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Do Firms Delay Bad News? Earnings Quality, Audit Opinion and Strategic Timing of Earnings Announcement in an Emerging Market

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The authors declare no conflict of interest relevant to this article.

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Do Firms Delay Bad News? Earnings Quality, Audit Opinion and Strategic Timing of Earnings Announcement in an Emerging Market

Abstract:

Purpose: This study addresses a longstanding puzzle in the financial reporting literature concerning why the traditionally negative signal conveyed by a non-clean audit opinion does not consistently result in delayed financial disclosure. Specifically, we examine how a firm's underlying earnings quality (EQ) influences its strategic disclosure timing decisions in response to such adverse audit signals.

Design/Methodology/Approach: Using a panel dataset of 130 Egyptian non-financial firms over the 2014–2022 period, comprising 1,059 firm-year observations, we employ a fixed-effects (FE) panel regression model. The robustness of the findings is further validated through subsample analyses and alternative econometric specifications, including the system generalized method of moments (GMM) estimator, to mitigate potential endogeneity concerns.

Findings: Although the direct effect of a non-clean audit opinion is not statistically significant, the significant negative interaction effect indicates the presence of two contrasting strategic disclosure responses. Specifically, firms with low earnings quality (EQ) significantly *delay* financial reporting following the receipt of a non-clean audit opinion, whereas high-EQ firms *accelerate* their disclosure announcements, consistent with a credible signaling strategy aimed at proactively demonstrating financial resilience. Furthermore, this interaction effect is conditional on the severity of the audit modification and is particularly pronounced among firms characterized by lower external audit quality and larger organisational size.

Practical Implications: A delayed announcement of a non-clean audit opinion constitutes a dual negative signal, reflecting not only the presence of an adverse audit outcome but also deficiencies in the firm's underlying information quality. In contrast, the timely disclosure of unfavorable audit news may function as a credible signal of organisational resilience, transparency, and confidence in the firm's underlying financial reporting quality.

Originality/Value: This study is among the first to document the significant moderating role of earnings quality (EQ) in shaping the relationship between audit opinion modifications and earnings announcement delays. In doing so, it offers a theoretically grounded explanation for a longstanding puzzle in the disclosure literature by demonstrating the interactive role of EQ through an extension of dynamic capabilities theory. The findings further suggest that high earnings quality functions as a critical operational buffer, enabling firms to adopt a credible and timely disclosure strategy even when confronted with adverse audit outcomes.

Keywords: Earnings Announcement Timing, Audit Opinion Modification, Earnings Quality, Corporate Governance, Dynamic Capabilities Theory, Signalling Theory, Emerging Markets, Egypt

JEL Classification: M41, M42, G34, O16

Do Firms Delay Bad News? Earnings Quality, Audit Opinion and Strategic Timing of Earnings Announcement in an Emerging Market

Introduction

Timely financial reporting remains a defining attribute of high-quality disclosure because it equips investors and other stakeholders with information essential for evaluating firms' performance and prospects. (Agyei-Mensah, 2018, Healy and Palepu, 2001). Within this broader financial reporting landscape, the timing of earnings announcements has acquired growing prominence as a visible signal of the reliability and clarity of a firm's underlying information environment. A substantial stream of research shows that earnings announcement delay (EAD) is not a mechanical artefact of the reporting cycle but reflects managerial discretion, shaped by incentives and constraints that influence when firms choose to release their results (Begley and Fischer, 1998, Kim *et al.*, 2021, Trueman, 1990). Consistent with this view, the "good news early, bad news late" pattern remains one of the most enduring insights in disclosure research, whereby firms expedite the release of favourable information while deferring adverse announcements (Chambers and Penman, 1984, Kross and Schroeder, 1984). A particularly informative form of "bad news" arises when auditors issue a modified audit opinion (AOM), signalling weaknesses or uncertainties surrounding the firm's financial statements (Blankley *et al.*, 2014, Cameran and Campa, 2025, Dunn and Mayhew, 2004). Prior studies consistently associate AOMs with longer reporting lags, typically attributed to the complexity of auditor–management negotiations and the heightened scrutiny applied to contentious accounting issues (Cullinan *et al.*, 2012, Haw *et al.*, 2003, Soltani, 2002). Nevertheless, this relationship is far from uniform. While some firms experience notable delays following an AOM, others release their earnings with little or no postponement. These divergent disclosure responses, despite a common external shock, suggest that the presence of an AOM alone does not fully explain EAD. This raises a fundamental question: *which firm characteristics determine how an organization reacts to the negative signal embedded in an AOM?*

This question is especially pertinent in emerging markets, where institutional weaknesses heighten the informational role of disclosure timing. In countries such as Egypt, weaker enforcement, governance frictions, and varying audit quality frequently contribute to longer reporting cycles and elevate investor uncertainty (Abozeid *et al.*, 2025, Seny Kan *et al.*, 2021, Yassen *et al.*, 2025, Chafai *et al.*, 2024). Moreover, concentrated ownership structures and the prevalence of family firms, often driven by reputational and socioemotional motives, create additional layers of heterogeneity in firms' disclosure behaviour (Gomez-Mejia *et al.*, 2011). Within such institutional contexts, variations in EAD may reveal more about a firm's internal capabilities and transparency than in more mature markets.

Despite a well-developed literature on reporting timeliness, existing studies have offered only partial explanations for the heterogeneity in firms' responses to AOMs. Much of the prior work emphasizes external factors, including regulatory changes (e.g., Kateb, 2024), but gives comparatively less attention to firms' internal capabilities, particularly those that enable organizations to absorb, interpret, and respond to adverse audit signals. Nonetheless, emerging evidence suggests that a firm's underlying earnings quality (EQ) may be central to understanding these differences. EQ, which broadly reflects the reliability and persistence of reported earnings, captures important organizational features such as the robustness of internal controls, the quality of accounting systems, and the discipline underpinning financial reporting processes (Dechow *et al.*, 2010, Schipper, 1989). Firms characterized by high-EQ often possess stronger reporting infrastructures and more effective audit relations, potentially equipping them to respond more efficiently to the complications associated with an AOM. Against this backdrop, a significant research

question emerges: *Does a firm's earnings quality shape the extent to which a modified audit opinion delays its earnings announcement?*

