

Are Component Auditor Disclosures Informative about Clients' Future Foreign Performance?

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ABSTRACT

We examine whether Form AP audit disclosures about changes in foreign component auditor use reveal information about clients' future foreign performance. Component auditors conduct audit work in foreign jurisdictions, and their use is primarily structural based on a multinational client's underlying foreign operations. Prior research generally views Form AP as a historical record of audit participation. However, we propose that changes in component auditor involvement also reflect lead auditors' forward-looking assessments of the sustainability of foreign operations. Consistent with this, we find that changes in component auditor use are positively associated with the persistence of foreign earnings, even after controlling for other foreign information sources such as geographic segments, foreign growth potential, and subsidiaries. This finding is driven by large component auditors, whose involvement indicates more financially material foreign operations. Textual analysis of the MD&A confirms our finding at the country level, where increased reliance on component auditors in a given country is followed by greater discussion of that country in the MD&A. Finally, we find a significant market reaction to changes in large component auditor use that coincide with recently reported foreign earnings news, suggesting that investors use Form AP disclosures to refine their expectations about the sustainability of foreign performance. Overall, our results indicate that, although Form AP was intended as a historical disclosure, it also provides a forward-looking signal about clients' multinational activity.

Keywords: Foreign Earnings; Earnings Persistence; Component Auditor; Form AP

JEL Codes: F23; G14; M40; M41; M49

Introduction

In this study, we examine whether disclosures about the participation of foreign auditors reveal information about clients' future foreign performance. For U.S. multinationals, the use of foreign auditors, also known as component auditors, is structurally tied to the significance of foreign operations. Lead auditors must engage local audit firms to reach the desired level of audit assurance when they lack jurisdictional authority or logistical capacity abroad. Starting in 2017, lead auditors have been required to disclose the involvement of foreign component auditors in PCAOB Form AP, providing new visibility into multinational audit structure. Prior research has viewed Form AP primarily as a disclosure about historical audit participation and the implications for audit quality (e.g., Burke et al. 2020; Docimo et al. 2021; Doxey et al. 2021; Chen and Conaway 2022). In contrast, we examine whether Form AP also provides forward-looking information, and specifically, whether changes in disclosed foreign component auditor use reveal information about clients' future foreign earnings.

While companies provide some disclosures about foreign operations, PCAOB Form AP may offer incremental and forward-looking insight by revealing the auditor's geographic allocation of audit work. For example, Exhibit 21 disclosures list the jurisdictions of significant subsidiaries but do not indicate financial materiality, and segment disclosures in the notes to the financial statements offer financial data but are often aggregated at a regional level.¹ In contrast, Form AP offers a unique lens into foreign activity by requiring lead auditors to disclose the extent of component auditor involvement, which may reflect the auditor's assessment of the sustainability of particular foreign operations. If lead auditors adjust component auditor involvement based on such expectations, these disclosures could provide a distinct signal of future foreign performance.

¹ Prior research suggests that foreign earnings may be more difficult for investors to interpret, either due to limited availability or complexity of the underlying information (e.g., Huang 2015; Callen et al. 2005).

Component auditors are used when a client has significant operations in a foreign location and legal, regulatory, or logistical constraints prevent the lead auditor from conducting the work directly (Burke et al. 2020; Downey and Westermann 2021). Lead auditors determine the need for component auditor involvement using extensive client-specific information obtained through their audit procedures and interactions with management. This information could include new or canceled contracts, product launches, development plans, or mergers or acquisitions, all of which may inform lead auditor decisions about whether and to what extent to use component auditors.² Using a component auditor requires considerable upfront and ongoing investment, including evaluating their capabilities, establishing communication protocols, training on U.S. GAAP and PCAOB standards, reviewing their work, and documenting compliance (Downey and Westermann 2021). The significance of these resource commitments suggests that auditors are unlikely to adjust component auditor involvement in response to short-term or transitory fluctuations in foreign activity. Instead, changes in use are likely to reflect the auditor's forward-looking assessments of sustained increases or decreases in the importance of a client's foreign operations.

To understand whether changes in component auditor use reflect lead auditors' forward-looking assessments, we examine their association with the persistence of foreign earnings. Earnings persistence, the extent to which current earnings predict future earnings, serves as a proxy for the sustainability of a company's performance (Lennox et al. 2023; Jennings et al. 2020).³

² Importantly, the decision to use component auditors also involves judgment about the scope of their work. The lead auditor may expand or reduce component auditor involvement in a particular location based on changes in risk or significance.

³ We could also assess the performance of foreign operations by calculating the return on foreign assets (foreign earnings divided by foreign assets). However, because foreign asset reporting is generally voluntary, foreign asset data is incomplete and biased towards certain countries. Companies generally do not report total foreign assets at the multinational level. Databases such as Moody's Orbis, which collect subsidiary-level data from subsidiary financial statements, are also limited by this constraint (Shroff et al. 2014). We, therefore, use foreign earnings persistence as a proxy for the performance of foreign operations, since research suggests that earnings persistence can serve as an indicator of company performance (Lennox et al. 2023; Jennings et al. 2020). We acknowledge that earnings

Analyzing the persistence of foreign earnings allows us to assess whether foreign operations contribute to company performance over time. If changes in component auditor involvement reflect lead auditors' expectations about the ongoing financial importance of foreign operations, we expect a positive association between increases in component auditor use and foreign earnings persistence. Conversely, decreases may signal weakening foreign earnings performance. However, if changes are driven primarily by audit risk, logistical factors, risk concerns, or transitory events, we would expect no meaningful relation with earnings persistence.

We use a sample of U.S. multinationals from 2018 to 2022 to test our hypothesis.⁴ Specifically, we focus on U.S. public issuers that report pretax foreign earnings to ensure changing component auditor use is possible for the entire sample. Our final sample includes 6,121 issuer-year observations with available data in Form AP, Compustat, Audit Analytics, and CRSP. Within this sample, foreign component auditors conduct an average of 12.1 percent of the audit work. Component auditor use is relatively stable year over year, with the average change being a decrease of 0.477 percent, consistent with the assumption that allocations remain stable absent substantive shifts in clients' foreign operations.

To test our hypothesis, we estimate a foreign earnings persistence model that includes an interaction between changes in component auditor use and current foreign earnings. This framework allows us to assess whether changes in component auditor involvement are associated with the extent to which current foreign earnings predict future foreign earnings. The model includes controls commonly used in the earnings persistence literature, as well as several controls

persistence may also reflect earnings quality (Dechow et al. 2010) and conduct additional analysis to address this concern.

⁴ Data on changes to component auditor use are available beginning in 2018 since Form AP disclosures began in 2017. Since we examine whether Form AP disclosures are associated with subsequently disclosed information on foreign earnings (i.e., in the next year's 10-K), our dependent variable is measured in $t+1$ and requires data through 2023.

related to foreign operations, including the number of geographic segments, number of subsidiaries, industry-level foreign growth potential, and foreign country mentions in the 10-K.⁵ These controls help isolate the incremental information provided by Form AP. We find a positive association between changes in component auditor use and the persistence of foreign earnings, consistent with the notion that lead auditors adjust component auditor involvement based on assessments of the future performance of foreign operations. This association is driven by large component auditors, who generally audit more material foreign operations.⁶ These findings suggest that changes in component auditor use reflect underlying shifts in the sustainability of foreign operations.⁷

We conduct additional analysis to address the concern that audit quality, rather than assessments of client performance, may explain our findings. Prior literature has shown that component auditor involvement can benefit subsidiary-level financial reporting quality (Docimo et al. 2021), and earnings persistence is sometimes used as a proxy for earnings quality. Thus, if changes in component auditor use affect audit/earnings quality, our interpretation could be confounded. To address this, we distinguish between changes in the use of high- and low-quality component auditors, based on whether the auditor has received a recent PCAOB inspection deficiency (Chen and Conaway 2022; Gunny et al. 2024). If audit quality were the primary driver of our findings, we would expect associations with persistence only for high-quality component auditors. Instead, we find that the association between component auditor use and earnings

⁵ In sensitivity tests, we expand our model to control for changes in other sources of foreign information (i.e., changes in geographic segments, subsidiaries, foreign growth potential, and foreign country mentions) and their interactions with foreign earnings. Our results are robust to the inclusion of these controls.

⁶ Form AP requires lead auditors to individually identify component auditors (by name, location, and percentage of audit work performed) that conduct more than five percent of audit hours. We refer to these components as large component auditors throughout the paper.

⁷ As sensitivity, we examine foreign earnings growth as the dependent variable and find that component auditor changes impact the association between foreign earnings and future foreign earnings growth.

persistence holds regardless of the component auditor's quality. This finding mitigates concerns that audit quality explains our results.

