**Do Audit Firms' Financial Statements Provide Information about Audit Quality?**


## ABSTRACT

Whether audit firms should disclose financial statements is controversial among investors, practitioners, and regulators. The debate centers on whether audit firms' financial statements provide information about audit quality. Using hand-collected data from U.K. audit firms' financial statements, we construct four measures that capture audit firms' resource investments (i.e., human capital, workplace environment, technologies) and risk exposures (i.e., litigation provisions). We find that increases in audit firms' staff costs, investments in tangible assets and IT software, and reductions in litigation provisions are associated with improved audit quality. The information in audit firms' financial statements is not contained in their transparency reports or regulatory inspection reports. Additional tests show that increases in audit firms' staff costs and tangible assets, as well as reductions in litigation provisions, are associated with improved audit efficiency.

## I. INTRODUCTION

Economic theory predicts that public disclosures reduce information asymmetry among market participants and facilitate the identification of high-quality products (Grossman 1981; Milgrom 1981). Audit services are a credence good, as auditors have a significant information advantage over clients and investors regarding the quality of their services (Causholli and Knechel 2012; Hansen, Lisic, Seidel, and Wilkins 2021). The rich quantitative data contained in audit firms' financial statements may help mitigate such information asymmetry. However, audit firms, due to their legal status as private entities, do not disclose their financial statements in most countries, including the United States. To date, we still know little about audit firms' financial statements and their implications for audit quality. Exploiting the United Kingdom setting, where audit firms in limited liability partnerships (LLPs) are required to disclose their financial statements, we examine whether audit firms' financial statements contain information about audit quality.

In recent years, U.S. regulators and investors have pushed for public disclosure of audit firms' financial statements. For example, in the report of the Advisory Committee on the Auditing Profession (ACAP) to the U.S. Department of the Treasury, Arthur Levitt, the former SEC chairman, and Donald Nicolaisen, the former SEC chief accountant, urged the PCAOB to require audit firms to disclose their financial statements (U.S. Treasury 2008a), arguing that "issuance of audited financial statements [of audit firms] provides greater transparency and increases discipline and helps sharpen focus, accountability, and trust" (p. II:9). In a comment letter, John Biggs, the then audit committee chair of Boeing, Inc., stated that "it is ironic that the firms that audit all U.S. public companies do not prepare their own public audited financial reports. … Strangely, the professional businesses that assure that openness, do not see an obligation to open their own financial records to the public" (p. 2, Biggs 2008).

However, audit firms strongly oppose disclosing their own financial statements. Their most frequent argument is that their financial statements do not provide information about audit quality and thus would not benefit investors. For example, Ernst & Young states that "neither the investing public nor audit committees would be able to discern anything about a firm's commitment to audit quality from the contents of its financial statements" (p. 30, Ernst & Young 2008). Similarly, Charles Gerdts, the then general counsel of PricewaterhouseCoopers, argued that "directors of public companies seeking to make meaningful and informed choices about auditor quality and competence would not be better informed by having access to financial statements of the accounting profession" (p. 13, Gerdts 2008).

In contrast to their current attitude, many U.S. audit firms once advocated the public disclosure of their financial statements. In the 1970s, at least four—Arthur Andersen, Peat Marwick Mitchell, Price Waterhouse, and Touche Ross—of the Big 8 firms voluntarily disclosed their financial statements to the public (Stabler 1977; Wall Street Journal 1978; Touche Ross 1980). Harvey Kapnick, then chairman of Arthur Andersen, explained in a letter to the U.S. Senate that the firm's decision to release its financial statements was in response to serious questions "raised as to the quality and independence of outside auditors" (U.S. Senate 1976). This anecdotal evidence suggests that audit firms historically viewed financial statement disclosure as a mechanism for regulators and the public to monitor their audit quality.

Similarly, we witness conflicting views on this matter among academics. For example, DeFond (2012) argues that "disclosure of audited financial statements [of audit firms] potentially provides another information channel for clients to gauge audit quality and for auditors to signal their quality" (p.176). In contrast, Zoe-Vonna Palmrose, in the ACAP meeting on June 3, 2008, stated, "I really struggled to find that there was any connection between audit quality and the audited financial statements provided by Arthur Anderson and the unaudited ones provided by the other firms" (U.S. Treasury 2008b). Perhaps because of

opposing views such as these and strong opposition from the practitioners, the PCAOB has not progressed towards requiring audit firms to disclose their financial statements, not even to regulators on a confidential basis (Public Company Accounting Oversight Board 2016).

We argue that audit firms' financial statements could be informative about audit quality for two reasons. First, they reveal audit firms' *resource investments*. For example, staff costs, a major expense on an audit firm's income statement, can provide investors insight into the firm's human resource investments. Higher staff costs may indicate that the firm employs more or higher-quality personnel. Tangible assets on an audit firm's balance sheet reflect the firm's investment in buildings and office properties. A higher value may signal a better work environment, which fosters collaboration between audit personnel and enhances audit effectiveness (Hethcock 2018; RSM 2019). IT software, another asset on an audit firm's balance sheet, could inform investors about the firm's technology investments. A higher value may reflect the availability of more advanced or widely accessible technologies for audit staff. Anecdotal evidence suggests that technologies such as automation have been transforming the audit industry in recent years (e.g., Harris 2017; Forbes 2018).

Second, audit firms' financial statements are informative about audit quality because they reveal audit firms' *risk exposure*. The most significant risk faced by audit firms is litigation (U.S. Treasury 2008a). Investors can infer audit firms' self-estimated litigation costs from litigation provisions, an expense reported on their income statements. These provisions may reveal an audit firm's private information about audit quality, as a firm that provides higher-quality audits may estimate a lower probability of future litigation and thus book smaller litigation provisions in the current period.

To empirically examine whether audit firms' financial statements provide information about audit quality, we exploit the U.K. setting, where audit firms in the form of LLP are required to disclose financial statements. Many U.K. audit firms, particularly the large ones,

have switched to LLPs since 2001 (Lennox and Li 2012). In our setting, all Big 4 firms disclose their financial statements throughout our sample period from 2009 to 2018. We read through each audit firm's annual financial statements and manually collect their staff costs, tangible assets, IT software, and litigation provision from their income statements, balance sheets, and supplemental notes.

Our sample includes both public and private companies in the U.K. because both groups face "substantially equivalent" regulation on auditing and accounting standards (Ball and Shivakumar 2005; Dedman, Kausar, and Lennox 2014). Following prior literature that examines the audit quality of private firms (Che, Hope, and Langli 2020; Dekeyser, Gaeremynck, Knechel, and Willekens 2021), we measure audit quality using clients' absolute accruals and going concern reporting errors. Similar to prior studies using U.K. data (e.g., Lennox and Li 2012; Kausar, Shroff, and White 2016), we obtain clients' financial information from the Financial Analysis Made Easy (FAME) database. Our sample period spans from 2009 to 2018 because FAME provides ten years of data at a snapshot of data collection and because the going concern opinions start to populate in FAME around 2009.

We adopt a changes model to better isolate a change in the financials that signals a change in audit quality and to reduce concerns about long-term trends. Measuring audit quality using clients' absolute accruals, we find that increases in audit firms' staff costs and investments in IT software, as well as reductions in litigation provisions, are associated with improved audit quality. Measuring audit quality using going concern reporting errors, we find that increases in investments in tangible assets and IT software and reductions in litigation provisions are associated with improved audit quality. These findings collectively support the inference that audit firms' financial statements reveal information about audit quality. When we break down the sample by audit firm tier and client type, this inference generally applies to

both Big 4 and non-Big 4 audit firms, primarily to private clients rather than public clients, the latter of which accounts for four percent of our sample.

A natural question about our findings is whether investors can obtain the same audit quality information contained in the audit firms' financial statements via other prominent public disclosures. To address this question, we manually collect U.K. audit firms' transparency reports and inspection reports by the Financial Reporting Council (FRC), the U.K. equivalent of the PCAOB. From the transparency reports, we follow Deumes, Schelleman, Vander Bauwhede, and Vanstraelen (2012) to construct an overall score about an audit firm's continuous education, independence compliance, and internal quality control system. From the inspection reports, we calculate the percentage of deficient engagements over the engagements inspected (i.e., deficiency rate). We find that our inferences remain the same after controlling for an auditor's transparency report score and deficiency rate, suggesting that the audit quality information inferred from audit firms' financial statements is not captured in their transparency reports or regulatory inspection reports.

We conduct additional tests to gain further insights. First, we focus on the resource-based financial statement variables and find that the associations between staff costs and IT software and audit quality are stronger for more complex client firms. Second, we follow Chen, Hribar, and Melessa (2023) to address concerns about using absolute total accruals as the dependent variable and show that our inferences still hold. Third, to mitigate correlated omitted variable concern in general, we employ the impact threshold of a confounding variable (ITCV) method and conclude that the likelihood of an omitted confounding variable with an impact large enough to invalidate our inferences is low.

Last, we examine whether audit firms' financial statements also provide information about audit efficiency. For example, investments in various resources may allow auditors to finish audits sooner. Following Knechel and Sharma (2012) and Ton (2023), we measure an

audit firm's efficiency using report lags. We find that increases in audit firms' staff costs and investments in tangible assets, and reductions in litigation provisions are associated with improved audit efficiency, suggesting that their financial statements also provide insights into audit efficiency.

Our study contributes to the debate on whether audit firms should disclose their financial statements by documenting an important benefit of such disclosures. Contrary to the audit firms' claim that their financial statements do not contain information about audit quality, we demonstrate *how* these statements can be used to gauge audit quality and provide supporting empirical evidence. However, albeit with the caveat of a small sample size, we do not find evidence for their usefulness in public client audits, lending some support for the PCAOB's current policy.

Additionally, our study contributes to the literature on audit firms' attributes. For example, Lee, Naiker, and Stewart (2022) examine auditors' labor supply from nearby prestigious universities. We complement their work by focusing on audit labor from the pecuniary perspective, as more competitive salaries and benefits may attract employees from greater distances and signal an auditor's commitment in human capital. Our paper also extends studies that use tech-related hiring to infer auditors' technology adoption (Ham, Hann, Rabier, and Wang 2024; Law and Shen 2024) by directly measuring the value of auditors' technologies. Lastly, motived by economic theories on firms' financial performance, Chen, Elemes, Hope, and Yoon (2024) investigate the determinants and implications of auditors' profitability. In contrast, motivated by the debate among regulators, practitioners, and academics on disclosing audit firms' financial statements, we hand-collect information across the entire financial report, including supplemental footnotes, to capture multiple factors indicative of audit quality.

We acknowledge two caveats in this study. First, an audit firm's financial statements disclose information about the entire firm, which engages in audit and other practices (e.g.,

consulting). Therefore, the resource-based firm variables (e.g., staff costs) may contain measurement errors. To reduce such error, we adjust these variables using the ratio of audit revenue to total revenue to better reflect the resources allocated to the audit practice. However, we acknowledge that some measurement errors may remain, which could bias against our finding results. Second, whether audit firms' financial statements provide information about audit quality is an important consideration—but hardly the only one—in the policy debate about whether to mandate the disclosures of these statements. Therefore, we caveat that our study does not directly suggest that regulators should require audit firms to disclose their financial statements. Rather, we envision our study, together with future research on other benefits or costs of these disclosures, informing regulators on the overall effect of disclosing audit firms' financial statements to the public.

## II. INSTITUTIONAL BACKGROUND

### The controversy on disclosing audit firms' financial statements in the United States

In 2007, the U.S. Department of the Treasury established the Advisory Committee on the Audit Profession (ACAP) to "examine comprehensively the condition and future of the auditing profession, with emphasis on the sustainability of a strong and vibrant profession" (p. II:1, U.S. Treasury 2008a). The ACAP, chaired by Arthur Levitt, the former chairman of the SEC, and Donald Nicolaisen, the former SEC chief accountant, issued its final report in October 2008. In this report, ACAP made several recommendations to the PCAOB on improving audit firm's transparency. Notably, ACAP urged the PCAOB to consider mandating disclosure of engagement partners' names (i.e., Recommendation #6 in the "Firm Structure and Finance" section) and to require that "the larger auditing firms file with the PCAOB on a confidential basis audited financial statements" (Recommendation #7 in the same section; p.VII:20, U.S. Treasury 2008a). Levitt and Nicolaisen separately recommended that "at least the largest auditing firms should make audited financial statements available, including to audit

committees and the investing public" (p.II:9, U.S. Treasury 2008a). Another former SEC chief accountant, Lynn Turner, insisted that audit firms' financial statements be made available to the public instead of the PCAOB confidentially. He specifically pointed to the United Kingdom as an example of a country that requires audit firms to disclose financial statements to the public (p.IX:1, U.S. Treasury 2008a).

Due to strong opposition from audit firms, however, the PCAOB has not made progress on this proposal. As noted earlier, audit firms oppose disclosing their financial statements on the grounds that the statements contain no information about audit quality. Specifically, comment letters from major accounting firms to the ACAP all explicitly state that audit firms should not disclose their financial statements because such disclosures provide no information about audit quality. For example, Grant Thornton, in its comment letter, maintains that "disclosure of audit firm financial statements would provide little, if any, value to the public who have audit oversight systems in place to monitor audit quality" (p. 5, Grant Thornton 2008). Similarly, Deloitte claims that "such disclosures bear little, if any, relation to audit quality" (p. 22, Deloitte 2008). In addition, the Center of Audit Quality notes, in its letter to the ACAP, that it "disagrees with any suggestion that firm financial statements should be released to the public. We have yet to hear a solid public policy reason for doing so or how such information will inform readers about a firm's ability to provide quality audits" (p. 25, Center of Audit Quality 2008).