This study addresses this question by integrating insights from signalling theory (Spence, 1973) and the dynamic capabilities theory (Teece *et al.*, 1997). From a signalling perspective, high-EQ firms may find it strategically advantageous to disclose adverse audit outcomes promptly to reinforce credibility and mitigate uncertainty (Khoo *et al.*, 2020). Conversely, low-EQ firms may struggle to resolve audit-related issues efficiently, resulting in more pronounced delays. Dynamic capabilities theory strengthens this interpretation by framing EQ as an internal operational capability that governs how effectively a firm can absorb the shock of an AOM and manage ensuing disclosure demands. Accordingly, we examine how EQ moderates the relationship between AOM and EAD using a panel of 130 non-financial firms listed on the Egyptian Exchange (EGX) over 2014–2022. Employing firm FE models and system GMM estimators to address endogeneity, we find that the average null association between AOM and EAD masks two contrasting strategic patterns. Low-EQ firms significantly delay announcements following an AOM. In contrast, high-EQ firms accelerate their disclosures, demonstrating the role of EQ as a dynamic capability and a credible mechanism for differentiating disclosure strategies.

This study offers three contributions. Theoretically, it extends dynamic capabilities theory by conceptualizing EQ as an “operational buffer” that shapes corporate responses to audit-related shocks. Empirically, it advances disclosure literature by explaining the heterogeneous AOM–EAD relationship through firm-level capabilities, adding novel evidence from an under-examined emerging economy. In practice, it highlights that a delayed announcement following an AOM is a dual warning sign, indicating both an adverse audit outcome and a weaker internal information environment, while timely disclosure of bad news may signal resilience.

The remainder of this paper is structured into five main sections. Section 2 reviews the relevant literature and develops our hypotheses. Section 3 describes the research design and methodology. Section 4 presents the empirical results and discussion. Finally, Section 5 concludes with a summary of our findings, implications, limitations, and avenues for future research.

Literature Review and Hypothesis Development

Theoretical Framework

The timing of a firm's earnings announcement reflects more than the mechanics of the reporting cycle; it is the outcome of strategic choices made under governance, market, and organizational constraints. Three theoretical lenses are particularly relevant to understanding these choices in the context of audit opinion modifications (AOM), earnings announcement delay (EAD), and earnings quality (EQ): agency theory, signalling theory, and dynamic capabilities theory.

From an agency theoretical perspective, managers act as agents whose incentives may not always be aligned with those of shareholders (Jensen and Meckling, 1976). When reporting bad news, managers may attempt to postpone or obfuscate disclosure to protect their own reputations, compensation, or private benefits. In this view, delays in earnings announcements can be interpreted as manifestations of agency problems, especially when underlying information is adverse or contentious. Signalling theory (Spence, 1973) complements this view by framing the timing of disclosure as a signal to external stakeholders. The “bad news late” regularity, where unfavourable information tends to be released with longer delays, reflects the idea that managers choose announcement timing strategically to shape market interpretations (Kross and

Schroeder, 1984, Patell and Wolfson, 1982). EAD thus conveys information about both the content of earnings and the process through which they are produced and verified (Suchman, 1995). When an external event such as an AOM occurs, the timing of firms' announcements becomes part of a broader signalling strategy in capital markets.

While agency and signalling theories focus on managerial incentives, the dynamic capabilities theory (Teece *et al.*, 1997) highlights the role of internal organizational competencies. Under this lens, the timeliness of financial reporting depends on a firm's ability to gather, process, and validate information quickly and reliably. Firms with strong internal controls, well-designed reporting systems, and skilled financial teams are more capable of handling complex audit issues and closing their books efficiently. Weak internal capabilities, in contrast, not only allow strategic delays to flourish but also make it more difficult to respond promptly even if managers wish to do so. Dynamic capabilities, therefore, shape the feasible set of disclosure strategies available to management.

These theoretical arguments must be interpreted in the light of the institutional context. Egypt, as an emerging market, is characterized by weaker regulatory enforcement, an evolving financial reporting infrastructure, and heterogeneous audit quality, all of which can lengthen reporting cycles and create opportunities for strategic timing (Ebrahim and Fattah, 2015, Seny Kan *et al.*, 2021, Yassen *et al.*, 2025). Ownership structures are often concentrated and family-controlled, and socioemotional considerations—such as the desire to preserve family reputation—may influence disclosure choices (Gomez-Mejia *et al.*, 2011). In such an environment, internal capabilities and credibility signals may act as partial substitutes for external enforcement. Consequently, theories developed largely in mature markets require careful adaptation rather than mechanical transfer when applied to Egypt. Our hypotheses are therefore grounded first in these theoretical frameworks and then critically informed, rather than determined, by prior empirical findings from other settings.

Within this integrated framework, AOM acts as an external adverse shock, EAD is the observable outcome of firms' strategic and operational responses, and EQ captures the internal financial reporting capability that shapes these responses. We next use this framework to develop hypotheses regarding the direct effects of AOM and EQ on EAD, as well as the moderating role of EQ.

AOM and EAD

An AOM represents a salient, publicly observable signal that the auditor has reservations about the firm's financial statements. From an agency theory standpoint, the presence of an AOM indicates weaknesses in monitoring and control, often arising from contentious accounting estimates or unresolved disagreements between management and the auditor. These issues typically require additional audit procedures, extended negotiations with management, and, in some cases, the involvement of audit committees, all of which consume time and can delay the release of audited results (Abernathy *et al.*, 2014, Chapman *et al.*, 2023). Under signalling theory, an AOM constitutes “bad news” that firms may seek to manage strategically. Managers anticipating negative market reactions to a modified opinion may opt to delay the earnings announcement to postpone the realization of reputational and valuation consequences, consistent with the “bad news late” phenomenon (Kross and Schroeder, 1984, Patell and Wolfson, 1982)). In this view, delays following an AOM have a dual interpretation: they may partly reflect the technical complexity of resolving audit issues and partly signal managerial reluctance to reveal unfavourable information (Kim *et al.*, 2021, Trueman, 1990).

