.219 | (0.284) |
| *B500* | 0.482 | (0.004) | 0.519 | (0.000) |
| *BANK* | –0.766 | (0.000) | –0.980 | (0.000) |
| *BANK*B10_50* | 0.213 | (0.283) | 0.033 | (0.842) |
| *BANK*B50_100* | –0.138 | (0.466) | –0.045 | (0.772) |
| *BANK*B100_500* | 0.201 | (0.523) | 0.315 | (0.129) |
| *BANK*B500* | 0.701 | (0.000) | 0.852 | (0.000) |
| Control variables | Yes | | Yes | |
| Year fixed effects | Yes | | Yes | |
| Observations | 8,585 | | 11,024 | |
| Adjusted $R^2$ | 90.92% | | 89.32% | |

The table reports the OLS estimation of a model with dependent variable *LogFEE* = the natural logarithm of the sum of audit fees and audit-related fees. The main test variable *BANK* = 1 if the firm is on Bank *Compustat* and 0 otherwise. We estimate the model on the combined BANK sample and one of two control samples of firms that are similar to banks but unregulated: (1) The *SIC61* control sample comprises non-depository credit institutions with two-digit standard industry classification (SIC) code 61 on Annual North American *Compustat*; (2) the *High REC/TA* control sample comprises non-banks with the top 5% of receivable to assets ratio on Annual North American *Compustat*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *ROA* = net income divided by total assets. *LOSS* = 1 if the firm reports negative net income and 0 otherwise. *SPECIAL_ITEMS* = special items divided by total assets. *DISCONTINUED* = 1 if a firm's discontinued operations exceeds $1 million and

0 otherwise. *LEVERAGE* = total liabilities divided by total assets. *INVENTORY* = inventory divided by total assets. *INTANGIBLES* = intangible assets divided by total assets. *GOODWILL* = goodwill divided by total assets. *M&A* = 1 if the firm's goodwill increases by more than $1 million and 0 otherwise. *NEG_EQUITY* = 1 if common equity is negative and 0 otherwise. *FIRM_AGE* = the number of years the firm is listed in Compustat. *ACCEL_FILER* = 1 if the firm is an accelerated filer and 0 otherwise. *INTERNAL_WEAKNESS* = 1 if the firm disclosed a material internal control deficiency and 0 otherwise. *MTB* = market value of equity divided by book value of equity. *RETURN* = fiscal year stock return. *STD_RETURN* = standard deviation of monthly stock returns. *GOING_CONCERN* = 1 if a firm receives a going concern modified opinion and 0 otherwise. *BUSY_MONTH* = 1 if the fiscal year-end is December and 0 otherwise. *BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. *ISPEC* = auditor's relative market share of audit fees in the client's Fama–French 48 industry classification. Panel A reports the base model estimation. Panel B reports the estimation of an expanded model which includes firm size indicators and their interactions with *BANK*. The firm size indicators are denoted *Bj_k*=1 if total assets are between j and k $ billion, for j=10, 50, or 100 and for k=50, 100, or 500 and are denoted *B500*=1 if total assets exceed $500 billion. Standard errors are clustered at the firm level (two-tailed *p*-values are in parentheses).

