Economic Consequences of Auditor Reputation Loss: Evidence from the Audit Inspection Scandal

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We examine whether the 2017 audit inspection scandal affected KPMG's client relationships and audit quality. Using the trial transcripts, we construct a novel dataset of KPMG clients whose audit engagements were compromised by information leakage from the PCAOB (Transcript Sample). We then examine KPMG's response to this regulatory data theft scandal. Our findings suggest an increased departure rate following the public revelation of the scandal of clients in the Transcript Sample but not in the broad portfolio of KPMG clients. While KPMG's audit fees do not appear to have changed, we find a reduction of KPMG's non-audit fees, which is concentrated in the Transcript Sample clients. Finally, we find that the quality of loan loss provisions of banking clients in the Transcript Sample decreased after the scandal. Overall, our results suggest the audit inspection scandal has imposed costs on both KPMG and its PCAOB-inspected clients whose identities were exposed.

Keywords: KPMG scandal; auditor reputation; auditor turnover; non-audit fees

Data Availability: Data are available from public sources cited in the text.

I. INTRODUCTION

Providing audit services to public companies is critical to maintaining investors' trust in capital markets (Doty 2016; Doty 2017). To that end, it is important for an audit firm to be perceived by its clients and the public as highly trustworthy. An audit firm's quality control system is central to its reputation for providing independent and high-quality audits.[1] This is because an effective quality control system provides a basis for the audit firm's assertion to the public and to regulators that, in performing their audits, its auditors exercised due professional care by complying with professional standards. A robust audit quality control process provides reasonable assurance to capital markets that the information reported by public companies can be relied upon.

Audit regulators have emphasized the development and maintenance of effective audit firm quality controls. Recently, the Public Company Accounting Oversight Board (PCAOB) issued a concept release to update the quality control standard (PCAOB 2019b). The intention is to revisit the existing audit firm quality controls given developments in the business environment (e.g., increases in technology usage) and an increased focus on audit firm governance and ethical requirements of the profession (Brown 2020). The continued focus of audit regulators on sufficient effectiveness of audit firms' quality control practices underscores the importance of effective quality control systems for maintaining public trust in the assurance services audit firms deliver.

Motivated by regulators' increased focus on the role of quality control within audit firms, we examine the failure of one of the most prominent audit firm quality controls – the national office. This failure resulted in publicly announced violations of professional ethics and civil and

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[1] The PCAOB defines a quality control system as "a process to provide a firm with reasonable assurance that its *personnel comply with professional standards* applicable to its accounting and auditing practice and the firm's standards of quality. Registered firms are required to design and implement a system of quality control to provide this reasonable assurance" (PCAOB 2019b; emphasis added).

criminal prosecutions for the theft of confidential regulatory information critical to the PCAOB's core mission of ensuring audit quality. The PCAOB accomplishes this mission via its audit firm and engagement inspection process (e.g., Gunny and Zhang 2013; Krishnan, Krishnan, and Song 2017; Lamoreaux 2016). KPMG's national office, internally called the Department of Professional Practice (DPP), maintains overall audit quality within the firm and provides consultation support on auditing and technical accounting matters to its audit professionals (KPMG 2019).

Although KPMG's national office was expected to have a high degree of accounting and auditing expertise, the 2017 audit inspection scandal exposed audit quality weaknesses that had the potential for damaging the firm's reputation. Furthermore, the public trial of individuals involved in the audit inspection scandal revealed the identity of several KPMG audit clients inspected by the PCAOB. This public exposure could have inadvertently subjected these clients to additional litigation and reputational risks. In other words, the scandal may have had a potentially negative impact on KPMG's reputation, because it revealed ethical lapses within the core of its quality control mechanisms, and a separate negative impact on KPMG's audit clients whose identities were exposed as a result of the public trial of former KPMG and PCAOB employees.

We provide evidence about the response by KPMG, its clients, and the market to the revelation of the audit inspection scandal. Our study offers a view of both the more visible public response and the more private internal response by the firm (i.e., KPMG's relationship with its clients). We use a novel data set that includes the specific clients whose PCAOB inspections were compromised (Transcript Sample). We investigate the response by KPMG with respect to these specific clients, compared to other KPMG clients and clients of other Big Four firms.

In our preliminary tests, we evaluate the stock market's response to the scandal by measuring the returns of KPMG clients around two events: (i) the KPMG announcement of partner

separations as a result of the scandal in April 2017; and (ii) the Department of Justice (DOJ) and SEC announcements of indictments of KPMG and PCAOB professionals involved in the scandal in January 2018. We find no differential response of KPMG clients' stocks compared to non-KPMG clients' stocks in the first window. In contrast, we do find a negative stock price response of KPMG clients that is significant and different from the response of non-KPMG clients in the second window. We interpret these findings as the market reacting more strongly once the scandal accusations galvanized into formal SEC and DOJ charges. This result is consistent with prior findings in the literature that the market generally reacts negatively to adverse shocks to auditor reputation (e.g., Dee, Lulseged, and Zhang 2011).

In our main tests, we document an increased likelihood of clients in the Transcript Sample leaving KPMG in the two years following the scandal. Such an effect is not observed in KPMG's general client portfolio. We then examine whether the scandal has any discernible impact on audit fees charged by KPMG in the years following the scandal and find no evidence of any change. In addition, we examine the impact on discretionary non-audit fees because the prior literature documents that non-audit fees are associated with compromised auditor independence (e.g. Causholli, Chambers, and Payne 2014). We find a significant reduction in non-audit fees for KPMG clients whose engagements were under PCAOB scrutiny and whose audits were compromised during the 2015-2017 inspection cycles (i.e., the Transcript Sample). We do not find such a reduction for the general portfolio of KPMG clients. These findings suggest that KPMG may have attempted to preemptively preserve the relationships with clients most likely to be affected by the scandal if or when client names became public, using non-audit fee concessions.

In additional analysis, we examine the impact of the scandal on financial reporting quality. Because of the increasing pressure from the PCAOB, KPMG attempted to improve its performance

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prior to the scandal by developing internal monitoring programs. One program was specifically aimed at the auditing of loan and lease losses of its banking clients (see Section II). In a subsample of banking clients included in KPMG's internal monitoring program to address previously-documented deficiencies, we find that financial reporting quality has deteriorated following the scandal. We interpret these findings as evidence of a possible reduction in audit quality at KPMG, at least temporarily. Such a reduction could have resulted from KPMG's increased incentives to retain clients and/or to alleviate clients' concerns about being linked indirectly to the scandal.

Our study contributes to the literature in several ways. First, we shed light on the consequences of disclosing the identity of clients subject to PCAOB inspections. The Sarbanes-Oxley Act (SOX) prohibits the disclosure of inspected clients' names, primarily because such disclosures might expose auditors, and audit clients, to additional litigation risk and impair the effectiveness of the PCAOB inspection process (PCAOB 2004; Morris 2014).[2] Significant parts of our analyses rely on a hand-collected sample of PCAOB-inspected audit clients whose identity *was* disclosed during the trial of KPMG and PCAOB staff involved in the scandal. Therefore, it is important to examine how KPMG responded to the disclosures of its clients' identities in the context of the audit inspection scandal.

Second, analyzing the impact on the clients whose names have been revealed through the trial transcripts and their response with regard to their relationship with KPMG as well as the impact, if any, on their share price, sheds light on how clients' reputation risk is affected by the damaged reputation of their auditor. Further, our setting allows us to pinpoint the ways an audit firm might respond to the elevation of such risk in specific clients.

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[2] Section 105(b)(5)(A) provides for the confidentiality of "all documents and information prepared or received by or specifically for the Board, and deliberations of the Board and its employees and agents, in connection with an inspection under section 104 or with an investigation under this section" (PCAOB 2004).

Third, we examine the effect of a shock to an audit firm's reputation resulting from its own actions. This contrasts with other settings in the literature (e.g., accounting restatements, accounting scandals of particular clients) that focus on negative reputational shocks to auditors because of their *association* with publicized audit failures driven by unethical and illegal behavior of client management. The literature does little to address the impact of negative reputational shocks to the audit firm that do not result from a specific audit failure. In contrast to prior literature, the results we document and the conclusions we draw are free from a "client" effect and are *directly* attributable to the auditor's behavior.

Fourth, the study helps us understand better the role of a quality control system within an audit firm. Because KPMG partners involved in the scandal were members of the firm's U.S. leadership team directly responsible for maintaining audit quality across all KPMG audit clients, our setting allows for a unique perspective of studying failures of an audit firm's "tone at the top."

II. AUDIT INSPECTION SCANDAL OF 2017[3]

Section 104 of the Sarbanes-Oxley Act requires the PCAOB to conduct annual inspections of large audit firms. These inspections are conducted at the audit engagement level (i.e., Part I reports) and the firm level (i.e., Part II reports). During 2012-2014, KPMG's deficiency rates for the Part I reports increased more than its peers and reached its highest levels in 2014, when the PCAOB judged 54 percent of inspected KPMG engagements as deficient (PCAOB 2019a). In December 2014, the PCAOB met with KPMG leadership and expressed concerns about KPMG's inspection results, its lack of responsiveness to PCAOB's ongoing comments, particularly for its clients in the banking industry, and its "tone at the top" (United States District Court 2019).

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[3] For the interested reader, we provide a more detailed chronology of the scandal in Appendix A.

In response to this increasing pressure from regulators, KPMG attempted to improve its performance in PCAOB inspections by: (1) developing multiple internal monitoring programs, including one specifically aimed at the allowance for loan losses of its banking clients; (2) increasing national office personnel; (3) hiring PCAOB professionals; (4) assigning national office staff, including former PCAOB staff, to assist teams whose engagements were under inspection; (5) revising the incentive structure for audit teams from a punitive model for inspection deficiencies to a reward system for clean PCAOB inspections; and (6) hiring a data analytics consulting firm to develop a predictive model of engagements likely to be targeted by the PCAOB.

From 2015-2017, KPMG obtained the names of engagements the PCAOB planned to inspect *before* the regulator officially notified the firm of its selections. Under SOX and the PCAOB's Ethics Code, such information cannot be released to the firm in advance to preserve the integrity of the regulatory inspection process. This early access to regulatory information allowed engagement teams to alter workpapers for specific clients and for specific accounting issues of interest to the PCAOB during the upcoming inspection cycle (e.g., allowance for loan losses).

In February 2017, an internal whistleblower informed KPMG's leadership of the information leakage between the PCAOB and employees in KPMG's national office. During its internal investigation, KPMG learned that at least six individuals either had improper advance warnings of engagements to be inspected by the PCAOB, or knew others had received such advance warnings and failed to report the situation promptly. On April 11, 2017, KPMG announced that the six employees, including Scott Marcello, the head of its audit practice in the United States, and Dave Middendorf, the national managing partner for audit quality and professional practice, would leave the firm. KPMG stated the issue had no impact on any of its audit opinions or any of its client's financial statements. On January 23, 2018, the United States

Attorney for the Southern District of New York charged the individuals involved in the scandal with conspiracy and wire fraud in connection with the scheme to defraud the SEC and the PCAOB by obtaining, disseminating, and using confidential regulatory information. The SEC simultaneously brought administrative charges against the defendants.