Unlike today's firms, audit firms once advocated the public disclosure of their financial statements. In 1970s, several big audit firms voluntarily disclosed their financial statements due to concerns about "corporate bribery and other questionable payments that were undetected by their auditing firms" and because "the collapse of some major companies has led analysts to question the value of their earlier audited financial statements." John Biegler, then Chairman of Price Waterhouse, proposed that audit firms register with the SEC and file annual financial

statements like their public clients (New York Times 1977). In the letter to the U.S. Senate, Harvey Kapnick, then chairman of Arthur Andersen, stated that they issued financial statements as a response to serious questions "raised as to the quality and independence of outside auditors" (U.S. Senate 1976).

Although news articles suggest that at least four of the Big 8 U.S. audit firms disclosed their financial statements in the late 1970s, we, despite our best efforts, could locate only two of the audit firms' financial reports from the period: one by Arthur Andersen in 1977 and another by Touche Ross in 1980. We have not been able to find documents showing how long these firms disclosed their financial statements or when and why they stopped. Due to data scarcity, we rely on U.K. audit firms' financial statements to examine our empirical questions.

**The United Kingdom setting**

All U.K. private firms in the legal form of LLPs or limited liability companies (LLCs) must file their financial statements with Companies House, the registrar of companies in the U.K. As audit firms switched from general partnerships to LLPs after the U.K. government permitted it in 2001, they began disclosing their financial statements to the public. Lennox and Li (2012) find that the larger audit firms were more likely to switch to LLPs. Consistent with their findings, we find that 15 of the 20 largest and all of the ten largest audit firms in the United Kingdom were LLPs by 2017 (Financial Reporting Council 2017).

In addition to data availability, the U.K. setting offers two advantages for tests of our research questions. First, because private and public companies face substantially equivalent accounting and auditing standards in the U.K. (Ball and Shivakumar 2005), we can include both types in our sample. The inclusion of private companies means our sample is less dominated by Big 4 audit firms, so our findings are less likely to be driven by a few big players. Second, the U.K. is relatively comparable to the U.S. in terms of the litigation risk for audit firms and the audit clients' financial reporting quality (Wingate 1997; Leuz, Nanda, and

Wysocki 2003). Thus, although there are differences between the legal and institutional environments in the U.K. and the U.S., our inferences are more generalizable to the U.S. than if we had used other non-U.S. countries.

## III. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Audits are fundamentally credence goods, because it is difficult for clients and investors to assess audit quality ex post, except in extreme forms of audit failures. Causholli and Knechel (2012) state that the credence nature of audits "induce[s] the most extreme form of information asymmetry" (p. 633). Since audit firms' financial statements contain rich quantitative information that clients and investors can use to gauge audit quality, they have the potential to reduce the information asymmetry between clients (or investors) and auditors. However, U.S. audit firms do not publicly disclose these statements and generally provide little internal information.

Audit firms' financial statements are likely to provide valuable insights into audit quality for two reasons. First, they reveal the firms' investments in critical resources, such as human capital, the workplace environment, and technology. Greater investment in these resources may lead to higher audit quality. Second, they signal the firms' risk exposure. For example, if a firm conducts higher-quality audits, it would expect lower future litigation risk and thus record smaller litigation provisions. As a result, litigation provisions could reveal the firm's private information about audit quality.

### Human resources and audit quality

Human resources are a critical asset for audit firms. Wayne Berson, the CEO of BDO USA, states that "people will always be the most critical issue in our industry" (Hood 2017). Based on a survey of over 700 auditors, Persellin, Schmidt, Vandervelde, and Wilkins (2019) show that staff shortage is the biggest impediment to providing high-quality audits. In the 2019 top issue survey conducted by the American Institute of CPAs (AICPA), CPA firms chose

finding qualified staff and retaining qualified staff as the top two most important issues.[1] Consistent with survey evidence, Lee et al. (2022) empirically show that auditors located closer to better universities are associated with higher audit quality, highlighting the importance of labor quality. The evidence collectively suggests that audit firms can improve audit quality by hiring more staff and by hiring higher-quality staff, both of which manifest themselves in higher staff costs. As a result, we predict the following:

*H1: Audit firms' staff costs are positively associated with audit quality*.

**Workplace environment and audit quality**

More valuable buildings and office equipment may indicate a better work environment. Anecdotal evidence suggests that audit firms move to more expensive office buildings to "create a more collaborative space for employees" (Hethcock 2018; RSM 2019). Audit firms often incorporate amenities in workspaces (e.g., media walls or conference facilities) to improve communication with clients. A modern workplace with large open spaces helps attract and retain high-quality personnel and foster collaboration between audit staff. Prior research shows that employees are more satisfied with their job and become more productive when they perceive a better workplace environment (Huselid 1995; Harter, Schmidt, and Hayes 2002; Huang, Masli, Meschke, and Guthrie 2017). We therefore argue that a higher value of workplace tangible assets implies a better workplace environment, and predict the following:

*H2: Audit firms' tangible assets are positively associated with audit quality.*

**Technology and audit quality**

In recent years, audit firms have been investing heavily in technologies, such as big data analytics, cloud services, and process automation tools. Anecdotal evidence suggests that these technologies facilitate more effective auditing (Alexander 2019; Needleman 2020). For example, they enable auditors to analyze more financial data and to conduct thorough tests of

[1] https://www.aicpa.org/press/pressreleases/2019/staffing-remains-top-concern-for-cpa-firms-survey-finds.html

more transactions than before. Through its machine-learning component, artificial intelligence outperforms traditional accounting technological toolkits (e.g., Excel spreadsheets). We argue that a higher value of IT software, as part of an audit firm's intangible asset, may signal a greater investment in audit technologies, and thus predict the following:

*H3: Audit firms' IT software assets are positively associated with audit quality.*

**Litigation provision and audit quality**

An inherent risk for audit firms is that outside investors might sue them due to alleged negligence in their audits. Similar to a bank's booking a loan loss provision to estimate the amount it may fail to collect in the future, audit firms book litigation provision to estimate their future payouts for lawsuit settlements. The litigation provision directly reflects an audit firm's estimation of the likelihood of audit failures and the expected litigation costs. We argue that an audit firm that provides high-quality audits would anticipate a lower likelihood of being sued by investors or creditors and therefore record smaller litigation provisions. We thus predict the following:

*H4: Audit firms' litigation provision is negatively associated with audit quality.*

## IV. RESEARCH DESIGN

To examine whether audit firms' financial statements provide information about audit quality, we estimate the following regression model:

$$\Delta\text{Audit Quality}_t = \sum \Delta\text{Audit Firm Financial Statement Variable}_t + \sum \Delta\text{Client Controls}_t + \sum \Delta\text{Auditor Controls}_t + \sum \text{Year FEs} + \sum \text{Industry FEs} + \varepsilon_t \quad (1)$$

We adopt a changes model to better isolate a change in financials that signals a change in audit quality and to reduce concerns that long-term trends affect our inferences.[2] Therefore, all variables are calculated by subtracting the value in year *t*-1 from the value in year *t*. Because

[2] An important econometric consideration favoring the use of the changes model is that we observe high variance inflation factors (VIF) on audit firm financial statement variables when they are included in the same *levels* model with firm fixed effects.

our sample include mostly private firms, we draw on recent studies of private firms' audit quality to guide our choice of audit quality measures. We find that most studies use accrual-based audit quality measures (e.g., Dekeyser et al. 2021), going concern-based audit quality measures (e.g., Knechel, Niemi, and Zerni 2013; Knechel, Vanstraelen, and Zerni 2015), or both (Che et al. 2020). Therefore, we measure audit quality using the absolute value of total accruals and going concern reporting errors. Following Gipper, Hail, and Leuz (2021), we use total accruals instead of discretionary accruals to avoid the econometric bias that arises from the two-stage estimation. We use going concern reporting errors instead of the issuance of a going concern itself because our audit firms' financial statement variables (e.g., staff costs or IT software) presumably reflect the firms' competence more than their independence. Because restatements are rare in the U.K., we do not use restatements to measure audit quality.[3]

From audit firms' financial statements, we construct four variables that are potentially informative of audit quality. *Staff Costs* is an audit firm's annual staff costs, including salaries, pension, and social security costs. *Tangible Assets* is the net book value of an audit firm's tangible assets, which typically include buildings, furniture, and office equipment. *IT Software* is the net book value of an audit firm's externally acquired or internally developed IT software. For *Tangible Assets* and *IT Software,* we use the book values net of accumulated depreciation or amortization to account for the assets' value reduction over time. All three of the above variables reflect an audit firm's resources, which are likely shared across its various service lines (e.g., audit, tax, and consulting). To capture the resources allocated specifically to audit services, we multiply these three variables by the ratio of audit revenue to total revenue.

[3] Consistent with this notion, Hallman, Schmidt, and Thompson (2022, p. 5) say they "do not examine direct measures of audit quality such as restatements and regulatory sanctions because they occur too infrequently in the United Kingdom to allow for robust statistical analysis."

*Litigation Provision* is an audit firm's expense recorded for future litigation claims.[4] All variables are scaled by the audit firm's total assets.

We hypothesize that 1) increased investment in human capital, workplace environment, and technologies and 2) reduced expected future litigation costs are associated with improved audit quality. Because higher absolute accruals and more going concern reporting errors indicate lower quality, we expect $\beta$ to be negative for $\Delta$*Staff Costs*, $\Delta$*Tangible Assets*, and $\Delta$*IT Software* and positive for $\Delta$*Litigation Provision* across all models.

We control for a number of client firm and auditor characteristics in their changes forms. Client firm characteristics include *Size*, *Leverage*, *ROA*, *Loss*, *Current Ratio*, *Investment*, *Issuances*, *Foreign Income*, *Extraordinary Item*, *Report Length*, and *Public*. To control for client misstatement and default risks, we further control for *F-score* and *ZM-score*. For the accrual model, because we combine two stages of estimating discretionary accruals, we also include Jones model regressors in the changes specification (i.e., the change in the inverse of total assets, the change in revenue over total assets, the change in receivables over total assets, and the change in PPE over total assets). Because we use the absolute value of total accruals as the dependent variable, we also control for the absolute value of these variables. We additionally control for an indicator variable for whether total accruals is calculated using the direct method or the indirect method. Auditor characteristics include *Auditor Tier*, *Audit Fees*, *Office Size*, *Client Importance*, *Industry Specialist*, *Partner Gender*, and *Partner Experience*. Last, we control for the regional consumer price index (*CPI*) to account for the possibility that staff costs vary with local cost of living. See Appendix A for detailed definitions of these variables. We cluster standard errors by client firm.

[4] We do not multiply the litigation provision variable by the ratio of audit revenue to total revenue because litigation risk should mostly arise from audit services. To validate this assumption, we download, from Audit Analytics, all lawsuits where audit firms are named as defendants from 2000 to 2021. We find that audit firms are sued due to accounting/audit issues in 1,107 cases and due to tax issues in only six cases. We do not find any cases where audit firms are sued due to consulting issues. Nevertheless, our results are robust to also adjusting this variable by the ratio of audit revenue to total revenue.

## V. DATA

Following prior studies (e.g., Brav 2009; Michaely and Roberts 2012; Lennox and Li 2012; Kausar et al. 2016), we obtain the financial information of client firms in the U.K. from the Financial Analysis Made Easy (FAME) database under Bureau Van Dijk in September 2019. The FAME database covers a snapshot of up to ten years of data for both public and private firms. We start with all client firms with non-missing accounting information (e.g., total assets, shareholder's equity, net income, revenue) and audit-related information (auditor name and audit fees) from 2009 to 2018. We exclude financial firms (U.S. SIC codes between 6000 and 6999), utilities (U.S. SIC codes between 4900 and 4999), nonprofit organizations, and audit firms' industry (U.K. SIC codes between 69201 and 69203). We further exclude client firms that file abridged annual financial statements.[5] These basic filters result in an initial sample of 267,779 client firm-year observations.

We then search for the client firms' auditors in the U.K. Companies House. We find that 106 audit firms file annual reports and that these firms audit 178,325 client firm-year observations in our sample. The audit firms include all Big 4 (EY, Deloitte, PWC, and KPMG) as well as many smaller firms. During our sample period, none of the audit firms switch to or from being LLPs or voluntarily disclose their financial statements before switching to LLP, mitigating the self-selection concern.

We read through audit firms' financial statements and manually collect information to construct the staff costs, tangible assets, IT software, and litigation provision variables. We collect staff costs from the income statements and supplemental notes. We collect tangible assets from the balance sheets and supplemental notes. We collect IT software and litigation provision from the supplemental notes because typically they are not separately disclosed on

[5] An abridged annual financial statement contains much less information than a typical full annual report. For example, it may include the balance sheet but not the income statement.

the balance sheets or income statements.[6] We exclude audit firms that file abridged annual financial statements from our sample because these statements lack the necessary information to construct our variables of interest. For example, in an abridged statement, an audit firm may disclose its balance sheet but not its income statements, making it impossible for us determine its staff costs. Last, the changes model further reduces the sample size by mechanically dropping the first year for each client firm. After these filters, our final sample consists of 125,000 client firm-year observations audited by 72 audit firms. 97 percent of audit firms' financial statements are audited.

