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**ARTICLE**

# Audit committee oversight and bank financial reporting quality

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**Abstract**

This study investigates the impact of audit committee oversight on the financial reporting quality of US bank holding companies. To overcome identification concerns, we use Section 165 h of the Dodd–Frank Wall Street Reform and Consumer Protection Act, which requires publicly traded bank holding companies with assets exceeding \$10 billion to have separate audit and risk committees. We utilise a difference-in-differences framework where our treatment group comprises bank holding companies that were required to separate audit and risk oversight functions following the introduction of Section 165 h and our control group comprises counterparts that already had separate audit and risk committees prior to the passage of Section 165 h. We estimate the difference in the behavior of treated bank holding companies between the pre- and post-implementation period of Section 165 h with the same difference in the behavior of control group counterparts and find that the separation of audit and risk committees leads to an improvement in financial reporting quality. We attribute the observed improvements in financial reporting quality to the increased focus of audit committees arising from a reduction in the volume and complexity of tasks undertaken following the implementation of Section 165 h.

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**KEYWORDS**

audit committee, bank holding companies, board busyness, Dodd-Frank Act, financial reporting quality, loan loss provisioning

**JEL CLASSIFICATION**

G21, G28, M41, M48

## 1 | INTRODUCTION

A lack of internal controls and audit committee oversight contributed to the management failures and subsequent financial instability at many banks during the global financial crisis (Financial Crisis Inquiry Commission, 2011; Hagedorff, 2019; Kirkpatrick, 2009). As part of the post-crisis reform agenda, new regulations were enacted, which require banks to engage in more effective audit committee oversight. In this study, we investigate the impact of audit committee oversight on the financial reporting quality of US bank holding companies.

Improvements in the quality of financial reporting information can reduce information asymmetries and improve the ability of regulators, auditors and other outside stakeholders in monitoring the performance and risk of firms (Bushman & Smith, 2001). However, assessing the financial reporting quality of banks presents a significant challenge given that assets held by financial institutions are often complex, opaque and difficult to value (Flannery et al., 2013; Jiang et al., 2016; Jones et al., 2012; Morgan, 2002). Given the critical role that banks play in the financial system and real economy, it is crucial that disclosed financial information is accurate and transparent so that outside stakeholders (depositors, equity-holders, bondholders and regulators) can accurately assess and monitor the financial condition of banks.<sup>1</sup>

In order to investigate the impact of audit committee oversight on the financial reporting quality of bank holding companies, we use the US banking industry as a setting. Prior to the financial crisis, the audit committees of bank holding companies were tasked with the oversight and monitoring of both financial reporting quality and risk management. However, following the global financial crisis of 2007–2009, policymakers strengthened prudential standards for corporate governance arrangements at banks via the passing of the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010. Section 165 h of the Dodd–Frank Act requires that publicly traded bank holding companies with total assets exceeding \$10 billion (as of June 30, 2014) establish a risk committee that is distinct and independent of the existing audit committee. The deadline for compliance was July 1, 2015 (Federal Register, 2014).

Prior to the passage of Section 165 h of the Dodd–Frank Act, in addition to the core task of overseeing financial reporting and effective communication to stakeholders, audit committees were required to identify, monitor and report on significant risk exposures and articulate any actions taken to address these. These arrangements led to possible concerns that members of bank audit committees had insufficient capacity to handle the volume and multiplicity of tasks required to ensure appropriate financial reporting quality (Ernst & Young, 2014; KPMG, 2014).

Regulatory reforms proposed under Section 165 h of the Dodd–Frank Act provide the setting for the current study, which investigates the impact of audit committees on the financial reporting quality of bank holding companies. Given that Section 165 h requires a separation of audit and risk committees, we posit that following the introduction of the new regulation, audit committees have more capacity to focus on core internal control and audit functions. This increased focus leads to an improvement in financial reporting quality.

The setting used for the current study (which allows us to identify bank holding companies subject to the introduction of Section 165 h vs. counterparts that were not subject to the new regulation) allows for a more rigorous research

<sup>1</sup> Banks operate the payments system, act as a conduit for monetary policy and are a major source of credit for households, corporations and governments (Allen et al., 2019). They act as a haven for household, corporate and government deposits funds and create liquidity by transforming relatively liquid liabilities in relatively illiquid assets both on- and off- balance sheet (Berger et al., 2020).

design than that utilized by many prior studies of financial reporting quality (Abbott et al., 2003a, 2003b, 2004; Bédard et al., 2004; Carcello & Neal, 2000; Karamanou & Vafeas, 2005; Klein, 2002). While all publicly traded banks with total assets exceeding \$10 billion were required to comply with Section 165 h, some bank holding companies already had distinct audit and risk committees prior to the introduction of the new regulation. Consequently, it is possible to identify a group of affected and unaffected bank holding companies before (pre-treatment) and after (post-treatment) the introduction of Section 165 h. This provides the basis for a robust research design to test our research hypothesis.

Financial reporting quality cannot be observed directly. Consequently, following established practice in prior literature, we utilize discretionary loan loss provisions as a proxy for financial reporting quality. Loan loss provisions are the most important accrual on bank balance sheets and should reflect the quality of loan portfolios. However, prior evidence suggests that bank managers exercise considerable discretion in loan loss provisioning via earnings smoothing, signaling and capital management activities (Beatty & Liao, 2014).<sup>2</sup> Following prior literature, we use the absolute value of residuals derived from an estimable model, which allows us to disentangle the discretionary and non-discretionary components of loan loss provisions. The resultant discretionary loan loss provisions are used as our primary outcome variable of interest in our empirical analysis.

In order to assess the impact of the separation of audit and risk committee (via the introduction of Section 165 h of the Dodd–Frank Act) on financial reporting quality, we adopt a difference-in-differences framework. Our treatment group comprises bank holding companies that were required to separate audit and risk oversight functions following the introduction of Section 165 h. Our control group comprises bank holding companies that already had separate audit and risk committees prior to the passage of Section 165 h and thus were unaffected by the regulatory change. The period of our investigation spans 2007 through 2016 and straddles the enactment of Section 165 h of the Dodd–Frank Act.

By way of preview, the results of an extensive empirical analysis suggest that bank holding companies affected by the separation of audit and risk committees reduce discretionary loan loss provisions relative to unaffected counterparts. Our results are economically significant and indicate that the separation of the audit and risk committee leads to an improvement in financial reporting quality. We conduct an additional analysis to investigate the mechanism through which the separation of audit and risk committees improves financial reporting quality. Specifically, we examine whether several characteristics related to audit committee effectiveness impact bank financial reporting quality following the introduction of Section 165 h of the Dodd–Frank Act. The results suggest that bank holding companies with busy audit committee members serving on other committees within the same (*Intra-bank busyness*) or other bank boards (*Inter-bank busyness*) experience a decline in financial reporting quality relative to counterparts with less busy directors. As part of our empirical analysis, we rule out an alternative explanation for our results that the over-provisioning for loan losses taking place prior to Section 165 h was a prudential response of audit committee members to higher credit risk facing treated banks.

Our results are robust to alternative measures of financial reporting quality and are not affected by other events such as the participation of bank holding companies in the Troubled Asset Relief Program (TARP); changes in state corporate income taxes facing banks; or participation in stress testing programs, which occurred around the time of the introduction of Section 165 h of the Dodd–Frank Act. Our findings remain unaffected even when considering bank's voluntary separation of audit and risk committees before the enactment of Section 165 h and after accounting for the 5-year grace period specified in the Act. We assess the internal validity of our findings via a placebo test where we assume falsely that the separation of the audit and risk committees took place in 2008 rather than 2010. The results of this placebo test are statistically insignificant, thus supporting the causal interpretation of our main findings.

<sup>2</sup> Schipper and Vincent (2003), Francis et al. (2006) and Dechow et al. (2010) provide extensive overviews of the measurement and determinants of financial reporting quality. Banks may have an incentive to smooth reported earnings via loan loss provisions to make reported earnings appear stable over time and meet pre-defined prudential regulatory requirements or satisfy opportunistic financial reporting objectives. The inclusion of loan loss reserves in the calculation of regulatory capital can lead bank managers to manipulate loan loss provisions in order to report regulatory capital above a certain minimum. Banks may also use loan loss provisions to signal information regarding loan quality and future earnings prospects to firm stakeholders (investors, customers and regulators).

Our study contributes to four strands of literature. First, we add to the literature that assesses the impact of audit committees and regulatory interventions on bank financial reporting quality.<sup>3</sup> Cornett et al. (2009) provide evidence that effective audit committees constrain earnings management behavior at large US bank holding companies prior to the passage of the Sarbanes–Oxley Act. Altamuro and Beatty (2010) assess the impact of the introduction and implementation of internal control requirements (as part of the provisions of the Federal Deposit Insurance Corporation Improvement Act) on the financial reporting quality of banks.<sup>4</sup> The authors find that the implementation of mandated internal control requirements leads to improved financial reporting quality. Delis et al. (2018) find that US banks subject to accounting-related regulatory enforcement actions subsequently improved financial reporting quality. In the current study, we augment this literature to investigate the impact of regulations regarding the scope of audit committees on financial reporting quality. We find that the separation of audit and risk committees mandated by the introduction of Section 165 h of the Dodd–Frank Act leads to an improvement in the financial reporting quality of bank holding companies.

Second, we contribute to an emerging literature that examines whether the increasing scope and multiplicity of tasks required of audit committees lead members to become overloaded with responsibilities and thus less able to execute core functions of overseeing financial reporting quality. Prior research shows that firms with a higher proportion of audit committee members who hold fewer multiple directorships (are less inter-bank busy) or sit on fewer committees on the same board (are less intra-bank busy) produce higher-quality financial reporting information (Almaqoushi & Powell, 2021; K. D. Chen & Wu, 2016; Dhaliwal et al., 2010; Fich & Shivdasani, 2006; Sun & Liu, 2014). Using a sample of non-financial firms, Ashraf et al. (2020) investigate whether increases in audit committee responsibilities impair the quality and reliability of financial statements. The authors find that audit committees, which are allocated responsibilities (such as risk management) unrelated to financial reporting produce lower-quality financial information. We complement this literature using a sample of US bank holding companies. The difference-in-differences design allows us to identify the causal impact of the separation of audit and risk committees on financial reporting quality. We find that affected bank holding companies improve reporting quality (by constraining earnings management) via a reduction in discretionary loan loss provisions. This finding is robust to alternative measures of financial reporting quality such as small positive earnings changes and avoiding negative earnings surprises.

