Does Auditor Independence Matter? Evidence from SEC Sanctions against PricewaterhouseCoopers LLP for Prohibited Non-Audit Services

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ABSTRACT

We examine stock market effects related to news of the Securities and Exchange Commission's (SEC) sanctions against PricewaterhouseCoopers LLP (PWC) in 2019. PWC provided prohibited non-audit services (NAS) to audit clients and mischaracterized the nature of the services to the audit committees by telling audit committees the prohibited services were audit services when they were not. The sanctions against PWC provide a rare opportunity to explore whether investors believe that the provision of certain *prohibited* NAS to audit clients violates an audit firm's independence, thus reducing investors' confidence in the audited financial statements. Univariate and Schipper-Thompson (1983) results show that, overall, stock prices for PWC clients reacted significantly negatively to news of the SEC sanctions while prices for non-PWC clients did not. We also find that the reaction is more negative for PWC clients that have higher abnormal fees and smaller audit committees. The examination of earnings response coefficients provides evidence that investors in PWC clients value unexpected earnings less in the quarter after the disclosure of sanctions than in the quarter before suggesting a reduction in investor confidence related to the disclosure of independence violations by PWC.

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INTRODUCTION

We examine the stock market reaction to news of the Securities and Exchange Commission's (SEC) sanctions against PricewaterhouseCoopers LLP (PWC) for violating auditor independence rules. On September 23, 2019, the SEC (2019a) announced that it was sanctioning PWC for a variety of violations, including "improper professional conduct…from 2013 through 2016, in connection with nineteen engagements for fifteen SEC-registrant issuers." The violations involved PWC providing prohibited non-audit services (NAS) to audit clients and mischaracterizing to audit committees the nature of the services. PWC was fined a total of $7,944,055 and a (non-audit) partner, Brandon Sprankle, was also sanctioned and fined $25,000. In addition, PWC agreed to undergo extensive remedial efforts to improve its quality control policies and procedures over independence and the provision of non-audit services to its SEC audit clients.

There is a longstanding debate on the association between the provision of NAS to audit clients and audit quality. On the one hand, some argue providing NAS to audit clients poses a self-interest threat that impairs auditor independence and harms audit quality. Citing auditor independence concerns, Section 201 of the Sarbanes-Oxley Act of 2002 (SOX) bans auditors from providing several types of NAS. Nine types of activities are specifically banned under SOX, one of which directly relates to our study: financial information systems design and implementation. On the other hand, some argue that litigation exposure (Palmrose 1988; Shu 2000) and reputation concerns (Watts and Zimmerman 1983) provide strong enough counterincentives to ensure auditors maintain independence while providing NAS to audit clients. In addition, the insight gained by auditors providing NAS could generate knowledge

spillovers that improve the audit (Simunic 1984; Beck, Frecka, and Solomon 1988); therefore, banning NAS could be detrimental to audit quality.

If investors believe that the provision of prohibited NAS to clients impairs auditor independence, we would expect investors in PWC clients to perceive the news of SEC sanctions against PWC negatively. However, if investors believe reputation and litigation concerns provide adequate incentives for PWC to maintain independence, we would expect investors to have no reaction, or even a positive reaction if investors believe providing NAS leads to knowledge spillovers that improve the audit. We also hypothesize that investor reaction varies by client characteristics. The SEC sanctions reveal that PWC misled audit committees about the prohibited NAS by intentionally mischaracterizing them as audit services. Since the SEC did not identify the issuers for which PWC provided prohibited services, investors may conclude that clients paying abnormally high total fees to the audit firm were more likely to have purchased prohibited NAS from PWC. Therefore, we predict that the severity of any possible economic bond effects or knowledge spillover effects will be increasing in the amount of abnormal total fees paid to PWC. Lastly, since the passage of SOX, the audit committee has taken on a more critical role in audit quality and must evaluate any NAS before they are purchased from the audit firm. Therefore, we examine how the strength of the audit committee (measured using audit committee size) influences investors' perceptions of the SEC sanctions against PWC.

We examine perceived audit quality rather than actual audit quality for these reasons. Examining perceived quality allows us to study the net benefit or net cost of audit quality (DeFond and Zhang 2014); that is, the tradeoff between the knowledge spillover and impaired auditor independence arguments. Additionally, the SEC sanctions do not identify the audit clients or exact years for which the PWC independence violations occurred. Because we can

only measure actual audit quality (e.g., restatements, discretionary accruals) for PWCs portfolio of clients, the research design may not be powerful enough to detect subtle audit quality changes. As DeFond and Zhang (2014, p. 288) note, perception-based audit quality measures "…are continuous, and thus capture both egregious failures as well as more subtle variations in audit quality."

We first examine size-adjusted abnormal returns around the event date for PWC clients. We find that PWC clients have significantly negative abnormal returns whereas other Big 4 clients do not and the PWC result is concentrated in clients with high abnormal fees and smaller audit committees. Since the SEC announced the PWC event on a single day (September 23, 2019), we must address event date clustering in our methodology; therefore, we use the Schipper and Thompson (1983) methodology to mitigate concerns about cross-sectional dependence of the residuals. We find the event date is significantly negative for the one-day and three-day event windows (the two-day event window is negative but insignificant) for PWC clients but insignificant across all three days for non-PWC clients. In terms of client characteristics, we find the negative reaction is concentrated in subsamples with high abnormal fees and smaller audit committees.[1] Lastly, we examine earnings response coefficients (ERCs), and find investors in PWC clients value unexpected earnings less in the quarter after news of the sanctions is released than they did in the quarter before the news. Overall, our evidence suggests investors in PWC clients perceive news of the SEC sanctions against PWC negatively, and that investor confidence in the financial statements of PWC clients is lower once news of the independence violations are released.

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[1] In additional analyses (reported in Tables 9 and 10), we conduct sensitivity tests to mitigate concerns that client size is driving our audit committee results.

Our work makes the following contributions to the literature. First, we contribute to the literature on NAS and perceived audit quality. The sanctions against PWC provide a rare opportunity to examine how investors perceive independence when the audit firm is providing prohibited NAS. Research to date has studied the association between *allowed* NAS and investors perception of audit quality and find mixed evidence (Francis and Ke 2006; Krishnan, Sami and Zhang 2005; Larcker and Richardson 2004; Khurana and Raman 2006; Ghosh, Kallapur, and Moon 2009). These studies use the measure of permitted (and disclosed) NAS fees as the proxy for impaired auditor independence. In contrast, the sanctions against PWC allow us to examine how investors perceive NAS *prohibited* by SOX.[2] Second, we find that investors react negatively even though they do not know *which* issuer clients of PWC were directly affected. The SEC did not identify the 15 issuers for which PWC provided prohibited NAS, but indicated that PWC's quality control system over independence was deficient. Thus, our results show that investor concern for auditor independence is broad since the investor reaction extends to PWC's portfolio of clients.

Our study also has potential implications for regulators. In its preview of 2019 inspection observations, the PCAOB staff voice concerns over auditor independence (PCAOB 2020, p. 7).[3] They identify deficiencies found in 2019 inspections related to audit firm independence and auditors' communications with audit committees. We provide direct evidence on investor perceptions related to violations of auditor independence rules, and a situation in which the auditor misled audit committees. Further, the SEC (2019c) has recently introduced a proposal to

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[2] The only other study to use a measure of banned NAS as a proxy for impaired auditor independence is Eilifsen and Knivsflå (2013) who examine a 2003 event in Norway in which several auditors violated independence rules. Examining ERCs, they find investors perceive NAS negatively for non-Big 5 clients but positively for Big 5 clients, contrasting with our findings.

[3] This document (PCAOB 2020) "…represents the views of PCAOB staff and not necessarily those of the Board. It is not a rule, policy, or statement of the Board."

revise auditor independence rules. The rule would "more effectively structure the independence rules and analysis so that relationships and services that would not pose threats to an auditor's objectivity and impartiality do not trigger non-substantive rule breaches or potentially time consuming audit committee review of non-substantive matters".[4] While our study does not directly address changes in the SEC proposal, we do provide evidence that investors value audit firm independence related to the provision of NAS that are prohibited by the SEC.

BACKGROUND AND HYPOTHESES

SOX and related SEC regulations prohibit audit firms from performing certain non-audit services for their SEC registered audit clients. Broadly, audit firms are prohibited from acting in a management capacity or performing management functions for issuer clients. Firms are also prohibited from performing financial information system implementation and design work for issuer audit clients, as well as any services which would lead them to audit their own work. In addition, any non-audit services must be approved in advance by the issuer's audit committee.

Prior Literature

The debate surrounding audit firms jointly providing audit services and NAS to the same client is longstanding. Regulators describe auditor independence as the cornerstone of the auditing profession and have various rules intended to ensure the auditor is independent of the client (Church, Jenkins, and Stanley 2018). Opponents argue that providing NAS to audit clients poses a self-interest threat to auditor independence that could impair independence and harm audit quality.[5] More specifically, citing concerns that auditor-provided NAS creates an economic

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[4] SEC Press Release, December 30, 2019 "SEC Proposes to Codify Certain Consultations and Modernize Auditor Independence Rules". https://www.sec.gov/news/press-release/2019-276 .

[5] The self-interest threat is one of the seven broad categories of threats to auditor independence enumerated by the AICPA's *Code of Professional Conduct* in its *Conceptual Framework for Independence*. The other six threats are adverse interest, advocacy, familiarity, management participation, self-review, and undue influence. (AICPA *Code of Professional Conduct* sec. 1.210.)

bond that impairs auditor independence, SOX bans auditors from providing several types of NAS. However, proponents argue that litigation exposure (Palmrose 1988; Shu 2000) and reputation concerns (Watts and Zimmerman 1983) are strong enough counterincentives to ensure auditors do not lose independence when providing NAS. In addition, some argue that auditor-provided NAS could improve audit quality if the knowledge gained by providing NAS generates knowledge spillovers that improve the audit (Simunic 1984; Beck et al. 1988). When knowledge spillovers exist, banning NAS could be detrimental to audit quality.

