Audit Committee Financial Expertise, Audit Committee Independence, and Regulatory Oversight on External Auditors

Abstract:

We empirically investigate how regulatory oversight on external auditors is jointly influenced by audit committee financial expertise and independence. To measure regulatory oversight on external auditors, we use comment letters issued by the Securities and Exchange Organization of Iran. We show that audit committee financial expertise increases (decreases) regulatory oversight on external auditors when audit committee independence is low (high). We further show that this interactive effect is stronger under higher regulatory reviewers' workload compression. Collectively, our findings suggest that, first, financial expertise and independence of audit committees should be analyzed together as independence moderates the benefit of financial expertise. Second, the consideration of regulatory reviewers' workload compression is important in this analysis.

Keywords: Audit committee, external auditor, regulatory oversight

JEL: M41, M42, G35

1- Introduction

Litigation risk is a major concern for external auditors (e.g., Kadous, 2000; Anantharaman et al., 2016; Chy and Hope, 2021; Hanlon and Shroff, 2022).[1] In particular, they are exposed to litigation risk if they fail to detect material misstatements. Litigation against external auditors can have extreme consequences such as financial damages, auditor resignation, and regulatory enforcements (e.g., Gomaa et al., 2005; Chy et al., 2021). Prior literature has mainly focused on litigation risk associated with lawsuits (e.g., Kadous, 2000; Backof, 2015; Alderman and Jollineau, 2020), while other types of litigation risk have largely remained unexplored. The present study extends the literature by investigating the impact of regulatory review risk.

Regulators in capital markets conduct regulatory annual reviews and submit comment letters to external auditors in order to improve financial reporting. This process motivates external auditors to more diligently address financial reporting issues, resulting in higher audit quality (Bills et al., 2020). However, this regulatory review process requires substantial time and effort, and may result in negative outcomes such as auditor change or resignation (Baldwin et al., 2013; Bills et al., 2020; Shroff, 2020; Hanlon and Shroff, 2022). Therefore, external auditors attempt to mitigate the likelihood of receiving a comment letter (Cassell et al., 2018). The present study examines whether the likelihood that the external auditor receives a regulatory comment letter (henceforth, CL likelihood) is influenced by audit committee financial expertise and independence.

Theoretically, audit committees are responsible for overseeing and, hence, enhancing financial reporting quality (e.g., Piot and Janin, 2007; Abdullah et al., 2010), safeguarding the independence of external auditors, and protecting them when they issue an unfavorable audit report (Carcello and Neal, 2003). Furthermore, regulators recognize that the effectiveness of

[1] In this paper, the term "external auditors" refers to both audit firms and individual auditors as the separation of regulatory oversight or its determinants and consequences in terms of audit firms and individual auditors is a challenging issue, and not very useful in the context of this paper.

an audit committee, in terms of selecting, monitoring, and evaluating external auditors, mainly depends on the financial expertise and independence of the audit committee members (e.g., Sarbanes-Oxley Act (SOX), 2002; China Securities Regulatory Commission, 2003; Australian Stock Exchange, 2010; Securities and Exchange Organization of Iran (SEO), 2013; National Securities Market Commission of Spain, 2020). Thus, it is generally expected that audit committee characteristics influence CL likelihood.

Nevertheless, prior research has provided mixed evidence on *how* financial expertise affects financial reporting decisions as well as the work of external auditors and, accordingly, CL likelihood. On the one hand, greater financial expertise of audit committees improves corporate reporting as well as the independence and quality of audit (Cohen et al., 2013; Bilal et al., 2018), thereby reducing CL likelihood. On the other hand, greater financial expertise of audit committees may also provide an opportunity for poor corporate reporting and lower audit quality (e.g., DeZoort et al., 2003; Malik, 2014), since audit committees may use their financial expertise to hide misstatements or to avoid proposed adjustments when external auditors detect misstatements (e.g., Albrecht et al., 2018). Relatedly, external auditors may also tend to accept larger abnormal accruals when an audit committee has greater financial expertise (e.g., Menon and Williams 2004). Hence, greater financial expertise of audit committees may increase CL likelihood. Based on these two competing arguments, our paper discusses that regulatory reviewers more positively rely on financial expertise as a signal of high audit quality of external auditors when audit committees have more independence. Therefore, we expect that audit committee independence has a moderating role in the association between audit committee financial expertise and CL likelihood.

Using a sample of 690 Iranian firm-year observations for the period 2011-2020, we find that there is a positive (negative) association between audit committee financial expertise and CL likelihood when audit committee independence is low (high). This indicates that, firstly,

audit committee financial expertise acts as a double-edged sword as it presents an obstacle or opportunity for audit quality, and therefore, higher or lower CL likelihood. Secondly, audit committee independence strongly influences the impact of audit committee financial expertise on CL likelihood. Moreover, our additional analysis reveals that this moderating effect is stronger under a higher level of regulatory reviewers' workload compression.

The present study makes various contributions to the literature. First, it adds to the literature by drawing associations between audit committee characteristics and CL likelihood. Specifically, the study reveals that audit committee financial expertise significantly increases (decreases) CL likelihood when the independence of an audit committee is low (high). Therefore, it shows that while audit committee financial expertise provides the knowledge needed to improve financial reporting quality (Securities and Exchange Commission (SEC), 2003), it may not be sufficient to reduce CL likelihood. Instead, the negative impact of audit committee financial expertise on CL likelihood is shaped by interactions with managers, and thus depends on audit committee independence. This is consistent with the theoretical argument made by Kalbers and Fogarty (1993) that audit committee financial expertise provides the *power* to understand and influence, while audit committee independence provides the *will* to use that power objectively. This point contributes to the debate on necessary reforms to the composition of financial experts in audit committees (Bilal et al., 2018) by showing that the benefits of audit committee financial expertise significantly hinge on audit committee independence. Furthermore, it suggests that considering the joint effect of expertise and independence provides a better understanding of audit committee effectiveness.

Second, while recent studies have mainly examined regulatory comment letters issued to companies (e.g., Hesarzadeh, 2020; Yao and Xue, 2020; Ballestero and Schmidt, 2022), to the best of our knowledge, the present study is the first to investigate regulatory comment letters sent to external auditors. In this regard, our empirical evidence highlights a risk which

needs to be assessed by audit firms and academics (e.g., Albrecht et al., 2018) through showing how audit committee financial expertise may increase CL likelihood. More broadly, prior studies have largely been focused on the consequences of external auditor litigation risk (e.g., Boasiako et al., 2022; Lamoreaux et al., 2022), and, therefore, we still know little about the determinants of the litigation risk. Relatedly, recent studies (e.g., Johnston and Savage, 2022) have called for an exploration into variables which may influence external auditor litigation risk. Our study responds to this call and suggests that audit committee independence is an important driver of the litigation risk. It further suggests that, comparable to prior studies on companies' litigation risk (e.g., Cassell et al., 2013; Ballestero and Schmidt, 2022), most corporate reporting quality metrics, corporate characteristics, and corporate governance mechanisms may also significantly influence external auditor litigation risk. In addition, while prior evidence in this area is mainly from the US and other large capital markets (e.g., Alderman et al., 2019; Al-Hadi et al., 2021; Chy et al., 2021; Boasiako et al., 2022), we present new evidence from a developing country.

Third, our study adds to the literature by revealing that regulatory reviewers' workload compression significantly affects CL likelihood and, therefore, the consideration of workload compression is important in the analysis of the association between audit committee characteristics and regulatory oversight. This point also extends the psychological theory of heuristic cues in the context of regulatory oversight (e.g., Bazerman, 2017) as it suggests that under higher workload compression, regulatory reviewers are more likely to explore audit committee independence as a heuristic cue to more quickly and efficiently reach a conclusion about the effects of audit committee financial expertise.

Our findings have important implications for corporate nominating committees and policymakers who set requirements for audit committee composition. For instance, the findings indicate that audit committee characteristics including expertise and independence need to

jointly be considered in order to improve financial reporting quality, particularly in the development of corporate governance codes in emerging markets where such codes are still developing (Alhababsah and Yekini, 2021). Furthermore, our findings can be helpful for external auditors in evaluating the litigation risks of their new clients.

The remainder of this paper is as follows: Section 2 presents the background and development of the hypotheses; Sections 3 and 4 present the research methodology and empirical findings; and, finally, Section 5 concludes the paper.