We also conduct additional analyses to explore our findings at the country level, since Form AP provides rare country-level insights by requiring large component auditors to be individually identified. Specifically, we examine the discussion of specific foreign countries in the MD&A section of the 10-K. In the MD&A, management provides a forward-looking narrative discussion about performance, risks, and strategy, and prior literature finds that changes in this discussion reflect underlying economic changes (Brown and Tucker 2011). Consistent with this view, we examine whether changes in component auditor use for a given country predict changes in management's discussion of that country in the subsequent MD&A. We find that increased reliance on component auditors in a country is followed by greater discussion of that country by management, suggesting that auditors' resource allocations reflect areas of expansion later emphasized in firm disclosures.⁸ This evidence offers a validation of our interpretation that changes in component auditor reliance convey forward-looking insights about issuers' foreign operations.

Lastly, we examine whether there is a market reaction to the information about foreign earnings revealed in Form AP disclosures. Our findings thus far suggest that changes in large component auditor use convey auditors' forward-looking assessments of client foreign performance. If investors incorporate this information, we would expect them to reassess the implications of previously reported foreign earnings once the Form AP is released.⁹ Form AP is

⁸ Decreased reliance is not significant, which is consistent with prior evidence that managers emphasize good news when discussing performance (Li 2010; D'Augusta and DeAngelis 2020).

⁹ On the other hand, investors may not react to changes in large component auditors if they perceive a lack of new information or have difficulty understanding the implications for foreign earnings persistence (Thomas 2000; Callen et al. 2005; Huang 2015; Dura and Reeb 2002; Khurana et al. 2003).

filed about one month after the 10-K and earnings announcement, providing an opportunity to test whether investors update their interpretation of foreign earnings news when component auditor information becomes available.¹⁰ Accordingly, we examine whether the interaction between changes in large component auditor use and changes in current foreign earnings is associated with a market reaction at the Form AP filing date. This interaction captures whether investors interpret component auditor disclosures as informative about the persistence of recently reported foreign earnings and revise their valuation of foreign earnings accordingly. Consistent with Doxey et al. (2021), we find no reaction to changes in component auditor use in isolation. However, we observe a significant reaction when changes in large component auditor use coincide with changes in foreign earnings, suggesting that investors use Form AP disclosures to refine their expectations about the sustainability of foreign performance. Overall, this evidence highlights that auditor-provided information in Form AP influences how investors evaluate the sustainability of foreign earnings.

Our study contributes to several streams of literature. First, we contribute to the literature on foreign earnings by establishing an association between audit disclosures regarding the use of foreign component auditors and future client performance. Specifically, our findings suggest that changes in component auditor use reflect lead auditors' forward-looking expectations about clients' foreign operations. Second, we extend research on the consequences of component auditor use and the informational value of PCAOB Form AP disclosures. While prior studies primarily examine the historical audit quality implications of component auditor involvement (e.g., Docimo et al. 2021; Burke et al. 2020) or whether investors respond to this information (e.g., Doxey et al. 2021; Chen and Conaway 2022), we show that Form AP also conveys forward-looking,

¹⁰ Importantly, since Form AP is filed separately, examining market reaction around its filing date reduces the risk of confounding information and isolates investor responses to the auditor disclosure.

economically relevant signals. Our country-level MD&A analysis reveals that component auditor disclosures align with management's subsequent discussion of foreign operations, and our market reaction analysis shows that investors use this information to reassess the persistence of recently reported foreign earnings. Overall, our findings reveal an unintended benefit of Form AP whereby disclosures about changes in component auditor use can be informative about client fundamentals. This is important given that capital market participants may underreact to foreign earnings, in part because information about foreign operations is scarce and difficult to interpret. By documenting that Form AP provides a signal of future foreign performance, we highlight its potential role in improving the valuation of multinational activities.

Background

Use of foreign component auditors

For U.S. multinationals, lead external auditors often engage other auditors to complete audit work in non-U.S. locations because of various legal and professional requirements that limit the work that U.S. auditors can conduct (Burke et al. 2020; PCAOB 2010). U.S. auditors are typically not allowed to perform audit work within foreign jurisdictions. Even in the few jurisdictions where U.S. auditors are legally allowed to perform audit work, regulatory requirements for licensing and training and language and cultural barriers usually prevent participation (Burke et al. 2020). The local auditors engaged are separate legal entities and are known as foreign component auditors.¹¹

¹¹ Nearly all component auditors are members of the lead auditor's global affiliate network (e.g., PwC-Italy), which could have advantages such as a shared global network audit methodology; however, there is no guarantee that the methodology will be consistently followed or uniformly applied (Barrett et al. 2005) given differences in professional training, as well as geographic, cultural, and language barriers (Burke et al. 2020; Downey and Westermann 2021).

Since it is typically not practical or feasible to subject all foreign locations to audit procedures, lead auditors of multinational companies must develop a strategy to allocate audit effort across geographic locations. Geographic locations that are financially significant or prone to misstatement will typically have a full-scope audit conducted by a foreign component auditor (AICPA 2021, para. 53 and 54).¹² For the remaining geographic locations, the auditor must decide whether and to what extent (e.g., full scope, only audit specified account balances, only perform specified audit procedures for specified account balances) audit procedures are needed so that the aggregate results yield the desired level of overall audit assurance (Graham et al. 2018; Stewart and Kinney 2013; Sunderland and Trumpeter 2017).

The lead auditor is responsible for supervising component auditor work and ensuring it follows PCAOB standards and ultimately takes responsibility for the overall audit opinion. PCAOB rules require the lead auditor to evaluate component auditor independence, competence, and capabilities, as well as appropriately direct, supervise, and review their work (PCAOB 2010). For example, in terms of competence, the lead auditor must assess whether component auditor staff have adequate training and technical knowledge of U.S. GAAP and auditing standards for the line items being audited (e.g., Inventory). Lead auditors will provide detailed instructions of the work to be performed, hold calls to review instructions and deliverables, and review workpapers when visiting in person (Downey and Westermann 2021). When expanding the scope of work assigned to a component auditor and when working with a new component auditor, these interactions will be more extensive because the lead auditor is less familiar with the component

¹² AICPA (2021, para. 6) explains how to define financially significant: “The group engagement team may apply a percentage to a chosen benchmark as an aid to identify components that are of individual financial significance. Identifying a benchmark and determining a percentage to be applied to it involve the exercise of professional judgment. Depending on the nature and circumstances of the group, appropriate benchmarks might include group assets, liabilities, cash flows, revenues, expenditures, or net income. For example, the group engagement team may consider that components exceeding a specified percentage of the chosen benchmark are significant components.”

auditor's capabilities and must spend more time training, supervising, and setting expectations for the assigned work (Downey and Westermann 2021).

Form AP disclosure requirements and prior literature

PCAOB Rule 3211 requires external auditors to disclose information about certain audit participants (PCAOB 2016), including foreign component auditors. Specifically, starting in 2017, external auditors of U.S. listed companies were required to file Form AP within 35 days after each annual report filing. In Form AP, auditors are required to disclose the name of the lead engagement partner, the number of component auditors that participated in the audit, and the percentage of audit hours (or range) completed by the component auditors. Additional disclosure is required if a component individually contributes five percent or more of total audit hours. Specifically, the lead auditor must disclose the name, geographic location, and percentage of audit hours completed by these significant component auditors. For example, while Form AP filings for Apple by Ernst & Young U.S. indicate that 10 component auditors participated in the audit, only Ernst & Young Ireland is individually identified as conducting more than five percent of audit hours.

Prior literature using Form AP disclosures focuses on the audit/financial reporting quality implications of component auditor use (e.g., Burke et al. 2020; Docimo et al. 2021; Gunny et al. 2024) and whether investors and lenders use disclosures about component auditor use in their investment decisions (e.g., Doxey et al. 2021; Chen and Conaway 2022; Krishnan et al. 2024). For audit quality, studies that examine multinational parent-level audit quality find component auditor use can be detrimental in certain situations such as when the extent of work by component auditors is substantial, low-quality component auditors are used, and geographic and cultural/language barriers are high (Burke et al. 2020; Carson et al. 2022). At the subsidiary level, Docimo et al. (2021) find higher financial reporting quality when subsidiaries are audited by component auditors.

On the investor side, Doxey et al. (2021) examine investor reaction around the Form AP disclosure date and find no significant reaction, even in specific instances where the disclosures are more likely to be informative about the audit quality implications of component auditor use.¹³ While Doxey et al. (2021) investigate the immediate market reaction to Form AP disclosures, Chen and Conaway (2022) examine how investors respond to changes in the PCAOB's oversight of foreign component auditors. They find investors react positively to companies that use component auditors with deficiency-free inspection reports and react negatively to companies that use component auditors who fail to remediate quality control deficiencies, suggesting investors consider the involvement of foreign component auditors. Although these studies appear to have conflicting findings on whether investors value the audit quality implications of component auditor use, they focus on different disclosures at different dates, and investors' prior awareness of component auditor information varies in each setting.