Researchers studying audit quality typically focus on either actual audit quality or perceived audit quality (DeFond and Zhang 2014). Actual audit quality is measured in a variety of ways—for example, abnormal accruals, restatements, and going concern opinions. Examples of perceived audit quality measures include stock market reactions, cost of capital estimates, and changes in auditor client portfolios (DeFond and Zhang 2014).

The Relation between NAS and Actual Audit Quality

The literature on whether allowed NAS creates an economic bond (i.e., self-interest threat) that impairs auditor independence and harms actual audit quality is mixed. Many studies fail to find an association between NAS and actual audit quality (DeFond et al. 2002; Ashbaugh Ashbaugh, LaFond, and Mayhew 2003; Chung and Kallapur 2003; Larcker and Richardson 2004; Reynolds, Deis, and Francis 2004) while some find a negative association (Frankel, Johnson, and Nelson 2002; Paterson and Valencia 2011; Markelevich and Rosner 2013; Carcello, Neal, Reid and Shipman 2020). Other studies find that the relation between NAS and actual audit quality depends on auditor and client characteristics, and that under some circumstances NAS are associated with higher audit quality. For example, Lim and Tan (2008) find audit quality increases when industry specialists conduct the NAS, consistent with the

spillover effect and with higher-quality auditors having more reputation concerns. Larcker and Richarson (2004) find the association between NAS and abnormal accruals is sensitive to research design choices; however, overall they find a positive association between NAS and audit quality, with the association being highest for clients with poorer corporate governance. They conclude that for clients with weaker corporate governance (p. 655) "…the auditor appears to be playing a key role in the governance process to limit abnormal accrual choices".

Research into tax NAS generally finds either no relation between tax NAS and actual audit quality, or a positive relation. For example, Kinney, Palmrose, and Scholz (2004) find that tax NAS has a negative association with financial statement restatements, an indication that these tax NAS provide knowledge spillovers that improve audit quality. Paterson and Valencia (2011) show that the findings of Kinney et al. (2004) are primarily driven by recurring tax NAS as opposed to non-recurring tax NAS—that is, recurring tax NAS has a negative association with restatements while non-recurring tax NAS has a positive association with restatements. Lennox (2016) examines the effects of PCAOB's actions in 2005 and 2006 to ban auditors from providing certain tax NAS for their audit clients. Lennox (2016) finds no change in actual audit quality for a group of clients whose tax-related NAS fees substantially dropped after the PCAOB's new prohibition (an indication that these clients had previously been purchasing the newly-prohibited services from their audit firms).

The Relation between NAS and Perceived Audit Quality

The literature on whether allowed auditor-provided NAS influences investors' perception of audit quality is also mixed. To the extent investors perceive NAS as creating an economic bond that impairs auditor independence, we would expect NAS to be negatively associated with perceived audit quality. Consistent with this explanation, Francis and Ke (2006) and Krishnan et

al. (2005) investigate earnings response coefficients and find a negative association between NAS and perceived audit quality. Similarly, Khurana and Raman (2006) find a negative relation between NAS and their measure of perceived audit quality, cost of capital. Unlike Larcker and Richardson's (2004) findings that the positive association between NAS and actual audit quality is strongest for clients with weak corporate governance, Khurana and Raman (2006) find no evidence that the negative relation between NAS and cost of capital is affected by client corporate governance. Schmidt (2012) finds an association between NAS fees and the likelihood of the audit firm being sued after a restatement, and concludes that audit litigants act as if jurors believe NAS impairs auditor independence.

Other studies examining NAS and perceived audit quality find either no relation or a positive relation. Lennox (2016) investigates the market reaction to news of the PCAOB's ban on certain tax NAS and finds investors did not perceive the rule change as informative. Consistent with the knowledge spillover argument, Lim and Tan (2008) find NAS provided by industry specialists is associated with higher earnings response coefficients for clients. Ghosh et al. (2009) find that client importance (client fees to auditor's total fees) rather than NAS fees impairs perceived audit quality. They conclude (Ghosh et al. 2009, p. 371) "In contrast to the findings of prior studies, our results question the long-held belief that higher non-audit to total fee ratios are perceived by investors to compromise auditor independence."

Eilifsen and Knivsflå (2013) examine an event occurring in 2003 in Norway, in which regulators found audit firms—all Big 5 firms, and many non-Big 5 firms—were providing prohibited NAS to clients.[6] Eilifsen and Knivsflå (2013) find that for clients of non-Big 5 firms,

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[6] The 2003 event examined by Eilifsen and Knivsflå (2013) differs from the 2019 PWC event we study. In the Norway event, regulators found all Big 5 audit firms and many non-Big 5 audit firms violated independence rules by providing banned NAS, and the event led to a tightening of NAS regulations in the country. The event we study is unique in that only one Big 4 firm was sanctioned, allowing us to effectively use clients of the other Big 4 firms as a

there is a negative relation between NAS and earnings response coefficients (ERCs) after the event. However, they find a positive relation between NAS and ERCs after the event for clients of Big 5 firms. The result indicates that for Big 5 firms in Norway, investors perceive the benefits of knowledge spillovers gained from providing the prohibited NAS to outweigh any negative effects related to threats to auditor independence.

SEC Sanctions against PWC

On September 23, 2019, the SEC filed orders imposing sanctions against PWC and PWC partner Brandon Sprankle. The sanctions related to PWC providing prohibited non-audit services to fifteen audit clients from 2013 through 2016, and deceiving audit committees as to the true nature of the services provided. PCAOB Rule 3525 requires audit committee pre-approval before the audit firm may perform any non-audit services related to internal controls over financial reporting for the client.[7] On several engagements, PWC violated Rule 3525, misled client audit committees and "…mischaracterized non-audit services as audit work" (SEC 2019a). The SEC (2019a, par. 2, emphasis added) writes:

> PWC's failure to comply with Rule 3525 prevented the audit committees of numerous issuers from evaluating the potential effects of the non-audit services on auditor independence, including whether the services could cause PWC to lack independence. **This resulted in PWC being engaged to provide non-audit services that were improperly characterized to the audit committees of numerous issuers as audit services.**

PWC paid the SEC a total of $7,944,055, consisting of disgorgement of $3,830,213; penalties of $3,500,000; and interest of $613,842. In addition, PWC agreed to undergo extensive remedial efforts to improve its quality control policies and procedures over independence and the provision of non-audit services to its SEC audit clients.

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control group. Additionally, unlike the U.S., Norway is a relatively low-litigation environment for auditors (Hope and Langli 2010).

[7] https://pcaobus.org/Rules/Pages/Section_3.aspx

Brandon Sprankle was a partner in the San Jose office of PWC from 2013 to 2019, and "…served as West Region leader of the Oracle Security and Controls practice…"[8] Sprankle supervised PWC staff in work on two projects for Issuer A: one related to implementation of software associated with internal controls over financial reporting ("GRC software"), and a second project for Issuer A's enterprise software ("the R12 project").[9] Internal PWC communications showed that PWC's Risk Assurance Independence (RAI) group was concerned that the projects were prohibited non-audit services. Sprankle revised the engagement letter for the R12 project to re-characterize the services as audit services. He drafted an addendum to the audit engagement letter for Issuer A, adding the R12 project as additional audit services, and misrepresented the services to Issuer A's audit committee as audit services. Because of his instrumental role in the PWC independence violations, the SEC fined Sprankle $25,000 and prohibited him from continuing to practice before the SEC.

The SEC orders (2019a, 2019b) describe similar events for other issuers, in which PWC mislead audit committees by characterizing prohibited non-audit services as audit services. For example, for Issuer D, PWC did not seek pre-authorization from the audit committee for non-audit services related to security controls. For Issuer D, "…PWC included the non-audit work as audit services in the audit engagement letter, and billed Issuer D for the services as part of the audit work." (SEC 2019a, par. 49).

The SEC (2019a, par. 3, emphasis added) summarizes the problems with PWC's quality control system as follows:

> PwC's violations were, in part, **the result of breakdowns in its system of quality control to provide reasonable assurance that PwC maintained independence**. In particular, in operating its system of quality controls related to auditor independence as

described in the instances discussed below, PwC did not: 1) adequately evaluate the nature and scope of proposed non-audit service engagements for permissibility; 2) properly characterize work as audit or non-audit services; 3) review and monitor non-audit work being performed for audit clients to confirm the services were permissible; and 4) properly describe to audit committees of SEC-registrant clients the nature of the audit and non-audit services to be provided.

Hypotheses

The SEC sanctions against PWC and Sprankle bring to light major problems with PWC's quality control system over maintaining independence from audit clients. PWC violated SEC independence requirements by performing prohibited non-audit services for a number of audit clients. According to the SEC, PWC personnel acted in a management capacity when they designed and helped implement controls related to financial reporting. Prior research examining whether non-audit services (NAS) impair auditor independence typically use some measure of NAS fees disclosed by the client as a proxy for (lack of) auditor independence. However, absent contrary evidence, the NAS disclosed by the client are *allowed* NAS. The sanctions against PWC provide us the opportunity to explore how investors interpret the provision of *prohibited* NAS to audit clients, and a situation in which the auditors are acting in a management capacity for their audit client. This provides a more powerful test than most prior studies.

In their discussion of research on NAS, DeFond and Zhang (2014, p. 309, emphasis added) write:

> A limitation of this research, however, is that firms are not required to disclose the type of NAS they purchase, with the exception of tax and systems NAS. **The proxy typically used, total NAS fees, captures only the threat of financial dependence, but not the threat to independence from auditors taking on management roles.** Thus, NAS studies may not adequately capture the channel through which NAS impairs audit quality.

Our research design allows us to directly address the concerns of DeFond and Zhang (2014) stated above.

