

# The Effect of the Information Quantity Announcement on Modified Audit Opinion - Evidence from Chinese A-Shares Listed Companies

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## ABSTRACT

*This study examines the effect of information quantity announcement (IQA) on modified audit opinion (MAO). The more frequently the listed companies make announcements, the more issues are disseminated to investors. The auditors who are concerned with the issues may consider issuing a modification opinion. This study also examines whether institutional investors can moderate the impact of IQA on MAO. This study uses multivariate regression on 15,875 year-observations of companies listed in China from 2014 to 2019. This study finds evidence that more information is disseminated to investors, increasing the possibility that the company will receive MAO. The results may indicate that the auditors become more skeptical toward the issues and favor issuing modification opinions consistent with the investors' understanding. The results also show that institutional investors moderate the relationship between IQA and MAO. The findings suggest that the more announcements the company has, the higher the probability of the company being issued with a modified audit opinion. More information indicates that the company may confront many issues that possibly influence the auditor's consideration of their audit opinion. Therefore, policymakers may consider and analyze the advantages or drawbacks of the announcement while setting up the rules and regulations for listed companies in China. Meanwhile, the presence of institutional investors can neutralize the auditors' skepticism toward the issues that were announced. This study is novel and contributes to the literature by examining the effect of IQA on MAO and the moderating role of institutional investors in the context of listed companies in China.*

*Keywords: Information quantity; audit opinion; institutional investor; announcement; China*

## INTRODUCTION

We examine the impact of information quantity announcement (IQA) on an auditor's decision to issue a modified audit opinion (MAO) and whether the presence of institutional investors has any effect on the relationship. In the information-rich capital market, the media and corporate announcement platforms, as the carriers of information dissemination of listed companies, are increasingly eliminating the information barrier between the two parties in the market, playing an increasingly significant role in the capital market (Li & Yang 2015; Li et al. 2018). Among them, media reports transmit facts, behaviors, and other information to the government, enterprises, investors, and other audiences in the form of public reports (Li et al. 2018; Liu & Jiang 2019). In addition, the listed company announcement platform is a platform for companies to release information (Lim & Hui 2006; He et al. 2019). The information comes from the company and is regulated by the China Securities Regulatory Commission and other departments, and it is necessary to disclose important information about the company.

At present, audit failures occur frequently, and auditors are both information providers and information users. So how auditors use the company's published information is an essential topic for scholars to study. Auditors, like other stakeholders, must not only perform the necessary audit procedures but also pay attention to the information released by the enterprise to assess the audit risk of the enterprise (Farinha & Viana 2009; Li & Jiang 2020; Liu & Li 2022). Media reports are tendentious, and company information will be selected according to the public interest, and the degree of media report information varies greatly among different companies (Mutchler et al. 1997; Han et al. 2020). A few prior studies focus on the impact of media reports on auditors' decision-making but limited coverage of the company announcement. For example, they have focused on media reports, especially whether negative reports will harm companies (Mutchler et al. 1997; Lennox 2000; Joe 2003; Burke et al. 2019; Liu & Jiang 2019), and whether the impact of positive reports is weaker than negative reports (Li et al. 2018; Zhu & Li 2017).

This study argues that media reports and company announcements are two important sources for outsiders to obtain corporate information or any issues related to the corporation. Company announcements are another important form of information disclosure, which contains information such as major business changes and regular company reports and is more authoritative. Compared to news, the content is more comprehensive, and the text is more obscure. However, there were limited studies focused on the overall impact of company announcements and media reports on audit decisions (Yao et al. 2019; Han et al. 2020). In addition, to what extent the number or frequency of them reported and announced will affect the issuance of audit opinions is still unclear. Therefore,

this study integrates the two important corporate governance methods of announcement information and news reports and determines to explore the relationship between the number of information announced from the two sources of the company each year (IQA) and modification audit opinions (MAO) issued that year from a quantitative perspective.

Additionally, from the corporate governance perspective, institutional investors may play three roles: "supervisor," "conspirator," and "bystander" (Wang et al. 2020), among which the role of supervisor has been verified the most. For example, Harford et al. (2018) and Garel et al. (2021) found that institutional ownership reduces corporate earnings management activities. McCahery et al. (2016) also pointed out that the exit behavior of institutional investors (voting with their feet) is an effective governance mechanism. In addition, Wang and Wei (2021) have proved that the influence of institutional investors on audit decision-making is mainly due to the role of supervision. Existing literature also shows institutional investors affect audit quality, auditor selection, or audit opinion shopping (Lennox 2000; Joe 2003; Liu & Li 2022). As an important stakeholder, institutional investors are different from ordinary investors because of their professionalism and teamwork and have stronger information analysis capabilities (Garcia-Meca et al. 2017; Wang & Wei 2021). Thus, we raise concern that the presence of institutional investors may affect the process by which auditors make audit opinion decisions based on the number or frequency of company issues announced. There is scarce literature on this research yet. Therefore, this paper aims to investigate whether institutional investors have a moderating effect on the relationship between IQA and MAO.