2- Background and hypotheses development

2-1- Regulatory oversight

2-1-1- Institutional setting

Regulatory review processes are designed to protect investors by enhancing corporate reporting and audit quality (e.g., Löhlein, 2016; Duro et al., 2019; Dwyer, 2020). Regulators periodically review financial reports including audit reports to ensure their compliance with accounting and auditing standards. Regulatory reviewers may use different methods in order to oversight financial information and audit activity. For example, Dwyer (2020) as well as Do and Zhang (2022) have suggested that regulators use both risk-based methods (i.e., reactive actions), such as the evaluation of the heightened risk of material misstatement or poor audit work, as well as random selection (i.e., proactive actions) in selecting companies or external auditors for review. They further suggested that regulatory reviewers mostly focus on reactive actions. If a filing is deemed to be deficient or the securities commissions desire further information, they issue comment letters to companies or external auditors to demand changes to publicly-reported information and request clarification or additional information (Brown et al., 2018; Bills et al., 2019; Cunningham et al., 2020).

Regarding the regulatory review process in Iran, since the mission of the SEO, like other securities commissions, is to protect investors and enhance market efficiency (see Islamic

Consultative Assembly, 2005; SEO, 2013), it must therefore scrutinize financial reports including audit reports. The SEO review process involves evaluating financial reports from an investor's perspective and asking questions that investors would ask when reading the reports. Upon scrutiny of corporate reports, if any concern arises, the SEO issues a comment letter to the firm or external auditor. In particular, the Division of Auditing and Financial Reporting as part of the SEO is required to scrutinize audit quality, request information and documents from external auditors, issue comment letters, and, if necessary, visit the audit firm's premises and conduct further inspections (SEO, 2008). If an auditor's response and actions are satisfactory, the filing review will be closed. Otherwise the auditor will face regulatory enforcement actions such as prohibition from accepting new auditing services, the scrutiny report being sent to the association of certified public accountants for the auditor to be delisted, or the scrutiny report being sent to judicial authorities (Hesarzadeh and Bazrafshan, 2019).

2-1-2- Literature review on regulatory comment letters

Recent studies have examined the determinants and consequences of receiving a regulatory comment letter by companies. For instance, research on the determinants of receiving a comment letter has provided evidence that this is more likely to happen for companies that are larger, older, more volatile, unprofitable, more complex, as well as those with smaller auditors, a recent initial public offering, weaker corporate governance, lower managerial ability, and lower financial reporting quality (e.g., Cassell et al., 2013; Ballestero and Schmidt, 2022). Research on the consequences of receiving a comment letter has indicated that, in general, a regulatory comment letter improves the information environment, in the form of increased earnings response coefficients, quality of disclosures, and forecast accuracy, as well as lower earnings management, return volatility, and future security price crash risk (e.g., Yao and Xue, 2019; Bozanic et al., 2017; Cassell et al., 2019).

In the context of external auditors' involvement in the regulatory review process, little recent empirical literature (e.g., Lamoreaux, 2016; Stuber and Hogan, 2021; Krishnan et al., 2022; Lamoreaux et al., 2022) has examined how regulatory oversight on external auditors — which is largely captured by whether an audit firm is inspected by the US Public Company Accounting Oversight Board (PCAOB) or the extent to which US states expand auditor legal liability to third parties — influences the work of external auditors. For instance, Lamoreaux (2016) discussed that regulatory oversight provides higher audit quality, while Krishnan et al., (2022) suggested that the lack of regulatory oversight by the PCAOB does not result in lower audit quality for US-listed Chinese companies. There is also some evidence that the regulatory oversight may have some unintended consequences. For example, Stuber and Hogan (2021) as well as Lamoreaux et al. (2022) cast doubt on the efficacy of regulatory oversight and suggested that firms manage regulatory oversight to the potential detriment of audit quality. Yet, the empirical literature about the determinants of regulatory comment letters on external auditors is scarce. In this respect, Firth et al. (2005) confirm that external auditors are more likely to be sanctioned when they fail to detect revenue-related rather than asset-related fraud. Chen et al. (2010) find that the client's economic importance differs between audit firms and individual auditors, which is reflected in the sanction's severity. De Fuentes and Porcuna (2019) also show that regulatory comment letters on external auditors increase when the audit report is signed by an individual auditor, the probability of financial distress is higher, and the auditor is permissive of upward earnings management. Anantharaman (2012) examines shifting from self-regulation by peer review to statutory regulation by the PCAOB and finds that audit firms choosing their own reviewers tend to receive peer review opinions more favorable than their subsequent PCAOB reports. Maurer (2020) and Christensen et al. (2022) discuss that increasing the number of random selections will cause audit firms to focus consistently on performing quality audits across the practice,

rather than on those perceived to have a greater chance of being selected for PCAOB inspection.

2-2- Audit committee

As Fichtner (2010) pointed out, the origin of audit committees can be traced back to the aftermath of the McKesson & Robbins Inc. fraud in 1930, when the SEC recommended that external auditors should be selected by a special committee composed of non-executive board members. Much later, in 1999, the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees issued several recommendations to improve the oversight role of audit committees (Lisic et al., 2019). These recommendations are related to audit committee composition and operational characteristics. Furthermore, the SOX and the European Union (European Commission, 2014) enhanced audit committees' authority and responsibility in overseeing external auditors, including with respect to their selection process, remuneration, work, and independence (e.g., Bédard and Paquette, 2021).

Prior studies on the determinants and consequences of audit committees' effectiveness have revealed that reputation and compensation, financial expertise, independence, size of committee, and meeting frequency all affect the effectiveness of audit committees (e.g., García-Sánchez et al., 2012; Cohen et al., 2013; Khoo et al., 2020). There is also evidence that audit committees significantly affect internal control weaknesses, earnings quality, earnings management, restatement likelihood, conservative accounting, audit fees, audit quality, fraud, and the cost of debt (e.g., Zhang et al., 2007; Malik, 2014; Sultana et al., 2019; Lisic et al., 2019; Liu et al., 2021).

2-3- Audit committee and regulatory oversight on external auditors

Prior literature has indicated that regulatory oversight makes external auditors know that they are in the subject of litigation risk in the event of audit failure (Alderman and Jollineau, 2020). Therefore, regulatory oversight motivates auditors to be more concerned about corporate

reporting quality (Shroff, 2017). Some studies have also argued that regulatory oversight on external auditors is more vital in developing markets, as their institutional settings are relatively weak and, therefore, regulatory oversight may significantly enhance social benefit through incentivizing external auditors to comply with requirements and standards (e.g., Ye and Simunic, 2017).

However, regulatory oversight usually bears significant financial and nonfinancial constraints (Egg et al., 2020), particularly in developing markets (e.g., Hesarzadeh and Bazrafshan, 2019). That is why regulatory reviewers use heuristic cues such as cognitive processing shortcuts to effectively select a firm or an auditor for review (Cunningham et al., 2020).[2] For example, prior studies have suggested that entities with stronger corporate governance are less likely to be entered into regulatory review process (e.g., Cassell et al., 2019). In the context of unobservable audit quality, audit committee characteristics could serve as a significant cognitive processing shortcut, as the audit committee is regarded as a key mechanism in the oversight of audit quality (Kusnadi et al., 2016) and the independence and financial expertise of an audit committee significantly influence audit quality (e.g., Bédard and Paquette, 2021). Hence, the perceived characteristics of audit committees, namely their independence and financial expertise, can potentially influence the judgement of regulatory reviewers about external auditors' independence and audit quality, thereby affecting the level of regulatory oversight (Alderman and Jollineau, 2020; Sharrof, 2020).

Notably, according to regulations around the world, such as the SOX in the US, the Combined Code in the UK, the Unified Good Governance Code in Spain, the Stock Exchange Listing Rules in New Zealand, or the Internal Control Acts in Iran, an audit committee is responsible for directly overseeing corporate financial reporting and external audit (see

[2] In psychology, cognitive processing shortcuts are mental, simple, and efficient cues, which people usually employ to form judgments and make decisions (e.g., Lewis, 2008).