In summary, prior literature using Form AP data has primarily focused on the actual and perceived audit quality implications of component auditor information, with findings depending on the context in which it is examined. This suggests that some disclosures about component auditors may be more informative than others. Our study seeks to understand whether disclosures about changes in component auditor use are informative about future client performance, specifically foreign earnings.

Hypothesis Development

Disclosures about component auditor use may provide incremental information beyond the public information companies already disclose about their foreign operations. For example,

¹³ Studies focusing on the audit partner information in Form AP find that investors use these disclosures when subsequent restatements are revealed (Aobdia et al. 2024) and when specific scandals occur (Abbott et al. 2023).

subsidiary disclosures in Exhibit 21 list the presence of specific foreign subsidiaries, but do not provide any financial data to indicate their materiality. Segment disclosures in the 10-K provide some financial data (e.g., net sales), but are often aggregated by region (e.g., Europe, Middle East, & Africa, instead of France and Sudan). Since different countries in the same region could vary in profitability and risk levels, disclosures about component auditor use could provide incremental information about the materiality and sustainability of clients' underlying foreign operations. Appendix B provides an example of these sources of foreign information.¹⁴

We examine the association between foreign component auditor use and foreign earnings persistence. Earnings persistence reflects the extent to which current earnings predict future earnings, or in other words, how well a company is performing over time (Lennox et al. 2023; Jennings et al. 2020). High persistence indicates that earnings are more stable and likely to recur in future periods, while low persistence suggests earnings are more volatile. Since component auditors are required when a location is financially significant to the resulting audit (AICPA 2021), a change in their use can reflect a change in the financial significance of foreign operations. This may serve as a valuable indicator for the materiality and sustainability of foreign earnings, and thus foreign earnings persistence. For example, increases in component auditor work may indicate that foreign operations are becoming more material and stable, whereas decreases may indicate that foreign operations are becoming less material and that this decrease is expected to persist.

Further, since there are substantial investment costs (e.g., initial evaluation, training, review) involved with starting to use or increasing the use of component auditors (Downey and

¹⁴ Appendix B presents three sources of foreign information for Gates Industrial Corp. in fiscal year 2018. Form AP indicates that material audit work was performed in China and Mexico (i.e., "5% to less than 10%"). However, these locations may not appear material based on Exhibit 21, which show similar or fewer subsidiaries in China (6) and Mexico (5) compared to the U.K. (26), Delaware (16), and Luxembourg (6). Supporting the significance of China and Mexico, segment disclosures report "Greater China" and "Rest of North America" separately but the disclosure reports that regions such as "Rest of EMEA," "East Asia," and "India" have higher net sales. Therefore, Form AP disclosures may offer incremental insight into the materiality of foreign operations in specific countries.

Westermann 2021), whether earnings are expected to maintain financial significance could influence the auditor's willingness to invest resources in the relationship. If earnings are expected to persist, the auditor can amortize the investment costs over a longer period. If earnings are expected to be transitory, auditors may be less likely to invest resources in a component auditor and might seek alternative approaches to achieve the same desired level of overall audit assurance (e.g., conduct analytical procedures themselves).

In addition to reflecting information that is difficult to discern from public sources of foreign information, disclosed changes in component auditor use may reflect the auditor's private information about the company's foreign operations. During the audit process, auditors gain access to extensive client-specific information through their audit procedures and informal conversations with executives and board members (Arif et al. 2022; Cai et al. 2016; Chen et al. 2022b, Dhaliwal et al. 2016; Nylen et al. 2025).¹⁵ The auditor may be made aware of supplier and customer contracts, plans for new product launches and changes to production processes, upcoming mergers and acquisitions by foreign subsidiaries, and have access to foreign subsidiary financial statements and internal audit reports. While auditors are bound by confidentiality agreements, this information could inform their decisions regarding audit work in locations where they expect the client to have persistent earnings.

In sum, to the extent changes in component auditor use are influenced by the changing materiality and sustainability of foreign operations, we expect a positive association between the

¹⁵ For example, Dhaliwal et al. (2016) find that auditors' knowledge about current performance and strategic plans can influence merger and acquisition (M&A) outcomes, where the information tends to benefit the acquiring firm at the expense of the target. Chen et al. (2022b) examine the social connections between auditors and mutual fund managers and find that information flow from auditors to fund managers enables superior portfolio returns. Arif et al. (2022) also find that the audit process reveals private information to company executives.

change in component auditor use and the persistence of foreign earnings. This leads to our hypothesis:

Hypothesis: Changes in component auditor use are positively associated with the persistence of foreign earnings.

On the other hand, changes in component auditor use might not be associated with foreign earnings persistence for several reasons. First, factors unrelated to the persistence of foreign earnings can explain changes to component auditor use. For example, locations that pose a significant risk of material misstatement are required to use a component auditor (AICPA 2021). Foreign risk factors related to currency, politics, regulatory intervention (Goldberg and Heflin 1995; Reeb et al. 1998), component complexity (Burke et al. 2020), and coordination and communication challenges when auditing foreign locations (Downey and Bedard 2019) could all change the risk of misstatement and the need for component auditors. Similarly, a change in audit risk at the company, not only at the foreign location, could change component auditor use.¹⁶ Thus, changes to component auditor use may not significantly reflect underlying client performance.

Research Design

Sample selection

Table 1 reports the sample derivation. The requirement to disclose component auditor use in Form AP became effective for audit reports filed on or after June 30, 2017 (i.e., fiscal year 2017). Therefore, our sample begins in fiscal year 2018 to allow observation of changes in component auditor use. We download Form AP filings from the PCAOB AuditorSearch database for fiscal

¹⁶ Since audit risk consists of the risk of material misstatement and detection risk (AICPA 1983; PCAOB 2010), an increase in the risk of material misstatement requires the auditor to decrease detection risk (i.e., the risk of failing to detect material misstatements) to maintain an acceptable level of audit risk. Consistent with this, Gunny et al. (2024) find that one way auditors respond to an increase in audit risk is by scoping in more component auditors.

years through 2022 (i.e., through fiscal years ending in May 2023). After limiting to the latest Form AP filing for public issuers with complete identifying information and removing duplicates, we begin with 39,508 issuer-year observations. We remove observations with divided responsibility, with non-U.S. lead auditors, and with U.S. component auditors since our interest is in U.S. lead auditor use of foreign component auditors. Next, we merge Form AP data with Compustat and remove observations missing coverage and those in the financial services and utilities industries. We then remove observations with missing or zero pretax foreign income. This step ensures focus on issuers with a foreign presence and the associated possibility of using a foreign component auditor. After removing observations without control variables in Compustat, Audit Analytics, and CRSP, our final sample includes 6,121 issuer-year observations with multinational operations.

Model Specification

Foreign earnings persistence

We use an earnings persistence model, tailored to foreign earnings,¹⁷ to test whether changes in component auditor use reflect auditors' assessments of a sustained increase or decrease in client foreign operations. Persistence models regress future earnings on current earnings, allowing us to distinguish between sustainable and temporary components of earnings. We estimate the following issuer-year model, which interacts changes in component auditor use with current foreign earnings to predict future foreign earnings:

$$\begin{aligned} \text{ForeignEarnings}_{t+1} = & a + \beta_1 \text{ForeignEarnings}_t + \beta_2 \Delta \text{CA}\%_t + \beta_3 \text{ForeignEarnings}_t * \\ & \Delta \text{CA}\%_t + \beta_n \text{Control variables}_t + \text{Year Fixed Effects} + \text{Industry Fixed Effects} + \\ & \varepsilon \end{aligned} \quad (1)$$

¹⁷ Prior literature related to the persistence of foreign earnings examines the differential persistence of foreign relative to domestic earnings on total earnings and whether investors or analysts understand the differential persistence (e.g., Thomas 2000; Khurana et al. 2002). Therefore, their research designs regress future total earnings on foreign and domestic earnings. Since we are interested in understanding how foreign earnings persistence changes with changes in component auditor use, we regress future foreign earnings on current foreign earnings.

$ForeignEarnings_{t+1}$ is equal to one year ahead pretax foreign earnings divided by average total assets, meaning it is measured in fiscal years 2019-2023 for our 2018-2022 sample period.^{18,19}

$ForeignEarnings_t$ is equal to pretax foreign earnings divided by average total assets. $\Delta CA\%_t$ is equal to the year-over-year change in the percentage of audit hours conducted by component auditors from fiscal year t-1 to fiscal year t. Auditors typically report this percentage as a range on Form AP (e.g., “5 percent to less than 10 percent of total audit hours”). Following prior studies (e.g., Burke et al. 2020; Docimo et al. 2021), we use the midpoint of this range in our calculations.²⁰

Our coefficient of interest (β_3) is the interaction of $ForeignEarnings_t$ with $\Delta CA\%_t$, which captures whether the persistence of foreign earnings changes with changes in component auditor use. Our hypothesis predicts that disclosed changes in foreign component auditor use are informative about the sustainability of foreign earnings, so we expect β_3 to be positive.