**Table 5**

Audit report lag for banks versus control firms

| *Panel A: OLS estimation of audit report lag* | | | | |
|---|---|---|---|---|
| | *CONTROL* | | | |
| | *SIC61* | | *High REC/TA* | |
| *BANK* | –0.101 | (0.015) | –0.101 | (0.000) |
| *LogASSETS* | –0.014 | (0.057) | –0.021 | (0.000) |
| *ROA* | –0.275 | (0.022) | 0.058 | (0.243) |
| *LOSS* | 0.113 | (0.000) | 0.144 | (0.000) |
| *DISCONTINUED* | 0.029 | (0.416) | 0.035 | (0.148) |
| *EXTRA_ITEMS* | 0.098 | (0.058) | 0.137 | (0.001) |
| *ABS_ACCRUALS* | –0.021 | (0.356) | 0.064 | (0.061) |
| *LEVERAGE* | 0.093 | (0.397) | 0.084 | (0.093) |
| *INVENTORY* | 0.408 | (0.001) | 0.255 | (0.005) |
| *FOREIGN* | 0.199 | (0.002) | 0.067 | (0.045) |
| *FIRM_AGE* | –0.007 | (0.000) | –0.005 | (0.000) |
| *INTERNAL_WEAKNESS* | 0.186 | (0.000) | 0.151 | (0.000) |
| *AUDITOR_TURNOVER* | 0.045 | (0.004) | 0.050 | (0.000) |
| *GOING_CONCERN* | 0.240 | (0.001) | 0.172 | (0.000) |
| *BUSY_MONTH* | –0.021 | (0.411) | –0.021 | (0.286) |
| *BIG4* | 0.111 | (0.000) | 0.083 | (0.000) |
| Year fixed effects | Yes | | Yes | |
| Observations | 8,289 | | 10,660 | |
| Adjusted $R^2$ | 51.28% | | 45.53% | |
| *Panel B: Incorporating firm size into the analyses* | | | | |
| | *SIC61* | | *High REC/TA* | |
| *B10_50* | –0.252 | (0.000) | –0.124 | (0.000) |
| *B50_100* | –0.190 | (0.074) | –0.090 | (0.126) |
| *B100_500* | –0.184 | (0.017) | 0.091 | (0.037) |
| *B500* | 0.079 | (0.608) | 0.161 | (0.004) |
| *BANK* | –0.174 | (0.000) | –0.141 | (0.000) |
| *BANK*B10_50* | 0.246 | (0.001) | 0.180 | (0.000) |
| *BANK*B50_100* | 0.238 | (0.061) | 0.229 | (0.001) |
| *BANK*B100_500* | 0.290 | (0.002) | 0.136 | (0.008) |
| *BANK*B500* | 0.101 | (0.546) | 0.202 | (0.001) |
| Control variables | Yes | | Yes | |
| Year fixed effects | Yes | | Yes | |
| Observations | 8,289 | | 10,660 | |
| Adjusted $R^2$ | 51.67% | | 46.51% | |

The table reports the OLS estimation of a model with dependent variable *LogARL* = the natural logarithm of the number of days between the fiscal year-end date and auditor signature date. The main test variable *BANK* = 1 if the firm is on Bank *Compustat* and 0 otherwise. We estimate the model on the combined BANK sample and one of two control samples of firms that are similar to banks but unregulated: (1) The *SIC61* control sample comprises non-depository credit institutions with two-digit standard industry classification (SIC) code 61 on Annual North American *Compustat*; (2) the *High REC/TA* control sample comprises non-banks with the top 5% of receivable to assets ratio on Annual North American *Compustat*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *ROA* = net income divided by total assets. *LOSS* = 1 if the firm reports negative net income and 0 otherwise. *DISCONTINUED* = 1 if a firm's discontinued operations exceeds $1 million and 0 otherwise. *EXTRA_ITEMS* = 1 if a firm's (absolute) extraordinary items exceeds $1 million and 0 otherwise. *ABS_ACCRUALS* = absolute value of accruals divided by total assets. *LEVERAGE* = total liabilities divided by total assets. *INVENTORY* = inventory divided by total assets. *FOREIGN* = 1 if a firm reports non-zero foreign exchange income and 0 otherwise. *FIRM_AGE* = the number of years a firm is listed in Compustat. *INTERNAL_WEAKNESS* = 1 if the firm disclosed a material internal control deficiency and 0 otherwise. *AUDITOR_TURNOVER* = 1 if the firm's auditor changed during the year and 0 otherwise. *GOING_CONCERN* = 1 if a firm receives a going concern modified opinion and 0 otherwise.

