

THE LAUNCH OF PUBLIC ACCOUNTING OFFSHORING AND FINANCIAL REPORTING QUALITY

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Abstract: I study the effects of public accounting offshoring on financial reporting quality. Over the past two decades, public accounting firms have fundamentally modified their business models by offshoring a large portion of U.S. audit and tax work to shared services centers in India. Despite this major shift, we have almost no evidence of its effects on firms' financial reporting. A stacked cohort difference-in-differences design with entropy balancing suggests the launch of an offshore model decreases financial reporting quality through increased restatements, particularly revision restatements. I also find that offshoring marginally decreases tax reporting quality. In analyses of the intended consequences of offshoring, I find the counterintuitive result that the launch of an offshoring model is associated with increases to client fees as well as increases to the audit firm's local industry market share, client count and tax planning effectiveness. Together, my results suggest that offshoring leads to some initial lapses in quality, a finding that should interest regulators, practitioners, shareholders and managers.

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I. INTRODUCTION AND BACKGROUND

Offshoring has become an integral part of the client service delivery model in public accounting. The largest public accounting firms, including each of the Big 4, own and operate affiliated offshore entities (AOEs) to help deliver professional services to U.S. clients.

Accounting offshoring in this setting is unique in that it leverages integrated overseas offices as an extension of the U.S. firm, differing from traditional outsourcing or component audits that engage third-party firms to perform professional services.¹ The practice began with Deloitte tax in 2000 and continues to expand throughout the industry (Berson 2023; *The Economic Times* 2022; Jones 2011; The Associated Press 2004). For example, in 2023, IRS records suggest nearly 3% of preparer tax identification number (PTIN) holders are located in India; however, among the Big 4, the percentage of Indian PTIN holders is as high as 36% (Internal Revenue Service 2023).

As of the 2018 PCAOB inspection year, Sherwood (2024) documents that more than 98% of Big 4 audit engagements are partially completed offshore, with average offshore hours reaching 9% of total hours. In particular, the increased prevalence of offshoring external audit work has captured the attention of regulators, and in the words of Lewis Ferguson, former general counsel for the PCAOB, offshoring external audit work “raises many, many, many questions” (Whitehouse, 2009, paragraph 8), including the impact on audit service delivery and client firm financial statement quality. Because the overall consequences of public accounting offshoring are little-understood, this study seeks to better understand the impact of launching offshore operations on financial reporting quality.

¹ Williams (2018) describes four sourcing arrangements: domestic performance within-the-firm, outsourcing to a domestic firm, offshoring within-the-firm and outsourced offshoring. In this study, I focus on offshoring within-the-firm and refer to the sourcing arrangement as “offshoring”. Alternatively, I refer to outsourced offshoring as “outsourcing”.

Offshoring of services is a common practice in the modern global economy and has been the focus of research in international business, management and strategy. The primary motivations for public accounting offshoring, cost savings and access to qualified labor, are consistent with other service industries (Bunyaratavej et al. 2011; Daugherty and Dickins 2009; Stringfellow, Teagarden, and Nie 2008); however, it is unclear if and how results from existing literatures would translate to a public accounting setting. Public accounting firms pursue standardization, a key element of successful offshoring, but must also customize deliverables to individual client firm facts and preferences. Further, business acquisitions, including the collapse and subsequent absorption of Andersen professionals, and geographic dispersion of individual offices make firm-wide process standardization more difficult.

The necessity of underlying accounting knowledge presents another uncertainty. Offshore professionals must be trained to understand and incorporate the intricacies of U.S. GAAP and U.S. tax law, as these topics are not components of local degree curricula. Similarly, U.S. staff must enter the workforce prepared to supervise tasks and review work that they have never performed (Daugherty, Dickins, and Fennema 2012). Finally, the industry hallmark of high quality in public accounting complicates the setting as the potential negative consequences of offshoring may threaten the core values of accounting firms. An example of this commitment to quality is reflected in the PwC 2021 Global Annual Review, which states “Delivering high-quality work is at the heart of everything we do” (p. 56). In this study, I explore the potential trade-offs embedded in the initial offshoring decision, including whether the operational change impacts financial reporting quality.

Despite the widespread adoption of offshoring by public accounting firms, the practice has received limited attention in academic archival research and the impact of launching offshore

operations on financial reporting quality is unknown. Sherwood (2024), a concurrent working paper, uses proprietary PCAOB examination data to study the impact of mature Big 4 audit offshoring on the audit quality and engagement economics of a non-random sample of PCAOB examined firm-years. The study finds that the percentage of offshore audit hours does not have a significant impact on audit quality. In contrast, my study uses AOE implementation dates and financial statement data for a broad sample of public firms to examine the impact of the initial launch of offshore operations on financial reporting quality and accounting firm economics.

Experimental accounting research (Downey 2018; Spilker et al. 2016) has studied individual components of the offshoring model, including client advocacy attitudes and shared task responsibility, and documented the potential for a negative effect on quality. Relatedly, Canning et al. (2022) use a case-study approach to document and examine changes in the process of offshoring external audit work in Europe. However, as these studies do not encompass the entire service preparation process, the effect of offshoring on financial reporting quality is unclear *ex ante*.

I extend the existing offshoring literature to conduct an archival analysis of the impact of the launch of audit firm offshore operations on financial reporting quality. To enable an archival analysis of quality outcomes with financial statement data, I take numerous steps to construct and validate a timeline for the implementation of the AOE model by the largest U.S. audit firms (Appendix B). In addition to reviewing Indian incorporation records, news articles and other publicly available information, I conduct semi-structured interviews with 19 partners, firm leaders and other individuals familiar with offshoring operations at ten public accounting firms, and a wider survey of more than 100 current and former public accounting professionals in both

the United States and India.² The survey and interviews not only validate my research design, which can be utilized by future researchers interested in using publicly available data to explore other outcomes related to public accounting offshoring, but also provide insights into the initial motivation for offshoring by public accounting firms and the current state of the practice.

Consistent with the strategy literature, interviewees confirm the initial decision to offshore centered on both competitive cost pressures and labor capacity concerns. The survey also allows quantification of the current level of offshoring, with most respondents selecting ranges from 15% to 50% of total engagement hours.³

I begin by examining data from Forms 10-K and DEF 14-A for public corporations for the period 2000-2017 to test the initial impact of offshoring audit services on financial reporting quality. Corporations in the sample are served by the ten largest public accounting firms in the United States for audit services. I utilize a stacked cohort difference-in-differences design with entropy balancing to exploit the staggered implementation of an offshoring strategy by comparing financial reporting quality three years before and three years after launch of an AOE. I measure financial reporting quality using restatements, a count of SEC comment letters and Accounting and Auditing Enforcement Releases (AAERs) (Cassell, Dreher, and Myers 2013; DeFond and Zhang 2014). My research design includes client firm and year fixed effects and controls for firm size, profitability and complexity to focus the results on changes driven by the audit firm.

I find a significantly positive relation between public accounting offshoring and

² I received approval from the Internal Review Board at my university to conduct a survey and semi-structured interviews with current and former public accounting professionals.

³ See Appendix C. On average, respondents working in an audit setting indicated target offshore hours to be 15-30% of total engagement hours. As my May 2023 survey is conducted after the end of data in Sherwood (2024), the higher figure I report may represent both increased offshoring over time and a difference attributable to my broader sample of publicly traded firms.

restatements following the adoption of an offshoring strategy, suggesting that offshoring audit services decreases financial reporting quality. The effect is concentrated in revision restatements, reflecting a collection of financial statement errors as opposed to a single, material lapse in quality. I also find some evidence of an increase to SEC comment letters, but do not find a significant relation between offshoring audit services and AAERs. Restatements, in particular revision restatements, and comment letters represent a direct measure of financial quality, but do not necessarily indicate the misconduct associated with issuance of an AAER (Aobdia 2019; DeFond and Zhang 2014).

I next examine the initial impact of public accounting offshoring on tax reporting quality. I measure tax reporting quality using tax-related restatements, a count of tax-related SEC comment letters, single year tax accrual quality (Choudhary, Koester, and Pawlewicz 2022) and the change in the balance of unrecognized tax benefits (UTB). I find marginally significant increases to tax-related comment letters, TaxAQ and the change in UTB, consistent with a decrease in tax reporting quality. Given that my analysis of tax outcomes is restricted to firms receiving auditor-provided tax services, there may be an opportunity for future research analyzing tax return outcomes that are more closely linked to the tax compliance services conducted offshore than the financial statements and that capture the breadth of tax preparation conducted offshore (e.g., returns for individuals and private entities).

Finally, I consider alternative dependent variables to examine the intended consequences of public accounting offshoring. To examine the financial motivation of offshoring, I consider the effect of public accounting offshoring on audit fees. I find a positive and statistically significant relation between offshoring and audit fees, suggesting offshoring audit services increases fees. Although potentially counterintuitive, these results may reflect the auditor's

ability to charge a premium for client firms requesting onshore labor or benefitting from new value-added services. Relatedly, I also find an increase to industry market share following the implementation of an offshoring strategy (McGuire, Omer, and Wang 2012). Overall, the pattern of results for my analysis of audit fees suggests that the benefits of offshoring retained by the audit firm result in the ability to increase local market share of audit fees and that, on average, the cost savings from offshoring are not passed onto client firms.

The second primary motivation for public accounting offshoring, consistent with the strategy literature and confirmed through semi-structured interviews with accounting professionals, is the need to access qualified labor and increase capacity. I examine the effects of increased capacity for audit services by considering both the relative client-load of audit firms and earnings announcement speed, a financial statement outcome that could provide evidence of increased capacity. I measure the ability of the audit firm to increase the relative number of clients following the calculation of economies of scale developed in Fung et al., (2012). I also consider earnings announcement speed, as additional offshore resources may increase working hours and allow for a faster audit process. I find that audit firms are able to increase their relative client count following the implementation of an offshoring strategy, indicating firms have sufficient capacity for additional work. I do not find significant results related to earnings announcement speed, and therefore, am unable provide clear evidence as to the effect of offshoring on the speed of audit processes.

To analyze intended tax-related consequences, I consider revised fees, market share and economies of scale figures for clients with auditor provided tax services and add a measure of tax planning effectiveness developed by Schwab, Stomberg, and Williams (2022). I do not find a significant relation between offshoring and any tax fee or market share measure and therefore,

cannot comment on the amount of auditor-provided tax services conducted after offshoring. However, I do find some evidence that offshoring of tax services increases tax planning effectiveness, which may support the assertion by public accounting firms that offshoring of routine tasks increases the capacity for U.S. professionals to focus on value-added services beyond basic compliance (Daugherty and Dickins 2009).

The largest U.S. public accounting firms have made significant investments in offshoring and smaller competitors are beginning to follow a similar AOE strategy. Consequently, the broader impact on quality is vital to cost-benefit analyses by public accounting firms currently operating or considering an offshoring model. My results suggest the potential for deficiencies in financial reporting quality following the launch of offshoring. These results can inform audit firms that have not yet offshored operations to consider the unintended consequences of rolling out a new service delivery model. For example, public accounting firms may choose to more slowly adopt offshoring to avoid process overwhelm or include additional quality control steps to identify errors that may or may not be directly performed by offshore colleagues.

Given the large market share of public firms with professional services performed by AOE's, regulators can better understand the current scale of offshoring and assess the related implications for financial reporting and assess needs for further transparency. Even though my results may not suggest a pattern of individual material errors following the implementation of an offshoring strategy, regulators and stakeholders may wish to better understand audit firm processes, including engagement areas subject to higher preparation risk and steps taken to prevent systematic errors. Similarly, client management and shareholders may benefit from additional clarity on how services are performed by their audit firm and potential implications on engagement metrics, including fees and labor capacity.

My study also contributes to the academic literature on the efficacy of audit firms as monitors of publicly traded corporations (Ege 2015). Prior literature has considered whether the delivery of non-audit services, including tax and consulting services, enhance or detract from quality (De Simone, Ege, and Stomberg 2015; Donelson et al. 2020; Kinney, Palmrose, and Scholz 2004). I expand upon these findings to consider whether changes to the service delivery model, such as offshoring, impact quality (Blann, Kleppe, and Moon 2023). Future research can leverage my detailed analysis of the timing of offshoring of public accounting firms to examine additional consequences of this increasing and important trend in public accounting firm service offerings.

