Audit quality and the ownership of non-audit businesses: Evidence from China*

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Abstract

Accounting practices are typically structured as groups that include both audit and non-audit businesses. Accounting groups generally have three types of owners: 1) audit partners who hold equity solely in the audit business, 2) audit partners who hold equity in the audit *and* non-audit businesses, and 3) non-audit shareholders (e.g., management consultants) who hold equity solely in the non-audit business. We find that audit adjustments are significantly smaller when audit partners hold larger ownership stakes in the non-audit businesses. Moreover, audit adjustments are incrementally smaller when the entire audit partnership as a *collective* body holds a larger ownership stake in the group's non-audit businesses. Overall, our findings suggest that audit quality is lower when audit partners have financial interests in their groups' non-audit operations.

1. Introduction

Accounting practices are typically organized as groups, in which one member firm provides audit services, while other affiliated member firms provide non-audit services. For example, the Deloitte US group has one audit firm (Deloitte & Touche LLP) and several non-audit firms, including Deloitte Consulting LLP, Deloitte Financial Advisory Services LLP, Deloitte Tax LLP, and Deloitte Transactions and Business Analytics LLP. Accounting groups generally have three types of equity holders: 1) partners who own shares only in the audit firm, 2) partners who hold equity in both the audit and non-audit businesses, and 3) non-audit shareholders whose ownership stakes are exclusively in the non-audit firms. The purpose of this study is to examine how such ownership structures affect audit quality. The ownership structures of accounting groups are generally not publicly disclosed, so prior research has been unable to offer insights on the variation in audit quality across different ownership structures. We address this gap by collecting detailed ownership data from accounting groups in China.[1]

In our first hypothesis (H1), we test whether audit quality is lower when the audit engagement partner holds a larger ownership stake in the group's non-audit businesses. A partner with equity only in the audit business does not directly benefit from the profits generated from non-audit services. Such a partner is less influenced by incentives to promote or cross-sell non-audit services and is more likely to focus on maintaining audit quality. In contrast, an engagement partner with ownership in *both* the audit and non-audit businesses has a financial interest in the profitability of the entire group, including its non-audit services which are typically more lucrative than auditing. Such a partner could be incentivized to compromise audit quality

[1] Ownership data are available from two official information providers (TianYanCha.com and Qcc.com) for every non-Big 4 practice in China. Data are unavailable for the Big 4 because they are registered in tax havens (Bermuda, British Virgin Islands, and Cayman Islands) where ownership remains strictly confidential.

to accommodate client preferences. They may also be distracted by revenue opportunities in the non-audit domain, potentially diverting their attention away from audit quality. Accordingly, we hypothesize that audit quality is lower when the audit engagement partner has a larger ownership stake in their group's non-audit businesses (H1).

Our test of H1 focuses on the ownership of the audit engagement partner. However, regulators have also expressed concerns about the ownership stakes of the entire audit partnership as a collective body. Their concern is that the audit partnership could be distracted away from audit quality when the audit partnership collectively owns and controls the group's non-audit businesses. Regulators have therefore called for a complete separation of the audit and non-audit businesses to prevent the audit partnership being distracted by non-audit revenues (e.g., European Commission 2010; Dutch Authority for the Financial Markets 2018; Dancey 2018; Competition & Markets Authority 2019; Davies 2020).[2] Motivated by these concerns, we hypothesize (H2) that audit quality is lower when the audit partnership *in aggregate* holds a larger ownership stake in the group's non-audit businesses.

Our research setting shares important institutional features with other jurisdictions, such as the United States. In China, auditors are subject to the international code of ethics which restricts the provision of non-audit services to public company audit clients. However, auditors

[2] For example, the Dutch Authority for the Financial Markets (2018) states (pages 55-56): "*The audit only model has a number of potential benefits. Firstly, separation of the audit practice of a service provider would bring an end to potential issues of independence related to the current mixing of audit services and other services, including advisory services from the same service provider. Due to the nature of its work, the advisory service primarily considers the interests of the client and operates in a more profit-oriented business culture that is however not appropriate for the audit practice, which should be more focused on the public interest. Secondly, separation could increase the focus on the quality of statutory audits. The risk that the attention of the management and the emphasis on investment in quality in organizations in their current form will (consciously or otherwise) shift from the statutory audit to the advisory practice, for instance if the latter contributes more to growth and profitability, will be effectively mitigated.*" In the face of increased regulatory pressure for the complete separation of audit and non-audit businesses, Ernst & Young announced in 2022 a plan to sell its advisory businesses. Ernst & Young later abandoned the project when its U.S. partners objected to the proposed new structure (Makortoff 2023).

are permitted to provide non-audit services to former audit clients as well as other non-audit clients. Additionally, regulators in China and the United States face significant challenges in enforcing the restrictions on non-audit services. For one thing, they need to exercise judgment when determining whether a specific service should be regarded as part of the regular audit or instead should be regarded as a prohibited non-audit service. In addition, significant judgement needs to be exercised when determining the economic substance of the relationship between the provider of the non-audit service and the customer. For example, the customer may not be a direct audit client but may instead be a related entity with ownership ties to the audit client. In such a situation, it can be complicated to determine whether the provision of the non-audit service constitutes a breach of the rules. Similar complications arise when the non-audit service is delivered by a legally separate non-audit business that has ownership ties with the customer's audit firm (Munter 2022). In this respect, the situation in China is similar to the United States because audit and non-audit services are often provided by legally separate firms that belong to the same ownership group.

Given the subjectivity in enforcing the rules on non-audit services, there is a risk that audit partners would interpret the rules in their own favor when they hold larger ownership stakes in the group's non-audit businesses. For instance, audit partners with financial interests in the group's non-audit revenues would have an economic incentive to argue that a service is audit-related (rather than non-audit), or that the customer is not technically an audit client, or that the non-audit service is provided by a different firm that is legally separate from the audit firm. In these situations, it becomes a grey area as to whether a specific non-audit service is allowable under regulatory rules.

A further advantage of the China setting is the availability of data on audit adjustments. Audit adjustments provide a relatively direct measure of audit quality, as they capture

misstatements that are identified and corrected during the year-end audit, prior to the issuance of audited financial statements. Consistent with prior literature, we use audit adjustments as our primary measure of audit quality (Choudhary et al. 2022; Dekeyser et al. 2024; He et al. 2018; Hu et al. 2023; Lennox et al. 2014, 2018, 2020, 2023; Lennox and Wu, 2022a; Li et al. 2020).

Our results support the predictions in H1 and H2. Consistent with H1, we find that audit quality is significantly lower when the lead engagement partner owns more shares in the group's non-audit businesses. Audit adjustments fall by 9.98% when the lead partner's ownership of the non-audit businesses increases from zero to the sample's non-zero mean of 0.953%. Supporting H2, we find that audit adjustments are significantly smaller when the audit partnership as a collective body holds a larger ownership stake in the group's non-audit businesses. Audit adjustments decline by 29.12% when the aggregate ownership of audit partners increases from zero to the sample's non-zero mean of 21.21%. These results remain statistically significant after we control for audit firm fixed effects, industry fixed effects, year fixed effects, and time-varying observable factors that influence audit adjustments.

A potential concern with our analysis is the endogenous matching between audit partners and client companies. Specifically, there could be systematic differences between the clients of partners who own (do not own) equity in the group's non-audit businesses. We address this concern in three ways. First, we include company fixed effects to control for time-invariant client characteristics and audit firm fixed effects to control for time-invariant audit firm characteristics. Further, we employ entropy balancing to ensure that the observable characteristics of clients are similar across partners with and without ownership stakes in the non-audit businesses. Our H1 and H2 results remain robust after controlling for company fixed effects, audit firm fixed effects, and entropy balancing.

Second, we conduct separate regressions for downward and upward audit adjustments.

Downward adjustments reflect the correction of earnings overstatements, while upward adjustments reflect the correction of understatements. Threats to auditor independence are more salient for downward adjustments because clients are generally more resistant to adjustments that reduce reported earnings. Accordingly, we expect our H1 and H2 results to be driven primarily by downward adjustments. Consistent with this expectation, the results are statistically significant for downward adjustments, whereas the results are either insignificant or considerably weaker for upward adjustments.

Third, there could be systematic differences between audit partners who own (do not own) shares in the group's non-audit businesses. For example, partners who own shares in the non-audit businesses may be inherently less focused on audit quality. To address this concern, we include fixed effects for each audit engagement partner, thereby controlling for time-invariant partner characteristics, such as intrinsic ability and preferences. Even after controlling for partner fixed effects, our results for H1 and H2 remain statistically significant, reinforcing the robustness of our findings.

To our knowledge, there is no prior research on the ownership of non-audit businesses within accounting groups. One reason may be the difficulty in obtaining data on the ownership structures of accounting groups. The closest study to ours is Lennox et al. (2020) who find that audit adjustments in China are either negatively or insignificantly associated with partners' ownership stakes in the *audit* business. Our study is different because we focus on the ownership of *non-audit* businesses. Specifically, we investigate whether audit quality varies with the equity holdings of audit partners in their group's non-audit businesses. Therefore, our study contributes to prior literature by taking an accounting group perspective rather than simply an audit firm perspective. Our study is also relevant to public policy because regulators around the world are considering whether audit and non-audit businesses should be housed with the same ownership

group. Our finding that audit quality is lower when audit partners collectively hold larger stakes in the non-audit businesses is particularly pertinent to the debate about whether audit and non-audit business should be separated (European Commission 2010; Dutch Authority for the Financial Markets 2018; Competition & Markets Authority 2019). Additionally, our results are relevant to ongoing policy discussions regarding the effects on audit quality when non-audit businesses are sold to outside investors (Munter 2022; Borysoff et al. 2024).

Our study also contributes to the existing literature on non-audit services, which considers whether audit quality is impaired by non-audit service fees. While the evidence on this issue remains mixed (see Section 2.1), prior research generally adopts the perspective of a single audit firm that provides both audit and non-audit services. In contrast, our study takes the perspective of an accounting group, where audit services are provided by one member firm, and non-audit services are offered by other affiliate member firms within the same group. Our perspective has significant practical importance because most accounting practices operate as groups, with separate firms handling different service lines. The group structure is more prevalent than the single multidisciplinary firm model, making our approach particularly relevant to understanding how audit quality is affected by ownership arrangements within accounting groups.