III. RELATED LITERATURE AND HYPOTHESES DEVELOPMENT

Related Literature

Auditing is a credence good, whereby the actual input level of audit quality is not observable to those purchasing the service (Causholli and Knechel 2012). A negative reputational shock can be damaging to an audit firm because outside stakeholders cannot easily assess the implications of the shock to the overall quality of the services provided by the audit firm. Because external audit services are expected to enhance public trust in financial reporting, ethics-based violations are likely to reduce the trust stakeholders place in the audit firm (Jha and Chen 2015; Knechel, Mintchik, Pevzner, and Velury 2019; Doty 2016; Doty 2017). Without an ability to facilitate such trust, an audit firm might lose its underlying *raison d'etre*.

Maintaining a reputation is central to an audit firm's ability to conduct its mission. One can view an audit firm's reputation as: (1) the actions of the firm (e.g., governance structures, hiring, performance evaluation, training, internal controls); (2) the actions of individuals at the firm and how their actions are affected by and reflect the firm's own policies; and (3) the actions of a few "bad" individuals that may propagate within the firm despite strong measures to avert them (e.g., Easley and O'Hara 2019).

An audit firm's clients, when making hiring and retention decisions, rely on the firm's reputation for delivering high audit quality (e.g., Nagy 2014; Aobdia and Shroff 2017;

Krishnamurthy, Zhou, and Zhou 2006). The value of the audit firm to its owners depends on its ability to attract and retain clients. Audit partner compensation is often driven by the ability to retain clients, and an audit partner's human capital and reputation are intrinsically tied to the audit firm's reputation (e.g., Trompeter 1994). Prior research shows that an audit partner associated with a firm experiencing an audit failure, but who is not complicit in the failure, nonetheless suffers reputational and economic losses (He, Pittman, and Rui 2016). Reputation, alongside human capital, is a key strategic "social approval" asset of any audit firm (Raithel and Schwaiger 2015).

Naturally, an audit firm going through a reputation-damaging scandal wants to minimize damage and avoid client attrition. This incentive is magnified whenever a reputation-damaging event affects positive aspects of a firm's reputation, such as its perceived commitment to high standards of audit quality (Rhee and Valdez 2009). However, it is not always the case that audit clients suffer negative economic consequences from adverse auditor reputation shocks (Harris and Krishnan 2012). Thus, it is important to further our understanding of the nature of the events that do and do not negatively affect the reputation of auditors and their audit clients.

The response to damaging reputational shocks can be two-fold. First, the firm has an incentive to take public steps to repair its image. Such steps may include separating audit partners associated with a scandal, adding independent directors to its board, or reassigning partners to different engagements after announced restatements (Bramwell 2019; Aobdia and Petacchi 2019).[4] Collectively, we label these actions as *reputation preservation*.

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[4] KPMG Chairperson at the time of the scandal, Lynne Doughtie, resigned in March 2020. Although her resignation was not directly attributed to the scandal, it may represent a measure of reputation-repair. Bramwell (2019) argues that "Doughtie often preached how important ethics and integrity were not only to KPMG but to her as a leader…[H]aving to fire six of the firm's top executives, five of whom were indicted, because they hatched and executed a plan to steal confidential audit inspection information from insiders at the PCAOB was not a good look."

We contend that the 2017 audit inspection scandal is a negative shock to KPMG's reputation because it exposed significant weaknesses in the leadership of the national office, whose primary goal is to ensure firm-wide commitment to high standards of audit quality. To mitigate the negative effects of the scandal revelation, KPMG asked the high-ranking partners involved to leave the firm and announced that *"(t)his issue does not impact any of the firm's audit opinions or any client's financial statements"* (KPMG 2017). These actions sought to minimize the impact of the scandal by reassuring clients, regulators, and the public that unethical behavior of individual partners, even its most senior, had no effect on the overall audit quality the firm delivers to its clients. Whether KPMG's efforts succeeded is still unclear.

Second, if audit clients and other stakeholders perceive the scandal negatively, the firm may have an incentive to engage in "damage control." We label these measures, collectively, as *economic mitigation*. In the case of KPMG, the scandal was public, involved SEC enforcement actions, included criminal indictments and, ultimately, resulted in convictions of several audit partners (Eaglesham 2019). Rhee and Valdez (2009) argue that the more prevalent and negative the actions of regulators towards the firm, the more difficult it is for the firm to repair its reputation. Consistent with this reasoning, it is reasonable to expect the firm to suffer economic consequences. To mitigate the economic impact of its damaged reputation, KPMG likely had to take additional actions to avoid a widespread desertion by its clients.

Hypothesis Development

Previous scandals associated with well-publicized audit failures (e.g., accounting frauds, restatements) and the release of PCAOB Part II reports on inspection deficiencies in firms' quality control systems have been shown to damage the reputation of audit firms (e.g., Nagy 2014; Aobdia and Shroff 2017; Irani, Tate, and Xu 2015; Mande and Son 2013). Consequences of these events

include client attrition and an increasing difficulty in the ability of firms to attract new clients.[5]

This is because higher quality audits increase the credibility of audit clients' financial reporting

(Gipper, Leuz, and Maffett 2019), and, conversely, publicized audit failures likely reduce it

(Knechel, Krishnan, Pevzner, Shefchik, and Velury 2013; DeFond and Zhang 2014; Hackenbrack

and Hogan 2005; Boone et al. 2015). Recent research provides evidence that client departures

create a cascading effect of additional departures of clients in the same industry (Francis, Mehta,

and Zhao 2017), suggesting negative reputational shocks to a firm could further increase the

likelihood of audit client departures. Overall, existing evidence suggests that a negative

reputational shock to an audit firm is likely to increase the probability of auditor dismissals or

resignations. This is stated formally as our first hypothesis:

> *Hypothesis 1a: KPMG is more likely to experience audit client turnover after the revelation of the scandal.*

Furthermore, the leakage of PCAOB information to KPMG pertained to specific

engagements. Thus, it is possible that the clients of these engagements (i.e., the Transcript Sample)

could suffer reputational loss by association, through no direct fault of their own. This damage

could arise from their name being connected to the scandal, unwarrantedly throwing into question

the quality of their own financial statements because investors may not understand the nature of

the PCAOB inspection process.[6] Because the reported deficiency rates in PCAOB inspections have

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[5] One example is the collapse of Arthur Andersen after the Enron fraud (Chaney and Philipich 2002; Nelson, Price, and Rountree 2008; Barton 2005). Other examples include: (i) the bankruptcy of the Japanese company Kanebo and the failure of its auditor, Japanese PwC member firm ChuoAoyama (Skinner and Srinivasan 2012); (ii) the fraud at India's Satyam and significant SEC and PCAOB sanctions on its auditor PW India (Brown, Daugherty, and Persellin 2014); (iii) the concentration of restatements within audit offices or audit partners (Swanquist and Whited 2015; Gul, Lim, Wang, and Xu 2016; Aobdia and Petacchi 2019; Chi, Lisic, Myers, Pevzner, and Seidel 2019; Mande and Son 2013); and (iv) the release of Part II PCAOB Inspection Reports (Boone, Khurana, and Raman 2015; Boone, Khurana, and Raman 2017; Drake, Goldman, and Lusch 2016; Johnson, Reichelt, and Soileau 2018). The commonality among these studies is that they are based on highly publicized and salient events.

[6] The PCAOB has emphasized that inspection findings refer to the observed level of *audit* quality and not *financial reporting* quality. Moreover, the PCAOB has stressed that financial reporting violations are not within its purview.

historically been high, investors may (potentially incorrectly) infer that the audit quality of the clients whose identities are exposed in the Transcript Sample is low.[7] That is, in the words of SEC Chairman Jay Clayton, these clients can be "collateral damage" in this scandal (Clayton 2018). Damage to clients could also arise from the fact that their engagement has been publicized as having been subject to a PCAOB inspection, suggesting the client is perceived by regulators as high-risk.[8] Regardless of the reason, these clients might have increased costs of continuing to be associated with KPMG and are more likely to leave the firm. This leads us to an incremental version of the first hypothesis, focusing only on clients in the Transcript Sample, as follows:

> *Hypothesis 1b: Transcript clients of KPMG are more likely to change their auditor after the revelation of the scandal.*

In managing its relationship with its clients after a crisis, an audit firm can take a variety of actions to alleviate the potential negative long-term economic effects, including the possible flight of clients from the firm. These actions of *economic mitigation* are the focus of our next two hypotheses. We investigate two levers that an audit firm can pull to mitigate economic impact from a scandal. The first one is audit fees. Because of the scandal, clients may have been concerned with the efficacy of their past audits and with whether the quality of their audits has been adversely affected. Consistent with this argument, prior research documents that the engagements of audit partners reporting higher frequencies of accounting restatements are associated with reductions in audit fees (Chi et al. 2019). Similar patterns are observed when Part II sections of PCAOB inspection reports become public (Johnson et al. 2018). It is also possible, however, that KPMG

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[7] The PCAOB has been criticized for highlighting audit deficiency rates in inspection reports because the public may not understand that deficiency rates do not capture the true state of audit quality (e.g., Peecher and Solomon 2014).
[8] Grunfeld (2006) states that the PCAOB "cautions against a firm drawing conclusions that the firm's audits, or its issuer clients' financial statements, are free of any deficiencies not specifically described in an inspection report. *This is because the PCAOB is performing a spot check, not a comprehensive universal check. The inspectors only look at a handful of audits, and, within those audits, only at a handful of issues*" (emphasis added).

may pass on, at least partially, the extra costs incurred in managing the crisis, resulting in an increase in audit fees. This discussion leads to the following hypothesis, which examines the extent to which there have been adjustments to audit fees charged to KPMG clients, compared to clients of other Big Four firms:

> *Hypothesis 2a: Audit fees charged by KPMG are adjusted in the years following the revelation of the scandal.*

Clients named in the inspection lists leaked to KPMG from the PCAOB (i.e., the Transcript Sample) may have been further affected by fee concessions. While these clients may not be directly linked to the scandal, having their names associated with the scandal may indirectly harm their reputation, as discussed earlier. To address these specific clients' concerns, KPMG may reduce audit fees to compensate them for additional reputational risk they bear by continuing their association with the firm, or to induce them to retain KPMG as their external auditor. This leads to the following hypothesis:

> *Hypothesis 2b: Audit fees charged by KPMG to transcript clients are adjusted in the years following the revelation of the scandal.*

Approved non-audit fees are the second lever an audit firm and its clients can adjust in response to a shock to audit firm reputation. SOX prohibits the provision of specific non-audit services to audit clients, subject to limited exceptions that may be granted through audit committee approval. Fees for allowed non-audit services generally include audit-related (e.g., benefit plan audits, due diligence) and tax-related fees. Audit committees can approve the provision of these services only if such services do not violate SOX prohibitions and do not compromise auditor independence.[9] Unlike audits required by U.S. securities laws, non-audit services are discretionary

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[9] For audit committee approval requirements of permitted non-audit services, see the SEC's Guidance: Audit Committee and Auditor Independence (SEC 2007).

to an audit client and the client has flexibility in whether to purchase them from the auditor. Moreover, excessive non-audit fees could be viewed by the SEC as potentially compromising auditor independence and thus impairing audit quality (Causholli et al. 2014; Kowaleski, Mayhew, and Tegeler 2018).