## VI. EMPIRICAL RESULTS

### Overview of audit firms' financial statements

As the first comprehensive study to examine audit firms' financial statements, we begin our analysis by presenting a common-size income statement and a common-size balance sheet of an average audit firm in Table 1, using the 72 U.K. audit firms in our sample. We document several observations below.

**Income statement**. As one may reasonably expect, the audit firm's largest expense is staff costs, which account for 47 percent of the revenue (62 percent of the operating expense). Depreciation expense is the second-most-frequently disclosed expense, but it only accounts for 2.1 percent of revenue (or 3 percent of operating expense). An audit firm's profit margin and profit distribution are, on average, 22.5 percent and 20.6 percent, respectively, suggesting that 1) audit firms are fairly profitable and 2) most profits are distributed to partners in the current year. In addition, we observe meaningful variations in the income statement accounts. For example, we find that a standard deviation of audit firms' net income is 13.2 percent, which corresponds to 58 percent of the mean in our sample.

[6] Audit firms rarely disclose the technologies they use in their financial statements.

**Balance sheet**. On the asset side, the largest component is accounts receivable, which on average accounts for almost 72 percent of total assets. Cash accounts for 7.3 percent of total assets. These large liquid-asset holdings should make audit firms less likely to run into liquidity problems. Fixed assets account for 9.4 percent of total assets. On the liability side, the largest component is accounts payable and unearned revenue,[7] accounting for 16.8 percent of total assets (28 percent of total liabilities). Another major liability, bank loans, accounts for 14.2 percent of total assets (24 percent of total liabilities), and pension liabilities make up 4.6 percent. Although the average percentage for pension liabilities is low, Big 4 audit firms generally have a significant amount of such liabilities, while most of the smaller audit firms have none. Thus, the standard deviation appears large. Equity capital on average accounts for about 40 percent of assets. Again, we observe meaningful variations in the balance sheet accounts. For example, a standard deviation of audit firms' accounts payable and unearned revenue is 11.7 percent, which corresponds to 70 percent of its mean.

**Descriptive statistics**

We present descriptive statistics of variables used in the regression analyses in Table 2. Because we use the changes model in all analyses, all variables are in changes specification, which subtracts the value in year *t*-1 from the value in year *t*. Because we do not, and do not need to, include firm fixed effects under such a specification, the standard deviations reflect the true variation in each variable when we interpret their economic magnitude in the regression analyses (Breuer and DeHaan 2024).

In addition, we report the correlations between the variables used in the regression analyses in Table 3. Consistent with our expectations, we find that clients' absolute total accruals are negatively correlated with audit firms' staff costs but positively correlated with litigation provision. Going concern reporting errors are negatively correlated with audit firms'

[7] Many audit firms do not separately report these two accounts, so we combine them.

tangible assets and IT software assets but positively correlated with litigation provision. Also, we find that the audit firms' financial statement variables are correlated with each other. For example, staff costs are negatively correlated with tangible assets and IT software, suggesting that Audit firms' investments in human resources and physical resources partially substitute for each other. A positive correlation between tangible assets and IT software suggests that audit firms simultaneously change investment in both types of physical resources. The correlations between most variables are generally small or modest, possibly because we use the changes specification.

**Audit quality tests**

We report multivariate regression results on the association between audit firms' financial statement variables and absolute value of total accruals in Table 4.[8] Following Gipper et al. (2021), we integrate the first-stage estimation of discretionary accruals into the second-stage model so that we can use a single model where total accruals is the dependent variable. We find that the coefficients on Δ*Staff Costs* in Column (1) and Δ*IT Software* in Column (3) are both significantly negative, suggesting that an increase in audit firms' investments in human capital (measured by staff costs) and technology (measured by IT software) is associated with improved audit quality. The coefficient on Δ*Litigation Provision* in Column (4) is significantly positive, consistent with our expectation that reductions in provisions recorded for future litigation indicate improved audit quality. However, we do not find a significant association between Δ*Tangible Assets* and Δ|*Total Accruals*|. These results continue to hold when we pool all variables in one regression model, as reported in column (5).

In terms of economic magnitude, we find that a one-standard-deviation increase in Δ*Staff Costs* is associated with a 12-basis-point (0.066 × 0.018 × 10,000) decrease in clients'

[8] Like other audit firm studies (e.g., Aobdia 2020; Firth, Mo, and Wong 2012; Lisic, Myers, Pawlewicz, and Seidel 2019), our variables of interest (such as staff costs) are at the audit firm level. Our findings should be interpreted with caution since statistical significance may be inflated.

absolute total accruals (|*Total Accruals*|), corresponding to 1.1 percent of the unconditional mean of absolute total accruals; a one-standard-deviation increase in Δ*IT Software* is associated with a 9.5-basis-point (0.001 × 0.952 × 10,000) decrease in clients' absolute total accruals (|*Total Accruals*|), corresponding to 0.9 percent of the unconditional mean of absolute total accruals; and a one-standard-deviation increase in Δ*Litigation Provision* is associated with a 12-basis-point (0.011 × 0.11 × 10,000) increase in clients' absolute total accruals (|*Total Accruals*|), corresponding to 1.1 percent of the unconditional mean of absolute total accruals.[9] We caution that, because almost all prior studies measure audit quality using levels of discretionary accruals instead of changes of total accruals, the economic magnitude may not be comparable to those documented in prior literature. The results regarding the control variables are largely consistent with prior literature. For example, similar to Lennox and Li (2012), we find that smaller client firms, higher-levered firms, and loss firms are associated with larger absolute accruals.

Next, we examine the association between audit firms' financial statement variables and going concern reporting errors and present the results in Table 5. We find that the coefficients on Δ*Tangible Assets* in Column (2) and Δ*IT Software* in Column (3) are significantly negative, consistent with our expectation that increases in audit firms' investments in workplace environment (measured by tangible assets) and technologies (measured by IT software) are associated with improved audit quality. The coefficient on Δ*Litigation Provision* in Column (4) is significantly positive, consistent with our expectation that reductions in provisions recorded for future litigation indicate improved audit quality. However, we do not

[9] The formula for calculating economic magnitude is the variable's standard deviation × its coefficient × 10,000. We multiply it by 10,000 to convert it to basis points. For example, a standard deviation of Δ*IT Software* is 0.001, and the coefficient on Δ*IT Software* in the accrual tests is -0.952, so the economic magnitude for a one-standard-deviation increase in IT software is 0.001 × 0.952 × 10,000 = 9.52 bps. The (untabulated) mean of |*Total Accruals*| is 0.108, so 9.52 bps corresponds to 0.9% (=9.52 bps/1,080 bps) of the unconditional mean of absolute total accruals.

find a significant association between Δ*Staff Costs* and Δ*GC Errors*. These results continue to hold when we pool all variables in one regression model, as reported in Column (5).

In terms of economic magnitude, one-standard-deviation changes in Δ*Tangible Assets*, Δ*IT Software*, and Δ*Litigation Provision* are associated with 14-basis-point (0.012 × 0.116 × 10,000), 9.3-basis-point (0.001 × 0.933 × 10,000), and 15-basis-point (0.011 × 0.138 × 10,000) changes in the probability of a going concern reporting error, respectively, corresponding to 4.4 percent, 2.9 percent, and 4.7 percent of the unconditional mean probability of a going concern reporting error.[10] Regarding control variables, we find that small firms, loss firms, and firms with higher default risk (*ZM-Score*) are associated with more going concern reporting errors.

Overall, we find that the measures we constructed using audit firms' financial statements are associated with audit quality, suggesting that the financial statements do provide insights into audit quality. DeFond and Zhang (2014) suggest that all audit quality measures contain some levels of measurement error. Although we follow prior literature to select the most appropriate measures for our setting, we may not expect each of the four auditor financial statement variables to be associated with all audit quality measures. Nonetheless, this study's key takeaway is that audit firms' financial statements provide information about audit quality. Our evidence supports this takeaway.

**Partitioning by auditor size and client type**

We first explore whether audit firms' financial statements are informative about audit quality across different auditor sizes, i.e., for Big 4 vs. non-Big 4 audit firms. Panel A of Table 6 reports the results. In the Big 4 subsample, we do not find significant coefficients on the

[10] The formula of calculating economic magnitude is the variable's standard deviation × its coefficient × 10,000. We multiply it by 10,000 to convert it to basis points. For example, a standard deviation of Δ*IT Software* is 0.001, and the coefficient on Δ*IT Software* in the accrual tests is -0.933, so the economic magnitude for a one-standard-deviation increase in IT software is 0.001 × 0.933 × 10,000 = 9.33 bps. The (untabulated) mean probability of a going concern reporting error is 3.16%, so 9.33 bps corresponds to 2.9% (=9.33 bps/316 bps) of the unconditional mean of absolute total accruals.

auditors' financial statement variables in the absolute accruals tests; however, we find that the coefficients on Δ*Staff Costs*, Δ*IT Software*, and Δ*Litigation Provision* are all statistically significant with expected signs in the going concern reporting error test. In the non-Big 4 subsample, we find that the coefficients on Δ*Staff Costs* and Δ*IT Software* are significant in the absolute accruals test and Δ*Tangible Assets*, and Δ*Litigation Provision* are significant in the going concern reporting error test. Taken together, these results suggest that both Big 4 and non-Big 4 audit firms' financial statements are informative about audit quality.

We then further partition the sample by client public status within Big 4 and non-Big 4 auditors, respectively. Panel B of Table 6 reports the results. We find that the associations between financial statement variables and audit quality largely concentrate in private clients for both the Big 4 and non-Big 4 auditors. Specifically, litigation provision is significantly associated with going concern reporting errors for non-Big 4's public clients; staff costs, IT software, and litigation provision are significantly associated with going concern reporting errors for Big 4's private clients; staff costs and IT software are significantly associated with absolute accruals for non-Big 4's private clients; litigation provision is significantly associated with going concern reporting errors for non-Big 4's private clients.[11] The weaker results for public clients are likely because they have better financial reporting/internal control systems, which potentially reduce the informativeness of auditors' financial statements. Alternatively, it may be because of limited statistical power, as public firms only account for four percent of our sample. As we do not find evidence for public clients, we caution against interpreting our

[11] One may wonder if the association between litigation provision and audit quality should hold for private firms, since private firms could represent less litigation risk. To shed light on private firms' litigation risk, we compare litigation cases against private firms versus public firms in the U.K. We focus on public litigation (i.e., lawsuits filed by regulators) because private litigation claims (i.e., lawsuits filed by investors) are scarce in the U.K. (Grant Thornton 2022). We manually collect all the lawsuits filed by the Financial Conduct Authority (the U.K. equivalent of the SEC), the Financial Reporting Council (the U.K. equivalent of the PCAOB), and the HM Revenue & Customs (the U.K. equivalent of the IRS). We find that during our sample period of 2009 to 2018, 71% of regulatory lawsuits are against private firms and 29% are against public firms. Within lawsuits against private firms, 22% (78%) are due to financial reporting/auditing (tax) issues. Although private firms surely outnumber public firms in the U.K., these statistics suggest that the private firms' litigation risk is nontrivial.

findings as suggesting that auditors' financials are informative about audit quality of these clients.

**Controlling for other prominent public disclosures about audit firms**

Our results above suggest that U.K. audit firms' financial statements provide information about audit quality, but these statements are not the only public disclosures about the firms. Similar to U.S. audit firms, U.K. audit firms disclose transparency reports, and the FRC (the U.K. equivalent of the PCAOB) issues inspection reports about audit firms. Either of these report types might reveal useful information that overlaps with the information in the audit firms' financial statements. Therefore, we next investigate if audit firms' financial statements provide additional insights into audit quality that are incremental to these reports.[12]

***Controlling for transparency reports of audit firms***

We manually collect transparency reports from the website of each audit firm in our sample. An audit firm's transparency report discloses qualitative information about the firm's governance. Audit firms with public clients are required to disclose transparency reports and keep the reports publicly available for two years. Deumes et al. (2012) argue that, in these reports, disclosures related to three dimensions—continuous education, independence compliance, and internal quality control systems—are most likely to be associated with audit quality. Following their study, we manually read through every report and code each dimension. For example, under the continuous education dimension, Deumes et al. (2012) list 13 elements, one of which is whether continuing education is considered in promotion decisions or employee remuneration policies. We code this element as one if the audit firm discloses such a policy in its transparency report, zero if the firm does not. The audit firm's continuous education score

[12] We acknowledge that there may be other public disclosures about audit firms and that our proxies for these two disclosures might contain measurement errors.

is the number of elements disclosed by the audit firm divided by total number of applicable elements under the continuous education dimension (13 in this case).