We caution that our findings are restricted to non-Big Four audit firms in China. Most public companies in China are audited by non-Big Four firms (e.g., Lennox and Wu 2022b), so the lack of ownership data for the Big Four firms does not have a large effect on our sample size. Nevertheless, we acknowledge that our findings for China's non-Big Four firms may not generalize to Big Four firms or to other countries.

2. Prior literature and hypotheses development

2.1. Audit quality and non-audit fees

Since 2002, most countries have imposed restrictions on the types of non-audit services that auditors can provide to public companies. The primary justification for the restrictions is the potential threat to auditor independence posed by non-audit fees. However, not all parties supported the regulatory restrictions. Critics argued that audit quality can benefit from knowledge spillovers when clients receive non-audit and audit services from the same provider.

The prior literature provides mixed evidence regarding the impact of non-audit services on audit quality. Some studies find that audit quality – either actual or perceived - is lower when non-audit fees are higher (Frankel et al. 2002; Ferguson et al. 2004; Francis and Ke 2006; Schmidt 2012; Causholli et al. 2014). Conversely, other studies find positive associations between audit quality and non-audit fees, particularly for tax-related services (Gleason and Mills 2011; Paterson and Valencia 2011; Koh et al. 2013). In addition, many studies report insignificant associations between non-audit fees and alternative measures of audit quality (Craswell et al. 2002; DeFond et al. 2002; Ashbaugh et al. 2003; Chung and Kallapur 2003; Ruddock et al. 2006; Lennox 2016).[3]

2.2. Challenges in enforcement

Although there are regulatory restrictions on non-audit services, there are significant challenges in enforcing the rules. First, it is sometimes unclear whether a specific service falls within the scope of prohibited non-audit work. For instance, in a 2019 enforcement action, the SEC found

[3] The evidence varies according to the type of non-audit service, the empirical measures of audit quality, or the type of client examined. Kinney et al. (2004) find insignificant associations between accounting restatements and non-audit fees for services related to financial information systems and internal audits, but a positive association for unspecified non-audit services and a significant negative association for tax services. Larcker and Richardson (2004) find a significant positive association between the absolute value of accruals and the ratio of non-audit fees to total fees, but significant negative relations between absolute accruals and the levels of audit and non-audit fees. Bell et al. (2015) report that the associations between internal assessments of audit quality and non-audit fees are positive for SEC registrants but negative for private clients.

that a PwC partner had worked on a client's software applications after characterizing the work as audit-related. The SEC disagreed, concluding that portions of the work constituted prohibited non-audit services (SEC 2019), rather than being entirely audit-related. A second key challenge is that regulators must assess the economic substance of the relationship between the provider and the recipient of the non-audit service. This can be complicated when the recipient is not a direct audit client but is instead a related entity with ownership ties to the audit client. Similar complications arise when the non-audit service is delivered by a legally separate firm that shares ownership ties with the client's audit firm. According to SEC staff, such cases often involve complex ownership structures that make it difficult to determine whether the service provider is affiliated with the client's audit firm (Munter 2022). Third, the restrictions on non-audit services have limited scope because they only apply to current audit clients - not former audit clients. Many accounting practices receive significant non-audit revenues from former audit clients (Competition & Markets Authority 2019). Regulators are concerned that the potential to sell future non-audit services to current audit clients after the engagement is terminated could impair auditor independence.

Enforcing the restrictions on non-audit services becomes particularly difficult when audit partners hold ownership stakes in the group's non-audit businesses. Due to the subjectivity in evaluating whether a specific service is audit or non-audit, partners with financial interests in non-audit revenues may be more inclined to argue that a service is audit-related or that the recipient is not technically an audit client - positions that would allow the service to be provided under regulatory rules. Furthermore, the potential to earn future non-audit revenues may compromise the independence of audit partners with financial interests in the non-audit business. These partners have a greater incentive to maintain favorable relationships with audit clients in the hope of securing non-audit engagements once the audit ends. In contrast, partners without

ownership in the non-audit businesses do not share in those future profits and are therefore less likely to face this independence threat.

Citing such concerns, regulators have called for a complete separation of the audit and non-audit businesses within accounting groups (Freedman 2019). An additional driver of the recent regulatory impetus is the substantial growth in accounting groups' non-audit businesses over the past two decades (Donelson et al. 2020; Hunton Andrews Kurth 2024). Regulators worry that as non-audit services become a larger share of group revenues, the overall culture within accounting groups may shift toward serving client management's preferences rather than prioritizing the public interest. Such a shift could undermine auditor independence and compromise the integrity of the audit function.

2.3. Audit quality and aggregate non-audit fees

Two studies investigate whether audit quality is impaired when non-audit services account for a larger share of aggregate revenues. However, they reach different conclusions. Lisic et al. (2019) analyze the relationship between accounting misstatements and the proportion of an audit firm's total revenues derived from consulting. In tests of the post-Sarbanes-Oxley period, they find no significant relationship between audit quality and consulting revenues. In contrast, Beardsley et al. (2021) report that accounting misstatements are positively associated with the proportion of non-audit revenues at the audit office level, suggesting that greater local dependence on non-audit services may impair audit quality.

The different conclusions of Lisic et al. (2019) and Beardsley et al. (2021) may stem from how each study measures its key variables. One important difference is that Lisic et al. (2019) focus on consulting revenues at the audit firm level, whereas Beardsley et al. (2021) examine non-audit revenues at the individual audit office level. A second, and arguably more critical,

difference lies in the source of the non-audit revenues: Lisic et al. (2019) include revenues from both audit and non-audit clients, whereas Beardsley et al. (2021) restrict their analysis to non-audit revenues from audit clients. This difference is particularly important because most non-audit services are sold to non-audit clients rather than audit clients (Donelson et al. 2020). Thus, the two studies are capturing fundamentally different economic exposures.

Our study differs from the above research by focusing on the ownership of non-audit businesses rather than the aggregate level of non-audit revenues. Nevertheless, we control for aggregate non-audit revenues in our regressions to ensure that our findings reflect the impact of ownership structures rather than non-audit revenues. The distinction between ownership and revenues is important because a partner has a direct financial interest in the profits from non-audit services if the partner has an ownership stake in the group's non-audit businesses. A partner has no direct financial interest in the group's non-audit services if the partner has no ownership stake in the non-audit businesses. Moreover, a partner is only connected to a *specific* non-audit service if the partner's client receives the service, whereas a partner is economically bonded to *all* the group's non-audit businesses when the partner has ownership stakes in them.

2.4. Hypotheses development

In a typical accounting group, one member firm provides audit services while other member firms provide non-audit services (e.g., management consulting, tax). The group structure generally has three types of owners: 1) audit partners who own shares only in the audit business, 2) audit partners who own shares in both the audit and non-audit businesses, and 3) non-audit shareholders who own shares only in the non-audit businesses. For notational brevity, we refer to these three owner types as: 1) audit-only (i.e., "AO"), 2) audit-plus-non-audit (i.e., "A&N"), and 3) non-audit-only (i.e., "NAO").

Our first hypothesis (H1) examines whether audit quality differs between AO partners and A&N partners. Specifically, we test whether audit quality is lower when the lead audit engagement partner holds a larger ownership stake in the group's non-audit businesses. Our second hypothesis (H2) investigates whether audit quality varies with the aggregate ownership of the entire audit partnership in the non-audit businesses – that is, whether the non-audit businesses are primarily owned by A&N partners or NAO shareholders.

2.4.1. AO partners versus A&N partners (H1)

A&N partners are incentivized to maximize the value of the entire accounting group because they hold ownership stakes in both the audit and non-audit businesses. In contrast, AO partners are focused solely on the audit business because they do not own shares in the non-audit businesses. As a result, A&N and AO partners have different incentives that are likely to impact audit quality. AO partners are less likely to compromise audit quality to promote or cross-sell non-audit services because they do not have a direct financial stake in the non-audit businesses. Their exclusive focus on auditing means they are less likely to be distracted by commercial opportunities in non-audit services. In contrast, A&N partners have an incentive to keep audit clients happy in order to cross-sell non-audit services to them.[4] The financial incentives to cross-sell non-audit services are greater when A&N partners hold larger stakes in the group's non-audit businesses. Based on this reasoning, we propose the following hypothesis:

> **H1.** *Audit quality is lower when the audit engagement partner holds a larger ownership stake in the group's non-audit businesses.*

There are a couple of reasons why H1 may not hold. First, audit partners with larger

[4] As discussed in Section 2.2, there are significant challenges in enforcing the regulatory restrictions on non-audit services. These challenges may motivate A&N partners to classify prohibited non-audit services as permissible, thereby increasing the risk to audit quality.

ownership stakes in the non-audit businesses may be more economically independent from their audit clients. This increased independence could reduce the likelihood of compromising audit quality. Second, partners with ownership in the non-audit businesses may possess deeper knowledge of their audit clients, thanks to potential knowledge spillovers between non-audit services and auditing. This enhanced understanding could improve audit quality, as the A&N partners may be better equipped to identify risks or potential misstatements.

2.4.2. Aggregate ownership of the non-audit businesses (H2)

Next, we consider whether audit quality is impacted when the audit partnership as a collective body holds a larger aggregate ownership stake in the group's non-audit businesses. Specifically, we examine whether audit quality depends on whether the non-audit businesses are primarily owned by the audit partnership (i.e., A&N partners) or non-audit shareholders (e.g., management consultants and tax partners).

Our test of H2 focuses on the aggregate ownership of all audit partners in the non-audit businesses, whereas H1 focuses on the ownership of the client's individual audit engagement partner in the non-audit businesses. The ownership of the entire partnership could have an incremental effect on audit quality (H2), above and beyond the ownership of an individual engagement partner (H1), because it is the partnership as a collective body that shapes the ethical culture and policies of the group's audit practice (Shafer 2008; Aobdia 2020). When the partnership emphasizes the cross-selling of non-audit services, this message can permeate the entire culture of the audit business, weakening ethical norms and potentially compromising independence. Thus, regulators have called for a complete separation of the audit and non-audit businesses (e.g., European Commission 2010; Dutch Authority for the Financial Markets 2018; Dancey 2018; Competition & Markets Authority 2019; Davies 2020). Based on this regulatory

perspective, our second hypothesis posits a negative relationship between audit quality and the aggregate ownership of audit partners in the group's non-audit businesses:

> **H2.** *Audit quality is negatively (positively) related to the aggregate ownership stakes of audit partners (non-audit shareholders) in the non-audit businesses.*

However, contrary to H2, one could also argue that audit quality may be lower when NAO shareholders hold larger aggregate ownership stakes in the non-audit businesses. NAO shareholders may compete with audit partners for internal resources, potentially diverting the group's focus from auditing to non-audit services. Furthermore, the influence of NAO shareholders could shift the group's overall orientation towards serving the interests of client management, rather than prioritizing the public interest. This could lead to compromised audit quality as the group's broader financial goals take precedence over maintaining audit independence. In line with this alternative perspective, the SEC has raised concerns that audit quality might decline if audit partners sell their ownership stakes in the non-audit businesses to NAO shareholders (Munter 2022).