Ghafran and O'Sullivan (2012) for a more detailed discussion). The presence of an audit committee is potentially vital for external audit quality and, as a consequence, regulatory oversight on external auditors. Meanwhile, prior literature shows that the competency of audit committees in overseeing external auditors significantly depends on the financial expertise and independence of audit committee members (e.g., Bedard et al., 2004; Salleh and Stewart, 2012; Bruynseels and Cardinaels, 2014; Cohen et al., 2013).

2-4- Hypotheses development

2-4-1- Audit committee financial expertise and regulatory comment letters on external auditors

Among the diverse characteristics of an audit committee, financial expertise is regarded as a significant feature that influences the financial reporting process and the external auditor's work (DeZoort et al., 2008; Salleh and Stewart, 2012). More pertinently, financial expertise has recently been considered by regulators as a very important attribute of audit committee effectiveness (CPAB, 2013; CAQ, 2016; Griffin, 2016). However, theoretical and empirical studies have provided mixed evidence as to *how* financial expertise affects financial reporting processes and external audits, and, thus, two competing arguments have emerged on how audit committee financial expertise influences regulatory oversight on external auditors in general and regulatory comment letters in particular. On the one hand, audit committees with more financial experts more diligently investigate financial issues which in turn motivates external auditors to provide a higher audit quality. As such, greater financial expertise of audit committee members improves corporate reporting and audit quality (Pomeroy, 2010; Cohen et al., 2013; Bilal et al., 2018; Alhababsah and Yekini, 2021). According to this line of argument, some prior empirical studies have suggested that the presence of financial experts in an audit committee is vital to improving the credibility of financial reports and to mitigating earnings management (Salehi and Shirazi, 2016; Bala et al., 2019). These cases are potential reasons for

reducing the number of regulatory comment letters issued to the external auditors (Habib et al., 2014). This view is consistent with Palmrose and Scholz (2004) and Habib et al. (2014) who argued that an external auditor's exposure to litigation risk is reduced under stronger corporate reporting mechanisms.

On the other hand, greater financial expertise in audit committees may also adversely affect corporate reporting and audit quality. This is firstly because, as the prior literature suggests, financial expertise significantly reduces external auditors' skepticism, resulting in lower audit quality (e.g., Albrecht et al., 2018; Liu et al., 2021). Research in social psychology has indicated that external auditors tend to find financial experts in audit committees more persuasive because of similarity in their knowledge, regardless of the content of the reports (e.g., Faraji-Rad et al., 2015). Furthermore, Alderman and Jollineau (2020) argued that since external auditors are trained to focus on risks due to low competence, auditors are more likely to be less skeptical of financially expert audit committee members. This point is closely related to the PCAOB's concern that external auditors can develop an inappropriate level of trust and confidence in firms with financially expert audit committees which can in turn result in lower audit quality (PCAOB, 2019). Similarly, Alderman and Jollineau (2020) suggested that greater financial expertise in audit committees could increase external auditors' trust in management and, consequently, increase the likelihood of misstatement. Consistent with this, there is empirical evidence that management's previous employment affiliation with their external audit firm is associated with lower accounting and audit quality (Menon and Williams 2004; Lennox 2005). Secondly, prior studies have argued that audit committees with high financial competence can better negotiate corporate reporting outcomes with auditors and managers. As a result, managers of firms with financially expert audit committees may presume that their audit committee can successfully negotiate misstatements, opening up the possibility for managerial misconduct (Albrecht et al., 2018). Thirdly, some of the literature has indicated that

financially expert audit committees may be more willing to tolerate earnings manipulation to improve stock prices so they can derive personal benefit from exercising options, selling stocks, or other economic incentives (Liu et al., 2021). Relatedly, prior studies have argued that audit committee financial expertise is negatively associated with external audit fees, which is consistent with the notion of companies with financially expert audit committees having less demand for external monitoring (Liu et al., 2021). Therefore, the existence of more financial experts in an audit committee may induce less external auditor skepticism, may lead to overthrust on managers by the external auditor, or may increase willingness to pursue personal benefit, and it can therefore be linked with lower audit quality and lower external auditor independence, which in turn may significantly increase CL likelihood.

The above counterarguments suggest that the financial expertise of an audit committee could have a negative or positive impact on CL likelihood. Accordingly, our first hypothesis is non-directional, as follows:

> ***H1****:* There is a relationship between audit committee financial expertise and CL likelihood.

2-4-2- Audit committee independence and regulatory comment letters on external auditors

Audit committees with independent members can play an important role in balancing different views of management and external auditors, and enhancing financial reporting quality (Klein, 2002; Kronenberger et al., 2020; Chy and Hope, 2021). For instance, Kronenberger et al. (2020) highlighted the role of audit committee independence in reducing disagreement between managers and external auditors. Audit committee members may appear less independent from management if they have financial interests in the firm or have some sort of employment and social relationship with it. Extant empirical evidence in both developed and emerging economies suggests that audit committee independence is associated with more quality

corporate reporting (Bedard et al., 2004; Saleh et al., 2007; Al-Hadrami et al., 2020; Mohammad et al., 2020). In particular, the literature has indicated that a higher level of audit committee independence is associated with lower earnings management (e.g., Yang and Krishnan, 2005; Bradbury et al., 2006), higher earnings quality (e.g., Salehi and Shirazi, 2016), lower fraudulent financial reporting (e.g., Bruynseels and Cardinaels, 2014), and higher corporate social responsibility (e.g., Mohammad et al., 2020). Prior studies have also indicated that audit committee independence significantly improves audit quality (e.g., CPAB, 2013). For example, Ghafran and O'Sullivan (2012) showed that independent audit committees are more likely to pursue audit quality. There is also evidence that audit committee independence is positively associated with audit fees (e.g., Liu et al., 2021). Furthermore, prior studies have indicated that an audit committee with independent members is a significant factor in enhancing the independence of the external auditor. For instance, Sori and Karbhari (2009) pointed out that the independence of audit committees is perceived to maintain the independence of the external auditor and enhance governance practices. Hunton and Rose (2008) provided evidence that independent audit committees tend to give less support to management when faced with restatements suggested by the external auditor.

These abovementioned mechanisms, including the positive impact of audit committee independence on corporate reporting quality, audit quality, and external auditor independence, can in turn reduce CL likelihood. In this respect, there is indirect empirical evidence supporting this claim. For example, Brandon and Mueller (2006) argued that litigation risk against external auditors could decrease as auditors appear more independent. Moreover, Alderman and Jollineau (2020) suggested that litigation risk against external auditors was likely to rise due to misstatements in the financial statements. They also argued that under a poor audit committee, if the case is brought to court, judges may conclude that external auditors were serving

management rather than stockholders. Thus, based on the above discussions, the second hypothesis is expressed as follows:

> ***H2:*** There is a negative relationship between audit committee independence and CL likelihood.

2-4-3- The moderating role of audit committee independence

As previously discussed, audit committees with financial experts and independent members are expected to influence corporate reporting quality, audit quality, and external auditor independence (e.g., Bradbury et al., 2006; Piot and Janin, 2007; Cohen et al., 2013; Kusnadi et al., 2015; Salehi and Shirazi, 2016; Salleh et al., 2017; Bala et al., 2019; Chy and Hope, 2021). In this section, we discuss the moderating role of audit committee independence. This role is important, since, as discussed in the background to the first hypothesis, greater financial expertise of audit committees may act as a double-edged sword as it may provide an obstacle or opportunity for poor financial reporting, poor audit quality, and less external auditor independence, leading to lower or higher probability of the issuance of regulatory comment letters to external auditors. Specifically, it is expected that when audit committee independence is low (high), the financial expertise of audit committees acts as an opportunity (obstacle) for poor financial reporting, poor audit quality, and less external auditor independence, thus resulting in higher (lower) CL likelihood. As already discussed, when audit committee independence is low, knowledgeable audit committee members may be more willing to tolerate earnings manipulation (Liu et al., 2021). Furthermore, if a misstatement is detected by external auditors, an expert audit committee with low independence from management may convince the external auditors that it is not actually a misstatement (e.g., Albrecht et al., 2018). In addition, there is also some concern that external auditors could be outwitted by non-independent experts in the interests of the client (e.g., Alderman and Jollineau, 2020; Shroff, 2020). In contrast, when audit committee independence is high, financial expertise of audit

committee members can improve the monitoring of the corporate reporting and audit quality (e.g., Bilal et al., 2018; Alhababsah and Yekini, 2021).