Third, our study contributes to the literature on bank opacity. The increasing size and complexity of financial institutions have gained the attention of both academics and policymakers following the global financial crisis (Avraham et al., 2012; Cetorelli et al., 2014; Copeland, 2012; H. Liu et al., 2020). Cetorelli and Goldberg (2014) suggest that managerial incentives are a significant contributory factor in the increasing complexity and resultant opacity of banks. Our results suggest that by allowing audit committees to focus on core functions, financial reporting quality and resultant bank transparency are improved. This improves the quality of information available to bank stakeholders. As such the results of our analysis have relevance for market discipline in the banking industry given that transparent, timely and reliable information can aid internal (depositors) and external stakeholders (investors and regulators) in taking actions to mitigate excessive risk (Bushman & Williams, 2012; Cohen et al., 2014; Flannery, 2009; Flannery and Bliss, 2019; Nguyen, 2013).

Finally, we contribute to an emerging literature regarding the impact of various provisions of the Dodd–Frank Act on bank behavior (FSOC, 2011, 2012, 2016). Prior evidence suggests that the implementation of various provisions embodied in the Dodd–Frank Act improves financial stability and market discipline. Balasubramnian and Cyree (2014), Akhigbe et al. (2016) and Gao et al. (2018) provide evidence that suggests that the Dodd–Frank Act lessened too-big-to-fail issues at large banks. Evans and Schwartz (2014) offer evidence that the burden of regulatory compliance is disproportionately higher for smaller banks, while Cyree (2016) finds that small bank compliance costs increase

<sup>3</sup> Extensive overviews of the financial reporting quality literature in banking are provided by Wall and Koch (2000), Beatty and Liao (2014) and Bushman (2014). A selective overview of this literature is also provided in Section 3 below.

<sup>4</sup> Banks with total assets exceeding \$500 million were required to compile a report (certified by the external auditor) which disclosed the effectiveness of internal controls over financial reporting. LaFond and You (2010) suggest that the findings produced by Altamuro and Beatty (2010) are confounded by other events taking place during the long sample period.

significantly. Leledakis and Pyrgiotakis (2022) find that the acquisition of small banks increased after the passage of the Dodd–Frank Act. Our results suggest that imposing stricter requirements on large bank holding companies leads to improvements in financial reporting quality.

The rest of this paper is organized as follows. In Section 2, we provide a review of the research evidence on bank financial reporting quality. This section also reviews research that investigates the role of audit committees in influencing the behavior of financial firms. Section 3 discusses the research design. In Section 4, we discuss the dataset used, while Section 5 presents the results of our empirical analysis. Section 6 presents the results of a series of additional tests, while Section 7 concludes.

## 2 | LITERATURE REVIEW

In this section, we present a selective review of the relevant literature. Section 2.1 provides an overview of the financial reporting quality literature. In Section 2.2, we provide an overview of the literature regarding audit committee effectiveness for financial services firms.

### 2.1 | Financial reporting quality in the banking industry

In the empirical bank accounting literature, financial reporting quality is measured most commonly by loan loss provisions. Evidence produced by early studies suggests that the accuracy of bank loan loss provisioning plays a critical role in determining the quality of financial reporting information (Wall & Koch, 2000).<sup>5</sup> However, there is a general consensus that bank managers routinely use discretion in loan loss provisioning in such a way as to make reporting earnings appear stable over time (Greenawalt & Sinkey, 1988; Wahlen, 1994).

A number of empirical studies examine the relationship between discretionary loan loss provisions and earnings. No clear consensus emerges with some studies finding a positive correlation between earnings and discretionary loan loss provisions, consistent with earnings smoothing (Bouvatier et al., 2014; Collins et al., 1995; Curcio & Hasan, 2015; Curcio et al., 2017; El Sood, 2012; Kanagaretnam et al., 2004; C. C. Liu & Ryan, 2006), while others fail to find any significant association between earnings and loan loss provisions (Ahmed et al., 1999; Beatty et al., 1995).

Another strand of literature investigates whether banks use discretionary loan loss provisioning in order to manage capital. Bank managers have incentives to influence the level of reported loan loss provisions in order to meet minimum capital requirements (Moyer, 1990).<sup>6</sup> Prior studies that test the capital management hypothesis focus on the association between discretionary loan loss provisions and Tier 1 capital before loan loss provisions. Much of the evidence presented (with the notable exception of Beatty et al., 1995, who find that discretionary loan loss provisions are positively related to capital) suggests that there is a negative correlation between discretionary loan loss provisions and Tier 1 capital before deductions for loan losses. This is consistent with the view that banks use loan losses to manage capital (Ahmed et al., 1999; Beaver & Engel, 1996; Collins et al., 1995; Curcio & Hasan, 2015; Kim & Kross, 1998).

Prior research also investigates whether bank managers use loan loss provisions to signal private information regarding bank loan portfolio quality to outsiders (Beaver & Engel, 1996; C. C. Liu & Ryan, 1995; Wahlen, 1994). The signaling hypothesis derives from the positive association between discretionary loan loss provisions and 1-year

<sup>5</sup> Loan loss provisions are made up of non-discretionary and discretionary components. The non-discretionary component represents loan loss provisions made to cover expected credit losses (Beaver & Engel, 1996; Wahlen, 1994). This component is related to the identification of non-performing loans and exhibits a cyclical pattern (decreasing during periods of economic buoyancy and increasing as economic conditions deteriorate (Bikker & Metzmakers, 2005; Laeven & Majnoni, 2003). The discretionary component captures loan loss provisions made for managerial objectives such as income smoothing, capital management or signaling (Ahmed et al., 1999; Fonseca & Gonzalez, 2008; Kanagaretnam et al., 2004, 2009).

<sup>6</sup> Another stream of research examines available for sales securities as an alternative tool to manage capital (Barth et al., 2017; Fabrizi et al., 2021).

forward earnings. Kanagaretnam et al. (2003) find that managers of banks with low external credit ratings use loan loss provisions to increase the level of reported earnings in order to send a positive signal regarding future earnings prospects. In a similar vein, Kanagaretnam et al. (2005) produce evidence, which suggests that banks use discretionary loan loss provisions to signal future earnings prospects.

An important strand of the banking literature examines how banks vary loan loss provisions over the business cycle. Much of the evidence presented suggests that loan loss provisions are pro-cyclical with banks decreasing (increasing) lending and increasing (decreasing) loan loss provisions during economic downturns (upturns). This amplifies general economic and financial conditions (Agenor & Zilberman, 2015; Beatty & Liao, 2011; Bikker & Metzmakers, 2005; Bouvatier & Lepetit, 2008; Huizinga & Laeven, 2019; Laeven & Majnoni, 2003).

## 2.2 | The role of audit committees in financial firms

The role of the audit committee (in overseeing financial reporting processes and mitigating opportunistic managerial behavior) derives from information asymmetries and resultant agency issues inherent in the separation of ownership and managerial control (Fama & Jensen, 1983; Jensen & Meckling, 1976). Prior studies of audit committee effectiveness tend to focus on non-financial firms. However, since the global financial crisis of 2007–2009, an evidence base for the financial services industry has emerged.

In the financial sector, there is a paucity of evidence regarding the effectiveness of audit committees. According to recent guidelines, bank audit committee responsibilities include: reviewing accounting estimates, financial reporting judgements and financial statement disclosures; monitoring and disciplining management accountable for addressing identified deficiencies (such as violations of law or regulation); overseeing internal control systems and the internal and external audit functions and meeting with bank examiners at least once each supervisory cycle (Federal Reserve Board, 2017; Office of the Comptroller Currency, 2016). Given the complexity and size of banking organizations, Cornett et al. (2009) use the size and the frequency of meetings of audit committees as instrumental variables in order to investigate the prevalence of earnings management behavior in large US bank holding companies in the period prior to the passing of the Sarbanes–Oxley Act of 2002. The authors find that effective audit committees constrain earnings manipulation. Conditions leading up to and surrounding the global financial crisis prompted increased concerns regarding excessive bank risk-taking. Using a sample of publicly listed financial institutions, Sun and Liu (2014) find that banks with audit committees comprising members with long tenure are associated with lower total and idiosyncratic risk. They also present evidence that banks with directors on their audit committees who also sit in other boards (inter-bank busyness) had higher total and idiosyncratic risk. In the case of the Dodd–Frank Act, Hines et al. (2015) document that the mandatory creation of a stand-alone risk committee is associated with higher audit fees. However, when members of audit committees sit also in risk committees, there is a reduction in audit fees. Using a cross-country sample and including years before the financial crisis, Garcia-Sanchez et al. (2017) find that members of audit committees with prior financial expertise decrease bank risk-taking in countries where the bank regulatory system is weak and investors feel unprotected. Beyond the oversight of financial reporting quality, members of audit committees supervise external audit quality. Recent evidence suggests that the incidence of earnings management at banks decreases when audit committees include former external auditors as members (Ittonen et al., 2020).

Overall, the extant literature suggests that effective audit committees improve financial reporting quality. While there is an abundance of evidence for non-financial firms, research regarding the role of audit committees in ensuring financial reporting quality at banks remains somewhat limited. In the remainder of this paper, we investigate whether the separation of audit and risk committees (required by Section 165 h of the Dodd–Frank Act) leads to an improvement in the financial reporting quality of US bank holding companies.

### 3 | RESEARCH DESIGN

To estimate the importance of audit committee oversight on the financial reporting quality of banks, we focus on a specific policy change incorporated in Section 165 h of the 2010 Dodd–Frank Act. Section 165 h requires publicly traded bank holding companies with assets exceeding \$10 billion to have separate committees for audit and risk oversight. Many of the provisions within the Dodd–Frank Act outline specific asset thresholds for compliance, often exempting smaller banks for which compliance is likely to be prohibitively costly. In the current setting, Section 165 h focuses on publicly traded bank holding companies with assets exceeding \$10 billion. The Dodd–Frank Act was signed into law on July 21, 2010. The deadline for compliance with Section 165 h for publicly traded bank holding companies whose asset size exceeds \$10 billion was July 1, 2015. The relevant asset size was that prevailing as of June 2014 (Federal Register, 2014).

Taking into consideration that banks have 5 years to comply with Section 165 h, we follow a special procedure to form our sample of bank holding companies. Following prior literature, we begin with publicly traded bank holding companies with total assets exceeding \$10 billion after 2010 (Balasubramanyan et al., 2019). We identify 60 bank holding companies with assets exceeding \$10 billion as of June 2014. Of the 60 bank holding companies, eight have total assets less than \$10 billion in the pre-2014 period. While we observe that these eight institutions exceed the \$10 billion threshold in the post-2010 period, our sample only includes the 52 bank holding companies with total assets exceeding \$10 billion in 2010.<sup>7</sup>

In order to identify affected (treated) and unaffected (control) institutions, we investigate whether bank holding companies have a joint audit and risk committee 1 year prior to the passage of Section 165 h of the Dodd–Frank Act. Specifically, bank holding companies with a joint audit and risk committee in 2009 are assigned to a treatment group, while counterparts that have both an independent risk committee and an independent audit committee are assigned to the control group. This results in seven more bank holding companies being excluded from our sample because they have a joint risk committee with another committee. We identify 45 bank holding companies, of which 23 were non-compliant as of the signing of the law, and these institutions constitute the treatment group. The remaining 22 bank holding companies, which do not have a joint audit and risk committee, when the law was passed, constitute our control group.