3. The research setting and design

3.1. Institutional setting

In August 2010, China's Ministry of Finance (MOF) announced that public company audit firms must re-organize as limited liability partnerships (LLPs) instead of being corporations. The intention of the LLP mandate was to improve audit quality and increase the size of China's audit firms.[5] Audit firms complied with the mandate by becoming LLPs in the years 2011 to 2013. The

[5] The LLP mandate was introduced for several reasons. First, the profit-sharing arrangements of partnerships are more conducive to service quality than the separation of ownership and control that exists in corporations (Levin and Tadelis 2005). Accordingly, the MOF believed that audit quality would improve if every audit firm were required to become an LLP instead of being a corporation. Second, the LLP

non-audit businesses continued to operate as corporations rather than as LLPs, creating a dual structure within accounting groups. Thus, audit services are always provided by an LLP firm, while other member firms (structured as corporations) offer non-audit services such as consulting and tax services. This dual structure means that some audit partners have ownership stakes in the non-audit businesses, potentially influencing their behavior and audit decisions.

[INSERT FIGURE 1 HERE]

Figure 1 illustrates the typical ownership structure of an accounting group, which comprises three types of owners. The audit business is owned by both AO partners and A&N partners. While AO partners own shares exclusively in the audit business, A&N partners own shares in both the audit business and at least one non-audit business within the same group. The non-audit businesses are jointly owned by A&N partners and NAO shareholders. A&N partners own shares in the audit and non-audit businesses, whereas NAO shareholders own shares exclusively in the non-audit businesses.

3.2. Identifying the non-audit businesses of each group

To identify the non-audit businesses of each group, we begin by consulting the group's official website for details about its organizational structure and non-audit businesses. We then search the websites of two official data providers (Tianyancha.com and Qcc.com) using the group's brand name together with terms related to the different types of non-audit services offered. Tianyancha.com and Qcc.com provide comprehensive shareholder information, including the

organizational form does not limit the liability of individual partners whereas the corporate form does. The MOF wanted to increase the legal liability of audit partners to increase their incentives for audit quality. Finally, corporate shareholders are subject to double taxation (at the individual level and firm level) whereas LLP shareholders are subject to taxation at the individual level only. The government believed the tax savings under the LLP organizational form would provide audit firms with more funds to grow their operations.

names and shareholdings of individuals associated with each member firm. Additionally, these platforms reveal each shareholder's affiliations with other businesses and the registered addresses of those businesses. As a supplemental procedure, we examine the businesses linked to each shareholder to identify any additional non-audit businesses. Furthermore, we collect the registered addresses of each audit firm and non-audit business and use Tianyancha.com and Qcc.com to identify additional non-audit businesses sharing the same brand name as the audit firm. These procedures enable us to compile a comprehensive list of non-audit businesses for each group. Finally, we verify that at least one individual shareholder has ownership ties to both the audit business and one or more of the group's non-audit businesses, ensuring the presence of at least one A&N partner in each group.

3.3. An illustrative example

Group ownership structures are often more intricate than the simplified example presented in Figure 1, due to the presence of multiple non-audit businesses organized under a parent firm at the top of the group pyramid. In such a structure, one member firm may have full or partial ownership of another member firm within the same group.

Figure 2 illustrates this complexity using an example from our sample, anonymized as XYZ Group. According to its website, XYZ Group has four lines of business: 1) audit and assurance, 2) management consulting, 3) project management, and 4) taxation services. In compliance with the LLP mandate, the group established XYZ CPAs LLP in 2012 as its sole provider of audit and assurance services. The parent entity, XYZ Group, is registered as an investment management company. The group has four non-audit businesses: Beijing XYZ Strategic Managerial Consulting LLC and XYZ Managerial Consulting LLC (management consulting), XYZ Project Management LLC (project management), and XYZ Taxation LLC

(taxation services). Additionally, the parent firm provides business management, financial, and investment consulting services.

The parent firm, XYZ Group, has nine individual shareholders, all of whom also hold equity in the audit firm, XYZ CPAs LLP. Beijing XYZ Strategic Managerial Consulting LLC has three shareholders, all of whom are also equity partners in the audit firm. XYZ Managerial Consulting LLC has two shareholders, both holding equity in the audit firm. XYZ Project Management LLC has seven shareholders, three of whom hold equity in the audit firm, while the remaining four are non-audit shareholders. XYZ Taxation LLC has three shareholders, including two equity partners from the audit firm and one non-audit shareholder. In total, the audit firm has over 50 equity partners, 14 of whom hold ownership stakes in at least one non-audit business (i.e., A&N partners). The remaining audit partners hold no ownership stakes in the parent firm or other non-audit entities (i.e., AO partners).

[INSERT FIGURE 2 HERE]

3.4. Research design

We test our hypotheses with the following model:

$$LnADJMAG = \beta_0 + \beta_1 LnNonauditOwn + \beta_2 LnAuditOwn + \beta_3 LnAggANOwn + CONTROLS + FE_{IND}/FE_{COM} + FE_{AUDITFIRM} + FE_{YEAR} + u \quad (1)$$

The dependent variable measures the magnitude of the audit adjustments to earnings during the year-end audit (*LnADJMAG*).[6]

We test H1 using the *NonauditOwn* variable, which captures the lead engagement partner's ownership stake in the group's non-audit businesses.[7] As outlined in Section 3.3, most

[6] Results are similar when we apply rank transformations to the raw values of audit adjustments (*Rank(ADJMAG)*).

[7] In China, audit reports typically disclose the names of two signing auditors: the lead engagement auditor

groups operate multiple non-audit businesses. Accordingly, we calculate the engagement partner's weighted ownership stake across all non-audit businesses, where the weights are based on each entity's proportion of the group's total registered share capital. Specifically, *NonauditOwn* is calculated as the sum of the audit partner's ownership stake in each non-audit firm, weighted by that firm's registered capital divided by the group's total share capital (i.e., the sum of the audit firm's share capital and the aggregate capital of all non-audit entities). [8] See Appendix A for additional details of how we calculate the *NonauditOwn* variable.

Following Lennox et al. (2020), eq. (1) uses a logarithmic transformation of the adjustment and ownership variables (*LnADJMAG* and *LnNonauditOwn*) to reduce the influence of skewness and outliers in the raw data. The logarithmic specification also facilitates an economic interpretation of the estimated coefficients. In particular, the *LnNonauditOwn* coefficient shows the percentage change in audit adjustments when there is a one percent change in an audit partner's ownership stake in the group's non-audit businesses.

Eq. (1) includes a control for the lead audit partner's ownership stake in the audit firm (*LnAuditOwn*). In line with the definition of *NonauditOwn*, the *AuditOwn* variable is calculated as the audit partner's ownership stake in the audit business divided by the group's total share capital. Based on the findings of Lennox et al. (2020), we anticipate that the coefficients on *LnAuditOwn* to be either statistically insignificant or weakly negative.

The independent variable used to test H2 captures the aggregate ownership of the entire audit partnership in the group's non-audit businesses (*AggANOwn*). We construct *AggANOwn*

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and a junior engagement auditor. Similar to Lennox et al. (2020), 89.5% of lead engagement auditors own equity in the audit firm whereas only 13.0% of junior engagement auditors own equity. Moreover, 20.4% of lead engagement auditors own equity in the non-audit businesses whereas only 2.8% of junior engagement auditors own equity in the non-audit businesses. Our results remain robust when we use the combined ownership of the lead and junior engagement auditors.

[8] Our main results are robust when the denominator is measured using the group's total non-audit share capital rather than the group's total share capital.

by aggregating the weighted ownership stakes in each non-audit business across all audit partners in a given audit firm-year. To isolate the effect of aggregate ownership and avoid confounding the test of H2 with the test of H1, we exclude the audit engagement partner's ownership stake from this calculation. Consistent with the treatment of other ownership variables, we apply a logarithmic transformation to *AggANOwn*, resulting in the variable *LnAggANOwn*.

Consistent with prior literature, we control for a range of time-varying client and audit engagement characteristics that may influence audit quality (Lennox et al. 2014, 2020, 2023; Lisic et al. 2019). Specifically, we include controls for client size (*LnTA*), the ratio of non-audit service revenues to total revenues (*NAS%*), organizational complexity (*LnSUBS*), financial leverage (*LEV*), losses (*LOSS*), state ownership (*SOE*), board independence (*INDDIRP*), audit firm changes (*SWITCH*), audit firm tenure (*TENURE*), the lead auditor's public company audit experience (*LnAUDEXP*), and audit firm mergers (*MERGER*).[9] Leadership roles may influence audit quality, as suggested by Anding et al. (2024). To account for this, we include *AUDLEADER*, an indicator variable equal to one if the lead auditor holds a national leadership position, and zero otherwise.[10] Our baseline specification includes industry, audit firm, and year fixed effects. In alternative (and more stringent) specifications, we replace industry fixed effects with company fixed effects to control for time-invariant client characteristics, and we add audit partner fixed effects to control for time-invariant partner characteristics. Standard errors are clustered at the client company level.

[9] Following He et al. (2022), we identify audit firm mergers from information provided by the Chinese Institute of Certified Public Accountants, audit firms' official websites, and leading financial newspapers. We identify 33 audit firm mergers during our sample period, among which 20 are between the CSRC-registered audit firms, and 13 are between a CSRC-registered audit firm and a non-CSRC-registered audit firm.

[10] We use proprietary data from the CSRC to identify whether a signatory auditor belongs to the audit firm's national leadership team.

4. Sample and descriptive statistics

4.1. Sample

Our sample begins in the year each accounting group complies with the government's mandate to restructure its audit business as an LLP; i.e., between 2011 and 2013. The sample ends in 2021, the final year for which audit adjustments data are available to us. Panel A of Table 1 outlines the sample selection process. In total, 41 accounting practices are licensed by the China Securities Regulatory Commission (CSRC) to conduct public company audits. We exclude Big Four firms because their ownership structures are not observable in publicly available data. This exclusion results in a final sample of 37 accounting practices.