In the context of the inspection scandal, clients' audit committees may be more likely to curtail the provision of non-audit services from KPMG for four reasons. First, they may want to ensure that the perception of auditor independence is not compromised. Second, they may want to limit their interaction with, dependence on, and exposure to KPMG to exert pressure on the firm to improve its audit-related services. Clients' management teams and their boards may be attuned to media and shareholder pressure to mitigate exposure to KPMG in the event the scandal is serious and/or the firm becomes non-viable due to client defections and legal and regulatory sanctions. Third, competitors from other Big Four and specialized non-audit firms may increase business development activities to compete for discretionary non-audit fees that the auditor doesn't perform. Finally, KPMG may price ongoing discretionary non-audit work on a deeply discounted or even gratis basis to retain clients' favor in periods of tension or stress in the relationship. Based on these reasons, non-audit fees for the same type of work will likely decrease. Thus, from the clients' perspective, there may be a reduction in fees for non-audit services performed by a firm like KPMG, one beleaguered by ongoing negative publicity and legal and regulatory risk.

From the audit firm's perspective, it is possible that discounting audit fees, as posited, will involve pitching additional non-audit services to compensate for the lost audit fees. Consistent with this argument, Beardsley, Lassila, and Omer (2019) contend that downward pressure on audit fees is associated with higher levels of non-audit fees and with decreases in audit quality. Thus, if

KPMG convinces its clients to purchase more non-audit services, we expect the value of non-audit services to increase for KPMG audit clients. This leads us to the following hypothesis:

> *Hypothesis 3a: Non-audit fees of KPMG audit clients did not change following the revelation of the scandal.*

The incentives associated with adjustments in non-audit fees may be even stronger for clients included in the list of clients leaked from the PCAOB to KPMG. As argued previously, these clients' reputation for high quality financial reporting is subject to greater stress levels through no fault of their own. Therefore, in our Hypothesis 3b, we focus attention on this subset of clients (Transcript Sample), as follows:

> *Hypothesis 3b: Non-audit fees of KPMG's transcript clients did not change following the revelation of the scandal.*

IV. DATA

Sample Selection

Because some analyses require the identity of KPMG clients included in the information leaks from the PCAOB to KPMG, we conduct an extensive data collection effort. Using the trial transcripts and documents filed in the criminal court case against the individuals involved in the scandal, we construct a novel and detailed database of KPMG clients whose audit engagements have been compromised by the leak of confidential information. In some cases, we are able to identify the clients directly. In other cases, we identify the lead partner of the engagement and use the PCAOB Form AP data to match the audit partner to their respective clients.[10] We collectively label this sample of clients throughout our study as the Transcript Sample.

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[10] Form AP, *Auditor Reporting of Certain Audit Participants*, discloses the names of engagement partners and other accounting firms that participate in the audits of public companies.

We use several other sources of data in our analyses, including stock returns from the Center for Research in Security Prices (CRSP), financial statement data from Compustat, and audit fees and related items from Audit Analytics.

Table 1 describes our sample selection process and the attrition of observations for our full analyses. We identify 40,347 firm-year observations where assets are non-missing in Compustat from 2015-2019. In our later pre-post analysis, we treat 2017 as a transition year, during which evidence of the scandal first emerged. Therefore, we exclude 8,222 observations with 2017 year-ends. We then exclude 10,249 observations lacking audit fee data in Audit Analytics and 7,883 observations not using a Big Four auditor. For the audit turnover (audit fee and non-audit fee) sample, we exclude 1,785 (1,197 and 2,182, respectively) observations with missing data to construct control variables. These screens result in samples of varying sizes, depending on the analysis, of approximately 12,000 observations.

[Insert Table 1]

Descriptive Statistics

Table 2 presents the sample composition during the period 2015-2019 for the audit turnover sample of 12,208 firm-year observations. Panel A bifurcates the sample between the KPMG clients and the sample of other Big Four clients. The sample includes 3,237 companies in 2015 (23.1 percent are KPMG clients), 3,134 companies in 2016 (22.6 percent are KPMG clients), 3,008 companies in 2018 (22.3 percent are KPMG clients), and 2,829 companies in 2019 (20.9 percent are KPMG clients). We also bifurcate the sample between the Transcript Sample and the non-transcript sample in Panel B. The Transcript Sample includes 255 firm-year observations from 2015-2019. There are approximately 64 transcript clients per year, accounting for about 9.4 percent of KPMG clients in the overall sample.

Panel C provides the industry composition of client firms across the sample period. KPMG's clients are less concentrated in manufacturing (5.8 compared to 9.1 percent for the other Big Four) and in health care (8.6 compared to 13.2 percent). KPMG's banking clients constitute about 24.2 percent of its client base, compared to 19.7 percent at the other Big Four firms.

Panel D presents the industry composition of transcript firms across the sample period. The Transcript Sample is more concentrated in wholesale and retail (11.0 compared to 8.3 percent for the other Big Four) and in banking (60.0 compared to 19.8 percent). The concentration of the Transcript Sample in banking reflects the KPMG's focus on banking clients (compared to other Big Four firms) and the PCAOB's agenda of addressing weaknesses previously found in KPMG's audit procedures related to this sector.

[Insert Table 2]

Table 3 reports descriptive statistics for variables used in the empirical analyses. The annual client turnover rate across all auditors and years is 4 percent. The average audit fees in our sample is $3.3 million (natural logarithm is 1.2), with a median of $2.8 million, while the average level of non-audit fees is $1.5 million with a median of $1.2 million. The mean (median) firm *Size* is 7.88 (7.85), translating to $2.64 ($2.57) billion in assets. The median ROA of sample firms is 8 percent, and sample firms exhibit a median of 4 percent annual growth rate in sales (*Growth*). Approximately 47 percent of firm-year observations have foreign income (*Foreign*). The mean (median) annual return for sample firms is 5 (4) percent. Overall, sample firms are large and complex, which can be attributed to the origin of the sample (i.e., firms audited by the Big Four).

[Insert Table 3]

Table 4 compares the subset of KPMG clients to clients of other Big Four auditors. The turnover of KPMG clients is similar to clients in the other Big Four sample, while the audit fees

of KPMG clients are, on average, smaller than the other Big Four sample. Similarly, non-audit fees and audit-related fees of KPMG clients are significantly smaller than clients in the other Big Four sample. When comparing the Transcript Sample to other KPMG clients (untabulated), the Transcript Sample is larger than the average KPMG client ($15.4 to $2.2 billion, respectively; *t*-test = -14.46) and has higher audit fees ($4.4 to $3.3 million, respectively; *t*-test = -5.95).

[Insert Table 4]

V. RESEARCH DESIGN AND RESULTS

Stock Market Reactions

We begin by examining the stock market reaction to two public announcements. The first date is April 11, 2017, when the news about the scandal was first disclosed through KPMG's announcement that six employees, including five partners, among them the leader of its audit practice, would leave the firm. The second date is January 22, 2018, when the SEC announced charges against six individuals. Our goal is to evaluate the market's response to these events by comparing the reaction of KPMG clients to the reaction of clients of other Big Four auditors.

One reason for the market to react to these events is the re-evaluation of the financial reporting quality of KPMG clients because of the scandal. If public markets believe the quality of financial reports is lower than previously thought, investors may assign a higher risk premium to these firms, leading to a lower price. This reasoning is consistent with the analyses in Chaney and Philipich (2002) and Nelson et al. (2008). However, as Nelson et al. (2008) demonstrate, there are impediments to such event studies, in the form of confounding effects. In addition, it is possible that the news about the scandal was not widely reported and disseminated to instigate a response.

Further, SEC Chairman Jay Clayton stated that there was no reason to suspect that the quality of the financial reports of KPMG clients was adversely affected by the scandal (McKenna 2018).

To perform the market reaction analysis, we identify 3,262 companies with a Big Four auditor in 2017 and 2018 without an earnings announcement in the two days before and after the dates of interest (to avoid confounding effects). Of the 3,262 companies, 2,897 have stock price information. We eliminate 57 companies that switch auditors during this period, resulting in a final sample of 2,840 firms. To investigate the market's reaction to these events, we follow a standard event study methodology and compute the abnormal return for firm i on day t by subtracting the returns of a value-weighted market index on day t from the raw return of each firm on that day.

We report cumulative abnormal returns (CARs) for various windows around the two dates. Table 5, Panel A, reports the CARs for KPMG's announcement of partner termination in April 2017. Average abnormal returns for KPMG range from -0.324 percent to 0.569 percent depending on the length of the event window. Average abnormal returns for other Big Four clients range from -0.264 percent to 0.510 percent. However, using a two-tailed t-test, we find no statistically significant difference between the abnormal returns of KPMG clients and those of other Big Four clients around this window.

In Panel B, we report the CARs around the SEC announcement in January 2018. Average abnormal returns for KPMG clients range from -0.497 percent to 0.074 percent depending on the length of the event window. Mean abnormal returns for other Big Four clients range from -0.054 percent to 0.679 percent. For the (-2,-1) event window, we do not find a statistically significant difference between the KPMG and other Big Four observations. However, when we evaluate the (-1,0), (0,+1), (0,+2), and (-1,+1) windows, we find statistically significant differences with the KPMG clients experiencing more negative mean abnormal returns.

Overall, the results indicate a differential market response to the 2018 SEC announcement for KPMG clients. Presumably, this event elevates the seriousness of the scandal because of the announcement of official and prosecutorial actions, compared to the self-reporting by KPMG in 2017. One interpretation consistent with these results is that the market re-evaluated the severity of the scandal in 2018 and responded by driving down stock prices of KPMG clients. Indeed, Barton (2005) shows the Enron scandal led to clients defecting from Arthur Andersen after the indictment for criminal conduct. Another interpretation of these results is that the news in 2017, while serious, was not widely disseminated.