II. PRIOR LITERATURE AND HYPOTHESES

Offshoring of services

Academic literatures in economics, management and strategy have debated the benefits and limitations of firm coordination and vertical integration since the publication of Coase's 1937 seminal paper "The Nature of the Firm". More recently, the literature has explored the complexities of offshoring services, which present different opportunities and challenges than the traditional manufacturing model. The primary benefits of offshoring, lower costs and access to qualified labor, extend to services (Stringfellow, Teagarden, and Nie 2008). In addition to potential labor cost arbitrage, offshoring to a geographically distant location may enable firms to take advantage of differing time zones under a "follow-the sun" model (Stringfellow, Teagarden, and Nie 2008). However, services are inherently intangible and require client input, which complicates the ability to standardize and exercise quality control based upon uniform metrics.

Youngdahl and Ramaswamy (2008) (hereafter, "YR") synthesize the offshoring strategy literature into a conceptual model to organize and explain the complexities associated with

offshoring of services and knowledge work, which can be compared to the public accounting setting. The YR framework yields theoretical propositions for general categories of services based upon the necessary levels of industry knowledge and client contact. For simple services, such as responding to standard inquiries or processing information, a manufacturing inspired “production-line approach” can be applied (Levitt 1972; 1976). These types of “transaction services”, such as routine airline ticketing and customer support call centers, require minimal specialized knowledge and tasks can be standardized (Youngdahl & Ramaswamy, 2008). Consequently, offshoring simple services can often lead to not only cost savings, but increases in efficiency, without a significant threat to task quality.

Under the YR model, certain public accounting services may be ideal for offshoring. Many tasks require limited client contact and discretionary judgments can be completed utilizing a production-line approach, increasing quality and efficiency while reducing costs (Bowen & Lawler, 1992; Chase, 1978; Youngdahl & Ramaswamy, 2008). Daugherty & Dickins (2009) capture a similar account from a Big 4 partner, “many audit processes are relatively easy to standardize, and the process is more efficient—with a better quality work product—when performed by personnel who do the work on a repetitive basis” (p.61). Further, by taking advantage of differing time zones, public accounting offshoring increases the working hours of the engagement team allowing work to be completed more quickly and alleviating pressure to meet deadlines. Firms suggest that offshoring may further increase quality as it permits specific aspects of an engagement to be completed by an overseas team, allowing the U.S. engagement team to focus on more complex and value-added services (Daugherty & Dickins, 2009).

Alternatively, complex services (referred to as “solutions” by YR) require specialized knowledge and/or significant client input and cannot be standardized with the same level of

precision. If embedded knowledge cannot be routinized, the process is more challenging to control from a distance and these services are more susceptible to cultural differences, such as communication errors or differences in perceptions of quality (Stringfellow, Teagarden, and Nie 2008). For example, in the setting of public accounting, the ultimate deliverable of a corporate tax return is consistent across firms. However, each line requires additional support that must be interpreted. Further, the analyses conducted on the underlying information may require the application of technical and circumstantial knowledge. After initial preparation, a reviewer can assess completeness with relative ease; however, assessing correctness requires professional expertise, as well as visibility into the underlying process.

Public accounting offshoring

Downey (2018) provides evidence that elements of a typical offshoring arrangement can impact task performance, which could suggest challenges for routinization and subsequent quality reduction. The study attempts to replicate common offshore task structure and finds that quality decreases when tasks are partially completed and perceived to be of low importance. However, the impact on end deliverable quality remains unclear as accounting firms may adjust internal processes to counteract any expected quality reduction from task sharing. For example, engagement management and upper-level review by U.S. team members may prevent a reduction in overall quality (Daugherty and Dickins 2009).

The predicted influence on quality is further complicated in an accounting setting, where certain judgments, such as the selection of an accounting method, may be subjective. For example, Spilker et al. (2016) conduct an experiment to evaluate client advocacy attitudes of experienced and inexperienced tax professionals in the United States and India and find that experienced U.S. professionals (defined by a title of senior associate or higher) demonstrate

stronger client advocacy attitudes than experienced Indian professionals and inexperienced U.S. professionals.⁴ Although the results do not directly speak to deliverable quality, the study provides evidence that offshore employees may interpret client information differently than domestic engagement team members.

Behavioral research on public accounting offshoring provides insight on potential mechanisms for differences in the quality of offshored work, but is unable to capture the ultimate impact on client outcomes. Sherwood (2024), a concurrent working paper, examines outcomes for a non-random selection of PCAOB inspected firms, identifying no association between the level of mature offshoring and audit quality. My study builds upon prior and concurrent research by examining the comprehensive impact of implementing an offshoring service delivery model on a broad sample of publicly traded firms.

Initial fieldwork

Public accounting provides a unique setting that does not cleanly fit into the framework for services established in the management literature, making it difficult to predict which factors will dominate in practice (i.e., standardization versus discretionary judgments) and influence quality. Similarly, the experimental accounting literature on public accounting offshoring focuses on individual elements of the AOE model, but does not capture overall outcomes from offshoring. To further inform my archival research design and hypothesis, I conduct semi-structured interviews and a survey with current and former public accounting professionals (Bloomfield, Nelson, and Soltes 2016). These strategies provide the opportunity to study the “why” and “how” of public accounting firm operations through targeted inquiries to professionals (Richter et al. 2023; Yin 2017).

⁴ In this setting, client advocacy attitudes reflect the individual’s determination of whether or not to incorporate client preferences into their own technical determination.

During 2022 and 2023, I conducted semi-structured interviews with nineteen current and former public accounting professionals, located both in the United States and in India. Interviewees included former employees familiar with the offshoring operations of ten large public accounting firms, such as experienced offshore professionals (5), current and former international assignees (5), managing partners of Indian offices (2) and firm leadership (3).⁵ During May 2023, I conducted a wider survey of 118 current and former public accounting professionals via Qualtrics (detailed in Appendix C). On average, survey respondents are experienced professionals with more than 40% reporting greater than ten years of experience. Respondents represent a variety of service lines (29.66% audit/assurance, 46.61% tax, 6.78% advisory and 16.95% multiple or other), included individuals having worked offshore and in the United States (61.02% only U.S., 16.95% only offshore and 22.03% both) and for both Big 4 and Non-Big 4 firms (35.59% Big 4 only, 22.88%, Non-Big 4 only and 41.53% both). The survey evidence complements the semi-structured interviews by recording responses to both quantitative and free-response questions from a much larger population of accounting professionals.

Per Bloomfield, Nelson, and Soltes (2016), “surveys offer a great opportunity for contextualization, generating rich descriptive data about practitioner’s beliefs” (p. 377). In particular, my May 2023 survey of public accounting professionals provided insight on practitioner beliefs about the impact of offshoring on end deliverable quality, with the results mirroring the uncertainty expressed in the management literature. Approximately 60% of survey respondents (72) completed a series of optional free-response questions reflecting their

⁵ I recruited interviewees through personal network connections, references and direct LinkedIn message. Interviews were conducted online via Zoom or a similar software and documented through detailed notes. Some interviewees also provided written responses to the initial list of questions.

perception of the final deliverable quality impact of public accounting offshoring.⁶ Of these respondents, 50.00% indicate that they believe offshoring does impact quality, 18.06% acknowledge the potential of offshoring to influence quality (“it depends”) and 31.94% do not believe offshoring impacts final deliverable quality (Figure 1, Panel A). Additionally, as demonstrated in Figure 1, Panel B, even though the majority of respondents perceive the presence of or potential for a change in final deliverable quality, respondents express heterogenous beliefs about the direction of such impact. Of those respondents, 45.83% believe quality is or can be decreased by offshoring, 37.50% believe quality is or can be increased by offshoring, with the remaining 16.67% acknowledging that offshoring has the potential to increase or decrease quality. The directional expectation of the impact to quality is skewed based upon the location of the respondent’s public accounting work experience, with the majority of individuals indicating a negative impact on quality having experience only in the United States (Figure 1, Panel C). Alternatively, individuals with offshore experience are more likely to expect an overall increase in final deliverable quality due to offshoring.

Collectively, the YR model, experimental accounting literature and my survey evidence of practitioner insights indicate an overall uncertainty on the potential influence of offshoring on financial reporting quality. Therefore, I state hypotheses 1 and 2 in the null form.

- H1:** The adoption of an offshoring model for audit services by public accounting firms has no effect on financial reporting quality.
- H2:** The adoption of an offshoring model for tax services by public accounting firms has no effect on tax reporting quality.

⁶ To encourage commentary, the perceived quality impact and direction of impact, if any, were collected via a free-response question. I classified each free-response answer to reflect the perception of an impact to quality (“Yes”, “No”, “It depends”) and if applicable, the direction of the perceived impact (“Increase”, “Decrease”, “It depends”). No individual responses were coded as (“It depends”, “Increase”). An individual with no involvement in the project independently coded each response into the referenced categories with more than 90% agreeance to my assessments. Example responses for each coded response category are included in Figure 1.

III. RESEARCH DESIGN

Implementation timeline

My archival analysis of offshoring consequences relies upon the staggered implementation of an offshoring strategy by the largest public accounting firms. Unfortunately, detailed information on offshoring operations, including the timing of the initial launch, is generally not made publicly available by accounting firms. To overcome this limitation, I took numerous steps to develop the timeline, displayed in Figure 2, and corroborate the assumptions incorporated into my research design (detail in Appendix B). My research design was developed through a combination of semi-structured interviews and review of public records. Specifically, I reviewed names, signatory details and incorporation dates for entities owned by each offshoring firm through the Indian Ministry of Corporate Affairs. I also reviewed each accounting firm's website, LinkedIn page and hiring site for institutional details and searched for the LinkedIn profiles of individuals currently and formerly employed at AOE's to verify that employment dates aligned with my assumptions. I conducted searches for news articles discussing public accounting offshoring, considering any included institutional details. Finally, I included implementation dates as an optional response in my May 2023 survey and was unable to identify any consistent patterns that may indicate errors in my timeline.

Sample selection

My sample begins with all firms for which Compustat and Audit Analytics data are available for the period surrounding the initial implementation of AOE's by the Big 4 and Grant Thornton. Due to data availability, the sample period begins in 2000, the first date for which all necessary variables are available in the Audit Analytics Audit Fees database. The sample for analyses with a dependent variable of restatements or comment letter count is further adjusted to

exclude cohorts with observations before 2004, the year in which the Audit Analytics database began recording restatements and comment letters, to reflect consistent data availability in the periods before and after treatment. The sample excludes utilities (SIC 4900-4999) and international affairs (SIC 9000-9999) as these institutions face unique regulatory and financial reporting requirements. The sample also excludes firm-year observations with missing data for hypothesis tests.

I also restrict the sample to focus the results on offshoring activity instead of inherent differences in the audit firm. First, given documented differences in financial reporting quality based on audit firm size (DeFond, Erkens, and Zhang 2017; DeFond and Zhang 2014; Jiang, Wang, and Wang 2019), I restrict the sample to firm-years with a large public accounting firm as auditor. Large public accounting firm is defined as ranking in the top ten highest total fees for the year in the Audit Analytics Audit Fees database.⁷ Untabulated tests consider alternative definitions as the top twenty-five largest firms and all firms offshoring as of 2022 with no significant change to results. I present my sample construction process in Table 1. The final financial reporting quality sample consists of 48,253 firm-year observations, with 10,319 firm-year observations for the analysis of restatements. Table 2 reflects descriptive statistics, detailing values for all dependent and control variables. I winsorize continuous control variables at the 1st and 99th percentiles.

Because the treatment variable in my analysis is determined based upon the audit firm and is limited to the largest accounting firms, it is possible that the treated client firms in my sample are inherently different than untreated client firms in the sample. Table 2, Panel A details

⁷ I compared these individual year rankings to a selection of published size rankings by Accounting Today (Accounting Today 2004; 2006; 2008; 2013; 2014). Comparisons appear largely consistent with the exception of some large tax-only providers such as H&R Block.

the difference in means and standard deviation between the treatment and control samples before entropy balancing for the restatement sample. To prevent these potential differences from driving my results, I perform entropy balancing on the means and variances of all firm-level control variables, in the period prior to treatment ($t-1$). Entropy balancing utilizes reweighting to adjust for sample inequalities and reduce model dependency (Hainmueller 2012). Table 2, Panel B details descriptive statistics for the entire sample after entropy balancing. The average firm in my financial reporting quality sample is large with assets in excess of \$8B. Average audit fees are in excess of \$2.7M annually.