[INSERT TABLE 1 HERE]

During the sample period, 36 out of 37 accounting practices operated at least one non-audit business that is legally distinct from their audit business. As a result, multidisciplinary accounting groups are prevalent (36/37), with single multidisciplinary firms being relatively rare (1/37).[11] In total, there are 861 non-audit businesses across 339 group-years. As detailed in Panel B of Table 1, the average group has 3.54 businesses, including 1.00 audit business, 1.40 consulting businesses, 0.44 taxation businesses, and 0.70 businesses providing other non-audit services, such as project management and asset appraisal.

4.2. Descriptive statistics on ownership

Table 2 presents descriptive statistics on the ownership structures of the accounting groups. As noted earlier, there are two types of audit partners: A&N partners and AO partners. Panel A reveals that the mean (median) number of A&N partners is 14.53 (13.00), with the mean (median)

[11] For expositional convenience, we use the term 'accounting group' to describe any accounting practice, regardless of whether it operates as a group or a single multidisciplinary firm.

ownership of an A&N partner in the audit business being 3.08% (2.80%). In comparison, the mean (median) number of AO shareholders is 65.12 (44.00), with the mean (median) ownership of an AO partner in the audit business being 1.47% (1.22%).

Recall that there are two types of owners in non-audit firms: A&N partners and NAO shareholders. Panel B of Table 2 shows that the mean (median) number of A&N shareholders is 14.53 (13.00), with the mean (median) ownership of an A&N partner in the non-audit businesses being 6.65% (4.21%). In contrast, the mean (median) number of NAO shareholders is 15.95 (9.00), with the mean (median) ownership of an NAO shareholder in the non-audit businesses being 4.56% (2.53%).

[INSERT TABLE 2 HERE]

4.3. Descriptive statistics for the sample of audit engagements

Panel A of Table 3 shows that, after merging the CSMAR and MOF databases, there are 19,100 public company audit engagements. We exclude 1,105 observations due to inconsistencies between the CSMAR and MOF databases in calculating year-end audit adjustments. Additionally, we drop 214 observations from the financial sector and 343 observations with missing data. As a result, we are left with a final sample of 17,438 audit engagements across 3,836 unique companies.

Panel B presents the descriptive statistics. Audit adjustments are observed in 55.1% of audits. On average, a partner holds 0.631% of shares in the audit firm (*AuditOwn*), compared to 0.194% of the shares in the non-audit businesses (*NonauditOwn*). The mean (median) aggregate ownership stakes of other audit partners in the non-audit businesses (*AggANOwn*) are 21.073% (20.641%).

Panel C presents a correlation matrix for the variables in eq. (1). Audit adjustments (*LnADJMAG*) do not show a significant correlation with audit partner ownership in the non-audit

businesses (*LnNonauditOwn*). However, this univariate correlation is strongly influenced by the confounding effects of audit firm size (Lennox et al. 2020). Specifically, smaller audit firms have more audit adjustments because their clients are riskier while smaller audit firms also have larger ownership stakes because they have fewer partners.[12] To isolate the true correlation between audit adjustments and ownership, we calculate a standardized version of *LnADJMAG* by subtracting the median adjustment for each audit firm-year. Panel C shows that the standardized *LnADJMAG* variable is negatively correlated with *LnNonauditOwn*, providing preliminary support for H1. The evidence is also consistent with H2 as *LnADJMAG* is significantly and negatively correlated with the aggregate ownership of audit partners in the non-audit businesses (*LnAggANOwn*).

[INSERT TABLE 3 HERE]

Notably, Panel C reveals that leaders of accounting groups (*AUDLEADER*) tend to hold larger ownership stakes in both the group's audit business (*LnAuditOwn*) and non-audit businesses (*LnNonauditOwn*). In contrast, the correlations between the ownership variables and state-owned enterprise (*SOE*) clients are near zero, suggesting no significant relationship between ownership stakes and SOE client engagements.

5. Results

5.1. Main regression results for eq. (1)

Col. (1) of Table 4 presents the OLS regression results for eq. (1), controlling for industry fixed effects, audit firm fixed effects, and year fixed effects. Consistent with H1, the coefficient on *LnNonauditOwn* is significant and negative (t-stat. = –4.11). Col. (2) presents the regression results

[12] In an untabulated regression, we find that small audit firms have significantly more audit adjustments and the A&N partners in these firms have significantly larger ownership stakes in the non-audit businesses.

after controlling for company fixed effects, audit firm fixed effects, and year fixed effects. Once again, the coefficient on *LnNonauditOwn* is significant and negative (t-stat. = –3.08). These results suggest that audit adjustments are significantly smaller when the engagement partner holds a larger ownership stake in the group's non-audit businesses. Consistent with H2, the coefficients on *LnAggANOwn* are negative and significant (t-stats. = –5.80, –5.64). Therefore, audit adjustments are significantly smaller when other audit partners have larger aggregate ownership stakes in the non-audit businesses. In terms of economic significance, audit adjustments decrease by 9.98% when the lead partner's ownership of the non-audit businesses (*NonauditOwn*) increases from zero to the sample's non-zero mean (0.953%) in Col. (1). Furthermore, audit adjustments decrease by 29.12% when the aggregate ownership of audit partners in the non-audit businesses (*AggANOwn*) increases from zero to the sample's non-zero mean (21.21%), or by 5.15% when *AggANOwn* increases by one standard deviation. These results for H1 and H2 support the concerns raised by European regulators that audit quality may be impaired when audit partners hold larger stakes in the non-audit businesses.

Consistent with prior literature, the coefficients on *LnAuditOwn* are negative and either insignificant or weakly significant (Lennox et al. 2020). We also find some evidence suggesting that audit adjustments are smaller when non-audit services constitute a higher proportion of total revenues (*NAS%*) (Beardsley et al. 2023). Our significant findings for *LnNonauditOwn* (H1) and *LnAggANOwn* (H2) underscore the *incremental* impact of audit partners' ownership stakes in the non-audit businesses. Regarding other control variables, we find that auditors make larger adjustments for initial audit engagements and for clients experiencing losses. Additionally, audit adjustments are significantly larger when partners possess more experience or have longer tenure with the client.

Audit partners are endogenously matched to clients, which raises concerns about

potential partner-client matching biases. While we already control for company fixed effects in Col. (2) of Table 4, we further address this concern by employing entropy balancing. For the entropy balancing analysis, we use all the independent variables (excluding the three ownership variables) as covariates. Untabulated results from OLS regressions with entropy balancing show that the coefficients on *LnNonauditOwn* remain negative and statistically significant (t-stats. = –4.00, –3.04), while the coefficients on *LnAggANOwn* remain negative and statistically significant (t-stats. = –3.20, –4.05). These findings confirm that our H1 and H2 results are robust to both entropy balancing and the inclusion of company fixed effects.

[INSERT TABLE 4 HERE]

5.2. Income-decreasing versus income-increasing audit adjustments

Clients typically exhibit greater resistance to audit adjustments that reduce reported earnings rather than to those adjustments that increase them. As a result, the threats to auditor independence associated with non-audit services are likely to be more pronounced in the case of downward (income-decreasing) adjustments. Accordingly, we expect the effects documented in H1 and H2 to be stronger for income-decreasing audit adjustments.

We re-estimate eq. (1) by separately examining between income-decreasing audit adjustments ($LnADJMAG_{DN}$) and income-increasing audit adjustments ($LnADJMAG_{UP}$). Table 5 shows that the coefficients on *LnNonauditOwn* are significantly negative when the dependent variable captures downward adjustments (t-stats. = –3.44, –3.23) but are statistically insignificant for upward audit adjustments (t-stats. = –1.52, 0.18). A formal test confirms that the *LnNonauditOwn* coefficients are significantly different between income-decreasing and income-increasing adjustments (Chi^2 =4.76, 6.91). The coefficients on *LnAggANOwn* are significantly negative for both downward and upward adjustments (t-stats. = –4.28, –3.83, –3.43, –3.04), but

the effects are significantly stronger for downward adjustments (Chi^2 = 3.55, 1.84). These results indicate that the effects predicted by H1 and H2 are more pronounced when audit adjustments reduce reported earnings, consistent with greater client resistance and heightened threats to auditor independence in such cases.

[INSERT TABLE 5 HERE]

5.3. Relative ownership stakes in the non-audit and audit businesses

Threats to auditor independence are likely to be greater when the partner holds a relatively large ownership stake in the non-audit business and a relatively small ownership stake in the audit business because the partner is then motivated to focus more on selling non-audit services than audit quality. In this section, we therefore examine whether audit adjustments are affected by the partner's relative ownership stake in the non-audit businesses. The relative ownership variable, *RelNonauditOwn,* is defined as the ratio of a partner's ownership in the non-audit businesses to their total ownership across both audit and non-audit businesses, calculated as *NonauditOwn / (AuditOwn + NonauditOwn).*

Table 6 shows that the coefficients on *RelNonauditOwn* are negative and highly significant (t-stats. = –3.90, –2.99), indicating that audit adjustments are significantly smaller when the partner's ownership stake in the non-audit business represents a larger proportion of their total ownership. This finding reinforces our inference from H1, suggesting that the relative concentration of ownership in non-audit businesses impairs audit quality. Consistent with the results in Table 5, the coefficients on *RelNonauditOwn* are significantly negative when the dependent variable captures income-decreasing audit adjustments ($LnADJMAG_{DN}$), while the coefficients are insignificant for income-increasing audit adjustments ($LnADJMAG_{UP}$).

[INSERT TABLE 6 HERE]

5.4. Audit partner fixed effects

Endogeneity poses a potential concern because audit partners are not randomly assigned to companies. For instance, if partners with larger ownership stakes, who are more senior people in the audit business, are matched with less risky clients that require smaller audit adjustments, then the observed associations may reflect endogenous matching rather than the causal effects of ownership. In our main analyses, we mitigate this concern by controlling for observable client characteristics and by employing entropy balancing to match the clients of A&N and AO partners. In addition, we include company fixed effects to control for time-invariant company characteristics and audit firm fixed effects to account for unobserved time-invariant audit firm attributes. In this section, we extend our identification strategy by including partner fixed effects to control for unobserved, time-invariant characteristics specific to individual auditors (e.g., their ability, intelligence, etc.).

A potential drawback of including audit partner fixed effects is that individual partners' ownership stakes in the group's businesses are generally persistent over time. As a result, there is limited within-partner variation in ownership, which reduces the identifying variation available in models that include partner fixed effects.[13] Most engagement partners maintain a consistent ownership status throughout the sample period, remaining either A&N partners or AO partners without switching. As shown in Panel A of Table 7, 266 partners are consistently classified as A&N partners and 2,292 as AO partners across all years in the sample, whereas only 177 partners change their ownership status during the period.