The above discussion is in line with the argument put forward by Kalbers and Fogarty (1993) that audit committee financial expertise provides the *power* to understand and influence, while audit committee independence provides the *will* to use that power objectively. Since regulators believe that independence improves the effort of an audit committee to effectively oversee external auditing (e.g., CPAB, 2013), it is expected that when regulatory reviewers perceive an audit committee as independent of management, they are more likely to consider the financial expertise of the audit committee members as a positive cue for audit quality, which results in lower CL likelihood. Specifically, borrowing the heuristic cues theory, when an audit committee appears to be independent of management, audit committee financial expertise is likely to provide a more positive heuristic cognitive cue for regulatory reviewers and, therefore, CL likelihood is reduced (Lewis, 2008; Brown et al., 2018; Cassell et al., 2019; Dwyer, 2020). Accordingly, audit committee independence acts as a moderator in the association between audit committee financial expertise and CL likelihood. This discussion leads us to the third hypothesis:

> ***H3****:* Audit committee independence moderates the relationship between audit committee financial expertise and CL likelihood.

3- Methods

3-1- Empirical models

The first two hypotheses examine whether the financial expertise and independence of an audit committee affect CL likelihood. The hypotheses are examined using the following logit regression model:

$$CL\_A_{it} = \gamma_0 + \gamma_1 Expert_{it} + \gamma_2 Indep_{it} + Controls_{it} + F\_FE + Y\_FE + \varepsilon_{it} \quad (1)$$

Appendix 2 defines all variables and the following sections explain how they are measured.

In order to reduce any potential heteroskedasticity problem, standard errors are clustered at the company level. Furthermore, we use standardized coefficients for ease of interpretation.

The third hypothesis examines whether audit committee independence moderates the association between audit committee financial expertise and CL likelihood. Thus, we empirically examine the relationship between CL likelihood and the interaction between financial expertise and independence of audit committee using the following logit regression model:

$$CL\_A_{it} = \delta_0 + \delta_1 Expert_{it} + \delta_2 Indep_{it} + \delta_3 (Expert \times Indep)_{it} + Controls_{it} + F\_FE + Y\_FE + \acute{\varepsilon}_{it} \quad (2)$$

Similar to Equation (1), standard errors are clustered at company level and standardized coefficients are used.

3-2- The likelihood that the external auditor receives a regulatory comment letter

Following extensive relevant studies (e.g., Cassell et al., 2013, 2019; Cunningham et al., 2020), we operationalize CL likelihood using SEO comment letters in a logit regression model (i.e., Equations (1) and (2)), *CL_A*. The *CL_A* takes the value 1 if an external auditor of the company receives a regulatory comment letter in year t, and 0 otherwise. Appendix 1 provides further details on how *CL_A* is coded. We obtain SEO comment letter information from the SEO's Division of Auditing and Corporate Reporting.[3]

3-3- Audit committee financial expertise and independence

Based on prior evidence (e.g., Bilal et al., 2018; Lee and Park, 2019), an audit committee member is considered a financial expert if she/he over the past three years has held one of the

[3] Currently, information on CL is only available upon request from the SEO's Division of Auditing and Corporate Reporting. However, the SEO is now developing a disciplinary opinion dissemination system at http://www.seo.ir.

following positions: chief or principal financial officer; chief or principal accounting officer; head of finance; financial executive; certified public accountant; audit partner; or controller. Furthermore, in line with previous studies, an audit committee member is considered independent when there are no personal ties (i.e., the member should not be from the same family as, or be a friend of, the CEO), no employment relationship (i.e., the member should not be a present or a previous employee of the firm), and no business connection (i.e., the member should not be an advisor, consultant, major customer, or vendor of the firm) (e.g., Bronson et al., 2009; Poretti et al., 2018). These conditions are also required by the Iranian Audit Committees Instruction (SEO, 2010), and all listed companies must consider them when they disclose information in the "Audit Committee and Internal Audit" form and introduce an audit committee member as a financial expert or an independent member. Specifically, all listed companies must clearly disclose the professional backgrounds of each audit committee member, and then explicitly specify whether or not the member is a financial expert. Moreover, companies are required to carefully fulfill the independence criteria, when they explicitly declare the independence of each audit committee member. Since the form is publicly available in the Iranian Comprehensive Database of All Listed Companies (CODAL: www.CODAL.ir), and as failure to accurately disclose this information will have severe disciplinary consequences for companies (Islamic Consultative Assembly, 2005; SEO, 2009), there are no significant inconsistencies between the disclosed professional backgrounds/regulatory requirements and the final specification of financial expertise or independence in the completed form (SEO, 2018). Hence, to determine the financial expertise and independence, we use the explicit declaration of financial expertise and independence for each audit committee member made by companies disclosed at CODAL.

Accordingly, our measure of audit committee financial expertise (*Expert*) is captured by the proportion of financial expert members on the company's audit committee. Similarly,

our measure of audit committee independence (*Indep*) is the proportion of independent members on the company's audit committee.

3-4- Control variables

Based on prior studies (e.g., Zhang et al., 2007; Cassell et al., 2013, 2019; Lisic et al., 2019; Hesarzadeh and Bazrafshan, 2019; Dwyer, 2020; Khoo et al., 2020; Alhababsah and Yekini, 2021; Ballestero and Schmidt, 2022), we include a number of control variables that can significantly affect CL likelihood. These control variables cover financial reporting quality, firm characteristics, and corporate governance (see Cassell et al. (2013, 2019) and Hesarzadeh and Bazrafshan (2019) for a more detailed discussion). Generally, based on the literature, it is expected that audit committee size (*AC_S*) and audit committee meetings (*AC_M*), which can reflect higher power and effort, are negatively associated with CL likelihood (e.g., Dwyer, 2020). Moreover, earnings management (*E_M*), internal control weakness (*IC_W*), and restatement (*Rest*) as proxies of poor financial reporting increase the probability of receiving a comment letter (e.g., Cassell et al., 2013). Among the variables related to external auditors, the bigness of external auditors (*Big*) and expertise (*A_S*) reduces CL likelihood (e.g., Khurana et al., 2020). Regulatory reviewers also closely monitor external auditors of firms with a higher market cap (*M_C*), lower age (*Age*), higher return on assets (*RO_A*), higher financial distress (*B_R*), and higher external financing (*E_F*) (e.g., Hesarzadeh and Bazrafshan, 2019). It is expected that CL likelihood is higher for firms receiving a comment letter from the SEO (*CL_F*) since some issues in corporate reports — such as a deficiency in audited financial statements — lead to an auditor involvement in the comment letter process (e.g., Ballestero and Schmidt, 2022) and probably the issuance of regulatory comment letters to the external auditor. Finally, higher institutional ownership (*I_O*), lower CEO duality (*Dual*), and higher board independence (*B_I*) are expected to reduce CL likelihood (Cassell et al., 2019).

3-5- Sample

Our research sample focuses on Iran's capital market, namely the Tehran Securities Exchange (TSE), over the period of 2011 to 2020. Panel A of Table 1 outlines the steps taken to construct the sample. The initial sample comprises 3,170 firm-year observations. We exclude financial/utility firms because of their unique financial characteristics (e.g., Bills et al., 2019; Yao and Xue, 2019). We also eliminate firm-years with low trade levels (less than 20 trading days) (e.g., Fjesme, 2020) and those with insufficient data. The final sample includes 690 firm-year observations, including 126 observations with comment letter observations and 564 non-comment letter observations. Panel B reports the annual distribution of comment letters and shows that the number (percentage) of comment letter observations varies from seven (10%) to 18 (26%). Panel C also presents the distributions of firm-year observations within different industries.

Except for data on comment letters which are obtained from the SEO, the rest of the data are extracted from the Rahavard Novin — which is the most comprehensive database in the TSE (Hesarzadeh and Bazrafshan, 2019; Oradi et al., 2020; Aflatooni et al., 2022) — and the Iranian Comprehensive Database of All Listed Companies (CODAL) at www.CODAL.ir.[4] Data on audit committee expertise and independence is obtained from the "Audit Committee and Internal Audit" forms in CODAL, where all companies are required to clearly declare whether or not an audit committee member is a financial expert and independent.