We also examine changes in component auditor use by the category of component auditor (i.e., large and small), as large component auditors are typically associated with more material foreign locations that are likely to have a greater impact on foreign earnings. Form AP disclosures delineate component auditors as small (contributing less than five percent of total audit hours) or large (contributing five percent or more of total audit hours). $\Delta CA\%_{Large,t}$ ($\Delta CA\%_{Small,t}$) is equal to the year-over-year change in the percentage of audit hours conducted by large (small) component auditors from fiscal year t-1 to fiscal year t.

For control variables, we include variables that could influence future foreign earnings, including pretax domestic earnings divided by average total assets ($DomesticEarnings_t$), the

¹⁸ We scale foreign earnings by total assets to facilitate size-adjusted comparisons across issuers. Using total earnings as the scalar is not feasible as it would result in undefined or extreme values for issuers with zero or negative earnings.

¹⁹ We do not use after-tax foreign earnings as the dependent variable since only pretax foreign earnings are available.

²⁰ Our results are robust to using both the minimum and maximum of the range.

natural logarithm of the market value of equity ($SIZE_t$), and the book-to-market ratio (BTM_t). In addition, we include the standard deviation of earnings over the prior five fiscal years (STD_EARN_t) and an indicator for whether the issuer's earnings before extraordinary items are negative ($LOSS_t$). We also include control variables that could influence foreign profitability, including the natural logarithm of reported geographic segments ($GeoSegments_t$) and the natural logarithm of subsidiaries reported in Exhibit 21 ($Subsidiaries_t$).²¹ We control for the growth potential of foreign operations ($ForeignGrowthPotential_t$) because companies with better growth opportunities are more likely to have higher future foreign earnings.²² Lastly, we control for the natural logarithm of foreign country mentions in the 10-K ($CountryMentions_10K$) following Burke et al. (2020).²³ All models include two-digit SIC industry and year fixed effects and standard errors are clustered by issuer. All variables are described in Appendix A.

Results

Descriptive statistics

Table 2 presents the descriptive statistics for the variables used in model (1). Mean $ForeignEarnings_t$ is 0.013, suggesting issuers have foreign earnings that are 1.30 percent of average total assets. When not scaled by total assets, mean foreign earnings is \$305,916,598 (untabulated). Mean (median) year-over-year change in the percentage of audit hours completed by component auditors ($\Delta CA\%_t$) is -0.477 (0.000) percent, suggesting issuers slightly decrease component auditor use on average. As expected, issuers change the percentage of audit hours of

²¹ We do not control for foreign sales because it is mechanically correlated with foreign earnings. Including both would result in the foreign earnings variable primarily capturing variation in foreign expenses rather than overall performance.

²² More specifically, we follow Chen et al. (2022a) and use a growth measure constructed using industry-level data. We sum foreign and domestic sales by industry-year, then calculate industry-year foreign and domestic sales growth over the past fiscal year. $ForeignGrowthPotential_t$ is industry-year foreign sales growth minus industry-year domestic sales growth. Higher values represent greater foreign growth potential since foreign growth exceeds domestic growth.

²³ We use text parsing to count mentions of foreign countries in each issuer's 10-K downloaded from Loughran and McDonald's website: <https://sraf.nd.edu/sec-edgar-data/cleaned-10x-files/>.

large component auditors more than small component auditors (-0.334 vs. -0.143). Untabulated results reveal that 18.84 percent of issuers disclose an increase in component auditor use and 23.49 report a decrease, leaving 57.67 percent with no change. For the issuers that increase (decrease) component auditor use, the mean increase (decrease) is 5.98 (6.73) percent.

Panel B of Table 2 reports the Pearson correlation matrix. As expected, foreign earnings in t is significantly correlated with foreign earnings in $t+1$. Foreign earnings in t and $t+1$ are also positively and significantly associated with domestic earnings, size, geographic segments, subsidiaries, and foreign country mentions, and negatively and significantly associated with the book-to-market ratio, standard deviation of earnings, and loss indicator. Focusing on the significant correlations, change in component auditor use is negatively correlated with the book-to-market ratio, geographic segments, subsidiaries, and foreign country mentions. While change in component auditor use is not significantly correlated with future foreign earnings, we caution against interpreting these univariate correlations until we include control variables likely influential to this result (i.e., *Size*, *GeoSegments*, etc.). In addition, our variable of interest for testing the hypothesis is the interaction of $\Delta CA\%_t$ with *ForeignEarnings_t*, not $\Delta CA\%_t$ alone.

Multivariate results

The results of model (1) are reported in Table 3. The first column presents the results using $\Delta CA\%_t$, which is the change in the percentage of audit hours conducted by all component auditors. Consistent with prior literature, the coefficient on *ForeignEarnings_t* is positive and significant, suggesting foreign earnings are persistent. The coefficient on $\Delta CA\%_t$ is significant, suggesting a positive association with future foreign earnings. The coefficient on our variable of interest, *ForeignEarnings_t*ΔCA%_t*, is positive and significant at the 0.05 level, indicating that foreign

earnings are more persistent when component auditor use changes.²⁴ This supports our hypothesis and suggests that changes in the use of foreign component auditors reveal information about the persistence of foreign earnings.

In terms of economic significance, holding all other variables at their sample mean, a one standard deviation increase in component auditor use increases the persistence of foreign earnings by 3.4 cents for every dollar of earnings. While the incremental impact of changes in component auditor use on foreign earnings persistence is modest in magnitude, it likely understates the full economic importance. Specifically, our tests focus on earnings in the subsequent year to avoid confounding effects in later years, but changes in component auditor involvement may reflect expectations about longer-term foreign performance. In later additional analysis, we examine investor response to understand whether the market views this information as economically meaningful.

The second (third) column reports the results using $\Delta CA\%_{Large_t}$ ($\Delta CA\%_{Small_t}$). The coefficient on our variable of interest ($ForeignEarnings_t * \Delta CA\%_{Large_t}$) when focused on large component auditors is positive and significant at the 0.05 level. The coefficient on the interaction is insignificant when focused on small component auditors. Overall, it appears that the informativeness of disclosed changes in component auditors for the persistence of foreign earnings is driven by more financially significant foreign locations.

For the control variables, we find larger companies ($Size_t$) and those with a loss ($Loss_t$) are positively associated with future foreign earnings, and those with more volatile earnings ($StdEarnings_t$) are negatively associated, consistent with Nekrasov et al. (2022). In terms of the

²⁴ Since total audit hours affects the percentage measure, we confirm the result is robust to using the number of component auditors to capture changes in involvement.

controls related to foreign operations, we find that more geographic segments ($GeoSegments_t$) and more subsidiaries ($Subsidiaries_t$) are significantly associated with future foreign earnings.

To understand the robustness of our results to potential correlated omitted variables, we follow prior literature (Frank 2000; Larcker and Rusticus 2010) and estimate the impact threshold. The impact threshold for both $\Delta CA\%_t$ and $\Delta CA\%_{Large,t}$ is 0.007, which is higher than all control variables except for *ForeignEarnings* and $\Delta CA\%_t$. Any confounding variable would need to have a greater impact than *ForeignEarnings* or $\Delta CA\%_t$ to influence the robustness of our results. Therefore, it is unlikely our findings would be invalidated by correlated omitted variables.

Sensitivity tests

For the sake of brevity, we present our remaining analyses using $\Delta CA\%_{Large,t}$ as the variable of interest, since Table 3 reveals that changes in the use of large component auditors are driving the result. In untabulated analyses, we confirm our sensitivity tests hold using $\Delta CA\%_t$ as the variable of interest.