[Insert Table 5]

Auditor Turnover Analysis

Methodology

We now turn to investigating our hypotheses of the response by KPMG and its clients to the revelation of the audit inspection scandal. In all of our analyses, including investigating client turnover in this section, one of the main variables is *Post*, which is an indicator variable equal to one for fiscal-years that end after January 22, 2018, and zero otherwise. This variable splits our sample period in two—the years before and after the January 2018 announcement by the SEC of prosecutorial actions against KPMG partners. We choose the 2018 event for two reasons. First, based on the event study results in the previous section, the 2018 announcement garnered market attention. Second, the 2018 announcement elevated the severity of the offenses to more formal judicial actions taken by the regulator. Both factors are more likely to affect the behavior of both KPMG and its clients and expedite any recognizable change in behavior. In addition, to further increase the power of our tests, we include the years 2015 and 2016 in the "before" period, and the years 2018 and 2019 in the "after" period. We remove firm-year observations from 2017 because

they might not yet reflect any actions taken by either the auditor or the client for two reasons: (i) the adjustment process to audit terms is slow; and (ii) the announcement in April 2017 was not as influential and, therefore, any adjustments to audit terms may have been deemed unwarranted.[11]

The first step in our investigation is testing Hypothesis 1a that involves client turnover in the years following the scandal. To operationalize our investigation, we estimate the following model with variable definitions provided in Appendix B:

$$Turnover_{it} = \beta_0 + \beta_1 KPMG_{it} + \beta_2 Post_{it} + \beta_3 KPMG * Post_{it} +$$
$$\beta_4 Size_{it} + \beta_5 Leverage_{it} + \beta_6 ROA_{it} + \beta_7 Opinion_{it} + \beta_8 MW404_{it} +$$
$$\beta_9 Growth_{it} + \beta_{10} Audit\ Fees_{it} + \beta_{11} BTM_{it} + \beta_{12} Tenure_{it} +$$
$$Industry\ Fixed\ Effects + Year\ Fixed\ Effects + \varepsilon_{it}, \qquad\qquad (1a)$$

where *Turnover* is an indicator variable equal to one if the client changed auditors between the prior and current year, and zero otherwise.[12] *KPMG* is an indicator equal to one if the client is audited by KPMG, and zero otherwise. Our variable of interest is *KPMG*Post*.

Consistent with prior literature, we include controls for firm characteristics shown to affect auditor turnover. We control for firm size (*Size*), firm performance (*ROA*), and annual sales growth (*Growth*). We control for financial distress, which has been a trigger for auditor turnover, using leverage (*Leverage*), distress risk (*BTM*), and whether the firm received a nonstandard audit report (*Opinion*) (Hennes, Leone, and Miller 2014). Ettredge, Heinz, Li, and Scholz (2011) suggest auditor switches are motivated by a decision to improve internal control quality. Therefore, we

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[11] To address concerns that the removal of 2017 fiscal years may affect the results, we replicate our analyses with the full 2015-2019 time series. This increases the sample size for the turnover, audit fees, non-audit fees, and loan loss provisioning analyses to 15,266, 16,006, 14,752, and 501 firm-year observations, respectively. In untabulated analyses, we find results consistent with the reported estimations. Inferences remain unchanged.

[12] We use linear probability models instead of nonlinear limited dependent variable models because of the use of fixed effects. Linear probability models have been used in prior research (e.g., Hanlon and Hoopes 2014) and overcome the potential bias and inconsistency in coefficients as well as standard errors problems that arise when using nonlinear limited dependent variable models (Greene 2004). In untabulated analyses, we replicate these analyses using the traditional logit model and find consistent results.

include *MW404* as a control variable. We also add auditor characteristics shown by prior literature to affect the turnover decision, including audit fees and tenure because tenure can influence board perceptions of audit quality (Hennes et al. 2014). Last, we include industry and year fixed effects.[13]

We then turn our attention to the Transcript Sample, the focus of Hypothesis 1b. These are KPMG clients whose engagements were in the PCAOB inspection samples and were compromised by the information leakage. We estimate the following variation of Equation (1a):

$$Turnover_{it} = \beta_0 + \beta_1 Transcript_{it} + \beta_2 Post_{it} + \beta_3 Transcript * Post_{it} + CONTROLS. \tag{1b}$$

Transcript is an indicator equal to one if the client or the signing partner is explicitly identified in the trial transcripts, and zero otherwise. The variable of interest in these specifications is *Transcript*Post*.

Results

The results of estimating Equation (1a) appear in Table 6, Column (1). The coefficient on the main effect of KPMG is negative and significant at the ten percent level, suggesting possible lower turnover for KPMG clients. The coefficient on our main variable of interest, *KPMG*Post*, is insignificant, suggesting that KPMG did not experience a significantly different turnover rate following the 2018 SEC announcement.

Table 6, Column (2), shows a positive and statistically significant coefficient (*t*-statistic of 2.85) on *Transcript*Post*.[14] This suggests that in the years following the scandal (i.e., 2018 and 2019), and unlike the general client base of KPMG, clients whose engagements were compromised

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[13] We cluster standard errors by client firm. In untabulated analyses, we examine the robustness of the results and cluster standard errors at the audit firm level. The *t*-statistics are generally larger but in the same direction as the reported results. Inferences remain unchanged.

[14] In untabulated analyses, we replicate these analyses using a traditional logit model and find consistent results. The coefficient on *KPMG*Post* (*Transcript*Post*) is negative and insignficant (positive and significant) with a *z*-statistic of -0.23 (2.25).

have a higher likelihood of changing auditors, supporting H1b. This result highlights the costs imposed on clients by the mere association of their names with the scandal. The turnover results also reflect the toll inflicted on KPMG because of the scandal.

[Insert Table 6]

Audit Fee Analysis

Methodology

Our second research question involves KPMG's response to the internal crisis through the adjustment of audit fees. On the one hand, because of the crisis, a firm may incur additional costs and may increase its audit fees to offset them. On the other hand, the crisis may reduce clients' confidence in the firm's ability to execute effective audits, leading to possible desertion of clients, as indicated by the turnover results in the previous section. To counteract that, the firm may reduce its audit fees, even temporarily, to retain clients.

Our analysis of audit fees focuses on the years surrounding the SEC announcement on January 22, 2018. To operationalize our investigation, we estimate the following model:

$$
\begin{aligned}
Audit\ Fees_{it} =\ & \beta_0 + \beta_1 KPMG_{it} + \beta_2 Post_{it} + \beta_3 KPMG * Post_{it} + \\
& \beta_4 Size_{it} + \beta_5 Complexity_{it} + \beta_6 Leverage_{it} + \beta_7 ROA_{it} + \\
& \beta_8 Growth_{it} + \beta_9 Foreign_{it} + \beta_{10} Merger_{it} + \beta_{11} Loss_{it} + \\
& \beta_{12} Tenure_{it} + \beta_{13} MW404_{it} + \beta_{14} Financing_{it} + \\
& \beta_{15} Inv\ Receivables_{it} + \beta_{16} Year-End_{it} + \beta_{17} Opinion_{it} + \\
& Industry\ Fixed\ Effects + Year\ Fixed\ Effects + \varepsilon_{it}, \qquad (2a)
\end{aligned}
$$

where *Audit Fees* is the natural logarithm of audit fees.[15] Similar to the previous analysis, we omit observations with fiscal year 2017. In addition to allowing a transition period for relevant parties to process the information about the scandal, omitting 2017 from this analysis accounts for the

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[15] For brevity, we restrict variable definitions to variables not previously defined.

inherent stickiness of audit fees and a delay in their adjustment. The variable of interest is *KPMG*Post*. Variables definitions can be found in Appendix B.

We include firm-specific factors shown by prior literature to be determinants of *Audit Fees*, including size (*Size*), segments (*Complexity*), the sum of inventory and receivables (*Inv Receivables*), whether the firm has foreign operations (*Foreign*), whether the firm has merger and acquisition activity (*Merger*), and whether the company obtained long-term financing during the year (*Financing*) (Simunic 1980; Hogan and Wilkins 2008; Lyon and Maher 2005). We also include several proxies to capture audit risk and audit effort, including the ratio of debt to assets (*Leverage*), firm performance (*ROA*), sales growth (*Growth*), whether the firm reports a loss (*Loss*), and whether the firm receives a nonstandard audit report (*Opinion*).

We also include engagement-specific variables found in prior research to be associated with audit fees. We include an indicator for the existence of a material weakness in internal controls (*MW404*) because additional procedures must be performed during such audits. We include an indicator for firms with a December year-end to identify audits requiring "busy season" resources as a fee premium is typically charged for them (*Year-End*). We control for the number of years the audit firm has served (*Tenure*) because auditor tenure is associated with a fee premium and because experience with the client may affect audit efficiency (Hogan and Wilkins 2008).

To formally evaluate Hypothesis 2b, we restrict attention to the Transcript Sample and estimate the following variation of Equation (2a):

$$Audit\ Fees_{it} = \beta_0 + \beta_1 Transcript_{it} + \beta_2 Post_{it} + \beta_3 Transcript * Post_{it} + CONTROLS. \tag{2b}$$

The variable of interest in these specifications is *Transcript*Post*.

Results

The results of estimating Equation (2a) appear in Table 7, Column (1). First, the coefficient on the main effect of KPMG confirms the summary statistics and shows that KPMG's clients have lower audit fees even after controlling for a variety of audit fee determinants. Second, the coefficient on *KPMG*Post* sheds light on Hypothesis 2a and assesses whether a reduction in audit fees occurs following the scandal revelation. The coefficient on *KPMG*Post* is insignificant, suggesting KPMG clients did not experience a significant shift in audit fees in the fiscal years following the revelation of the audit inspection scandal.

Column (2) reports results of estimating Equation (2b). The coefficient on *Transcript*Post* is negative but not statistically significant at conventional levels (t-statistic of -1.41). This suggests that Transcript Clients, too, have not experienced a significant reduction in audit fees in the years following the scandal.

Columns (1) and (2) report results based on all client firms, including firms that switched away from KPMG in the post-scandal years. There may be a concern that the changes in audit fees may be attributed to audit turnover and not directly to the KPMG scandal. For example, competing firms might have lured away clients from KPMG by offering lower audit fees, leading to possible misattribution of the results documented in the unrestricted specifications in Columns (1) and (2). To allay these concerns, in Columns (3) and (4), we present results based on a restricted sample of clients that retained KPMG over the entire sample period. We continue to observe no significant difference in both columns, solidifying the conclusion that there is no evidence of changes to audit fees by KPMG during this period.

[Insert Table 7]

24

Non-Audit Fee Analysis

Methodology

Another lever audit firms can use for client management is the adjustment of non-audit fees. We estimate models similar to those in the previous section, except we use non-audit fees as the dependent variable:

$$
\begin{aligned}
Non-Audit\ Fees_{it} = &\ \beta_0 + \beta_1 KPMG_{it} + \beta_2 Post_{it} + \beta_3 KPMG * \\
&\ Post_{it} + \beta_4 Size_{it} + \beta_5 Complexity_{it} + \beta_6 Leverage_{it} + \beta_7 ROA_{it} + \\
&\ \beta_8 Growth_{it} + \beta_9 Foreign_{it} + \beta_{10} Merger_{it} + \beta_{11} Loss_{it} + \\
&\ \beta_{12} Financing_{it} + \beta_{13} Annual\ Return_{it} + \beta_{14} Book-to- \\
&\ Market_{it} + \beta_{15} Restructure_{it} + \beta_{16} Special\ Items_{it} + \\
&\ Industry\ Fixed\ Effects + Year\ Fixed\ Effects + \varepsilon_{it}, \qquad\qquad (3a)
\end{aligned}
$$

where *Non-Audit Fees* is the natural logarithm of non-audit fees. The variable of interest is *KPMG*Post*. Variable definitions are provided in Appendix B. In our empirical analysis, we use two measures for *Non-Audit Fees*. First, we use the total non-audit fees paid to the external auditor. Second, we use only the audit-related portion of non-audit fees.