*BUSY_MONTH* = 1 if the fiscal year-end is December and 0 otherwise. *BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. Panel A reports the base model estimation. Panel B reports the estimation of an expanded model which includes firm size indicators and their interactions with *BANK*. The firm size indicators are denoted *Bj_k*=1 if total assets are between j and k $ billion, for j=10, 50, or 100 and for k=50, 100, or 500 and are denoted *B500*=1 if total assets exceed $500 billion. Standard errors are clustered at the firm level (two-tailed *p*-values are in parentheses).

**Table 6**

Identification tests for audit fee model using proxies for times-series variation in the intensity of banking regulation

| *Panel A: Descriptive statistics* | N | Mean | Std | Q1 | Median | Q3 |
|---|---|---|---|---|---|---|
| *BUDGET* (in millions $) | 15 | 2,757 | 908 | 2,008 | 2,506 | 3,584 |
| *RESTRICTIONS* (number of words) | 15 | 29,936 | 9,313 | 24,771 | 25,536 | 30,053 |

| *Panel B: OLS estimation of audit fees* | *LogBUDGET* model | | *LogRESTRICTIONS* model | |
|---|---|---|---|---|
| *LogBUDGET* | –1.640 | (0.000) | | |
| *LogRESTRICTIONS* | | | –0.677 | (0.000) |
| *LogASSETS* | 0.454 | (0.000) | 0.467 | (0.000) |
| *ROA* | –1.735 | (0.008) | –1.227 | (0.083) |
| *LOSS* | 0.046 | (0.008) | 0.048 | (0.008) |
| *SPECIAL_ITEMS* | 2.113 | (0.020) | 1.043 | (0.281) |
| *DISCONTINUED* | 0.057 | (0.024) | 0.078 | (0.003) |
| *LEVERAGE* | –0.896 | (0.000) | –0.732 | (0.000) |
| *INVENTORY* | 0.274 | (0.086) | 0.228 | (0.170) |
| *INTANGIBLES* | 1.962 | (0.090) | 1.632 | (0.207) |
| *GOODWILL* | –0.059 | (0.960) | 1.379 | (0.286) |
| *M&A* | 0.036 | (0.000) | 0.055 | (0.000) |
| *NEG_EQUITY* | 0.099 | (0.300) | 0.113 | (0.244) |
| *FIRM_AGE* | 0.177 | (0.000) | 0.101 | (0.000) |
| *ACCEL_FILER* | –6.728 | (0.000) | –3.901 | (0.000) |
| *INTERNAL_WEAKNESS* | 0.230 | (0.000) | 0.220 | (0.000) |
| *MTB* | 0.005 | (0.352) | 0.037 | (0.002) |
| *RETURN* | –0.052 | (0.000) | –0.059 | (0.000) |
| *STD_RETURN* | 0.131 | (0.040) | –0.209 | (0.008) |
| *GOING_CONCERN* | 0.039 | (0.441) | 0.057 | (0.294) |
| *BUSY_MONTH* | 0.043 | (0.438) | 0.063 | (0.273) |
| *BIG4* | 0.109 | (0.002) | 0.111 | (0.002) |
| *ISPEC* | 0.516 | (0.000) | 0.554 | (0.000) |
| Year fixed effects | No | | No | |
| Firm fixed effects | Yes | | Yes | |
| Observations | 7,914 | | 7,914 | |
| Adjusted $R^2$ | 95.90% | | 95.69% | |