Evidence from various jurisdictions, especially in emerging markets, documents a positive association between adverse audit outcomes and reporting delays (Ashton *et al.*, 1989, Cullinan *et al.*, 2012, Haw *et al.*, 2003, Soltani, 2002). These studies are informative but not definitive for the Egyptian setting,

as they are grounded in different institutional arrangements and enforcement regimes. Nevertheless, they collectively support the notion that a modified opinion is typically accompanied by a more complex reporting process and, on average, a longer EAD. Given the relatively weaker enforcement and evolving audit infrastructure in Egypt ((Ebrahim and Fattah, 2015, Seny Kan *et al.*, 2021), the frictions associated with resolving an AOM may be even more pronounced, making delays a plausible and theoretically consistent outcome. Based on agency and signalling theories, and recognising the heightened frictions in the Egyptian capital market, we expect AOMs to be associated with longer EAD:

Hypothesis 1: Audit opinion modification (AOM) is positively associated with earnings announcement delay (EAD).

EQ and EAD

EQ captures the extent to which reported earnings faithfully reflect a firm's underlying economic performance and are useful for decision-making (Dechow *et al.*, 2010, Schipper, 1989). Conceptually, EQ is not merely an outcome of accounting choices; it also reflects deeper organizational features, including the quality of internal controls, the competence of accounting staff, and the robustness of information systems (Altamuro and Beatty, 2010, Demerjian *et al.*, 2013, Gong *et al.*, 2021, Liang *et al.*, 2024, Wan-Hussin *et al.*, 2021, Zheng and Han, 2025). Viewed through the lens of dynamic capabilities theory, high-EQ signals that a firm possesses strong internal capabilities for processing transactions, documenting evidence, and closing its books efficiently. These capabilities should naturally translate into smoother audit processes and more timely earnings announcements (Diab and Hamdy, 2022, Lee *et al.*, 2015, Liu *et al.*, 2022)

From a signalling perspective, persistent high-EQ conveys “good news” about the sustainability and reliability of performance (Dichev *et al.*, 2013, Pevzner *et al.*, 2015). In such cases, managers have stronger incentives to release earnings promptly to capitalize on favourable market reactions and reinforce their reputation for transparency (Chambers and Penman, 1984). Conversely, low-EQ, particularly when associated with aggressive or “last-chance” earnings management, may necessitate additional internal reconciliation, increase the risk of auditor challenge, and induce caution in the timing of disclosure, leading to longer EAD (Kim *et al.*, 2021).

Empirical evidence from other regions supports the view that poorer reporting quality is associated with delayed announcements, especially when coupled with regulatory shocks or heightened scrutiny (Kateb, 2024). However, these findings arise predominantly from GCC and other non-Egyptian contexts. In the Egyptian market, where external enforcement and investor protection are relatively weaker, internal reporting quality may be even more critical. Firms with high-EQ can rely on well-structured internal processes and credible financial records to expedite both audit work and board approval, thereby reducing delays. For investors operating in this environment, a short EAD, combined with high-EQ, may serve as a particularly credible signal of organisational competence. On this basis, we propose:

Hypothesis 2: Earnings quality (EQ) is negatively associated with earnings announcement delay (EAD).

The Moderating Role of EQ

This study examines not only whether audit opinion modifications (AOMs) and earnings quality (EQ) individually influence earnings announcement delay (EAD), but crucially whether EQ conditions the impact of AOMs on disclosure timing. Drawing on dynamic capabilities and signalling theory, we argue that EQ moderates this relationship.

From a dynamic capabilities perspective, EQ reflects a firm's financial reporting capability. Drawing on the audit negotiation and internal control literatures, we posit that these high-EQ capabilities manifest in several specific ways. High-EQ firms are more likely to maintain strong internal controls, transparent transaction trails, and effective communication channels with auditors (Chapman et al., 2023; Dechow et al., 2010; Lee et al., 2015). When faced with an AOM, these firms, with superior internal controls, provide a stronger foundation for the audit, reducing ambiguity and points of contention (Gibbins et al., 2010). They can more rapidly diagnose underlying issues, compile supporting evidence, and engage constructively with auditors and audit committees. This allows for a more efficient auditor-management negotiation process, enabling faster remediation of any identified issues. Recent literature (e.g., Chapman et al., 2023) suggests that firms with stronger operational capabilities are able to address audit-related challenges more efficiently, enabling underlying firm quality to translate into shorter reporting delays even when an adverse audit opinion is issued. Complementing this view, Seavey et al. (2022) show that firms characterized by higher accounting quality are more likely to release earnings announcements prior to the completion of the audit process. Research on audit negotiations also indicates that structured documentation practices and sophisticated reporting systems facilitate more efficient dispute resolution and accelerate audit completion (Gibbins et al., 2010; Blaufus et al., 2022). These findings suggest that although AOMs generally increase reporting complexity and delay financial reporting, firms with higher EQ possess the internal capabilities and reporting infrastructure necessary to mitigate such delays more effectively.

Signalling theory reinforces this logic. In environments such as Egypt, where enforcement and investor protection are relatively weak, disclosure timing itself becomes an important credibility signal. Promptly announcing earnings despite receiving an AOM can demonstrate organizational resilience and a commitment to transparency (Khoo et al., 2020; Suchman, 1995). High-EQ firms, possessing both stronger reporting systems and reputational capital, have greater incentives and capacity to adopt this strategy. In contrast, low-EQ firms face technical constraints in resolving audit issues and may strategically delay disclosure to soften market scrutiny.

The Egyptian institutional context strengthens this moderating effect. Where external governance mechanisms are uneven, internal reporting capabilities serve as a substitute for formal enforcement. EQ, therefore, functions as an operational buffer against the time pressure created by an AOM. For investors, an AOM accompanied by a significant delay may signal not only adverse audit findings but also weak internal capability. Conversely, a rapid disclosure by a high-EQ firm may frame the modified opinion as an isolated, well-managed issue rather than a symptom of systemic weakness. Accordingly, we hypothesize the following:

Hypothesis 3: The positive association between audit opinion modification (AOM) and earnings announcement delay (EAD) is weaker for firms with high-earnings quality (EQ).

Based on the hypotheses presented above, Figure 1 illustrates the theoretical framework of this study.