Hypotheses tests

I utilize a stacked cohort difference-in-differences design to capture the effect of implementation of an offshoring strategy by the audit firm on quality. The stacked cohort design helps overcome potential bias of difference-in-differences models with staggered treatment timing (Baker, Larcker, and Wang 2022; Barrios 2021; Goodman-Bacon 2018). The construction of individual cohorts for each event refines the control group by only including observations that have not been treated before the event and are not treated within three years of the event. The cohorts are then combined into a single “stacked” sample for estimation of an overall effect.

The difference-in-differences regression model follows the form detailed in equation (1), with the primary output measured as $Quality_{cjt}$ for firm (j) in cohort (c) at time (t). Client firm and year fixed effects, by cohort, are represented by α_{cj} and α_{ct} , respectively. The overall effect of offshoring is captured by the coefficient β_t . $f(X_{cjt})$ represents a vector of control variables and ε is the error term. Appendix A details the calculation of variables utilized, including all dependent variables.

$$Quality_{cjt} = \alpha_{cj} + \alpha_{ct} + \beta_t(Offshore_{cj} \times Post_{cjt}) + f(X_{cjt}) + \varepsilon \quad (1)$$

The symmetry of the stacked cohort design (three years untreated, three years treated) provides the opportunity to both evaluate trends in the pre-period and view the year-by-year effect in the post period. To view the year-by-year impact, equation (2) expands the original specification to include individual indicator variables for each period relative to treatment ($Offshore_{cjt+k}$) multiplied by the coefficients of interest β_k .⁸ All other variables are unchanged.

$$Quality_{cjt} = \alpha_{cj} + \alpha_{ct} + \left[\sum_{k=-3}^{k=+2} \beta_k (Offshore_{cjt+k}) \right] + f(X_{cjt}) + \varepsilon \quad (2)$$

I measure financial reporting quality following three measures: restatements, SEC comment letters and SEC Accounting and Auditing Enforcement Releases.⁹ I select a variety of proxies as each measure may capture distinct elements of quality (Aobdia 2019). Further, I favor proxies for financial statement quality that are closely tied to the provision of audit services, as opposed to more client-firm driven proxies, such as earnings persistence and disclosure (Gaynor et al. 2016). For tests of tax reporting quality, I measure quality as tax-related restatements and SEC comment letters, the change in unrecognized tax benefits (UTB) and one-year tax accrual quality (TaxAQ). In supplemental analyses, I also consider the intended consequences of offshoring, including audit fees, as cost and internal margin are key components of an offshoring strategy. However, I examine fees separately to alleviate concerns that fee adjustment alone results in differing quality. While not the primary focus of this study, a benefit of the overall research design is that it provides a mechanism to understand whether the expected cost savings from offshoring resulted in lower average fees for clients.

This research design focuses on corporations served by large public accounting firms, which are inherently likely to exhibit certain characteristics that could produce spurious results.

⁸ I am unaware of any firms that discontinue offshoring after implementation.

⁹In untabulated analyses, I also consider discretionary accruals, finding no relation with offshoring. For brevity, I exclude discretionary accruals in favor of measures that provide a more direct proxy of financial reporting quality.

Therefore, my research design also includes client firm and year fixed effects by cohort (α_{cj} , α_{ct}) and control variables ($f(X_{cjt})$). I also present an alternative form of each regression with audit firm fixed effects, represented by α_{ca} , to capture any impact of audit firms not subsumed by the client firm fixed effect. Control variables are selected in accordance with the suggested control variables for Big N Audit Quality Models in DeFond and Zhang (2014) and include size, leverage, loss indicator, return on assets, current ratio, asset turnover, sales growth, capital intensity and indicators for debt/equity issuances and Big 4 audit firm. All continuous control variables are winsorized at the 1st and 99th percentiles.

IV. HYPOTHESES TESTS

Financial reporting quality

Table 3, Panels A and B present results from the stacked cohort differences-in-differences test for the effect of offshoring on financial reporting quality as detailed in equations (1) and (2), respectively. Panel A displays the average impact of offshoring, while Panel B presents the year-by-year results of the event-study design. On average, I find that restatements increase by 6 percentage points following the implementation of an offshoring strategy (Panel A, Column 1-2). I do not find a significant average effect of offshoring on the count of SEC comment letters or AAERs (Panel A, Columns 7-10). Table 3, Panel B provides additional detail on the year-by-year impact of offshoring on my proxies of financial reporting quality. The event-study presentation of the main effect for restatements is captured in Table 3, Panel B, Column 1 and Figure 3. In the years prior to treatment, I do not find a significant difference in restatements between my treatment and control groups, indicating that my assumption of parallel trends is reasonable. In the post period, offshoring displays a positive and significant relation with restatements in the year of treatment ($k=0$) and third year of treatment ($k=2$), indicating a negative effect on financial reporting quality. The effect is particularly pronounced in the year of

treatment, as the results indicate offshoring increases restatements by 9 percentage points ($p < 0.01$). The increase falls to 7.6 percentage points ($p < 0.05$) in the third year of treatment. Results with the addition of audit firm fixed effects, Table 3, Panel B, Column 2, are directionally consistent. I also observe a marginally significant relation ($p < 0.10$) between offshoring and SEC comment letters in the second year of treatment (Column 8), further supporting a decrease in financial statement quality. I do not observe a significant effect for AAERs under either fixed effects structure (Columns 9-10). Taken together, my tests provide evidence that offshoring reduces quality in the form of increased restatements and SEC comment letters, and, therefore, I reject H1 that offshoring has no effect on financial reporting quality.

Although each of the three dependent variables in these analyses proxies for financial reporting quality, the underlying computation of each variable captures different potential deficiencies in the audit process (Aobdia 2019). Restatements and AAERs are the most direct measures of quality, as they reflect identified issues with the financial statements. However, the underlying causes may differ. Restatements capture a wide range of misstatements, from unintentional errors to intentional fraud. Alternatively, AAERs capture violations resulting in SEC action against responsible parties. SEC comment letters provide feedback on financial statement disclosure and like restatements, may encompass a variety of consequences from underlying audit processes. The underlying differences in construction for restatements, comment letter count, and AAERs make it reasonable that I receive inconsistent outcomes for my proxies of financial reporting quality.

To better understand the negative impact of offshoring on quality, I conduct an additional analysis related to the type of restatement. Reissuance or big “R” restatements reflect material errors that result in the reissuance of the financial statements for the impacted period and a

formal announcement via Form 8-K Item 4.02 (AA 2022). Offshoring may increase reissuance restatements if the offshoring of audit work results in systematic, material errors that are not corrected during the domestic review process. Revision or little “r” restatements reflect errors and misstatements that are corrected by revising the previous periods in the current year financial statements (AA 2022). Offshoring may increase revision restatements if the offshoring of audit work results in a collection of smaller, immaterial errors that aggregate into a material financial statement difference in a subsequent period.

To test for potential differences in the impact of offshoring, I replace the dependent variable in equations (1) and (2) with an indicator variable for each type of restatement. The results, displayed in Table 3, Panel A, Columns 3-4 and 5-6, reflect the overall average results for big “R” and little “r”, respectively, and indicate that the overall average increase to restatements is concentrated in little “r” restatements. The event-study results in Table 3, Panel B, Column 5, display a positive and significant relation in the first and third year of the post period (Table 3, Panel B, Column 5 and Figure 4). The inclusion of auditor fixed effects produces directionally consistent results, with a significant relation for all three years in the post-period. This pattern of increased immaterial errors is consistent with anecdotal evidence describing an initial learning curve for both domestic and offshore teams as firms roll-out a new process for the offshoring of audit work. As a firm leader in charge of launching new offshore operations noted, it is a “lumpy process”, where “nothing works well the first time”. Another firm leader echoed this idea, the “first year felt like an experiment, assuming it could fail. Lots of rework and somewhat wasteful instead following the established process”.

Tax reporting quality

Tax services represent a key component of public accounting offshoring. Tax compliance

is often the first professional service offshored by public accounting firms (Figure 2). Further, respondents to my May 2023 survey indicate a higher proportion of tax services are conducted offshore, with average offshore engagement targets most frequently estimated at 30-50% of total engagement hours being performed offshore (Appendix C). However, without proprietary data, the analysis of public accounting offshoring on tax quality is limited to financial statement information related to auditor-provided tax services. In my second set of hypothesis tests, I explore this relation between public accounting offshoring and tax reporting quality.

To examine the impact of offshoring tax services, I perform entropy balancing on the means and variances of all firm-level control variables in the period prior to treatment ($t-1$) on a sample of 8,664 firm-year observations with necessary treatment, control and dependent variables and non-zero auditor provided tax services (as the tax provider cannot otherwise be identified). Analyses of tax reporting quality include tax-related restatements, tax-related comment letters (Kubick et al. 2016), the change in unrecognized tax benefits (Robinson et al. 2016), and single year tax accrual quality (referred to as TaxAQ by Choudhary et al. (2022)), which captures the association between the tax accrual and cash flows.

Table 4 presents results from the stacked cohort difference-in-differences tests for the effect of offshoring on tax reporting outcomes. Panel A displays the average impact of offshoring, while Panel B presents the year-by-year results of the event-study design. On average, offshoring displays a positive and marginally significant relation with tax-related SEC comment letters (Panel A, Columns 3-4), the change in unrecognized tax benefits (Panel A, Columns 5-6) and TaxAQ (Panel A, Columns 7-8).¹⁰ Offshoring does not exhibit a significant relation with tax restatements. The results of the event-study design (Panel B) illustrate that the

¹⁰ TaxAQ is calculated as an absolute value, with a larger number indicating more variation between the tax accrual and future cash flows.

increase to unrecognized tax benefits and tax accrual quality occurs primarily in the first year following the offshoring of tax services ($k=0$), while the impact to tax comment letters is delayed until the third year after treatment ($k=2$). Overall, the results are consistent with a decrease in tax reporting quality following the implementation of an offshoring strategy, and therefore, I reject H2 that the offshoring of tax services has no impact on tax-related financial reporting quality.

Anecdotal evidence indicates that tax offshoring originated in the preparation of income tax returns and remains concentrated in compliance services, limiting the mechanisms through which financial statement measures reflect underlying offshoring quality. Additionally, prior research has provided evidence that financial reporting quality is higher for firms with auditor provided tax services (De Simone et al., 2015; Gleason & Mills, 2011; Kinney et al., 2004), making my sample of firms with auditor provided tax services potentially suboptimal for finding an offshoring effect. Tax comment letters are relatively rare, with an average value of 0.167 in the entropy-balanced sample (untabulated), and may not represent a severe financial reporting lapse. Similarly, although untabulated tests indicate a significant first-year change in unrecognized tax benefits and TaxAQ, these results may reflect an increase in reserve balances due to a discovered error or anticipated future settlement with the tax authority; however, the increase could also relate to new or existing uncertain tax positions. Given the indirect path between tax compliance and the financial statements, as well as an overall pattern of high quality for auditor provided tax services, it is not surprising I find weaker results for tax reporting quality.

V. TESTS OF INTENDED CONSEQUENCES

Public accounting offshoring began with Deloitte in the early 2000s, sparking a trend that the remainder of the Big 4 and Grant Thornton would follow over the next decade. The literature

on service offshoring emphasizes the trade-off firms face between the motivation to offshore and potential quality implications. Interviews with public accounting professionals, including partner-level leaders tasked with launching offshore operations, confirm that the motivations to offshore accounting services align with those highlighted in the management literature, lower costs and access to qualified labor (Stringfellow, Teagarden, and Nie 2008), which align with the primary motivations highlighted during my semi-structured interviews with firm leaders. To provide additional insight into the strategic decision by public accounting firms to offshore audit services, I perform additional analyses to understand if and how audit firms were able to successfully achieve the intended consequences of offshoring.

Cost outcomes

Labor cost savings due to lower wages are a consistent driver of offshoring across industries and public accounting firms face the same advantages (Bunyaratavej et al. 2011). A review of average auditor salaries on indeed.com indicates that the average salary for a U.S. auditor is more than 14 times the average auditor salary in India. As more firms adopted the model, this opportunity for cost savings became an even more important motivation for large firms. Interviewees stressed the eventual necessity of shifting work offshore as competitors with AOE's benefitted from costs less than \$25 per hour "all in". As one partner explained "[An offshoring firm] was offering tax returns at \$80 per hour versus \$125 to \$150 per hour – it was impossible to compete."