In order to construct the discretionary loan loss provisions measure, we follow Beatty and Liao (2014) and estimate the following model:

$$\begin{aligned}
 LLP_{it} = & \beta_0 + \beta_1 \Delta NPA_{it+1} + \beta_2 \Delta NPA_{it} + \beta_3 \Delta NPA_{it-1} + \beta_4 SIZE_{it-1} + \beta_5 \Delta LOANS_{it} + \beta_6 ALW_{it-1} \\
 & + \beta_7 CO_{it} + \beta_8 CSRET_{it} + \beta_9 \Delta GSP_{it} + \beta_{10} \Delta UNEMP_{it} + \varepsilon_{it},
 \end{aligned} \tag{1}$$

where  $LLP_{it}$  represents loan loss provisions,  $\Delta NPA_{it}$  represents the change in non-performing assets between year  $t$  and  $t - 1$ ,  $SIZE_{it-1}$  is the natural logarithm of total assets in year  $t - 1$ ,  $\Delta LOANS_{it}$  is the change in total loans over the year,  $ALW_{it-1}$  represents loan loss allowances in year  $t - 1$  and  $CO_{it}$  is net charge-offs in year  $t$ . The model also includes  $CSRET_{it}$ ,  $\Delta GSP_{it}$  and  $\Delta UNEMP_{it}$ . These variables denote the return on the Case–Shiller Real Estate Index, the change in gross state product and the change in the rate of state unemployment, respectively.<sup>8</sup> Full definitions of these aforementioned variables are provided in panel B of Table 1, summary statistics are tabulated in Appendix 1 in the

<sup>7</sup> In Section 7, we consider whether our findings are sensitive to the inclusion of those banks that grew in size to exceed the regulatory threshold of \$10 billion as of June 2014. By way of preview, our findings remain qualitatively unchanged.

<sup>8</sup> We include  $\Delta GSP$  to capture effects of macroeconomic conditions on loan loss provisions (Bikker & Metzmakers, 2005; Fonseca & Gonzalez, 2008; Laeven & Majnoni, 2003). Our results are consistent with pro-cyclical loan loss provisioning behavior.



**TABLE 1** Variable definitions.

Variable	Definition
<b>Panel A: Variables used in main analysis</b>	
<i>DLLP</i>	The absolute value of the discretionary loan loss provisions (residuals from Equation 1)
<i>DLLP Positive</i>	The positive value of the discretionary loan loss provisions (residuals from Equation 1)
<i>DLLP Negative</i>	The negative value of the discretionary loan loss provisions (residuals from Equation 1)
<i>Post Event</i>	Indicator variable equals one in the post-Dodd–Frank Act period (2010) and zero otherwise
<i>Affected</i>	Indicator variable equals one if bank holding companies have a joint audit and risk committee 1 year before the introduction of Section 165 h (2009) and zero otherwise
<i>Audit Committee Size</i>	The size of audit committee
<i>Financial Expert</i>	The number of members in the audit committee who are financial experts
<i>Meetings</i>	The number of audit committee meetings held by bank per year
<i>Intra-bank busyness</i>	The percentage of directors of the audit committee who also sit on other committees in the same bank
<i>Inter-bank busyness</i>	The percentage of directors of the audit committee who also sit on other committees in a different bank board
<i>Tenure</i>	The average number of years the audit committee members serve as directors in the audit committee
<i>Size</i>	The natural logarithm of total assets at the beginning of the year
<i>Dividends</i>	Total cash dividends paid to common shareholders divided by total equity capital
<i>lag_LL</i>	1-year lag of loan loss provisions scaled by beginning total loans
<i>Capital</i>	Bank capital as measured by Tier 1 capital divided by risk-weighted assets
<i>EBTLLP</i>	Net income before taxes and loan loss provisions scaled by total assets
$\Delta EBTLLP$	1-year ahead change in net income before taxes and loan loss provisions scaled by total assets
<b>Panel B: Definition of variables used to estimate discretionary loan loss provisions</b>	
<i>LLP</i>	The ratio of loan loss provisions to beginning of the year total loans
$\Delta NPA$	Change in non-performing assets over the year divided by beginning of the year total loans
$\Delta LOANS$	Change in total loans over the year divided by beginning of the year total loans
<i>CSRET</i>	The return on the Case–Shiller Real Estate Index over the year
$\Delta GSP$	Change in GSP (gross state product) over the year scaled by 100
$\Delta UNEMP$	Change in unemployment rates over the year
<i>ALW</i>	Loan loss allowances over the year divided by beginning of the year total loans
<i>CO</i>	Net charge off over the year divided by beginning of the year total loans

(Continues)

TABLE 1 (Continued)

Variable	Definition
<b>Panel C: Variables used in sensitivity analyses</b>	
<i>Joint Risk Committee</i>	Indicator variable that equals one if a bank holding company has a joint risk with another committee in 2009 (1 year prior to the Dodd–Frank Act) and zero otherwise
<i>TARP</i>	Binary variable that equals one for the period that a bank holding company receives and repays Troubled Asset Relief Program (TARP) funding and zero otherwise
<i>Tax</i>	Binary variable that equals one the year the state in which a bank holding company is headquartered in changes its corporate income tax rate and zero otherwise
<i>Stress</i>	Binary variable that equals one for the years a bank holding company is part of the stress tests and zero otherwise
<i>Small Positive Earnings Changes</i>	Indicator variable that equals one if earnings increase is positive and up to 1.5% over last year's net income divided by total assets and zero otherwise
<i>Surprise Avoidance</i>	Indicator variable that equals one if an earnings surprise is between 0.00 and 0.04 cents over the consensus (median) analyst forecast, measured as the last forecast prior to the announcement of annual earnings and zero otherwise

Note: This table provides the definitions of variables used in this study. Panel A shows the variables used in main analysis, panel B shows the variables used to estimate discretionary loan loss provisions and panel C shows the variables used in sensitivity analysis.

Supplementary Material, while the results obtained from estimating Equation (1) are presented in Appendix 2 in the Supplementary Material.

The absolute value of residuals from Equation (1) is discretionary loan loss provisions. We posit that a reduction in the amount of discretionary loan loss provisions for affected banks after the enactment of Section 165 h of the Dodd–Frank Act would imply higher financial reporting quality. This is consistent with our prediction that when audit committees focus on the core function of reporting oversight, financial reporting quality is improved via a reduction in discretionary loan loss provisions.

To investigate the impact of the separation of audit and risk committees on financial reporting quality, we use a difference-in-differences approach. This approach compares the difference in reporting quality between the treated and control bank holding companies in the pre- and post-event periods. We estimate a model of the form:

$$Y_{i,t} = \beta_1 (\text{Affected}_i \times \text{Post Event}_t) + \delta X_{i,t} + v_i + \gamma_t + \epsilon_{i,t}, \quad (2)$$

where  $i$  indexes bank and  $t$  indexes time.  $Y_{i,t}$  denotes the financial reporting quality measure.  $\text{Affected}_i$  is a dummy variable equal to one if a bank holding company has a joint audit and risk committee 1 year prior to the passage of Section 165 h of the Dodd–Frank Act and zero otherwise.  $\text{Post Event}_t$  is a dummy variable for the post-treatment period. This variable takes the value of one from 2010 onward and zero otherwise.  $\text{Affected}_i \times \text{Post Event}_t$  is an interaction term that takes the value of one if the bank holding company is forced to separate audit and risk committees after Section 165 h came into force and zero otherwise. Our coefficient of interest is  $\beta_1$ , which represents the impact of the separation of audit and risk committees on the financial reporting quality of bank holding companies.

$X_{i,t}$  represents a vector of bank-level control variables that vary across bank holding companies and over time. These control variables include size, dividends, the 1-year lag of loan loss provisions, capital, earnings before taxes and loan loss provisions and the 1-year ahead change in earnings before taxes and loan loss provisions. Prior evidence

suggests that larger banks produce higher-quality financial reporting information (Altamuro & Beatty, 2010; Delis et al., 2018). Dividends could also influence financial reporting quality, given the likely negative association with higher earnings persistence (Lawson & Wang, 2016). Prior research also suggests that 1-year lagged loan loss provisions are associated with better financial reporting quality (Kanagaretnam et al., 2010).

We also control for possible relationships between discretionary loan loss provisions and capital management, earnings smoothing and signaling. A negative association between discretionary loan loss provisions and capital indicates that bank managers use loan loss provisions to manage capital (Ahmed et al., 1999; Curcio & Hasan, 2015; Kanagaretnam et al., 2004). A positive association between discretionary loan loss provisions and earnings before taxes and loan loss provisions is consistent with income smoothing behavior (Curcio & Hasan, 2015; Fonseca & Gonzalez, 2008; C. C. Liu & Ryan, 2006). Positive correlation between discretionary loan loss provisions and changes in future earnings is consistent with signaling behavior (Ahmed et al., 1999; Curcio & Hasan, 2015).

Finally, we introduce six additional covariates, which prior literature suggests are important drivers of audit committee effectiveness. These comprise the size of the audit committee, the financial expertise of members of the audit committee, the frequency of audit committee meetings, the intra-bank busyness, the inter-bank busyness and the tenure of audit committee directors. Table 1 provides a full list of variables included in the model along with their respective definitions. Equation (2) also includes time fixed effects,  $\gamma_t$ , as well as bank fixed effects  $\nu_i$ , which control for unobserved bank heterogeneity. The White (1980) sandwich estimator for variance is used to allow for heteroscedasticity robust standard errors.

## 4 | DATA AND SUMMARY STATISTICS

We construct our dataset from three main data sources. At the individual bank holding company (BHC) level, we collect data from the Standard and Poor's Global Market Intelligence (previously SNL financial) database. Information on analyst forecasts and on corresponding actual earnings per share is collected from Institutional Brokers Estimate System. Our sample period spans from 2007 to 2016. This period straddles the introduction of Section 165 h of the Dodd–Frank Act in 2010. In order to identify the structure and characteristics of audit committees, we assemble a hand-collected dataset using the annual (10-K) reports and definitive proxy (DEF 14A) statements submitted by banks at the Securities and Exchanges Commission and made available via the Electronic Data Gathering, Analysis and Retrieval database. Finally, macroeconomic variables are collected from the Bureau of Economic Analysis.