This study uses Chinese A-shares listed companies in China during the period 2014–2019 and includes 15,875 year-observations. Generally, this study finds strong evidence to show that the quantity of information that was announced affects the auditor's decision to issue a modified audit opinion. This implies that auditors are concerned about the announcement, where more information reported through various mediums may indicate more issues or problems the companies face. Since investors and other stakeholders have acknowledged the issues, the auditor becomes more skeptical in determining their opinion in ensuring its consistency with the investors' understanding. The findings also show that institutional investors can moderate the IQA and MAO relationship, i.e., the presence of institutional investors reduces auditors' potential to issue modification audit opinions even if the companies may frequently announce a high quantity of information.

This study contributes to the literature by expanding past research findings by Lennox (2000), Joe (2003), Yu et al. (2013), and Li and Yang (2015) in several ways. We expand existing literature by examining the overall impact of disclosed information rather than solely focusing on its positive or negative aspects. While prior research has yielded inconsistent findings regarding the effects of positive and negative disclosures from unofficial media sources, we contend that real-world information is multifaceted and extends beyond simple dichotomies like positive or negative type. A single issue may be reported by various media outlets over time, each presenting it with differing tones. Auditors must assess both the sources and the nature of disclosed information comprehensively to formulate appropriate audit opinions. This necessitates auditors to maintain a skeptical and critical mindset, guarding against emotional biases and ensuring accuracy irrespective of the tone of the information.

This study broadens the scope of information sources beyond traditional media, which previous studies solely focused on. It also reinforces the application of agency theory in explaining auditors' role in ensuring trustworthy services amidst low information asymmetry, where many stakeholders are already well-informed. Additionally, it sheds light on stakeholder theory by examining how institutional investors contribute to governance and mitigates the relationship between information quantity announcements (IQA) and modified audit opinions (MAO). The study reveals that auditors become more cautious when assessing numerous information disclosures, perceiving them as higher risk. However, this cautiousness diminishes when auditors engage with institutional investors. Policymakers and regulators should take these findings into account when shaping new policies on the number of frequent information disclosures regarding specific issues. Furthermore, the study delves into auditors' practical behavior when addressing public issues, extending beyond financial matters.

The remainder of the paper is organized as follows: Section 2 discusses related theories, the literature review, and hypotheses development. Section 3 describes the research design, and Section 4 presents the empirical results. Finally, Section 5 discusses the findings and concludes the study.

## LITERATURE REVIEW, THEORY, AND HYPOTHESES DEVELOPMENT

### THEORETICAL FRAMEWORK

Agency theory underscores the vital role of independent auditors in resolving conflicts between agents and principals. It posits that these parties, being independent, can benefit from effective monitoring by auditors. Managers, as agents, are driven to pursue their interests, potentially at the expense of shareholders, resulting from information asymmetry. The auditors' function is to mitigate this by executing specific audit procedures, thereby reducing information asymmetry in agency relationships. Independent auditing serves as a crucial external

governance mechanism for enterprises, effectively addressing agency problems (Jensen & Meckling 1976). Auditors, in providing assurances on corporate financial information through audit reports, inevitably rely on the company's existing information as a reference. Therefore, disclosure of company information across various mediums may signal issues related to agency conflicts. Company announcements and news reports often highlight specific issues to stakeholders before audit reports are issued (Wang & Wei 2021). Auditors, being attentive to such circumstances, may adopt a skeptical stance towards reducing information asymmetry through these disclosures when determining their opinion.

Furthermore, we posit that the involvement of institutional investors in governance facilitates information advantage (Collins et al. 2003). Institutional investors typically hold higher shareholding ratios compared to individual investors, enabling them to exert greater influence through voting (McCahery 2016). Additionally, stakeholders exhibit significant disparities in resource endowments, information access, interests, and societal roles, necessitating cooperation. Consequently, different institutional investors can collaborate by sharing information and taking collective actions (Edmans et al. 2017). They possess robust supervisory capabilities to address any managerial mismanagement issues (McCahery 2016), thereby reducing the necessity for extensive issue disclosures. Aligned with stakeholder theory by Freeman et al. (2004), institutional investors may collaborate to enhance their current status or economic value by influencing auditors' considerations regarding the quantity of disclosed issues. Hence, we contend that institutional investors may impact the relationship between the quantity of information disclosures and audit decisions.

## RESEARCH ON AUDIT OPINIONS

Current auditing standards define audit opinion as the auditor's assessment of whether the financial statements comply with relevant accounting standards and accurately represent the entity's financial position, operating results, and cash flow (Bo & Wu 2011). The audit opinion gives specific evaluation results regarding the audited financial statement, which serves to reduce information asymmetry among stakeholders, including government and enterprises, enhancing external governance effectiveness. The opinion reflects the auditor's stance on the financial statements' reliability (Wang & Li 2016). The type of opinion issued is crucial, serving as a key determinant for users assessing a company's accounting information credibility and regulatory authorities' monitoring capability over listed companies. Consequently, investors and stakeholders rely on audit opinions to form judgments about the company, impacting its stock price and financing prospects (Lu & Tong 2003). Audits, as independent governance mechanisms, verify accounting information quality, with audit opinions serving as vital cues for investment decisions by individual and institutional investors. Therefore, these opinions significantly influence how listed companies manage issues before disclosures.