Following Deumes et al. (2012), we conduct a confirmatory factor analysis to construct a latent variable that explains the three dimensions (i.e., *Transparency Report Score*). We rerun Model (1) after controlling for *ΔTransparency Report Score* and report the results in Panel A of Table 7. We include the same set of control variables as in Tables 4 and 5 but do not tabulate their coefficients (for brevity). Consistent with Deumes et al. (2012), we find that *ΔTransparency Report Score* is not significantly associated with the audit quality measures, suggesting that audit firms' transparency reports do not provide information about audit quality. Importantly, our primary findings are robust to further controlling for this additional variable: the results are very similar to column (5) of Tables 4 and 5, suggesting that the audit quality information inferred from the audit firms' financial statements is not covered in the transparency reports. We report these results as a robustness test because many of the audit firms in our sample do not have transparency reports available during our sample period, resulting in a loss of sample observations.

***Controlling for FRC's inspection reports of audit firms***

Like the PCAOB, the FRC inspects a small number of engagements for each audit firm every year and identifies the number of engagements that require improvements (i.e., the deficient engagements).[13] We hand-collect the number of engagements inspected and the number of engagements that require improvements from each inspection report on the FRC website, then construct a deficiency rate for each audit firm-year in our sample period. The firm-level deficiency rate is calculated as the ratio of the number of engagements requiring improvement to the total number of engagements inspected. The mean deficiency rate is 40

[13] The FRC inspects public companies and private companies with outstanding bonds. Based on the inspection cases manually collected from the FRC website, we find that 30% (70%) of inspected client companies are private (public) clients.

percent. This ratio appears high, possibly because the FRC strategically inspects engagements with high audit risks.

We rerun Model (1) after further controlling for the inspection report deficiency rate and report the results in Panel B of Table 7. We find that *ΔInspection Report Deficiency Rate* is not associated with clients' total accruals or going concern opinion reporting errors, suggesting that the FRC's inspection reports do not provide material information about audit quality. This insignificant association could be related to the FRC's small inspection pool. Importantly, our main findings are robust to further controlling for this additional variable. The results are very similar to those in column (5) of Tables 4 and 5, suggesting that the audit firms' financial statements provide insights into audit quality that are not captured by the FRC's inspection reports. We report these results as a robustness test because many audit firms in our sample do not have FRC inspection reports during our sample period, resulting in loss of sample observations.

**Additional analyses.**

***Client complexity***

So far, our results show that audit firms' investments in resources such as human capital and technology are associated with higher audit quality. Since complex engagements may require more auditor resources, we expect that the effect of these investments is greater for more complex clients. Prior literature has used multiple measures to capture different aspects of complexity, so we construct a composite complexity score by combining three measures: firm size (Bushee, Gow, and Taylor 2018), the magnitude of inventories and receivables relative to total assets (Chou, Pittman, and Zhuang 2021), and the standard deviation of return on assets (Bratten, Causholli, and Omer 2019). To combine these measures, we rank all client firms into quartiles for each metric, then sum each firm's rankings. *Complex* equals one if a

firm-year's overall complexity score is greater than the median, zero otherwise. We then interact this indicator variable with three resource-based audit firm variables.

Table 8, Panel A reports the results. We find some evidence that the association between audit firms' financial statement variables and audit quality is stronger for more complex clients. Specifically, for more complex clients, absolute accruals decrease more when audit firms' staff costs increase, absolute accruals decrease more when audit firms' IT investments increase, and going concern reporting errors decrease more when audit firms' staff costs increase. These results corroborate our inference that audit firms' investments in resources improve audit quality.

***Signed accruals***

Following recent literature (e.g., Carson, Simnett, Thürheimer, and Vanstraelen 2022; Gipper et al. 2021; Hallman et al. 2022), we use a single-step regression with absolute value of total accruals as a dependent variable. However, a recent working paper by Chen et al. (2023) raises concerns about this approach. The primary issue is that this approach is designed to model total signed accruals, as opposed to the unsigned one, potentially introducing bias in estimation. One way they propose to avoid potential bias is to estimate the single-step OLS regression using an interaction variable that identifies observations for which the effect on audit quality is positive versus negative.[14]

We follow their proposal to run a robustness test and present the results in Table 8, Panel B. Specifically, we estimate a single-step OLS regression with signed total accruals as dependent variable and interact an indicator variable with our auditor financial statement

[14] Chen et al.'s (2023) second approach does not apply to our setting because it is designed for levels models but not for our changes model. Specifically, their second approach is to run quantile regression at different points of the dependent variable distribution (i.e., signed accruals). This approach is based on the same assumption as the approach we follow – a positive (negative) accruals *level* indicates upward (downward) earning management (pp.23-24, Chen et al. 2023). However, for our changes model, quantile regression would define deciles based on the *change* in accruals, so the bottom (top) decile is the group of firms that experience the biggest decrease (increase) in accruals, as opposed to those with most negative (positive) accruals. Therefore, estimating quantile regressions across bins of the *change* in accruals does not achieve the purpose of sorting firms by earning management.

variables. We construct the indicator variable (*Positive Accruals*) based on the sign of accruals, as positive (negative) accruals likely indicate upward (downward) earning management. We find negative coefficients on Δ*Staff Costs* × *Positive Accruals* and Δ*IT Software* × *Positive Accruals*, and a positive coefficient on Δ*Litigation Provision* × *Positive Accruals*. These results suggest that, when accruals are positive versus negative, increases in staff costs and IT software are associated with larger reductions in accruals while increases in litigation provision are associated with larger increases in accruals. Taken together, these results corroborate our inference that auditor financial statement variables provide valuable insights for gauging audit quality (in predicted directions).

***Impact threshold of a confounding variable***

To mitigate correlated-omitted variable concerns in general, we follow recent literature (e.g., Larcker and Rusticus 2010; Lee et al. 2022; Badertscher, Kim, Kinney Jr, and Owens 2023) to employ the ITCV method. This method evaluates the likelihood that our inference could be invalidated by an unobservable confounding variable. We find that the ITCV for Δ*Staff Costs*, Δ*IT Software*, and Δ*Litigation Provision* in the absolute accrual test ranges from 28 to 34 bps. As a comparison, the highest ITCV for the control variables ranges from 3 to 10 bps. Similarly, the ITCV for Δ*Tangible Assets*, Δ*IT Software*, and Δ*Litigation Provision* in the going concern reporting error test ranges from 45 to 59 bps, while the highest ITCV for the control variables ranges from 1 to 11 bps. Overall, these statistics suggest that, for an omitted variable to render the coefficients on our variables of interest insignificant, it would need to have an impact that is 3.4 to 45 times as strong as that of our most impactful control variable. Given that we have exhaustively included factors that prior literature suggests affect audit

quality measures, the likelihood of an omitted confounding variable having such a strong impact is low.[15]

**Audit efficiency tests**

Conceptually, an audit firm's financial statements could reveal information about audit efficiency. For example, when RSM announced that it was moving its headquarters to the CME center in Chicago, John Bird, the managing partner of the Chicago office, said the move would fulfill "the need for a more efficient and productive environment that accommodates the way our people work today" (RSM 2019). This anecdotal evidence suggests that an audit firm's investment in its workplace environment increases its efficiency. Regarding litigation provision, the relation with report lag is less clear. On one hand, an increase in litigation provision may indicate that the audit firm realizes that some of its engagements are risky and could result in lawsuits, in which case the auditor might spend more time on the audits. On the other hand, an increase in litigation provision may indicate that the audit firm is rushing its audits and anticipates more litigation as a result.

Following Knechel and Sharma (2012) and Ton (2023), we measure an audit firm's efficiency using report lags. We scrape each client's annual report filing date from the U.K. Company House website and calculate the report lag as the number of days between the filing

[15] We also conduct a randomization test to assess the likelihood of our findings being due to pure random chance (e.g., White and Webb 2021; Ege, Seidel, Sterin, and Wood 2022a; Ege, Kim, and Wang 2022b; Ege, Wang, and Xu 2024). Specifically, for each audit firm financial statement variable, we generate a placebo variable by randomly assigning the variable's actual value to client-year observations in the sample. This placebo variable follows the same distribution as the actual variable. Then, we rerun Model (1) using this placebo variable and repeat the process 999 times to generate a distribution of placebo coefficients. Last, we calculate the Fisher p-value based on the percentage of placebo coefficients that have a magnitude greater than the one obtained using the actual variable. We find that the Fisher p-values for coefficients on *ΔStaff Costs*, *ΔIT Software*, and *ΔLitigation Provision* are all less than 0.01 for the absolute accrual tests. Similarly, we also find that the Fisher p-values for coefficients on *ΔTangible Assets*, *ΔIT Software*, and *ΔLitigation Provision* are all less than 0.01 for the going concern error tests. Results are available upon request. These findings confirm that the associations we find in our baseline tests are not spurious and further increase the credibility of our findings.

date and the client's fiscal year-end.[16] We rerun Model (1) with report lag as the dependent variable and report the results in Table 9.

We find that coefficients on Δ*Staff Costs* in Column (1), Δ*Tangible Assets* in Column (2), and Δ*IT Software* in Column (3) are all significantly negative, suggesting that increases in investments in human capital and physical resources by audit firms signal more efficient audits. We also find that the coefficient on Δ*Litigation Provision* in Column (4) is significantly positive, suggesting that auditors spend more time in auditing engagements that are more likely to lead to lawsuits. When we pool all variables in one regression model (i.e., Column (5)), we find that the coefficients on Δ*Staff Costs*, Δ*Tangible Assets*, and Δ*Litigation Provision* remain statistically significant, but the coefficient on Δ*IT Software* does not.[17] Overall, these results suggest that auditors' financial statements provide insights into audit efficiency.

In terms of economic magnitude, we find that one-standard-deviation increases in Δ*Staff Costs*, Δ*Tangible Assets*, and Δ*Litigation Provision* are associated with 0.8 fewer days (0.066 × 0.385 × 30), 2.3 fewer days (0.012 × 6.475 × 30), and 0.6 fewer days (0.011 × 1.903 × 30) in report lag, respectively. These magnitudes are comparable to those in prior literature. For example, Hoitash and Hoitash (2018) show that a one-standard-deviation increase in accounting reporting complexity, their variable of interest, is associated with 1.4 more days in report lag (0.397 × 3.624, Table 1 and 6 of their paper).

## VII. CONCLUSION

[16] The auditor signing date is not available in any U.K. database and is not scrapeable, because it is often hand-written and sits in the middle of the client's annual reports (typically scanned PDFs). We acknowledge that measuring report lags with clients' annual report filing dates may introduce measurement errors. To assess the magnitude of the measurement error, we randomly select 40 clients over ten years (i.e., 400 firm-year observations) in our sample, download their annual reports from the Company House website, and manually read through each annual report to identify the audit firm's signing date. We find that the correlation between the client's annual report filing lag and auditor signing lag (i.e., the number of days between the auditor report signing date and the fiscal year-end) is 89%, suggesting that the measurement error is relatively small. In addition, this measurement error presumably biases against finding significant results because non-auditor-related factors that affect clients' filing dates are unlikely to systematically correlate with audit firm-level characteristics such as staff costs or IT investments.

[17] Untabulated analyses suggest that the statistical significance of Δ*IT Software* is subsumed by Δ*Tangible Assets*, another physical resource measure.

This study provides the first comprehensive look at audit firms' financial statements and, more importantly, examines whether these statements provide information about audit quality. We argue that audit firms' financial statements provide valuable insights into audit quality because they disclose an audit firm's *resource investment* and *risk exposure*. Using hand-collected data from audit firms' financial statements, we construct three resource-based measures (staff costs, tangible assets, IT software) and one risk-based measure (litigation provision). We provide empirical evidence that increases in audit firms' resource investments and reductions in their litigation provisions are associated with improved audit quality. These associations are robust to controlling for audit firms' transparency reports and regulatory inspection reports, suggesting that the information contained in their financial statements is incremental to these prominent public disclosures. Additional tests show that these measures are also associated with audit efficiency.

Our study contributes to the unsettled debate among regulators, practitioners, and investors on whether audit firms should disclose their financial statements. Note that we do not directly recommend that audit firms disclose their financial statements. Our study demonstrates a potential benefit for U.K. private firms, but given institutional differences between the U.S. and U.K., we encourage future research using U.S. data to inform the U.S. regulators about the cost–benefit trade-offs surrounding the mandatory disclosure of audit firms' financial statements.

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**TABLE 1**
**Audit Firms' Financial Statements**

**Panel A: Common-Size Income Statement**

| | Mean | Std. Dev |
|---|---|---|
| Revenue | 100.0% | |
| – Operating expenses | | |
| Staff costs | 47.0% | 10.6% |
| Depreciation expense | 2.1% | 3.1% |
| Other expenses | 26.7% | 9.8% |
| Operating income | 24.2% | 10.8% |
| +/– Other non-operating revenues, expenses, taxes | 1.6% | 10.1% |
| Net income (after tax) | 22.5% | 13.2% |
| Distribution to partners | 20.6% | 13.1% |

**Panel B: Common-Size Balance Sheet**

| | Mean | Std. Dev | | Mean | Std. Dev |
|---|---|---|---|---|---|
| Cash | 7.3% | 8.5% | Accounts payable & deferred revenue | 16.8% | 11.7% |
| Accounts receivable | 71.9% | 14.8% | Bank loans | 14.2% | 12.0% |
| Fixed assets | 9.4% | 6.9% | Pension liabilities | 4.6% | 17.1% |
| Other assets | 11.4% | 12.6% | Other liabilities | 24.3% | 16.4% |
| Total Assets | 100.0% | | Total liabilities | 59.9% | 25.0% |
| | | | Equity | 40.1% | 25.0% |

This table presents a common-size income statement and a common-size balance sheet of an average audit firm using the 72 U.K. audit firms in our sample.