Assigning institutions to treatment and control groups as described in Section 4 results in a final sample of 45 unique bank holding companies (23 treated and 22 control banks) with 422 bank holding company-year observations due to missing values. We classify observations from 2007 to 2009 and 2010 to 2016 as the pre- and post-treatment periods, respectively. A key identifying assumption underlying our estimation strategy is that in the absence of Section 165 h, the average discretionary loan loss provisions made by both affected and unaffected banks would have evolved in a parallel fashion. This implies a similar trend for the outcome variable for both the treatment and control groups in the pre-treatment period. To mitigate any concerns regarding the violation of the parallel trend assumption, we construct a control group using an entropy-balanced matching procedure, which exhibits a trend in discretionary loan loss provisions during the pre-treatment period similar to that of the treated group. Unlike propensity score matching, entropy balancing reweights observations in the control group such that the distribution of the control banks matches that of the affected banks (Hainmueller, 2012). Moreover, this is achieved without discarding observations in the process.

Table 2 provides descriptive statistics for the main variables for the banks in the treated group and the banks in the control group before and after matching, spanning the entire period of investigation. Panels A and B tabulate these descriptive statistics for the period before and after the passage of Section 165 h of the Dodd–Frank Act, while panel C tabulates the evolution of the outcome variable for the pre-treatment period. The descriptive statistics indicate that the trend in discretionary loan loss provisions is similar between affected and unaffected banks after the matching

TABLE 2 Summary statistics.

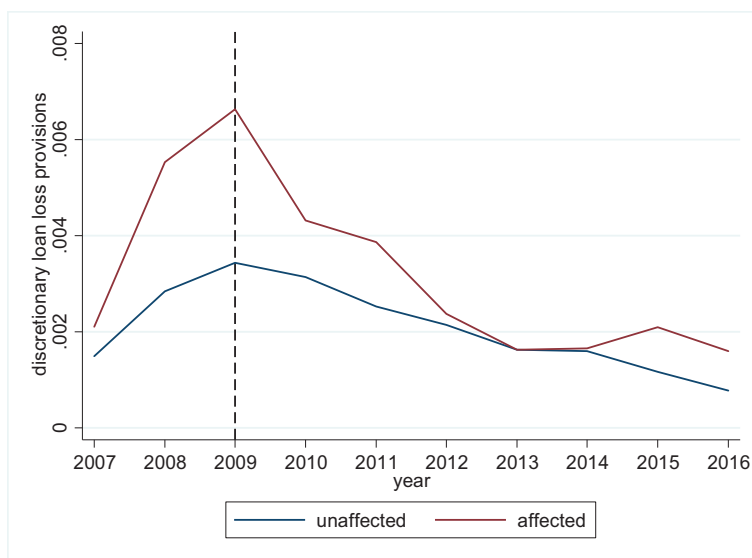
	Affected BHCs			Unaffected BHCs			Unaffected BHCs (entropy balancing)												
	N	Mean	(1)	N	Mean	(2)	N	Mean	(3)	N	Mean	(4)	Difference	(5) = (2)-(4)	Mean	(6)	Difference	(7) = (2)-(7)	
<b>Panel A: Pre-treatment period (2007-2009)</b>																			
DLLP	54	0.0047	63	0.0029	0.0018	63	0.0023	0.0024	63	0.0023	0.0024	0.0001	0.0001	63	0.0023	0.0024	0.0001	0.0001	
DLLP Positive	19	0.0067	38	0.0038	0.0029	38	0.0031	0.0036	38	0.0031	0.0036	0.0005	0.0005	38	0.0031	0.0036	0.0005	0.0005	
DLLP Negative	35	-0.0036	25	-0.0015	-0.0021	25	-0.0012	-0.0024	25	-0.0012	-0.0024	0.0002	0.0002	25	-0.0012	-0.0024	0.0002	0.0002	
Audit Committee Size	54	5	63	5	0.0000	63	5	0.0000	63	5	0.0000	0.0000	0.0000	63	5	0.0000	0.0000	0.0000	
Financial Expert	54	2	63	3	-1.0000	63	3	-1.0000	63	3	-1.0000	-1.0000	-1.0000	63	3	-1.0000	-1.0000	-1.0000	
Meetings	54	10	63	11	-1.0000	63	11	-1.0000	63	11	-1.0000	-1.0000	-1.0000	63	11	-1.0000	-1.0000	-1.0000	
Intra-bank busyness	54	0.8403	63	0.0232	0.8170	63	0.0358	0.8045	63	0.0358	0.8045	0.0017	0.0017	63	0.0358	0.8045	0.0017	0.0017	
Inter-bank busyness	54	0.2627	63	0.3585	-0.0958	63	0.2259	0.0368	63	0.2259	0.0368	0.0000	0.0000	63	0.2259	0.0368	0.0000	0.0000	
Tenure	54	4	63	4	0.0000	63	4	0.0000	63	4	0.0000	0.0000	0.0000	63	4	0.0000	0.0000	0.0000	
Size	54	17.2962	63	18.2512	-0.9549	63	17.3152	-0.0019	63	17.3152	-0.0019	0.0000	0.0000	63	17.3152	-0.0019	0.0000	0.0000	
Dividends	54	0.0390	63	0.0365	0.0025	63	0.0298	0.0092	63	0.0298	0.0092	0.0000	0.0000	63	0.0298	0.0092	0.0000	0.0000	
lag_LLTP	54	0.0093	63	0.0095	-0.0002	63	0.0077	0.0016	63	0.0077	0.0016	0.0000	0.0000	63	0.0077	0.0016	0.0000	0.0000	
Capital	54	0.1146	63	0.1094	0.0052	63	0.1128	0.0018	63	0.1128	0.0018	0.0000	0.0000	63	0.1128	0.0018	0.0000	0.0000	
EBTLLP	54	0.0173	63	0.0150	0.0023	63	0.0149	0.0024	63	0.0149	0.0024	0.0000	0.0000	63	0.0149	0.0024	0.0000	0.0000	
ΔEBTLLP	54	0.0001	63	0.0003	-0.0002	63	0.0006	-0.0005	63	0.0006	-0.0005	0.0000	0.0000	63	0.0006	-0.0005	0.0000	0.0000	
<b>Panel B: Post-treatment period (2010-2016)</b>																			
DLLP	152	0.0024	153	0.0020	0.0004	153	0.0017	0.0007	153	0.0017	0.0007	0.0007	0.0007	153	0.0017	0.0007	0.0007	0.0007	
DLLP+	82	0.0021	79	0.0014	0.0007	79	0.0015	0.0006	79	0.0015	0.0006	0.0006	0.0006	79	0.0015	0.0006	0.0006	0.0006	
DLLP-	70	-0.0028	74	-0.0026	-0.0002	74	-0.0021	-0.0007	74	-0.0021	-0.0007	-0.0007	-0.0007	74	-0.0021	-0.0007	-0.0007	-0.0007	

(Continues)

TABLE 2 (Continued)

	Affected BHCs			Unaffected BHCs			Unaffected BHCs (entropy balancing)		
	N	Mean	N	Mean	N	Mean	N	Mean	Difference
	(1)	(2)	(3)	(4)	(5) = (2)-(4)	(6)	(7)	(8) = (2)-(7)	
<i>Audit Committee Size</i>	152	5	153	6	-1.0000	153	5	0.0000	
<i>Financial Expert</i>	152	3	153	3	0.0000	153	3	0.0000	
<i>Meetings</i>	152	10	153	11	-1.0000	153	10	-0.0000	
<i>Intra-bank busyness</i>	152	0.2972	153	0.0464	0.2508	153	0.0804	0.2168	
<i>Inter-bank busyness</i>	152	0.2390	153	0.4385	-0.1995	153	0.3496	-0.1106	
<i>Tenure</i>	152	6	153	5	1.0000	153	5	1.0000	
<i>Size</i>	152	17.8683	153	18.4422	-0.5739	153	17.6194	0.2489	
<i>Dividends</i>	152	0.0247	153	0.0186	0.0061	153	0.0178	0.0069	
<i>log_ILP</i>	152	0.0101	153	0.0101	0.0000	153	0.0103	-0.0002	
<i>Capital</i>	152	0.1339	153	0.1270	0.0069	153	0.1260	0.0079	
<i>EBTLLP</i>	152	0.0189	153	0.0148	0.0041	153	0.0150	0.0039	
<i>ΔEBTLLP</i>	152	-0.0002	153	-0.0003	0.0001	153	-0.0007	0.0005	
<b>Panel C: Pre-trend growth rate in discretionary loan loss provisions (2007–2009)</b>									
2007	18	2.0084	21	1.6242	0.3842	21	1.6855	0.3229	
2008	18	2.4128	21	36.3507	-33.9379	21	2.0715	0.3413	
2009	18	1.2989	21	2.2979	-0.9990	21	1.1131	0.1858	

Note: This table reports summary statistics for the treated and control group before and after the entropy balancing procedure, for both the pre-treatment period (2007–2009) and the post-treatment period (2010–2016), respectively. Panel C presents trends in the pre-treatment period and the mean comparison of these trends between treated and control banks for the outcome variable. The definitions of the variables are given in Table 1.



**FIGURE 1** Evolution of discretionary loan loss provisions from 2007 to 2016. *Note:* This graph shows the evolution of discretionary loan loss provisions for affected and unaffected bank holding companies over the period 2007–2016. The dashed vertical line marks 2009, the year immediately before Section 165 h of the Dodd–Frank Act came into effect.

procedure in the pre-treatment period. Figure 1 provides a graphical illustration of this finding. It depicts the evolution of discretionary loan loss provisions for bank holding companies in the treatment and control groups after the matching procedure. In the years prior to 2010 (pre-treatment period), discretionary loan loss provisions of affected and unaffected banks follow similar paths. However, from 2010 (the year that Section 165 h of the Dodd–Frank Act came into effect), we observe diverging trends for the affected and control bank holding companies. These findings lend support to the notion that the parallel trend assumption is not violated in our setting (the results of more formal tests are reported in Section 7).

## 5 | RESULTS

### 5.1 | Baseline results

Table 3 presents the results of estimating Equation (2) using discretionary loan loss provisions as a dependent variable. Column 1 presents the results of our baseline regression. We find a significantly negative coefficient on our primary variable of interest ( $Affected_t \times Post\ Event_t$ ) at the 1% level. The point estimate suggests that the amount of discretionary loan loss provisions of affected bank holding companies declines by 22 basis points. The effect size of this decline, calculated using eta squared, is 0.0228. This decline is also economically significant and suggests that affected bank holding companies reduce discretionary loan loss provisions by 85%.<sup>9</sup> In monetary terms, affected bank holding companies reduce loan loss provisions by \$257 million.<sup>10</sup> This suggests that relative to unaffected counterparts, bank holding companies affected by the introduction of Section 165 h of the Dodd–Frank Act are less likely

<sup>9</sup> Economic significance is calculated by dividing the coefficient of interaction term by the mean value of discretionary loan loss provisions of the average bank (which is equal to 0.0026) in our sample.