[13] Following the recommendation of Breuer and deHaan (2024), we evaluate the amount of variation in ownership within each partner by regressing the *LnNonauditOwn* variable on the audit partner fixed effects. The adjusted R^2 from this regression is 82.2%, implying that audit partner fixed effects absorb much of the variation in the *LnNonauditOwn* variable.

Panel B of Table 7 shows that the majority of companies are audited exclusively by either A&N partners (284 companies) or AO partners (2,301 companies) throughout the sample period. However, 1,251 companies experience changes in partner type, either due to partner rotations or shifts in the partner's ownership status. Panel C of Table 7 further indicates that ownership in the non-audit businesses is not entirely static: 1,209 audit engagements involve increases in the lead auditor's ownership stake in the non-audit businesses, while 2,069 engagements involve decreases. These statistics suggest sufficient within-company and within-partner variation, supporting the inclusion of both audit partner fixed effects and company fixed effects in the same regression specification.

Panel D of Table 7 reports the regression results after adding the partner fixed effects. Consistent with H1, the coefficients on *LnNonauditOwn* remain negative and statistically significant (t-stats. = –2.39, –2.65), with the effects predominantly driven by income-decreasing audit adjustments rather than income-increasing adjustments. In line with earlier findings for H2, the coefficients on *LnAggANOwn* continue to be negative and highly significant after controlling for partner fixed effects (t-stats. = –3.97, –3.47), and the results remain significant for both types of audit adjustments. These findings suggest that the results are robust to the inclusion of audit partner fixed effects, in addition to company and audit firm fixed effects. Overall, the evidence supports the conclusion that audit quality is impaired when audit partners hold larger equity stakes in their group's non-audit businesses.

[INSERT TABLE 7 HERE]

5.5. Public company A&N partners versus non-public company A&N partners

Our H2 tests show that audit adjustments are smaller when non-audit businesses are primarily owned by audit partners rather than non-audit shareholders. In this section, we investigate

whether this effect varies depending on whether the A&N partners audit public companies or just non-public entities. We expect the H2 effects to be stronger for A&N partners who audit public companies rather than A&N partners who do not audit public companies because the former would have a bigger effect on the quality of public company audits. To test this, we partition the aggregate non-audit ownership variable (*LnAggANOwn*) into two components: A&N partners who audit public companies ($LnAggANOwn_{PubPTN}$) and A&N partners who do not audit public companies ($LnAggANOwn_{NonpubPTN}$).[14]

The results are presented in Table 8. Consistent with H2, we find that audit adjustments are significantly smaller when the aggregate ownership of A&N partners who audit public companies ($LnAggANOwn_{PubPTN}$) is larger (t-stats. = –8.35, –7.46). In contrast, the coefficients for A&N partners who do not conduct public company audits ($LnAggANOwn_{NonpubPTN}$) are statistically insignificant (t-stats. = –0.64, –0.53). Furthermore, the coefficients on $LnAggANOwn_{PubPTN}$ (–0.153, –0.144) are significantly more negative than those on $LnAggANOwn_{NonpubPTN}$ (–0.014, –0.011), with F-statistics of 18.25 and 14.63, respectively. These findings indicate that our H2 results are primarily driven by the ownership stakes of audit partners who are actively involved in public company audits.[15]

[INSERT TABLE 8 HERE]

5.6. The different types of non-audit services

Some non-audit services, such as management consulting, are generally perceived as more

[14] Untabulated descriptive statistics suggest that the aggregate ownership of public company audit partners ($AggANOwn_{PubPTN}$) averages 6.966%, which is approximately half the aggregate ownership held by audit partners who do not audit public companies ($AggANOwn_{NonpubPTN}$), at 14.107%. This suggests that audit partners who do not audit public companies tend to have larger ownership stakes in the non-audit businesses compared to those partners who are involved in public company audits.

[15] By definition, all the lead partners in our sample are public company auditors. Therefore, it would not be possible to measure the *LnNonauditOwn* variable for lead partners who do not audit public companies.

profitable than others, such as tax. Therefore, we explore the effects of different types of non-audit services. Specifically, we partition the *LnNonauditOwn* variable into three categories: consulting, taxation and other services, creating the variables $LnNonauditOwn_{Consulting}$, $LnNonauditOwn_{Taxation}$, and $LnNonauditOwn_{Other}$. Similarly, we partition the aggregate non-audit ownership variable (*LnAggANOwn*) into the same three types of non-audit services: $LnAggANOwn_{Consulting}$, $LnAggANOwn_{Taxation}$, and $LnAggANOwn_{Other}$.[16]

The results are reported in Table 9. Audit adjustments are significantly smaller when audit partners have larger ownership stakes in consulting businesses ($LnNonauditOwn_{Consulting}$; t-stats. = –3.13, –2.32). In contrast, the results for taxation and other non-audit businesses are relatively weak. Furthermore, downward audit adjustments are significantly smaller for audit partners with larger ownership stakes in consulting ($LnNonauditOwn_{Consulting}$; t-stats. = –2.56, –2.42). However, the results for upward adjustments and the other two types of non-audit services are generally insignificant. Overall, these findings suggest that our H1 results are mainly driven by audit partners' financial interests in highly profitable non-audit businesses.

Consistent with H2, we find that audit adjustments are significantly smaller when the non-audit businesses are primarily owned by audit partners ($LnAggANOwn_{Consulting}$, t-stats. = –5.33, –4.80; $LnAggANOwn_{Taxation}$, t-stats. = –1.85, –2.75; $LnAggANOwn_{Otherg}$, t-stats. = –2.98, –4.86). As with our previous findings, these results are more pronounced for downward adjustments than upward adjustments.

[INSERT TABLE 9 HERE]

[16] Untabulated descriptive statistics show that the lead audit partner's ownership of the consulting ($NonauditOwn_{Consulting}$), taxation ($NonauditOwn_{Taxation}$), and other non-audit businesses ($NonauditOwn_{Other}$) are 0.121%, 0.038%, and 0.035%, respectively. The aggregate ownership percentages of audit partners in consulting ($AggANOwn_{Consulting}$), taxation ($AggANOwn_{Taxation}$), and other non-audit businesses ($AggANOwn_{Other}$) are 13.708%, 4.627%, and 2.738%, respectively. Therefore, A&N partners have larger ownership stakes in consulting than in tax or other types of non-audit businesses.

5.7. Accounting misstatements

Our study follows prior research by using audit adjustments as the primary measure of audit quality (Choudhary et al. 2022; Dekeyser et al. 2024; He et al. 2018; Hu et al. 2023; Lennox et al. 2014, 2018, 2020, 2023; Lennox and Wu, 2022a; Li et al. 2020). Our results show that audit adjustments are significantly larger when audit partners own fewer shares in the group's non-audit businesses. The purpose of an adjustment is to prevent a misstatement in the audited financial statements. Consequently, it is possible that there is no significant difference in material misstatements between partners who own fewer or more shares in the non-audit businesses. However, some studies use material misstatements, rather than audit adjustments, as a measure of audit quality. To further assess the robustness of our findings, we examine whether the results for H1 and H2 hold when using misstatements as the audit quality measure.

Our misstatement variable (*MISSTATE*) equals one if there is a misstatement in an audited financial statement line item that results in a subsequent restatement or regulatory enforcement action (zero otherwise). Data on restatements and enforcement actions are collected from the CSMAR and WIND databases and the CSRC official website. The incidence of accounting misstatements in our sample is 7.63%, which is comparable to the 6.83% misstatement rate in He et al. (2022). In untabulated regressions, we find significant positive coefficients on *LnNonauditOwn* and *RelNonauditOwn*, suggesting a higher incidence of accounting misstatements when the lead audit partner owns more shares in the group's non-audit businesses. The coefficients on *LnAggANOwn* are statistically insignificant in the full sample. However, in the sub-sample of observations without audit adjustments (i.e., *ADJMAG* = 0), the coefficients on *LnAggANOwn* are positive and statistically significant at either the 5% or 10% significance levels. Taken together, these results suggest that the impairment to audit quality arising from A&N

partners' ownership stakes in the group's non-audit businesses has material negative consequences for financial reporting quality.

6. Conclusion

Regulators have imposed significant restrictions on non-audit services. The popular press (and some academic articles) often state that these restrictions apply to the provision of non-audit services by "audit firms". However, non-audit services are typically provided by non-audit firms that belong to the same group as the audit firm but operate as separate legal entities. Our study is the first to recognize that non-audit and audit firms are typically organized within groups rather than as single multidisciplinary firms. It is also the first to evaluate the impact of these ownership structures on audit quality.

The distinction between groups and single multidisciplinary firms is crucial because, in a group structure, some audit partners do not have ownership stakes in the group's non-audit businesses, whereas in a multidisciplinary firm, all audit partners are eligible to enjoy profits from both the audit and non-audit services.

We find that audit adjustments are significantly smaller when the lead audit engagement partner has a larger ownership stake in the group's non-audit businesses. In addition, audit adjustments are significantly smaller when audit partners own a larger aggregate stake in the non-audit businesses. These results suggest that audit quality suffers when audit partners have financial interests in their group's non-audit businesses.

Our findings contribute to the ongoing regulatory debate regarding whether audit and non-audit businesses should be completely separated (European Commission 2010; Dutch Authority for the Financial Markets 2018; Competition & Markets Authority 2019; Munter 2022; Hunton Andrews Kurth 2024). However, we refrain from making definitive policy

recommendations because a complete separation could have unintended consequences. For instance, it could potentially reduce the quality of individuals that enter the audit profession (Pandey et al. 2025). Additionally, separating the audit and non-audit businesses could affect the level of competition in the markets for both services. Nevertheless, our study highlights a challenging gray area in enforcing the restrictions on non-audit services, and we believe these challenges merit further deliberation and regulatory scrutiny.

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Appendix A

Calculation of the *NonauditOwn* Variable

In a pyramidal structure, an individual shareholder can hold both direct and indirect ownership interests in member firms. However, in our sample, corporate shareholdings (where one member firm owns another member firm) are relatively rare. Thus, individual shareholders are predominant in our sample (N = 806, or 93.6% of 861 non-audit business-years).[17] Therefore, as a typical example, we begin by illustrating the calculation of *NonauditOwn* when all the group's businesses are owned by individual shareholders.