The Chinese auditing standards recognized four types of audit reports: standard unqualified (unqualified opinions without explanatory paragraphs, emphasized matters paragraphs, or any modifiers), qualified, adverse, and disclaimer of opinion (Zhu & Yu 2003). Despite this, there is inconsistency among Chinese scholars in categorizing audit opinions. In 1999, Li (1999) examined audit opinion information content, identifying seven non-standard categories based on issuance reasons: illegal brokerage business, improper accounting treatment, restricted audit scope, matters affecting accounting statement fairness, continuity from the previous year, mixed type, and emphasized type. Similarly, Lu and Tong (2003) and Zhu and Yu (2003) classified non-standard opinions into five types: unqualified opinions with explanatory paragraphs, qualified opinions with explanatory paragraphs, reservations, refusals, and negative opinions. Recently, Zhu et al. (2019) distinguished between standard and non-standard opinions, including unqualified opinions with emphasis on matter paragraphs, qualified opinions, disclaimers of opinions, non-standard opinions for continuing operations, and non-standard opinions for non-continuing operations.

Past scholars typically categorize audit opinions into two groups: standard and non-standard (Fang et al. 2018; Li et al. 2008; Tang 2008). Some studies classify standard unqualified opinions as "clean" and non-standard unqualified opinions as "unclean" (Meyer et al. 2007). When Yao et al. (2019) explored information disclosure and audit opinions, they adopted this distinction. This article follows the common research design, dividing audit opinions into standard unqualified and non-standard unqualified. The latter can also be termed modification audit opinions (MAOs), serving as a red flag or cautionary signal to financial statement users, indicating the auditor's reservations about the financial information's accuracy or completeness (Khuong et al. 2021).

Several factors influence audit opinions. Prior research indicates that corporate governance is a contributing factor to non-standard audit opinions, with enhancing listed companies' governance structures potentially mitigating this risk and helping reduce the possibility of companies being issued non-standard audit opinions (Farinha & Viana 2009). Companies receiving non-standard audit opinions tend to exhibit poorer profit sustainability compared to those receiving standard unqualified opinions. Audit opinions serve as crucial indicators of a company's profit quality (Zhu et al. 2019). Moreover, studies suggest that listed companies engaging in significant earnings management are more likely to receive non-standard audit opinions. However,

increased audit fees can weaken the link between earnings management and non-standard audit opinions (Gandia & Huguet 2021).

In contrast, Bo and Wu (2011) discovered no significant correlation between a company's earnings management and the likelihood of auditors issuing non-standard opinions. Instead, they found that the company's information risk significantly increases the probability of auditors issuing non-standard opinions. Moreover, Xiao et al. (2020) investigated the impact of audit effort on audit quality and output, revealing no evidence that audit effort influences the issuance of modified audit opinions. Auditors may prioritize information risk over earnings management activities when issuing audit opinions. This study underscores the influence of information risk on audit opinion decisions, highlighting the scarcity of existing evidence and laying the groundwork for examining the relationship between information quantity and audit opinions.

## INFORMATION QUANTITY ANNOUNCEMENTS AND AUDIT OPINION

The agency problem arises primarily from information asymmetry between principals and agents (Jensen & Meckling 1976). Investors rely on company-related information to make judgments. Yet, the impact of market information quantity and abundance on auditors' judgments remains inconclusive. Psychological studies suggest that while information quantity and quality generally have little effect, in certain contexts, the quality of information significantly influences individual feelings of insecurity. For instance, in specific situations, risk perception partially links information quality to individual insecurity (Zhu et al. 2009). Zhong (2012) discovered that information overload increases discrimination, correlating positively with information volume. Additionally, Beretta and Bozzolan (2008) noted that while research often focuses on information disclosure quality, the quantity and frequency of disclosure also hold importance as an indicator that should not be ignored.

In financial management research, Li and Hui (2006) found that listed companies weigh the incremental disclosure costs against reduced risk premiums to determine optimal information disclosure levels. In another study focusing on energy companies' information disclosure, Wang and Su (2020) observed that positive qualitative information was disclosed abundantly, while negative quantitative information was limited in both quantity and quality. Meanwhile, He et al. (2019) found that increased voluntary disclosure of government subsidies led to higher corporate equity capital costs, although this effect was mitigated by institutional investors. They argue that investor information processing costs exacerbate information asymmetry, with different investor types experiencing varying degrees of impact.