<sup>10</sup> The \$ value decline in loan loss provisions is calculated by multiplying the coefficient of interaction term by the amount of total loans of the average bank in our sample.

**TABLE 3** Audit committees and bank financial reporting quality-baseline results.

	DLLP (1)	Partial eta squared (2)	Signed DLPP	
			DLLP positive (3)	DLLP negative (4)
<i>Affected<sub>t</sub> × Post Event<sub>t</sub></i>	−0.0022*** (0.0007)	0.0228	−0.0028** (0.0011)	0.0014 (0.0010)
<i>Audit Committee Size</i>	0.0001 (0.0001)	0.0006	0.0003 (0.0001)	0.0000 (0.0002)
<i>Financial Expert</i>	−0.0000 (0.0001)	0.0020	−0.0001 (0.0001)	0.0002 (0.0002)
<i>Meetings</i>	0.0001** (0.00004)	0.0070	0.0000* (0.00005)	−0.0000 (0.00009)
<i>Intra-bank busyness</i>	−0.0002 (0.0005)	0.0050	0.0005 (0.0006)	0.0005 (0.0006)
<i>Inter-bank busyness</i>	−0.0000 (0.0011)	0.0023	0.0000 (0.0009)	0.0004 (0.0020)
<i>Tenure</i>	0.0002** (0.0001)	0.0051	0.0000 (0.0001)	−0.0005** (0.0002)
<i>Size</i>	−0.0007 (0.0011)	0.0016	0.0020 (0.0012)	0.0051** (0.0021)
<i>Dividends</i>	0.0079 (0.0115)	0.0001	−0.0125 (0.0202)	−0.0141 (0.0203)
<i>lag_LL</i>	0.0273 (0.0261)	0.0084	0.0373 (0.0358)	−0.0341 (0.0368)
<i>Capital</i>	−0.0235** (0.0109)	0.0145	−0.0121 (0.0129)	0.0333 (0.0209)
<i>EBTLLP</i>	−0.0546 (0.0460)	0.0000	−0.0403 (0.0502)	0.0865 (0.0765)
<i>ΔEBTLLP</i>	−0.0563** (0.0241)	0.0006	−0.0248 (0.0299)	0.1652** (0.0682)
Bank fixed effects	Yes		Yes	Yes
Year fixed effects	Yes		Yes	Yes
Observations	422		218	204
No. of banks	45		45	45
R-squared	0.273		0.490	0.348

Note: This table reports the baseline results. The dependent variable is the absolute value of discretionary loan loss provisions. Column 1 investigates the effect of the separation of audit and risk committees following the introduction of section 165 h of the Dodd–Frank Act. The variable of interest is *Affected × Post Event*, which indicates the improvement in financial reporting quality between affected and unaffected banks following the introduction of section 165 h of the Dodd–Frank Act. Column 2 reports partial eta squared effect sizes for each variable included in specification of column 1. Column 3 uses positive discretionary loan loss provisions to investigate the impact of the separation of audit and risk committees on bank financial reporting quality. Column 4 uses negative discretionary loan loss provisions to investigate the impact of the separation of audit and risk committees on bank financial reporting quality. All regressions include the following set of control variables: Audit Committee Size, Financial Expert Meetings, Intra-bank busyness, Inter-bank busyness, Tenure, Size, Dividends, Loan loss provisions (lagged by one period), Capital, Earnings before taxes and loan loss provisions and 1-year forward change in earnings before taxes and loan loss provisions. Heteroscedasticity robust standard errors are reported in parentheses. The definitions of variables are provided in Table 1.

\*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% level, respectively.

to use discretionary loan loss provisions. This is in line with prior evidence, which suggests that lower discretionary loan loss provisions imply higher financial reporting quality (DeBoskey & Jiang, 2012; Fonseca & Gonzales, 2008; Kanagaretnam et al., 2004, 2010; Wahlen, 1994).

In our analysis thus far, we have used the absolute value of residuals to measure discretionary loan loss provisions. We augment this analysis to investigate the direction of change in discretionary loan loss provisions. Prior evidence suggests that managers have incentives to overstate earnings using negative discretionary loan loss provisions (Huizinga & Laeven, 2012; Jiang et al., 2016; Norden & Stoian, 2014). On the other hand, banks may engage in over-provisioning in order to accumulate additional resources that could be used to boost their earnings at a later date (Norden & Stoian, 2014). Following prior literature (Danisewicz et al., 2021), we measure positive and negative discretionary loan loss provisions in Equation (1) and use these derived estimates as dependent variables in re-estimated versions of Equation (2). The results are presented in columns 3 and 4 of Table 3. In the case of positive discretionary loan loss provisions, we find a negative and significant coefficient on our variable of interest ( $Affected_i \times Post Event_i$ ) at the 1% level, while for negative discretionary loan loss provisions, the interaction term does not enter the regression with a statistically significant coefficient. These results suggest that the decrease in the absolute value of discretionary loan loss provisions is driven by the decline in income-decreasing provisioning.<sup>11</sup>

Turning to our control variables, we focus our discussion on the baseline specification (column 1) in Table 3. We control for the effectiveness of audit committees using: audit committee size; extent of membership financial expertise; frequency of meetings and percentage of busy audit committee directors (both intra- and inter-bank busyness); and the average tenure of directors (Bédard et al., 2004; Dhaliwal et al., 2010; Krishnan & Visvanathan, 2008; Sun & Liu, 2014; Yang & Krishnan, 2005). *Audit Committee Size* enters the regression with positive but insignificant coefficient, while *Financial Expert*, *Intra-bank busyness* and *Inter-bank busyness* enter the regression with negative but insignificant coefficients. *Meetings* and *Tenure* enter the regression with positive and significant coefficients. Regarding our bank holding company level control variables, *Size* enters the regression with a negative but statistically insignificant coefficient, while *lag\_LLP* and *Dividends* enter the regression with a positive but insignificant coefficient. We also find that better-capitalized bank holding companies make lower discretionary loan loss provisions (as indicated by the negative and statistically significant coefficient on capital). This is in line with prior literature, which suggests that banks use discretionary loan loss provisions to satisfy regulatory capital requirements (Ahmed et al., 1999; Curcio & Hasan, 2015). Furthermore, *EBTLLP* enters the regression with a negative but statistically insignificant coefficient. Finally, we do not find evidence of the signaling hypothesis as indicated by the negative and statistically insignificant coefficient in future earnings.

Overall, the results of our empirical analysis suggest that affected bank holding companies improve financial reporting quality following the introduction of Section 165 h of the Dodd–Frank Act.

## 5.2 | Underlying mechanisms

The results of our empirical analysis (described in Section 6.1) suggest that affected bank holding companies improve financial reporting quality following the introduction of Section 165 h of the Dodd–Frank Act. The separation of the joint audit and risk committee into two independent committees after the introduction of Section 165 h of the Dodd–Frank Act decreases the scope of responsibilities of the audit committee members, thus allowing for increased focus on the core function of financial reporting quality oversight. This suggests that when members of the audit committees are not overloaded, they are more effective at their core functions with subsequent improvement in financial report-

<sup>11</sup> Our analysis involves the use of three different outcome variables. To alleviate concerns that the individual coefficients of interest are statistically significant simply due to chance, we estimate the average effect size for these three outcomes of interest collectively. Following Kling et al. (2007) and Beck et al. (2018), we standardize each one of our outcome variables by subtracting the control group mean and dividing by the control group standard deviation. Subsequently, we re-estimate Equation (2) using the equally weighted average of these standardized outcome variables as the dependent variable. Separating the audit from the risk committee lowers discretionary loan loss provisions by approximately 0.6 standard deviations on average (a finding significant at the 1% level).



ing quality. In this section, we explore the mechanisms through which this outcome is realized. We identify five such channels based on audit committee characteristics including size, financial expertise, frequency of meetings, intra- and inter-bank busyness and tenure that relate to the audit committee's effectiveness.

The size of the audit committee is an important factor in enhancing financial reporting quality, given that larger audit committees can draw upon a wider knowledge base and varied expertise of members. As such, they can undertake their role more effectively (Vafeas, 2005). If audit committee size affects financial reporting quality, then any resultant impact of the separation of audit and risk committees following the introduction of Section 165 h of the Dodd–Frank Act should be higher among affected bank holding companies with larger audit committees.

Regulators have also shown considerable interest in the financial expertise of audit committee members. In the United States, following the Sarbanes–Oxley Act (2002), audit committees ought to comprise at least one financial expert, while the other members need to be financially literate. Prior research suggests that the presence of financial expertise on the audit committee is positively associated with financial reporting quality (Abbott et al., 2003b, 2004; Bédard et al., 2004; Xie et al., 2003). Therefore, we would expect the impact of the introduction of Section 165 h of the Dodd–Frank Act on financial reporting quality to be higher among bank holding companies with a higher proportion of audit committee members with financial expertise.

The activity level of audit committees plays an important role in overseeing and monitoring the financial reporting process. It is argued that frequent audit committee meetings play a crucial role in addressing agency problems between management and various stakeholders. A number of prior studies provide evidence in support of the importance currently attached to the level of activity undertaken by the audit committee (Abbott et al., 2003a; Engel et al., 2010; Hoitash et al., 2009; Sharma et al., 2009; Vafeas, 2005). These studies suggest that more frequent audit committee meetings result in less aggressive earnings management. Therefore, if the separation of audit and risk committees affects financial reporting quality via a change in the frequency of audit committee meetings, then any resultant impact of Section 165 h of the Dodd–Frank Act should be higher among bank holding companies with a higher frequency of audit committee meetings.

The relationship between multiple directorships and firm performance remains a major concern for regulators and academics. Existing evidence shows that serving on numerous boards, so-called inter-bank busyness (Fich & Shivdasani, 2006; Shivdasani & Yermack, 1999) or on numerous committees on the same board, so-called intra-bank busyness (K. D. Chen & Wu, 2016) can result in busy and overstretched directors that may not be effective monitors of corporate management.<sup>12</sup> Dhaliwal et al. (2010) document that audit committee members with fewer directorships are associated with less earnings management. In light of these arguments, we expect that if the separation of audit and risk committees affects financial reporting quality via a change in the composition of audit committee membership, then any resultant impact of Section 165 h of the Dodd–Frank Act on financial reporting quality should be higher for bank holding companies with audit committees comprising less busy directors.