[Insert Table 1]

[4] Iranian firms' financial data are not available in international databases such as Compustat and CRSP. Rahavard Novin provides data coverage similar to CRSP/Compustat in the United States (Aflatooni et al., 2022) and is available under subscription (see https://mabnadp.com/rahavardnovin3). Nevertheless, the data is also fully and freely available on CODAL.

4- Empirical findings

4-1- Univariate analysis

Table 2 presents descriptive statistics. To decrease the impact of outliers, continuous variables are winsorized at the top and bottom 1% of the distribution of continuous distributions. As shown in the table, the average for *Expert* is approximately 0.462 and 0.454 for the two subsamples, i.e., no regulatory comment letter observations (*CL_A*=0) and regulatory comment letter observations (*CL_A*=1), respectively. However, the difference is not statistically significant (t=1.508). Furthermore, the mean of *Indep* is 0.789 and 0.507 for the two subsamples and the difference is statistically significant (t=2.008), suggesting that audit committee independence is likely to be higher for observations with no regulatory comment letter. In addition, firms receiving a regulatory comment letter probably experience higher internal control weakness (*I_CW*), higher restatement of financial statements (*Rest*), smaller external auditors (*Big*), higher external financing (*E_F*), more comment letters on firms (*CL_F*), and CEO duality (*Dual*).[5]

[Insert Table 2]

Table 3 tabulates Pearson's correlations and variance inflation factors (VIFs). As shown in the table, the correlation of *CL_A* and *Expert* (*Indep*) is not (is) significant, suggesting that the financial expertise (independence) of an audit committee does not affect (affects) CL likelihood. The correlation coefficients between the independent variables are all less than 0.500 and the VIFs are all smaller than three, which indicates that multicollinearity is not a problem in our analysis.[6]

[5] Notably, out of all firms whose auditors received (did not received) a regulatory comment letter, 38.7% (31.3%) of them received a regulatory comment letter. This is relatively consistent with prior research (e.g., Ballestero and Schmidt, 2022) indicating that auditor involvement in review process and CL likelihood is higher for firms receiving a regulatory comment letter. Moreover, the correlation between the two types of comment letters, as shown in Table 3, is about 22%. This is because there are many situations — such as vague audit reports (deficiencies in non-audited corporate reports) — in which only auditors (only firms) receive comment letters.

[6] In the presence of the interaction term, VIFs for the interaction term and main independent variables, i.e., *Expert* & *Indep*, are respectively 28, 17, and 12, and the average (maximum) VIF for the other variable is 1.8

[Insert Table 3]

4-2- Multivariate analysis

4-2-1- Testing *H1* and *H2*

We begin our multivariate analysis by testing the first two hypotheses. The hypotheses predict that audit committee financial expertise and independence are associated with CL likelihood. As shown in Table 4, the explanatory power (i.e., Pseudo R^2) and the diagnostic ability (i.e., Area Under the Curve) of regressions are respectively about 50%-53% and 85%-87%, which are relatively comparable with past *CL_A* research (e.g., Cassell et al., 2013, 2019; Cunningham et al., 2020; Yang, 2021) who reported Pseudo R^2s between 20% and 60% as well as Area Under the Curve between 70% and 90%. It further shows that the relationship between *Expert* and *CL_A* is statistically insignificant (Z = 1.637) which is inconsistent with *H1*. We provide further evidence regarding this in the following sections. The findings further indicate a significantly negative association between *Indep* and *CL_A* (Z = - 6.618), suggesting that higher *Indep* leads to lower *CL_A*. This finding is consistent with *H2*, which predicts that audit committee financial independence reduces CL likelihood.

Our findings also show that, consistent with prior studies (e.g., Cassell et al., 2013; Hesarzadeh and Bazrafshan, 2019), internal control weakness (*I_CW*; Z = 2.530) and restatement (*Rest*; Z = 1.923) significantly increase *CL_A*, which is consistent with the notion that poor corporate reporting raises CL likelihood. The evidence further shows that firm characteristics, such as bankruptcy risk (*B_R*; Z = 1.652) and external financing (*E_F*; Z= 2.097), increase *CL_A*. Furthermore, consistent with expectations, the issuance of a comment letter to a firm (*CL_F*; Z=5.458) is positively linked to *CL_A*. Meanwhile, CEO duality (*Dual*; Z = 2.084) is also positively associated with *CL_A*. These results are generally comparable to

(4.2). The three high VIFs do not refer to a multicollinearity problem, as prior literature (e.g., Disatnik and Sivan, 2014; McClelland et al., 2017) clearly discusses that regression with interaction term does not suffer from a multicollinearity problem when the independent variables are highly correlated with their product since this multicollinearity is simply a matter of interval scaling.

the findings of Cassell et al. (2013), who suggested that financial reporting, corporate features, and corporate governance may affect the issuance of regulatory comment letters.

[Insert Table 4]

4-2-2- Testing *H3*

H3 predicts that audit committee independence moderates the association between audit committee financial expertise and CL likelihood. The column (2) of Table 4 indicates that the coefficient on "*Expert* × *Indep*" is significant (*Z*= -5.428), which is consistent with the third hypothesis. There is a significantly positive coefficient on *Expert* (0.466), which represents the "conditional effect" of *Expert* as the coefficient is conditional on the level of *Indep* (see Burks et al. (2019) for a more detailed discussion), as well as a significantly negative coefficient on *Expert* × *Indep* (-0.694). These reveal that at a low level of *Indep* (i.e., close to zero), the coefficient on *Expert* is probably positive, suggesting that when audit committee independence is low, there is a positive relationship between audit committee financial expertise and CL likelihood. At higher values of *Indep* (i.e., close to one), however, higher *Expert* is likely to lead to lower *CL_A*, suggesting that when audit committee independence is higher, audit committee financial expertise reduces CL likelihood. In this regard, untabulated results indicate that when the sample is divided into low and high audit committee independence observations — i.e., observations having audit committee with lower versus higher than 50% independence — audit committee financial expertise, respectively, increases and decreases CL likelihood. The next section provides further evidence with regard to this issue.

4-3- Further evidence on the moderating effect of audit committee independence

4-3-1- Graphical analysis

First, some of the prior literature has argued that statistical testing of moderating effects in nonlinear models is too complex and may produce misleading results, and some have recommended a pick-a-point graphical approach for additional analysis (e.g., Greene, 2010;

De Jong et al., 2012; Muiño and Núñez-Nickel, 2016). Accordingly, we present a graphical illustration where the values of the interaction terms are plotted against the probabilities predicted by the regression model (i.e., the fitted values). In doing so, we plot four lines, each of which show the relationship between audit committee financial expertise (*Expert*) and the fitted values for different levels of audit committee independence (*Indep*) including 0%, 33%, 66%, and 100%.[7] The results are presented in Panel A of Figure 1. The panel shows that the interaction between *Expert* and *Indep* widens the distance between the plotted fitted probabilities for all four lines. Specifically, the distance is broader between low (i.e., lower than 50%) versus high (i.e., higher than 50%) audit committee independence. As discussed by Greene (2010), these findings indicate that, consistent with our previous results, audit committee independence significantly moderates the relationship between audit committee financial expertise and CL likelihood.

[Insert Figure 1]

Second, recent studies on regressions with interactions (e.g., Dawson, 2014; Burks et al., 2019; Jollineau et al., 2021) have suggested that a standard regression result only represents a test of a single conditional effect via coefficient estimates on constituent terms and, therefore, they encourage researchers to employ the approach of Johnson and Neyman (1936) and incorporate a conditional slope graph including confidence bands to show statistical significance for all conditional slopes. Accordingly, using an online tool — available at http://www.quantpsy.org/interact/hlm2 — which has also been employed in recent management and accounting research (e.g., Dawson, 2014; Hayes, 2018; Burks et al., 2019; Cao et al., 2021), we present the graph in Panel B of Figure 1. As this shows, the y-axis of the conditional slope graph reflects the slope on our main independent variable, *Expert*, while the

[7] We choose these levels because most Iranian audit committees are composed of three members (Oradi and Izadi, 2019).

x-axis represents the level of the moderator variable, *Indep*. The red confidence bands represent the 95% level of confidence interval for the slope at the particular *Indep* value. The black downward-sloping line shows the estimated conditional slope on *Expert* for the range of *Indep* values; it implies that for low (high) levels of *Indep* the slope on *Expert* is positive (negative), which is consistent with our previous conclusions on the moderating role of audit committee independence. The slope is significantly different from zero if the confidence bands, at a particular *Indep* level, do not overlap with zero. Thus, in this graph, the conditional slope on *Expert* is statistically different from zero for *Indep* levels of approximately less than 0.41 and greater than 0.57.[8] Overall, from the conditional slope graph, one can observe that there is a statistically significant positive (negative) relationship between audit committee financial expertise and *CL_A* when independence is low (high).