_____ *Insert Figure 1 about here* _____

Research Method

Data and Sample Selection

This study examines the complex relationship among AOM, EQ, and the timeliness of earnings announcements using a sample of non-financial firms listed on EGX. Our analysis is based on the 2014-2022 period, a timeframe strategically chosen to capture corporate disclosure strategies within a dynamic environment of institutional and economic reform following the 2011-2014 post-revolutionary era. We aimed to better understand the dynamics of AOM, EAD, and EQ in the Egyptian context. Following standard research protocols, we exclude financial institutions such as banks and insurance companies to avoid the confounding effects of their unique regulatory and governance environments. After excluding observations with missing data, the final unbalanced panel consists of 1,059 firm-year observations from 130 unique firms across 10 industries. To ensure data accuracy, we employed a dual collection strategy: quantitative financial metrics and earnings announcement dates were sourced from the LSEG Workspace database, while governance data, including board characteristics, ownership structures, and audit opinion modifications, were meticulously hand-collected from primary source corporate annual reports. Table I details the sample selection process, while Table II provides operational definitions for all variables.

_____ *Insert Table I about here* _____

Research model

To test our hypotheses, we employ a panel fixed-effects (FE) regression model as the baseline empirical specification. This approach is particularly appropriate in the context of financial reporting research, where unobservable, time-invariant firm characteristics, such as managerial philosophy, organizational culture, internal reporting systems, and structural complexity, may simultaneously influence audit outcomes and disclosure timeliness. If left uncontrolled, these latent attributes can generate omitted variable bias. The FE estimator addresses this concern by exploiting within-firm variation over time, thereby absorbing all time-invariant heterogeneity and strengthening causal inference.

The specification of the first model, which is designed without the interaction term to examine the direct impact of AOM level and EQ on EAD, is as follows.

$$EAD_{it} = \alpha + \beta_1 AOM_{it} + \beta_2 EQ_{it} + \beta_{3-14} CONTROLS_{it} + \varepsilon_{it} \quad \text{Model (1)}$$

Then, we add an interaction between AOM and EQ to test our third hypothesis regarding how the relationship between AOM and EAD varies with EQ.

$$EAD_{it} = \alpha + \beta_1 AOM_{it} + \beta_2 EQ_{it} + \beta_3 AOM * EQ_{it} + \beta_{4-15} CONTROLS_{it} + \varepsilon_{it} \quad \text{Model (2)}$$

where the subscript, i , refers to the firm number, and the subscript, t , denotes the time period; α_i is a constant; β_1 – β_{15} are the regression coefficients of the explanatory variables; and finally, ε_{it} is the idiosyncratic error term. Variable definitions were presented in Table II.

We estimate two related models. The first examines the direct effects of AOM and EQ on EAD. The second introduces an interaction term between AOM and EQ to test whether EQ moderates the association between audit opinion severity and disclosure timeliness. This specification allows us to assess whether firms with higher-quality earnings respond differently to audit scrutiny compared to those with lower-

quality earnings. To mitigate concerns regarding serial correlation and heteroskedasticity, we cluster standard errors at the firm level.

Consistent with prior studies on reporting timeliness (Khelif et al., 2015; Krishnan & Yang, 2009; Abernathy et al., 2014; Lisic et al., 2022; Khan et al., 2026), we measure EAD as the number of calendar days between fiscal year-end and the initial earnings announcement (Kateb, 2024). While this measure does not capture potential pre-announcement information leakage through other channels, it fully captures managerial discretion over disclosure timing and reflects informational frictions in the reporting process. To ensure robustness and account for distributional skewness, we re-estimate our models using the natural logarithm of EAD, following Khan et al. (2026), Aslan et al. (2011), Zhu and Sun (2012), and Wang et al. (2025).

To capture the severity of negative signals conveyed in the auditor’s report, we construct an ordinal measure of AOM. Rather than adopting a binary clean versus non-clean classification, we follow AbuRaya (2023) in coding AOM along a graduated scale reflecting escalating auditor concern, ranging from an unqualified opinion to explanatory paragraphs, qualified opinions, adverse opinions, and disclaimer. This ordinal structure enables a more nuanced examination of how firms adjust disclosure timing in response to varying degrees of audit severity. Conceptually, more severe modifications signal heightened reporting risk and uncertainty, which may influence managerial disclosure strategies.

EQ is measured using the StarMine Earnings Quality Score (EQS), reflecting growing recognition that traditional accrual-based proxies have experienced declining explanatory power (Bushman et al., 2016). Recent literature advocates multi-dimensional measures that integrate accruals, cash flows, operating efficiency, and earnings exclusions to provide a more comprehensive assessment of earnings reliability and persistence (Abdelsalam et al., 2021; Fassas et al., 2023). The EQS is expressed as a percentile rank (0–100), benchmarking firms against peers within the same regulatory environment, which enhances comparability in cross-country and emerging market settings (Saona et al., 2024). Importantly, the measure rewards sustainable, cash-based performance and penalizes excessive accrual reliance, aligning with theoretical expectations regarding reporting credibility.

Finally, consistent with prior research (Owusu-Ansah, 2000; Lee et al., 2015; Kim et al., 2021; Çelik et al., 2023; Kateb, 2024, Ebaid, 2022, Lourenço et al., 2018, Owusu-Ansah and Leventis, 2006, Singh et al., 2022), we include governance and firm-level controls to mitigate confounding effects. These include board characteristics, ownership structure, firm size, profitability, leverage, liquidity, growth, dividend policy, and inherent risk. Following El-Dyasty and Elamer (2021–2026), inherent risk is proxied by inventory and receivables scaled by total assets, capturing accounting estimation uncertainty. Collectively, this design provides a rigorous framework for examining the direct and conditional effects of AOM and EQ on disclosure timeliness.

Insert Table II about here

Results and Discussion

Descriptives and correlations

Table III Panel A provides an initial portrait of the empirical landscape. After excluding incomplete observations and winsorizing continuous variables at the 1st and 99th percentiles, the average EAD stands at 83 days, with a striking dispersion ($SD = 36$; range 18–262 days). This widespread underscores that reporting timeliness in Egypt is not mechanical but reflects meaningful managerial discretion (Chambers

and Penman, 1984). AOMs occur in 16.5% of firm-years, broadly consistent with AbuRaya (2023), signalling that adverse audit outcomes are neither rare nor dominant. EQ, measured on a 0-100 percentile scale, exhibits substantial variation (mean = 41.5), providing fertile ground to examine its conditioning role (Dechow et al., 2010).