Alternative audit quality explanation

We find the persistence of foreign earnings is higher for issuers with changes in component auditor use, and we interpret this as evidence that changes in component auditor use reveal the auditor's assessment of future foreign earnings (i.e., client performance). In this section, we consider whether audit quality could be an alternative explanation for our findings given that some prior literature finds higher financial reporting quality when more foreign operations are covered by component auditors (Docimo et al. 2021)²⁵ and earnings persistence can be a proxy for

²⁵ Docimo et al. (2021) use a unique data set (Orbis) to conduct this subsidiary-level analysis. There are limitations to using Orbis in our setting. Notably, Orbis coverage is affected by differences in reporting requirements across countries (Shroff et al. 2014). While Docimo et al. (2021) overcome this concern by analyzing the largest subsidiary in each country, coverage would be significantly limited in our sample since, to analyze changes, we would require financial data for all subsidiaries (e.g., Gates Industrial Corp has 26 subsidiaries in the U.K.) as well as foreign locations that require audit work but do not have a subsidiary. In additional analysis, we examine MD&A discussions of specific countries to provide a country-level analysis.

earnings/financial reporting quality (Dechow 2010). To address this, we examine whether our finding depends on the quality of the component auditors. If results are driven by audit quality, changes in the use of higher-quality component auditors should drive the finding. To test this, we split $\Delta CA\%_{Large}$ into the percentage conducted by component auditors with and without recent PCAOB inspection deficiencies ($\Delta CA\%_{LargeDeficient}$ and $\Delta CA\%_{LargeClean}$) and assume that component auditors with (without) inspection deficiencies provide lower (higher) audit quality (e.g., Chen and Conaway 2022; Gunny et al. 2024).²⁶

Table 4 reports the results. We find that the interaction coefficients on both $ForeignEarnings_t * \Delta CA\%_{LargeDeficient_t}$ and $ForeignEarnings_t * \Delta CA\%_{LargeClean_t}$ are positive and significant, at the 0.05 level. This suggests that changes in component auditor use are associated with greater earnings persistence regardless of the quality of the component auditor.²⁷ Overall, this result mitigates concerns that audit quality explains our findings.

As an alternative way to address the potential confounding influence of audit quality, we include three additional controls for audit quality in Model (1), and the results (untabulated) remain robust. Specifically, we capture audit quality issues at the lead auditor using the disclosure of an internal control material weakness or the announcement of a restatement in the prior two years, and at the component auditor level using whether any large component auditor used by the issuer has deficient PCAOB inspection findings.

Controlling for changes in other sources of foreign information

²⁶ Since the PCAOB inspects smaller firms triennially, we define recent inspection deficiencies as those reported within the past three years.

²⁷ Although it may seem counterintuitive that auditors would increase reliance on lower quality component auditors, practical constraints could drive these decisions. Since lead auditors rely on component auditors in their global affiliate network, viable alternatives may be limited, particularly for significant operations.

We conclude that component auditor disclosures are incrementally informative about the persistence of foreign earnings relative to other sources of foreign information. To further explore this, we extend our analysis to control for changes in the other sources of foreign information. In this test, we use change specifications and add interactions between foreign earnings and changes in geographic segments, subsidiaries, foreign growth potential, and 10-K country mentions to the main model (1). Table 5 reports the results. While the interaction of foreign earnings with geographic segments, subsidiaries, and 10-K country mentions is insignificant, the interaction with $\Delta ForeignGrowthPotential_t$ is positive and significant, suggesting changes in foreign growth opportunities help explain the persistence of foreign earnings. The coefficient on our variable of interest, $ForeignEarnings_t * \Delta CA\%_Large_t$, remains positive and significant at the 0.05 level, suggesting Form AP disclosures about component auditors provide information about the persistence of foreign earnings that is incremental to these other sources of information. Extending this test, in untabulated sensitivity analysis we follow deHaan et al. (2023) and interact foreign earnings with every control variable in the model since these interactions could influence both the persistence of foreign earnings and component auditor use. Our results are robust to this full set of controls.

Alternative outcome: Foreign earnings growth

In this section, we examine the robustness of our results to an alternative measure of future foreign performance. More specifically, we use foreign earnings growth ($ForeignEarningsGrowth$), defined as the change in foreign pretax earnings divided by average total assets, to capture expansion in foreign earnings, rather than their persistence. We re-estimate model (1) replacing the dependent variable with $ForeignEarningsGrowth$, therefore, our variable

of interest ($ForeignEarnings_t * \Delta CA\%_Large_t$) captures the association between current foreign earnings and future foreign earnings growth as component auditor use changes.

The results are reported in Table 6. The coefficient on $ForeignEarnings_t * \Delta CA\%_Large_t$ is positive and significant at the 0.05 level, which suggests that component auditor changes impact the association between foreign earnings and future foreign earnings growth. More specifically, firms with high (low) foreign earnings and increasing (decreasing) component auditor use experience stronger (weaker) future foreign earnings growth. This interpretation aligns with our persistence results and suggests that changes in component auditor reflect forward-looking assessments of foreign operations.

Additional analysis: Country-level insights

While our primary analyses focus on the informativeness of changes in component auditor use at the parent-level, Form AP disclosures also provide rare country-level insights. Large component auditors (those contributing more than five percent of total audit hours) are individually identified in Form AP by name, location, and percentage of audit work performed. If our interpretation that changes in large component auditor use reflect auditors' assessments of the sustainability of clients' foreign operations is correct, the relationship should be observable within specific countries. For example, increased component auditor use in Mexico should reflect auditors' assessments of the sustainability of operations in Mexico.

To test this, we conduct country-level analysis using management's discussion of foreign operations in the MD&A section of the 10-K.²⁸ The MD&A provides management's narrative discussion of the financial statements. Brown and Tucker (2011) find that changes in MD&A text

²⁸ Country-level financial data is difficult to obtain and limited by differences in reporting requirements across countries (Shroff et al. 2014). By focusing on country mentions in management disclosures, we capture variation across all countries in which issuers operate, rather than only those where standardized financial data are available.

reflect underlying economic changes and are informative to investors. Therefore, changes in management's discussion of specific countries may reflect the changing significance of those foreign operations to the issuer's overall operations. We test whether changes in reliance on component auditors in a specific country predict changes in the significance of that country in the subsequent MD&A.

We estimate the following country-issuer-year model for each case where a large component auditor is disclosed:

$$\Delta CountryMentions_MD\&A_{t+1} = \alpha + \beta_1 ForeignEarnings_t + \beta_2 Country_IncreaseCA_t + \beta_3 Country_DecreaseCA_t + \beta_n Control\ variables_t + Year\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon \quad (2)$$

The dependent variable $\Delta CountryMentions_MD\&A$ measures the year-over-year change in the number of mentions of a given country within the MD&A.²⁹ Since management would discuss both expansions and contractions in foreign activity, and this variation would be obscured in the aggregate variable, we separate changes in component auditor use into increases and decreases for the test variables. *Country_IncreaseCA* (*Country_DecreaseCA*) is an indicator for whether a country's component auditor involvement increased (decreased) relative to the prior year. Therefore, model (2) tests whether increases and decreases in component auditor use are associated with changes in the MD&A discussion of the same country, thereby indicating the changing significance of that country's operations. We include the same control variables as in model (1), with the addition of overall MD&A mentions of foreign countries (*CountryMentions_MD\&A*) to account for general practices for disclosing foreign operations in the MD&A (irrespective of the

²⁹ We parse mentions of foreign countries from the MD&A section of each issuer's 10-K made available by Codesso et al. (2025) at <https://www.analytext.com/>.

specific country) and country fixed effects to absorb structural country-level differences. This specification ensures that the coefficients reflect within-country changes rather than cross-country variation.

Our sample includes 5,482 country-issuer-year observations.³⁰ Panel A of Table 7 summarizes the distribution of countries in this sample. In total, there are 74 unique countries where large component auditors are used. The United Kingdom is the most frequently reported location (874 observations; 16 percent), followed by China (539; 10 percent), Germany (523; 10 percent), and Brazil (282; 5 percent). Panel B of Table 7 reports the descriptive statistics for this sample. The dependent variable $\Delta CountryMentions_MD\&A$ has a mean close to zero (-0.02) and a median of zero, consistent with prior evidence of the stickiness of MD&A disclosures (Brown and Tucker 2011).

Panel C of Table 7 reports the results of estimating model (2). The coefficient on *Country_IncreaseCA* is positive and significant at the 0.10 level, indicating that increased reliance on component auditors in a country is associated with increased discussion of that country in the subsequent MD&A. This aligns with our interpretation of the issuer-level results, suggesting that increases in component auditor use capture sustained increases in clients' foreign operations. In contrast, the coefficient on *Country_DecreaseCA* is insignificant. This asymmetry is consistent with prior evidence that managers emphasize good news when discussing performance (e.g., Li 2010; D'Augusta and DeAngelis 2020).

Overall, these findings suggest that Form AP disclosures not only provide information at the issuer level but also offer country-level insights. Specifically, increases in component auditor

³⁰ The sample used in our main analysis include 6,121 issuer-years with non-zero foreign income. 43 percent use at least one large component auditor and, within this group, the mean number of large component auditors is 1.76, leading to this country-issuer-year sample.

use correspond to management's subsequent emphasis on those countries in the MD&A, reinforcing our interpretation that changes in auditor reliance reflect forward-looking assessments of foreign operations.

Additional analysis: Market reaction to Form AP disclosures

In this section, we examine market reaction to the information about foreign earnings revealed in Form AP. Since we find that Form AP disclosures about changes in large component auditor use reveal information about foreign earnings, investors may reevaluate foreign earnings at the Form AP date when component auditor information is disclosed. Specifically, investors may view component auditor disclosures as informative about the persistence of recently reported foreign earnings.