**TABLE 2**
**Descriptive Statistics**

| | N | Mean | St. Dev | P25 | Median | P75 |
|---|---|---|---|---|---|---|
| **Dependent variables** | | | | | | |
| Δ\|*Total Accruals*\| | 86,770 | -0.001 | 0.137 | -0.054 | -0.001 | 0.052 |
| Δ*GC Errors* | 125,000 | 0.009 | 0.147 | 0.000 | 0.000 | 0.000 |
| Δ*Report Lag* | 125,000 | 0.036 | 2.171 | -0.767 | 0.000 | 0.833 |
| **Audit firm financial statement variables** | | | | | | |
| Δ*Staff Costs* | 125,000 | -0.002 | 0.066 | -0.016 | 0.000 | 0.016 |
| Δ*Tangible Assets* | 125,000 | -0.002 | 0.012 | -0.005 | -0.001 | 0.002 |
| Δ*IT Software* | 125,000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 |
| Δ*Litigation Provision* | 125,000 | 0.001 | 0.011 | -0.002 | 0.000 | 0.004 |
| **Control variables** | | | | | | |
| Δ*Size* | 125,000 | 0.052 | 0.265 | -0.045 | 0.044 | 0.151 |
| Δ*Leverage* | 125,000 | -0.003 | 0.136 | -0.052 | -0.007 | 0.038 |
| Δ*ROA* | 125,000 | -0.002 | 0.135 | -0.035 | 0.000 | 0.033 |
| Δ*Loss* | 125,000 | 0.000 | 0.426 | 0.000 | 0.000 | 0.000 |
| Δ*Current Ratio* | 125,000 | 0.042 | 0.954 | -0.145 | 0.018 | 0.208 |
| Δ*Investment* | 125,000 | 0.001 | 0.035 | 0.000 | 0.000 | 0.000 |
| Δ*Issuances* | 125,000 | 0.035 | 0.447 | 0.000 | 0.000 | 0.000 |
| Δ*Foreign Income* | 125,000 | 0.012 | 0.206 | 0.000 | 0.000 | 0.000 |
| Δ*Extraordinary Item* | 125,000 | 0.000 | 0.104 | 0.000 | 0.000 | 0.000 |
| Δ*Report Length* | 125,000 | 0.944 | 3.581 | -1.000 | 0.000 | 2.000 |
| Δ*F-Score* | 125,000 | -0.001 | 0.631 | -0.198 | 0.000 | 0.201 |
| Δ*ZM-Score* | 125,000 | -0.028 | 1.288 | -0.385 | -0.038 | 0.311 |
| Δ*Public* | 125,000 | -0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| Δ*Auditor Tier* | 125,000 | -0.008 | 0.238 | 0.000 | 0.000 | 0.000 |
| Δ*Audit Fees* | 125,000 | 0.033 | 0.342 | 0.000 | 0.000 | 0.105 |
| Δ*Office Size* | 125,000 | 0.029 | 0.405 | -0.092 | 0.021 | 0.137 |
| Δ*Client Importance* | 125,000 | 0.000 | 0.075 | -0.002 | 0.000 | 0.002 |
| Δ*Industry Specialist* | 125,000 | 0.000 | 0.306 | 0.000 | 0.000 | 0.000 |
| Δ*Auditor Tenure* | 125,000 | 0.718 | 1.153 | 1.000 | 1.000 | 1.000 |
| Δ*Partner Gender* | 125,000 | 0.003 | 0.125 | 0.000 | 0.000 | 0.000 |
| Δ*Partner Age* | 125,000 | 0.716 | 2.640 | 1.000 | 1.000 | 1.000 |
| Δ*CPI* | 125,000 | 0.145 | 1.299 | 0.000 | 0.000 | 0.000 |
| **Jones Model first-stage Regressors** | | | | | | |
| Δ*Inverse Assets* | 86,770 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Δ*Sales* | 86,770 | 0.072 | 0.362 | -0.051 | 0.044 | 0.193 |
| Δ*Receivables* | 86,770 | 0.009 | 0.080 | -0.017 | 0.003 | 0.033 |
| Δ*PPE* | 86,770 | -0.004 | 0.054 | -0.019 | -0.003 | 0.009 |
| \|Δ*Inverse Assets*\| | 86,770 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| \|Δ*Sales*\| | 86,770 | 0.236 | 0.313 | 0.046 | 0.128 | 0.294 |
| \|Δ*Receivables*\| | 86,770 | 0.050 | 0.068 | 0.008 | 0.025 | 0.063 |
| \|Δ*ROA*\| | 86,770 | 0.066 | 0.102 | 0.012 | 0.031 | 0.073 |
| \|Δ*PPE*\| | 86,770 | 0.031 | 0.044 | 0.005 | 0.015 | 0.037 |

This table presents descriptive statistics of variables used in the regression analyses. Because we use the changes model, all variables (Δ) are calculated by subtracting the value in year *t*-1 from the value in year *t*. See Appendix A for variable definitions.

**TABLE 3**
**Correlation Table**

| | Δ\|*Total Accruals*\| | Δ*GC Errors* | Δ*Report Lag* | Δ*Staff Costs* | Δ*Tangible Assets* | Δ*IT Software* | Δ*Litigation Provision* | Δ*Size* | Δ*Leverage* | Δ*ROA* | Δ*Loss* | Δ*Current Ratio* | Δ*Investment* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Δ*GC Errors* | **0.022** | | | | | | | | | | | | |
| Δ*Report Lag* | **0.037** | **0.075** | | | | | | | | | | | |
| Δ*Staff Costs* | **-0.011** | -0.002 | **-0.024** | | | | | | | | | | |
| Δ*Tangible Assets* | 0.002 | **-0.011** | **-0.032** | **-0.034** | | | | | | | | | |
| Δ*IT Software* | -0.004 | **-0.013** | -0.004 | **-0.031** | **0.263** | | | | | | | | |
| Δ*Litigation Provision* | **0.006** | **0.006** | **0.007** | **-0.065** | 0.001 | **-0.017** | | | | | | | |
| Δ*Size* | **-0.069** | **-0.027** | **-0.008** | **-0.010** | 0.004 | **0.010** | -0.001 | | | | | | |
| Δ*Leverage* | **0.095** | **0.048** | **0.054** | **-0.007** | 0.003 | **0.009** | 0.002 | **-0.058** | | | | | |
| Δ*ROA* | **-0.084** | **-0.055** | **-0.112** | **0.009** | **0.007** | **-0.011** | -0.004 | **0.146** | **-0.361** | | | | |
| Δ*Loss* | **0.056** | **0.038** | **0.130** | **-0.007** | **-0.005** | **0.011** | **-0.007** | **-0.078** | **0.183** | **-0.459** | | | |
| Δ*Current Ratio* | **-0.059** | **-0.015** | **-0.023** | 0.000 | 0.001 | 0.001 | 0.003 | **0.011** | **-0.344** | **0.100** | **-0.064** | | |
| Δ*Investment* | 0.003 | 0.002 | **0.008** | 0.002 | **-0.005** | **-0.006** | **-0.005** | **0.052** | **-0.023** | -0.005 | 0.003 | **-0.058** | |
| Δ*Issuances* | 0.003 | 0.000 | **-0.009** | -0.001 | **0.009** | **-0.009** | 0.003 | **0.101** | **0.008** | **-0.015** | **0.014** | **0.061** | **0.013** |
| Δ*Foreign Income* | -0.002 | 0.002 | 0.002 | -0.001 | **-0.008** | **-0.005** | **0.009** | 0.005 | 0.002 | -0.002 | 0.000 | 0.000 | -0.003 |
| Δ*Extraordinary Item* | **0.009** | 0.000 | -0.001 | 0.002 | 0.002 | -0.003 | -0.001 | -0.002 | -0.004 | **-0.012** | **0.007** | **0.006** | **0.007** |
| Δ*Report Length* | **0.012** | **0.014** | **0.054** | **-0.021** | **-0.028** | **0.035** | **-0.052** | **0.066** | **0.009** | **-0.017** | **0.018** | **-0.017** | **0.024** |
| Δ*F-Score* | **-0.059** | **-0.006** | 0.004 | 0.002 | 0.000 | -0.001 | **0.010** | **0.198** | **-0.009** | **-0.088** | **0.022** | **0.016** | **0.058** |
| Δ*ZM-Score* | **0.104** | **0.065** | **0.095** | **-0.009** | -0.002 | **0.012** | 0.002 | **-0.124** | **0.818** | **-0.716** | **0.352** | **-0.272** | **-0.016** |
| Δ*Public* | 0.003 | 0.000 | **-0.009** | -0.001 | 0.001 | 0.004 | -0.001 | **0.018** | **-0.015** | -0.003 | **0.008** | -0.001 | -0.002 |
| Δ*Auditor Tier* | -0.005 | -0.005 | **-0.026** | **0.312** | **-0.028** | **-0.052** | **0.079** | **-0.014** | -0.003 | **0.006** | **-0.009** | 0.004 | -0.001 |
| Δ*Audit Fees* | **0.009** | 0.002 | **0.013** | **-0.032** | **-0.011** | **0.013** | **-0.005** | **0.102** | **0.014** | **-0.007** | **0.011** | **-0.019** | **-0.010** |
| Δ*Office Size* | 0.003 | 0.001 | **0.022** | **-0.269** | **0.083** | **0.101** | **0.048** | **0.022** | 0.001 | **-0.008** | **0.008** | -0.002 | -0.002 |
| Δ*Client Importance* | 0.002 | -0.003 | **-0.011** | **0.131** | **-0.014** | **-0.024** | **-0.047** | **0.008** | 0.003 | 0.004 | -0.001 | -0.002 | -0.001 |
| Δ*Industry Specialist* | 0.005 | 0.004 | **0.005** | **-0.029** | **0.009** | **0.024** | **0.001** | **0.015** | 0.001 | **-0.006** | **0.007** | **-0.009** | **0.005** |
| Δ*Auditor Tenure* | **-0.015** | 0.002 | **-0.045** | **0.069** | **-0.080** | **-0.034** | **-0.039** | **0.010** | **-0.005** | 0.004 | **-0.009** | 0.000 | -0.002 |
| Δ*Partner Gender* | 0.003 | **-0.018** | **0.015** | -0.003 | **-0.013** | **0.018** | -0.001 | -0.002 | **-0.005** | 0.004 | 0.000 | -0.003 | -0.003 |
| Δ*Partner Age* | -0.003 | **0.007** | **-0.016** | **0.017** | 0.003 | **-0.023** | 0.003 | 0.000 | -0.001 | **0.006** | **-0.009** | 0.003 | -0.002 |
| Δ*CPI* | 0.001 | **0.024** | **-0.018** | **-0.006** | **0.018** | **-0.043** | **-0.012** | 0.001 | **-0.007** | **0.022** | **-0.022** | -0.004 | 0.003 |
| Δ*Inverse Assets* | **0.041** | **0.014** | **0.006** | -0.001 | 0.005 | 0.001 | -0.001 | **-0.518** | **0.091** | **-0.134** | **0.056** | -0.004 | **-0.018** |
| Δ*Sales* | **0.006** | **-0.012** | **-0.030** | **0.007** | **-0.009** | -0.001 | 0.000 | **0.363** | **-0.022** | **0.192** | **-0.124** | **-0.047** | **-0.037** |
| Δ*Receivables* | **-0.033** | **-0.009** | **-0.007** | 0.000 | 0.002 | 0.003 | 0.004 | **0.402** | **0.068** | **0.084** | **-0.069** | **-0.089** | **-0.046** |
| Δ*PPE* | **-0.021** | -0.001 | 0.000 | -0.001 | **0.009** | **0.007** | -0.005 | **0.089** | 0.006 | **0.031** | 0.005 | **-0.135** | **-0.134** |
| \|Δ*Inverse Assets*\| | **0.077** | **0.011** | 0.003 | **0.007** | 0.003 | 0.001 | -0.002 | **0.023** | **0.047** | **-0.009** | **-0.007** | **-0.027** | **0.008** |
| \|Δ*Sales*\| | **0.017** | **0.008** | -0.001 | -0.002 | 0.004 | **0.010** | -0.001 | **0.057** | 0.002 | **0.020** | -0.002 | 0.004 | -0.003 |
| \|Δ*Receivables*\| | **0.058** | **0.009** | **0.014** | **-0.008** | **0.008** | **0.008** | 0.000 | **0.047** | **0.021** | **-0.006** | 0.004 | **-0.007** | **-0.009** |
| \|Δ*ROA*\| | **0.049** | **0.031** | **-0.010** | 0.000 | **0.006** | 0.004 | -0.003 | **-0.136** | **0.101** | **-0.073** | **0.007** | **-0.018** | -0.005 |
| \|Δ*PPE*\| | **0.020** | -0.001 | **0.011** | 0.001 | -0.005 | 0.000 | -0.004 | **0.123** | **0.041** | **-0.010** | **0.008** | **-0.014** | **0.038** |