4-3-2- The impact of regulatory reviewers' workload compression

Recent literature has suggested that workload pressure affects the monitoring role of securities commissions (Hesarzadeh and Bazrafshan, 2019; Gunny and Hermis, 2020). This is because the workload of regulatory reviewers is seasonal as the majority of Iranian listed firms have March as their fiscal year-end.[9] This workload leads to time constraints and workload compression (Robinson et al., 2011; Hesarzadeh and Bazrafshan, 2019). Under workload compression, in line with the psychological theory of heuristic cues, regulatory reviewers are more likely to explore heuristic cues to more quickly and efficiently conclude whether external auditors provide a high audit quality (Bazerman, 2017). Accordingly, under workload compression, regulatory reviewers are more likely to rely on audit committee independence as a determinant of audit quality. Hence, in line with the arguments presented in support of the third hypothesis, we expect that the moderating effect of audit committee independence on the

[8] Accordingly, the area between the blue vertical lines is the region where the conditional slope is not significantly different from zero.

[9] Esfand is the final month of the Solar Hijri calendar, the official calendar of Iran. It begins in February and ends in March of the Gregorian calendar.

link between audit committee financial expertise and CL likelihood is stronger under higher regulatory reviewers' workload compression. To provide empirical evidence on this theoretical expectation, following some of the prior literature (e.g., Huang, 2022; Hsu et al., 2022), we categorize our sample into two groups: (1) companies with March as their fiscal year-end (i.e., high workload pressure sample: *R_workload*=1); and (2) companies whose fiscal year-end does not fall in March (i.e., low workload pressure sample: *R_workload*=0). Then, we re-estimate Equation (2).

Table 5 reports the results. Columns (1) and (2) of the table pertain to a high workload pressure sample versus a low workload pressure sample. As shown in the columns, the coefficients on "*Expert* × *Indep*" are statistically significant in both (*Z*-stat= -7.863 & -2.012). However, the coefficient in Column (1) (-0.751) is different and stronger than the equivalent in Column (2) (-0.309). The Z-statistic shows that the difference is statistically significant at 5% (Z= 2.443).[10] Relatedly, our untabulated analysis indicates that when we include a triple interaction (i.e., *Expert* × *Indep* × *R_workload*) and its corresponding double interactions (i.e., *Expert* × *R_workload* & *Indep* × *R_workload*) to Equation (2), the coefficient on the triple interaction is statistically significant. These point out that the moderating influence of audit committee independence on the relationship between audit committee financial expertise and CL likelihood is stronger when regulatory reviewers are under greater workload compression.

[Insert Table 5]

5- Conclusions

Prior studies have provided mixed evidence on how audit committee financial expertise affects corporate reporting as well as the work of external auditors and, thus, CL likelihood. We argue

[10] The Z-statistic tests for differences across groups (e.g., Cohen, 1983; Holzhacker et al., 2015) and is computed as follows: $Z= \frac{c_1 - c_2}{\sqrt{Std.Error(c_1)^2 + Std.Error(c_2)^2}}$, where c_1 and c_2 are δ_3 in Equation (2) and *se* refers to standard errors.

that audit committee independence has a moderating role in the association between audit committee financial expertise and CL likelihood. Using comment letters issued by the SEO, we show that audit committee financial expertise can increase (decrease) CL likelihood when audit committee independence is low (high). Furthermore, additional analysis indicates that this interactive effect is stronger under higher regulatory reviewers' workload compression.

Our findings have implications for various capital market participants. For example, when assessing the litigation risk of existing and potential clients, external auditors should concentrate on the composition and characteristics of audit committees, namely financial expertise and independence, as our findings suggest that these factors affect regulatory oversight on external auditors. Moreover, our findings may be of interest to shareholders and other stakeholders in evaluating the effectiveness of audit committees as audit committee independence affects the outcome of audit committee financial expertise.

Future research could explore the impact of other determinants of external auditor litigation risk such as the personality of managers and directors, including managerial materialism (Davidson et al., 2018) or political links (He et al., 2017), on regulatory review risk. Future research could also further examine the impact of institutional contexts, as there are some major differences in the orientation of managers across countries (Surroca and Tribó, 2008).

Our analysis has some caveats to bear in mind. Firstly, our sample includes Iranian companies listed on the TSE which is a low developed capital market. As noted by Su et al. (2014), in more developed markets, where more information is available and budgetary resources for regulatory reviewers are higher, regulatory reviewers can assess firms through diverse channels and, therefore, reliance on the signaling effect of audit committee characteristics may be lower. As such, the effect of audit committees' characteristics on regulatory oversight may be less strong in more developed capital markets. Secondly, our

measure of regulatory oversight may not capture the entire regulatory oversight on external auditors. Thirdly, we include control variables indirectly identified in prior research to have an influence on regulatory oversight. Thus, to the extent that this approach is not exhaustive, one should be cautious in drawing causal inferences therefrom.

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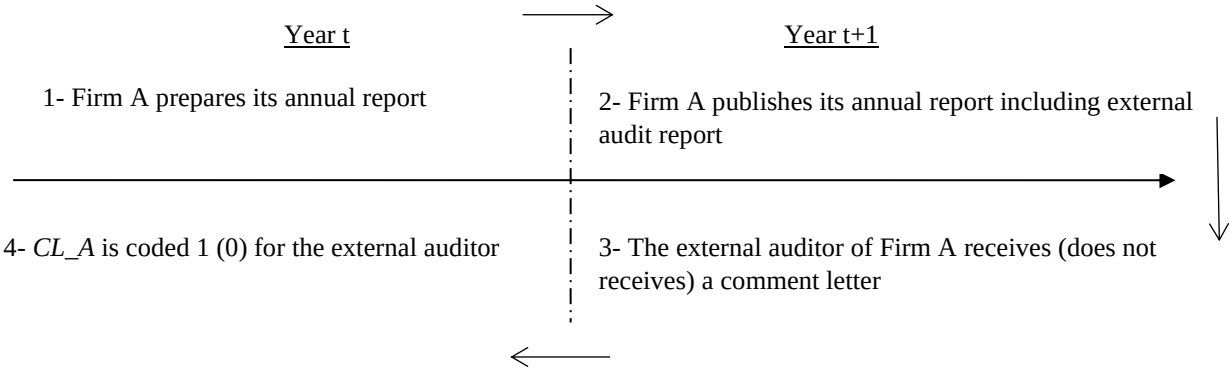
Appendix 1. Visual description of variable *CL_A*



Note: This appendix shows how *CL_A* is coded as "1" ("0") in year t, i.e., in the same year a firm prepares its annual report and the external auditor reports on its annual report.

Appendix 2. Definition of variables

Variable	Definition
Dependent variable:	
CL_A	Equals 1 if the external auditor of the company received an SEO comment letter for a corporate report of year *t*, and 0 otherwise
Main independent variables:	
Expert	Proportion of financial expert members in audit committee
Indep	Proportion of independent members in audit committee
Control variables:	
AC_S	Audit committee size
AC_M	Number of audit committee meetings
EM	Earnings manipulations computed based on Dechow et al. (1995)
I_CW	Equals 1 if audit report reveals an internal control weakness in year *t*, and 0 otherwise
Rest	Equals 1 for firms with restatement, and 0 otherwise
Big	Equals 1 if external auditor is a big audit firm (i.e., audited by Audit Organization of Iran), and 0 otherwise[11]
A_S	Equals 1 if external auditor's market share based on audit fees in year *t* is higher than the median of the relevant industry, and 0 otherwise
M_C	Market capitalization captured by the logarithm of number of shares outstanding × share price
Age	Number of years the company has been listed on TSE
R_OA	Return on assets, i.e., operational profit divided by total assets
B_R	Equals 1 if Altman's Z score (DeFond and Hung, 2003) is greater than median, and 0 otherwise
E_F	Sum of equity financing and debt financing divided by total assets, measured following Ettredge et al. (2011). Equity financing is defined as sales of common and preferred stock less purchases of common stock and preferred stock and dividends. Debt financing is defined as long-term debt issuance less long-term debt reduction and changes in current debt (Cassell et al., 2013; Ballestero and Schmidt, 2022).
CL_F	Equals 1 if the firm received a SEO comment letter in year *t*, and 0 otherwise
I_O	Proportion of shares owned by institutional investors

[11] Audit Organization of Iran is a government entity, which is acknowledged to be the largest audit firm in Iran. Since the international big audit firms (BIG4) have not set up their activities in Iran, following the literature (e.g., Mihret et al., 2020; Oradi et al., 2020), this paper classifies audit firms in two groups of big (Audit Organization) and small (all other audit firms).