We include firm-level control variables shown by prior literature to be determinants of non-audit fees. We control for firm size (*Size*), firm complexity (*Complexity*), and the existence of foreign operations (*Foreign*). To capture the demand for outside consulting services, we also control for the occurrence of merger and acquisition activity (*Merger*), of restructuring charges (*Restructure*), and of obtaining debt or equity financing during the year (*Financing*) (Ashbaugh, LaFond, and Mayhew 2003). We also use several proxies to capture risk, including leverage (*Leverage*), performance (*ROA*), growth (*Growth*), stock market returns (*Annual Return*), whether the company has experienced a loss (*Loss*), the firm's book-to-market ratio (*Book-to-Market*), and whether the company has recorded special items (*Special Items*). Similar to the audit fee analysis, we omit 2017 as a transition year.

To formally test Hypothesis 3b, we estimate a model focusing on the Transcript Sample:

$$Non - Audit\ Fees_{it}\ = \beta_0 + \beta_1 Transcript_{it} +$$
$$\beta_2 Post_{it} + \beta_3 Transcript * Post_{it} + CONTROLS. \qquad (3b)$$

The variable of interest is *Transcript*Post*.

Results

Table 8 presents the estimation results of Equations (3a) and (3b) for non-audit fees (Columns (1) to (4)), and for the audit-related component of non-audit fees (Columns (5) to (8)). We begin with the models for *Non-Audit Fees*. Column (1) focuses on the KPMG client portfolio. The results indicate that KPMG clients, on average, pay lower non-audit fees than other Big Four clients, as reflected by the negative and significant coefficient on *KPMG*. To test Hypothesis 3a, we find a negative but insignificant coefficient on *KPMG*Post* (*t*-statistic of -1.54). That is, we find no evidence that KPMG clients, as a whole, pay lower non-audit fees in the years after the scandal. Column (2) focuses on the Transcript Sample. *Transcript*Post* is negative and statistically significant at the five percent level (*t*-statistic of -2.02). This suggests that the Transcript Sample, in particular, experienced a reduction in non-audit fees following the scandal.

The reduction in non-audit fees is not related to clients that may have left KPMG. In Column (4), when we restrict the analysis to clients that retained KPMG over the entire sample period, we continue to observe a negative and significant coefficient on *Transcript*Post* (*t*-statistic of -2.00). It is worth noting that, in the restricted sample, we observe a negative and significant (at the ten percent level) coefficient on *KPMG*Post*, demonstrating limited evidence that KPMG non-audit fees were lower after the scandal for clients that retained the firm.

To understand what drives the results for *Non-Audit Fees*, Columns (5) and (6) of Table 8 present the estimation results of Equations (3a) and (3b) using *Audit-Related Fees* as the dependent variable. For the entire KPMG client portfolio, Column (5) shows that KPMG clients, on average,

pay lower audit-related fees than other Big Four clients (*t*-statistic of -3.00). We find a negative but insignificant coefficient on *KPMG*Post* (*t*-statistic of -1.38). For the Transcript Sample, Column (6) reports a negative and statistically significant coefficient on *Transcript*Post* (*t*-statistic of -2.10). This suggests that clients in the Transcript Sample experienced a reduction in audit-related fees following the scandal. Similar results are obtained in the restricted sample.

Taken together, results on non-audit fees suggest that KPMG's ability to provide non-audit services to clients whose engagements were part of the PCAOB inspections diminished in the aftermath of the scandal. This could have occured because of a reduction in client demand, perhaps attributable to client desire to increase independence in appearance with the external auditor. The results are also consistent with KPMG discounting non-audit fees to compensate for potential damage inflicted on clients from the scandal.

[Insert Table 8]

VI. ADDITIONAL ANALYSES

The Loan Loss Provision

As discussed in Section II, KPMG created several internal monitoring programs to improve its performance in PCAOB inspections. Because of the number of banking clients in its portfolio and the PCAOB's prior concerns with KPMG's financial services engagements, KPMG created an additional monitoring system targeting the auditing of loan losses in banks.

We examine a subset of KPMG banking clients, for whom the loan loss provisioning comments apply. We are interested in how the scandal and KPMG's response to it might have affected the quality of loan-loss provisioning, given KPMG's focus on remedying deficiencies.

Prior research finds that banks manage the loan loss provision and loan charge-offs to manipulate earnings and improve regulatory capital (Beatty, Chamberlain, and Magliolo 1995; Collins, Shackelford, and Wahlen 1995; Liu and Ryan 2006; Ahmed, Takeda, and Thomas 1999; Kim and Kross 1998). According to prior research, an improvement in the validity of the provision signals higher financial reporting quality.[16] To that end, we evaluate whether the quality of provisioning in the financial statements of KPMG's banking clients has changed following the scandal by measuring how well the loan-loss provision maps into future charge-offs.

To avoid the use of a three-way interaction, we test the validity of the loan-loss provision using seemingly unrelated estimation and testing coefficient differences across subsamples (i.e., KPMG compared to other Big Four, Transcript compared to other Big Four). Following Altamuro and Beatty (2010), we estimate the following model:

$$
\begin{aligned}
CHGO_{it+1} = {} & \beta_0 + \beta_1 LLP_{it} + \beta_2 Post_{it} + \beta_3 LLP * Post_{it} + \\
& \beta_4 \Delta NPL_{it} + \beta_5 Size_{it} + \beta_6 LLP * Size_{it} + \beta_7 Commercial_{it} + \\
& \beta_8 Resloans_{it} + \beta_9 Consumer_{it} + \beta_{10} Tier\ 1_{it} + \beta_{11} Loss_{it} + \\
& \beta_{12} Efficiency_{it} + Year\ Fixed\ Effects + \varepsilon_{it}.
\end{aligned} \quad (4)
$$

The dependent variable is loan charge-offs in year $t+1$, scaled by beginning total assets (*CHGO*). We measure the loan-loss provision in year t, scaled by beginning total assets (*LLP*). The primary variable of interest is the interaction, *LLP*Post*.

We control for the change in non-performing loans (*ΔNPL*), calculated as the change in non-performing loans, scaled by non-performing loans in year t-1. We control for bank size (*Size*) and the interactive effect of the loan-loss provision on bank size (*LLP*Size*) because larger and more sophisticated banks are expected to have enhanced provisioning methodologies. Further, we

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[16] The SEC guidance for estimating loan losses (i.e., Staff Accounting Bulletin 102) states that a bank's loan loss allowance method is valid when it "include(s) procedures that adjust loan loss estimation methods to reduce differences between estimated losses and actual subsequent charge-offs."

control for characteristics of the loan portfolio, including the percentage of commercial and industrial loans (*Commercial)*, real estate loans (*Resloans*), and consumer loans (*Consumer*). Finally, we control for overall bank performance using the Tier 1 capital ratio (*Tier 1*), whether the bank reported a loss (*Loss*), and operating efficiency (*Efficiency*). *Efficiency* is measured as non-interest expense divided by the sum of interest income and non-interest income.

The banking sample includes 377 firm-year observations. We report the estimation results of Equation (4) in Table 9. We first bifurcate the sample of banks between the KPMG and other Big Four observations (Columns (1) and (2)). We then bifurcate the sample of banks between the Transcript Sample and other Big Four observations (Columns (3) and (4)).

In Table 9, Columns (1) and (2), we compare the quality of loan loss provisioning between KPMG and other Big Four firms. We do not find a significant coefficient on the interaction of *LLP*Post*. A Wald test for coefficient differences indicates the coefficient on *LLP*Post* of the KPMG subsample is not statistically different from that of the other Big Four subsample.

Columns (3) and (4) of Table 9 compare the Transcript Sample to the other Big Four. Column (3) reports a negative coefficient on *LLP*Post* (*t*-statistic of -1.60) for the Transcript Sample while Column (4) reports a positive coefficient on *LLP*Post* (*t*-statistic of 2.06) for the other Big Four subsample. A test for coefficient differences indicates that the coefficient on *LLP*Post* is statistically different, and lower, for the Transcript Sample compared to the other Big Four subsample. This result is consistent with the quality of loan loss provisioning of the Transcript Sample declining after the scandal because its mapping to future charge-offs is weaker. The results suggest the financial reporting quality of banks identified in the transcripts *deteriorated* in the post-scandal period compared to a sample of banks audited by other Big Four firms. Similar to the main

analyses, Columns (5) to (8) report results for firms that retained KPMG throughout the sample period. The results for the restricted sample are consistent with the unrestricted sample.

[Insert Table 9]

VII. CONCLUSION

This study examines the response by the stock market, KPMG, and its clients to the 2017 audit inspection scandal. The scandal presented a possible threat to KPMG's reputation because it exposed a significant failure of its audit quality control system as managed by its national office. Such a threat likely instigated a response by KPMG to preserve its reputation and mitigate economic damage in the form of client attrition. Further, the risks were especially high for clients linked indirectly to the scandal because investors may have been more likely to question the quality of their financial reporting due to potentially lower quality audits.

We find a negative stock price response of KPMG clients that is significant and different from the response of non-KPMG clients when the DOJ and SEC announced formal charges against KPMG and its personnel. We interpret these findings as the market reacting more strongly once the scandal accusations galvanized into formal public allegations with legal and regulatory ramifications. In the two years following the scandal, we find a significant increase in the frequency of departures of clients whose engagements were included as part of the information leaked from the PCAOB to KPMG (Transcript Sample). We find no significant change in audit fees for KPMG clients in general, and in particular for the Transcript Sample. In contrast, non-audit fees paid by the Transcript Sample declined. Finally, we find evidence of a possible reduction in audit quality, at least temporarily, at KPMG's banking clients. These results may stem from

KPMG's increased incentives to retain clients and/or alleviate clients' concerns about being linked indirectly to the scandal.

Our study has implications on the anonymity of audit clients subject to PCAOB audit inspections. Our results broadly suggest that the inadvertent exposure of KPMG clients' identities during the trial imposed additional costs on those clients because of a perceived negative shock to their reputation. The findings also explain why the SEC has emphasized that the scandal should not be used to make inferences about the audit quality of KPMG. Specifically, when the SEC charges against the KPMG executives were announced, SEC Chairman Jay Clayton stated: "…I am also concerned about *potential adverse collateral effects, including on our Main Street investors…I do not believe that today's actions against these six individuals will adversely affect the ability of SEC registrants to continue to use audit reports issued by KPMG* in filings with the Commission or for investors to rely upon those required reports. I do not expect that these actions will adversely affect the orderly flow of financial information to investors and the U.S. capital markets, including the filing of audited financial statements with the Commission" (Clayton 2018; emphasis added).

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APPENDIX A

CHRONOLOGY OF THE AUDIT INSPECTION SCANDAL

The Scheme

The audit inspection scandal that became public in 2017 has its origins in KPMG's performance in the PCAOB's inspection reviews during the 2012-2014 cycles. During those years, KPMG's deficiency rates increased more than its peers, reaching their highest levels in 2014, when the PCAOB judged 54 percent of inspected KPMG engagements as deficient. In December 2014, the PCAOB met with KPMG leadership and expressed concerns about KPMG's inspection results and its lack of responsiveness to PCAOB's ongoing comments, particularly for its clients in the banking industry. The PCAOB specifically criticized KPMG's "tone at the top."