**TABLE 3 (continued)**

| | ΔIssuances | ΔForeign Income | ΔExtraordinary Item | ΔReport Length | ΔF-Score | ΔZM-Score | ΔPublic | ΔAuditor Tier | ΔAudit Fees | ΔOffice Size | ΔClient Importance | ΔIndustry Specialist | ΔAuditor Tenure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ΔForeign Income | -0.004 | | | | | | | | | | | | |
| ΔExtraordinary Item | 0.003 | -0.002 | | | | | | | | | | | |
| ΔReport Length | **0.021** | **0.033** | **0.023** | | | | | | | | | | |
| ΔF-Score | **0.619** | -0.003 | **-0.008** | **0.011** | | | | | | | | | |
| ΔZM-Score | **0.007** | 0.003 | 0.004 | **0.016** | **0.021** | | | | | | | | |
| ΔPublic | 0.004 | **0.007** | **0.008** | **0.048** | 0.003 | **-0.007** | | | | | | | |
| ΔAuditor Tier | **-0.005** | -0.001 | 0.004 | **0.010** | **0.007** | **-0.006** | -0.002 | | | | | | |
| ΔAudit Fees | **0.024** | 0.002 | 0.005 | **0.071** | **0.021** | **0.015** | **0.018** | **-0.052** | | | | | |
| ΔOffice Size | **0.006** | 0.002 | -0.002 | 0.002 | **0.005** | **0.006** | **0.007** | **-0.422** | **0.096** | | | | |
| ΔClient Importance | 0.004 | **-0.009** | 0.003 | **0.020** | **0.007** | -0.002 | -0.001 | **0.193** | **0.129** | **-0.493** | | | |
| ΔIndustry Specialist | 0.000 | 0.001 | 0.004 | **0.012** | 0.001 | 0.003 | 0.004 | **-0.048** | **0.078** | **0.089** | **-0.009** | | |
| ΔAuditor Tenure | **0.013** | **-0.007** | 0.000 | **-0.028** | 0.003 | -0.004 | 0.004 | **0.016** | **0.030** | **-0.029** | **0.013** | **-0.006** | |
| ΔPartner Gender | **-0.011** | **0.006** | -0.004 | 0.000 | **-0.007** | -0.004 | -0.002 | 0.000 | 0.001 | **0.008** | -0.002 | -0.003 | **0.005** |
| ΔPartner Age | **0.011** | -0.004 | 0.002 | **-0.005** | 0.004 | -0.004 | 0.001 | **0.012** | 0.000 | **-0.007** | 0.003 | **-0.005** | **0.033** |
| ΔCPI | **0.041** | -0.001 | **-0.007** | **-0.032** | 0.000 | **-0.017** | **-0.007** | **-0.029** | **-0.007** | **0.007** | -0.004 | **0.010** | **0.021** |
| ΔInverse Assets | **-0.029** | -0.001 | 0.004 | **-0.011** | **-0.110** | **0.112** | -0.002 | 0.002 | **-0.029** | **-0.007** | 0.002 | -0.005 | **-0.008** |
| ΔSales | **0.010** | **0.010** | **-0.016** | **0.018** | **0.096** | **-0.099** | **0.017** | **-0.007** | **0.103** | **0.018** | 0.004 | **0.007** | **0.015** |
| ΔReceivables | **0.028** | **0.013** | **-0.010** | **0.008** | **0.433** | **0.006** | 0.003 | 0.001 | **0.054** | **0.012** | **0.007** | **0.013** | **0.008** |
| ΔPPE | **0.126** | -0.003 | **-0.011** | **0.023** | **0.031** | **-0.014** | **0.011** | 0.004 | **0.024** | 0.004 | 0.005 | 0.005 | **0.008** |
| \|ΔInverse Assets\| | **0.016** | 0.004 | 0.000 | **-0.028** | **0.022** | **0.018** | 0.003 | -0.004 | -0.001 | **0.016** | -0.005 | **-0.014** | **0.007** |
| \|ΔSales\| | 0.002 | **0.009** | **0.013** | -0.004 | **0.007** | **-0.012** | 0.005 | **-0.007** | **0.016** | **0.012** | -0.004 | 0.002 | **-0.011** |
| \|ΔReceivables\| | **0.016** | **0.012** | 0.005 | -0.004 | **0.011** | **0.016** | -0.001 | -0.005 | **0.019** | **0.013** | -0.005 | **0.009** | **-0.009** |
| \|ΔROA\| | -0.003 | **-0.007** | 0.005 | **-0.011** | **-0.011** | **0.074** | **-0.006** | 0.000 | **-0.006** | 0.004 | -0.001 | -0.003 | **-0.016** |
| \|ΔPPE\| | **0.022** | **-0.008** | **0.012** | **0.033** | **0.028** | **0.026** | **-0.006** | -0.004 | **0.020** | **0.011** | 0.003 | 0.001 | **-0.006** |

| | ΔPartner Gender | ΔPartner Age | ΔInverse Assets | ΔSales | ΔReceivables | ΔPPE | \|ΔInverse Assets\| | \|ΔSales\| | \|ΔReceivables\| | \|ΔROA\| | \|ΔPPE\| |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ΔPartner Age | **-0.232** | | | | | | | | | | |
| ΔCPI | -0.004 | **0.011** | | | | | | | | | |
| ΔInverse Assets | 0.003 | -0.002 | -0.002 | | | | | | | | |
| ΔSales | -0.002 | **0.009** | -0.001 | **-0.230** | | | | | | | |
| ΔReceivables | -0.003 | 0.003 | **-0.006** | **-0.274** | **0.381** | | | | | | |
| ΔPPE | 0.004 | -0.005 | -0.001 | **-0.039** | **-0.012** | **-0.014** | | | | | |
| \|ΔInverse Assets\| | -0.002 | **0.006** | **0.013** | **-0.124** | **0.027** | **0.032** | **0.012** | | | | |
| \|ΔSales\| | **-0.008** | 0.005 | -0.001 | **-0.032** | **0.202** | **0.074** | 0.002 | **0.218** | | | |
| \|ΔReceivables\| | **-0.007** | **0.008** | **-0.009** | **-0.039** | **0.067** | **0.165** | -0.005 | **0.247** | **0.394** | | |
| \|ΔROA\| | -0.004 | 0.000 | -0.002 | **0.056** | **-0.089** | **-0.063** | **-0.006** | **0.268** | **0.177** | **0.126** | |
| \|ΔPPE\| | 0.004 | **-0.010** | 0.003 | **-0.077** | **0.031** | **0.018** | **0.023** | **0.093** | **0.022** | **-0.044** | **0.143** |

This table reports the correlations of variables used in the regression analyses. Bolded values are significant at the 0.10 level.

**TABLE 4**
**Auditors' Financial Statements and Audit Quality**
**Absolute Accruals Tests**

| DV = Δ\|*Total Accruals*\| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Δ*Staff Costs*** | **-0.020*** ** | | | | **-0.018** ** |
| | **(-2.64)** | | | | **(-2.36)** |
| **Δ*Tangible Assets*** | | **0.022** | | | **0.048** |
| | | **(0.51)** | | | **(1.11)** |
| **Δ*IT Software*** | | | **-0.866** ** | | **-0.952*** ** |
| | | | **(-2.46)** | | **(-2.68)** |
| **Δ*Litigation Provision*** | | | | **0.121** ** | **0.110** ** |
| | | | | **(2.48)** | **(2.26)** |
| Δ*Size* | -0.025*** | -0.025*** | -0.025*** | -0.025*** | -0.025*** |
| | (-5.31) | (-5.30) | (-5.29) | (-5.31) | (-5.31) |
| Δ*Leverage* | 0.055*** | 0.055*** | 0.055*** | 0.055*** | 0.055*** |
| | (3.48) | (3.49) | (3.49) | (3.49) | (3.48) |
| Δ*Loss* | 0.007*** | 0.007*** | 0.007*** | 0.007*** | 0.007*** |
| | (4.13) | (4.14) | (4.14) | (4.15) | (4.16) |
| Δ*Current Ratio* | -0.006*** | -0.006*** | -0.006*** | -0.006*** | -0.006*** |
| | (-6.74) | (-6.74) | (-6.73) | (-6.74) | (-6.74) |
| Δ*Investment* | 0.042** | 0.042** | 0.041** | 0.042** | 0.042** |
| | (2.22) | (2.21) | (2.20) | (2.22) | (2.22) |
| Δ*Issuances* | 0.033*** | 0.033*** | 0.033*** | 0.033*** | 0.033*** |
| | (13.04) | (13.03) | (13.04) | (13.03) | (13.04) |
| Δ*Foreign Income* | -0.002 | -0.002 | -0.002 | -0.002 | -0.002 |
| | (-0.83) | (-0.83) | (-0.85) | (-0.85) | (-0.86) |
| Δ*Extraordinary Item* | 0.010** | 0.010** | 0.010** | 0.010** | 0.010** |
| | (1.98) | (1.98) | (1.98) | (1.99) | (1.98) |
| Δ*Report Length* | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| | (2.80) | (2.85) | (2.81) | (2.92) | (2.91) |
| Δ*F-Score* | -0.029*** | -0.029*** | -0.029*** | -0.029*** | -0.029*** |
| | (-13.49) | (-13.49) | (-13.50) | (-13.50) | (-13.50) |
| Δ*ZM-Score* | -0.002 | -0.002 | -0.002 | -0.002 | -0.002 |
| | (-0.71) | (-0.71) | (-0.71) | (-0.71) | (-0.70) |
| Δ*Public* | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| | (0.44) | (0.44) | (0.44) | (0.43) | (0.44) |
| Δ*Auditor Tier* | -0.000 | -0.002 | -0.002 | -0.002 | -0.001 |
| | (-0.09) | (-0.64) | (-0.71) | (-0.90) | (-0.45) |
| Δ*Audit Fees* | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 |
| | (1.51) | (1.53) | (1.50) | (1.51) | (1.49) |
| Δ*Office Size* | -0.000 | 0.000 | 0.000 | -0.000 | -0.000 |
| | (-0.20) | (0.09) | (0.29) | (-0.04) | (-0.22) |
| Δ*Client Importance* | 0.006 | 0.005 | 0.006 | 0.006 | 0.006 |
| | (0.68) | (0.64) | (0.71) | (0.72) | (0.78) |
| Δ*Industry Specialist* | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | (1.16) | (1.16) | (1.20) | (1.17) | (1.21) |
| Δ*Auditor Tenure* | -0.001*** | -0.001*** | -0.001*** | -0.001*** | -0.001*** |
| | (-3.51) | (-3.62) | (-3.69) | (-3.57) | (-3.30) |
| Δ*Partner Gender* | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 |
| | (0.83) | (0.84) | (0.86) | (0.84) | (0.88) |
| Δ*Partner Age* | -0.000 | -0.000 | -0.000 | -0.000 | -0.000 |
| | (-0.51) | (-0.53) | (-0.56) | (-0.55) | (-0.56) |

| | | | | | |
|---|---|---|---|---|---|
| Δ*CPI* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.09) | (0.08) | (0.09) | (0.10) | (0.11) |
| Δ*Inverse Assets* | 35.582** | 35.593** | 35.707** | 35.625** | 35.609** |
| | (2.51) | (2.51) | (2.52) | (2.51) | (2.51) |
| Δ*Sales* | 0.016*** | 0.016*** | 0.016*** | 0.016*** | 0.016*** |
| | (7.82) | (7.80) | (7.80) | (7.80) | (7.82) |
| Δ*Receivables* | 0.052*** | 0.052*** | 0.052*** | 0.052*** | 0.052*** |
| | (3.99) | (3.98) | (3.99) | (3.99) | (4.00) |
| Δ*ROA* | -0.079*** | -0.079*** | -0.079*** | -0.079*** | -0.079*** |
| | (-4.94) | (-4.94) | (-4.94) | (-4.94) | (-4.94) |
| Δ*PPE* | -0.073*** | -0.073*** | -0.073*** | -0.073*** | -0.073*** |
| | (-5.58) | (-5.58) | (-5.58) | (-5.57) | (-5.58) |
| \|Δ*Inverse Assets*\| | 146.617*** | 146.409*** | 146.585*** | 146.536*** | 146.907*** |
| | (12.11) | (12.09) | (12.10) | (12.10) | (12.13) |
| \|Δ*Sales*\| | -0.010*** | -0.010*** | -0.010*** | -0.010*** | -0.010*** |
| | (-4.93) | (-4.93) | (-4.90) | (-4.93) | (-4.90) |
| \|Δ*Receivables*\| | 0.091*** | 0.091*** | 0.091*** | 0.091*** | 0.091*** |
| | (9.38) | (9.40) | (9.40) | (9.40) | (9.39) |
| \|Δ*ROA*\| | 0.020*** | 0.020*** | 0.020*** | 0.020*** | 0.020*** |
| | (2.94) | (2.94) | (2.94) | (2.95) | (2.94) |
| \|Δ*PPE*\| | 0.054*** | 0.053*** | 0.053*** | 0.053*** | 0.054*** |
| | (4.48) | (4.48) | (4.47) | (4.48) | (4.48) |
| Industry FEs | Y | Y | Y | Y | Y |
| Year FEs | Y | Y | Y | Y | Y |
| Observations | 86,770 | 86,770 | 86,770 | 86,770 | 86,770 |
| adj. $R^2$ | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |

This table presents results of the association between audit firm financial statement variables and audit quality proxied by absolute total accruals. All variables (Δ) are calculated by subtracting the value in year *t*-1 from the value in year *t*. Because we combine two stages of estimating discretionary accruals, we control for Jones model regressors (i.e., Δ*Inverse Assets*, Δ*Sales*, Δ*Receivables*, Δ*ROA*, Δ*PPE*). Because we use the absolute value of total accruals as the dependent variable, we also control for the absolute value of these variables. In addition, we control for industry and year fixed effects and an indicator variable for whether total accruals is calculated using the direct versus the indirect method. See Appendix A for variable definitions. We report *t*-statistics based on standard errors clustered by client firm. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

**TABLE 5**
**Auditors' Financial Statements and Audit Quality**
**Going Concern Reporting Errors Tests**

| DV= Δ*GC Errors* | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Δ*Staff Costs*** | **-0.003** | | | | **-0.001** |
| | **(-0.39)** | | | | **(-0.14)** |
| **Δ*Tangible Assets*** | | **-0.145*** ** | | | **-0.116*** ** |
| | | **(-3.51)** | | | **(-2.75)** |
| **Δ*IT Software*** | | | **-1.217*** ** | | **-0.933*** ** |
| | | | **(-3.71)** | | **(-2.78)** |
| **Δ*Litigation Provision*** | | | | **0.140*** ** | **0.138*** ** |
| | | | | **(3.24)** | **(3.15)** |
| Δ*Size* | -0.010*** | -0.010*** | -0.010*** | -0.010*** | -0.010*** |
| | (-4.47) | (-4.46) | (-4.46) | (-4.48) | (-4.46) |
| Δ*Leverage* | -0.004 | -0.004 | -0.004 | -0.004 | -0.004 |
| | (-0.31) | (-0.30) | (-0.31) | (-0.31) | (-0.30) |
| Δ*ROA* | -0.011 | -0.011 | -0.011 | -0.010 | -0.010 |
| | (-0.98) | (-0.97) | (-0.98) | (-0.97) | (-0.97) |
| Δ*Loss* | 0.005*** | 0.005*** | 0.005*** | 0.005*** | 0.005*** |
| | (3.25) | (3.24) | (3.25) | (3.27) | (3.27) |
| Δ*Current Ratio* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.18) | (0.19) | (0.19) | (0.18) | (0.19) |
| Δ*Investment* | 0.013 | 0.013 | 0.013 | 0.013 | 0.013 |
| | (0.86) | (0.84) | (0.84) | (0.87) | (0.84) |
| Δ*Issuances* | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (0.57) | (0.59) | (0.58) | (0.57) | (0.59) |
| Δ*Foreign Income* | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (0.43) | (0.41) | (0.41) | (0.41) | (0.37) |
| Δ*Extraordinary Item* | -0.001 | -0.001 | -0.001 | -0.001 | -0.001 |
| | (-0.12) | (-0.12) | (-0.13) | (-0.12) | (-0.12) |
| Δ*Report Length* | 0.001*** | 0.001*** | 0.001*** | 0.001*** | 0.001*** |
| | (4.15) | (4.04) | (4.14) | (4.24) | (4.12) |
| Δ*F-Score* | -0.001 | -0.001 | -0.001 | -0.001 | -0.001 |
| | (-1.39) | (-1.41) | (-1.40) | (-1.41) | (-1.42) |
| Δ*ZM-Score* | 0.006*** | 0.006*** | 0.006*** | 0.006*** | 0.006*** |
| | (3.17) | (3.17) | (3.17) | (3.17) | (3.18) |
| Δ*Public* | 0.002 | 0.003 | 0.002 | 0.002 | 0.002 |
| | (0.11) | (0.12) | (0.11) | (0.11) | (0.11) |
| Δ*Auditor Tier* | -0.002 | -0.002 | -0.002 | -0.003 | -0.003 |
| | (-0.90) | (-0.97) | (-1.07) | (-1.37) | (-1.27) |
| Δ*Audit Fees* | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (0.80) | (0.74) | (0.77) | (0.80) | (0.72) |
| Δ*Office Size* | -0.001 | -0.001 | -0.001 | -0.002 | -0.001 |
| | (-0.95) | (-0.62) | (-0.57) | (-1.11) | (-0.63) |
| Δ*Client Importance* | -0.007 | -0.006 | -0.007 | -0.007 | -0.006 |
| | (-1.00) | (-0.88) | (-0.91) | (-0.93) | (-0.76) |
| Δ*Industry Specialist* | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | (1.12) | (1.13) | (1.17) | (1.12) | (1.18) |
| Δ*Auditor Tenure* | 0.000 | -0.000 | 0.000 | 0.000 | 0.000 |
| | (0.23) | (-0.11) | (0.17) | (0.34) | (0.07) |
| Δ*Partner Gender* | -0.019*** | -0.019*** | -0.019*** | -0.019*** | -0.019*** |
| | (-4.53) | (-4.57) | (-4.50) | (-4.52) | (-4.53) |

| | | | | | |
|---|---|---|---|---|---|
| Δ*Partner Age* | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | (0.72) | (0.72) | (0.69) | (0.69) | (0.68) |
| Δ*CPI* | 0.002*** | 0.002*** | 0.002*** | 0.002*** | 0.002*** |
| | (4.83) | (4.82) | (4.84) | (4.83) | (4.83) |
| Industry FEs | Y | Y | Y | Y | Y |
| Year FEs | Y | Y | Y | Y | Y |
| Observations | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| adj. $R^2$ | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |

This table presents results of the association between audit firm financial statement variables and audit quality proxied by going concern errors. As we use the changes model, all variables (Δ) are calculated by subtracting the value in year *t*-1 from the value in year *t*. See Appendix A for variable definitions. We report *t*-statistics based on standard errors clustered by client firm. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

**TABLE 6**
**Generalizability by Auditor Size and Client Type**

**Panel A: Auditor Size**

| Subsample: | Big 4 | Big 4 | Non-Big 4 | Non-Big 4 |
|---|---|---|---|---|
| DV= | Δ\|*Total Accruals*\| | Δ*GC Errors* | Δ\|*Total Accruals*\| | Δ*GC Errors* |
| Δ*Staff Costs* | 0.011 | -0.069*** | -0.021*** | 0.006 |
| | (0.44) | (-3.36) | (-2.65) | (0.79) |
| Δ*Tangible Assets* | 0.036 | -0.086 | 0.052 | -0.107* |
| | (0.51) | (-1.35) | (0.91) | (-1.85) |
| Δ*IT Software* | -0.487 | -1.803*** | -1.147** | -0.471 |
| | (-0.73) | (-3.02) | (-2.57) | (-1.07) |
| Δ*Litigation Provision* | 0.130 | 0.203*** | 0.061 | 0.140** |
| | (1.48) | (3.06) | (1.00) | (2.22) |
| Controls | Y | Y | Y | Y |
| Industry + Year FEs | Y | Y | Y | Y |
| Observations | 45,589 | 64,980 | 41,181 | 60,020 |
| adj. $R^2$ | 0.032 | 0.007 | 0.041 | 0.008 |

**Panel B: Auditor Size and Client Type**

| Subsample: | Big 4/Public | | Big 4/Private | | Non-Big 4/Public | | Non-Big 4/Private | |
|---|---|---|---|---|---|---|---|---|
| DV= | Δ\|*Total Accruals*\| | Δ*GC Errors* | Δ\|*Total Accruals*\| | Δ*GC Errors* | Δ\|*Total Accruals*\| | Δ*GC Errors* | Δ\|*Total Accruals*\| | Δ*GC Errors* |
| Δ*Staff Costs* | -0.003 | -0.123 | 0.013 | -0.065*** | 0.013 | -0.022 | -0.021*** | 0.007 |
| | (-0.05) | (-0.99) | (0.49) | (-3.10) | (0.33) | (-0.20) | (-2.59) | (0.92) |
| Δ*Tangible Assets* | 0.104 | -0.126 | 0.025 | -0.076 | -0.187 | -0.729 | 0.054 | -0.086 |
| | (0.65) | (-0.52) | (0.33) | (-1.17) | (-0.57) | (-1.17) | (0.95) | (-1.50) |
| Δ*IT Software* | -1.170 | 2.574 | -0.425 | -2.088*** | -1.334 | 4.793 | -1.104** | -0.569 |
| | (-0.85) | (1.22) | (-0.60) | (-3.36) | (-0.63) | (1.11) | (-2.43) | (-1.30) |
| Δ*Litigation Provision* | 0.194 | 0.228 | 0.133 | 0.209*** | -0.314 | 0.960* | 0.072 | 0.114* |
| | (0.89) | (0.61) | (1.44) | (3.10) | (-1.34) | (1.73) | (1.14) | (1.82) |
| Controls | Y | Y | Y | Y | Y | Y | Y | Y |
| Industry + Year FEs | Y | Y | Y | Y | Y | Y | Y | Y |
| Observations | 3,056 | 3,665 | 42,533 | 61,315 | 1,342 | 1,692 | 39,839 | 58,328 |
| adj. $R^2$ | 0.35 | 0.05 | 0.03 | 0.01 | 0.36 | 0.01 | 0.04 | 0.01 |

This table reports the subsample analyses on the association between audit firms' financial statement variables and audit quality, partitioned by auditor size and client type. Panel A reports the results based on subsamples of Big 4 versus non-Big 4 audit firms. Panel B reports the results based on public versus private clients within the Big 4 or non-Big 4 audit firms. Because we use the changes model, all variables (Δ) are calculated by subtracting the value in year *t*-1 from the value in year *t*. In the absolute accruals (going concerns reporting error) tests, we include the same set of control variables and fixed effects as in Table 4 (5). See Appendix A for variable definitions. We report *t*-statistics based on standard errors clustered by client firm. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

**TABLE 7**
**Controlling for Transparency and Inspection Reports**

**Panel A: Controlling for Audit Firms' Transparency Reports**

| | (1) | (2) |
|---|---|---|
| DV= | Δ\|*Total Accruals*\| | Δ*GC Errors* |
| Δ*Staff Costs* | -0.025** | -0.000 |
| | (-2.29) | (-0.04) |
| Δ*Tangible Assets* | 0.061 | -0.133*** |
| | (1.16) | (-2.68) |
| Δ*IT Software* | -1.079*** | -0.918** |
| | (-2.78) | (-2.58) |
| Δ*Litigation Provision* | 0.110** | 0.207*** |
| | (2.17) | (4.70) |
| Δ*Transparency Report Score* | -0.002 | 0.002 |
| | (-0.27) | (0.33) |
| Controls | Y | Y |
| Industry + Year FEs | Y | Y |
| Observations | 73,209 | 104,240 |
| adj. $R^2$ | 0.03 | 0.01 |

**Panel B: Controlling for Regulatory Inspection Reports**

| | (1) | (2) |
|---|---|---|
| DV= | Δ\|*Total Accruals*\| | Δ*GC Errors* |
| Δ*Staff Costs* | -0.022* | 0.004 |
| | (-1.83) | (0.37) |
| Δ*Tangible Assets* | 0.065 | -0.136** |
| | (1.15) | (-2.55) |
| Δ*IT Software* | -1.001** | -0.991** |
| | (-2.24) | (-2.42) |
| Δ*Litigation Provision* | 0.165*** | 0.228*** |
| | (3.02) | (4.80) |
| Δ*Inspection Report Deficiency Rate* | 0.003 | -0.002 |
| | (0.91) | (-0.88) |
| Controls | Y | Y |
| Industry + Year FEs | Y | Y |
| Observations | 68,083 | 95,567 |
| adj. $R^2$ | 0.04 | 0.01 |

This table presents results of the association between audit firms' financial statement variables and audit quality after controlling for the information from audit firms' transparency reports and regulatory inspection reports. In Panel A, we follow Deumes et al. (2012) to construct a disclosure score using audit firms' transparency reports. In Panel B, we calculate the audit firm's deficiency rate using the FRC's regulatory inspection reports. The samples in both panels are smaller than those in Tables 4 and 5 because only a subset of audit firms in our sample discloses transparency reports and another subset is inspected by regulators. Because we use the changes model, all variables (Δ) are calculated by subtracting the value in year *t*-1 from the value in year *t*. See Appendix A for variable definitions. We include (but do not tabulate) the same set of control variables and fixed effects as in Tables 4 and 5. We report *t*-statistics based on standard errors clustered by client firm. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

**TABLE 8**
**Additional Analyses**

**Panel A: Client Complexity**

| DV= | (1) Δ\|*Total Accruals*\| | (2) Δ*GC Errors* |
|---|---|---|
| Δ*Staff Costs* | -0.004 | 0.006 |
| | (-0.52) | (0.81) |
| Δ*Staff Costs* × *Complex* | -0.057*** | -0.029** |
| | (-2.99) | (-1.96) |
| Δ*Tangible Assets* | 0.036 | -0.141*** |
| | (0.79) | (-2.96) |
| Δ*Tangible Assets* × *Complex* | 0.059 | 0.083 |
| | (0.58) | (0.91) |
| Δ*IT Software* | -0.381 | -1.176*** |
| | (-1.01) | (-3.01) |
| Δ*IT Software* × *Complex* | -1.983** | 0.732 |
| | (-2.36) | (1.00) |
| Δ*Litigation Provision* | 0.115** | 0.140*** |
| | (2.37) | (3.20) |
| Controls | Y | Y |
| Industry + Year FEs | Y | Y |
| Observations | 86,770 | 125,000 |
| adj. $R^2$ | 0.03 | 0.01 |