Investors could perceive the PWC event in several ways. The economic bond argument suggests NAS could impair auditor independence and harm audit quality. If investors believe that the provision of prohibited NAS to clients impairs auditor independence, we would expect investors in PWC clients to perceive the news of SEC sanctions against PWC negatively (Francis and Ke 2006; Krishnan et al. 2005; Khurana and Raman 2006). However, reputation and litigation concerns could provide auditors adequate incentive to maintain independence when providing NAS to clients—even prohibited NAS as in the 2019 PWC event. In this case, we would expect investors to have no reaction to news of the SEC sanctions against PWC (Ghosh et al. 2009; Lennox 2016).[10]

Finally, if investors believe providing financial information system implementation and design work leads to economies of scale and scope and knowledge spillovers that improve the audit, we would expect investors to perceive the SEC sanctions against PWC positively (Lim and Tan 2008; Eilifsen and Knivsflå 2013). In one of the few studies to examine prohibited NAS, Eilifsen and Knivsflå (2013) find evidence that investors perceive positively the news of Big 5 auditors in Norway providing banned NAS to audit clients, consistent with knowledge spillovers. Similar to Eilifsen and Knivsflå (2013), we examine a situation in which the audit firm provided prohibited NAS to audit clients. However, given the legal and institutional differences between the US and Norway, and the differences between the events (e.g., for our event only PWC was providing banned NAS), we cannot necessarily predict a result similar to that of Eilifsen and Knivsflå (2013).

This leads to our first hypothesis (stated in the null):

Hypothesis 1: There is no market reaction for PWC clients to the announcement of auditor independence violations by the SEC.

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[10] Of course, if we fail to reject the null we cannot necessarily conclude that investors are unconcerned about the PWC sanctions.

Next, we consider the association between NAS and perceived audit quality for clients of PWC paying abnormally high versus abnormally low total fees to their audit firms. Investors do not know which clients purchased prohibited NAS from PWC, as this is not disclosed in the SEC sanctions. In addition, according to the SEC sanctions, PWC mischaracterized fees paid for the prohibited NAS as audit fees. Thus, we propose that investors may conclude that clients paying abnormally high total fees to the audit firm were more likely to have purchased prohibited NAS from PWC. Accordingly, we predict that the severity of any possible economic bond effects (negative perceptions by investors) or knowledge spillover effects (positive perceptions by investors) will be increasing in the amount of abnormal total fees paid to PWC.

Hypothesis 2: Any market reaction for PWC clients to the announcement of auditor independence violations by the SEC will be stronger for clients with high abnormal fees.

Finally, we consider whether investor perceptions of auditor independence in light of the prohibited NAS provided by PWC are attenuated by the relative strength or weakness of the audit committee. Since the passage of SOX, the audit committee has taken on a more critical role in audit quality, and regulators continue to focus on the importance of the audit committee in ensuring auditor independence. In a 2019 public statement, Jay Clayton, SEC Chairman, along with Sagar Teotia (Chief Accountant) and William Hinman (Director, Division of Corporate Finance) write

> Compliance with auditor independence rules is a shared responsibility of the audit firm, the issuer and its audit committee. The audit committee plays a critical role in auditors' compliance with the auditor independence rules, in part because the Sarbanes-Oxley Act mandates that audit committees be directly responsible for the oversight of the engagement of the company's independent auditor.[11]

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[11] https://www.sec.gov/news/public-statement/statement-role-audit-committees-financial-reporting

The SEC sanctions against PWC showed that PWC misled audit committees about the prohibited NAS by intentionally mischaracterizing them as audit services. This prevented audit committees from performing their duties required under SOX to evaluate any non-audit services before they are purchased from the audit firm.

It is not clear how the relative strength or weakness of the audit committee will affect investor perceptions of the SEC sanctions against PWC. On the one hand, investors may perceive a strong audit committee to be less likely to have purchased prohibited NAS from PWC. On the other hand, because PWC deceived audit committees by mischaracterizing the prohibited services as audit services, there may be no difference between investor perceptions for stronger versus weaker audit committees. Finally, it is possible that investors will view the purchase of prohibited NAS as evidence that the auditor is "playing a key role" (Larcker and Richardson 2004, p. 655) in corporate governance for those clients with weaker audit committees. Thus our third hypothesis is stated in null form:

> **Hypothesis 3: The market reaction for PWC clients to the announcement of auditor independence violations by the SEC will not be different between strong and weak audit committees.**

In addition to the above, in supplementary analyses we also examine whether any results we find are stronger or weaker for clients in the San Jose, CA metropolitan statistical area (MSA), given that the partner Sprankle was based out of that PWC office.

SAMPLE SELECTION, RESEARCH DESIGN, AND DESCRIPTIVE STATISTICS

Sample Selection

Table 1 provides a summary of our sample selection criteria. We begin our initial Schipper Thompson regression sample in Panel A by identifying 3,136 issuers with a Big 4 auditor that are in both Audit Analytics and COMPUSTAT. We drop 737 issuers in financial and regulated

industries (Standard Industrial Classification (SIC) codes: 6000-6999 and 4900-4949) from the sample.[12] We also eliminate 599 issuers that do not have the necessary information available to calculate abnormal total fees and audit committee size. We drop 36 issuers with missing return data in CRSP. Our final sample includes 1,764 issuer client observations. There are 417 PWC audited clients and 1,347 non-PWC Big 4 audited clients in the final sample.

Our ERC regression sample is described in Panel B of Table 1. We begin with the 417 PWC clients in Panel A and identify (a) the client-quarter for each client immediately preceding the September 23, 2019, SEC announcement about the PWC independence violations and (b) the client-quarter immediately after the SEC announcement date. There are 834 PWC client-quarters. We drop 254 client-quarter observations for client-quarters missing necessary information to calculate the additional Compustat variables used in the ERC regression. There are 580 client-quarter observations of PWC clients in the final sample. Next, for the PWC ERC sample, we obtain a matched sample based on industry and size. More specifically, we match each PWC client to a non-PWC client in the same Fama French 12 Industry Classification (SIC) and closest match in total assets to identify 580 client-quarter observations for the matched sample.[13]

[INSERT TABLE 1 HERE]

Research Design

Schipper Thompson (1983) Regressions

Since the SEC announced the PWC event on a single day (September 23, 2019), we address event date clustering in our methodology. To help prevent incorrect inferences caused by

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[12] This is a requirement of the abnormal fee model we estimate to test Hypothesis 2.
[13] Using the less restrictive Fama French 12 Industry classification relative to two-digit SIC allows us to find a client match closer in total assets because the matched industry pool of clients is larger.

biased estimates of standard errors, we use the Schipper and Thompson (1983) methodology to

mitigate concerns about cross-sectional dependence of the residuals.[14] The Schipper and

Thompson (1983) regression is as follows:

$$RETURN_{pt} = \beta_0 + \beta_1 RETURN_{mt} + \beta_2 EVENT_k \qquad (1)$$

$RETURN_{pt}$ is the equally-weighted portfolio return for all clients of PWC (or non-PWC)

on day t. $RETURN_{mt}$ is the market return on day t, which is proxied by the CRSP value-weighted

index. $EVENT_k$ is a binary variable that equals one for each day in the event window and a zero

otherwise. Our regression estimation period is from January 1, 2019 thru December 31, 2019.

The β_2 coefficient represents the shift in the mean excess return attributed to the event (Schipper

and Thompson 1983). If the event binary variable is negative and statistically significant, it

suggests the market punished PWC for their perceived violation of auditor independence. In

contrast, a statistically significant and positive coefficient suggests the market viewed the

perceived independence violation from a positive perspective. Due to the requirement that

Schipper and Thompson (1983) regressions are estimated using an equally-weighted portfolio

return and not client-level data, we must use subsamples of abnormal fees, audit committee size,

and San Jose MSA clients rather than using control variables to test each of these characteristics.

Therefore, we run a separate Schipper Thompson regression for each of our hypotheses. We also

run separate Schipper Thompson regressions for non-PWC Big 4 audit firms to ensure our results

are not confounded by macroeconomic events affecting all Big 4 audit firms, and to identify

whether spillover effects to clients of non-PWC auditors occurred (Dee et al. 2011).

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[14] Research shows that event date clustering can result in cross-sectional dependence in residuals, which leads to biased estimates of the standard errors (Schipper and Thompson 1983; Bernard 1987).

Client Characteristics

The first client characteristic we examine is abnormal total fees paid to the auditor. We focus on total fees because PWC conducted non-audit service related to systems implementation (a banned non-audit service under SOX) and it is not clear in which category those prohibited service fees were reported on the clients' proxy statements. However, all of our results are robust to using abnormal audit fees. We calculate abnormal total fees using a model developed by Simunic (1984) and Larcker and Richardson (2004). The model and results are presented in Appendix A. We designate high abnormal total fees as those above the median and low abnormal total fees as those below the median. We measure abnormal fees in the fiscal year prior to the PWC event since that is the information investors have about fees at the time of the announcement of SEC sanctions.

The second client characteristic we examine is whether the audit committee is large (above the median) or small (at or below the median). We obtain audit committee information for each client from BoardEx, in the year prior to the announcement of the PWC event. Clients with smaller audit committees would, on average, have fewer resources to devote to monitoring the external auditor and considering NAS that could impair auditor independence. For example, Anderson, Mansi, and Reeb (2004) find evidence that clients with larger audit committees have a significantly lower cost of debt.