Because of increasing regulatory pressure, KPMG attempted to improve its performance in PCAOB inspections by: (1) developing multiple internal monitoring programs, including one specifically aimed at the loan losses of its banking clients; (2) increasing national office personnel; (3) hiring professionals from the PCAOB; (4) assigning national office staff, including former PCAOB staff, to assist teams whose engagements were under inspection; (5) revising the incentive structure for audit teams from a punitive model for inspection deficiencies to a reward system for clean PCAOB inspections; and (6) hiring a data analytics consulting firm (i.e., Palantir) to assist in developing a predictive model of engagements likely to be targeted by the PCAOB.

In May 2015, Brian Sweet, a former PCAOB inspector with an expertise in financial institutions, joined KPMG as a partner and shared with leaders of KPMG's national office the engagements the PCAOB planned to inspect in 2015. This information was received after most clients on the list had issued their annual reports and the underlying workpapers were locked from further changes. Sweet also shared additional confidential information with Palantir to improve the predictive modeling of engagement selection. Under the provisions of SOX and the PCAOB's Ethics Code, Rule EC9, both actions were illegal.

In 2016, Sweet provided the list of banking clients targeted for PCAOB inspection to several KPMG leaders.[17] The timing of this information was critical. Because the 2016 inspection information was provided to KPMG during the 45-day documentation period, KPMG engagement teams had time to alter engagement workpapers for issues they anticipated the PCAOB would review, before the audit workpapers were locked but (in most cases) after the audit opinion had been issued. Relatedly, during this time, Sweet and Holder worked closely with engagement teams focusing on clients that were part of KPMG's allowance for loan losses monitoring program. After the 2016 inspection cycle, KPMG leaders met with the PCAOB and noted the significant reductions in deficiencies. In his trial testimony, Thomas Whittle, former National Partner-in-Charge of Quality Measurement, testified that "[i]n 2016 all 10 issuer banks inspected participated in the monitoring program and received no comments in our historical areas of deficiencies in testing complex aspects of the allowance" (United States District Court 2019).

In February 2017, Sweet again received a list of engagements targeted for PCAOB inspection and informed KPMG leadership. It is important to note the timing of this transmission. Because this information was received *while audits were still being completed*, KPMG

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[17] Sweet obtained the list from Jeffrey Wada, a PCAOB employee, through Cynthia Holder, a former PCAOB staff member who joined KPMG in September 2015.

engagement teams had an opportunity to alter audit testing and documentation before the audit was completed, before the audit opinion was issued, and before the workpapers were locked.

The Whistleblowers

On Friday, February 3, 2017, Sweet informed Diana Kunz, a KPMG partner in the Chicago office, that one of her engagements, Chemical Financial, had been approved for PCAOB inspection. Sweet not only explained why Chemical Financial had been selected but also what the focus areas were for the PCAOB's upcoming inspection cycle. The audit of Chemical Financial was still in progress and staff were conducting fieldwork. Kunz contacted her supervisors, John Rodi and Dave Marino, who co-led the Chicago office. Dave Marino noted in his testimony that:

> "It was clear to me that if she was going to be getting notification at that point in time while the audit was ongoing, that we had information in advance that we should not be privy to under any circumstance...Because we would never be notified from a regulator that there was going to be an inspection of an engagement while that engagement was still being executed" (United States District Court 2019).

Resolution

After KPMG's leadership was made aware of the information leakage, KPMG initiated an internal investigation and contacted the SEC and PCAOB. During its investigation, KPMG learned that six individuals either had improper advance warnings of engagements to be inspected by the PCAOB, or knew others had received such advance warnings and failed to report the situation promptly. On April 11, 2017, KPMG announced that the six employees, including Scott Marcello, the head of its audit practice in the United States would leave the firm. KPMG stated the issue did not affect any of its audit opinions or any of its client's financial statements.

On January 23, 2018, the United States Attorney for the Southern District of New York unsealed its indictments of David Middendorf, Thomas Whittle, David Britt, Cynthia Holder, and Jeffrey Wada for criminal charges of conspiracy and wire fraud in connection with the scheme to defraud the SEC and the PCAOB by obtaining, disseminating, and using confidential regulatory information.[18] The SEC simultaneously brought administrative charges against the defendants. Brian Sweet settled charges with the SEC, filed a guilty verdict for criminal charges, and agreed to cooperate with prosecutors. In February 2019, a joint trial for Wada and Middendorf began.

On March 11, 2019, Middendorf was convicted of four of five criminal charges. Wada was convicted on three of four charges. Middendorf was sentenced to one year and one day in prison and Wada was sentenced to nine months in prison.

Sweet settled charges with the SEC and pleaded guilty to the criminal allegations before the original indictments were announced. He cooperated with the government. In October 2018 Holder pleaded guilty to conspiracy to defraud the United States and to wire fraud. She was sentenced to eight months in prison and released in June 2020.

Whittle changed his plea on October 30, 2018 to guilty on all five criminal counts. He was a cooperating witness against Middendorf. A separate trial for Britt did not occur after he pleaded guilty to one count of wire fraud.

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[18] David Middendorf served as the National Managing Partner for Audit Quality. David Britt served as the National Banking and Capital Markets Co-Lead.

APPENDIX B

Variable Definitions

Dependent Variables

Audit Fees	Natural logarithm of audit fees (Audit Analytics)
Audit-Related Fees	Natural logarithm of audit-related fees. Audit-related fees are a component of non-audit fees and are defined as assurance and related services provided by the external auditor (e.g., employee benefit plan audits, due diligence services) (Audit Analytics)
Non-Audit Fees	Natural logarithm of non-audit fees (Audit Analytics)
Turnover	Indicator variable equal to one if the client changed auditors between the prior and current year, and zero otherwise (Audit Analytics)

Variables of Interest

KPMG	Indicator variable equal to one if the company is audited by KPMG, and zero otherwise (Audit Analytics)
Post	Indicator variable equal to one if the fiscal year-end is after the SEC AAER announcement on January 22, 2018, and zero otherwise
Transcript	Indicator variable equal to one if the company or the signing audit partner is named in the trial transcripts, and zero otherwise (PCAOB Form AP data)

Control Variables

Annual Return	Annual stock return over the fiscal year (CRSP)
Book-to-Market	Ratio of book value to market capitalization (Compustat)
Complexity	Natural logarithm of the number of business segments (Compustat)
Financing	Indicator variable equal to one if long-term debt or equity, and zero otherwise (Compustat)
Foreign	Indicator variable equal to one if the firm has foreign operations, and zero otherwise (Compustat)
Growth	One-year sales growth (Compustat)
Inv Receivables	Sum of inventories and receivables, scaled by total assets (Compustat)
Leverage	Total debt scaled by prior year total assets (Compustat)

Control Variables

Loss	Indicator variable equal to one if the firm reports negative income before taxes, and zero otherwise (Compustat)
Merger	Indicator variable equal to one if the firm is engaged in merger activity, and zero otherwise (Compustat)
MW404	Indicator variable equal to one if the firm received a material weakness, and zero otherwise (Audit Analytics)
Opinion	Indicator variable equal to one if the firm received a nonstandard audit report, and zero otherwise (Compustat)
Restructure	Indicator variable equal to one if the firm recorded a restructuring charge, and zero otherwise (Compustat)
ROA	Income before extraordinary items, divided by total assets (Compustat)
Size	Natural logarithm of total assets (Compustat)
Special Items	Indicator variable equal to one if the firm recorded a special item, and zero otherwise (Compustat)
Tenure	Number of years the audit firm has audited the client (Compustat)
Year-End	Indicator variable equal to one if the firm has a December 31 year-end, and zero otherwise (Compustat)

TABLE 1
Sample Selection

Description of Selection Criteria	Auditor Turnover Sample	Audit Fee Sample	Non-Audit Fee Sample
Firm-year observations where assets is non-missing in Compustat for 2015-2019	40,347	40,347	40,347
Exclude observations with 2017 fiscal year ends	-8,222	-8,222	-8,222
Exclude observations with missing audit fees in Audit Analytics	-10,249	-10,249	-10,249
Exclude firms not using a Big Four audit firm in the current year	-7,883	-7,883	-7,833
Exclude observations missing control variables	-1,785	-1,197	-2,182
Final Sample	**12,208**	**12,796**	**11,811**

This table provides sample selection criteria. The sample is reduced for firms missing assets in Compustat, lacking audit fee data in Audit Analytics, not employing a Big Four auditor, and missing necessary variable data.

TABLE 2
Sample Composition by Year and Industry

Panel A: Observations Audited by KPMG vs. the Other Big Four over Time

Year	KPMG	Other Big Four	Total
2015	748	2,489	3,237
2016	709	2,425	3,134
2018	672	2,336	3,008
2019	592	2,237	2,829
Total	2,721	9,487	12,208

Panel B: Observations Identified in Trial Transcript vs. the Other Big Four over Time

Year	Transcript	Other Big Four	Total
2015	70	3,167	3,237
2016	69	3,065	3,134
2018	60	2,948	3,008
2019	56	2,773	2,829
Total	255	11,953	12,208

Panel C: Observations Audited by KPMG vs. the Other Big Four based on FF-12 industries

	KPMG		Other Big Four	
Industry	N	Freq. (%)	N	Freq. (%)
Consumer non-durables	117	4.30	363	3.83
Consumer durables	40	1.47	215	2.27
Manufacturing	157	5.77	862	9.09
Energy	168	6.17	429	4.52
Chemicals	83	3.05	222	2.34
Business equipment	407	14.96	1,605	16.92
Telecommunications	91	3.34	240	2.53
Utilities	64	2.35	354	3.73
Wholesale and retail	289	10.62	736	7.76
Healthcare	233	8.56	1,251	13.19
Banks and financial institutions	657	24.15	1,868	19.69
Other	415	15.25	1,342	14.15
TOTAL	2,721	100.00	9,487	100.00

Panel D: Observations Identified in the Trial Transcript vs. the Other Big Four based on FF-12 industries

	Transcript		Other Big Four	
Industry	N	Freq. (%)	N	Freq. (%)
Consumer non-durables	6	2.35	474	3.97
Consumer durables	4	1.57	251	2.10
Manufacturing	8	3.14	1,011	8.46
Energy	4	1.57	593	4.96
Chemicals	4	1.57	301	2.52
Business equipment	12	4.71	2,000	16.73
Telecommunications	5	1.96	326	2.73
Utilities	8	3.14	410	3.43
Wholesale and retail	28	10.98	997	8.34
Healthcare	2	0.78	1,482	12.40
Banks and financial institutions	153	60.00	2,372	19.84
Other	21	8.24	1,736	14.52
TOTAL	255	100.00	11,953	100.00

This table presents the frequency of firm-year observations for the audit turnover sample. Panel A (B) presents the frequency of observations for the KPMG (Transcript) and the Other Big Four subsamples over time. Panel C (D) presents the frequency of observations for the KPMG (Transcript) and the Other Big Four subsamples by industry.