Panel A reports descriptive statistics for two measures of bank regulation intensity, *BUDGET* and *RESTRICTIONS*. *BUDGET* is the annual budget in $ millions of the "finance and banking" subcategory (which includes the Comptroller of the Currency, Federal Deposit Insurance Corporation, and Securities and Exchange Commission) from Regulatory Reports available at https://wc.wustl.edu/regulatory_reports. *RESTRICTIONS* is based on *RegData*, an industry- and year-specific regulation index constructed by Al-Ubaydli and McLaughlin (2017) from textual analysis of the number of constraints (the strings "shall," "must," "may not," "prohibited," and "required") in the Code of Federal Regulations (CFR) Title 12 for the banking industry each year. Panel B reports the OLS estimation, for the *BANK* sample only, of an expansion of the audit fee model with dependent variable *LogFEE* = the natural logarithm of the sum of audit fees and audit-related fees reported in Table 4. The expanded model includes the natural logarithm of *BUDGET* or *RESTRICTIONS*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *ROA* = net income divided by total assets. *LOSS* = 1 if the firm reports negative net income and 0 otherwise. *SPECIAL_ITEMS* = special items divided by total assets. *DISCONTINUED* = 1 if a firm's discontinued operations exceeds $1 million and 0 otherwise. *LEVERAGE* = total liabilities divided by total assets. *INVENTORY* = inventory divided by total assets. *INTANGIBLES* = intangible assets divided by total assets. *GOODWILL* = goodwill divided by total assets. *M&A* = 1 if the firm's goodwill increases by more than $1 million and 0 otherwise. *NEG_EQUITY* = 1 if common equity is negative and 0 otherwise. *FIRM_AGE* = the number of years a firm is listed in Compustat. *ACCEL_FILER* = 1 if the firm is an accelerated filer and 0 otherwise. *INTERNAL_WEAKNESS* = 1 if the firm disclosed a material internal control

deficiency and 0 otherwise. *MTB* = market value of equity divided by book value of equity. *RETURN* = fiscal year stock return. *STD_RETURN* = standard deviation of monthly stock returns. *GOING_CONCERN* = 1 if a firm receives a going concern modified opinion and 0 otherwise. *BUSY_MONTH* = 1 if the fiscal year-end is December and 0 otherwise. *BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. *ISPEC* = auditor's relative market share of audit fees in the client's Fama–French 48 industry classification. Standard errors are White's corrected standard errors (two-tailed *p*-values are in parentheses).

**Table 7**

Identification tests for audit fee model using proxy for cross sectional variation in the intensity of banking regulation

| | *STATE BANKS* | | *ALL BANKS* | |
|---|---|---|---|---|
| *STATE_REG* | 0.664 | (0.016) | –0.670 | (0.196) |
| *STATE_BANK* | | | –0.088 | (0.158) |
| *STATE_REG x STATE_BANK* | | | 1.346 | (0.023) |
| *LogASSETS* | 0.537 | (0.000) | 0.567 | (0.000) |
| *ROA* | –3.904 | (0.010) | –4.337 | (0.003) |
| *LOSS* | 0.093 | (0.009) | 0.116 | (0.001) |
| *SPECIAL_ITEMS* | 3.148 | (0.057) | 3.943 | (0.012) |
| *DISCONTINUED* | 0.296 | (0.001) | 0.273 | (0.000) |
| *LEVERAGE* | –1.964 | (0.000) | –1.976 | (0.000) |
| *INVENTORY* | 0.780 | (0.000) | 0.986 | (0.000) |
| *INTANGIBLES* | 7.261 | (0.000) | 6.960 | (0.000) |
| *GOODWILL* | –5.674 | (0.000) | –5.593 | (0.000) |
| *M&A* | 0.091 | (0.000) | 0.066 | (0.000) |
| *NEG_EQUITY* | 0.164 | (0.184) | 0.027 | (0.879) |
| *FIRM_AGE* | 0.007 | (0.002) | 0.008 | (0.000) |
| *ACCEL_FILER* | 0.076 | (0.014) | 0.023 | (0.440) |
| *INTERNAL_WEAKNESS* | 0.250 | (0.000) | 0.248 | (0.000) |
| *MTB* | 0.005 | (0.708) | –0.004 | (0.764) |
| *RETURN* | –0.047 | (0.013) | –0.021 | (0.243) |
| *STD_RETURN* | 0.669 | (0.001) | 0.637 | (0.000) |
| *GOING_CONCERN* | –0.081 | (0.318) | 0.017 | (0.855) |
| *BUSY_MONTH* | 0.068 | (0.055) | 0.068 | (0.062) |
| *BIG4* | 0.360 | (0.000) | 0.331 | (0.000) |
| *ISPEC* | 0.035 | (0.889) | 0.003 | (0.989) |
| Intercept | 9.320 | (0.000) | 9.274 | (0.000) |
| Year fixed effects | Yes | | Yes | |
| Observations | 5,679 | | 7,340 | |
| Adjusted $R^2$ | 87.41% | | 88.59% | |