Market Valuation of Earnings (ERC) Analysis

To determine whether the independence violation influenced investors' valuation of earnings, we estimate the following ERC model that follows Dee, Lulseged and Zhang (2015) and Francis and Ke (2006):

$$CAR_{it} = \beta_0 INTERCEPT + \beta_1 POST_{it} + \beta_2 QUE_{it} + \beta_3 POST_{it} \times QUE_{it}$$

$$+ \sum_{k=4}^{11} \beta_k X + \sum_{k=12}^{19} \beta_k QUE_{it} \times X + \varepsilon_{it},$$

(2)

$$X = BTM_{it} + STDRET_{it} + DEBT\_EQ_{it} + SIZE_{it} + ABSQUE_{it} + LOSS_{it} + REST_{it} +$$

$$EP\_RATIO_{it}.$$

We use the earnings announcements for the quarters immediately before and after the September 23, 2019 SEC announcement. We use clients with a December year-end. *CAR* is the cumulative abnormal size-adjusted return for the three days after the 10-Q report release beginning with the first full day of trading. *POST* is coded as a one for the quarter after September 23 and a zero for the quarter before September 23. *QUE* is the seasonal change in quarterly earnings. Our variable of interest is *POST x QUE*. A significantly negative (positive) coefficient on *POST x QUE* would be consistent with investors placing less (greater) confidence in earnings after the SEC revelation on September 23. We test a sample for PWC clients and a match sample based on size and industry using clients of other Big 4 firms. Control variables include *BTM* (book-to-market ratio), *STD_RETURN* (standard deviation of returns), *DEBT_EQ* (debt-to-equity ratio), *SIZE* (log of market value), *ABSQUE* (absolute value of *QUE*), *LOSS* (a binary one if the client had a loss and a zero otherwise), *RESTR* (a binary one if the client had significant restructuring cost and zero otherwise), and *EP_RATIO* (the earnings-to-price ratio). We also interact *QUE* with all control variables. All variables are described in Appendix B.

Descriptive Statistics

Table 2 reports descriptive statistics. Panel A shows descriptive statistics for the entire Schipper Thompson sample. We include *Abnormal Fees* (abnormal total fees) in the descriptive statistics because we separate clients at the median (0.124) in Panel A to test whether PWC

clients with abnormally high total fees have more negative abnormal returns. We include audit committee size in the descriptive statistics because we separate clients at the median (4) in Panel A to test whether PWC clients with small audit committees have negative abnormal returns. We include size in the descriptive statistics because client size is likely correlated with audit committee size. Size is measured using market capitalization. The raw cumulative returns for each window are negative, and the three-day cumulative raw return is the most negative.

[INSERT TABLE 2 HERE]

Table 2 Panel B separates descriptive statistics for PWC and non-PWC clients in the Schipper Thompson regression sample. Non-PWC clients are clients of the other three Big 4 firms (Deloitte and Touche, Ernst and Young, and KPMG). PWC clients have higher abnormal fees (p-value = <0.01) and larger audit committees (p-value = 0.08). PWC clients are also larger in size; however, the difference is not statistically significant. PWC clients have lower cumulative raw returns for the one-day, two-day, and three-day cumulative return windows. The one-day window cumulative raw return for PWC clients is significantly lower (p-value = 0.09) than for non-PWC clients. There is not a statistically significant difference between PWC and non-PWC clients in either the two-day or three-day cumulative raw return windows.

Table 2 Panel C separates the descriptive statistics for PWC and non-PWC clients in the ERC regression sample. The PWC and non-PWC clients are similar across all variables except for leverage (*DEBT_EQ*). Non-PWC clients have greater leverage (p-value = 0.09).

Table 2 Panel D shows correlations for the Schipper Thompson sample variables presented in Panels A and B. Abnormal fees does not have a statistically significant correlation with audit committee size or client size. Abnormal fees does have a negative and statistically significant correlation with raw cumulative returns for one- and two-day windows. Audit committee size

does not have a statistically significant correlation with abnormal fees, but it does have a positive and statistically significant correlation with client size and cumulative raw returns for one, two, and three-day windows. Client size has a positive and significant correlation with each variable in the table except for abnormal fees.[15]

Table 2 Panel E shows correlations for the ERC regression sample variables presented in Panel C. Of primary interest are the correlations between *QUE* and the other variables. *QUE* has a negative and significant correlation with *POST*, *BTM*, *STDRET*, *ABSQUE*, *LOSS*, and *RESTR*. *QUE* has a positive and significant correlation with *SIZE* and *EP_RATIO*. All correlations between QUE and other variables are under 0.25, and there is no indication of multicollinearity.

RESULTS

Univariate analysis of abnormal returns around the event date

Table 3 shows the market's initial reaction to the SEC's sanctions against PWC. We use size-adjusted decile returns for our univariate analysis of abnormal returns. We compute size adjusted returns as the buy and hold raw return minus the buy and hold return on a size matched decile portfolio of clients similar to the method used in Rajgopal, Shevlin, and Venkatachalam (2003). Panel A presents the full sample abnormal returns for PWC clients compared to non-PWC clients. We also examine subsamples based on abnormal total fees since our event involves PWC providing banned non-audit service that potentially impairs auditor independence. We compare abnormal returns of PWC clients to clients of other Big 4 firms for subsamples of low abnormal fees (Panel B) and high abnormal fees (Panel C). To provide an alternative control group, we compare abnormal returns of PWC clients with low abnormal fees to PWC clients

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[15] The association between audit committee size and client size is concerning because client size could be driving our audit committee results. We perform additional analysis in Table 9 and 10 and find that our audit committee results are consistent across subsamples of small and large clients suggesting size is not influencing our results.

with high abnormal fees (Panel D). We also examine subsamples based on audit committee size

to determine if the negative abnormal returns in the event date windows are accentuated when

the audit committee is weak (i.e., small). We present the audit committee analysis in Panels E, F,

and G. Lastly, in Panel H we present the analysis of abnormal returns of PWC clients by San

Jose office given that the partner Sprankle was based out of that PWC office.

[INSERT TABLE 3 HERE]

Table 3 Panel A shows abnormal returns for the full sample. We find that PWC clients

have significantly lower abnormal returns (p-value = < 0.05) than non-PWC clients for each of

the one, two, and three-day event windows. When we break down the sample by low (Panel B)

and high (Panel C) abnormal fees, we do not find a statistically significant difference between

PWC and non-PWC client returns for the sample of abnormally low fees (Panel B). However,

Table 3 Panel C presents abnormal returns for PWC and non-PWC clients with abnormally high

fees and PWC has significantly lower returns on the two (p-value = 0.01) and the three-day (p-

value = 0.02) event windows. Thus we find evidence suggesting investors react negatively to the

PWC clients with high abnormal fees. Panel D provides a similar analysis except we use PWC

clients with low abnormal fees as the comparison group. PWC clients with abnormally high fees

have significantly lower returns on the two-day (p-value = 0.06) and three-day (p-value = 0.09)

event windows compared with PWC clients with abnormally low fees.

Next, we examine subsamples of large (above the median of four members) and small (at

or below the median of four members) audit committees. We compare abnormal returns of PWC

clients to non-PWC clients for a subsample of small audit committees (Panel E) and a subsample

of large audit committees (Panel F). For a subsample of only PWC clients, we compare abnormal

returns of clients with small audit committees vs. clients with large audit committees (Panel G).

Table 3 Panel E shows PWC clients with small audit committees have significantly lower abnormal returns on the two-day (p-value = 0.01) and three-day (p-value = <0.01) event windows compared to non-PWC clients. Table 3 Panel F shows that, for clients with large audit committees, there is a statistically significant difference in returns between PWC clients and non-PWC clients only on the one-day event window (p-value = 0.08). For the sample of PWC clients, Table 3 Panel G shows that PWC client firms with small audit committees have significantly lower abnormal returns on the two-day (p-value = 0.01) and three-day (p-value = <0.01) event windows. Overall, these results suggest larger audit committees mitigate investors' negative reaction to impaired auditor independence because the negative reaction is concentrated in clients with small audit committees.

Lastly, we examine a sample of clients headquartered in the San Jose MSA. Brandon Sprankle, the partner identified by the SEC as responsible for the independence violation, was located in the San Jose office of PWC. To the extent investors believe PWCs impaired auditor independence was concentrated in the San Jose office, investor reaction to those clients would be more negative. Table 3 Panel H shows, for a sample of clients located in the San Jose MSA, PWC clients have lower abnormal returns on one and two-day event windows compared to non-PWC clients; however, the returns are not statistically significantly different.

Overall, the univariate evidence based on abnormal returns suggests investors react negatively to news of the SEC sanctions against PWC. Subsample analyses show that investors react negatively when PWC clients have high abnormal fees and smaller audit committees. To the extent investors believe the probability of PWC providing banned services increases with abnormal fees and weaker audit committees, our evidence suggests investors react negatively to impaired auditor independence. However, the univariate analysis does not control for cross-

sectional correlation in the residuals so we must interpret these results cautiously. Therefore, we implement the Schipper and Thompson (1983) methodology.

Results: Schipper Thompson (1983) regressions

In this section, we implement the Schipper and Thompson (1983) methodology to alleviate concerns our single event date results have cross-sectional dependence in the residuals that will bias estimates of standard errors. Table 4 presents the results of estimating equation (1) for PWC and non-PWC clients. For a sample of PWC clients, the event date binary variable is significantly negative for one-day and three-day event windows. The event date binary variable for the two-day window is negative but insignificant. For the non-PWC sample, the event date binary variable is negative and insignificant for all event date windows. The lack of statistical significance in the non-PWC sample indicates there is no evidence of macroeconomic occurrences on the event date windows that created a negative return for all Big 4 firms. The result also suggests there is no evidence of a spillover effect to clients of non-PWC auditors. Overall, consistent with the univariate results, we find statistical evidence that investors respond negatively to the news about PWC's independence violations, which is similar to how investors respond to news about penalty sanctions and nonindependence related reputational concerns (Weber, Willenborg, and Zhang 2008; Dee, Lulseged, and Zhang 2011). The evidence presented in Table 4 is consistent with our hypothesis 1.