TABLE 3
Descriptive Statistics

Variable	N	Mean	p25	p50	p75	Std Dev
Turnover	12,208	0.04	0.00	0.00	0.00	0.20
Audit Fees	12,796	1.20	0.66	1.04	1.60	0.74
Non-Audit Fees	11,811	0.41	0.04	0.20	0.58	0.53
Audit-Related Fees	11,811	0.20	0.00	0.03	0.21	0.37
KPMG	12,796	0.22	0.00	0.00	0.00	0.41
Transcript	12,796	0.02	0.00	0.00	0.00	0.14
Post	12,796	0.48	0.00	0.00	1.00	0.50
Size	12,796	7.88	6.54	7.85	9.17	2.02
Leverage	12,796	0.34	0.11	0.29	0.48	0.36
ROA	12,796	0.05	0.03	0.08	0.14	0.31
Opinion	12,796	0.29	0.00	0.00	1.00	0.45
MW404	12,796	0.06	0.00	0.00	0.00	0.24
Growth	12,796	0.13	-0.04	0.04	0.14	0.66
Book-to-Market	12,208	0.54	0.22	0.45	0.80	0.90
Tenure	12,796	14.41	6.00	12.00	21.00	10.03
Complexity	12,796	0.73	0.00	1.00	1.10	0.66
Foreign	12,796	0.47	0.00	0.00	1.00	0.50
Merger	12,796	0.37	0.00	0.00	1.00	0.48
Loss	12,796	0.29	0.00	0.00	1.00	0.46
Financing	12,796	0.91	1.00	1.00	1.00	0.29
Inv Receivables	12,796	0.21	0.05	0.15	0.30	0.21
Year-End	12,796	0.81	1.00	1.00	1.00	0.39
Annual Return	11,811	0.05	-0.18	0.04	0.23	0.39
Restructure	11,811	0.01	0.00	0.00	0.00	0.10
Special Items	11,811	0.75	0.00	1.00	1.00	0.43

This table reports descriptive statistics for the variables used in our empirical analyses. Variables are defined in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles.

TABLE 4
Descriptive Statistics Bifurcated by Subsamples

Variable	KPMG N	Mean	Median	Other Big Four N	Mean	Median	Comparison (*t*-test/Wilcoxon) *p*-value	*p*-value
Turnover	2,721	0.04	0.00	9,487	0.04	0.00	0.229	n/a
Audit Fees	2,784	1.12	0.97	10,012	1.23	1.05	0.000	0.000
Non-Audit Fees	2,620	0.32	0.15	9,191	0.44	0.22	0.000	0.000
Audit-Related Fees	2,620	0.16	0.02	9,191	0.21	0.03	0.000	0.000
Post	2,784	0.46	0.00	10,012	0.48	0.00	0.130	n/a
Size	2,784	7.85	7.86	10,012	7.89	7.85	0.469	0.670
Leverage	2,784	0.32	0.26	10,012	0.35	0.30	0.001	0.000
ROA	2,784	0.05	0.08	10,012	0.04	0.08	0.517	0.313
Opinion	2,784	0.31	0.00	10,012	0.29	0.00	0.042	n/a
MW404	2,784	0.08	0.00	10,012	0.06	0.00	0.001	n/a
Growth	2,784	0.11	0.05	10,012	0.14	0.04	0.126	0.865
Book-to-Market	2,721	0.57	0.48	9,487	0.54	0.44	0.143	0.000
Tenure	2,784	13.76	12.00	10,012	14.62	13.00	0.000	0.001
Complexity	2,784	0.73	1.00	10,012	0.72	1.00	0.684	0.791
Foreign	2,784	0.43	0.00	10,012	0.48	0.00	0.000	n/a
Merger	2,784	0.35	0.00	10,012	0.37	0.00	0.010	n/a
Loss	2,784	0.27	0.00	10,012	0.30	0.00	0.005	n/a
Financing	2,784	0.90	1.00	10,012	0.91	1.00	0.730	n/a
Inv Receivables	2,784	0.24	0.18	10,012	0.21	0.14	0.000	0.000
Year-End	2,784	0.80	1.00	10,012	0.82	1.00	0.041	n/a
Annual Return	2,620	0.05	0.04	9,191	0.05	0.04	0.507	0.358
Restructure	2,620	0.01	0.00	9,191	0.01	0.00	0.388	n/a
Special Items	2,620	0.75	1.00	9,191	0.75	1.00	0.966	n/a

This table presents descriptive statistics comparing observations in the KPMG and Other Big Four subsamples. Panel A presents descriptive statistics for the auditor turnover analysis. Panel B presents descriptive statistics for the audit fee analysis. Panel C presents descriptive statistics for the non-audit fee analysis. Differences are calculated using two-tailed *t*-tests of means and Wilcoxon rank-sum tests of medians for continuous variables, and chi-squared tests of equal proportions for indicator variables. Variables are defined in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles.

TABLE 5
Market Reaction to KPMG Events

Panel A: April 11, 2017 KPMG Announcement of Partner Termination

Window	KPMG (N=679)			Other Big Four (N=2,161)			Comparison (t-test)		
	CAR (%)	t-stat		CAR (%)	t-stat		Mean	t-stat	
(-2,-1)	0.250	2.492	**	0.136	2.122	**	0.114	-0.894	
(-1,0)	0.569	5.610	***	0.510	7.571	***	0.059	-0.443	
(0,+1)	-0.177	-1.951	*	-0.157	-2.598	***	-0.020	0.172	
(0,+2)	-0.324	-2.708	***	-0.264	-3.444	***	-0.060	0.391	
(-1,+1)	0.152	1.398		0.000	0.009		0.152	-1.000	

Panel B: January 22, 2018 SEC Announcement of KPMG Partner AAER

Window	KPMG (N=679)			Other Big Four (N=2,161)			Comparison (t-test)		
	CAR (%)	t-stat		CAR (%)	t-stat		Mean	t-stat	
(-2,-1)	0.074	0.611		0.174	2.732	***	-0.100	0.754	
(-1,0)	-0.003	-0.027		0.469	6.838	***	-0.472	3.439	***
(0,+1)	-0.345	-2.901	***	0.198	2.540	**	-0.543	3.520	***
(0,+2)	-0.497	-3.684	***	-0.054	-0.604		-0.443	2.519	**
(-1,+1)	-0.047	-0.345		0.679	7.497	***	-0.726	4.059	***

Panel A presents mean cumulative abnormal returns (CAR %) surrounding April 11, 2017 (day 0), the day KPMG announces the termination of five partners and the director of its audit practice in the United States. Panel B presents mean CARs surrounding January 22, 2018 (day 0), the day the SEC announces cease-and-desist proceedings against select KPMG partners through Accounting and Auditing Enforcement Release (AAER) No. 3918. In both panels, abnormal returns are calculated as the return for firm *i* on day *t* less the value-weighted market return on day *t*. Differences are calculated using two-tailed *t*-tests of means.

TABLE 6
Auditor Turnover Analysis

Variable	DV = *Turnover*	
	(1)	**(2)**
KPMG	-0.0107*	
	(-1.81)	
Transcript		-0.0381***
		(-4.42)
Post	-0.0066	-0.0079
	(-1.20)	(-1.51)
KPMG*Post	-0.0007	
	(-0.08)	
Transcript*Post		0.0660***
		(2.85)
Size	0.0062***	0.0061***
	(3.07)	(2.97)
Leverage	0.0076	0.0081
	(0.93)	(1.00)
ROA	-0.0094	-0.0093
	(-0.76)	(-0.75)
Opinion	0.0007	0.0004
	(0.16)	(0.08)
MW404	0.0580***	0.0573***
	(5.38)	(5.32)
Growth	0.0031	0.0031
	(0.87)	(0.90)
Audit Fees	-0.0275***	-0.0267***
	(-5.65)	(-5.51)
BTM	0.0018	0.0019
	(0.82)	(0.85)
Tenure	-0.0029***	-0.0029***
	(-14.63)	(-14.62)
Clustered Standard Errors	Firm	Firm
Fixed Effects	Industry & Year	Industry & Year
Observations	12,208	12,208
Adjusted R-squared	0.036	0.036

This table presents the results of estimating Equations (1a) and (1b) where the dependent variable is *Turnover*. Industry and year fixed effects are included. Standard errors are clustered at the firm level. The constant is unreported. Variables are defined in Appendix B. Continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-tailed statistical significance of coefficient estimates at the 1, 5, and 10 percent levels, respectively.

TABLE 7
Audit Effects: Audit Fee Analysis

Variable	DV = *Audit Fees*			
	Unrestricted Sample		**Restricted Sample**	
	(1)	**(2)**	**(3)**	**(4)**
KPMG	-0.0710***		-0.0646***	
	(-4.40)		(-3.96)	
Transcript		-0.0750		-0.0789
		(-1.29)		(-1.35)
Post	0.0139*	0.0174**	0.0120	0.0142*
	(1.73)	(2.26)	(1.50)	(1.85)
KPMG*Post	0.0062		0.0032	
	(0.45)		(0.23)	
Transcript*Post		-0.0438		-0.0345
		(-1.41)		(-1.09)
Size	0.2952***	0.2962***	0.2959***	0.2969***
	(54.71)	(54.55)	(54.57)	(54.39)
Complexity	0.1016***	0.1014***	0.1025***	0.1024***
	(9.96)	(9.92)	(10.02)	(9.99)
Leverage	-0.0282*	-0.0268*	-0.0288*	-0.0276*
	(-1.87)	(-1.77)	(-1.90)	(-1.82)
ROA	-0.1346***	-0.1350***	-0.1547***	-0.1560***
	(-4.64)	(-4.48)	(-4.30)	(-4.20)
Growth	-0.0017	-0.0015	-0.0015	-0.0011
	(-0.34)	(-0.29)	(-0.30)	(-0.22)
Foreign	0.2581***	0.2597***	0.2590***	0.2603***
	(17.01)	(17.03)	(17.01)	(17.02)
Merger	0.0896***	0.0903***	0.0884***	0.0889***
	(7.81)	(7.85)	(7.69)	(7.71)
Loss	0.1011***	0.1032***	0.0973***	0.0991***
	(8.06)	(8.18)	(7.56)	(7.64)
Tenure	0.0041***	0.0042***	0.0039***	0.0040***
	(5.73)	(5.83)	(5.53)	(5.57)
MW404	0.1783***	0.1755***	0.1847***	0.1827***
	(8.93)	(8.74)	(9.20)	(9.06)
Financing	-0.0181	-0.0184	-0.0171	-0.0173
	(-1.01)	(-1.04)	(-0.95)	(-0.97)
Inv Receivables	-0.0325	-0.0307	-0.0257	-0.0229
	(-0.86)	(-0.79)	(-0.68)	(-0.59)
Year-End	-0.0089	-0.0081	-0.0094	-0.0087
	(-0.52)	(-0.48)	(-0.55)	(-0.51)
Opinion	0.0620***	0.0596***	0.0638***	0.0615***
	(5.65)	(5.47)	(5.81)	(5.64)
Clustered Standard Errors	Firm	Firm	Firm	Firm
Fixed Effects	Industry & Year	Industry & Year	Industry & Year	Industry & Year
Observations	12,796	12,796	12,694	12,694
Adjusted R-squared	0.703	0.702	0.704	0.703

This table presents the results of estimating Equations (2a) and (2b) where the dependent variable is the natural logarithm of audit fees. Industry and year fixed effects are included. Standard errors are clustered at the firm level. The constant is unreported. Variables are defined in Appendix B. Continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-tailed statistical significance of coefficient estimates at the 1, 5, and 10 percent levels, respectively.