The length of tenure of audit committee directors is likely to determine the effectiveness via which audit committees perform their monitoring role. Prior literature suggests that companies with audit committees where members have a long tenure exhibit lower financial reporting quality (Dhaliwal et al., 2010; Vafeas, 2005). Therefore, we expect that the introduction of Section 165 h will have a greater impact on financial reporting quality among banks with higher tenure audit committee members.

To determine which of these aforementioned non-mutually exclusive mechanisms explain how the separation of audit and risk committees results in an improvement in financial reporting quality oversight, we re-estimate Equation (2) after sequentially replacing the respective audit committee characteristics as dependent variables. We express the dependent variables (*Size*, *Financial Expert*, *Meetings* and *Tenure*) in logarithmic form in order to make the estimated coefficients comparable across the different models. The results are presented in columns 1–6 of Table 4. The only cases that the interaction term enters the regression with a significant coefficient are in columns 4 and 5, where *Intra-*

<sup>12</sup> Almaqoushi and Powell (2021) also suggest that firms where audit committee members hold other board positions (such as secretary, treasurer and senior vice presidents) exhibit lower financial reporting quality.

**TABLE 4** Audit committees and bank financial reporting quality-possible channels.

	Size (1)	Financial expert (2)	Meetings (3)	Intra-bank busyness (4)	Inter-bank busyness (5)	Tenure (6)	Credit risk (7)
<i>Affected</i> <sub>t</sub> × <i>Post Event</i> <sub>t</sub>	0.0165 (0.0547)	0.1245 (0.8319)	0.0880 (0.0715)	-0.5495*** (0.0802)	-0.1769*** (0.0304)	0.1860 (0.6855)	-0.0000 (0.00003)
Bank level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
A.C. Characteristics	No	No	No	No	No	No	Yes
Bank fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	422	422	422	422	422	422	422
No. of banks	45	45	45	45	45	45	45
R-squared	0.032	0.106	0.125	0.308	0.104	0.272	0.122

*Note:* This table reports the results of the mechanism analyses (columns 1–6), as well as that of testing for an alternative explanation (column 7) for our observed baseline results. Columns 1–7 report the estimates of Equation (2) for different dependent variables. In column 1, the dependent variable, *Size*, is defined as the natural logarithm of the size of the audit committee. In column 2, the dependent variable, *Financial Expert*, is defined as the natural logarithm of the number of audit committee members that are considered as financial experts. In column 3, the dependent variable, *Meetings*, is defined as the natural logarithm of meetings held by audit committees. In column 4, the dependent variable, *Intra-bank busyness*, is defined as the percentage of audit committee members that sit also in other committees in the same bank. In column 5, the dependent variable, *Inter-bank busyness*, is defined as the percentage of audit committee members that sit also in other committees in a different bank. In column 6, the dependent variable, *Tenure* is defined as the natural logarithm value of the years that directors serve on the audit committee. In column 7, the dependent variable, *Credit risk*, is defined as the ratio of non-performing loans to total loans. All regressions include the following set of control variables but are not reported in the table for brevity: *Size*, *Dividends* *Loan loss provisions* (lagged by one period), *Capital*, *Earnings* before taxes and loan loss provisions, 1-year forward change in earnings before taxes and loan loss provisions. Audit committee characteristics including: *Audit Committee Size*, *Financial Expert Meetings*, *Intra-bank busyness*, *Inter-bank busyness*, *Tenure* are only included in the specification presented in column 7. Heteroscedasticity robust standard errors are reported in parentheses. The definitions of variables are provided in Table 1.

\*\*\*, \*\*, and \* indicate significance at the 1%, 5% and 10% level, respectively.

*bank busyness* and *Inter-bank busyness* are the dependent variables, respectively. The sign of the coefficient is negative in both cases. Moreover, the effect is more prominent in the case of *Intra-bank busyness* with the magnitude of the reported coefficient on the interaction term being three times higher than that of the *Inter-bank busyness*. These findings suggest that reducing audit committee members' busyness in general and *Intra-bank busyness* in particular can be an effective channel for improving financial reporting quality.

### 5.3 | Alternative explanation

Our results, thus far suggest that Section 165 h reduced discretionary loan loss provisions at affected banks due to the increased focus of the audit committee on the core function of financial reporting quality oversight. This was achieved via the establishment of independent risk committees resulting in the separation of joint audit and risk committees. However, one could argue that this documented reduction in discretionary loan loss provisions of affected banks was the result of audit committee members being prudent, while in charge of bank risk oversight.

We test whether the level of risk at affected banks changes as a result of the introduction of Section 165 h. We re-estimate Equation (2) using credit risk (measured by the ratio of non-performing loans to total loans) as the dependent variable.<sup>13</sup> We expect credit risk to be higher in cases where risk oversight is undertaken by board members with a lack of requisite knowledge and expertise. In this case, we would expect audit committee members to over-provision. The results of this test, which are tabulated in column 7 of Table 4, show that the level of credit risk at affected banks remains unchanged between the pre- and post-implementation period relative to the banks in the control group. This refutes the alternative explanation of our findings.

## 6 | ADDITIONAL TESTS

In this section, we investigate the robustness of our main findings by conducting several tests that support the causal interpretation of the results obtained from our analysis above. Furthermore, we explore possible confounding effects that could drive our estimated results.

### 6.1 | Falsification tests

The analysis presented thus far has shown that bank holding companies affected by the separation of audit and risk committees through the implementation of Section 165 h of the Dodd-Frank Act improve their financial reporting quality. However, the validity of the difference-in-differences estimation requires that in the absence of the treatment, financial reporting quality for both treated and control bank holding companies follow the same behavior. This is referred to as the parallel trend assumption (Abadie, 2005). We complement the initial investigation of the parallel trend assumption reported in Section 5 (Table 2, panel C) by conducting two additional tests. First, we conduct a placebo test, which falsely varies the timing of the introduction of Section 165 h. Following Ignatowski and Korte (2014), we extend our dataset to cover the period 2002 to 2006, which we define as the pre-placebo period. In order to investigate the effect of a placebo treatment, we assume falsely that the separation of the audit and risk committees took place in 2008 rather than in 2010. Therefore, the sample used for this test covers the period 2002 through 2009. The results of this test are displayed in column 1 of Table 5. The coefficient on the interaction term ( $Affected_i \times Placebo Post Event_t$ ) is statistically insignificant. Second, we investigate the dynamics of financial reporting quality around the introduction of Section 165 h, by plotting the annual average gap in the discretionary loan loss

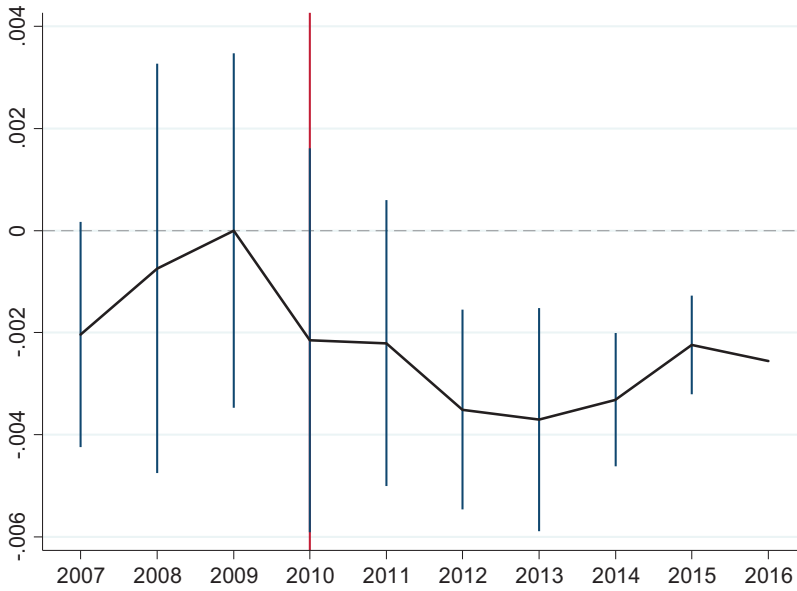
<sup>13</sup> Our results remain unaltered when using net charge offs as an alternative proxy for credit risk.

TABLE 5 Robustness tests.

	Placebo event (1)	Covariates exclusion (2)	Two-stage correction (3)	Two-period sample (4)	Expanded sample (5)	Joint Risk committee (6)
$Affected_i \times Placebo Post Event_t$	0.0019 (0.0014)					
$Affected_i \times Post Event_t$		-0.0015*** (0.0006)	-0.0027*** (0.0006)	-0.0017*** (0.0003)	-0.0011** (0.0005)	
$Joint Risk Committee \times Post Event_t$						-0.0003 (0.0007)
Equation 1 regressors	No	No	Yes	No	No	No
Bank level controls	Yes	No	Yes	Yes	Yes	Yes
Bank fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed Effects	Yes	Yes	Yes	No	Yes	Yes
Observations	292	422	422	84	499	280
No. of banks	39	45	45	45	53	30
R-squared	0.380	0.231	0.427	0.664	0.239	0.159

Note: This table presents the results of sensitivity checks of our baseline regressions with respect to different model specifications and sample composition, as well as on the validity of the parallel trend assumption. In column 1, we create a hypothetical event 2 years prior the actual year of event in 2008. The results are estimated using a sample spanning the period before the introduction of Section 165 h of the Dodd-Frank Act. *Placebo Post Event<sub>t</sub>* is a dummy variable equal to one for years 2007–2009 and zero for years 2002–2006. In column 2, we exclude covariates from the main model. In column 3, we present estimates of Equation (2) augmented with controls present in Equation (1). This approach, which is in line with W. Chen et al.'s (2018) two-stage approach correction, alleviates potential biases arising from estimating a regression model where the dependent variable consists of residuals obtained from a first-stage regression. In column 4, following Bertrand et al. (2004), we collapse our dataset into a two-period panel. Specifically, we average the data before (2007–2009) and after (2011–2016) the separation of audit and risk committees by the introduction of Section 165 h of the Dodd-Frank Act in 2010. In column 5, we re-estimate the baseline model using an expanded sample that also includes banks that grew in size to exceed the regulatory threshold of \$10 billion as of June 2014. In column 6, the model is estimated using as a treated group bank holding companies that have a joint risk with another committee (e.g., compliance committee, capital committee, examination committee, etc.) and as a control group the banks that had already an independent risk committee before the introduction of Section 165 h. All columns, except for column 2, include a set of control variables: Audit Committee Size, Financial Expert Meetings, Intra-bank busyness, Inter-bank busyness, Tenure, Size, Dividends Loan loss provisions (lagged by one period), Capital, Earnings before taxes and loan loss provisions, 1-year forward change in earnings before taxes and loan loss provisions but are not reported in the table for brevity. Heteroscedasticity robust standard errors are reported in parentheses. The definitions of variables are given in Table 1.