[INSERT TABLE 4 HERE]

Next, we investigate the impact of high and low abnormal fees on investors' reaction to news of PWC providing banned non-audit services. Table 5 Panel A consists of a sample of clients with low abnormal fees by PWC and non-PWC auditors. The event date binary variable is insignificant for both the PWC or non-PWC low abnormal fee samples across all event windows.

Table 5 Panel B consists of a sample of clients with high abnormal fees, split by PWC and non-PWC clients. For PWC clients, the event date binary variable is significantly negative for one-day and three-day event windows. The event date binary variable for the two-day window is negative but insignificant. The event date binary variable is insignificant for the non-PWC sample across all event windows, which indicates there is no evidence of a significant macroeconomic occurrence in the event window or a spillover effect to clients of non-PWC clients. Consistent with the univariate results, the findings presented in Table 5 suggest that the negative reaction to PWC sanctions is limited to PWC clients with high abnormal fees. The result is consistent with the notion that investors perceive high abnormal fees as an indicator of PWC providing prohibited non-audit services that could impair auditor independence.

[INSERT TABLE 5 HERE]

Next, we investigate the impact of audit committee size on investors' reaction to news of SEC sanctions against PWC. Table 6 Panel A consists of a sample of clients with audit committees at or below the median number of four audit committee members (small audit committees). For PWC clients with small audit committees, the event date binary variable is significantly negative for the one, two, and three-day event windows. The event date binary variable is insignificant for the non-PWC sample for one-day and two-day windows but significantly negative for the three-day window. The negative reaction to the three-day window for non-PWC clients with smaller audit committees suggests a potential spillover effect in terms of investors assessing whether other Big 4 auditors could be providing non-audit service that might impair auditor independence. Table 6 Panel B consists of a sample of clients with large audit committees split by PWC and non-PWC auditors. The event date binary variable is insignificant for both the PWC and non-PWC samples across all event windows. The evidence

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presented in Table 6 suggests that the negative market reaction to impaired auditor independence only occurs when the client has a small audit committee. This is consistent with Anderson et al. (2004) who find stronger audit committees (i.e., larger) are associated with a lower cost of debt relative to weaker audit committees (i.e., smaller).

[INSERT TABLE 6 HERE]

Next, we investigate the impact of clients headquartered in the San Jose MSA on investors' reaction to the PWC event. Although we find that the negative investor reaction to the event is concentrated in PWC clients with high abnormal total fees, we do not limit the San Jose MSA sample to high abnormal fee clients because the San Jose sample is already quite small— 61 PWC clients and 79 non-PWC clients. Given the limitations of this analysis—small sample when restricting to clients headquartered in the San Jose MSA and not restricting the sample to high abnormal fees clients—we include this analysis as an additional test and not a hypothesis. Table 7 presents the results. For the PWC sample, the event date binary variable is significantly negative in the one-day and three-day windows but negative and insignificant for the two-day window. For the non-PWC sample, the event date binary variable is insignificant for the one-day and two-day windows but significantly negative for the three-day window. The negative reaction in the three-day window could suggest a potential spillover effect in terms of the market assessing whether other Big 4 auditors located in the San Jose MSA could be providing banned non-audit services that impair auditor independence.

[INSERT TABLE 7 HERE]

Results: ERC Analysis

Table 8 presents the results of estimating equation (2) for PWC clients and a matched sample of non-PWC Big 4 clients. In the PWC sample, *POST x QUE* (our variable of interest) is

negative and significant (p-value = <0.01). In contrast, *POST x QUE* in the matched sample is positive and not significant. The analysis of earnings response coefficients provides evidence that investors in PWC clients value unexpected earnings less in the quarter after the announcement of the independence violation than in the quarter before. Overall, this suggests investors perceive the PWC independence violation as a negative event and place less confidence in the earnings of PWC clients after the SEC announcement.

[INSERT TABLE 8 HERE]

Additional Analysis

We perform additional audit committee analysis to test whether the negative investor response to PWC clients with small audit committees is concentrated in small clients. Due to the close relation between audit committee size and client size, the audit committee result in Table 6 could be due to client size and not audit committee size. In Table 9, we compare abnormal returns of PWC Clients to non-PWC clients for a subsample of small clients with small audit committees (Panel A), a subsample of small clients with large audit committees (Panel B), a subsample of large clients with small audit committees (Panel C), and a subsample of large clients with large audit committees (Panel D). If client size is not influencing our audit committee results, we would expect the negative reaction to clients with small audit committees to hold for both small and large clients.

[INSERT TABLE 9 HERE]

Table 9 Panel A shows that small PWC clients with small audit committees have significantly lower abnormal returns on two and three-day event windows compared to a similar sample of non-PWC auditors. Panel C shows that, for a sample of large clients with small audit committees, PWC clients have significantly lower returns on the one-day event window

compared to clients of non-PWC auditors. Overall, these results suggest that the negative

reaction to clients with small audit committees holds for both small and large clients.

Table 9 Panel B shows that small clients with large audit committees have lower returns

for each event window compared to non-PWC clients; however the differences are not

statistically significant. Panel D shows that large PWC clients with large audit committees have

significantly lower returns in the one-day event window compared to large clients of non-PWC

auditors. PWC clients also have lower returns in the two and three-day event windows, but the

differences are not significantly different. Overall, these results suggest that the non-reaction to

clients with large audit committees holds for both small and large clients with the exception of

one-day event window for large clients with large audit committees.

Table 10 presents our Schipper Thompson analysis for audit committee size within

subsamples of client size to mitigate concerns size is driving our results. If client size is not

influencing our audit committee results, we would expect the negative reaction to clients with

small audit committees to hold for both small and large clients.

We first discuss the results for subsamples based on small audit committees presented in

Panel A and C. Panel A consists of a sample of clients with small audit committees and client

size below the median. The event date binary variable is negative and significant for the two-day

and three-day event windows for PWC clients. The event date binary variable is negative and

significant for non-PWC clients on the three-day event window, which suggests there could be a

spillover effect. Table 10 Panel C consists of a sample of clients with small audit committees and

client size above the median. The event date binary variable is negative and significant for the

one-day and three-day event windows for PWC clients. The event date binary variable is

insignificant for non-PWC samples across all event windows. Overall, these results suggest that

the negative reaction to clients with small audit committees holds for both small and large clients mitigating concerns that client size is driving the results.

[INSERT TABLE 10 HERE]

Next, we discuss the results for subsamples based on large audit committees presented in Panel B and D. Table 10 Panel B consists of a sample of clients with large audit committees and client size below the median. The event date binary variable is insignificant for both the PWC and non-PWC samples across all event windows. Table 10 Panel D consists of a sample of clients with large audit committees and client size above the median. The event date binary variable is insignificant for both the PWC and non-PWC samples across all event windows. Overall, our evidence suggests that the insignificant reaction to clients with large audit committees is present for both small and large clients.

CONCLUSION

We examine stock market effects related to news of SEC sanctions against PWC for providing prohibited non-audit services to audit clients, and for mischaracterizing the nature of the services to the audit committees—telling audit committees the services were audit services when they were not. In addition to paying a penalty of $7.9 million, PWC agreed to undergo extensive remedial efforts to improve its quality control policies over independence and the provision of non-audit services to its SEC audit clients. The sanctions against PWC provide a rare opportunity to explore investor beliefs about whether the provision of prohibited NAS to audit clients violates an audit firm's independence, thus reducing investors' confidence in the audited financial statements.

Univariate and Schipper-Thompson (1983) results show that, overall, stock prices for PWC clients reacted significantly negatively to the event while prices for non-PWC clients did

not. We also find that the reaction is more negative for PWC clients with (a) higher abnormal fees, and (b) smaller (below the median number of members) audit committees. Our analyses show that investors in PWC clients value unexpected earnings less in the quarter after news of the sanctions is disclosed than in the quarter before the news. This indicates a reduction in investor confidence in the financial statements of PWC clients once news of the independence violations is released.

Our work makes the following contributions to the literature. First, we examine the effects on audit clients of an actual independence violation by its audit firm. This allows us to see if investors behave as if they believe the provision of prohibited NAS to audit clients impairs auditor independence. Previous research primarily examines only permitted NAS. Second, we find that investors react negatively even though they do not know *which* issuer clients of PWC were directly affected. The SEC did not identify the issuers for which PWC provided prohibited services, but indicated that PWC's quality control system over independence was deficient. Thus, our results show that investor concern for audit firm independence is broad and extends to all clients, because the indication is that PWC has a larger problem over independence. Third, our finding that the negative market reaction is focused on clients with smaller audit committees is an indication that investors have less confidence in the abilities of weaker audit committees to address auditor independence concerns. Finally, our results provide evidence to regulators that investors value audit firm independence.

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Appendix A
Abnormal Fee Model

We estimate abnormal total fees using the following model developed by Simunic (1984) and Larcker and Richardson (2004) for a sample of clients in fiscal year 2017 with a Big 4 auditor and exclude clients in the financial and regulated industries:

$$FEE_{it} = \beta_0 INTERCEPT + \beta_1 ASSET_{it} + \beta_2 SEG_{it} + \beta_3 INV_{it} + \beta_4 AR_{it} + \beta_5 LEV_{it} + \beta_6 INCOME_{it} + \beta_7 LOSS3_{it} + \beta_8 GC_{it} + \beta_9 INDUSTRY\_FE + \varepsilon \tag{3}$$

Where,

FEE	The natural logarithm of total fees paid to the audit firm.
ASSET	The natural logarithm of total assets.
SEG	The number of operating segments.
INV	Total inventory divided by total assets.
AR	Accounts receivable divided by total assets.
LEV	Total debt divided he debt-to-equity ratio.
INCOME	Operating income after depreciation divided by total assets
LOSS3	A binary variable that equals one when net income is negative in any of the past three years and a zero otherwise.
GC	A binary variable that equals one when the audit opinion is going concern and a zero otherwise.
INDUSTRY_FE	Industry fixed effects using 2-digit SIC

The results of the estimation are reported below:

Variable	Coeff.	P-Value	
Intercept	9.322	<.0001	***
ASSET	0.604	<.0001	***
SEG	0.002	0.871	
INV	0.120	0.257	
AR	0.881	<.0001	***
LEV	0.010	0.145	
INCOME	-0.010	0.104	
LOSS3	0.226	<.0001	***
GC	0.171	<.0001	***
Observations	2026		
Industry Fixed Effects	Yes		
Adjusted R-square	0.758		

*, **, *** Denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively. All continuous variables are winsorized at 1 and 99 percent.