Some studies have explored the relationship between information disclosure, audit opinions, and audit quality, with particular focus on public information such as news media reports. Scholars have investigated how media reports influence audit opinions. Yu et al. (2013) conducted the first empirical study in China on how media scrutiny impacts auditors' judgments and opinions. Their findings indicated that an increase in negative media reports on listed companies correlated with a higher likelihood of auditors issuing non-standard audit opinions. This effect was more pronounced in the subsequent year, suggesting that media scrutiny contributes to audit governance. Building on this, Zhang and Lv (2014) identified specific pathways through which media reports influence audit judgments. Li and Yang (2015) observed that media serves as a risk warning, and the combined governance of media attention and independent audits can enhance the transparency of accounting information.

Regarding the influence of media on audit opinions, Zhang and Lv (2014) found that higher media evaluations corresponded to a higher likelihood of companies receiving standard unqualified opinions. Burke et al. (2019) discovered that negative media reports increased the probability of non-standard audit opinions. Zhang and Song (2019) noted that media reports encouraged audit opinion shopping, particularly among companies with higher earnings management and negative news. Meanwhile, Liu and Li (2022) observed that negative media reports had a more significant supervisory effect on companies compared to non-negative reports.

Existing research predominantly focuses on unofficial media information and news, overlooking official sources such as company websites or securities commission announcements accessible to investors. Moreover, most studies concentrate on media attention, types, and the relative impact of media coverage. We contend that the information landscape is intricate, encompassing both negative and non-negative issues. The amalgamation of issue sources and natures may influence auditors' judgments in determining appropriate audit opinions. Align with the agency theory, the more frequently the issues are announced either by the same or various media may indicate potential conflict issue. Since the issues are accessible, the public can assess and interpret the nature, type and either positive or negative perspective, the auditors may tend to issue opinion that consistent with the public expectation. However, conclusive evidence to support our proposition is lacking. Therefore, we propose the first research hypothesis (H1) as below:

H<sub>1</sub> The information quantity announcement (issues) increases the potential of companies to receive the auditor's modification audit opinion.

## RESEARCH ON MODERATING EFFECT OF INSTITUTIONAL INVESTORS

Liu and Jiang (2019) discovered that the adverse impact of negative media reports on non-standard audit opinions can be mitigated through effective governance, with audit quality. Chinese scholars have extensively investigated the corporate governance effects of institutional investors. Previous studies indicate that institutional shareholding can mitigate conflicts between major and small-medium shareholders (Wang & Xiao 2005), bolster board independence (Garcia-Meca et al. 2017), reduce earnings manipulation (Garel et al. 2021), and refine executive compensation contracts (Zhang & Jiang 2010). Generally, literature suggests that institutional investors in China exert specific corporate governance effects. Furthermore, companies with more institutional investors typically attract greater market attention and scrutiny, reducing information asymmetry. Smales (2021) suggests that frequent information disclosures may trigger a negative market response if investors perceive the information as significant, highlighting the dynamic impact of new information on the market.

Aligned with stakeholder theory, we posit that institutional investor ownership influences auditors' responses to corporate information disclosure levels. However, scant evidence exists regarding whether institutional investor ownership mitigates the link between the number of company announcements and the type of audit opinion issued. Given these considerations, auditor judgments may be influenced. To test this hypothesis, we propose H2 as below:

H<sub>2</sub> Institutional investors can moderate the relationship between information quantity announcement and modification audit opinion.

## RESEARCH DESIGN

### DATA AND SAMPLE SELECTION

Our study focuses on a population of Chinese A-share listed companies spanning from 2014 to 2019. This timeframe was chosen due to the maturation and enhancement of China's A-share market, particularly with the introduction of trading systems like stock index futures and margin trading since 2010. Moreover, 2014 and 2015 witnessed a transition from a bull market to a bear market, marked by a surge in company announcements and news reports, prompting increased investor attention towards information releases and enterprise audit opinions. Post-2019, the outbreak of the epidemic significantly altered company information disclosure practices. Hence, utilizing samples from 2014–2019 better captures the impact of information quantity on audit opinions.

Our sample primarily comprises A-share non-financial listed companies, requiring availability of financial and corporate governance data. Following Han et al. (2020), financial institutions and companies with negative net assets per share are excluded. This screening process yields a final sample of 15,875 observations spanning six years, considered sufficiently large to represent the population. To mitigate outlier influence, we conduct winsorization on all continuous variables, trimming data at the top and bottom 1%. Additionally, the study conducts tests using two sub-samples: Big companies (7,899 firm-years) and small companies (7,936 firm-years). Financial and corporate governance data are sourced from the CSMAR database, while information quantity data are retrieved from the Reese database.