Panel B reveals that qualified opinions cluster more heavily among low-EQ firms (4.46%) than high-EQ firms (2.68%), yet high-quality reporters are not immune to adverse signals. This nuance foreshadows the heterogeneous behavioural responses explored later. Although 930 observations were lost due to missing data, common in emerging-market archival research (El-Dyasty and Elamer, 2026), the final sample remains diverse and representative. Correlation diagnostics, presented in Table IV, indicate no multicollinearity concerns (Gujarati and Porter, 2009). Preliminary associations align with theory: AOM correlates positively with delay, whereas EQ correlates negatively, consistent with signalling and capability-based arguments (Spence, 1973; Teece et al., 1997).

_____ *Insert Table III about here* _____

_____ *Insert Table IV about here* _____

Multivariate analysis

Table V reports baseline FE regressions with robust standard errors clustered at the firm level. Using EAD1 as the dependent variable, Model (1) presents the direct effects while controlling for firm and year effects. The coefficient on AOM is positive but statistically insignificant ($\beta = 4.226$, $t = 1.28$), indicating that, on average, AOMs do not unconditionally delay earnings announcements. This null finding sharpens the empirical puzzle and, at first glance, appears to contradict the classic “bad news late” proposition of signalling theory (Kross & Schroeder, 1984). In contrast, EQ is negative and highly significant ($\beta = -0.157$, $t = -3.75$), providing strong support for H2 and confirming that firms with higher-quality earnings report more promptly, consistent with the notion that robust reporting infrastructures facilitate faster financial disclosure (Dechow et al., 2010).

Model (2) introduces the interaction term and fundamentally alters the interpretation. AOM becomes positive and significant at the 5% level ($\beta = 11.156$, $t = 2.31$), supporting H1 and aligning with prior evidence that adverse audit outcomes prolong reporting cycles (Ashton et al., 1989; Haw et al., 2003; Cullinan et al., 2012; Soltani, 2002). EQ remains negative and significant ($\beta = -0.124$, $t = -2.80$), reaffirming H2. Crucially, the interaction term AOM×EQ is negative and significant ($\beta = -0.191$, $t = -2.28$), supporting H3. This indicates that the delay associated with AOM weakens, and may reverse, as EQ increases. The earlier insignificance of AOM in Model (1) is thus explained by offsetting behaviours: low-EQ firms delay, whereas high-EQ firms accelerate disclosure. The model is jointly significant ($F = 3.30$, $p < 0.01$; $R^2 = 15.6\%$).

Re-estimating the models with log-transformed EAD (EAD2) confirms the pattern. Model (3) again shows an insignificant unconditional AOM effect, reinforcing the inadequacy of a simple linear specification. Model (4) reports a positive main effect for AOM ($\beta = 0.114$, $p < 0.01$) and a negative interaction ($\beta = -0.002$, $p < 0.046$), corroborating all three hypotheses. The consistency across level and log specifications strengthens confidence that the interaction reflects a genuine economic mechanism rather than distributional artefacts.

Insert Table V about here

The conditional support for H1 reconciles our findings with signalling theory. Once EQ is accounted for, AOM behaves as predicted by the “bad news late” paradigm (Spence, 1973; Kross & Schroeder, 1984). The result also aligns with Cheng et al. (2023), who show that firms strategically delay announcements to manage reputational exposure. Yet our evidence reveals heterogeneity: delays are concentrated among firms lacking strong reporting capabilities. The robust support for H2 confirms that EQ directly enhances timeliness, in contrast to regional studies, such as Kateb (2024), which reports an insignificant baseline link when using discretionary accruals. By employing a comprehensive, multi-factor EQ measure, we capture deeper reporting integrity, consistent with dynamic capabilities theory (Teece et al., 1997). Most importantly, H3 highlights EQ as an “operational buffer.” High-EQ firms appear to transform an adverse audit signal into a reputational opportunity, accelerating disclosure to mitigate uncertainty and preserve legitimacy (Suchman, 1995; Khoo et al., 2020). This complements Pevzner et al. (2015), who emphasize credibility as a market signal. Unlike Kateb (2024), who documents compliance-driven acceleration in response to regulatory shocks, we identify a reputation-driven response to firm-specific adversity.

Within Egypt’s institutional environment, which is characterized by concentrated ownership and evolving enforcement (Elbayoumi et al., 2019), internal capabilities substitute for weaker external governance. Earlier reporting by family firms further aligns with socioemotional wealth theory (Gomez-Mejia et al., 2011), suggesting that reputational preservation motivates timely disclosure.

Control variables behave largely as expected: profitability, leverage, and dividend payments are associated with shorter delays (Clatworthy and Peel, 2016; Diab and Hamdy, 2022), while inherent risk prolongs reporting. Unlike prior studies (e.g., Alexeyeva, 2024), board size and institutional ownership are insignificant, likely reflecting limited within-firm variation and the passive monitoring structure prevalent in the Egyptian market. Collectively, the evidence reveals that disclosure timing in emerging markets is shaped by the interplay between adverse audit signals and firm-specific reporting capabilities, rather than by audit opinions alone.

Robustness Checks

To strengthen the credibility and generalizability of our baseline FE results, we conduct a structured sequence of robustness tests that address three central empirical concerns in panel-based disclosure research: cross-sectional dependence, estimator sensitivity, and contextual heterogeneity (Petersen, 2009; Gow et al., 2010). Each test is designed not merely to mechanically replicate the findings, but to interrogate whether the documented moderating role of EQ survives alternative assumptions and institutional conditions.

We begin by addressing the possibility that unobserved shocks common to all firms in a given year, such as regulatory changes or macroeconomic volatility, may induce cross-sectional correlation in the residuals and bias statistical inference. To mitigate this concern, we re-estimate our main FE specification using two-way clustered standard errors at both the firm and year levels. The results are reported in Table VI. The magnitudes of the key coefficients remain virtually unchanged. Although the t-statistics decline modestly, as expected under a more conservative variance estimator, the substantive conclusions persist. AOM remains positively associated with EAD (supporting H1), EQ remains negatively associated with delay (supporting H2), and, most importantly, the interaction term between AOM and EQ remains negative and statistically significant at the 5% level ($\beta = -0.192$, $t = -2.05$), reaffirming H3. This evidence indicates that our findings are not driven by understated standard errors or time-specific clustering effects.