Appendix B

Variable Definitions

ABNORMAL FEES	The residual from the abnormal total fee model.
ABSQUE	The absolute value of unexpected quarterly earnings calculated as the absolute value difference between earnings of the current quarter and earnings of the same quarter in the prior year, scaled by market value.
AUDIT COMMITTEE SIZE	The number of audit committee members.
BTM	Book value divided by market value.
CAR	Size decile adjusted cumulative abnormal returns.
DEBT_EQ	The debt-to-equity ratio.
EP_RATIO	The earnings-to-price ratio.
EVENT	A binary variable that equals one for each day in the event window and a zero otherwise.
LOSS	A binary variable that equals one when net income is negative and a zero otherwise.
RAW RETURNS	The raw buy-and-hold return.
RESTR	A binary variable for restructuring that equals one when the ratio of quarterly special items to total assets is less than 0.05 and a zero otherwise.
RETURN	The equally-weighted portfolio return for all clients of PWC (or non-PWC) on each day.
SIZE	The natural logarithm of market value.
STDRET	The standard deviation of stock returns computed using daily returns from 90 days up to 7 days before the earnings announcement date.
QUE	Unexpected quarterly earnings calculated as the difference between earnings of the current quarter and earnings of the same quarter in the prior year, scaled by market value.

Table 1.

Sample Summary

Panel A: Schipper Thompson Sample

Issuer clients with a Big 4 auditor in a USA office identified in Audit Analytics and Compustat as of December 31, 2018	3,136
Less: Clients in heavily regulated industries (financial services and utilities)	(737)
Less: Clients missing information necessary to calculate abnormal fees and audit committee size	(599)
Less: Clients with missing return data in CRSP	(36)
Total issuer clients	1,764
Total PWC clients	417
Total non-PWC clients	1,347

Panel B: Earnings Response Coefficient Match Sample

PWC audited client-quarters for clients in Panel A for the quarter before and quarter after September 23, 2019 (417×2 quarters)	834
PWC audited client-quarters missing additional Compustat variables required in each quarter	(254)
Total PWC audited client-quarters	580
Total non-PWC audited client-quarters using a match sample of industry and size	580

Table 2.
Descriptive Statistics

Panel A: PWC and Non-PWC Clients

Full Sample (N = 1,764)

	Mean	Q1	Median	Q3	SD
Abnormal Fees	0.110	-0.205	0.124	0.428	0.493
Audit Committee Size	4.71	4.00	4.00	6.00	1.55
Client Size	11,460.31	525.68	1,771.92	5,900.37	48,812.04
Raw Returns One Day	-0.018	-0.030	-0.014	-0.004	0.024
Raw Returns Two Days	-0.010	-0.023	-0.004	0.008	0.033
Raw Returns Three Days	-0.022	-0.042	-0.013	0.005	0.045

Panel B: Comparison of PWC and Non-PWC Clients in the Full Sample

PWC Clients (N = 417)

	Mean	Q1	Median	Q3	SD
Abnormal Fees	0.172	-0.153	0.167	0.477	0.476
Audit Committee Size	4.82	4.00	5.00	6.00	1.55
Client Size	12,654.89	1,018.43	2,498.27	8,500.73	32,774.35
Raw Returns One Day	-0.020	-0.031	-0.015	-0.006	0.023
Raw Returns Two Days	-0.012	-0.023	-0.006	0.008	0.032
Raw Returns Three Days	-0.025	-0.040	-0.015	0.003	0.044

Non-PWC Clients (N = 1,347)

	Mean	Q1	Median	Q3	SD
Abnormal Fees	0.091	-0.224	0.119	0.410	0.497
Audit Committee Size	4.67	3.00	4.00	6.00	1.54
Client Size	10,921.22	426.59	1,544.11	5,155.71	52,153.90
Raw Returns One Day	-0.018	-0.030	-0.014	-0.004	0.024
Raw Returns Two Days	-0.009	-0.023	-0.004	0.008	0.033
Raw Returns Three Days	-0.021	-0.042	-0.012	0.005	0.046

	Diff. in Means	p-value	
Abnormal Fees	0.081	<0.01	***
Audit Committee Size	0.15	0.08	*
Client Size	1,733.67	0.42	
Raw Returns One Day	-0.002	0.09	*
Raw Returns Two Days	-0.003	0.11	
Raw Returns Three Days	-0.004	0.15	

Table 2.
Descriptive Statistics (continued)

Panel C: Comparison of PWC and Non-PWC Clients in the ERC Sample

PWC Client Quarters (N = 580)

	Mean	Q1	Median	Q3	SD
CAR	-0.001	-0.017	0.000	0.017	0.054
QUE	-0.009	-0.010	0.000	0.004	0.076
ABSQUE	0.036	0.002	0.006	0.022	0.105
BTM	0.567	0.156	0.337	0.703	0.782
STDRET	0.026	0.016	0.022	0.031	0.014
DEBT_EQ	0.351	0.205	0.345	0.478	0.203
SIZE	7.986	6.773	7.958	9.144	1.808
LOSS	0.314	0.000	0.000	1.000	0.464
RESTR	0.034	0.000	0.000	0.000	0.183
EP_RATIO	0.011	0.000	0.007	0.016	0.015

Non-PWC Client Quarters (N = 580)

	Mean	Q1	Median	Q3	SD	Diff. in Means	p-value	
CAR	-0.002	-0.015	0.001	0.015	0.047	0.001	0.86	
QUE	-0.003	-0.008	-0.001	0.003	0.064	-0.006	0.14	
ABSQUE	0.029	0.002	0.005	0.019	0.088	0.006	0.26	
BTM	0.503	0.144	0.303	0.633	0.828	0.064	0.18	
STDRET	0.025	0.016	0.021	0.031	0.013	0.000	0.66	
DEBT_EQ	0.372	0.221	0.354	0.501	0.229	-0.021	0.09	*
SIZE	8.024	6.810	7.913	9.233	1.857	-0.037	0.73	
LOSS	0.322	0.000	0.000	1.000	0.468	-0.009	0.75	
RESTR	0.040	0.000	0.000	0.000	0.195	-0.005	0.64	
EP_RATIO	0.010	0.000	0.007	0.015	0.012	0.001	0.13	

Table 2.

Descriptive Statistics (continued)

Panel D: Pearson Correlations for the Schipper Thompson Sample

Variable		(1)	(2)	(3)	(4)	(5)	(6)
Abnormal Fees	(1)	-	-0.025	-0.035	**-0.055**	**-0.053**	-0.032
Audit Committee Size	(2)	-0.025	-	**0.100**	0.058	0.104	0.137
Client Size	(3)	-0.035	**0.100**	-	0.069	0.047	0.075
Raw Returns One Day	(4)	**-0.055**	0.058	0.069	-	0.727	0.677
Raw Returns Two Days	(5)	**-0.053**	0.104	0.047	0.727	-	0.868
Raw Returns Three Days	(6)	-0.032	0.137	0.075	0.677	0.868	-

Panel E: Pearson Correlations for the ERC Sample

Variable		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
POST	(1)	-	**-0.072**	0.029	**0.121**	0.012	-0.019	**0.060**	0.050	0.023	0.011
QUE	(2)	**-0.072**	-	**-0.093**	**-0.104**	-0.006	**0.081**	**-0.184**	**-0.185**	**-0.212**	**0.180**
BTM	(3)	0.029	**-0.093**	-	**0.286**	**-0.200**	**-0.250**	**0.156**	**0.100**	-0.015	**0.096**
STDRET	(4)	**0.121**	**-0.104**	**0.286**	-	0.050	**-0.642**	**0.403**	**0.513**	**0.062**	**-0.123**
DEBT_EQ	(5)	0.012	-0.006	**-0.200**	0.050	-	0.016	**0.145**	-0.045	0.046	**0.110**
SIZE	(6)	-0.019	**0.081**	**-0.250**	**-0.642**	0.016	-	**-0.327**	**-0.447**	-0.015	**0.128**
ABSQUE	(7)	**0.060**	**-0.184**	**0.156**	**0.403**	**0.145**	**-0.327**	-	**0.265**	**0.263**	0.022
LOSS	(8)	0.050	**-0.185**	**0.100**	**0.513**	-0.045	**-0.447**	**0.265**	-	**0.082**	**-0.522**
RESTR	(9)	0.023	**-0.212**	-0.015	**0.062**	0.046	-0.015	**0.263**	**0.082**	-	0.038
EP_RATIO	(10)	0.011	**0.180**	**0.096**	**-0.123**	**0.110**	**0.128**	0.022	**-0.522**	0.038	-

Note: Correlations under the 0.05 significance level are in bold.