On the other hand, investors might not view changes in large component auditors as relevant to foreign earnings. Doxey et al. (2021) find no investor reaction to Form AP disclosures regarding component auditor participation, even when the disclosures are more likely to provide insight into audit quality, such as the level or quality of component auditor involvement. Prior literature also consistently finds that investors underestimate the valuation implications of foreign earnings relative to domestic earnings (Thomas 2000; Callen et al. 2005) and are slow to incorporate information about foreign operations into stock prices (Huang 2015). Even more sophisticated intermediaries like financial analysts have difficulty incorporating foreign information into their forecasts (Dura and Reeb 2002) and underestimate the persistence of foreign earnings (Khurana et al. 2003).

With this tension in mind, we estimate the below model to examine whether disclosures about changes in the use of large component auditors are informative to investors about foreign earnings.³¹

$$\begin{aligned}
 CAR(-1, +1)_t = & a + \beta_1 \Delta ForeignEarnings_t + \beta_2 \Delta CA\%_Large_t + \\
 & \beta_3 \Delta ForeignEarnings_t * \Delta CA\%_Large_t + \beta_n Control\ variables_t + \\
 & Year\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon
 \end{aligned} \tag{3}$$

This model tests whether investors react to changes in large component auditor use disclosed in Form AP that are directionally consistent with previously disclosed changes in foreign earnings. Component auditor information is disclosed in Form AP shortly after foreign earnings information is disclosed in the 10-K. As an example, if foreign earnings increase from 2017 to 2018 (disclosed in the 2018 10-K, filed in early 2019 for a December year-end company) and component auditor use also increases (disclosed in the Form AP filed 35 days after the 2018 10-K is filed in 2019), we are interested in the market reaction to that Form AP. Since Form AP is not released concurrently with the 10-K or earnings announcement, analyzing the market reaction around its filing date reduces the risk of confounding information influencing the results, making it more likely that any significant investor reaction is to the information disclosed in Form AP. Importantly, other sources of foreign earnings information (e.g., Exhibit 21 subsidiaries and segment disclosures) should already be incorporated in market returns before the Form AP date.³²

³¹ This is an earnings response coefficient (ERC) model tailored to foreign earnings (e.g., Kormendi and Lipe 1987; Collins and Kothari 1989). ERC models require a measure of unexpected earnings to determine the earnings news to investors. The literature uses different proxies to reflect investors' expectations such as last year's earnings (e.g., Collins and Kothari 1989; Binz and Graham 2022) or analyst forecasts of earnings (e.g., Easton and Zmijewski 1989; Gipper et al. 2020). Since analysts do not provide separate forecasts for foreign earnings, we use last year's foreign earnings to reflect investors' expectations of foreign earnings and capture unexpected earnings as the change in foreign earnings.

³² While there may be correlated omitted variable concerns for previous analyses, this market test is based on abnormal returns at the Form AP date. Since the Form AP date is isolated from other disclosure dates (Doxey et al. 2021), the model controls for investor reaction to previously disclosed information about foreign operations (e.g., Exhibit 21 subsidiary information, segment disclosures, information in the MD&A, conference calls, etc.).

Our dependent variable $CAR(-1,+1)$ is the cumulative abnormal return over the three-day window around the Form AP filing date in year t . Table 2 descriptives show that mean cumulative abnormal return is -0.006. Different from Model (1), we focus on the change in foreign earnings ($\Delta ForeignEarnings_t$) since this would represent recent foreign earnings news. Our coefficient of interest is β_3 , which captures whether changes in component auditor use make changes in foreign earnings more informative to investors. A positive coefficient on the interaction term would suggest that investors view component auditor disclosures as relevant to assessing the persistence of recently disclosed foreign earnings news. In other words, investors may view increases in foreign earnings as more sustainable, rather than mere short-term fluctuations, after learning that foreign audit work also increased. We include two additional control variables. First, we include an indicator for audit partner change, since this information is revealed in Form AP and could prompt a market reaction at the Form AP date. Second, we include the estimated market model measured over the twelve months before the 10-K filing ($Beta_t$). Given a high correlation between $StdEarnings_t$ and $Beta_t$, we include only $Beta_t$ in the model consistent with prior literature (e.g., Collins and Kothari 1989; Fang et al. 2017).

The results are reported in Table 8. To allow for comparison to other component auditor market reaction studies, we test both the overall change ($\Delta CA\%_t$) and the change for large component auditors ($\Delta CA\%_Large_t$). The main effects of component auditor changes are not significant, , consistent with Doxey et al. (2021). The coefficient on the interaction $ForeignEarnings_t * \Delta CA\%_t$ is also insignificant when using overall change in component auditor use as the dependent variable However, when using change in large component auditor use as the variable of interest, $ForeignEarnings_t * \Delta CA\%_Large_t$, the coefficient is positive and significant at

the 0.10 level. This result suggests that, when evaluating foreign earnings, investors react to changes in large component auditor use. Combined with our other findings, this suggests that changes in large component auditor use enhance the informativeness of foreign earnings by signaling the lead auditor's assessment of their expected persistence.

Conclusion

In this study, we examine whether audit disclosures regarding changes in foreign component auditor use provide information about clients' future foreign performance. For U.S. multinationals, the use of foreign component auditors is structurally tied to the significance of foreign operations and reflects lead auditors' judgments about where substantial audit work is needed. Because engaging or expanding reliance on a component auditor requires substantial investment in evaluation, supervision, and coordination, such decisions are unlikely to respond to short-term fluctuations. Instead, they may reveal auditors' assessments of the ongoing and future importance of foreign operations.

Consistent with this interpretation, we find a positive association between changes in component auditor use and the persistence of foreign earnings even after controlling for geographic segments, foreign subsidiaries, industry-level foreign growth potential, and foreign country mentions in the 10-K. This finding is driven by large component auditors that reflect more financially significant client operations. Additional analyses mitigate concerns that audit or earnings quality explains these findings. We further demonstrate that these changes reflect forward-looking assessments with country-level analyses, which reveal that increased reliance on component auditors in a given country is associated with expanded management discussion of that country in the subsequent year's MD&A. In addition, we find that the interaction between changes

in large component auditor use and changes in foreign earnings is associated with a significant market reaction at the Form AP filing date. Together, these findings suggest that component auditor disclosures convey economically meaningful information about clients' future foreign operations.

Overall, our study contributes to the literature on foreign earnings and the informativeness of Form AP by establishing a link between recently required auditor disclosures regarding the use of foreign component auditors and the future performance of multinational clients' foreign operations. Our study is subject to limitations. For example, since Form AP disclosures are relatively new and our model requires change variables, our sample is limited to five years. It is possible that lead auditors may change their disclosures over time, especially if they seek to avoid being an original provider of information, as our study's findings suggest.

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Appendix A: Variable Definitions

<i>Dependent variables</i>	
ForeignEarnings	Foreign pretax earnings divided by average total assets
ForeignEarningsGrowth	Foreign pretax earnings minus lagged foreign pretax earnings divided by average total assets [COMPUSTAT]
CountryMentions_MD&A	Natural logarithm of total foreign country mentions in the MD&A section of the 10-K [MD&As provided by Codesso et al. (2025) at: https://www.analytext.com/]
CAR(-1,+1)	Cumulative abnormal return over the three-day window around the 10-K filing date, where daily abnormal returns are Fama French five-factor abnormal returns [CRSP]
Δ_t	Change in variable from year t-1 to year t
<i>Other variables of interest</i>	
CA%	Percentage of audit hours completed by component auditors
CA%_Large	Percentage of audit hours completed by large component auditors [FormAP]
CA%_Small	Percentage of audit hours completed by small component auditors [FormAP]
CA%_LargeDeficient	Percentage of audit hours completed by large component auditors with an inspection deficiency identified by the PCAOB in the prior three years [FormAP]
CA%_LargeClean	Percentage of audit hours completed by large component auditors without an inspection deficiency identified by the PCAOB in the prior three years [FormAP]
Country_IncreaseCA	One for country-issuer-years with an increase in component auditor use from the prior year, zero otherwise [FormAP]
Country_DecreaseCA	One for country-issuer-years with a decrease in component auditor use from the prior year, zero otherwise [FormAP]
<i>Control variables</i>	
DomesticEarnings	Domestic pretax earnings divided by average total assets [COMPUSTAT]
Size	Natural logarithm of the market value of equity [COMPUSTAT]
BTM	Book-to-market ratio [COMPUSTAT]
StdEarnings	The standard deviation of total earnings over the prior five fiscal years [COMPUSTAT]

Loss	One for issuer-years with nonzero earnings before extraordinary items, zero otherwise [COMPUSTAT]
GeoSegments	Natural logarithm of the sum of reported geographic segments [COMPUSTAT Segment file]
ForeignGrowthPotential	Calculated as industry-level foreign sales growth minus domestic sales growth following Chen et al. (2022a) [COMPUSTAT]
Subsidiaries	The natural logarithm of the sum of subsidiaries reported in Exhibit 21 [SeekEdgar]
CountryMentions_10K	Natural log of total foreign country mentions in the 10-K [10-Ks downloaded from Loughran and McDonald's website: https://sraf.nd.edu/sec-edgar-data/cleaned-10x-files/]
Beta	Market beta estimated with the market model for each fiscal year using the 12 months before the 10-K [CRSP]

Appendix B: Sources of Foreign Information for Gates Industrial Corp in 2018

Below we report three sources of foreign information (Form AP about component auditors, Exhibit 21 about subsidiaries, and segment information):

Component auditor information (Form AP)

Lead auditors file Form AP, Auditor Reporting of Certain Audit Participants, with the PCAOB. Item 4.1 includes component auditor information. For component auditors that conduct more than 5% of audit hours, the lead auditor discloses identifying information and the percentage of participation.