### REGRESSION MODEL AND VARIABLES

Based on previous research by Han et al. (2020), we use the following regression model to verify all the hypotheses.

$$MAO = \beta_0 + \beta_1 IQA_{it} + \beta_2 InstInvestor_{it} + \beta_3 IQA_{it} * InstInvestor_{it} + \beta_4 Size_{it} + \beta_5 Leverage_{it} + \beta_6 Recratio_{it} + \beta_7 Liquidity_{it} + \beta_8 EM_{it} + \beta_9 Big4_{it} + \beta_{10} Age_{it} + \beta_{11} SOE_{it} + \beta_{\sum 12} Year_{it} + \beta_{\sum 13} Industry_{it} + \varepsilon_{it} \quad (1)$$

Where, MAO is a modified audit opinion, which is the explained variable in this study. It represents a type of audit opinion other than the standard unqualified opinion issued by the external auditor, such as modified, qualified, adverse, or disclaimer opinions. MAO is measured as a dummy variable, coded as 1 if the companies received a modification of the audit opinion and coded as 0 if they received a standard unqualified opinion (Joe 2003).

The main explanatory variable, Information Quantity (IQA), represents the frequency of news for the particular listed companies reported or announced to the public through specified mediums, including the stock exchange and the company's website. It is measured by the natural logarithm of the total number of issues announced each year. More news reported may indicate more issues about the companies' business operations,

which could influence the auditor's decision in determining their opinion. Considering that the skewness and kurtosis of the IQA for some companies in different years are relatively large, we measured the IQA by taking the natural logarithm (Han et al. 2020).

InstInvestor represents an institutional investor, measured by the percentage of the institutional investor's ownership in the listed companies. Institutional investors have a certain corporate governance effect (Garel et al. 2021) due to their professional judgment and analytical capabilities compared to ordinary investors. Therefore, institutional investors are expected to weaken the relationship between the quantity of information announced and the modification of audit opinions.

In line with prior literature, we include controls for factors influencing audit opinions. Size, Leverage, Recratio, and Liquidity account for company characteristics' differential effects. EM controls for reporting quality differences, Big4 for audit quality variances, Age and SOE for corporate structure variations. Year and Industry are also controlled for the differential effect of company's industry type and observation year. Size is a company size measured by the natural logarithm of each firm's year-end total assets. Dalziel et al. (2011) and Chen (2013) observed positive and negative correlations, respectively, between company size and standard or modification audit opinions. Leverage represents the company's total debt ratio, calculated as total liabilities over total assets. Gul et al. (2013) noted a positive correlation between corporate leverage and non-standard audit opinions issuance. Recratio denotes the accounts receivable asset ratio, computed as accounts receivable over total assets. Gul et al. (2013), Liu and Jiang (2019), and Li et al. (2020) found varying correlations between this ratio and the likelihood of receiving a modification audit opinion.

Liquidity, a key indicator of short-term solvency, is measured by the ratio of current assets to total assets. While some studies find no significant correlation between liquidity and audit opinions (Yu et al. 2013), others suggest a positive link between liquidity and the likelihood of receiving a non-standard audit opinion (MohammadRezaei et al. 2016; Gul et al. 2013). EM represents manipulated accrued surplus profit, measured by the absolute operability accrual surplus profit value. Research by Yu et al. (2013) reveals a negative correlation between discretionary accruals and non-standard audit opinions. The Big 4 auditor is representing high audit quality, is denoted by a dummy variable, coded as 1 for Big 4 audit firms and 0 otherwise. DeAngelo (1981) observed a negative correlation between Big 4 audit firms and modified audit opinions, suggesting that companies audited by the Big 4 are less likely to receive non-standard audit opinions (Hashim et al. 2021).

Age signifies the number of years since the company's establishment, calculated by subtracting the founding year from the current year. Yu et al. (2013) found a positive correlation between a company's establishment years and non-standard audit opinions, while MohammadRezaei et al. (2016) discovered a negative correlation between listing years and such opinions in Iran. SOE is a state-owned enterprise coded as a dummy, and the value is 1 if the company is state-owned; otherwise, the value is 0. State-owned listed companies are less likely to be issued non-standard audit opinions than non-state-owned listed companies (MohammadRezaei et al. 2016). Control variables also include YEAR and Industry to account for differential effects of observation years and industry specifications.

## EMPIRICAL RESULTS

### DESCRIPTIVE ANALYSIS AND MULTICOLLINEARITY

Table 1 shows the descriptive statistics of the variables. Among them, the average value of MAO (modification audit opinion) is 0.04, which shows that only about 4 percent of the observations received a modification of audit opinion, whereas most companies received standard audit opinions. After taking the natural logarithm of the number of issues announced, the average value is 5.12, the minimum value is 2.40, and the maximum value is 8.32, which shows that there are large differences in the amount of information among different companies. The mean value of the proportion of institutional investors is 0.04, indicating that the sample companies have an average institutional shareholding ratio of only 4 percent, with a maximum shareholding is about 27 percent. The descriptive results of control variables were also tabulated in Table 1.