The table reports the OLS estimation, for the *BANK* sample only, of two expansions of the audit fee model with dependent variable *LogFEE* = the natural logarithm of the sum of audit fees and audit-related fees in $ millions reported in Table 4. The both expanded models include Agarwal, Lucca, Seru and Trebbi's (2014) measure of regulatory leniency (inverse intensity) across state-chartered banks (*STATE_REG*) and The measure is based on the "alternating examination program" in which state-chartered banks are examined by (more stringent) federal supervisors (the FDIC or Federal Reserve) and state supervisors on an alternating basis. Using a proprietary database, Agarwal et al. (2014) estimate the differential examination stringency of federal supervisors versus 44 state bank supervisors. The expanded reported in right column as includes an indicator for whether bank is a state-chartered bank (*STATE_BANK*) based on information obtained from the FDIC website (https://www5.fdic.gov/idasp/advSearchLanding.asp), as well as the interaction of *STATE_REG* with *STATE_BANK*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *ROA* = net income divided by total assets. *LOSS* = 1 if the firm reports negative net income and 0 otherwise. *SPECIAL_ITEMS* = special items divided by total assets. *DISCONTINUED* = 1 if a firm's discontinued operations exceeds $1 million and 0 otherwise. *LEVERAGE* = the total liabilities divided by total assets. *INVENTORY* = inventory divided by total assets. *INTANGIBLES* = intangible assets divided by total assets. *GOODWILL* = goodwill divided by total assets. *M&A* = 1 if the firm's goodwill increases by more than $1 million and 0 otherwise. *NEG_EQUITY* = 1 if common equity is negative and 0 otherwise. *FIRM_AGE* = the number of years a firm is listed in *Compustat*. *ACCEL_FILER* = 1 if the firm is an accelerated filer and 0 otherwise. *INTERNAL_WEAKNESS* = 1 if the firm disclosed a material internal control deficiency and 0 otherwise. *MTB* = market value of equity divided by book value of equity. *RETURN* = fiscal year stock return. *STD_RETURN* = standard deviation of monthly stock returns. *GOING_CONCERN* = 1 if a firm receives a going concern modified opinion and 0 otherwise. *BUSY_MONTH* = 1 if the fiscal year-end is December and 0 otherwise.

*BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. *ISPEC* = auditor's relative market share of audit fees in the client's Fama–French 48 industry classification. Panel A reports the base model estimation. Panel B reports the estimation of an expanded model which includes the interactions of firm size with *BANK*. The bank size indicators are denoted *Bj_k*=1 if total assets are between j and k $ billion, for j=10, 50, or 100 and for k=50, 100, or 500 and are denoted *B500*=1 if total assets exceed $500 billion. Standard errors are clustered at the firm level (two-tailed *p*-values are in parentheses).

**Table 8**

Likelihood of small earnings increases for banks versus control firms

| | *CONTROL* | | | |
|---|---|---|---|---|
| | *SIC61* | | *High REC/TA* | |
| *BANK* | 1.483 | (0.000) | 0.897 | (0.000) |
| *LogASSETS* | –0.052 | (0.026) | –0.030 | (0.168) |
| *LEVERAGE* | –1.351 | (0.006) | –0.022 | (0.952) |
| *MTB* | 0.040 | (0.192) | 0.001 | (0.965) |
| *ACCEL_FILER* | 0.222 | (0.003) | 0.176 | (0.019) |
| *BIG4* | –0.062 | (0.401) | –0.062 | (0.399) |
| Intercept | –1.467 | (0.000) | –2.164 | (0.000) |
| Year fixed effects | Yes | | Yes | |
| Observations | 8,585 | | 8,928 | |
| McFadden's $R^2$ | 3.12% | | 3.28% | |