ITEM 4.1 - OTHER ACCOUNTING FIRM(S) INDIVIDUALLY 5% OR GREATER OF TOTAL AUDIT HOURS					
Firm ID	01113	Check here if no Firm ID is available	<input type="checkbox"/>	Percentage of participation	% or range 5% to less than 10%
Legal name	Deloitte Touche Tohmatsu Certified Public Accountants LLP				
Headquarters' office location:					
Country	China				
City	Shanghai	State			
Firm ID	01153	Check here if no Firm ID is available	<input type="checkbox"/>	Percentage of participation	% or range 5% to less than 10%
Legal name	Galaz, Yamazaki, Ruiz, Urquiza, S.C.				
Headquarters' office location:					
Country	Mexico				
City	Ciudad de México	State			

Subsidiary information (Exhibit 21)

Companies file Exhibit 21 with their 10-K. The Exhibit lists their significant subsidiaries, including names and jurisdictions. For illustrative purposes, we show the first ten listed. The full Exhibit 21 shows that Gates Industrial Corp has 116 U.S. and foreign subsidiaries, with (by declining frequency) 26 in the U.K., 16 in Delaware, 6 in China, 6 in Luxembourg, 5 in Mexico, 5 in Turkey, 5 the United Arab Emirates, and 47 others in different countries and U.S. states.

SUBSIDIARIES OF GATES INDUSTRIAL CORPORATION PLC

Name	Jurisdiction of Organization or Incorporation
Gates Argentina S.A.	Argentina
Gates Australia Pty, Limited	Australia
Gates Engineering & Services Australia Pty Ltd	Australia
Gates E&S Bahrain WLL	Bahrain
Gates Distribution Centre N.V.	Belgium
Gates do Brasil Industria e Commercio Ltda	Brazil
Gates Fleximak Ltd	British Virgin Islands
Atlas Hydraulics Inc.	Canada
Gates Canada Inc.	Canada
Gates Industrial Canada Ltd	Canada

Segment information (10-K Notes)

Companies disclose geographic segment information in the notes to the 10-K. Companies can, and typically do, aggregate segments by region.

<u>(dollars in millions)</u>	<u>December 29, 2018</u>
U.S.	\$ 1,278.0
Rest of North America	344.9
U.K.	94.9
Rest of EMEA	757.3
East Asia and India	399.2
Greater China	369.7
South America	103.6
Net Sales	\$ 3,347.6

Table 1: Sample Selection

	Issuer-years
U.S. public issuer-years from 2018-2022 with Form AP in PCAOB	
AuditorSearch	39,508
Less: Audits with divided responsibility	(173)
Less: Non-U.S. lead auditor	(6,207)
Less: U.S. component auditor used	(116)
Less: Issuer-years not covered by Compustat	(9,367)
Less: Financial and utilities industries	(5,793)
Less: Missing or zero pretax foreign income	(9,288)
Less: Missing control variables in Compustat, Audit Analytics, or CRSP	(2,443)
Sample	<u><u>6,121</u></u>

Table 2
Panel A: Descriptive statistics

Variable	N	Mean	Median	Q1	Q3	Std.Dev.
ForeignEarnings _{t+1}	6,121	0.013	0.010	0.000	0.036	0.065
ForeignEarnings _t	6,121	0.013	0.010	0.000	0.036	0.065
$\Delta CA\%_t$	6,121	-0.477	0.000	0.000	0.000	5.000
$\Delta CA\%_{_Large_t}$	6,121	-0.334	0.000	0.000	0.000	5.136
$\Delta CA\%_{_Small_t}$	6,121	-0.143	0.000	0.000	0.000	2.628
DomesticEarnings _t	6,121	-0.032	0.007	-0.056	0.054	0.178
Size _t	6,121	7.700	7.778	6.359	9.094	2.111
BTM _t	6,121	0.458	0.329	0.149	0.619	0.505
StdEarnings _t	6,121	0.075	0.040	0.021	0.086	0.099
Loss _t	6,121	0.383	0.000	0.000	1.000	0.486
GeoSegments _t	6,121	1.718	1.792	1.099	2.485	0.945
ForeignGrowthPotential _t	6,121	0.000	-0.001	-0.029	0.027	0.058
Subsidiaries _t	6,121	2.186	2.303	0.693	3.497	1.669
CountryMentions_10K _t	6,121	4.047	4.700	3.850	5.308	2.002
ForeignEarningsGrowth _{t+1}	6,121	0.002	0.001	-0.006	0.009	0.040
ForeignEarningsGrowth _t	6,121	0.002	0.001	-0.006	0.010	0.039
CAR(-1,+1)	6,121	-0.006	-0.002	-0.031	0.023	0.063
Beta _t	6,121	1.213	1.158	0.661	1.729	0.998
$\Delta ForeignEarnings_t$	6,121	0.001	0.000	-0.007	0.008	0.041

Table 2 (continued)**Panel B: Pearson correlation matrix**

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ForeignEarnings _{t+1}	(1)	-											
ForeignEarnings _t	(2)	0.755	-										
ΔCA% _t	(3)	-0.020	0.005	-									
ΔCA%_Large _t	(4)	-0.005	0.013	0.866	-								
ΔCA%_Small _t	(5)	-0.027	-0.015	0.210	-0.307	-							
DomesticEarnings _t	(6)	0.255	0.258	-0.005	0.008	-0.025	-						
Size _t	(7)	0.316	0.331	0.012	0.033	-0.042	0.439	-					
BTM _t	(8)	-0.102	-0.097	-0.030	-0.034	0.010	-0.090	-0.430	-				
StdEarnings _t	(9)	-0.314	-0.315	0.014	0.003	0.022	-0.492	-0.334	0.003	-			
Loss _t	(10)	-0.354	-0.440	-0.004	-0.018	0.029	-0.624	-0.422	0.131	0.364	-		
GeoSegments _t	(11)	0.282	0.281	-0.026	-0.002	-0.045	0.229	0.194	-0.024	-0.212	-0.211	-	
ForeignGrowthPotential _t	(12)	-0.013	-0.012	0.010	0.008	0.004	-0.024	-0.024	-0.022	0.020	0.031	0.080	-
Subsidiaries _t	(13)	0.263	0.272	-0.027	-0.006	-0.039	0.276	0.397	-0.074	-0.289	-0.294	0.325	0.012
CountryMentions_10K _t	(14)	0.295	0.306	-0.038	-0.017	-0.040	0.289	0.296	-0.046	-0.265	-0.251	0.748	-0.003
													0.486

See Appendix A for variable definitions. Correlations of statistical significance at the 10% level are in bold.

Table 3: Foreign earnings persistence

Variable	ForeignEarnings _{t+1}					
	$\Delta CA\% = \Delta CA\%$		$\Delta CA\% = \Delta CA\%_{-Large}$		$\Delta CA\% = \Delta CA\%_{-Small}$	
	Coef.	p-value	Coef.	p-value	Coef.	p-value
Constant	-0.014***	0.01	-0.014**	0.02	-0.014**	0.02
ForeignEarnings _t	0.701***	<0.01	0.700***	<0.01	0.694***	<0.01
$\Delta CA\%_t$	0.000***	<0.01	0.000**	0.02	0.000	0.98
ForeignEarnings_t*$\Delta CA\%_t$	0.007**	0.04	0.008**	0.02	-0.004	0.61
DomesticEarnings _t	0.009	0.20	0.009	0.19	0.009	0.22
Size _t	0.001***	<0.01	0.001***	<0.01	0.001***	<0.01
BTM _t	-0.003	0.10	-0.003	0.10	-0.003	0.10
StdEarnings _t	-0.040***	<0.01	-0.040***	<0.01	-0.040***	<0.01
Loss _t	0.003**	0.04	0.003**	0.04	0.003**	0.04
GeoSegments _t	0.004***	<0.01	0.004***	<0.01	0.004***	<0.01
ForeignGrowthPotential _t	0.002	0.74	0.002	0.77	0.001	0.85
Subsidiaries _t	0.001**	0.02	0.001**	0.02	0.001**	0.02
CountryMentions_10K _t	0.000	0.55	0.000	0.56	0.000	0.60
Industry fixed effects	Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes	
Observations	6,121		6,121		6,121	
Adjusted R ²	0.587		0.588		0.586	

*, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Standard errors clustered by issuer. See Appendix A for variable definitions.