Although the ability to reduce labor costs by completing a portion of work in a location with a lower cost of living is the most salient benefit of service offshoring, it is unclear how labor savings at the audit firm level translate into audit fees for the client. To test this relation, I modify the dependent variable in equations (1) and (2) to reflect audit fees. The fixed effect

structure is unchanged. All control variables are maintained with the addition of restatements to provide comfort that quality lapses are not driving any change in fees. Table 5, Panel A presents the results from the stacked cohort difference-in-differences tests for the effect of offshoring on audit fees. On average, offshoring displays a significantly positive relation with audit fees (Columns 1-2). The results indicate an average 4% increase in audit fees following AOE implementation. Given average audit fees in excess of \$2.7M for the entropy-balanced sample, the average audit fee increase exceeds \$119,000. Figure 5 further details the significant year-by-year increase in audit fees following the implementation of an offshoring strategy. Based on untabulated tests of the event study design, the relation is positive and significant for each of three years following treatment, with the largest impact (approximately 5%) noted in the first year ($k=0$). Results for the regression specification with audit firm fixed effects are consistent.

The test does not provide any evidence of fee reduction for audit services, and consequently, it does not appear that public accounting firms pass cost savings onto clients through reduced fees on average. These results are corroborated through interviews with public accounting professionals. Interviewees indicated that as fees can be interpreted as a signal of quality, firms did not pursue fee reductions on existing clients.¹¹ As one firm leader summarized “Accounting firms are insurance firms. The value is not the work, the value being brought is the stamp of insurance. Clients want a lower rate and the answer is no, you are still getting the same value.” Further, the results indicate that audit firms are able to increase overall audit fees after implementing the AOE model. Given that my research design applies treatment at the audit-firm level, I cannot directly observe the level of offshoring on a client firm basis and, therefore, cannot fully explain the mechanism for the audit fee increase. For example, I cannot determine if

¹¹ This perspective is consistent with audit research documented in DeFond and Zhang (2014) utilizing audit fees as the dependent variable in analyses of audit quality.

clients with offshoring of audit services are provided additional value-added audit services, increasing fees, or if client firms resistant to offshoring of audit services are paying a premium for onshore service delivery. However, either explanation across my broad sample has the potential to reconcile my finding of an increase during the initial stages of offshoring to the opposite results for firms with mature offshoring models in Sherwood (2024).

Table 5, Panel A also presents a related analysis using audit fees. The empirical evidence of increasing audit fees, paired with interview discussions of a focus on increased margin, suggest that audit firms may retain the financial benefits of offshoring versus reducing client fees. The extent of such benefits may be observable by fee-based market share, which can be influenced by both audit fees on existing clients and the ability to service additional clients. I conduct an analysis of industry market share by considering whether a client firm is serviced by an “expert”, as measured by McGuire et al. (2012).¹² The expert designation indicates that the audit firm has at least 30% of industry audit fees in a particular metropolitan statistical area (MSA). As detailed in Table 5, Panel A Columns 3-4, I find a positive and significant relation between offshoring and industry market share of the client firm auditor. Even though I am unable to provide definitive evidence on the utilization of labor savings by audit firms, the audit fee and market share results are consistent with commentary from semi-structured interviews indicating that a primary motivation to offshore is the opportunity to increase audit firm profitability.

Capacity outcomes

In addition to competitive pressure and obvious cost savings, firm leaders identify access to qualified labor as a key driver in the decision to offshore. As one firm leader described, “Talent in the U.S. is constrained as there is a shift away from the glamour of the accounting

¹² Untabulated analyses utilizing a similar measure of “specialist” from Francis et al. (2005) illustrate that the demonstrated effect does not translate to the higher threshold of becoming the local industry leader.

firms.” The demand for new accountants doubled over the course of the sample period, exceeding the rate of increase in new accounting graduates (AICPA 2019). One partner summarized the motivation for labor arbitrage as “The (labor) contraction was expected and therefore, it was...hedged”. Offshoring allows U.S. engagement teams to fill this gap with qualified professionals abroad, while also increasing the workday to nearly 24 hours (Daugherty and Dickins 2009). The same partner referred to this combination of benefits (response to talent shortage, increased workday and decreased costs) the “trifecta of success” for the adoption and expansion of offshoring within public accounting.

I explore two strategies to test the second primary motivation to offshore, the need to increase capacity through access to qualified labor. First, I consider whether offshoring allows audit firms to complete “more” work. To test this relation, I examine whether firms are able to increase economies of scale following the methodology developed in Fung et al. (2012). In most contexts, “economies of scale” would align more closely with cost margin by capturing a firm’s internal operational metrics. However, due to the inability to access cost data for audit firms, the measure captures the relative number of clients in an industry-locality grouping for each accounting firm. Specifically, *Economies of Scale* is defined as the annual percentile ranking of the audit client count at the city-industry level. Second, I examine the potential effects of increased capacity for audit services by considering earnings announcement speed, as additional resources and extended working hours under a follow-the-sun strategy could result in quicker service delivery (Stringfellow, Teagarden, and Nie 2008).

Results for each measure are reflected in Table 5, Panel A. On average, I find a significantly positive relation between offshoring and audit economies of scale, suggesting a potential increase in capacity for audit firms. I do not find an overall significant relation between

offshoring and earnings announcement speed (Table 5, Panel A, Columns 7-8). I acknowledge that earnings announcement speed is an imperfect proxy for the speed of the audit process. Earnings announcement disclosures are not required to include audited GAAP numbers and client firms may have other motivations, beyond audit completion, to time earnings releases (Schroeder 2016).¹³

Tax-related cost and capacity outcomes

To examine financial and capacity outcomes for tax services, I adjust the dependent variables for fees, industry market share and economies of scale to reflect auditor-provided tax services. Additionally, I consider tax planning effectiveness as a documented motivation for offshoring is the ability for increased capacity to allow U.S. teams to prioritize resources on complex and quality increasing services (Daugherty and Dickins 2009). Tax planning effectiveness, developed by Schwab, Stomberg, and Williams (2022), measures the relative efficiency of a client firm's maximization of after-tax returns by industry given their operating environment. Specifically, the measure considers six common tax planning strategies over a four-year period: research and development; property, plant and equipment; tax havens; intangible assets; inventory and total debt. Given the calculation of tax planning effectiveness extends beyond the three-year post-period in my standard stacked cohort design, I consider an extended cohort with a four-year post-period.

Table 5, Panel B, displays the average impact of offshoring (Offshore x Post) on tax-related cost and capacity outcomes. On average, I find a significantly positive relation between tax planning effectiveness for the regression specification including auditor fixed effects (p-value

¹³ Due to audit firm process changes following the 2009 issuance of SFAS 165 during my sample period, I do not consider the speed of the audit opinion signatures as a proxy for audit completion (Glover, Hansen, and Seidel 2022).

<0.10), providing some evidence that offshoring firms are able to increase tax planning effectiveness for client firms. I also find a positive relation for the specification with only client firm and year fixed effects in Column 6; however, it is only marginally significant when utilizing one-tailed thresholds of significance. The increase in tax planning effectiveness is consistent with the assertion by public accounting firms that offshoring of routine tasks increases the capacity for U.S. professionals to focus on value-added services beyond basic compliance. Offshoring does not display an association with any other cost or capacity measure. Together, my results for tax reporting quality further support the conclusion that audit firms are able to achieve strategic objectives by offshoring professional services.

Potential limitations

My study relies upon a staggered timeline of accounting firms adopting an offshoring strategy through opening of an AOE in India. The decision and timing of offshoring is not random and, therefore, an alternative explanation may exist for my results. I have considered motivations for offshoring by firms, such as financial and staffing constraints, but have not identified any plausible alternative explanations that would correspond to the timeline of the documented effects on quality, fees and capacity. I have also employed a variety of fixed effect structures to capture any significant time invariant effects that may influence the decision to offshore or subsequent effects. Additionally, as the decision to offshore during my sample period is restricted to the largest firms, primarily the Big 4, my results may not generalize to a setting of smaller accounting firms that have not yet begun to offshore professional services.

Further, my research design reflects treatment at the audit firm level and, therefore, I am not able to observe the specific tasks performed offshore or the level of offshoring on an individual client-firm basis. Although this design choice enables the study of industry-wide

consequences of offshoring without the necessity of proprietary data, it limits my ability to conclusively identify the mechanism through which offshoring impacts my outcome measures.

VII. CONCLUSION

I contribute to the accounting literature by examining the industry-wide financial reporting effects of public accounting offshoring. Through 19 semi-structured interviews and a wider survey of more than 100 current and former accounting professionals, I document the initial motivation of accounting firms to offshore, the current state of the practice and professionals' expectations of an impact to final deliverable quality. I use a combination of Indian incorporation records, public data and interview responses to develop an archival methodology to study the quality impact of public accounting offshoring that can also be employed by future researchers to consider other questions regarding the impact of offshoring.

I build upon existing experimental literature demonstrating potential mechanisms for reduced financial reporting quality and provide evidence that restatements increase after the adoption of an offshoring strategy by the audit firm, with the overall effect concentrated in the first year after adopting the model. Additional analyses illustrate that the increase in restatements is concentrated in revision or little "r" restatements, suggesting that the decrease in quality relates to a combination of errors in the initial years of offshoring versus a severe lapse in one audit area. This pattern of results is consistent with the initial learning curve described in semi-structured interviews.

I next provide evidence of a relation between public accounting offshoring and decreased tax reporting quality, through increased tax comment letters, changes to unrecognized tax benefits and tax accrual quality. Although I provide initial insights into the potential impact on tax reporting quality through the context of auditor-provided tax services, the larger relation

between offshoring and tax compliance quality remains an open question for future research.

I also explore the intended consequences of offshoring by studying the impact on audit fees, local audit fee market share, audit firm economies of scale and capacity-related financial statement outcomes. I provide preliminary evidence that public accounting firms do not pass on the labor cost savings from offshoring to clients through reduced fees, on average. My study indicates that audit fees are counter-intuitively increasing with offshoring. Further, I find a positive association between local market share and audit economies of scale and implementation of an offshoring strategy. I also provide some evidence that tax planning effectiveness increases following implementation of an offshoring strategy, which could represent the ability of domestic accounting professionals to focus on value-added tasks following access to offshore talent.

My results indicate that the widespread practice of public accounting offshoring accomplished the intended consequences of improved engagement finances and increased capacity, illustrated by an overall increase in audit fees, local market share, client counts and tax planning effectiveness. However, offshoring also resulted in decreased financial reporting quality, indicated by an increase in restatements and multiple tax-reporting measures. Together, the pattern of results indicate that public accounting firms have accomplished their internal goals while avoiding severe financial statement deficiencies (big “R” restatements and AAERs). However, due to the overarching commitment from accounting firms to prioritize quality above all else, the impact of offshoring may extend beyond the economic magnitude of the documented increase to revision restatements. These results can inform new offshoring firms, as well as regulators and other stakeholders, to the potential trade-offs faced when launching a new process, including the potential for increased errors due to an initial learning curve.