TABLE 1. Descriptive statistics

Variable	N	Mean	Median	Maximum	Minimum	Std. Dev
<i>MAO</i>	15,875	0.04	0.00	1.00	0.00	0.18
<i>IQA</i>	15,875	5.12	5.08	8.32	2.40	1.02
<i>InstInvestor</i>	15,875	0.04	0.02	0.27	0.00	0.05
<i>Size</i>	15,875	22.29	22.13	26.41	19.51	1.28
<i>Leverage</i>	15,875	0.43	0.42	0.93	0.05	0.20
<i>Recratio</i>	15,875	0.13	0.10	0.51	0.00	0.11
<i>Liquidity</i>	15,875	2.29	1.64	17.79	0.25	2.12
<i>EM</i>	15,875	0.06	0.04	0.33	0.00	0.06
<i>Big4</i>	15,875	0.056	0.00	1.00	0.00	0.23
<i>Age</i>	15,875	2.89	2.92	3.55	1.89	0.30
<i>SOE</i>	15,875	0.34	0.00	1.00	0.00	0.47

Table 2 shows Pearson correlation coefficients among the variables. Results indicate a significant negative correlation between institutions and MAO, suggesting that higher institutional investor proportions are associated with lower chances of receiving non-standard audit opinions. MAO also negatively correlates significantly with Size, Liquidity, Big4, and SOE. Furthermore, InstInvestor shows a significant positive correlation with IQA, suggesting that companies with more disclosed information attract institutional investors. Additionally, IQA demonstrates significant positive correlations with Size, Leverage, EM, Big4, and SOE, and negative correlations with Recratio, Liquidity, and Age. Notably, the most substantial correlation observed is -0.65 between Leverage and Liquidity, followed by 0.51 between Size and Leverage. Other correlations are below 0.51, indicating minimal or there is no severe multicollinearity concerns among the variables.

TABLE 2. Pearson correlation matrix

Variable	MAO	IQA	InstInvestor	Size	Lev	Rec	Liq	EM	Big4	Age	SOE
MAO	1.00										
IQA	0.01	1.00									
InstInvestor	-0.08***	0.28***	1.00								
Size	-0.07***	0.42***	0.15***	1.00							
Leverage	0.14***	0.22***	-0.01	0.51***	1.00						
Recratio	-0.00	-0.16***	0.03***	-0.20***	0.02***	1.00					
Liquidity	-0.06***	-0.13***	-0.01	-0.35***	-0.65***	-0.02**	1.00				
EM	0.16***	0.03***	-0.01	-0.07***	0.10***	0.08***	-0.02**	1.00			
Big4	-0.03***	0.22***	0.05***	0.34***	0.11***	-0.08***	-0.08***	-0.05***	1.00		
Age	0.06***	-0.06***	-0.05***	0.14***	0.16***	-0.14***	-0.10***	0.01	0.02***	1.00	
SOE	-0.05***	0.10***	-0.00	0.36***	0.27***	-0.21***	-0.18***	-0.08***	0.13***	0.21***	1.00

Notes: \*\*\*Significant level  $p < 0.01$ , \*\*significant level  $p < 0.05$ , \*significant level  $p < 0.10$ . (two-tailed test)

#### MULTIPLE REGRESSION RESULTS

Table 3 shows the logistic regression results with the pseudo-R<sup>2</sup> value of 0.220, significant at a  $p < 0.01$ . The results show that the coefficient of the core explanatory variable IQA is 0.27 (t-value=3.92), significant at  $p < 0.01$ . The finding shows that the core explanatory variable, IQA, substantially increases the potential of companies to receive a modification of audit opinion. In other words, the more information or issues the company announced influenced the auditor's skepticism and concern about the issues that led to the issuance of a modification of audit opinion. This evidence supports H<sub>1</sub> which is the number of information (issues) announced increases the potential of listed companies to receive modified audit opinion. It can be interpreted that the auditors may become skeptical and perceive that more information was announced, indicating more issues supplied to investors. Thus, the more skeptical auditors may favor issuing modification audit reports. This finding is consistent with Han et al. (2020) that the quantity of information influences stakeholders' decisions.

Table 3 also presents the moderating results for the institutional investors on the relationship between information quantity announcement and modification of audit opinion. The coefficient on IQA\*InstInvestor is -5.70 (t-value= -3.29), significant at a level  $p < 0.01$ . This finding shows that institutional investors significantly negatively moderate the relationship between information quantity announcement and modification of audit reports, which supports hypothesis H<sub>2</sub>. The evidence indicates that the institutional investor can reduce the probability of the companies receiving a modification of audit reports even though more issues were announced to the investors.

Regarding the control variables reported in Table 3, we summarize that Size is negatively correlated with modification audit opinions that indicate larger companies are more likely to be issued standard audit opinions. This finding is consistent with Zhang et al. (2011) and Yu et al. (2013). Recratio is negatively correlated with modification audit opinion, which shows that a larger proportion of accounts receivable assets is less likely to receive modification or qualified audit opinion (Liu & Jiang 2019; Li et al. 2020). The SOE and MAO are negatively correlated, indicating that state-owned enterprises are less likely to be issued modification audit opinions (Yu et al. 2013; MohammadRezaei et al. 2016). We also found that Leverage is positively correlated with modification audit opinions, i.e., the higher leverage increases the possibility of companies being issued with modification audit opinions, consistent with Zhang et al. (2011). EM is positively related to modification audit opinions, where the earnings management activities increase the companies' potential to receive modification audit opinions (Yu et al. 2013). Age is positively related to modification of audit opinion, which is consistent with MohammadRezaei et al. (2016), showing companies with a longer establishment period are more likely to receive clean audit opinions. Meanwhile, we found that Liquidity and Big4 have no significant associations with modification audit opinions.