Table 4: Deficient vs. clean component auditors

Variable	ForeignEarnings _{t+1}	
	Coef.	p-value
Constant	-0.014**	0.02
ForeignEarnings _t	0.700***	<0.01
ΔCA%_LargeDeficient _t	0.000	0.21
ForeignEarnings_t* ΔCA%_LargeDeficient_t	0.011**	0.04
ΔCA%_LargeClean _t	0.000**	0.03
ForeignEarnings_t* ΔCA%_LargeClean_t	0.008**	0.04
DomesticEarnings _t	0.009	0.19
Size _t	0.001***	<0.01
BTM _t	-0.003	0.10
StdEarnings _t	-0.040***	<0.01
Loss _t	0.003**	0.04
GeoSegments _t	0.004***	<0.01
ForeignGrowthPotential _t	0.002	0.77
Subsidiaries _t	0.001**	0.02
CountryMentions_10K _t	0.000	0.56
Industry fixed effects	Yes	
Year fixed effects	Yes	
Observations	6,121	
Adjusted R ²	0.587	

*, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Standard errors clustered by issuer. See Appendix A for variable definitions.

Table 5: Controlling for changes in other foreign information

Variable	ForeignEarnings _{t+1}	
	Coef.	p-value
Constant	-0.009*	0.06
ForeignEarnings _t	0.725***	<0.01
ΔCA%_Large _t	0.000**	0.02
ForeignEarnings_t* ΔCA%_Large_t	0.008**	0.03
ΔGeoSegments _t	0.000	0.54
ForeignEarnings_t* ΔGeoSegments_t	0.005	0.59
ΔSubsidiaries _t	-0.001	0.30
ForeignEarnings_t* ΔSubsidiaries_t	0.006	0.78
ΔForeignGrowthPotential _t	-0.002	0.72
ForeignEarnings_t* ΔForeignGrowthPotential_t	0.493**	0.02
CountryMentions_10K _t	0.000	0.49
ForeignEarnings_t* ΔCountryMentions_10K_t	0.000	0.44
DomesticEarnings _t	0.010	0.15
Size _t	0.002***	<0.01
BTM _t	-0.002	0.20
StdEarnings _t	-0.043***	<0.01
Loss _t	0.003*	0.07
Industry fixed effects	Yes	
Year fixed effects	Yes	
Observations	6,121	
Adjusted R ²	0.587	

*, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Standard errors clustered by issuer. See Appendix A for variable definitions.

Table 6: Alternative dependent variable: Foreign earnings growth

Variable	ForeignEarningsGrowth _{t+1}	
	Coef.	p-value
Constant	-0.014***	<0.01
ForeignEarnings _t	-0.169***	<0.01
ΔCA%_Large _t	0.000**	0.02
ForeignEarnings_t*ΔCA%_Large	0.008**	0.03
ForeignEarningsGrowth _t	-0.095***	<0.01
DomesticEarnings _t	0.002	0.74
Size _t	0.001**	0.02
BTM _t	-0.001	0.65
StdEarnings _t	-0.023**	0.02
Loss _t	0.002	0.11
GeoSegments _t	0.004***	<0.01
ForeignGrowthPotential _t	0.003	0.67
Subsidiaries _t	0.001**	0.01
CountryMentions_10K _t	-0.001	0.18
Industry fixed effects	Yes	
Year fixed effects	Yes	
Observations	6,121	
Adjusted R ²	0.108	

*, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Standard errors clustered by issuer. See Appendix A for variable definitions.

Table 7: Country-level insights from the MD&A**Panel A: Country frequency**

Variable	Freq.	%
United Kingdom	874	16%
China	539	10%
Germany	523	10%
Brazil	282	5%
Mexico	265	5%
France	212	4%
Netherlands	202	4%
India	199	4%
Ireland	197	4%
Australia	177	3%
Canada	156	3%
Japan	147	3%
Switzerland	129	2%
Italy	124	2%
Singapore	115	2%
Poland	109	2%
Belgium	92	2%
Philippines	85	2%
Malaysia	74	1%
Taiwan	68	1%
Israel	67	1%
South Korea	62	1%
Sweden	62	1%
Other Countries*	722	12%
	5,482	

* “Other countries” includes 51 additional countries, each representing less than 1% of the sample.

Table 7 (continued)**Panel B: Country-level descriptive statistics**

Variable	N	Mean	Median	Q1	Q3	Std.Dev
Δ CountryMentions_MD&A _{t+1}	5,482	-0.02	0.00	0.00	0.00	2.61
Country_IncreaseCA _t	5,482	0.20	0.00	0.00	0.00	0.40
Country_DecreaseCA _t	5,482	0.24	0.00	0.00	0.00	0.43
ForeignEarnings _t	5,482	0.04	0.03	0.01	0.06	0.05
DomesticEarnings _t	5,482	0.01	0.01	-0.02	0.04	0.09
Size _t	5,482	8.36	8.36	7.25	9.58	1.93
BTM _t	5,482	0.48	0.38	0.19	0.67	0.46
StdEarnings _t	5,482	0.05	0.03	0.02	0.06	0.05
Loss _t	5,482	0.23	0.00	0.00	0.00	0.42
GeoSegments _t	5,482	2.17	2.20	1.79	2.71	0.79
ForeignGrowthPotential _t	5,482	0.00	0.00	-0.03	0.02	0.05
Subsidiaries _t	5,482	3.14	3.47	2.20	4.39	1.64
CountryMentions_10K _t	5,482	5.07	5.31	4.84	5.79	1.39
CountryMentions_MD&A _t	5,482	0.61	0.00	0.00	1.10	0.93

Table 7 (continued)**Panel C: Country-issuer-year level regression of changes in MD&A country mentions on increases and decreases in component auditor use**

Variable	Δ CountryMentions	MD&A _{t+1}
	Coef.	p-value
Constant	0.472	0.65
ForeignEarnings _t	-0.870	0.27
Country_IncreaseCA_t	0.166*	0.07
Country_DecreaseCA_t	-0.060	0.48
DomesticEarnings _t	0.296	0.67
Size _t	0.036	0.21
BTM _t	0.035	0.79
StdEarnings _t	-0.838	0.40
Loss _t	0.045	0.75
GeoSegments _t	0.020	0.74
ForeignGrowthPotential _t	0.139	0.91
Subsidiaries _t	-0.062*	0.06
CountryMentions_10K _t	0.107***	<0.01
CountryMentions_MD&A _t	-0.710***	<0.01
Industry fixed effects	Yes	
Year fixed effects	Yes	
Country fixed effects	Yes	
Observations	5,482	
Adjusted R ²	0.051	

*, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Standard errors clustered by issuer. See Appendix A for variable definitions.

Table 8: Market return to foreign earnings information around the Form AP disclosure

Variable	CAR(-1,+1)			
	$\Delta CA\% = \Delta CA\%$		$\Delta CA\% = \Delta CA\%_{Large}$	
	Coef.	p-value	Coef.	p-value
Constant	-0.009	0.12	-0.009	0.12
$\Delta ForeignEarnings_t$	0.052**	0.02	0.054**	0.01
$\Delta CA\%_t$	0.000	0.22	0.000	0.44
$\Delta ForeignEarnings_t * \Delta CA\%_t$	0.003	0.39	0.006*	0.08
DomesticEarnings _t	0.000	0.99	0.000	0.99
Size _t	0.002***	<0.01	0.002***	<0.01
BTM _t	0.000	0.99	0.000	0.99
Loss _t	0.004**	0.04	0.004**	0.04
Beta _t	-0.002*	0.09	-0.002*	0.09
GeoSegments _t	0.001	0.37	0.001	0.37
ForeignGrowthPotential _t	-0.002	0.87	-0.002	0.87
Subsidiaries _t	-0.002***	<0.01	-0.002***	<0.01
PartnerChange _t	-0.003	0.16	-0.003	0.16
CountryMentions_10K _t	0.000	0.66	0.000	0.66
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
Observations	6,121		6,121	
Adjusted R ²	0.033		0.034	

*, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Standard errors clustered by issuer. See Appendix A for variable definitions.