Suppose an accounting group consists of a parent firm, an audit firm, a consulting firm, and a tax firm, where the parent firm, consulting firm, and tax firm provide the group's non-audit services. The share capital of the parent firm is $9 million, the share capital of the audit firm is $10 million, the share capital of the consulting firm is $5 million, and the share capital of the tax firm is $6 million, implying that the group's total share capital is $30 million (= 9 + 10 + 5 + 6). Suppose individual A (an A&N partner) owns 10% of the parent firm, 5% of the audit firm, 2% of the consulting firm and 1% of the tax firm. Thus, in this situation, *NonauditOwn* for individual A is calculated as the sum of her weighted direct ownership in the parent firm (i.e., 10% × 9/30), plus her weighted direct ownership in the consulting firm (i.e., 2% × 5/30), plus her weighted direct ownership in the tax firm (i.e., 1% × 6/30). Overall, individual A has a value of 3.533% for the *NonauditOwn* variable.[18]

[17] The parent firm always has a 0% ownership stake in the audit firm because, under the LLP mandate, the audit firm partnership is fully owned by individual partners.

[18] When the denominator is measured using the group's total non-audit share capital ($20 million) instead of the group's total share capital ($30 million), the value of *NonauditOwn* for individual A is the sum of her weighted direct ownership in the parent firm (i.e., 10% × 9/20), plus her weighted direct ownership in the consulting firm (i.e., 2% × 5/20), plus her weighted direct ownership in the tax firm (i.e., 1% × 6/20). Thus, in this case, the value of *NonauditOwn* for individual A is 5.3%.

In a few cases (N = 55, or 6.4% of 861 non-audit business-years), the non-audit businesses have corporate shareholders. In such cases, we net off the share capital of the non-audit businesses held by other member firms of the same group to avoid double counting the direct and indirect share interests of individual shareholders. For example, take the hypothetical case of the previous paragraph, but now assume that the parent firm has an 80% stake in the consulting firm and a 20% stake in the tax firm. Because 80% (20%) of profits earned by the consulting (tax) firm are attributable to the parent, we make sure not to double count individual A's profit share in both the parent and consulting (tax) firms. Thus, we calculate the group's total share capital as \$24.8 million (= 9 + 10 + 5 × (1 – 80%) + 6 × (1 – 20%)), and calculate the value of *NonauditOwn* for individual A as the sum of her weighted direct ownership in the parent firm (i.e., 10% × 9/24.8), plus her weighted direct ownership in the consulting firm (i.e., 2% × 5/24.8), plus her weighted direct ownership in the tax firm (i.e., 1% × 6/24.8). Thus, in this situation, individual A has a value of 4.27% for the *NonauditOwn* variable. The value for *NonauditOwn* is larger in this example (4.27%) compared to the example in the previous paragraph (3.533%) because A has indirect ownership stakes in the consulting and tax firms, due to A owning equity in the parent firm and the parent firm owning equity in the consulting and tax firms.

Appendix B

Variable Definitions

Variable		Definition
Ownership variables		
NonauditOwn	=	The lead audit partner's weighted ownership stake in the group's non-audit businesses. We calculate *NonauditOwn* as the sum of the lead partner's ownership stake in each of the group's non-audit businesses × the registered capital of each non-audit business / Registered capital of the entire group. If a group has more than one non-audit business, the partner's ownership in the non-audit firm is weighted by its relative size in the group (in terms of its registered share capital).
LnNonauditOwn	=	The natural logarithm of (one plus) *NonauditOwn*.
AuditOwn	=	The lead audit partner's weighted ownership stake in the group's audit business. We calculate *AuditOwn* as the lead partner's ownership stake in the audit business × the registered capital of the audit business / Registered capital of the entire group.
LnAuditOwn	=	The natural logarithm of (one plus) *AuditOwn*.
AggANOwn	=	The aggregate ownership of audit partners in the non-audit businesses. We calculate *AggANOwn* as the sum of the weighted ownership stakes of all audit partners (except for the lead audit partner) within a given audit firm-year.
LnAggANOwn	=	The natural logarithm of (one plus) *AggANOwn*.
RelNonauditOwn	=	*NonauditOwn* / (*NonauditOwn* + *AuditOwn*).
$AggANOwn_{PubPTN}$	=	The aggregate ownership of public company audit partners (except for the lead audit partner) in the non-audit businesses.
$LnAggANOwn_{PubPTN}$	=	The natural logarithm of (one plus) $AggANOwn_{PubPTN}$.
$AggANOwn_{NonpubPTN}$	=	The aggregate ownership of non-public company audit partners in the non-audit businesses.
$LnAggANOwn_{NonpubPTN}$	=	The natural logarithm of (one plus) $AggANOwn_{NonpubPTN}$.
$NonauditOwn_{Consulting}$	=	The sum of the lead audit partner's ownership stake in each of the group's consulting businesses × the registered capital of each consulting business / Registered capital of the entire group.
$LnNonauditOwn_{Consulting}$	=	The natural logarithm of (one plus) $NonauditOwn_{Consulting}$.
$NonauditOwn_{Taxation}$	=	The sum of the lead audit partner's ownership stake in the group's taxation business × the registered capital of taxation business / Registered capital of the entire group.
$LnNonauditOwn_{Taxation}$	=	The natural logarithm of (one plus) $NonauditOwn_{Taxation}$.
$NonauditOwn_{Other}$	=	The sum of the lead audit partner's ownership stake in each of the group's non-audit businesses (other than consulting and taxation) × the registered capital of each non-audit business / Registered capital of the entire group.
$LnNonauditOwn_{Other}$	=	The natural logarithm of (one plus) $NonauditOwn_{Other}$.
$AggANOwn_{Consulting}$	=	The aggregate ownership of audit partners (except for the lead audit partner) in the consulting businesses.
$LnAggANOwn_{Consulting}$	=	The natural logarithm of (one plus) $AggANOwn_{Consulting}$.

$AggANOwn_{Taxation}$	=	The aggregate ownership of audit partners (except for the lead audit partner) in the taxation business.
$LnAggANOwn_{Taxation}$	=	The natural logarithm of (one plus) $AggANOwn_{Taxation}$.
$AggANOwn_{Other}$	=	The aggregate ownership of audit partners (except for the lead audit partner) in non-audit businesses other than consulting and taxation.
$LnAggANOwn_{Other}$	=	The natural logarithm of (one plus) $AggANOwn_{Other}$.

Audit adjustment and accounting misstatement variables

E_{PRE}	=	Pre-audit annual earnings.
E_{AUD}	=	Audited annual earnings.
ADJMAG	=	The absolute magnitude of the audit adjustment (i.e., $\mid E_{PRE} - E_{AUD} \mid / \mid E_{PRE} \mid$).
LnADJMAG	=	Natural log of (one plus) *ADJMAG*.
RANK(ADJMAG)	=	The ranked value of *ADJMAG*. Specifically, when *ADJMAG* has *N* non-zero observations in year *t*, we first replace each observation with its corresponding rank (from $j = 1, ..., N$ in ascending order) and the rank *j* assigned to each observation is then divided by *N*+1. When *ADJMAG* has zero-value observations, we code *Rank(ADJMAG)* as zero.
$LnADJMAG_{DN}$	=	A continuous variable equal to the original value of *LnADJMAG* if the audit adjustment is income-decreasing, and zero otherwise.
$LnADJMAG_{UP}$	=	A continuous variable equal to the original value of *LnADJMAG* if the audit adjustment is income-increasing, and zero otherwise.
MISSTATE	=	Indicator variable equal to one if there is a misstatement in an audited financial statement line item that results in a subsequent restatement or regulatory enforcement action, and zero otherwise.

Control variables

NAS%	=	The ratio of an audit firm's annual revenues from nonaudit services to its total annual revenues.
LnTA	=	Natural log of the company's total assets.
LnSUBS	=	Natural log of (one plus) the number of subsidiaries.
LEV	=	Ratio of total liabilities to total assets.
LOSS	=	Indicator variable equal to one if the company reports a net loss, and zero otherwise.
SOE	=	Indicator variable equal to one if the company's ultimate owner is the government or a state-owned entity, and zero otherwise.
INDDIRP	=	The fraction of independent directors on the board of directors.
SWITCH	=	Indicator variable equal to one if the company switches to a different audit firm in the year, and zero otherwise.
TENURE	=	Length of tenure between the audit firm and client (measured in years).
MERGER	=	Indicator variable equal to one if the audit firm merges or acquires another audit firm, and zero otherwise.

LnAUDEXP	=	Natural log of (one plus) *EXP*, where *EXP* is the total number of public company audits conducted before the current year by the lead auditor.
AUDLEADER	=	Indicator variable equal to one if the lead signatory auditor has a national leadership role at their firm, and zero otherwise.
Audit sanction variable (used in Table 10)		
AUDSANC	=	Indicator variable equal to one if the auditor is subject to a regulatory enforcement action in the current year or a previous year, and zero otherwise.

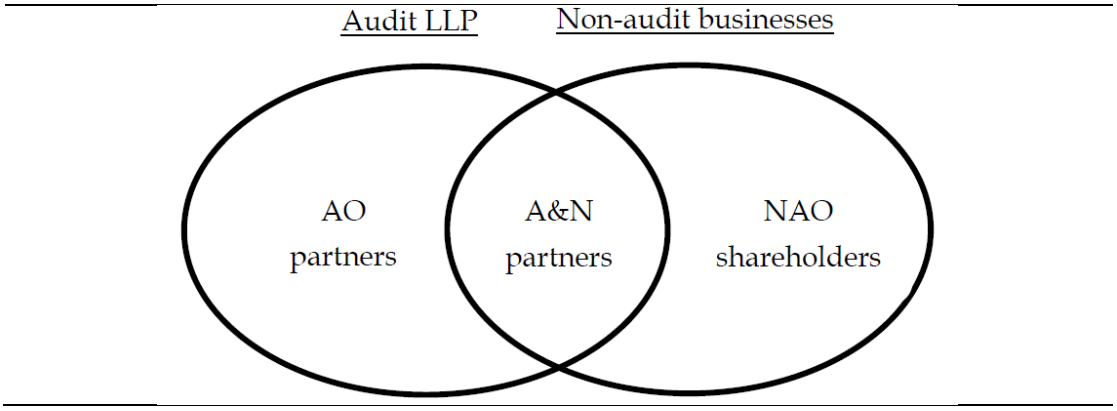


Figure 1. The ownership structure of an accounting group

Definitions:
A&N partner = a partner who owns shares in the group's audit business and one or more non-audit businesses.
AO partner = a partner who owns shares in the group's audit business but not any non-audit businesses.
NAO shareholder = a shareholder who owns shares in one or more of the group's non-audit businesses but not the group's audit business.