Table 3

Univariate Comparison of Cumulative Abnormal Returns by Subsamples

Panel A: Full Sample

| | PWC Clients (N = 417) | | | Non-PWC Clients (N = 1,347) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0046	-0.0012	0.0241	-0.0015	0.0014	0.0307	-0.0032**
2 Day	-0.0049	0.0014	0.0327	-0.0001	0.0042	0.0421	-0.0048**
3 Day	-0.0078	-0.0006	0.0450	-0.0013	0.0053	0.0551	-0.0065**

Panel B: Low Abnormal Fee Sample

| | PWC Clients (N = 193) | | | Non-PWC Clients (N = 691) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0032	-0.0018	0.0218	-0.0003	0.0018	0.0249	-0.0029
2 Day	-0.0016	0.0023	0.0270	-0.0002	0.0032	0.0351	-0.0014
3 Day	-0.0038	0.0022	0.0387	-0.0010	0.0047	0.0487	-0.0027

Panel C: High Abnormal Fee Sample

| | PWC Clients (N = 224) | | | Non-PWC Clients (N=656) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0059	0.0003	0.0259	-0.0027	0.0008	0.0358	-0.0032
2 Day	-0.0076	-0.0008	0.0367	0.0001	0.0052	0.0484	-0.0077**
3 Day	-0.0112	-0.0016	0.0497	-0.0016	0.0060	0.0613	-0.0096**

Panel D: PWC Sample, Low and High Abnormal Fees

| | PWC Clients with Low Abnormal Fees (N = 193) | | | PWC Clients with High Abnormal Fees (N = 224) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0032	-0.0018	0.0218	-0.0059	0.0003	0.0259	0.0027
2 Day	-0.0016	0.0023	0.0270	-0.0076	-0.0008	0.0367	0.0060*
3 Day	-0.0038	0.0022	0.0387	-0.0112	-0.0016	0.0497	0.0074*

Panel E: Audit Committee Size at or Below the Median Sample

| | PWC Clients (N = 199) | | | Non-PWC Clients (N = 720) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0051	-0.0023	0.0262	-0.0020	0.0005	0.0337	-0.0031
2 Day	-0.0092	-0.0019	0.0355	-0.0014	0.0042	0.0470	-0.0077**
3 Day	-0.0162	-0.0057	0.0482	-0.0046	0.0032	0.0622	-0.0117***

Table 3 (Cont.)

Univariate Comparison of Cumulative Abnormal Returns by Subsamples

Panel F: Audit Committee Size Above the Median Sample

	PWC Clients (N = 218)			Non-PWC Clients (N = 627)			
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0042	-0.0002	0.0221	-0.0009	0.0018	0.0269	-0.0033*
2 Day	-0.0010	0.0032	0.0295	0.0014	0.0045	0.0357	-0.0024
3 Day	-0.0001	0.0044	0.0405	0.0024	0.0066	0.0456	-0.0025

Panel G: PWC Sample, Audit Committee Below or Above Median

	Audit Committee Size Below the Median (N = 199)			Audit Committee Size Above the Median (N = 218)			
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0051	-0.0023	0.0262	-0.0042	-0.0002	0.0221	-0.0010
2 Day	-0.0092	-0.0019	0.0355	-0.0010	0.0032	0.0295	-0.0082**
3 Day	-0.0162	-0.0057	0.0482	-0.0001	0.0044	0.0405	-0.0161***

Panel H: San Jose Sample

	PWC Clients (N = 61)			Non-PWC Clients (N = 79)			
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0135	-0.0078	0.0270	-0.0082	-0.0053	0.0185	-0.0053
2 Day	-0.0127	-0.0074	0.0356	-0.0090	-0.0008	0.0378	-0.0037
3 Day	-0.0134	-0.0114	0.0481	-0.0150	0.0025	0.0537	0.0016

*, **, and *** indicate significance at the p=0.10, 0.05, and 0.01 levels, respectively. This table shows the market's initial reaction to the SEC's sanctions against PWC. We use size-adjusted decile returns for our univariate analysis of cumulative abnormal returns (CARs). We compute size adjusted returns as the buy and hold raw return minus the buy and hold return on a size matched decile portfolio of clients similar to the method used in Rajgopal, Shevlin, and Venkatachalam (2003). CARs are estimated over one-, two-, and three-day intervals.

Table 4.

Schipper Thompson Regression Results for PWC and Non-PWC Clients

$$RETURN_{pt} = \beta_0 + \beta_1 RETURN_{mt} + \beta_2 EVENT_k$$

PWC Clients (N=417)

Variable	One Day Coeff.	p-value		Two Days Coeff.	p-value		Three Days Coeff.	p-value	
INTERCEPT	-0.0005	0.06	*	-0.0005	0.05	*	-0.0005	0.07	*
RETURN	1.3065	<0.01	***	1.3103	<0.01	***	1.3084	<0.01	***
EVENT	**-0.0073**	**0.09**	*	**-0.0034**	**0.28**		**-0.0048**	**0.06**	*
Adjusted R-Square	84.07%			83.97%			84.13%		

Non-PWC Clients (N=1,347)

Variable	One Day Coeff.	p-value		Two Days Coeff.	p-value		Three Days Coeff.	p-value	
INTERCEPT	-0.0005	0.07	*	-0.0005	0.06	*	-0.0005	0.08	*
RETURN	1.2409	<0.01	***	1.2441	<0.01	***	1.2423	<0.01	***
EVENT	**-0.0056**	**0.23**		**-0.0020**	**0.54**		**-0.0038**	**0.16**	
Adjusted R-Square	80.99%			80.90%			81.03%		

R_{pt} is the equally weighted portfolio return for all clients of PWC on day t. R_{mt} is the market return on day t. $Event_k$ is a binary variable equally to 1 in the days in the event window and zero otherwise.

Table 5.

Schipper Thompson Regresson Results for PWC and Non-PWC Clients Based on Abnormal Total Fees

$$RETURN_{pt} = \beta_0 + \beta_1 RETURN_{mt} + \beta_2 EVENT_k$$

Panel A: Low Abnormal Total Fees

PWC Clients (N=193)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	0.0003	0.22		0.0003	0.21		0.0003	0.24	
RETURN	1.3073	<0.01	***	1.3106	<0.01	***	1.3092	<0.01	***
EVENT	**-0.0057**	**0.18**		**-0.0017**	**0.57**		**-0.0031**	**0.21**	
Adjusted R-Square	84.68%			84.59%			84.67%		

Non-PWC Clients (N=691)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0003	0.26		-0.0003	0.26		-0.0003	0.30	
RETURN	1.2692	<0.01	***	1.2716	<0.01	***	1.2699	<0.01	***
EVENT	**-0.0044**	**0.36**		**-0.0018**	**0.59**		**-0.0036**	**0.19**	
Adjusted R-Square	80.68%			80.64%			80.75%		

Panel B: High Abnormal Total Fees

PWC Clients (N=224)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	0.0006	0.06	*	0.0006	0.06	*	0.0006	0.08	*
RETURN	1.3426	<0.01	***	1.3469	<0.01	***	1.3444	<0.01	***
EVENT	**-0.0089**	**0.08**	*	**-0.0051**	**0.15**		**-0.0066**	**0.02**	**
Adjusted R-Square	81.12%			81.04%			81.28%		

Non-PWC Clients (N=656)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0006	0.05	*	-0.0006	0.05	**	-0.0006	0.06	*
RETURN	1.2624	<0.01	***	1.2666	<0.01	***	1.2648	<0.01	***
EVENT	**-0.0074**	**0.13**		**-0.0025**	**0.48**		**-0.0042**	**0.14**	
Adjusted R-Square	79.75%			79.61%			79.75%		

R_{pt} is the equally weighted portfolio return for all clients of PWC on day t. R_{mt} is the market return on day t. $Event_k$ is a binary variable equally to 1 in the days in the event window and zero otherwise.

Table 6.

Schipper Thompson Regression Results for PWC and Non-PWC Clients Based on Audit Committee Size

$$RETURN_{pt} = \beta_0 + \beta_1 RETURN_{mt} + \beta_2 EVENT_k$$

Panel A: At or Below the Median Audit Committee Size

PWC Clients (N=199)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	0.0004	0.20		0.0004	0.21		0.0003	0.27	
RETURN	1.3099	<0.01	***	1.3138	<0.01	***	1.3106	<0.01	***
EVENT	**-0.0090**	**0.07**	*	**-0.0062**	**0.07**	*	**-0.0085**	**<0.01**	***
Adj. R-Square	81.15%			81.14%			81.57%		

Non-PWC Clients (N=720)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0005	0.17		-0.0005	0.16		-0.0004	0.20	
RETURN	1.2516	<0.01	***	1.2552	<0.01	***	1.2528	<0.01	***
EVENT	**-0.0070**	**0.17**		**-0.0032**	**0.38**		**-0.0055**	**0.06**	*
Adj. R-Square	78.07%			77.98%			78.21%		

Panel B: Above the Median Audit Committee Size

PWC Clients (N=218)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	0.0005	0.08	*	0.0005	0.07	*	0.0005	0.08	*
RETURN	1.3375	<0.01	***	1.3412	<0.01	***	1.3403	<0.01	***
EVENT	**-0.0058**	**0.22**		**0.0010**	**0.77**		**-0.0018**	**0.50**	
Adj. R-Square	82.70%			82.60%			82.62%		

Non-PWC Clients (N=627)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0005	0.10	*	-0.0005	0.09	*	-0.0005	0.10	
RETURN	1.2803	<0.01	***	1.2831	<0.01	***	1.2820	<0.01	***
EVENT	**-0.0046**	**0.32**		**-0.0010**	**0.75**		**-0.0022**	**0.41**	
Adj. R-Square	81.73%			81.67%			81.71%		

R_{pt} is the equally weighted portfolio return for all clients of PWC on day t. R_{mt} is the market return on day t. $Event_k$ is a binary variable equally to 1 in the days in the event window and zero otherwise.

Table 7.

Schipper Thompson Regression Results for PWC and Non-PWC Clients in San Jose MSA

$$RETURN_{pt} = \beta_0 + \beta_1 RETURN_{mt} + \beta_2 EVENT_k$$

PWC Clients (N=61)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0003	0.49		-0.0003	0.48		-0.0002	0.53	
RETURN	1.4162	<0.01	***	1.4233	<0.01	***	1.4215	<0.01	***
EVENT	**-0.0139**	**0.02**	**	**-0.0068**	**0.11**		**-0.0067**	**0.06**	*
Adjusted R-Square	76.84%			76.58%			76.69%		

Non-PWC Clients (N=79)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0002	0.62		-0.0002	0.62		-0.0001	0.71	
RETURN	1.4680	<0.01	***	1.4721	<0.01	***	1.4697	<0.01	***
EVENT	**-0.0087**	**0.11**		**-0.0052**	**0.17**		**-0.0067**	**0.03**	**
Adjusted R-Square	81.82%			81.76%			81.96%		

R_{pt} is the equally weighted portfolio return for all clients of PWC on day t. R_{mt} is the market return on day t. $Event_k$ is a binary variable equally to 1 in the days in the event window and zero otherwise.