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APPENDIX A

Variable definitions and data sources

Variable name	Description	Database
Treatment variables		
Offshore _{acjt+k}	An indicator variable equal to 1 if the client firm's auditor (AUDITOR_FKEY) offshore audit services at time t in cohort c. In supplemental analyses, reflects offshoring of tax services by audit firm.	Appendix B
Post _t (audit)	An indicator variable equal to 1 if the client firm's auditor (AUDITOR_FKEY) offshore audit services as of the year t, based upon the timeline detailed in Appendix B	Audit Analytics – Audit Fees
Post _t (tax)	An indicator variable equal to 1 if the client firm's auditor (AUDITOR_FKEY) offshore tax services as of the year t, based upon the timeline detailed in Appendix B	Audit Analytics – Audit Fees
Quality dependent variables		
Restatement _{acjt}	An indicator variable equal to 1 if the client firm experiences a restatement for a period-ended in the year t. Restatements reflect all restatements included in the Audit Analytics “Restatements” database.	Audit Analytics – Restatements
CL count _{acjt}	A count of SEC comment letters received during the fiscal year. Equal to 0 for firms receiving no comment letters.	Audit Analytics – Comment Letter
AAER _{acjt}	An indicator variable equal to 1 if the client firm is named in an AAER for a period-ended in the year t. AAERs reflect all AAERs included in the Audit Analytics “AAER” database.	Audit Analytics - AAER
BIGR _{acjt}	An indicator variable equal to 1 if the client firm experiences a restatement for a period-ended in the year t that resulted in the filing of an Item 4.02 8-K.	Audit Analytics – Restatements
LittleR _{acjt}	An indicator variable equal to 1 if the client firm experiences a restatement for a period-ended in the year t that did not result in the filing of an Item 4.02 8-K.	Audit Analytics – Restatements
Tax Restatement _{acjt}	An indicator variable equal to 1 if restatement = 1 and RES_ACC_RES_TITLE_LIST includes “Tax”	Audit Analytics – Restatements
Tax CL count _{acjt}	A count of tax-related SEC comment letters received during the fiscal year. Equal to 0 for firms receiving no tax related comment letters.	Audit Analytics – Comment Letter
TaxAQ_1Y _{acjt}	Absolute value of the residuals from firm-specific estimates of equation ($\text{TaxACC}_{ct} = \beta_0 + \beta_1 \text{CTP}_{ct-1} + \beta_2 \text{CTP}_{ct} + \beta_3 \text{CTP}_{ct+1} + \beta_4 \text{ChangeDTL_LT}_{ct} + \beta_5 \text{ChangeDTA_LT}_{ct} + \beta_6 \text{ChangeESO}_{ct} + \beta_7 \text{ChangeDisc\&Extra}_{ct} + \beta_8 \text{ChangeUTB}_{ct} + \varepsilon_{ct}$) multiplied by 1,000.	Compustat Fundamentals Annual (Choudhary, Koester, and Pawlewicz 2022)
Change_UTB _{acjt}	UTB beginning balance less UTB ending balance, scaled by lagged total assets ($\text{txtubbegin}_{ct} - \text{txtubend}_{ct}$) / at_{ct-1}	Compustat Fundamentals Annual
Supporting variables		
CTP _{cjt}	Cash income taxes paid (txpd_{cjt}), scaled by total assets (at_{cjt})	Compustat Fundamentals Annual
TaxACC _{cjt}	Total income tax accrual, calculated as total tax expense (tte_{cjt}) scaled by at_{cjt} less CTP _{cjt}	Compustat Fundamentals Annual

Change_DTA_LT _{cjt}	<p>Change in long-term deferred tax assets (TXDBA_{cjt} – TXDBA_{cjt-1}).</p> <p>Missing values of TXDBA_{cjt} reset to 0 if TXDB_{cjt} is not missing. If TXDB_{cjt} missing set equal to TXNDB_{cjt} – TXDBCL_{cjt} – TXDBCA_{cjt}. Missing values of TXDBCL_{cjt} reset to 0 if TXDBCA_{cjt} is not missing. Missing values of TXDBCA_{cjt} reset to 0 if TXDBCA_{cjt} is not missing.</p>	Compustat Fundamentals Annual
Change_DTL_LT _{cjt}	<p>Change in long-term deferred tax liabilities (TXDB_{cjt} – TXDB_{cjt-1}).</p> <p>Missing values of TXDBL_{cjt} reset to 0 if TXDB_{cjt} is not missing. If TXDB_{cjt} missing set equal to TXNDB_{cjt} – TXDBCL_{cjt} – TXDBCA_{cjt}. Missing values of TXDBCL_{cjt} reset to 0 if TXDBCA_{cjt} is not missing. Missing values of TXDBCA_{cjt} reset to 0 if TXDBCA_{cjt} is not missing.</p>	Compustat Fundamentals Annual
Change_ESO _{cjt}	<p>Change in the absolute value of excess tax benefits on stock options scaled by assets</p> <p>$Abs(txbcof_{cjt} / at_{cjt}) - Abs(txbcof_{cjt-1} / at_{cjt-1})$</p>	Audit Analytics – Audit Fees
Change_Disc&Extra _{cjt}	<p>Change in discontinued operations scaled by assets</p> <p>$xidoc_{cjt} / at_{cjt} - xidoc_{cjt-1} / at_{cjt-1}$</p>	
Cost and capacity tests		
Audit Fees _{cjt}	AUDIT_FEES _{cjt}	Audit Analytics – Audit Fees
Log(Audit Fees) _{cjt}	log(Audit_Fees _{cjt})	Audit Analytics – Audit Fees
Tax Fees _{cjt}	TAX_FEES _{cjt}	Audit Analytics – Audit Fees
Log(Tax Fees) _{cjt}	log(Tax_Fees _{cjt})	Audit Analytics – Audit Fees
Economies of Scale _{cjt}	Annual percentile ranking of count of audit (tax) clients by grouping of CBSA-Industry	Audit Analytics – Audit Fees (Fung, Gul, and Krishnan 2012)
Industry Market Share _{cjt}	Indicator variable equal to 1 if industry audit (tax) fee market share for MSA is at least 30% in current year	Audit Analytics – Audit Fees (McGuire, Omer, and Wang 2012)
Earnings Announcement Speed _{cjt}	<p>Restricted to Q4 filings:</p> <p>$(datadate_{cjt} - rdq_{cjt})/365$</p>	Compustat Fundamentals Quarterly (Gallemore and Labro 2015)
Tax Effectiveness _{cjt}	<p>Tax Planning Effectiveness score</p> <p>https://sites.google.com/view/brianmwilliams/tax-effectiveness-scores</p>	(Schwab, Stomberg, and Williams 2022)
Control variables		
Size _{cjt}	<p>Log of total assets</p> <p>$log(at_{cjt})$</p>	Compustat Fundamentals Annual
Leverage _{cjt}	<p>Debt, scaled by lagged total assets</p> <p>$(dlc_{cjt} + dl_{cjt}) / at_{cjt-1}$</p> <p>Missing values of dlc_{cjt} reset to 0 if dl_{cjt} is not missing. Missing values of dl_{cjt} reset to 0 if dlc_{cjt} is not missing.</p>	Compustat Fundamentals Annual

$Loss_{cjt}$	An indicator variable equal to 1 if $ib_{cjt} < 0$	Compustat Fundamentals Annual
ROA_{cjt}	Operating income scaled by lagged total assets $oiadp_{cjt} / at_{cjt-1}$	Compustat Fundamentals Annual
Current ratio $_{cjt}$	Total assets divided by total liabilities at_{cjt} / lt_{cjt}	Compustat Fundamentals Annual
Asset turnover $_{cjt}$	Sales scaled by total assets $sale_{cjt} / at_{cjt}$	Compustat Fundamentals Annual
Sales growth $_{cjt}$	Current year change in revenue divided by lagged revenue $(revt_{cjt} - revt_{cjt-1}) / revt_{cjt-1}$	Compustat Fundamentals Annual
Equity issuance $_{cjt}$	An indicator equal to 1 if $cshi_{cjt} > 0$ and 0 otherwise.	Compustat Fundamentals Annual
Debt issuance $_{cjt}$	An indicator equal to 1 if $dltis_{cjt} > 0$ and 0 otherwise.	Compustat Fundamentals Annual
$BIG4_{cjt}$	An indicator equal to 1 if the auditor of the client firm is a Big 4 audit firm and 0 otherwise.	Compustat Fundamentals Annual

APPENDIX B

Offshoring adoption dates by accounting firm in sample period

Firm	Name of offshoring operations	Year offshoring of services began	
		Tax	Audit
Deloitte	Deloitte Indian offices of the US (USI)	2000	2005
EY	EY Global Talent Hub (GTH)	2002	2002
KPMG	KPMG Global Services (KGS)	2003	2008
PwC	PwC Service Delivery Center (SDC)	2010	2010
Grant Thornton	GT INDUS (formerly GTSSC)	2012	2013

Since the conclusion of the sample period, additional firms have started offshoring operations (including, but not limited to): BDO, RSM, Wipfli, Moss Adams, Cohn Reznik, MGO, Withum, Ryan, alliantTalent, Vistra (formerly, Radius).

I constructed and corroborated the above timeline of offshoring dates through a multi-pronged approach consisting of the actions listed below:

- I performed a company name search for each firm through the Indian Ministry of Corporate Affairs (MCA) website (<https://www.mca.gov.in/mcafoportal/showCheckCompanyName.do>) to identify legal entities and identification numbers for related entities. I then used these identification numbers to review company master data (<https://www.mca.gov.in/mcafoportal/viewCompanyMasterData.do>). The master data provides director/signatory details and contact information to differentiate between AOE and local Indian member-firms. The master data also includes date of incorporation details for each entity, which I utilized to corroborate the above timeline. All tax dates agree to the year of incorporation.
- I conducted a series of semi-structured interviews with current and former public accounting professionals. Interviewees include individuals with experience at each of the referenced firms and are primarily composed of professionals with direct offshoring experience, such as managing partners of local AOE, former international assignees and local Indian employees.
- During May 2023, I conducted a wider survey of current and former public accounting professionals via Qualtrics (detailed in Appendix C). To solicit potential participants, I utilized a series of shareable LinkedIn posts, LinkedIn direct messages, LinkedIn Sales Navigator and email messages. As incentive, respondents were able to enter an optional, random drawing for one of six \$100 Amazon gift cards. Of 606 total responses received, only 303 passed the Qualtrics quality checks. Upon further examination of the data, I also eliminated 185 observations that did not successfully complete all required multiple-choice questions or completed the survey in less than 180 seconds and did not respond to any optional free-response questions. The final survey sample includes a total of 118 high-quality responses.
- I reviewed the website for each U.S. member firm and the AOE (as available) including job postings and employee testimonials, to identify conflicting information and found no contradictory statements.
- I reviewed the LinkedIn page for offshoring entities (as available) and a variety of LinkedIn profiles for public accounting employees in India to identify any employment pre-dating the listed dates.
- I performed searches of traditional media sources and employment websites (Going Concern, Fish Bowl). The 2010 launch of the PwC facility in Kolkata was confirmed by Jones (2011) and no contradictory information was identified.

APPENDIX C

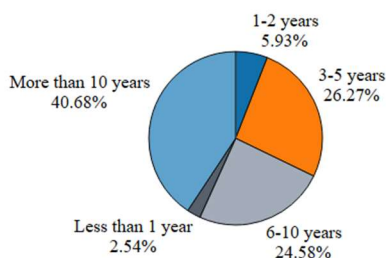
Survey of current and former public accounting professionals

The following quantitative questions were included in the survey:

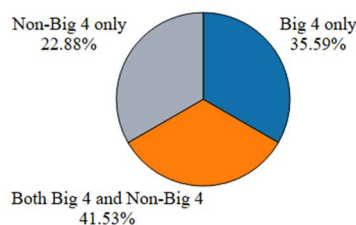
- 1) How many years of professional experience do you have?
- 2) Have you ever worked for a U.S. public accounting firm? Were you based in the United States or offshore?
For purposes of this question, offshore is defined as an office outside the United States (e.g. service center, acceleration center, Indian office of the U.S.).
- 3) Have you worked for Big 4 or non-Big 4 public accounting firm(s)?
- 4) Are you still working in public accounting?
- 5) In which of the following service lines have you been employed?
- 6) Within your current (or last) service line, did you further specialize? If yes, what was your area of specialization?
Examples of specialization include industry (e.g. financial services, real estate, manufacturing, etc.), entity type (e.g. C-corporations, partnerships, individuals, etc.) and service offering (e.g. transaction services, cost segregation, property tax, etc.).
- 7) Please select your current (or last) public accounting job title.

On average, survey respondents are experienced professionals with more than 40% reporting greater than ten years of professional experience. Respondents represent a variety of service lines (29.66% audit/assurance, 46.61% tax, 6.78% advisory and 16.95% multiple or other), included individuals having worked offshore and in the United States (61.02% only U.S., 16.95% only offshore and 22.03% both in the U.S. and offshore), and included individuals having worked for both Big 4 and Non-Big 4 firms (35.59% Big 4 only, 22.88% Non-Big 4 only and 41.53% both).