TABLE 3. Results of Regression Analysis (all companies)

Dependent variable	MAO
Variable	$\beta$ (t-Stat.)
Constant	3.73 (3.19)***
<i>IQA</i>	0.27 (3.92)***
<i>InstInvestor</i>	-9.82 (-6.18)***
<i>IQA*InstInvestor</i>	-5.70 (-3.29)***
<i>Size</i>	-0.59 (-12.18)***
<i>Leverage</i>	4.87 (15.52)***
<i>Recratio</i>	-1.53 (-3.24)***
<i>Liquidity</i>	0.03 (0.66)
<i>EM</i>	6.38 (10.72)***
<i>Big4</i>	-0.21 (-0.69)
<i>Age</i>	0.88 (4.85)**
<i>SOE</i>	-0.68 (-5.67)***
<i>Industry</i>	Yes
<i>Year</i>	Yes
<i>Observations (n)</i>	15,875
pseudo $R^2$	22.0%

Note: The model is regressed by using logistic regression. We report t-statistics based on White's (1980) consistent estimator. \*\*\*significant level  $p < 0.01$ , \*\*significant level  $p < 0.05$ , \*significant level  $p < 0.10$ .(two-tailed test)

## ADDITIONAL ANALYSIS

### DIFFERENTIAL EFFECT BETWEEN LARGE AND SMALL SIZE OF COMPANIES

The test was repeated using two sub-samples categorized by company size: large and small. Company size was determined based on total assets at the beginning of each year, with companies above the yearly median considered large, and the rest considered small. The two sub-samples consisting of 7,899 and 7,936 firm-year observations of large and small companies, respectively. This aimed to explore how the relationship between information quantity announcements and modified audit opinions varies with company size, and whether institutional investors moderate this relationship. We sought to address concerns that quantity or frequency of information announcement might yield different audit opinions based on company size (Han et al. 2020). Large companies perhaps have a solid information foundation and attract significant market attention, potentially leading to a weaker response to changes in information quantity. Conversely, smaller companies attract less market attention. As information volume increases, they may face heightened scrutiny, with auditors becoming more cautious and skeptical about audit risks (Wu et al. 2022; Joe et al. 2003) and favor to issue modification of audit opinions.

TABLE 4. Analysis Results for Large and Small Companies

Sample DV Variable	Large companies	Small companies
	MAO $\beta$ (t-Stat.)	MAO $\beta$ (t-Stat.)
<i>Constant</i>	3.12 (1.23)	6.62 (2.77)***
<i>IQA</i>	0.36 (3.58)***	0.18 (1.75)*
<i>InstInvestor</i>	-14.88 (-4.97)***	-9.93 (-4.79)***
<i>IQA*InstInvestor</i>	-0.64 (-0.25)	-9.55 (-3.97)***
<i>Size</i>	-0.55 (-4.97)***	-0.72 (-7.05)***
<i>Leverage</i>	4.29 (7.34)***	5.26 (13.66)***
<i>Recratio</i>	-1.59 (-2.03)**	-1.12 (-1.83)*
<i>Liquidity</i>	0.01 (0.15)	0.06 (1.59)
<i>EM</i>	5.50 (5.51)***	7.48 (9.61)***
<i>Big4</i>	-0.50 (-1.30)	0.40 (0.73)
<i>Age</i>	0.81 (2.89)***	0.81 (3.34)***
<i>SOE</i>	-0.97 (-5.61)***	-0.37 (-2.15)**
<i>Industry</i>	Yes	Yes
<i>Year</i>	Yes	Yes
<i>Observations (n)</i>	7,899	7,936
pseudo $R^2$	18.2%	26.9%

Note: The model is regressed by using panel logistic regression. We report t-statistics based on White's (1980) consistent estimator. \*\*\*significant level  $p < 0.01$ , \*\*significant level  $p < 0.05$ , \*significant level  $p < 0.10$ .

We posit that institutional investors may wield varying degrees of influence in moderating the relationship between the number of announcements and audit opinions across large and small companies. Institutional investors possess the capability to acquire and analyze information effectively, acting as a supervisory force over auditors (Harford et al. 2018; McCahery et al. 2016). Consequently, large companies, subject to heightened scrutiny from these investors, may prompt auditors to exercise greater caution, leading to a weaker association between information quantity and modified audit opinions. In large companies, where information volume and market attention are substantial, the presence of institutional investors can potentially temper auditors' response to information, diminishing the likelihood of modified audit opinions. Thus, we suggest that institutional investors

can serve as a supervisory mechanism, enhancing auditors' resilience to issues raised by large companies and reducing the incidence of modified audit opinions.