Variable	Definition
Dual	Equals 1 if CEO is the chairman of the board of directors, and 0 otherwise
B_I	The proportion of independent (non-executive) directors

Table 1. Sample

Panel A: Sample selection procedures

	Observations
Firm-years between 2011-2020	3,170
Less: Utility/financial firm-years	1,380
Less: Low trade levels firm –years	660
Less: Missing information firm-years	440
Research sample (N)	690
Non- comment letter observations	564
Comment letter observations	126

Panel B: Annual distribution of regulatory comment letters

Year	Comment letter observations (%)
2011	11 (16%)
2012	17 (25%)
2013	18 (26%)
2014	17 (25%)
2015	8 (12%)
2016	7 (10%)
2017	14 (20%)
2018	13 (19%)
2019	9 (13%)
2020	12 (17%)
	126

Panel C: Industry classification

Year	Observations (Comment letter observations)
Car	100 (17)
Cement	80 (9)
Chemical products	50 (12)
Drug	60 (8)
Electrical products	40 (12)
Energy	80 (14)
Food	50 (10)
Household Stuff	40 (8)
Machinery	70 (13)
Mine Products	80 (15)
Steel	40 (8)
	690 (126)

Table 2. Descriptive statistics

	CL_A = 0			*CL_A* = 1			
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	t.stat
Expert	0.462	0.333	0.390	0.454	0.333	0.410	1.508
Indep	0.789	1.000	0.269	0.507	0.666	0.235	2.008**
AC_S	3.287	3.000	0.630	3.143	3.000	0.468	0.173
AC_M	12.661	12.000	5.794	14.897	12.000	6.587	-1.444
EM	0.005	0.010	0.087	-0.008	0.010	0.098	1.488
I_CW	0.112	0.000	0.315	0.206	0.000	0.406	-2.659***
Rest	0.094	0.000	0.292	0.167	0.000	0.374	-3.367***
Big	0.309	0.000	0.462	0.182	0.000	0.414	2.047**
A_S	0.188	0.000	0.108	0.168	0.000	0.102	0.086
M_C	11.733	11.655	1.644	11.829	11.820	1.787	-0.774
Age	21.237	19.000	10.560	21.698	20.000	10.616	-0.156
R_OA	0.157	0.151	0.163	0.154	0.140	0.168	0.293
B_R	0.496	0.000	0.500	0.548	1.000	0.500	-0.750
E_F	0.021	0.000	0.177	0.035	0.000	0.083	-1.708*
CL_F	0.312	0.000	0.464	0.387	1.000	0.494	-1.989*
I_O	72.043	80.610	24.444	76.266	82.585	20.236	-0.027
Dual	0.059	0.000	0.235	0.183	0.000	0.388	-2.017**
B_I	0.431	1.000	0.404	0.453	0.330	0.379	-0.750
N		564			126		

Note: The asterisks show a 10% (*), 5% (**), and 1% (***) level of significance.

Table 3. Pearson correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	VIF
(1)	*CL_A*	1.000																			-
(2)	*Expert*	-0.004	1.000																		1.084
(3)	*Indep*	**-0.383**	**0.106**	1.000																	1.684
(4)	*AC_S*	**-0.092**	**0.106**	0.019	1.000																1.198
(5)	*AC_M*	**0.144**	**-0.074**	**-0.123**	**-0.340**	1.000															1.479
(6)	*EM*	-0.060	0.052	**0.128**	-0.046	0.053	1.000														1.785
(7)	*I_CW*	**0.109**	-0.050	-0.066	-0.023	0.020	0.036	1.000													1.031
(8)	*Rest*	**0.091**	-0.043	-0.054	0.021	-0.024	**-0.144**	0.076	1.000												1.044
(9)	*Big*	**-0.122**	-0.044	0.065	**0.086**	**-0.164**	0.060	-0.011	-0.020	1.000											1.111
(10)	*A_S*	0.016	-0.057	-0.057	-0.050	**0.309**	0.061	0.011	-0.022	-0.031	1.000										1.141
(11)	*M_C*	0.022	**0.115**	0.048	0.022	**0.079**	**0.196**	-0.033	0.044	0.023	-0.003	1.000									1.197
(12)	*Age*	0.017	0.037	-0.034	0.028	0.003	0.050	-0.065	0.019	**0.137**	0.059	0.046	1.000								1.096
(13)	*R_OA*	-0.006	0.027	**0.074**	**-0.133**	**0.166**	**0.415**	0.003	**-0.075**	0.010	**0.074**	**-0.135**	**0.299**	1.000							3.045
(14)	*B_R*	0.040	-0.046	-0.021	**0.115**	-0.070	**-0.250**	0.052	0.033	**0.073**	0.009	0.061	**-0.083**	-0.036	1.000						1.768
(15)	*E_F*	0.033	0.062	0.043	0.039	**-0.082**	-0.038	-0.029	-0.018	**0.077**	-0.054	0.053	-0.047	0.007	0.020	1.000					1.138
(16)	*CL_F*	**0.221**	0.006	**0.095**	**-0.096**	-0.008	**0.081**	0.007	0.012	**0.076**	-0.047	-0.035	0.048	**0.202**	**-0.141**	0.034	1.000				1.132
(17)	*I_O*	0.069	**-0.088**	-0.029	**-0.093**	-0.012	0.068	0.034	-0.009	**-0.096**	-0.030	**-0.113**	**-0.089**	**-0.125**	**0.119**	-0.044	-0.071	1.000			1.109
(18)	*Dual*	**0.175**	0.041	**-0.078**	**-0.093**	-0.011	-0.003	0.060	0.051	**-0.092**	**-0.112**	-0.005	**0.165**	-0.047	-0.014	0.033	0.041	**0.097**	1.000		1.100
(19)	*B_I*	**-0.260**	-0.032	**0.499**	**0.105**	**-0.339**	0.050	-0.043	0.013	**0.166**	**-0.083**	-0.072	0.000	0.017	0.019	**0.085**	0.035	-0.034	**-0.082**	1.000	1.841
	N	690																			

Note: Bold values are significant at 5% level.

Table 4. Association of audit committee financial expertise, audit committee independence, and CL likelihood

(1) $CL\_A_{it} = \gamma_0 + \gamma_1 Expert_{it} + \gamma_{21} Indep_{it} + Controls_{it} + F\_FE + Y\_FE + \varepsilon_{it}$

(2) $CL\_A_{it} = \delta_0 + \delta_1 Expert_{it} + \delta_2 Indep_{it} + \delta_3 (Expert \times Indep)_{it} + Controls_{it} + F\_FE + Y\_FE + \acute{\varepsilon}_{it}$