TABLE 8
Audit Effects: Non-Audit Fee Analysis

| | DV = *Non-Audit Fees* | | | | DV = *Audit-Related Fees* | | | |
| | Unrestricted Sample | | Restricted Sample | | Unrestricted Sample | | Restricted Sample | |
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
KPMG	-0.0996***		-0.0968***		-0.0348***		-0.0333***	
	(-6.51)		(-6.21)		(-3.00)		(-2.81)	
Transcript		-0.0257		-0.0235		0.0196		0.0213
		(-0.45)		(-0.41)		(0.40)		(0.43)
Post	-0.0334***	-0.0343***	-0.0341***	-0.0363***	-0.0208***	-0.0219***	-0.0220***	-0.0235***
	(-4.18)	(-4.72)	(-4.25)	(-4.93)	(-3.22)	(-3.71)	(-3.39)	(-3.94)
KPMG*Post	-0.0195		-0.0238*		-0.0140		-0.0156	
	(-1.54)		(-1.84)		(-1.38)		(-1.51)	
Transcript*Post		-0.0773**		-0.0801**		-0.0614**		-0.0637**
		(-2.02)		(-2.00)		(-2.10)		(-2.09)
Size	0.1695***	0.1705***	0.1704***	0.1713***	0.1088***	0.1091***	0.1095***	0.1097***
	(30.93)	(31.02)	(30.86)	(30.94)	(24.48)	(24.50)	(24.41)	(24.43)
Complexity	0.0524***	0.0524***	0.0519***	0.0520***	0.0304***	0.0304***	0.0305***	0.0306***
	(5.09)	(5.05)	(5.01)	(4.99)	(4.23)	(4.21)	(4.22)	(4.22)
Leverage	-0.0114	-0.0084	-0.0121	-0.0092	-0.0291***	-0.0277**	-0.0294***	-0.0281**
	(-0.86)	(-0.63)	(-0.91)	(-0.69)	(-2.65)	(-2.53)	(-2.67)	(-2.56)
ROA	-0.0977***	-0.0965***	-0.1107***	-0.1107***	-0.0909***	-0.0904***	-0.1097***	-0.1097***
	(-5.37)	(-5.01)	(-4.52)	(-4.29)	(-4.39)	(-4.27)	(-3.99)	(-3.91)
Growth	-0.0061	-0.0057	-0.0062	-0.0056	0.0004	0.0005	0.0002	0.0004
	(-1.32)	(-1.24)	(-1.34)	(-1.22)	(0.13)	(0.16)	(0.08)	(0.13)
Foreign	0.1288***	0.1318***	0.1300***	0.1328***	0.0443***	0.0456***	0.0446***	0.0458***
	(8.67)	(8.81)	(8.72)	(8.84)	(3.99)	(4.09)	(4.00)	(4.09)
Merger	0.0344***	0.0358***	0.0343***	0.0356***	0.0204**	0.0211**	0.0208**	0.0214**
	(2.83)	(2.93)	(2.81)	(2.90)	(2.26)	(2.32)	(2.29)	(2.35)
Loss	0.0172	0.0196*	0.0152	0.0175	0.0375***	0.0384***	0.0352***	0.0360***
	(1.46)	(1.66)	(1.26)	(1.44)	(4.29)	(4.39)	(3.83)	(3.91)
Financing	-0.0159	-0.0166	-0.0161	-0.0165	-0.0043	-0.0046	-0.0046	-0.0049
	(-0.98)	(-1.03)	(-0.98)	(-1.01)	(-0.40)	(-0.43)	(-0.42)	(-0.45)
Annual Return	-0.0315***	-0.0322***	-0.0294***	-0.0301***	-0.0146**	-0.0149**	-0.0119*	-0.0122**
	(-3.70)	(-3.77)	(-3.40)	(-3.49)	(-2.37)	(-2.42)	(-1.93)	(-1.99)
Book-to-Market	-0.0335***	-0.0325***	-0.0331***	-0.0321***	-0.0198***	-0.0194***	-0.0197***	-0.0193***

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(-4.42)	(-4.25)	(-4.32)	(-4.16)	(-3.88)	(-3.80)	(-3.81)	(-3.73)
Restructure	-0.0304	-0.0350	-0.0375	-0.0419	-0.0049	-0.0067	-0.0052	-0.0068
	(-0.74)	(-0.84)	(-0.92)	(-1.01)	(-0.16)	(-0.21)	(-0.17)	(-0.22)
Special Items	0.0613***	0.0602***	0.0613***	0.0600***	0.0196**	0.0190**	0.0200**	0.0193**
	(5.58)	(5.42)	(5.55)	(5.39)	(2.30)	(2.22)	(2.32)	(2.24)
Clustered Standard Errors	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Fixed Effects	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry & Year	Industry & Year
Observations	11,811	11,811	11,719	11,719	11,811	11,811	11,719	11,719
Adjusted R-squared	0.438	0.431	0.439	0.432	0.333	0.331	0.334	0.332

This table presents the results of estimating Equations (3a) and (3b). Columns (1) through (4) show results where the dependent variable is the natural logarithm of non-audit fees (*Non-Audit Fees*). Columns (5) through (8) show results where the dependent variable is the natural logarithm of audit-related fees (*Audit-Related Fees*). Industry and year fixed effects are included. Standard errors are clustered at the firm level. The constant is unreported. Variables are defined in Appendix B. Continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-tailed statistical significance of coefficient estimates at the 1, 5, and 10 percent levels, respectively.

TABLE 9
Additional Analysis: Validity of the Loan-Loss Provision Analysis

Variable	DV = *CHGO* Unrestricted Sample				DV = *CHGO* Restricted Sample			
	(1) KPMG	(2) Other Big Four	(3) Transcript	(4) Other Big Four	(5) KPMG	(6) Other Big Four	(7) Transcript	(8) Other Big Four
LLP	-1.1218*	-0.9399	0.0122	-1.0158*	-0.9876	-0.9399	0.0298	-0.9927*
	(-1.67)	(-0.91)	(0.01)	(-1.77)	(-1.46)	(-0.91)	(0.03)	(-1.69)
Post	0.0004	-0.0011	0.0011*	-0.0009	0.0007	-0.0011	0.0011*	-0.0008
	(0.81)	(-1.40)	(1.78)	(-1.60)	(1.29)	(-1.40)	(1.80)	(-1.50)
*LLP*Post*	-0.0047	0.1875	-0.0908	0.1735**	-0.0153	0.1875	-0.0909	0.1740**
	(-0.07)	(1.53)	(-1.60)	(2.06)	(-0.24)	(1.53)	(-1.59)	(2.04)
ΔNPL	0.0003	-0.0001	0.0004	-0.0001	0.0003	-0.0001	0.0005	-0.0001
	(1.38)	(-0.98)	(1.18)	(-0.61)	(1.49)	(-0.98)	(1.20)	(-0.64)
Size	-0.0004	-0.0009***	-0.0002	-0.0007***	-0.0003	-0.0009***	-0.0002	-0.0007***
	(-1.33)	(-3.91)	(-0.49)	(-3.27)	(-1.00)	(-3.91)	(-0.42)	(-3.17)
*LLP*Size*	0.0969**	0.0737	0.0269	0.0821**	0.0902**	0.0737	0.0263	0.0809**
	(2.50)	(1.27)	(0.50)	(2.51)	(2.33)	(1.27)	(0.49)	(2.42)
Commercial	-0.0036	-0.0089***	-0.0013	-0.0081***	-0.0028	-0.0089***	-0.0013	-0.0077***
	(-1.56)	(-2.68)	(-0.73)	(-2.73)	(-1.25)	(-2.68)	(-0.72)	(-2.61)
Resloans	-0.0030***	-0.0088***	-0.0018	-0.0076**	-0.0029***	-0.0088***	-0.0018	-0.0075**
	(-2.77)	(-3.35)	(-1.41)	(-2.48)	(-2.82)	(-3.35)	(-1.42)	(-2.47)
Consumer	0.0064**	0.0078**	0.0160***	0.0061	0.0064**	0.0078**	0.0157***	0.0062
	(2.17)	(2.00)	(4.48)	(1.61)	(2.26)	(2.00)	(4.33)	(1.62)
Tier 1	-0.0017	-0.0049	-0.0113	-0.0001	-0.0028	-0.0049	-0.0110	0.0004
	(-0.23)	(-0.73)	(-1.25)	(-0.02)	(-0.37)	(-0.73)	(-1.19)	(0.07)
Loss	0.0022*	0.0009		0.0021**	0.0023**	0.0009		0.0021**
	(1.86)	(0.84)		(2.20)	(2.13)	(0.84)		(2.27)
Efficiency	0.0014	-0.0051**	0.0022	-0.0036*	0.0013	-0.0051**	0.0021	-0.0037*
	(0.74)	(-2.18)	(0.91)	(-1.88)	(0.69)	(-2.18)	(0.85)	(-1.95)
Clustered Standard Errors	Firm	Firm	Firm	Firm	Firm	Firm	Firm	Firm
Fixed Effects	Year	Year	Year	Year	Year	Year	Year	Year
Observations	184	193	93	284	173	193	90	276
Adjusted R-squared	0.766	0.764	0.877	0.722	0.780	0.764	0.876	0.721

Wald tests for coefficient differences:

[KPMG]LLP*Post – *[Other Big Four]* *LLP*Post = 0*	Chi-Sq.: 1.89	Chi-Sq.: 2.15
[Transcript]LLP*Post – *[Other Big Four]* *LLP*Post = 0*	Chi-Sq.: 6.76***	Chi-Sq.: 6.67***

This table presents the results of estimating Equations (4a) and (4b). The dependent variable is loan charge-offs (*CHGO*) during year *t*+1. Columns (1) and (2) report the results across two subsamples, KPMG and Other Big Four, and Columns (3) and (4) report the results across two subsamples, Transcript and Other Big Four, for the unrestricted sample. Columns (5) and (6) report the results across two subsamples, KPMG and Other Big Four, and Columns (7) and (8) report the results across two subsamples, Transcript and Other Big Four, for the restricted sample. Year fixed effects are included. Standard errors are clustered at the firm level. The constant is unreported. Tests for coefficient differences across the subsamples are conducted by using seemingly unrelated estimation and the Wald test. Variables are defined in Appendix B. Continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-tailed statistical significance of coefficient estimates at the 1, 5, and 10 percent levels, respectively.