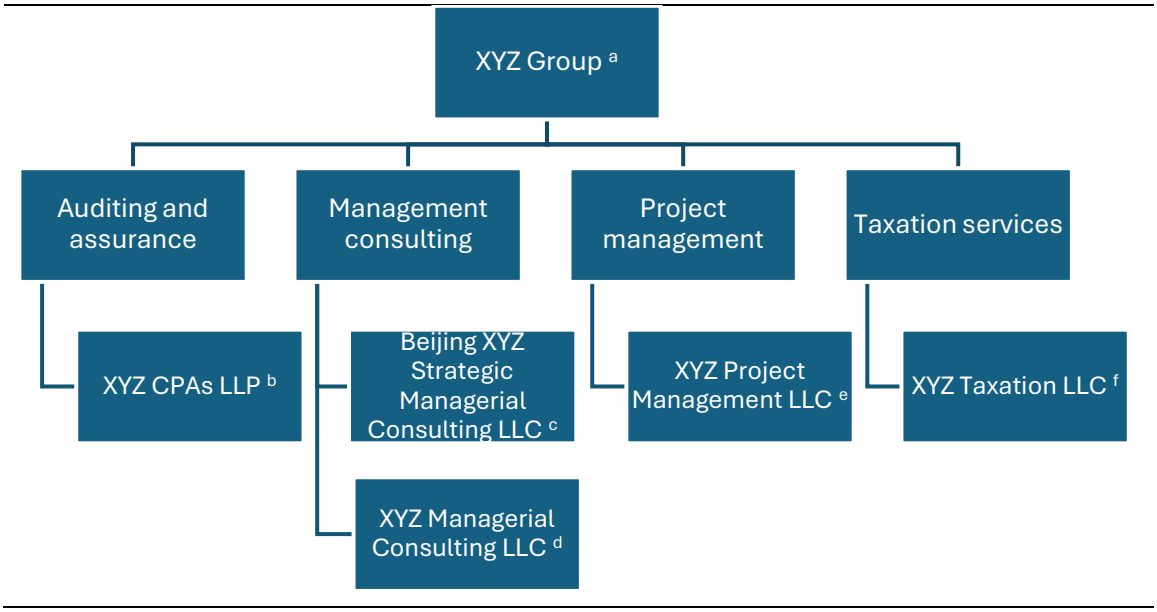


Figure 2. Example of an accounting group ownership structure: The XYZ Group

All the information and data in this example are based on a real professional services group in the year of LLP formation (2012), but we anonymize the group's identity using the name XYZ.

a. The parent firm (XYZ Group) has nine shareholders, all of whom are equity partners in the audit firm.

b. The audit firm (XYZ CPAs LLP) has over 50 equity partners.

c. Beijing XYZ Strategic Managerial Consulting LLC has three shareholders, all of whom are equity partners in the audit firm.

d. XYZ Managerial Consulting LLC has two shareholders, both of whom are equity partners in the audit firm.

e. XYZ Project Management LLC has seven shareholders, three of whom are equity partners in the audit firm.

f. XYZ Taxation LLC has three shareholders, two of whom are equity partners in the audit firm.

Table 1
Accounting practice structures

Panel A: Accounting practices

	Number
Practices that are licensed to audit public companies	41
Less: Four practices whose shareholders are registered in jurisdictions that do not disclose shareholder identities (Deloitte, EY, KPMG, and PwC)	(4)
Sample accounting practices	37

Panel B: Lines of business in the 37 accounting practices (N = 339 accounting practice-year observations)

	Total number	Average number per year (= Total number/339)
Auditing and assurance	339	1.00
Non-audit businesses		
Management consulting	476	1.40
Taxation	149	0.44
Others	236	0.70
Subtotal	861	2.54
Total	1,200	3.54

"Others" include non-audit services such as project appraisal and asset valuation.

Table 2
Ownership arrangements

Panel A: Ownership of the audit business

Accounting practice-year level statistics	Mean	Median
Total number of A&N partners in the audit business	14.53	13.00
Total number of AO partners in the audit business	65.12	44.00
A&N partner's average shareholding in the audit business	3.08%	2.80%
AO partner's average shareholding in the audit business	1.47%	1.22%
A&N partners' aggregate shareholdings in the audit businesses	36.52%	31.02%
AO partners' aggregate shareholdings in the audit businesses	63.48%	68.98%

Panel B: Ownership of the non-audit businesses

Accounting practice-year level statistics	Mean	Median
Total number of A&N partners in the non-audit businesses	14.53	13.00
Total number of NAO shareholders in the non-audit businesses	15.95	9.00
A&N partner's average shareholding in the non-audit businesses	6.65%	4.21%
NAO shareholder's average shareholding in the non-audit businesses	4.56%	2.53%
A&N partners' aggregate shareholdings in the non-audit businesses	57.29%	59.10%
NAO shareholders' aggregate shareholdings in the non-audit businesses	42.71%	40.90%

Definitions:
A&N partner = a partner who owns shares in the group's audit and non-audit businesses.
AO partner = a partner who owns shares in the group's audit business but not its non-audit businesses.
NAO shareholder = a shareholder who owns shares in the group's non-audit businesses but not its audit business.

Table 3
Descriptive statistics for the sample of audit engagements

Panel A: Sample audit engagements

	Company-year observations
Initial sample of audit engagements	19,100
Less: Observations with inconsistencies between the CSMAR and MOF databases	(1,105)
Less: Observations in the financial industry	(214)
Less: Observations with missing data	(343)
Final sample of audit engagements	17,438

Panel B: Descriptive statistics (N = 17,438*)*

Variables	Mean	SD	P10	P50	P90
ADJDUM	0.551	0.497	0.000	1.000	1.000
ADJMAG	7.418	24.922	0.000	0.226	15.812
LnADJMAG	0.921	1.247	0.000	0.203	2.822
NonauditOwn	0.194	1.205	0.000	0.000	0.328
LnNonauditOwn	0.094	0.294	0.000	0.000	0.283
AuditOwn	0.631	0.834	0.000	0.338	1.702
LnAuditOwn	0.410	0.361	0.000	0.291	0.994
AggANOwn	21.073	13.467	6.344	20.641	36.155
LnAggANOwn	2.859	0.790	1.994	3.075	3.615
NAS%	0.133	0.069	0.049	0.126	0.231
LnTA	22.014	1.267	20.577	21.871	23.690
LnSUBS	2.488	0.998	1.386	2.485	3.761
LEV	0.421	0.216	0.143	0.406	0.722
LOSS	0.115	0.319	0.000	0.000	1.000
SOE	0.330	0.470	0.000	0.000	1.000
INDDIRP	0.376	0.055	0.333	0.364	0.429
SWITCH	0.108	0.311	0.000	0.000	1.000
TENURE	7.334	5.399	1.000	6.000	15.000
MERGER	0.095	0.294	0.000	0.000	0.000
LnAUDEXP	2.829	1.095	1.099	3.045	4.060
AUDLEADER	0.130	0.337	0.000	0.000	1.000

Table 3 (Cont'd)
Descriptive statistics for the sample of audit engagements

Panel C: Correlation analysis (N = 17,438)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1)	*LnADJMAG*	1.00																
(2)	*LnADJMAG (standardized)*	**0.91**	1.00															
(3)	*LnNonauditOwn*	0.01	**–0.04**	1.00														
(4)	*LnAuditOwn*	**0.06**	**–0.03**	**0.41**	1.00													
(5)	*LnAggANOwn*	**–0.10**	0.01	**0.09**	**–0.20**	1.00												
(6)	*NAS%*	**–0.11**	**0.05**	0.00	**0.05**	**–0.06**	1.00											
(7)	*LnTA*	**–0.09**	**–0.07**	0.01	**–0.02**	**–0.02**	**0.03**	1.00										
(8)	*LnSUBS*	0.01	**0.03**	–0.01	–0.01	**–0.04**	0.02	**0.61**	1.00									
(9)	*LEV*	**0.04**	**0.06**	0.00	0.02	–0.02	**0.06**	**0.46**	**0.36**	1.00								
(10)	*LOSS*	**0.12**	**0.14**	–0.01	0.01	**–0.03**	**0.03**	**–0.05**	**0.03**	**0.25**	1.00							
(11)	*SOE*	**–0.10**	**–0.06**	**0.03**	0.02	**0.02**	**0.14**	**0.35**	**0.10**	**0.28**	**0.04**	1.00						
(12)	*INDDIRP*	**0.03**	**0.04**	**–0.02**	0.00	0.00	–0.01	**–0.02**	**0.02**	–0.01	**0.03**	**–0.07**	1.00					
(13)	*SWITCH*	0.00	**0.03**	**–0.05**	**–0.09**	**0.02**	**0.03**	0.01	–0.01	**0.05**	**0.04**	**0.07**	–0.01	1.00				
(14)	*TENURE*	**0.06**	**–**0.01	**0.11**	**0.17**	**–0.07**	**–0.08**	**0.10**	**0.14**	**0.04**	0.00	**0.04**	**–0.02**	**–0.39**	1.00			
(15)	*MERGER*	**0.02**	**0.02**	0.01	**–0.03**	**0.10**	**–0.04**	**–0.05**	**–0.10**	**0.03**	–0.01	**0.06**	**–0.04**	**0.22**	**–0.13**	1.00		
(16)	*LnAUDEXP*	**0.03**	**–0.02**	**0.18**	**0.28**	–0.01	**–0.09**	**0.02**	**0.03**	**–0.05**	**–0.03**	**–0.06**	–0.01	**–0.19**	**0.24**	**–0.10**	1.00	
(17)	*AUDLEADER*	0.01	0.00	**0.32**	**0.43**	**0.02**	**0.03**	**0.05**	**0.02**	**0.03**	–0.01	**0.04**	–0.01	**–0.04**	**0.06**	**0.02**	**0.21**	1.00

Bold letters denote significance at the 5% level or better (two-tailed).
All variables are defined in Appendix B.