Having addressed potential dependence in the error structure, we next examine whether the results are sensitive to the estimation technique itself. FE estimation is well suited for controlling time-invariant heterogeneity, yet concerns may arise that the interaction effect is specific to this transformation. To rule this out, we re-estimate the models using alternative approaches that impose different assumptions about heteroskedasticity and serial correlation. Specifically, we employ Generalized Estimating Equations (GEE), which allow flexible working correlation structures (Liang and Zeger, 1986), and Feasible Generalized Least Squares (FGLS), which explicitly corrects for panel-level heteroskedasticity and AR(1) autocorrelation (Baltagi, 2021). We also estimate a pooled OLS model as a benchmark. The results, also presented in Table VI, are remarkably consistent across specifications. In each case, AOM is positively associated with delay, EQ is negatively associated with delay, and the interaction term remains negative and statistically significant. Although the statistical significance of some control variables varies, an unsurprising outcome under alternative covariance assumptions, the stability of the main and interaction effects reinforces that the moderating role of EQ reflects a persistent economic relationship rather than a model-specific artefact.

Beyond statistical specification, robustness also requires demonstrating that the mechanism operates in theoretically meaningful ways across institutional contexts. We therefore turn to sub-sample analyses to explore boundary conditions, reported in Table VII. Following the audit quality literature (DeAngelo, 1981; Francis et al., 2009), we use auditor size as a proxy for external monitoring strength, classifying firms audited by Big 4 auditors as high audit quality and others as lower audit quality. The results reveal that the attenuating effect of EQ on the AOM–delay relationship is statistically significant only among firms audited by non-Big 4 auditors. Among Big 4 clients, the interaction term becomes insignificant. This pattern is theoretically coherent. When external audit quality is weaker, internal reporting capability becomes more salient as a substitute governance mechanism. Conversely, when firms already benefit from the reputational assurance of a Big 4 auditor, the incremental signalling value of accelerated disclosure diminishes. The evidence, therefore, supports a substitutive relationship between internal capabilities and external monitoring, consistent with dynamic capabilities theory (Teece et al., 1997).

We further examine whether organizational scale conditions the moderating effect by partitioning the sample by firm size. Larger firms typically face greater capital market scrutiny and possess more developed reporting infrastructures (Kim et al., 2021). As shown in Table VII, the interaction between AOM and EQ is stronger and statistically significant among large firms but disappears among small firms. This finding deepens the theoretical interpretation. While high-EQ provides operational capacity, its deployment as a credible market signal requires complementary organizational resources, such as analyst coverage, institutional ownership, and investor relations capabilities, that are more prevalent among large firms. In smaller firms, even strong internal reporting quality may not translate into a strategic acceleration of disclosure, because the market incentives and signalling infrastructure are comparatively limited. Although theoretically plausible, these findings on firm-size heterogeneity are exploratory and should therefore be interpreted with caution, pending further validation in future research.

Finally, we observe heterogeneous effects of liquidity across firm size. Although liquidity is insignificant in the full sample, Table VII indicates a significant negative association with delay among large firms, consistent with a capabilities-based view in which financial slack enhances operational efficiency and reporting readiness (Teece et al., 1997). Among small firms, liquidity exhibits no significant effect, aligning more closely with agency-based concerns regarding free cash flow (Jensen, 1986). While this is a secondary finding, it underscores that disclosure timing is shaped by an interaction between financial resources, governance structures, and organizational scale.

Insert Table VI about here

Endogeneity Issues and Additional Analysis:

To confront the most serious endogeneity concerns, particularly dynamic persistence in reporting delay and potential simultaneity in our earnings quality (EQ) measure, we employ a two-step System GMM estimator following Arellano and Bond (1991) and Blundell and Bond (1998). This approach explicitly models the dynamic structure of EAD and instruments endogenous variables using their deeper lags, thereby reducing bias from reverse causality and omitted time-varying factors.

As reported in Table VIII, the specification satisfies the key diagnostic tests. The Arellano–Bond AR(2) test ($p = 0.276$) indicates no second-order serial correlation, and the Sargan test of overidentifying restrictions ($p = 0.432$) supports instrument validity. Although the instrument count (58) is relatively high, it remains within acceptable limits given the sample size (130 firms), and diagnostics do not suggest instrument proliferation.

Substantively, the GMM results provide the most rigorous confirmation of our hypotheses. AOM remains positively associated with delay (supporting H1), EQ remains negatively associated (supporting H2), and the interaction term (AOM×EQ) remains negative and statistically significant (supporting H3). Interestingly, several control variables that were significant under FE become insignificant in GMM, suggesting that their earlier effects were partially driven by endogeneity. This progression, from baseline FE to clustered errors, alternative estimators, and finally dynamic GMM, provides a layered and credible evidentiary foundation for our conclusions.

A further concern is that high-EQ firms might systematically receive less severe audit modifications, mechanically generating the interaction. To address this, we re-estimate the FE model, treating AOM as a categorical variable and interacting each level with EQ. The results are reported in Table VIII (Models 3 and 4).

Model (3) shows that, in isolation, a qualified opinion (AOM2) has no significant unconditional effect on delay, while an emphasis-of-matter opinion (AOM1) increases delay modestly (8.8 days, significant at 10%). EQ remains strongly negative. However, once interaction terms are introduced in Model (4), a clear pattern emerges: the moderating effect of EQ is statistically significant only for the more severe qualified opinion ($\beta = -0.503$, $t = -2.28$), increasing model explanatory power (R^2 rises from 0.151 to 0.159).

Crucially, the strongest interaction occurs precisely for the most severe audit signal, not for the milder emphasis-of-matter opinion. This directly contradicts the alternative selection explanation. If high-EQ firms merely received “easier” opinions, the moderation would be strongest for the least severe category. Instead, the buffering role of EQ intensifies when audit severity increases. Moreover, Table III Panel B confirms that high-EQ firms do receive qualified opinions (2.68% in the top quartile), ruling out compositional artefacts. It is noteworthy that, consistent with prior studies (AbuRaya, 2023), qualified opinions are relatively infrequent in our sample. While the significant interaction effect for qualified opinions (AOM=2) is estimated based on the 32 firm-year observations (3.02%) in our sample that received this type of opinion,

the statistical significance of the interaction coefficient ($t = -2.28$) suggests that there is sufficient variation to reliably estimate the moderating effect of EQ.

To translate statistical interaction into economic intuition, we compute predicted delays for representative firm profiles, reported in Table IX. For low-EQ firms, a qualified opinion increases delay by over 14 days (from 86.1 to 100.3 days). For high-EQ firms, the pattern reverses: a qualified opinion reduces delay by 18.5 days (from 77.8 to 59.4 days). Thus, the same audit event can add two weeks of uncertainty for a weak firm or subtract more than two weeks for a strong one.