**Panel B: Signed Accruals**

| DV = Δ*Total Accruals* | (1) |
|---|---|
| Δ*Staff Costs* | 0.019* |
| | (1.91) |
| Δ*Staff Costs* × *Positive Accruals* | -0.036** |
| | (-2.01) |
| Δ*Tangible Assets* | -0.097 |
| | (-1.60) |
| Δ*Tangible Assets* × *Positive Accruals* | 0.125 |
| | (1.18) |
| Δ*IT Software* | 1.069** |
| | (2.10) |
| Δ*IT Software* × *Positive Accruals* | -2.871*** |
| | (-3.25) |
| Δ*Litigation Provision* | -0.196*** |
| | (-3.05) |
| Δ*Litigation Provision* × *Positive Accruals* | 0.252** |
| | (2.40) |
| *Positive Accruals* | 0.129*** |
| | (61.82) |
| Controls | Y |
| Industry + Year FEs | Y |
| Observations | 86,770 |
| adj. $R^2$ | 0.43 |

Panel A reports the results of regressing audit quality measures on financial statement variables and the interaction terms between three resource-based variables and the client complexity indicator variable (*Complex*). Following Bushee et al., (2018), Bratten et al. (2019), and Chou et al. (2021), we use three complexity proxies: the natural log of total assets, the magnitude of inventories and account receivables scaled by total assets, and standard deviation of return on assets. To combine these three dimensions, we rank all firms into quartiles on each

dimension and sum their rankings. *Complex* equals one if a firm-year's overall ranking is greater than the median, zero otherwise. Panel B presents the results of regressing signed accruals on interaction terms between financial statement variables and an indicator variable for positive accruals. See Appendix A for variable definitions. We report *t*-statistics based on robust standard errors clustered by client firm. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

**TABLE 9**
**Auditors' Financial Statements and Audit Efficiency**
**Report Lag Tests**

| DV= Δ*Report Lag* | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| **Δ*Staff Costs*** | **-0.403*** ** | | | | **-0.385*** ** |
| | **(-4.04)** | | | | **(-3.83)** |
| **Δ*Tangible Assets*** | | **-6.591*** ** | | | **-6.475*** ** |
| | | **(-11.59)** | | | **(-11.21)** |
| **Δ*IT Software*** | | | **-19.277*** ** | | **-4.096** |
| | | | **(-3.86)** | | **(-0.81)** |
| **Δ*Litigation Provision*** | | | | **2.115*** ** | **1.903*** ** |
| | | | | **(3.43)** | **(3.08)** |
| Δ*Size* | 0.052** | 0.054** | 0.053** | 0.052** | 0.054** |
| | (1.98) | (2.07) | (2.02) | (1.99) | (2.05) |
| Δ*Leverage* | -0.129 | -0.125 | -0.128 | -0.128 | -0.126 |
| | (-1.11) | (-1.08) | (-1.10) | (-1.11) | (-1.09) |
| Δ*ROA* | -0.744*** | -0.742*** | -0.745*** | -0.743*** | -0.740*** |
| | (-7.32) | (-7.31) | (-7.33) | (-7.31) | (-7.29) |
| Δ*Loss* | 0.491*** | 0.491*** | 0.491*** | 0.491*** | 0.491*** |
| | (23.88) | (23.89) | (23.90) | (23.91) | (23.91) |
| Δ*Current Ratio* | -0.013* | -0.013* | -0.013* | -0.013* | -0.013* |
| | (-1.70) | (-1.68) | (-1.67) | (-1.69) | (-1.69) |
| Δ*Investment* | 0.381** | 0.368** | 0.374** | 0.382** | 0.370** |
| | (2.13) | (2.05) | (2.09) | (2.13) | (2.06) |
| Δ*Issuances* | -0.042** | -0.041* | -0.042** | -0.042** | -0.041* |
| | (-2.01) | (-1.95) | (-2.00) | (-2.02) | (-1.95) |
| Δ*Foreign Income* | -0.012 | -0.015 | -0.013 | -0.013 | -0.016 |
| | (-0.39) | (-0.47) | (-0.42) | (-0.42) | (-0.50) |
| Δ*Extraordinary Item* | -0.075 | -0.074 | -0.076 | -0.076 | -0.074 |
| | (-1.36) | (-1.33) | (-1.38) | (-1.36) | (-1.33) |
| Δ*Report Length* | 0.032*** | 0.031*** | 0.032*** | 0.032*** | 0.031*** |
| | (16.43) | (16.12) | (16.47) | (16.57) | (16.13) |
| Δ*F-Score* | 0.002 | 0.001 | 0.002 | 0.002 | 0.001 |
| | (0.14) | (0.09) | (0.13) | (0.12) | (0.09) |
| Δ*ZM-Score* | 0.054*** | 0.054*** | 0.054*** | 0.054*** | 0.054*** |
| | (3.12) | (3.12) | (3.12) | (3.12) | (3.13) |
| Δ*Public* | -0.922*** | -0.917*** | -0.922*** | -0.924*** | -0.917*** |
| | (-4.41) | (-4.38) | (-4.41) | (-4.43) | (-4.38) |
| Δ*Auditor Tier* | -0.178*** | -0.200*** | -0.207*** | -0.216*** | -0.185*** |
| | (-5.53) | (-6.32) | (-6.51) | (-6.77) | (-5.67) |
| Δ*Audit Fees* | 0.050** | 0.046** | 0.050** | 0.050** | 0.046** |
| | (2.27) | (2.10) | (2.25) | (2.28) | (2.07) |
| Δ*Office Size* | 0.009 | 0.038* | 0.027 | 0.016 | 0.025 |
| | (0.44) | (1.79) | (1.29) | (0.75) | (1.17) |
| Δ*Client Importance* | -0.123 | -0.084 | -0.114 | -0.116 | -0.074 |
| | (-1.15) | (-0.78) | (-1.06) | (-1.09) | (-0.69) |
| Δ*Industry Specialist* | 0.009 | 0.010 | 0.010 | 0.009 | 0.010 |
| | (0.40) | (0.44) | (0.46) | (0.41) | (0.45) |
| Δ*Auditor Tenure* | -0.078*** | -0.085*** | -0.080*** | -0.079*** | -0.083*** |
| | (-13.82) | (-14.98) | (-14.10) | (-13.92) | (-14.58) |
| Δ*Partner Gender* | 0.214*** | 0.205*** | 0.216*** | 0.214*** | 0.206*** |
| | (4.35) | (4.17) | (4.40) | (4.35) | (4.18) |

| | | | | | |
|---|---|---|---|---|---|
| Δ*Partner Age* | -0.008*** | -0.008*** | -0.008*** | -0.008*** | -0.008*** |
| | (-3.35) | (-3.37) | (-3.41) | (-3.40) | (-3.36) |
| Δ*CPI* | 0.009* | 0.009 | 0.009 | 0.009 | 0.009 |
| | (1.66) | (1.59) | (1.64) | (1.62) | (1.63) |
| Industry FEs | Y | Y | Y | Y | Y |
| Year FEs | Y | Y | Y | Y | Y |
| Observations | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| adj. $R^2$ | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |

This table presents results of the association between audit firms' financial statement variables and audit efficiency proxied by report lags. Because we use the changes model, all variables (Δ) are calculated by subtracting the value in year *t*-1 from the value in year *t*. See Appendix A for variable definitions. We report *t*-statistics based on robust standard errors clustered by client firm. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

**APPENDIX A**
**Variable Definitions**

| Variable | Definition [Source] |
|---|---|
| *Audit Fees* | The natural logarithm of the client's audit fees. [FAME] |
| *Auditor Tenure* | The number of consecutive years the client has been audited by its current audit firm. [FAME] |
| *Auditor Tier* | = 1 if the audit firm is one of the Big 4 audit firms, = 2 if the audit firm is one of the next four biggest audit firms on the ranking of the U.K. Accountancy Daily, = 3 if the audit firm is not one of the biggest eight audit firms. [FAME] |
| *Big 4* | = 1 if the audit firm is one of the Big 4 audit firms, 0 otherwise. [FAME] |
| *Client Importance* | The client's audit fees scaled by the sum of audit fees from the audit firm's clients headquartered in the same county. [FAME] |
| *Complex* | Following Bushee et al., (2018), Bratten et al. (2019), and Chou et al. (2021), we use three complexity proxies: the natural log of total assets, the magnitude of inventories and account receivables scaled by total assets, and the standard deviation of return on assets. To combine these three dimensions, we rank all firms into quartiles on each dimension and sum their rankings. *Complex* equals one if a firm-year's overall ranking is greater than the median, zero otherwise. [FAME] |
| *CPI* | The U.K. regional consumer price index. [U.K. Office for National Statistics] |
| *Current Ratio* | The client's current assets scaled by current liabilities. [FAME] |
| *Extraordinary Item* | = 1 if the client has extraordinary items, 0 otherwise. [FAME] |
| *Foreign Income* | = 1 if the client has revenue from foreign countries, 0 otherwise. [FAME] |
| *F-Score* | The variable is constructed following Model (1) in Dechow et al. (2011, Table 7). It equals -7.893 + 0.79 × RSST accruals + 2.518 × change in receivables + 1.191 × change in inventory + 1.979 × soft asset + 0.171 × change in cash sales - 0.932 × change in return on assets +1.029 × issuance. [FAME] |
| *GC Errors* | = 1 if the client receives a going concern opinion but does not default within 12 months after the annual report is filed with the U.K. Company House, or if the client firm does not receive a going concern opinion but defaults within 12 months after the annual report is filed with the U.K. Company House, 0 otherwise. [FAME, U.K. Company House] |
| *Industry Specialist* | = 1 if the audit firm has the largest market share (in audit fees) in the client's industry in the same county and has more than 10% greater market share than its closest competitor, 0 otherwise. [FAME] |
| *Inspection Report Deficiency Rate* | The ratio of the number of engagements that require audit improvements to the total number of engagements inspected by the FRC. [U.K. FRC Inspection Reports] |
| *Inverse Assets* | = 1/the client's total assets. [FAME] |
| *Investment* | The client's security investments scaled by total assets. [FAME] |
| *Issuances* | = 1 if the client's equity capital or long-term debt increases by more than 5% from the previous year, 0 otherwise. [FAME] |
| *IT Software* | An audit firm's IT software assets (net of accumulated amortization) over its total assets, multiplied by the ratio of audit revenue to total revenue. [Audit firms' financial statements] |

| | |
|---|---|
| *Leverage* | The client's total liabilities scaled by total assets. [FAME] |
| *Litigation Provision* | An audit firm's litigation provision over its total assets. [Audit firms' financial statements] |
| *Loss* | = 1 if *ROA* is negative, 0 otherwise. [FAME] |
| *Office Size* | The natural logarithm of the sum of audit fees from an audit firm's clients headquartered in the same county. We treat an audit firm-county as an audit office because the audit office information is not available in the U.K. [FAME] |
| *Partner Age* | The audit partner's age. Because we use the changes specification in the regression model, we assume the change variable equals 1 when the partner's age is not available. [FAME] |
| *Partner Gender* | =1 if the audit partner is female, 0 otherwise. Because we use the changes specification in the regression model, we assume the change variable equals 0 when the partner's gender is not available. [FAME] |
| *Positive Accruals* | = 1 if *Total Accruals* is positive, 0 otherwise. |
| *PPE* | The client's tangible assets scaled by total assets. [FAME] |
| *Receivables* | The client's receivables scaled by total assets. [FAME] |
| *Report Lag* | The number of days between a client's annual report filing date and its fiscal year end date, divided by 30. [U.K. Company House] |
| *Report Length* | The number of pages in the client's annual report. [U.K. Company House] |
| *ROA* | The client's net income scaled by total assets. [FAME] |
| *Sales* | The client's sales scaled by total assets. [FAME] |
| *Size* | The natural logarithm of the client's total assets. [FAME] |
| *Staff Costs* | An audit firm's staff costs over its total assets, multiplied by the ratio of audit revenue to total revenue. [Audit firms' financial statements] |
| *Tangible Assets* | An audit firm's tangible assets (net of accumulated depreciation) over its total assets, multiplied by the ratio of audit revenue to total revenue. [Audit firms' financial statements] |
| *Total Accruals* | Net income minus cash flow from operation, scaled by total assets. If a client firm's operating cash flow is not available, this variable equals the absolute value of changes in non-cash current assets less changes in non-debt current liabilities minus depreciation expense, scaled by total assets. [FAME] |
| \|*Total Accruals*\| | Absolute value of *Total Accruals* [FAME] |
| *Transparency Report Score* | Following Deumes et al. (2012), we first count audit firms' governance policies on the three dimensions (continuous education, independence compliance, and internal quality control system) and divide them by the total number of applicable policies for each dimension. Then, we conduct the confirmatory factor analysis to extract the latent variable that explains the three dimensions. We label this latent variable *Transparency Report Score*. [Audit firms' transparency reports] |
| *ZM-Score* | The Zmijewski (1984) bankruptcy score at the end of year *t*. It equals - 4.336 - 4.513 × return on assets + 5.679 × leverage + 0.004 × current ratio. [FAME] |

Because we use the changes model, all variables with Δ in the regression models are calculated by subtracting the value in year *t*-1 from the value in year *t*.