Table 4
OLS regression results

Dependent variable	(1) *LnADJMAG*	(2) *LnADJMAG*
	Coeff. (t-stat.)	Coeff. (t-stat.)
LnNonauditOwn	–0.157***	–0.127***
	(–4.11)	(–3.08)
LnAuditOwn	–0.134***	–0.060
	(–2.64)	(–1.13)
LnAggANOwn	–0.111***	–0.105***
	(–5.80)	(–5.64)
NAS%	–0.363*	–0.279
	(–1.67)	(–1.24)
LnTA	–0.113***	–0.024
	(–7.48)	(–0.71)
LnSUBS	0.113***	0.038
	(6.93)	(1.26)
LEV	0.380***	0.140
	(5.21)	(1.25)
LOSS	0.363***	0.210***
	(8.96)	(4.95)
SOE	–0.188***	0.002
	(–6.30)	(0.02)
INDDIRP	0.717***	0.093
	(3.53)	(0.30)
SWITCH	0.101***	0.108***
	(2.91)	(2.98)
TENURE	0.011***	0.014***
	(4.13)	(2.74)
MERGER	0.124**	0.079
	(2.37)	(1.52)
LnAUDEXP	0.035***	0.027**
	(3.10)	(2.14)
AUDLEADER	–0.005	–0.014
	(–0.12)	(–0.33)
Industry FEs	Yes	No
Company FEs	No	Yes
Audit firm FEs	Yes	Yes
Year FEs	Yes	Yes
Observations	17,438	17,438
Model F-stat.	25.04***	6.72***
Adj. R^2	0.142	0.291

***, **, and * denote significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The t-statistics are based on standard errors clustered on each company. All variables are defined in Appendix B.

Table 5
Income-decreasing *versus* income-increasing audit adjustments

Dependent variable	(1)	(2)	(3)	(4)
	$LnADJMAG_{DN}$		$LnADJMAG_{UP}$	
	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)
LnNonauditOwn	–0.124***	–0.130***	–0.028	0.004
	(–3.44)	(–3.23)	(–1.52)	(0.18)
LnAuditOwn	–0.133***	–0.074	–0.007	0.007
	(–2.82)	(–1.45)	(–0.27)	(0.24)
LnAggANOwn	–0.074***	–0.068***	–0.034***	–0.035***
	(–4.28)	(–3.83)	(–3.43)	(–3.04)
NAS%	–0.256	–0.204	–0.064	–0.045
	(–1.24)	(–0.94)	(–0.57)	(–0.38)
Controls	Yes	Yes	Yes	Yes
Industry FEs	Yes	No	Yes	No
Company FEs	No	Yes	No	Yes
Audit firm FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Observations	17,438	17,438	17,438	17,438
Model F-stat.	21.91***	5.59***	2.92***	1.72**
Adj. R^2	0.111	0.238	0.022	0.067

***, **, and * denote significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The t-statistics are based on standard errors clustered on each company. All variables are defined in Appendix B.

Table 6
Relative importance of an audit partner's ownership stakes in the non-audit and audit businesses

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	*LnADJMAG*		*LnADJMAG$_{DN}$*		*LnADJMAG$_{UP}$*	
	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)
RelNonauditOwn	–0.269***	–0.218***	–0.211***	–0.200***	–0.045	–0.013
	(–3.90)	(–2.99)	(–3.18)	(–2.79)	(–1.38)	(–0.34)
LnAggANOwn	–0.100***	–0.100***	–0.064***	–0.063***	–0.033***	–0.035***
	(–5.35)	(–5.49)	(–3.78)	(–3.60)	(–3.38)	(–3.05)
NAS%	–0.378*	–0.299	–0.270	–0.225	–0.065	–0.044
	(–1.74)	(–1.33)	(–1.30)	(–1.04)	(–0.58)	(–0.37)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	No	Yes	No	Yes	No
Company FEs	No	Yes	No	Yes	No	Yes
Audit firm FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,438	17,438	17,438	17,438	17,438	17,438
Model F-stat.	25.76***	6.99***	22.52***	5.62***	3.06***	1.83**
Adj. R^2	0.142	0.291	0.111	0.238	0.022	0.067

***, **, and * denote significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The t-statistics are based on standard errors clustered on each company. All variables are defined in Appendix B.

Table 7
Controlling for audit partner fixed effects

Panel A: Within partner variation in A&N versus AO status

	# of unique lead audit partners
The auditor changes status from A&N to AO (or vice versa) during the sample period	177
The auditor is an A&N partner in every sample year	266
The auditor is an AO partner in every sample year	2,292
Total	2,735

Panel B: Within company variation in A&N versus AO status

	# of unique companies
The client company rotates between an A&N partner and an AO partner	1,251
The client company is audited by an A&N partner in every sample year	284
The client company is audited by an AO partner in every sample year	2,301
Total	3,836

Panel C: Within-company variation in the lead audit partner's ownership of the group's non-audit businesses

	# of audits
Increases in the lead partner's ownership	1,209
Decreases in the lead partner's ownership	2,069
No changes in the lead partner's ownership	14,160
Total	17,438

Table 7 (Cont'd)
Controlling for audit partner fixed effects

Panel D: Regression results

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	*LnADJMAG*		*LnADJMAG$_{DN}$*		*LnADJMAG$_{UP}$*	
	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)
LnNonauditOwn	–0.172**	–0.168***	–0.117*	–0.133**	–0.038	–0.024
	(–2.39)	(–2.65)	(–1.88)	(–2.23)	(–0.97)	(–0.63)
LnAuditOwn	–0.085	–0.091	–0.036	–0.052	–0.040	–0.032
	(–0.91)	(–0.86)	(–0.42)	(–0.53)	(–0.87)	(–0.61)
LnAggANOwn	–0.089***	–0.077***	–0.043**	–0.039*	–0.041***	–0.035**
	(–3.97)	(–3.47)	(–2.06)	(–1.83)	(–3.31)	(–2.39)
NAS%	–0.060	0.079	–0.033	0.119	–0.021	–0.033
	(–0.25)	(0.31)	(–0.14)	(0.46)	(–0.16)	(–0.24)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	No	Yes	No	Yes	No
Company FEs	No	Yes	No	Yes	No	Yes
Audit partner FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,438	17,438	17,438	17,438	17,438	17,438
Model F-stat.	18.12***	4.50***	15.09***	4.36***	2.31***	0.88
Adj. R^2	0.257	0.329	0.203	0.272	0.059	0.058

***, **, and * denote significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The t-statistics are based on standard errors clustered on each company. All variables are defined in Appendix B.

Table 8
Partitioning the aggregate ownership in non-audit businesses by different types of audit partners (i.e., partners who audit public versus non-public companies)

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	*LnADJMAG*		*LnADJMAG$_{DN}$*		*LnADJMAG$_{UP}$*	
	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)
LnNonauditOwn	–0.169***	–0.133***	–0.131***	–0.132***	–0.033*	0.000
	(–4.44)	(–3.26)	(–3.63)	(–3.30)	(–1.75)	(0.02)
LnAuditOwn	–0.125**	–0.053	–0.130***	–0.072	–0.002	0.012
	(–2.45)	(–0.99)	(–2.75)	(–1.42)	(–0.06)	(0.40)
LnAggANOwn$_{PubPTN}$	–0.153***	–0.144***	–0.102***	–0.091***	–0.045***	–0.047***
	(–8.35)	(–7.46)	(–6.14)	(–5.13)	(–4.92)	(–4.53)
LnAggANOwn$_{NonpubPTN}$	–0.014	–0.011	–0.016	–0.014	0.001	0.001
	(–0.64)	(–0.53)	(–0.84)	(–0.70)	(0.07)	(0.05)
NAS%	–0.168	–0.107	–0.144	–0.108	0.009	0.023
	(–0.77)	(–0.48)	(–0.70)	(–0.50)	(0.08)	(0.19)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	No	Yes	No	Yes	No
Company FEs	No	Yes	No	Yes	No	Yes
Audit firm FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,438	17,438	17,438	17,438	17,438	17,438
Model F-stat.	26.80***	8.59***	22.19***	6.49***	3.51***	2.30***
Adj. R^2	0.145	0.293	0.113	0.239	0.023	0.068

***, **, and * denote significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The t-statistics are based on standard errors clustered on each company. All variables are defined in Appendix B.

Table 9
Partitioning the non-audit businesses by the different types of services (i.e., consulting, taxation, other)

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
	LnADJMAG		*LnADJMAG$_{DN}$*		*LnADJMAG$_{UP}$*	
	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)	Coeff. (t-stat.)
LnNonauditOwn$_{Consulting}$	–0.151***	–0.125**	–0.119**	–0.133**	–0.026	0.009
	(–3.13)	(–2.32)	(–2.56)	(–2.42)	(–0.99)	(0.32)
LnNonauditOwn$_{Taxation}$	–0.088	–0.142*	–0.077	–0.155**	–0.007	0.016
	(–1.20)	(–1.80)	(–1.05)	(–2.01)	(–0.18)	(0.31)
LnNonauditOwn$_{Other}$	–0.175**	–0.069	–0.123*	–0.041	–0.049**	–0.026
	(–2.25)	(–0.79)	(–1.75)	(–0.51)	(–1.96)	(–0.87)
LnAuditOwn	–0.140***	–0.082	–0.141***	–0.092*	–0.004	0.003
	(–2.70)	(–1.54)	(–2.95)	(–1.79)	(–0.18)	(0.11)
LnAggANOwn$_{Consulting}$	–0.088***	–0.078***	–0.062***	–0.054***	–0.024***	–0.022**
	(–5.33)	(–4.80)	(–4.10)	(–3.55)	(–2.88)	(–2.30)
LnAggANOwn$_{Taxation}$	–0.056*	–0.087***	–0.056**	–0.063**	–0.003	–0.025
	(–1.85)	(–2.75)	(–2.02)	(–2.11)	(–0.16)	(–1.40)
LnAggANOwn$_{Other}$	–0.063***	–0.106***	–0.043**	–0.072***	–0.017*	–0.030***
	(–2.98)	(–4.86)	(–2.24)	(–3.64)	(–1.66)	(–2.63)
NAS%	–0.292	–0.174	–0.202	–0.140	–0.046	–0.006
	(–1.33)	(–0.77)	(–0.97)	(–0.64)	(–0.41)	(–0.05)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	No	Yes	No	Yes	No
Company FEs	No	Yes	No	Yes	No	Yes
Audit firm FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,438	17,438	17,438	17,438	17,438	17,438
Model F-stat.	20.01***	6.36***	17.68***	5.15***	2.32***	1.51*
Adj. R^2	0.143	0.292	0.112	0.239	0.022	0.067

***, **, and * denote significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The t-statistics are based on standard errors clustered on each company. All variables are defined in Appendix B.