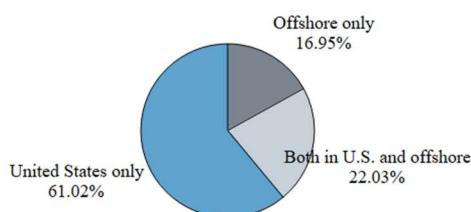
Professional work experience



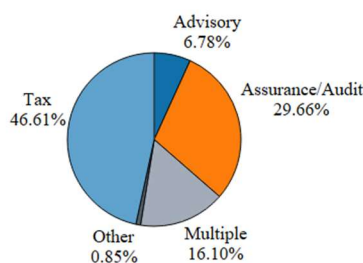
Type of public accounting firm



Location of public accounting experience



Public accounting service line

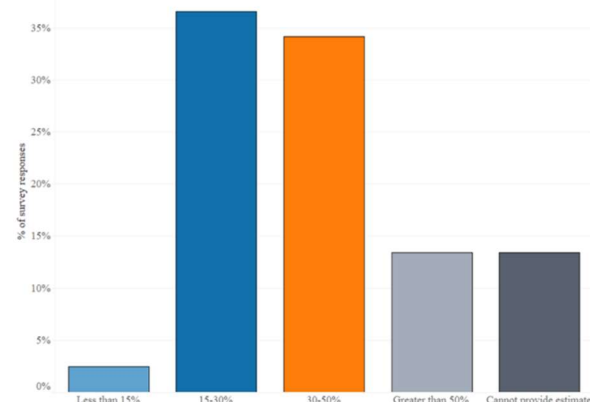


The following optional quantitative questions were included in the survey:

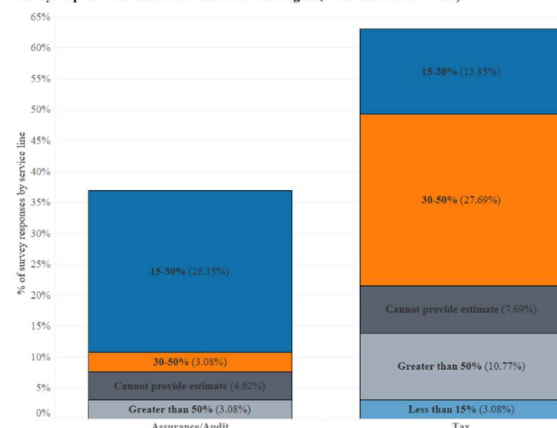
- 8) [Optional] Does your current (or last) firm have goals for the percentage of engagement hours to be completed offshore?
- 9) [Optional] On average, which of the following ranges would best approximate the engagement hour goals?

Of 118 total respondents, 97 responded to an optional series of questions regarding the level of public accounting offshore. 82 of the 97 respondents (approximately 85%) indicated their current or last public accounting firm had targets for the percentage of total engagement hours conducted offshore. Panel A presents the estimated hours range from these 82 respondents. Panel B presents these responses for individuals who indicated they have worked in only tax (41) or only assurance/audit (24). 17 respondents who indicated they have worked in advisory, other or multiple service lines were excluded for brevity and direct comparability to the 2011 AAA panel discussion referenced in Daugherty et al. (2012).

Panel A
Survey responses for estimated offshore hours targets (total)



Panel B
Survey responses for estimated offshore hours targets (Assurance/Audit v. Tax)



Additionally, the survey included 4 optional, open-ended questions.

For the following open-ended questions, consider your personal experience with the setting of offshoring in public accounting. For these questions, offshoring indicates utilization of an internal or affiliated offshore entity. Offshoring does not include utilization of an external third party or a foreign member firm.

- 1) Based upon your knowledge and experience, please enter the year you believe that the following public accounting firms began offshoring professional services. You may also add firms to the bottom of the chart. If you are not sure, leave the box blank. Do not guess.
- 2) What do you find to be the greatest benefit of working with teams in different countries?
- 3) What do you find to be most challenging about working with teams in different countries?
- 4) Do you think that public accounting offshoring impacts the quality of client deliverables? Why? For this question, impact may indicate an increase or decrease to quality, while no impact would indicate that quality is unchanged by offshoring.

Sample responses and relative coding

No *“As long as there is sufficient review and oversight by a qualified person, whether it is in the U.S. or offshore, I have not experienced any impact on client deliverables”*

Yes (Increase) *“In my personal experience, in order to leverage work offshore, the work model has to be standardized, so that it is easy for training the teams offshore. Using standardized models and tools, the quality would improve over the period than deteriorate. Focusing on continuous training and development, quality control processes and innovation using technology will help in improving quality of client deliverables.”*

Yes (Decrease) *“Yes, it decreases it. In a perfect world, if you had time to complete engagements, it could be great. But when you're dealing with hard deadlines and quick turnarounds, working with offshore teams feels burdensome. It's valuable to have something done while you sleep, but it's rarely where you need it to be. That is mainly because clients get you things late. Because of that, it's not an easy problem to solve and may just be the nature of the beast.”*

It depends (Decrease) *“It can. If the engagement is completed at the last minute, there's more likely to be mistakes due to offshore teams not having the same knowledge base as stateside teams.”*

Figure 1, Panels A & B
Survey responses for impact of public accounting offshoring on final deliverable quality

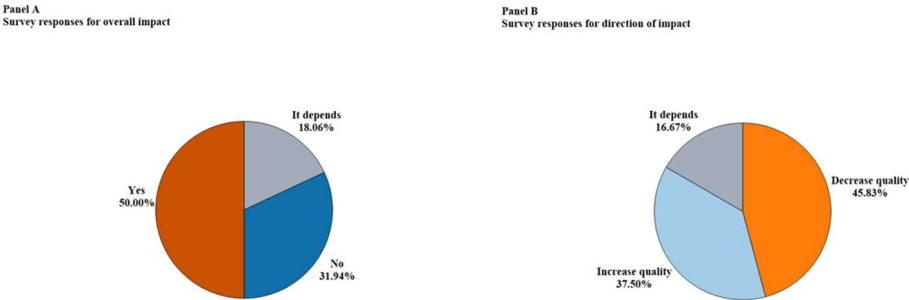
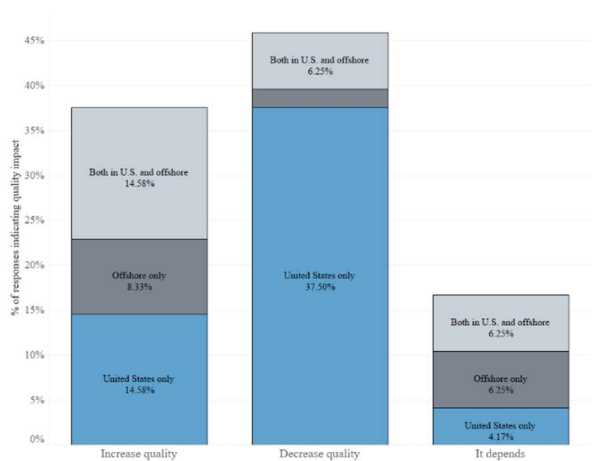


Figure 1, Panel C
Survey responses for directional impact of public accounting offshoring on final deliverable quality by location



Notes: This figure presents responses to a May 2023 survey of public accounting professionals. Of 118 total respondents, 72 responded to an optional series of free-response questions regarding the impact of public accounting offshoring on final deliverable quality. For ease of presentation and quantification, I reviewed each free-response answer individually and coded them into the summarized categories reflected above (See Appendix C for additional details). Panel A presents the proportion of responses indicating that final deliverable quality is (“Yes”), is not (“No”) or may be (“It depends”) impacted by public accounting offshoring. Panel B presents the indicated directional impact by respondents categorized as “Yes” or “It depends” in Panel A. Panel C decomposes the directional impact from Panel B by the location of respondents public accounting experience. One respondent who did not indicate direction is excluded from Panels B and C.

Figure 2
Offshoring adoption dates by accounting firm in sample period

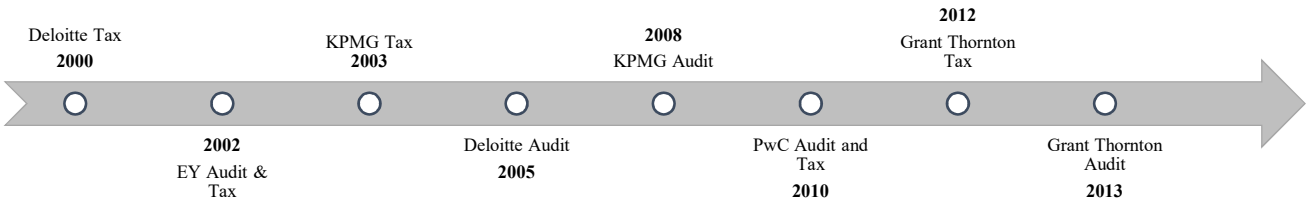
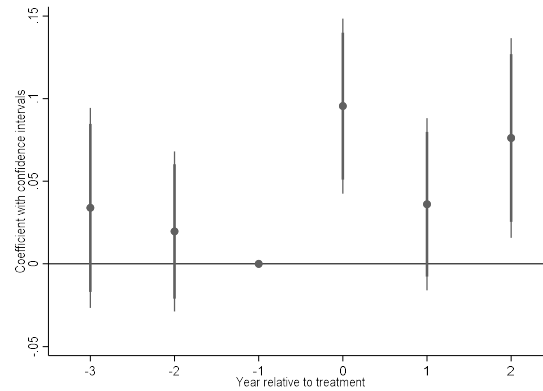
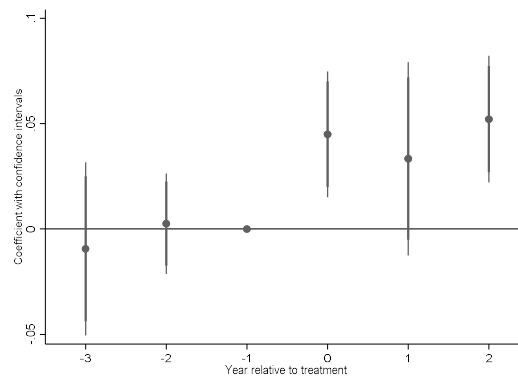


Figure 3
Impact of Offshoring on Restatements, Stacked Cohort Design



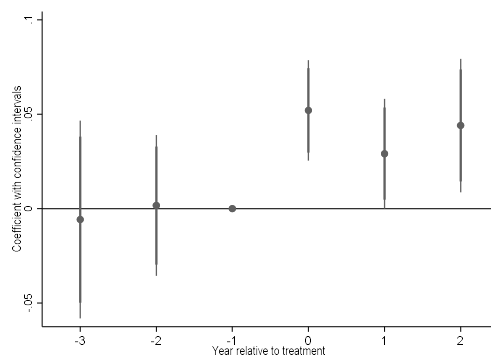
Notes: The above figure presents the difference in restatements between treatment and control groups pre- and post-treatment for each year relative to year (t-1), which represents the baseline at zero. The model reflects a stacked-cohort design with a symmetric three-year period. Results are presented with an entropy-balanced sample with balancing conducted by cohort on covariate means and variances in the period prior to treatment (t-1). Results are tabulated in Table 3, Panel B, Column 1. 95% (90%) confidence intervals are represented by the thin (bold) vertical lines.

Figure 4
Impact of Offshoring on Little “r” Restatements, Stacked Cohort Design



Notes: The above figure presents the difference in little “r” restatements between treatment and control groups pre- and post-treatment for each year relative to year (t-1), which represents the baseline at zero. The model reflects a stacked-cohort design with a symmetric three-year period. Results are presented with an entropy-balanced sample with balancing conducted by cohort on covariate means and variances in the period prior to treatment (t-1). Results are tabulated in Table 4, Panel B, Column 5. 95% (90%) confidence intervals are represented by the thin (bold) vertical lines.

Figure 5
Impact of Offshoring on Audit Fees, Stacked Cohort Design



Notes: The above figure presents the difference in audit fees between treatment and control groups pre- and post-treatment for each year relative to year (t-1), which represents the baseline at zero. The model reflects a stacked-cohort design with a symmetric three-year period. Results are presented with an entropy-balanced sample with balancing conducted by cohort on covariate means and variances in the period prior to treatment (t-1). The results of the average effect are tabulated in Table 5, Panel A, Column 1. For brevity, the event-study presentation of results for tests of intended consequences are untabulated. 95% (90%) confidence intervals are represented by the thin (bold) vertical lines.