The table reports the logistic estimation of the likelihood that a firm reports a small earnings increase. *SMALL_POS* = 1 if $0.00 < \Delta ROE \leq 0.01$, where ROE = net income divided by the book value of common equity, and 0 otherwise. The main test variable *BANK* = 1 if the firm is a bank and 0 otherwise. We estimate the model on the combined *BANK* sample and one of two control samples of firms that are similar to banks but unregulated: (1) The *SIC61* control sample comprises non-depository credit institutions with two-digit standard industry classification (SIC) code 61 on Annual North American *Compustat*; (2) the *High REC/TA* control sample comprises non-banks with the top 5% of receivable to assets ratio on Annual North American *Compustat*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *LEVERAGE* = total liabilities divided by total assets. *MTB* = market value of equity divided by book value of equity. *ACCEL_FILER* = 1 if the firm is an accelerated filer and 0 otherwise. *BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. *p*-values are reported in parentheses.

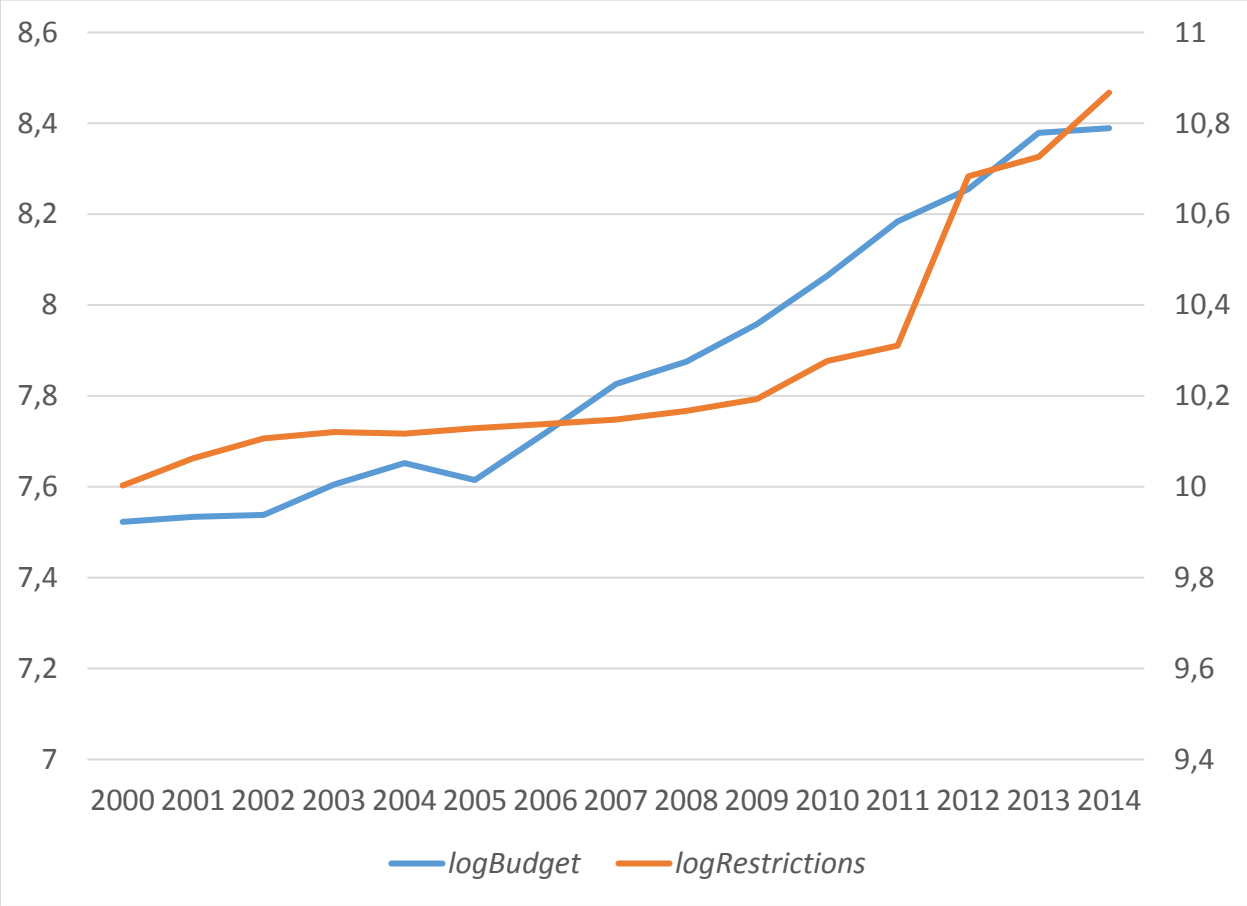
**Table 9**

Length of string of consecutive earnings increases for banks versus control firms

| | *CONTROL* | | | |
|---|---|---|---|---|
| | *SIC61* | | *High REC/TA* | |
| *BANK* | 0.383 | (0.008) | 0.663 | (0.000) |
| *LogASSETS* | –0.128 | (0.000) | –0.171 | (0.000) |
| *LEVERAGE* | –0.469 | (0.377) | 0.516 | (0.000) |
| *MTB* | –0.275 | (0.000) | –0.062 | (0.000) |
| *GOODWILL* | 1.023 | (0.4260 | –0.726 | (0.070) |
| *ACCEL_FILER* | –0.446 | (0.000) | –0.246 | (0.000) |
| *INTERNAL_WEAKNESS* | –0.170 | (0.467) | 0.041 | (0.763) |
| *BIG4* | 0.101 | (0.215) | 0.111 | (0.058) |
| *Intercept* | | | | |
| Year fixed effects | Yes | | Yes | |
| Number of observations | 1,069 | | 1,778 | |
| McFadden's $R^2$ | 4.17% | | 3.90% | |