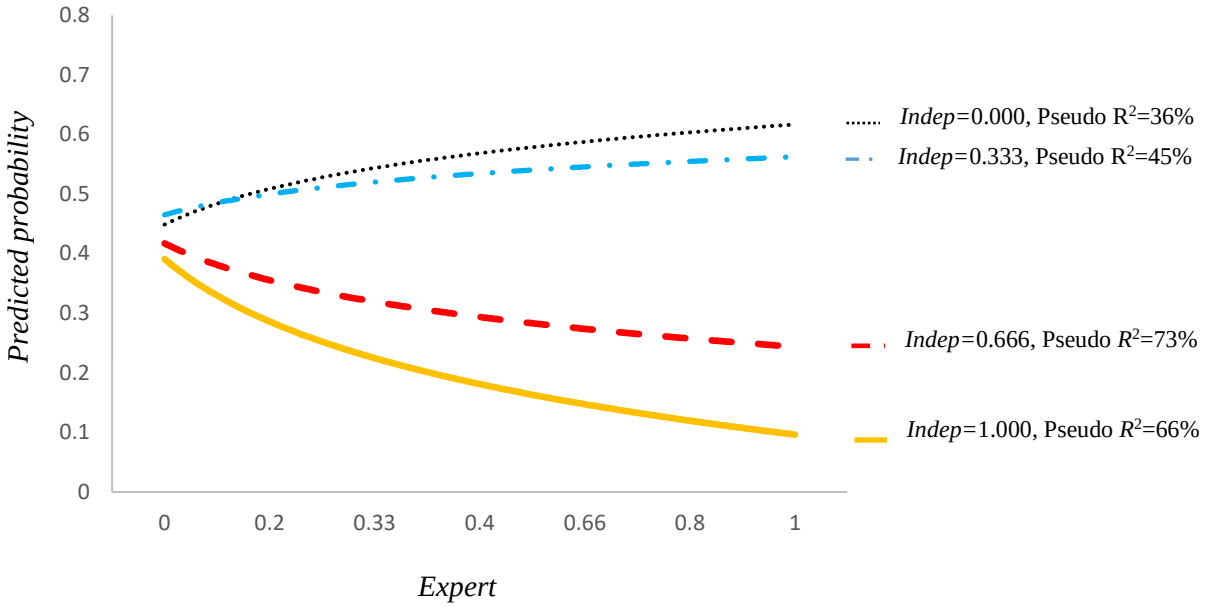
Indep.Var	Pred.	(1) Coef. (Z.stat)	(2) Coef. (Z.stat)
Expert	−/+	0.080 (1.637)	0.466 *** (5.213)
Indep	−	-0.666*** (-6.618)	-0.170 *** (-3.619)
Expert × Indep	−/+	—	-0.694 *** (-5.428)
AC_S	−	-0.327 (-0.456)	-0.260 (-0.801)
AC_M	−	0.001 (0.263)	0.002 (0.744)
EM	+	0.006 (0.025)	0.004 (0.033)
I_CW	+	0.112 ** (2.530)	0.075 *** (2.992)
Rest	+	0.082 * (1.923)	0.058 ** (2.541)
Big	−	-0.075 (-1.587)	-0.056 (-0.710)
A_S	−	-0.008 (-0.163)	-0.018 (-0.657)
M_C	+	0.015 (1.260)	0.013 ** (2.086)
Age	+	0.001 (0.296)	0.001 (0.360)
R_OA	+	-0.191 (-1.381)	-0.113 (-1.466)
B_R	+	0.083 * (1.652)	0.052 ** (2.026)
E_F	+	0.333 ** (2.097)	0.290 *** (3.459)
CL_F	+	0.339 *** (5.458)	0.197 *** (6.234)
I_O	−	0.002 (0.299)	0.007 (1.475)
Dual	+	0.131 ** (2.084)	0.093 ** (2.542)
B_I	−	0.017 (0.296)	0.028 (0.973)
Constant, F_FE, Y_FE		Included	Included
N		690	690
Pseudo R^2 [Prob (LR statistic)]		50% [0.000]	53% [0.000]

Area Under the Curve (ROC)	85%	87%

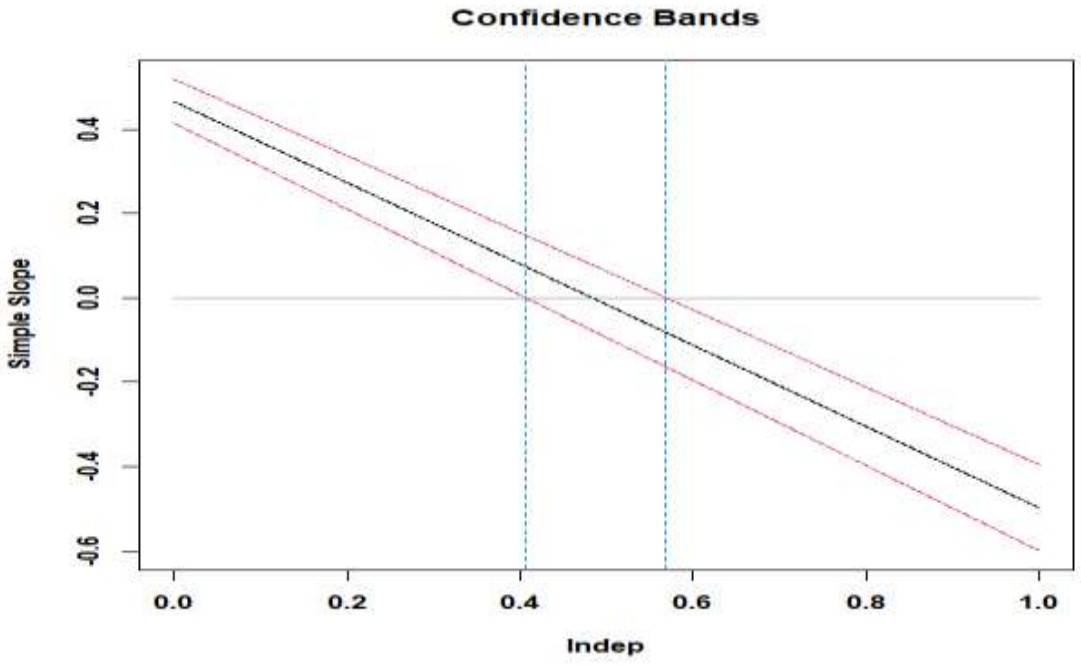
Note: The asterisks show a 10% (*), 5% (**), and 1% (***) level of significance. Parentheses report *z*-statistics.

Figure 1. Graphical analysis

Panel A: Pick-a-point approach



Panel B: Johnson-Neyman approach



Note: This figure demonstrates the moderating effect of audit committee independence (*Indep*) in the relationship between audit committee financial expertise (*Expert*) and CL likelihood. Panel A depicts the relationship between *Expert* and the fitted values of the Equation (1) in four levels of *Indep*. Panel B illustrates conditional slope and confidence bands for regression coefficient estimate on *Expert* conditional on the all Level of *Indep*.

Table 5. Effect of regulatory reviewers' workload compression

$CL\_A_{it} = \delta_0 + \delta_1 Expert_{it} + \delta_2 Indep_{it} + \delta_3 (Expert \times Indep)_{it} + Controls_{it} + F\_FE + Y\_FE + \acute{\varepsilon}_{it}$

Indep.Var	Pred.	High workload Coef. (Z.stat)	Low workload Coef. (Z.stat)
Expert	−/+	0.364* (1.738)	0.233 (1.087)
Indep	−	-0.928*** (-3.920)	-0.745*** (-3.164)
Expert × Indep	−/+	-0.751*** (-7.863)	-0.309** (-2.012)
AC_S	−	-0.623 (-1.588)	0.577 (0.956)
AC_M	−	0.009 (0.184)	0.047 (1.212)
EM	+	-0.197 (-1.560)	0.254 (0.758)
I_CW	+	0.520*** (2.958)	0.522*** (2.975)
Rest	+	0.409*** (2.626)	0.395*** (2.636)
Big	−	-0.619 (-1.625)	-0.300 (-0.582)
A_S	−	-0.062* (-1.749)	-0.050 (-0.124)
M_C	+	0.222 (1.252)	0.190 (1.307)
Age	+	0.040** (2.080)	0.050** (2.301)
R_OA	+	0.145 (0.067)	-0.930 (-1.420)
B_R	+	0.076 (0.129)	-0.047 (-0.081)
E_F	+	0.684*** (3.435)	0.153 (0.586)
CL_F	+	0.341*** (3.405)	0.488*** (3.937)
I_O	−	0.006 (0.562)	-0.018** (-2.040)
Dual	+	0.520* (3.461)	-0.218 (-0.345)
B_I	−	-0.886* (-1.748)	-0.838* (-1.893)
Constant, F_FE, Y_FE		Included	Included
Difference in δ_3 between columns (1) and (2)		Z= 2.443**	
N		478	212
Pseudo R^2 [Prob (LR statistic)]		54% [0.000]	50% [0.000]
Area Under the Curve (ROC)		87%	85%

Note: The asterisks show a 10% (*), 5% (**), and 1% (***) level of significance. Parentheses report *z*-statistics.