Table 1
Sample construction

Data for which Compustat & AA is available (year, gvkey, cik, audit_fees) between 2000 and 2017	125,562
Exclude utilities (SICH 4900-4999) and international affairs (SICH 9000-9999)	(5,331)
Exclude firm-years with missing dependent and control variables (DA, ABS_DA, at, lev, pi, sale, act, lct, ppent, sich)	(35,519)
Exclude firms-years served by small audit firms (ranking by total fees >10)	(15,717)
Exclude observations outside cohort and singleton observations	(20,742)
Base sample quality (DA, ABS_DA, Fees)	48,253
Exclude cohorts with observations before 2004	(37,934)
Sample financial reporting quality (restatements, CL)	10,319

Notes: This table illustrates sample selection for the primary tests of financial reporting quality detailed in Section III. The sample includes all client firm year observations for which dependent and control variables are available, excluding client firms operating as utilities, financial institutions or international affairs. The sample is further restricted to remove client firms audited by firms ranking outside the top 10 by total fees for the year. The sample for studying restatements is further restricted to observations beginning in 2004 and excludes cohorts with firms treated before 2004 to align with the collection of restatement data in the Audit Analytics database. Client firms with only one observation are also excluded due to utilization of fixed effects in all tests.

Table 2**Panel A: Comparison of treatment and entropy balanced control observations financial reporting quality sample (restatements)**

Variable	Control observations			Treatment observations			Differences	
	n	Mean	S.D.	n	Mean	S.D.	Mean	S.D.
Restatement	625	0.070	0.256	954	0.081	0.273	-0.010	-0.017*
CL count	625	2.454	3.534	954	2.675	3.347	-0.221	0.187
Total assets	625	781	1,925	954	11,881	76,651	-11,100***	-74,726***
Log(total assets)	625	5.146	1.790	954	6.697	2.098	-1.551***	-0.309***
Leverage	625	0.192	0.255	954	0.226	0.254	-0.034***	0.002
Loss	625	0.446	0.498	954	0.353	0.478	0.093***	0.019
ROA	625	(0.004)	0.246	954	0.039	0.196	-0.043***	0.050***
Current	625	2.203	2.646	954	2.576	2.512	-0.372***	0.134
Asset turnover	625	1.008	0.894	954	0.877	0.681	0.131***	0.213***
Sales growth	625	0.064	0.507	954	0.071	0.539	-0.007	-0.032*
Capital intensity	625	0.171	0.211	954	0.251	0.248	-0.080***	-0.037***
Equity issuance	625	0.989	0.105	954	0.974	0.160	0.015**	-0.055***
Debt issuance	625	0.395	0.489	954	0.498	0.500	-0.103***	-0.011
Audit fees	625	568,039	1,105,607	954	2,690,716	5,568,031	-2,122,678***	-4,462,424***

Panel B: Descriptive statistics financial reporting quality sample (restatements)

Variable	n	Mean	S.D.
Restatement	10,319	0.074	0.005
CL count	10,319	2.599	0.105
Total assets	10,319	8,166	607
Log(total assets)	10,319	6.794	0.073
Leverage	10,319	0.213	0.005
Loss	10,319	0.314	0.010
ROA	10,319	0.049	0.003
Current	10,319	2.565	0.044
Asset turnover	10,319	0.935	0.013
Sales growth	10,319	0.107	0.009
Capital intensity	10,319	0.249	0.005
Equity issuance	10,319	0.985	0.002
Debt issuance	10,319	0.522	0.014
Audit fees	10,319	2,772,983	265,943

Notes: Panel A reflects descriptive statistics for the control and treatment sample for the tests of financial reporting quality before entropy balancing. Panel A only includes observations in the period prior to treatment (t-1), on which entropy balancing was conducted. Panel B reflects descriptive statistics for the primary sample for tests on restatements for financial reporting quality. Other tests may utilize an alternative sample due to different data requirements. I provide definitions of all variables in Appendix A

Table 3
Financial reporting quality results
Panel A: Stacked-cohort with entropy balancing

VARIABLES	(1) Restatement	(2) Restatement	(3) Big "R"	(4) Big "R"	(5) Little "r"	(6) Little "r"	(7) CL count	(8) CL count	(9) AAERs	(10) AAERs
Offshore x Post	0.062*** (3.743)	0.063*** (3.786)	0.018 (1.392)	0.000 (0.024)	0.043*** (3.284)	0.062*** (4.387)	0.020 (0.057)	0.291 (0.712)	-0.000 (-0.021)	-0.001 (-0.417)
Log(total assets)	0.005 (0.219)	0.007 (0.352)	-0.000 (-0.006)	0.003 (0.147)	0.003 (0.309)	0.005 (0.443)	0.476* (1.887)	0.508** (2.022)	0.005*** (2.771)	0.005*** (2.788)
Leverage	-0.083 (-1.494)	-0.088 (-1.593)	-0.035 (-0.882)	-0.047 (-1.301)	-0.043 (-1.062)	-0.040 (-1.025)	-1.573** (-2.211)	-1.582** (-2.141)	-0.003 (-0.704)	-0.003 (-0.751)
Loss	0.028* (1.905)	0.027* (1.845)	0.016 (1.517)	0.014 (1.407)	0.011 (1.178)	0.012 (1.243)	0.055 (0.245)	0.056 (0.263)	0.001 (0.624)	0.001 (0.626)
ROA	0.002 (0.031)	-0.008 (-0.126)	0.006 (0.113)	0.003 (0.051)	-0.013 (-0.524)	-0.011 (-0.410)	-2.505** (-2.407)	-2.616** (-2.573)	-0.001 (-0.624)	-0.001 (-0.599)
Current	-0.002 (-0.260)	-0.001 (-0.249)	-0.000 (-0.066)	-0.000 (-0.006)	-0.001 (-0.313)	-0.001 (-0.420)	-0.073 (-0.763)	-0.085 (-0.838)	-0.001** (-2.393)	-0.001** (-2.414)
Asset turnover	-0.019 (-0.895)	-0.018 (-0.900)	0.014 (0.955)	0.014 (0.922)	-0.032** (-2.114)	-0.031** (-2.156)	-0.127 (-0.367)	-0.043 (-0.126)	0.000 (0.131)	0.000 (0.144)
Sales growth	-0.032 (-0.920)	-0.028 (-0.826)	-0.031 (-0.960)	-0.032 (-0.980)	0.005 (0.826)	0.004 (0.670)	0.243** (2.143)	0.265** (2.300)	-0.000 (-0.330)	-0.000 (-0.255)
Capital intensity	-0.021 (-0.215)	-0.021 (-0.228)	0.044 (0.510)	0.016 (0.211)	-0.045 (-0.790)	-0.037 (-0.646)	-2.568 (-1.459)	-2.219 (-1.266)	-0.013* (-1.662)	-0.013* (-1.651)
Equity issuance	0.042 (0.837)	0.056 (1.207)	0.044 (0.855)	0.047 (1.100)	-0.014 (-0.484)	0.009 (0.313)	1.801** (2.463)	2.181*** (2.978)	-0.001 (-1.385)	-0.001 (-1.449)
Debt issuance	-0.008 (-0.527)	-0.008 (-0.556)	-0.015 (-1.053)	-0.012 (-1.048)	0.007 (0.667)	0.004 (0.494)	0.098 (0.427)	0.055 (0.239)	0.002 (1.269)	0.002 (1.321)
BIG 4	0.153** (2.042)	-	0.134 (1.633)	-	0.019 (0.756)	-	-0.485 (-1.036)	-	-0.003 (-1.490)	-
Observations	10,319	10,319	10,319	10,319	10,319	10,319	10,319	10,319	48,377	48,377
Adjusted R-Squared	0.077	0.088	0.125	0.148	0.054	0.055	0.096	0.103	0.604	0.604
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Client firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audit firm fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Table 3
Financial reporting quality results (event-study)
Panel B: Stacked-cohort with entropy balancing

VARIABLES	(1) Restatement	(2) Restatement	(3) Big "R"	(4) Big "R"	(5) Little "r"	(6) Little "r"	(7) CL count	(8) CL count	(9) AAERs	(10) AAERs
3 years pre treatment	0.034 (1.098)	-0.004 (-0.095)	0.043* (1.780)	0.033 (1.284)	-0.009 (-0.448)	-0.037 (-1.142)	0.450 (0.860)	-0.011 (-0.030)	-0.000 (-0.021)	-0.002 (-0.842)
2 years pre treatment	0.020 (0.797)	-0.006 (-0.252)	0.017 (0.756)	-0.002 (-0.094)	0.003 (0.211)	-0.004 (-0.312)	0.152 (0.308)	0.166 (0.375)	0.000 (0.131)	-0.002 (-1.079)
1 year pre treatment (baseline)	-	-	-	-	-	-	-	-	-	-
Treatment year	0.095*** (3.538)	0.088*** (3.194)	0.050** (1.989)	0.028 (1.328)	0.045*** (2.952)	0.060*** (3.176)	-0.118 (-0.213)	0.143 (0.228)	0.002 (1.273)	0.000 (0.139)
1 year post treatment	0.036 (1.359)	0.027 (1.101)	0.003 (0.185)	-0.024* (-1.688)	0.033 (1.426)	0.051*** (2.650)	0.500 (1.384)	0.867* (1.925)	0.001 (0.446)	-0.001 (-0.514)
2 year post treatment	0.076** (2.472)	0.058* (1.913)	0.024 (0.842)	-0.012 (-0.673)	0.052*** (3.398)	0.070*** (2.770)	-0.161 (-0.249)	0.059 (0.106)	-0.004 (-0.900)	-0.006 (-1.301)
Observations	10,319	10,319	10,319	10,319	10,319	10,319	10,319	10,319	48,377	48,377
Adjusted R-Squared	0.078	0.089	0.128	0.152	0.054	0.055	0.097	0.105	0.604	0.604
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Client firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audit firm fixed effects	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: This table presents results from the stacked cohort difference-in-differences test of offshoring on financial reporting quality measures. Results are presented with an entropy-balanced sample with balancing conducted by cohort on covariate means and variances in the period prior to treatment (t-1). Panel A displays the average effect of the regression (equation (1)) and Panel B details the year-by-year event study presentation (equation (2)). Control variables are suppressed in Panel B for brevity. Columns vary by measure of quality: restatements (1-2), big "R" restatements (3-4), little "r" restatements (5-6), comment letter count (7-8) and Accounting and Auditing Enforcement Releases (AAERs) (9-10). I provide definitions of all variables in Appendix A. All regressions include client firm and year fixed effects at the cohort level. Even numbered columns also include audit firm fixed effects. Standard errors are clustered at the client firm level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10

Table 4
Results of tests on tax reporting quality
Panel A: Stacked-cohort with entropy balancing

VARIABLES	(1) Tax Restatement	(2) Tax Restatement	(3) Tax CL count	(4) Tax CL count	(5) Change UTB	(6) Change UTB	(7) TaxAQ 1Y	(8) TaxAQ 1Y
Offshore x Post	0.010 (1.565)	0.011 (1.588)	0.060* (1.772)	0.060* (1.701)	4.951* (1.860)	4.945* (1.747)	3.297* (1.915)	2.866* (1.681)
Log(total assets)	0.000 (0.002)	-0.001 (-0.146)	-0.040 (-0.848)	-0.045 (-0.874)	-2.798 (-0.907)	-3.429 (-1.073)	4.981* (1.750)	6.061** (2.025)
Leverage	-0.023 (-0.977)	-0.022 (-0.939)	-0.156 (-1.183)	-0.172 (-1.312)	16.477 (1.245)	17.431 (1.302)	0.992 (0.143)	0.863 (0.123)
Loss	-0.007 (-1.132)	-0.006 (-1.018)	0.024 (0.936)	0.021 (0.815)	-3.835 (-1.490)	-3.868 (-1.487)	1.680 (1.155)	1.778 (1.198)
ROA	0.010 (0.239)	0.007 (0.155)	-0.154 (-0.664)	-0.166 (-0.703)	-19.235 (-1.231)	-17.804 (-1.124)	48.565*** (3.012)	49.514*** (3.016)
Current	0.004 (1.531)	0.005 (1.560)	0.008 (0.559)	0.006 (0.414)	1.528 (1.313)	1.559 (1.328)	0.137 (0.169)	0.259 (0.313)
Asset turnover	-0.027* (-1.947)	-0.028* (-1.937)	-0.041 (-0.604)	-0.050 (-0.725)	10.971** (2.144)	10.493** (2.039)	9.449*** (2.648)	10.505*** (2.880)
Sales growth	-0.009 (-0.892)	-0.008 (-0.829)	0.107* (1.827)	0.113* (1.925)	-2.405 (-0.464)	-2.584 (-0.497)	0.630 (0.177)	0.156 (0.043)
Capital intensity	0.030 (0.671)	0.024 (0.543)	-0.320 (-1.474)	-0.295 (-1.355)	3.790 (0.238)	3.124 (0.195)	11.545 (0.903)	9.167 (0.697)
Equity issuance	0.079 (1.436)	0.072 (1.497)	-0.313 (-1.099)	-0.320 (-1.117)	13.172 (1.194)	13.277 (1.199)	-5.518 (-1.081)	-3.389 (-0.948)
Debt issuance	-0.001 (-0.134)	-0.000 (-0.044)	-0.003 (-0.116)	0.001 (0.052)	-2.183 (-0.958)	-2.176 (-0.948)	1.950 (1.397)	1.684 (1.204)
BIG 4	0.004 (0.408)	-	-0.017 (-0.602)	-	-5.283 (-1.116)	-	-1.872 (-0.620)	-
Observations	8,664	8,664	8,664	8,664	5,408	5,408	3,743	3,743
Adjusted R-Squared	-0.002	-0.002	0.068	0.067	0.014	0.010	0.114	0.114
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Client firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audit firm fixed effects	No	Yes	No	Yes	No	Yes	No	Yes