\*\*\*, \*\*, \* indicate significance at the 1%, 5% and 10% level, respectively.



**FIGURE 2** Evolution of the discretionary loan loss provisions after the implementation of Section 165 h of the Dodd-Frank Act. Note: This graph shows the evolution of discretionary loan loss provisions for affected and unaffected bank holding companies over the period 2007–2016.

provisions of the treated banks relative to their unaffected counterparts. Figure 2 shows that the trend in the discretionary loan loss provisions of the treated banks is statistically not different from that of the control group during the pre-treatment period. This is another indication that the parallel trend assumption is not violated in our sample. Both Figure 2 and the results of the placebo test suggest that the parallel trend assumption is not violated for our analysis and further supports the causal interpretation of our main findings.

Moreover, our analysis includes several time-varying control variables to mitigate the risk of the parallel trend assumption violation. Such inclusion, however, introduces the risk of biasing the estimated treatment effect (Atanasov & Black, 2016). In order to ensure that our results do not suffer from such a bias, we re-estimate Equation (2) without including time-varying control variables. The results of this analysis, which are reported in column 2 of Table 5, show that the magnitude of the coefficient of interest (*Affected<sub>it</sub> × Post Event<sub>it</sub>*) remains virtually unchanged, and thus our main conclusions continue to hold. In addition, we utilize a coefficient stability test in order to investigate possible omitted variable bias in our estimates. The test (proposed by Oster, 2019) quantifies how much stronger the effect of unaccounted (relative to accounted) factors influencing financial reporting quality has to be in order to obtain a zero difference-in-differences estimate. The results of this test indicate that the effect of unobservables would have to be twice as important as the included covariates for the introduction of Section 165 h of the Dodd-Frank Act to have no effect on financial reporting quality of banks.<sup>14</sup> This implies that our findings are not driven by unobservable characteristics.

In our main analysis, the financial reporting quality measure (discretionary loan loss provisions) relies on transformed residuals from the first-stage regression (Equation 1). Using the residuals from the first-stage regression as the dependent variable in a second-stage regression could result in biased coefficient estimates and standard errors, leading to incorrect inference. To alleviate concerns that our main findings are driven by such a bias, we follow a rec-

<sup>14</sup> Using Oster's (2019) terminology, we find that  $\delta = 2.01$ . This result assumes that the  $R^2_{\max}$  of the hypothetical regression which contains all unobservable factors of financial reporting quality is the product of the  $R^2$  of the regression including the observable factors multiplied by 1.3. Specifically, we use  $R^2 = 0.274$  reported in column 1 of Table 3 in order to obtain  $R^2_{\max} = 1.3 * 0.274$ .

ommendation described by Chen et al. (2018), where we re-estimate Equation (2) including all first- and second-stage covariates. The results of this analysis, which are tabulated in column 3 of Table 5, suggest that our main findings are robust to this correction.

## 6.2 | Correlation of errors

A concern regarding the validity of a difference-in-differences estimation arises if the standard errors are serially correlated. In such cases, reported standard errors could be biased downward. To alleviate concerns regarding biased standard errors, we could follow Bertrand et al. (2004) in using a cluster-robust variance matrix estimator throughout our empirical analysis. However, since there are only 45 clusters at the bank level, we may encounter a “too few clusters” problem, which could lead to an over-rejection of the null hypothesis (Cameron & Miller, 2015). This problem is further confirmed by the results of a test devised by Carter et al. (2017), which suggests that there are only 26 effective clusters in our data. To alleviate concerns regarding serial correlation in the errors, we collapse the sample into two time periods (Bertrand et al., 2004). Specifically, we average our variables before and after the separation of audit and risk committees by the introduction of Section 165 h of the Dodd–Frank Act. The results of this exercise, which are reported in column 4 of Table 5 confirm that our findings are not driven by serial correlation in the errors, given that the coefficient of interest ( $Affected_j \times Placebo\ Post\ Event_t$ ) retains its significance.

## 6.3 | Sensitivity analysis

We also investigate whether our results are robust to the selection of our sample of bank holding companies. Our findings are based on those bank holding companies that meet the size threshold set by Section 165 h in 2010 when the Dodd–Frank Act was signed into law. After 2010, and during the ensuing 5-year period these banks were given to comply with the Act, eight more banks grew to exceed the \$10 billion asset size threshold, and thus had to comply with the Act. In order to ensure that our findings are not driven by the exclusion of these banks, we re-estimate Equation (2) with an expanded sample that includes the eight banks with total assets exceeding \$10 billion in the post-2010 period.<sup>15</sup> The results of this analysis, which are reported in column 5 of Table 5, suggest that our main findings remain qualitatively unaltered to the inclusion of these observations.

Another potential driver of our results could arise from the requirement that bank holding companies had to establish independent risk committees after the introduction of Section 165 h of the Dodd–Frank Act. Delis et al. (2018) find that enforcement actions related to risk issues improve the accounting quality of US commercial banks. If this is the case and treated bank holding companies display an improved financial reporting quality because of the presence of an independent risk committee and hence a better risk management policy, this could confound our baseline results. In order to investigate this possibility, we re-estimate Equation (2) using as a treated group bank holding companies that have a joint risk with another committee (compliance committee, capital committee, examination committee, etc.) and as a control group bank holding companies that already had an independent risk committee prior to the introduction of Section 165 h of the Dodd–Frank Act.<sup>16</sup> Specifically, in Equation (2), we replace  $Affected_j$  with  $Joint\ Risk\ Committee_j$ , a dummy variable that captures the distinction between the treated and control group described above. Column 6 of Table 5 reports the results of this analysis. The coefficient of the interaction term ( $Joint\ Risk\ Committee_j \times Post\ Event_t$ ) is statistically insignificant. This finding implies that only bank holding companies that have a joint audit and risk committee before the introduction of Section 165 h of the Dodd–Frank Act show an improvement in financial reporting

<sup>15</sup> Of these eight banks, five are classified as treated. The rest are unaffected by Section 165 h and thus are classified as control banks.

<sup>16</sup> Following the same data collection procedure as in our baseline analysis (Section 5), we identify seven bank holding companies that have a joint risk with another committee before the introduction of Section 165 h of the Dodd–Frank Act.

quality. This further confirms that the observed improvement in the financial reporting quality of the affected bank holding companies is driven by the increased focus of the audit committee.

Finally, another critical issue is the exact timing of when affected bank holding companies separate their audit and risk committees given that they had 5 years to comply with Section 165 h of the Dodd–Frank Act. Our main analysis is conducted under the assumption that the separation of audit and risk committees occurred in 2010 for affected bank holding companies. To alleviate concerns that our results are driven by this assumption, we check our data to identify the year that affected bank holding companies separate their audit and risk committees following the introduction of Section 165 h of the Dodd–Frank Act.<sup>17</sup> Scrutiny of the definitive proxy statements (DEF 14A) of affected bank holding companies reveals that five bank holding companies separate their audit and risk committees in 2010, four in 2011, one in 2012, nine in 2013, three in 2014 and one in 2015. First, we adjust Equation (2) to reflect this information by replacing  $Post\ Event_t$  with  $Post\ Event_{i,t}$ , which takes the value of one the year that a treated bank holding company separates the audit and risk committee onwards and zero otherwise. Next, and given that treated banks can choose when to separate their audit and risk committees, we employ the instrumental variable approach to extract the exogenous component from separating the audit and risk committee and then use it to explain the variation in the discretionary loan loss provisions. As an instrument, we use the variable *peer effect*, which is defined as the share of banks that has separate audit and risk committees in period  $t - 1$  in the same geographic region where the bank is headquartered. Due to peer effects, corporate governance practices may spill over from one bank to another (Bouwman, 2011; Foroughi et al., 2022). As such, the greater the number of peer banks with separate audit and risk committees, the greater the chance the bank's joint audit and risk committee will separate. Therefore, we expect this instrumental variable to be positively correlated with the bank's decision to separate its audit and risk committee after Section 165 h came into force. To better represent peer banks for the treated group in the two-stage least squares analysis, we expand the sample to also include publicly listed banks with less than \$10 billion in total assets.

Column 1 of Table 6 reports the reduced form regression results. The coefficient on the instrument suggests a strong reduced form relationship between discretionary loan loss provisions and the share of peer banks with separated audit and risk committees. Column 2 of Table 6 reports the first stage regression results, where the dependent variable is the binary variable indicating when treated banks choose to separate audit and risk committees within the 5-year grace period provided by the Act. The first-stage regression is also strong with an  $F$ -statistic of 14.92 exceeding the relevant Stock and Yogo (2005) critical value of 8.96 (at 5% level of significance), suggesting that the chosen instrument is not weak. Moreover, and consistent with the rationale behind the instrument, the fraction of peer banks with separated audit and risk committees enters the regression with a positive and statistically significant coefficient, which indicates a valid instrument. Column 3 of Table 6 reports the results of the second-stage regression whose dependent variable is discretionary loan loss provisions. The variable of interest in this regression is the fitted linear probability of a treated bank separating its audit and risk committees obtained from the first-stage regression. The results confirm our main findings that the separation of the audit and risk committees leads to an improvement in financial reporting quality.

## 6.4 | Confounding factors

The validity of our approach would be undermined if factors other than the separation of audit and risk committee (following the introduction of Section 165 h of the Dodd–Frank Act) are driving our main results. In 2009, the US gov-

<sup>17</sup> The control group in our analysis comprises banks that would have to separate their audit and risk committees had they not done so prior to passage of the Act. Choosing to separate the audit and risk committee is an endogenous decision to the bank. Therefore, comparing banks that chose to separate audit and risk committees prior to the Act with banks that were forced to do so by the Act could imply differences in some unobserved characteristics that could bias our results. To alleviate this concern, we re-estimate Equation (2) by using an alternative control group (but keeping the same treated group). This alternative control group consists of publicly listed banks with less than \$10 billion in total assets and a joint audit and risk committee throughout the studied period. The results of this analysis, which are available upon request, confirm our main findings.

**TABLE 6** Instrumental variable estimation.

	Reduced form regression	First-stage regression	Second-stage regression
	<i>DLLP</i>	<i>Affected<sub>i</sub> × Post Event<sub>i,t</sub></i>	<i>DLLP</i>
	(1)	(2)	(3)
Peer effect (x100)	-0.00361** (0.00001)	0.66*** (0.0009)	
<i>Affected<sub>i</sub> × Post Event<sub>i,t</sub></i> (fitted)			-0.0056*** (0.0017)
Control variables	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	979	979	979
No. of banks	107	107	107
F-statistic		14.92	
Stock–Yogo weak ID test critical value		8.96	

Note: In this table, we adopt an IV approach to deal with endogeneity concerns in this study. In column 1, we report the reduced form regression results. In column 2, we report the corresponding first-stage regression results. In column 3, we report the second-stage regression results using the fitted linear probability from the first stage regression as the variable of interest. In all regressions, we include a set of control variables: Audit Committee Size, Financial Expert Meetings, Intra-bank busyness, Inter-bank busyness, Tenure, Size, Dividends Loan loss provisions (lagged by one period), Capital, Earnings before taxes and loan loss provisions, 1-year forward change in earnings before taxes and loan loss provisions but are not reported in the table for brevity. Heteroscedasticity robust standard errors are reported in parentheses.