Table 4 presents regression results for large and small companies. In the first column, coefficients for large companies show IQA at 0.27 (t-value= 3.09), significant at  $p < 0.01$ . In the second column, for small companies, IQA coefficient is 0.38 (t-value= 4.70), also significant at  $p < 0.01$ . These results affirm our hypothesis: increased public announcements correlate with higher chances of modified audit opinions, regardless of company size. Notably, the IQA coefficient for small companies surpasses that of large ones, indicating a greater susceptibility to modified opinions with more announcements. Furthermore, the regression reveals a significant interaction term for small companies: IQA\*InstInvestor coefficient stands at -9.55 (t-value= -3.97), significant at  $p < 0.01$ . This suggests that institutional investor holdings effectively mitigate the risk of modified audit opinions stemming from increased public announcements in small companies.

In contrast, the interaction term, IQA\*InstInvestor, is insignificant for large companies, suggesting that institutional investors in this group do not moderate the relationship between information announcements and modified audit opinions. This implies that the moderating effect of institutional investors is exclusive to small companies. One possible explanation could be the relatively low ownership of institutional investors (with a mean ownership of about 4 percent), which may not wield significant influence over major or controlling shareholders regarding public announcements. Additionally, institutional investors may struggle to comprehend the nature of these announcements and may face challenges in persuading other governance stakeholders, particularly auditors, to issue modified audit opinions. Overall, the robustness tests conducted across various dimensions confirm the stability of our conclusions, although these tests' details are omitted due to space constraints.

## DISCUSSION AND CONCLUSION

This study uses the 2014-2019 Chinese A-share listed companies as a sample to examine the impact of the amount of information that was announced to the public on audit opinion, specifically for the modification of audit opinion. We argue that a greater number of the announced information indicates more issues to be disseminated to investors, directly reducing information asymmetry among stakeholders. Since the issues have been leaked to the public, the auditors may become more skeptical in auditing the issues to ensure their opinion would be consistent with the public understanding. The study found that the amount of the announced information is positively associated with modification audit opinion, indicating that auditors are more skeptical towards the more issues that were announced and favor issuing modification of audit opinion. The findings support H1, where the greater number of issues announced requires auditors to play a substantial governance role.

Additionally, this study reveals that institutional investors' shareholding can moderate the link between the quantity and frequency of disclosed information and the modification of audit opinions. This finding supports H2, underscoring institutional investors' role in corporate governance by attenuating the adverse impact of disseminated issues on the issuance of modified opinions. Furthermore, the results indicate that the influence of publicly announced issues on modified opinions is more pronounced in small firms compared to larger ones. The moderating effect of institutional investors is notably effective in mitigating the relationship between the disclosed issues and modified audit opinions in small firms. However, this governance role of institutional investors does not extend to large companies, possibly indicating that their governance and control mechanisms are relatively robust, rendering the influence of institutional investors less apparent.

This study contributes fresh insights into information governance by examining the impact of information quantity announcements on reliability of corporate information disclosure, which proxied by modified audit opinion. It enriches our understanding of this aspect of corporate governance. The findings carry important policy implications. Firstly, while increased information disclosure may alleviate information asymmetry among stakeholders or investors, it can also heighten auditors' scrutiny of announced issues, potentially leading to an increased likelihood of issuing modified audit opinions. Moreover, these effects vary between large and small companies, with a more pronounced impact observed among smaller firms. Typically, small companies attract less market attention. However, as information volume rises, they may face heightened scrutiny, prompting auditors to be more cautious, skeptical and attentive to negative information to mitigate audit risks. In light of these findings, regulators and policymakers should consider encouraging small companies to enhance their information disclosure practices. This can help mitigate information asymmetry and promote greater transparency in the market.

In addition, attach importance to the role of institutional investors in the market, and cultivate and develop institutional investors that are conducive to the healthy development of the capital market. Second, there is a certain complementarity between different corporate governance mechanisms. In strengthening corporate governance, such as the company's information disclosure system, it is also necessary to promote the participation of institutional investors in corporate governance so that the supervisory role of institutional investors and other governance mechanisms form an excellent complementary relationship and enhance the company's value.

This study has several limitations. Firstly, due to the intricate nature of the model and the researchers' limited capacity, conducting a path test to assess the impact of information quantity on non-standard audit opinions was not feasible. Secondly, the study predominantly relies on data from China, which restricts the generalizability of the findings geographically. Thirdly, while the results indicate that institutional investors exert a significant negative moderating influence on small companies but not on large ones, the complexities of the audit opinion decision-making process hinder a direct examination of the reasons for this discrepancy. Furthermore, our regression model only partially controls for corporate governance elements, as most companies comply with the requirements. However, future research could investigate whether slight variations in corporate governance attributes yield different effects. Additionally, due to data limitations, future studies may benefit from conducting matched pair analyses to validate the identified shortcomings post data enrichment. Lastly, while agency theory is typically employed, we suggest that future studies explore alternative theories to forecast auditor judgment more effectively.

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