_____Insert Table IX about here_____

This reversal is visually illustrated in Figure 2, which plots the marginal effect of AOM across levels of EQ. For low-EQ firms ($EQ < 35$), a qualified opinion significantly increases delay by up to 15 days. As EQ rises, the effect attenuates and eventually turns negative; for high-EQ firms ($EQ > 50$), qualified opinions accelerate reporting by more than 20 days. In contrast, emphasis-of-matter opinions show no conditional significance at any EQ level, confirming that the moderation is specific to more severe audit signals.

_____Insert Figure 2 about here_____

Finally, we test measurement robustness by replacing the composite EQ score with a cash-flow-based quality proxy, the cash flow component (CFC), following Abdelsalam et al. (2021). As shown in Table VIII (Model 6), the interaction between AOM and CFC remains negative and significant ($\beta = -0.199$, $p < 0.10$), confirming that the moderating effect is not dependent on a specific operationalization of earnings quality. The slightly weaker statistical significance of the interaction term when using the CFC is expected, as CFC is a narrower construct than the multi-faceted EQ score, which also incorporates accruals and operational efficiency metrics. This provides a less complete, and therefore, less precise proxy for the firm's overall 'operational buffer,' yet still confirms the robustness of our central conclusion.

Conclusions, Implications, and Further Research

This study sought to explain why the conventionally negative signal of a modified audit opinion does not consistently translate into longer earnings announcement delays, despite extensive evidence linking adverse audit outcomes to prolonged reporting cycles (Cullinan et al., 2012; Haw et al., 2003; Soltani, 2002). Drawing on dynamic capabilities, agency, and signalling theories, we proposed that EQ, as a proxy for a firm's internal financial reporting capability, fundamentally shapes how organizations respond to the informational shock of an AOM. Consistent with this theoretical logic, our empirical analysis reveals that the well-documented positive association between AOM and delay emerges only when firms possess weak internal reporting capabilities. High-EQ firms, in contrast, accelerate disclosure following an AOM, signalling confidence and reducing uncertainty in capital markets. These findings resolve the longstanding puzzle of the heterogeneous AOM–EAD relationship by demonstrating that the average null effect commonly observed in prior research masks two opposing disclosure strategies.

This research contributes to the broader knowledge system in several ways. First, by interpreting EQ as a dynamic capability, the study extends dynamic capabilities theory into the domain of corporate disclosure behaviour. Rather than viewing financial reporting quality merely as an outcome reflecting managerial discretion, our findings highlight its role as an “operational buffer” that equips firms to manage adverse

audit outcomes more effectively. Second, we refine signalling theory in the context of emerging markets by demonstrating that the credibility of managerial signals depends heavily on internal capability conditions, as high-EQ firms can credibly signal resilience through rapid disclosure, whereas low-EQ firms cannot. Third, we enrich agency theory by showing that internal capability constraints can amplify or mitigate managerial incentives to delay disclosure, thereby producing heterogeneous outcomes even under similar audit conditions. Collectively, these implications embed the study more firmly into interdisciplinary debates on disclosure, auditing, governance, and organizational capabilities.

Our findings have important practical implications for investors, auditors, regulators, and policymakers, particularly in emerging markets such as Egypt. For investors, a delayed earnings announcement following an AOM should be interpreted as a dual signal: it reflects not only the adverse audit opinion but also a weak underlying reporting capability that prevents the firm from managing audit challenges efficiently. Conversely, when high-EQ firms disclose quickly despite a modified opinion, this should be interpreted as a credible indication of internal resilience and strong governance processes.

For corporate boards and senior management, the results highlight EQ as a strategic asset. Investing in robust internal controls, efficient information systems, and high-quality financial reporting personnel enhances not only the effectiveness of routine reporting but also organisational resilience during periods of heightened audit scrutiny. For regulators in emerging markets, the findings underscore the need for policies that strengthen firms' internal reporting infrastructures, as these internal capabilities substitute for weaker external enforcement mechanisms. Tailored guidance on audit-related disclosures, internal control quality, and governance oversight may reduce systemic uncertainty and improve market confidence.

The economic magnitude of our findings is substantial. The interaction between audit opinions and EQ is not merely a statistical artifact but has a meaningful impact on corporate disclosure. Our findings provide a clear quantitative estimate of the dual red flag signal sent by a combination of an AOM and low-EQ. Our analysis predicts that a qualified opinion can either add 14 days to the reporting timeline for a low-quality firm or subtract 18 days for a high-quality firm. This range of over 30 days represents a significant period of uncertainty for capital markets. This insight can help regulators and policy makers better understand the complex incentives that drive corporate disclosure behavior in the wake of adverse audit findings.

While offering meaningful insights, this study has limitations that open several avenues for future research. We acknowledge that our dependent variable, EAD, based on official announcement dates, may not fully capture information timing due to potential pre-announcement leakage. This limitation likely attenuates our findings, suggesting results represent conservative estimates. Future research with high-frequency data could illuminate these dynamics. Our focus on a single emerging-market context (Egypt) constrains the generalizability of findings. Future studies conduct cross-country comparisons to examine whether EQ plays a similar moderating role in markets with stronger enforcement, different ownership structures, or varying audit-quality regimes. Additionally, although our categorical measure of AOM captures increasing severity, future research could unpack specific audit issues—such as going-concern uncertainties or scope limitations—to assess whether different types of modifications interact differently with EQ. Further, while the StarMine EQS provides a comprehensive measure suitable for emerging markets and our core findings remain robust when using its more fundamental and universally applicable cash flow component as an alternative moderator, future research could explore alternative capability-based proxies

or test how specific components of EQ (e.g., Accrual or operating efficiency) contribute to the buffering effect we document.

Finally, our findings speak to *what* high-EQ firms do (i.e., accelerate disclosure in the face of adverse audit signals) but not precisely *how* they accomplish this. Qualitative studies involving interviews with auditors, CFOs, and audit committee members could shed light on the process mechanisms underlying rapid disclosure (e.g., negotiation dynamics, audit preparedness, remediation speed). Future research might also examine whether high-EQ firms incur lower incremental audit fees or face fewer follow-up adjustments, offering further evidence of their operational resilience.