\*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% level, respectively.

ernment introduced the TARP to assist distressed banks and stabilize the banking industry. As a result, TARP-recipient banks would be subject to more and stricter government supervision (Bouvard et al., 2015). Specifically, banks that received TARP funding are required to be more transparent about how the funds are being used. Therefore, the TARP could have an impact on bank financial reporting quality similar to that observed following the separation of the audit and risk committee after the introduction of Section 165 h of the Dodd–Frank Act. In order to investigate the robustness of our findings on this issue, we introduce the variable *TARP* and its interaction with *Affected<sub>i</sub>* in Equation (2). *TARP* is defined as a dummy variable that is equal to one for the period each bank holding company in our sample receives funding from the US government. The results are presented in column 1 of Table 7. The coefficient of the interaction term (*Affected<sub>i</sub> × TARP<sub>it</sub>*) enters the regression negatively and statistically insignificant, while the coefficient on the interaction term of interest (*Affected<sub>i</sub> × Post Event<sub>t</sub>*) remains negative and statistically significant. This suggests that our main findings are not driven by the provisions of TARP.

Another potential effect that could confound the results of our analysis is changes in the state corporate income tax rates facing banks in our sample. Tax rates changes have been shown to influence earnings management behavior and hence financial reporting quality. For example, Dong and Xu (2019) find that accounting earnings are more likely to be managed upward via the use of discretionary accruals in response to state tax cuts. If statutory tax rates were reduced in states where bank holding companies in our control group are located around the same time as the introduction of Section 165 h of the Dodd–Frank Act, then this could confound the impact of the separation of audit and risk committee on financial reporting quality. In order to check the robustness of our findings to changes in state taxes, we hand-collect information on state-level statutory corporate income tax rates (from the Tax Foundation) and re-estimate Equation (2) via the introduction of the variable *Tax* and its interaction with *Affected<sub>i</sub>*. We define *Tax* as a dummy variable equal to one if there is a cut in state corporate income tax rate and zero otherwise. The results are presented in column 2 of Table 7. The interaction term *Affected<sub>i</sub> × Tax* enters the regression with a positive and statisti-



**TABLE 7** Confounding events.

	TARP (1)	State corporate income tax (2)	Stress test (3)
<i>Affected<sub>i</sub> × Post Event<sub>t</sub></i>	−0.0017** (0.0007)	−0.0023*** (0.0007)	−0.0022*** (0.0007)
TARP	−0.0006 (0.0011)		
<i>Affected<sub>i</sub> × TARP</i>	0.0014 (0.0010)		
Tax		−0.0015*** (0.0005)	
<i>Affected<sub>i</sub> × Tax</i>		0.0037** (0.0014)	
Stress			−0.0007 (0.0005)
<i>Affected<sub>i</sub> × Stress</i>			−0.0015 (0.0015)
Bank level controls	Yes	Yes	Yes
Bank fixed Effects	Yes	Yes	Yes
Year fixed Effects	Yes	Yes	Yes
Observations	422	422	422
No. of banks	45	45	45
R-squared	0.280	0.284	0.291

Note: This table presents results of the effect of the separation of audit and risk committees following the introduction of section 165 h of the Dodd–Frank Act, on bank financial reporting quality, while considering potential confounding events. The dependent variable is discretionary loan loss provisions. The variable of interest is *Affected × Post Event*, which indicates the improvement in financial reporting quality between affected and unaffected banks following the introduction of section 165 h of the Dodd–Frank Act. In column 1, we include an additional interaction term between the dummy for TARP and variable *Affected*. TARP is defined as a binary variable that equals one for the period that bank holding companies purchase and repay the funding. Column 2 includes an additional interaction term between the dummy for *Tax* and variable *Affected*. *Tax* is defined as a binary variable that equals one for the year of our sample each state has changed corporate income tax rate relative to previous and next year. Column 3 includes an additional interaction term between the dummy for *Stress* and variable *Affected*. *Stress* is defined as a binary variable that equals one for the years that bank holding companies are part of the stress tests. The definitions of variables are given in Table 1. In all regressions, we include a set of control variables: In all regressions, we include a set of control variables: Audit Committee Size, Financial Expert Meetings, Intra-bank busyness, Inter-bank busyness, Tenure, Size, Dividends Loan loss provisions (lagged by one period), Capital, Earnings before taxes and loan loss provisions, 1-year forward change in earnings before taxes and loan loss provisions but are not reported in the table for brevity. Heteroscedasticity robust standard errors are reported in parentheses.

\*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% level, respectively.

cally significant coefficient, while importantly the coefficient of the interaction term of interest (*Affected<sub>i</sub> × Post Event<sub>t</sub>*) remains negative and statistically significant. This suggests that our main findings are not confounded by coincident changes in state corporate income taxes.<sup>18</sup>

<sup>18</sup> The results are robust to the use of an alternative proxy for capturing tax burden variation across states, namely, the tax component of the Economic Freedom of North America index. The Economic Freedom index has been shown to correlate with US bank performance (Chortareas et al., 2016).

We also investigate stress tests as a potential confounder of our findings. Prior evidence suggests that banks manage financial performance in order to meet capital ratio targets (Cochrane, 2014; Cornett et al., 2020; Fernandes et al., 2020). Therefore, we explore whether our findings are driven by the stress tests exercises rather than the introduction of Section 165 h of the Dodd–Frank Act. In order to check the robustness of our findings to stress tests, we re-estimate Equation (2), by incorporating the variable *Stress* and its interaction with *Affected<sub>it</sub>*. Following prior literature, we define *Stress* as a dummy variable that equals one for the years that bank holding companies are part of the stress test exercises (Fernandes et al., 2020). The results, which are tabulated in column 3 of Table 7, indicate that the interaction term *Affected<sub>it</sub> × Stress* is statistically insignificant, while the interaction term of interest *Affected<sub>it</sub> × Post Event<sub>it</sub>* retains its sign and significance. These results suggest that stress tests do not drive our main findings.

## 6.5 | Alternative measures of financial reporting quality

We also investigate the sensitivity of our findings to alternative measures of financial reporting quality. Following prior literature, we compute small positive earnings changes and surprise avoidance. Small positive earnings changes capture the tendency of banks to manage earnings (so as to avoid reporting a negative change in earnings). We isolate all bank holding company-years with a marginally positive earnings change. Prior evidence for non-financials suggests that firms that report small marginal positive income increases seek to avoid conveying bad news to investors (Burgstahler & Eames, 2003). Following Vafeas (2005), *Small Positive Earnings Changes* is defined as an indicator variable that equals one if there is a positive change of up to 1.5% over last year's net income divided by total assets and zero otherwise. The surprise avoidance measure is also motivated based on prior evidence, which suggests that managers manipulate earnings upward in order to avoid negative earnings surprises and meet analyst expectations (Matsumoto, 2002). Again, following Vafeas (2005), *Surprise Avoidance* is an indicator variable that equals one if an earnings surprise is between 0.00 and 0.04 cents over the consensus (median) analyst forecast, calculated as the last forecast prior to the announcement of annual earnings, and zero otherwise.

Table 8 shows that the interaction term *Affected<sub>it</sub> × Post Event<sub>it</sub>* is significantly and negatively associated with these alternative measures of financial reporting quality. This further illustrates the robustness of our main findings.

## 7 | CONCLUSION

In the aftermath of corporate governance and risk management failures during the global financial crisis of 2007–2009, US policymakers expressed concerns that audit committees did not have sufficient capacity to execute core responsibilities, evidenced by a deterioration in financial reporting quality. Resultant regulatory reforms embodied in Section 165 h of the Dodd–Frank Wall Street Reform and Consumer Protection Act sought to tackle such issues by stipulating that large publicly traded bank holding companies should have separate rather than joint audit and risk committees.

Against this backdrop, we investigate the importance of the audit committee for the financial reporting quality of US bank holding companies. Given that some bank holding companies already had separate audit and risk committees prior to the enactment of the Section 165 h of the Dodd–Frank Act allows us to identify a treated and control group of institutions and conduct a difference-in-differences analysis to assess the impact of policy reforms on the financial reporting quality (measured by discretionary loan loss provisions) of affected bank holding companies relative to unaffected counterparts.

The results of the empirical analysis presented in this paper suggest that financial reporting quality significantly improves following the introduction of Section 165 h of the Dodd–Frank Act. Specifically, there is a significant reduction in earnings management at bank holding companies via a reduction in discretionary loan loss provisions. Consistent with the notion that directors who serve on many committees on the same board experience a reduced

**TABLE 8** Alternative measures of financial reporting quality.

	Small positive earnings changes (1)	Surprise avoidance (2)
<i>Affected<sub>t</sub> × Post Event<sub>t</sub></i>	−0.0540* (0.0293)	−0.1772* (0.0940)
Bank level controls	Yes	Yes
Bank fixed Effects	Yes	Yes
Year fixed Effects	Yes	Yes
Observations	477	477
No. of banks	45	45
R-squared	0.042	0.166

*Note:* This table reports the results of sensitivity checks of our baseline estimation with respect to alternative measures of financial reporting quality. In column 1, the dependent variable is replaced with the variable small positive earnings changes. In column 2, the dependent variable is replaced with the variable surprise avoidance. In all regressions, we include a set of control variables: Audit Committee Size, Financial Expert Meetings, Intra-bank busyness, Inter-bank busyness, Tenure, Size, Dividends Loan loss provisions (lagged by one period), Capital, Earnings before taxes and loan loss provisions, 1-year forward change in earnings before taxes and loan loss provisions but are not reported in the table for brevity. Heteroscedasticity robust standard errors are reported in parentheses.

\*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% level, respectively.

ability to be effective monitors of corporate management, we further find that this reduction in discretionary loan loss provisions is stronger for banks with fewer busy directors. An exhaustive series of additional tests confirm our findings. Our results are of relevance for policymakers tasked with monitoring the impact of accounting-based regulatory reforms on the behavior and performance of large banks. Specifically, the evidence presented in this paper suggests that active policy reforms aimed at increasing the focus of audit committees lead to improvements in financial reporting quality and resultant information available to industry stakeholders.

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## DATA AVAILABILITY STATEMENT

The data supporting the findings of this study can be accessed through the sources cited in Section 4 of the article.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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