The table reports proportional hazard model estimation of a model with dependent variable *STRING* = the duration of the longest string of consecutive annual earnings increases. The main test variable *BANK* = 1 if the firm is a bank, and 0 otherwise. We estimate the model on the combined *BANK* sample and one of two control samples of firms that are similar to banks but unregulated: (1) The *SIC61* control sample comprises non-depository credit institutions with two-digit standard industry classification (SIC) code 61 on Annual North American *Compustat*; (2) the *High REC/TA* control sample comprises non-banks with the top 5% of receivable to assets ratio on Annual North American *Compustat*. The control variables are defined as follows. *LogASSETS* = the natural logarithm of total assets. *LEVERAGE* = total liabilities divided by total assets. *MTB* = market value of equity divided by book value of equity. *ACCEL_FILER* = 1 if the firm is an accelerated filer and 0 otherwise. *BIG4* = 1 if the firm is audited by one of the Big-Four auditors and 0 otherwise. *p*-values are reported in parentheses.

**Figure 1**
Plot of time-series measures of the intensity of banking regulation from 2000-2014




*LogRestrictions* is based on RegData, an industry- and year-specific regulation index constructed by Al-Ubaydli and McLaughlin (2017) from textual analysis of the number of constraints (the strings "shall," "must," "may not," "prohibited," and "required") in the Code of Federal Regulations (CFR). This measure is the natural logarithm of the number of constraints in CFR Title 12 for the banking industry each year. *LogBudget* is the natural logarithm of the annual budget (in $ millions) of the "finance and banking" subcategory (which includes the Comptroller of the Currency, Federal Deposit Insurance Corporation, and Securities and Exchange Commission) from Regulatory Reports available at https://wc.wustl.edu/regulatory_reports.