Table 4
Results of tests on tax reporting quality (event-study)
Panel B: Stacked-cohort with entropy balancing

VARIABLES	(1) Tax Restatement	(2) Tax Restatement	(3) Tax CL count	(4) Tax CL count	(5) Change UTB	(6) Change UTB	(7) TaxAQ 1Y	(8) TaxAQ 1Y
3 years pre treatment	-0.009 (-0.860)	-0.010 (-0.902)	-0.051 (-0.902)	-0.016 (-0.282)	0.260 (0.054)	-0.131 (-0.025)	9.955 (1.004)	3.964 (0.379)
2 years pre treatment	-0.011 (-1.435)	-0.012 (-1.374)	0.017 (0.365)	0.042 (0.883)	0.773 (0.166)	0.613 (0.124)	0.335 (0.156)	-1.136 (-0.511)
1 year pre treatment (baseline)	-	-	-	-	-	-	-	-
Treatment year	0.011 (1.212)	0.011 (1.135)	0.034 (0.734)	0.051 (1.056)	9.193* (1.943)	9.095* (1.796)	4.098* (1.792)	2.970 (1.317)
1 year post treatment	0.005 (0.461)	0.005 (0.420)	0.033 (0.603)	0.049 (0.885)	5.552 (1.310)	5.349 (1.171)	3.628* (1.730)	2.523 (1.185)
2 year post treatment	-0.000 (-0.038)	-0.002 (-0.239)	0.098* (1.845)	0.114** (1.965)	-0.233 (-0.068)	-0.407 (-0.107)	3.161 (1.539)	1.765 (0.851)
Observations	8,664	8,664	8,664	8,664	5,408	5,408	3,743	3,743
Adjusted R-Squared	-0.002	-0.002	0.068	0.067	0.014	0.010	0.114	0.114
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Client firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audit firm fixed effects	No	Yes	No	Yes	No	Yes	No	Yes

Notes: This table presents results from the stacked cohort difference-in-differences test of offshoring on tax reporting income. Panel A displays the average effect of the regression (equation (1)) and Panel B details the year-by-year event study presentation (equation (2)). Results are presented with an entropy-balanced sample with balancing conducted by cohort on covariate means and variances in the period prior to treatment (t-1). Columns vary based by dependent variable: tax-related restatements (1-2), tax-related comment letters (3-4), and the change in unrecognized tax benefits (5-6) and one-year tax accrual quality (7-8). I provide definitions of all variables in Appendix A. All regressions include client firm and year fixed effects at the cohort level. Even numbered columns also include audit firm fixed effects. Standard errors are clustered at the client firm level with robust t-statistics presented in parentheses.

*** p<0.01, ** p<0.05, * p<0.10

Table 5
Results of tests on intended consequences (audit services)
Panel A: Stacked-cohort with entropy balancing

VARIABLES	(1) log(audit fees)	(2) log(audit fees)	(3) Industry Market Share	(4) Industry Market Share	(5) Audit Economies of Scale	(6) Audit Economies of Scale	(7) Earnings Announcement Speed	(8) Earnings Announcement Speed
Offshore x Post	0.043*** (3.311)	0.048*** (3.540)	0.036*** (3.892)	0.022*** (2.984)	0.028*** (3.552)	0.026** (2.073)	-0.001 (-0.438)	-0.003 (-1.026)
Log(total assets)	0.376*** (23.356)	0.378*** (23.611)	0.029*** (2.956)	0.030*** (3.265)	0.003 (0.516)	0.002 (0.438)	0.017*** (6.518)	0.017*** (6.483)
Leverage	0.060* (1.792)	0.058* (1.776)	0.015 (0.667)	0.011 (0.530)	-0.010 (-0.997)	-0.011 (-1.162)	-0.041*** (-5.253)	-0.041*** (-5.303)
Loss	0.072*** (6.065)	0.074*** (6.219)	0.011* (1.669)	0.009 (1.348)	-0.003 (-0.993)	-0.004 (-1.270)	-0.012*** (-5.806)	-0.011*** (-5.691)
ROA	-0.035 (-1.350)	-0.031 (-1.180)	0.058*** (3.648)	0.057*** (3.677)	0.004 (0.387)	0.004 (0.368)	0.022*** (4.454)	0.023*** (4.584)
Current	-0.019*** (-6.971)	-0.019*** (-7.116)	-0.004** (-2.565)	-0.003** (-2.008)	0.000 (0.005)	0.000 (0.381)	0.003*** (5.875)	0.003*** (6.196)
Asset turnover	0.116*** (7.048)	0.117*** (7.106)	0.006 (0.745)	0.007 (0.831)	-0.002 (-0.418)	-0.001 (-0.303)	-0.000 (-0.010)	-0.000 (-0.116)
Sales growth	-0.016** (-2.347)	-0.016** (-2.433)	0.000 (0.021)	0.001 (0.302)	-0.001 (-0.605)	-0.001 (-0.572)	-0.003** (-2.155)	-0.003** (-2.212)
Capital intensity	-0.046 (-0.543)	-0.045 (-0.564)	-0.040 (-1.005)	-0.047 (-1.212)	0.013 (0.605)	0.010 (0.453)	0.006 (0.290)	0.006 (0.318)
Equity issuance	0.115* (1.717)	0.096 (1.426)	-0.029 (-0.993)	-0.041 (-1.408)	0.019 (0.585)	0.005 (0.265)	0.179*** (4.850)	0.171*** (4.898)
Debt issuance	0.013 (1.141)	0.012 (1.172)	-0.012* (-1.910)	-0.005 (-0.993)	-0.005 (-1.433)	-0.003 (-1.131)	-0.002* (-1.726)	-0.002 (-1.558)
BIG 4	0.228*** (7.316)	- (0.000)	0.316*** (4.344)		0.166*** (7.359)		0.005 (1.593)	
Restatement	0.001 (0.090)	0.003 (0.224)						
Observations	48,253	48,253	48,253	48,253	48,253	48,253	48,253	48,253
Adjusted R-Squared	0.928	0.930	0.762	0.776	0.888	0.893	0.434	0.437
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Client firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audit firm fixed effects	No	Yes	No	Yes	No	Yes	No	Yes

Table 5
Results of tests on intended consequences (tax services)
Panel B: Stacked-cohort with entropy balancing

VARIABLES	(1) log(tax fees)	(2) log(tax fees)	(3) Tax Industry Market Share	(4) Tax Industry Market Share	(5) Tax Economies of Scale	(6) Tax Economies of Scale	(7) Tax Planning Effectiveness	(8) Tax Planning Effectiveness
Offshore x Post	0.028 (0.443)	-0.053 (-0.997)	0.017 (1.112)	0.019 (1.335)	-0.014 (-0.960)	-0.012 (-0.954)	0.017 (1.473)	0.022* (1.728)
Log(total assets)	0.603*** (4.659)	0.421*** (3.388)	-0.039 (-0.911)	-0.027 (-0.780)	0.023 (0.678)	-0.016 (-1.050)	0.145*** (7.028)	0.142*** (6.898)
Leverage	-0.192 (-0.576)	-0.109 (-0.353)	0.094 (1.053)	0.082 (0.908)	-0.043 (-1.130)	-0.011 (-0.394)	-0.371*** (-6.671)	-0.365*** (-6.554)
Loss	0.018 (0.384)	0.036 (0.814)	0.001 (0.059)	0.000 (0.003)	-0.011 (-1.442)	-0.006 (-1.046)	-0.038*** (-4.428)	-0.039*** (-4.478)
ROA	-0.047 (-0.111)	0.216 (0.601)	0.149 (1.403)	0.134 (1.306)	-0.192* (-1.832)	-0.083** (-1.984)	0.595*** (6.515)	0.591*** (6.437)
Current	0.012 (0.341)	0.010 (0.296)	0.004 (0.434)	0.004 (0.470)	0.003 (0.826)	0.001 (0.481)	0.021*** (3.820)	0.020*** (3.738)
Asset turnover	-0.043 (-0.251)	-0.169 (-0.828)	-0.088 (-1.129)	-0.082 (-1.228)	0.002 (0.066)	-0.017 (-1.213)	0.022 (0.673)	0.023 (0.706)
Sales growth	-0.057 (-0.603)	-0.049 (-0.512)	0.020 (0.508)	0.028 (0.718)	0.048** (2.319)	0.051** (2.527)	-0.068*** (-3.560)	-0.067*** (-3.488)
Capital intensity	0.818 (1.635)	0.600 (1.348)	0.152 (1.114)	0.173 (1.304)	0.024 (0.348)	0.012 (0.225)	0.122 (1.401)	0.121 (1.398)
Equity issuance	-0.404 (-1.275)	-0.483 (-1.595)	0.053 (0.921)	0.055 (0.997)	-0.039 (-1.142)	-0.057* (-1.768)	-0.010 (-0.176)	-0.019 (-0.339)
Debt issuance	0.013 (0.284)	0.014 (0.311)	-0.003 (-0.287)	-0.004 (-0.382)	-0.003 (-0.529)	0.000 (0.056)	-0.005 (-0.899)	-0.005 (-0.794)
BIG 4	-0.359 (-1.247)	- (-0.512)	0.146** (2.492)	- (-0.382)	0.130* (1.784)	- (-0.394)	0.029 (1.455)	- (-0.339)
Observations	10,202	10,202	10,202	10,202	10,202	10,202	8,410	8,410
Adjusted R-Squared	0.779	0.786	0.708	0.715	0.907	0.919	0.778	0.779
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Client firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Audit firm fixed effects	No	Yes	No	Yes	No	Yes	No	Yes
Expanded cohort window	No	No	No	No	No	No	Yes	Yes

Notes: This table presents results from the stacked cohort difference-in-differences test of offshoring on the intended consequences of public accounting offshoring. Panel A presents the average effect of the regression (equation (1)) from the stacked cohort difference-in-differences test of treatment on cost and capacity outcomes for the offshoring of audit services. Results are presented with an entropy-balanced sample with balancing conducted by cohort on covariate means and variances in the period prior to treatment (t-1). Columns vary based by dependent variable: log of audit fees (1-2), audit industry market share (3-4), economies of scale (5-6) and earnings announcement speed (7-8). Panel B presents the average effect of the regression (equation (1)) from the stacked cohort difference-in-differences test of treatment on cost and capacity outcomes for the offshoring of tax services: log of tax fees (1-2), tax industry market share (3-4), tax economies of scale (5-6), and tax planning effectiveness (7-8). Panel B, Columns 7-8 reflect an extended 4-year stacked cohort model to better match the dependent variable, which incorporates four years of data. In the 4-year cohort tax analysis, entropy balancing is done on covariate means due to sample limitations. I provide definitions of all variables in Appendix A. All regressions include client firm and year fixed effects at the cohort level. Even numbered columns also include audit firm fixed effects. Standard errors are clustered at the client firm level with robust t-statistics presented in parentheses. *** p<0.01, ** p<0.05, * p<0.10