Table 8.

Size-Adjusted Three-Day CAR Regression on Unexpected Earnings and Explanatory Variables

$$CAR_{it} = \beta_0 INTERCEPT + \beta_1 POST_{it} + \beta_2 QUE_{it} + \beta_3 POST_{it} \times QUE_{it} + \sum_{k=4}^{11} \beta_k X +$$

$$\sum_{k=12}^{19} \beta_k QUE_{it} \times X + \varepsilon_{it}, \ X = BTM_{it} + STDRET_{it} + DEBT\_EQ_{it} + SIZE_{it} + ABSQUE_{it} +$$

$$LOSS_{it} + REST_{it} + EP\_RATIO_{it}.$$

Variable	PWC Clients			Match Sample		
	Coeff.	P-Value		Coeff.	P-Value	
Intercept	-0.021	0.35		-0.003	0.89	
POST	0.007	0.14		0.000	0.97	
QUE	0.052	0.86		0.975	<0.01	***
POST x QUE	**-0.177**	**<0.01**	***	**0.088**	**0.25**	
BTM	-0.010	0.02	**	-0.001	0.62	
STDRET	0.091	0.72		0.269	0.26	
DEBT_EQ	0.006	0.62		0.019	0.05	**
SIZE	0.000	0.87		0.000	0.97	
ABSQUE	-0.022	0.48		-0.189	<0.01	***
LOSS	0.015	0.03	**	-0.005	0.40	
RESTR	0.017	0.24		0.013	0.25	
EP_RATIO	0.653	<0.01	***	-0.205	0.39	
QUE x BTM	-0.069	<0.01	***	0.033	0.29	
QUE x STDRET	2.507	0.30		-8.198	0.03	**
QUE x DEBT_EQ	-0.114	0.56		0.318	0.19	
QUE x SIZE	0.027	0.41		-0.110	<0.01	***
QUE x ABSQUE	0.210	0.18		0.203	0.38	
QUE x LOSS	-0.175	0.29		-0.139	0.31	
QUE x RESTR	0.015	0.86		-0.255	0.01	**
QUE x EP	-2.437	0.33		3.641	0.21	
Observations	580			580		
Industry Dummies	Yes			Yes		
Adjusted R-square	0.047			0.085		

*, **, *** Denote significance at the 10 percent, 5 percent, and 1 percent levels, respectively. The variables used in the regression model are as defined in Appendix B. All continuous variables are winsorized at 1 and 99 percent.

Table 9

Univariate Comparison of Cumulative Abnormal Returns by Client Size

Panel A: Small Clients Below the Median Audit Committee Size Sample

| | PWC Clients (N = 99) | | | Non-PWC Clients (N = 431) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0044	0.0013	0.0315	-0.0031	-0.0001	0.0406	-0.0013
2 Day	-0.0133	-0.0037	0.0436	-0.0021	0.0044	0.0567	-0.0113**
3 Day	-0.0260	-0.0150	0.0597	-0.0057	0.0029	0.0749	-0.0202***

Panel B: Small Clients Above the Median Audit Committee Size Sample

| | PWC Clients (N = 67) | | | Non-PWC Clients (N = 280) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0070	-0.0040	0.0288	-0.0026	0.0025	0.0367	-0.0044
2 Day	-0.0010	0.0078	0.0420	0.0007	0.0067	0.0484	-0.0017
3 Day	-0.0014	0.0102	0.0596	0.0001	0.0063	0.0607	-0.0015

Panel C: Large Clients Below the Median Audit Committee Size Sample

| | PWC Clients (N = 100) | | | Non-PWC Clients (N=289) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0059	-0.0030	0.0198	-0.0004	0.0018	0.0196	-0.0055**
2 Day	-0.0051	-0.0004	0.0248	-0.0005	0.0040	0.0270	-0.0046
3 Day	-0.0068	-0.0015	0.0311	-0.0028	0.0038	0.0363	-0.0039

Panel D: Large Clients Above the Median Audit Committee Size Sample

| | PWC Clients (N = 151) | | | Non-PWC Clients (N = 347) | | | |
	Mean	Median	SD	Mean	Median	SD	Mean Dif.
1 Day	-0.0030	0.0002	0.0186	0.0005	0.0016	0.0147	-0.0035**
2 Day	-0.0009	0.0026	0.0223	0.0021	0.0035	0.0202	-0.0030
3 Day	0.0005	0.0024	0.0289	0.0042	0.0067	0.0281	-0.0038

Table 10
Schipper Thompson Regression Results for PWC and Non-PWC Clients on Audit Committee Size and Firm Size

$$RETURN_{pt} = \beta_0 + \beta_1 RETURN_{mt} + \beta_2 EVENT_k$$

Panel A: Small Clients at or Below the Median Audit Committee Size

PWC Clients (N=99)

Variable	One Day				Two Days				Three Days		
	Coeff.	p-value			Coeff.	p-value			Coeff.	p-value	
INTERCEPT	-0.0004	0.39			-0.0004	0.43			-0.0003	0.54	
RETURN	1.3548	<0.01	***		1.3583	<0.01	***		1.3529	<0.01	***
EVENT	**-0.0104**	**0.18**			**-0.0099**	**0.07**	*		**-0.0137**	**<0.01**	***
Adjusted R-Square	64.68%				64.90%				65.77%		

Non-PWC Clients (N=431)

Variable	One Day				Two Days				Three Days		
	Coeff.	p-value			Coeff.	p-value			Coeff.	p-value	
INTERCEPT	-0.0006	0.18			-0.0006	0.18			-0.0005	0.22	
RETURN	1.2597	<0.01	***		1.2645	<0.01	***		1.2614	<0.01	***
EVENT	**-0.0094**	**0.18**			**-0.0047**	**0.34**			**-0.0073**	**0.07**	*
Adjusted R-Square	65.79%				65.67%				65.99%		

Panel B: Small Clients Above the Median Audit Committee Size

PWC Clients (N=67)

Variable	One Day				Two Days				Three Days		
	Coeff.	p-value			Coeff.	p-value			Coeff.	p-value	
INTERCEPT	-0.0010	0.08	*		-0.0011	0.07	*		-0.0010	0.08	*
RETURN	1.4862	<0.01	***		1.5111	<0.01	***		1.5090	<0.01	***
EVENT	**-0.0101**	**0.25**			**-0.0022**	**0.73**			**-0.0045**	**0.40**	
Adjusted R-Square	61.57%				61.38%				61.47%		

Non-PWC Clients (N=280)

Variable	One Day				Two Days				Three Days		
	Coeff.	p-value			Coeff.	p-value			Coeff.	p-value	
INTERCEPT	-0.0008	0.12			-0.0008	0.12			-0.0007	0.14	
RETURN	1.3840	<0.01	***		1.3886	<0.01	***		1.3864	<0.01	***
EVENT	**-0.0082**	**0.30**			**-0.0029**	**0.60**			**-0.0050**	**0.27**	
Adjusted R-Square	64.96%				64.84%				64.98%		

R_{pt} is the equally weighted portfolio return for all clients of PWC on day t. R_{mt} is the market return on day t. $Event_k$ is a binary variable equally to 1 in the days in the event window and zero otherwise.

Table 10 (continued)
Schipper Thompson Regression Results for PWC and Non-PWC Clients on Audit Committee Size and Firm Size

Panel C: Large Clients at or Below the Median Audit Committee Size

PWC Clients (N=100)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0003	0.08	*	-0.0004	0.08	*	-0.0003	0.09	*
RETURN	1.2684	<0.01	***	1.2724	<0.01	***	1.2711	<0.01	***
EVENT	**-0.0071**	**0.03**	**	**-0.0025**	**0.27**		**-0.0034**	**0.06**	*
Adjusted R-Square	90.51%			90.37%			90.43%		

Non-PWC Clients (N=289)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0002	0.35		-0.0002	0.32		-0.0002	0.40	
RETURN	1.2396	<0.01	***	1.2418	<0.01	***	1.2403	<0.01	***
EVENT	**-0.0036**	**0.24**		**-0.0008**	**0.70**		**-0.0028**	**0.12**	
Adjusted R-Square	90.47%			90.42%			90.51%		

Panel D: Large Clients Above the Median Audit Committee Size

PWC Clients (N=151)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0003	0.15		-0.0003	0.14		-0.0003	0.14	
RETURN	1.2620	<0.01	***	1.2646	<0.01	***	1.2643	<0.01	***
EVENT	**-0.0039**	**0.23**		**-0.0005**	**0.84**		**-0.0007**	**0.71**	
Adjusted R-Square	89.74%			89.69%			89.69%		

Non-PWC Clients (N=347)

Variable	One Day			Two Days			Three Days		
	Coeff.	p-value		Coeff.	p-value		Coeff.	p-value	
INTERCEPT	-0.0001	0.49		-0.0001	0.45		-0.0001	0.46	
RETURN	1.1941	<0.01	***	1.1954	<0.01	***	1.1952	<0.01	***
EVENT	**-0.0015**	**0.59**		**0.0005**	**0.79**		**0.0000**	**0.98**	
Adjusted R-Square	91.44%			91.43%			91.43%		

R_{pt} is the equally weighted portfolio return for all clients of PWC on day t. R_{mt} is the market return on day t. $Event_k$ is a binary variable equally to 1 in the days in the event window and zero otherwise.