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Tables

Table I Sample Distribution

Panel A: Year-Wise Sample Distribution			Panel B: Industry-wise sample distribution		
Year	Observations	Percent	Industry	Number of observations	Percent
2014	114	10.76	Basic Materials	146	13.79%
2015	120	11.33	Consumer Discretionary	164	15.49%
2016	118	11.14	Consumer Staples	207	19.55%
2017	109	10.29	Energy	34	3.21%
2018	115	10.86	Health Care	88	8.31%
2019	124	11.71	Industrials	221	20.87%
2020	119	11.24	Real Estate	166	15.68%
2021	118	11.14	Technology	6	0.57%
2022	122	11.52	Telecommunications	18	1.7%
			Utilities	9	0.85%
Total	1059	100	Total	1059	100%
Panel C: Breakdown					
Initial number of firm-year observations of listed firms in EGX				2412	
Exclude: financial sector firms				423	
Exclude: observations of delisted firms and firms with missing data of key dependent and independent variables				930	
Final usable sample				1059	

Source: Authors' own work

Table II Variables definition

Variables	Acronyms	Definition	Source
Dependent variable			
Earning announcement Delay	EAD1	The number of days between the fiscal year end date and the date when earnings data was first publicly available, the filing date of preliminary report or filing date of final report, whichever is earliest	LSEG Workspace
	EAD2	The Natural logarithm EAD1	
Independent variable			
Audit Opinion Modification	AOM	The level of auditor’s opinion modification issued on the company’s financial statements. The variable takes a value between 0 and 4: 0 for standard unmodified opinion, 1 for emphasis of matter, 2 for qualified opinion, 3 for adverse opinion, and 4 for disclaimer of opinion.	Annual reports
Earning quality	EQ	A percentile rank based on the earnings quality model algorithm in which a security is compared to all other securities trading in the same country. Scores of 100 indicate the highest-rated stocks in the country; scores of 1 indicate the lowest-rated stocks in the country.	LSEG workspace
Cash Flow component	CFC	A percentile rank that reflects only the Cash Flow factors of the Earnings Quality Model. Scores of 100 indicate the highest rated stocks; scores of 1 indicate the lowest rated stocks.	
Control variables			
Family ownership	FAM_OWN	Percentage of shares owned by dominant family	Annual Reports
Institutional ownership	INS_OWN	Percentage of shares owned by institutions	
Board size	BS	The number of board of directors’ members	
Duality	DUAL	A dummy variable equals 1 when the CEO also holds the position of the chairman of the board of directors, 0 otherwise	
Board gender diversity	BG	Proportion of female directors on the board	LSEG Workspace
Firm size	SIZE	The Natural logarithm of the Company’s total assets at year end	
Profitability	ROA	Net income to total assets	
Leverage	LEV	Debt to total assets ratio calculated as total debt percentage of company’s total assets	
Liquidity	LIQI	Current ratio calculated as the company’s Current assets scaled by current Liabilities	
Growth	GROW	The difference between the current period's and the previous period's revenue scaled by the previous period's revenue	
Inherent risk	INHERENT	(Accounts receivables + inventory)/total assets	
Dividends	DIV	Dividends payout ratio	

Source: Authors' own work

Table III Descriptive statistics and Audit opinion Distribution

Panel A: Descriptive statistics					
Variable	Obs.	Mean	Std. dev.	Min	Max
EAD1	1,059	82.683	36.366	18	262
EAD2	1,059	4.336	0.392	2.890	5.568
AOM	1,059	0.165	0.445	0	2
EQ	1,059	41.496	32.553	0	100
CFC	1059	45.909	32.924	0	100
FAM_OWN	1,059	0.096	0.162	0	0.76
INS_OWN	1,059	0.494	0.302	0	0.97
BS	1,059	8.044	2.742	3	16
Duality	1,059	0.617	0.486	0	1
BG	1,059	0.104	0.121	0	0.500
SIZE	1,055	9.002	0.715	7.584	10.727
ROA	1,059	0.049	0.110	-0.338	0.400
LEV	1,059	0.155	0.191	0	0.864
LIQUI	1,059	2.881	6.087	0.133	49.880
GROW	1,059	0.243	0.889	-1	6.076
INHERENT	1,055	0.305	0.213	0	0.847
DIV	1,059	0.316	0.705	0	5.272
Panel B: Distribution of audit opinion by EQ quartile					
Audit Opinion Type					
EQ Quartile	Unqualified	Emphasis of Matter	Qualified	Total	
Q1 (Lowest EQ)	223 (82.90%)	34 (12.64%)	12 (4.46%)	269 (100%)	
Q2	235 (88.35%)	24 (9.02%)	7 (2.63%)	266 (100%)	
Q3	233 (88.59%)	24 (9.13%)	6 (2.28%)	263 (100%)	
Q4 (Highest EQ)	225 (86.21%)	29 (11.11%)	7 (2.68%)	261 (100%)	
Total	916 (86.50%)	111 (10.48%)	32 (3.02%)	1,059 (100%)	

Notes: Research variables are operationally defined in Table II. Panel B shows the frequency and row percentage of AOM types for each quartile of the EQ score. Quartiles are based on the distribution of EQ for the full estimation sample (N=1,059).

Source: Authors' own work

Table IV Correlation matrix and VIF test

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	VIF
(1) EAD1	1.000															
(2) AOM	0.070*	1.000														1.05
(3) EQ	-0.176*	-0.045	1.000													1.23
(4) FAM_OWN	0.023	0.029	-0.039	1.000												1.73
(5) INS_OWN	0.017	0.001	0.129*	-0.628*	1.000											1.9
(6) BS	-0.085*	-0.093*	0.113*	-0.060	0.129*	1.000										1.24
(7) Duality	0.025	0.061*	0.034	0.008	-0.022	-0.033	1.000									1.08
(8) BG	-0.078*	-0.145*	0.044	0.069*	-0.084*	0.093*	0.000	1.000								1.07
(9) SIZE	0.083*	-0.062*	0.166*	-0.037	0.248*	0.399*	-0.166*	-0.052	1.000							1.61
(10) ROA	-0.188*	-0.008	0.378*	-0.034	0.016	0.146*	0.085*	-0.001	0.182*	1.000						1.43
(11) LEV	0.053	-0.081*	-0.186*	0.015	0.127*	0.049	-0.182*	0.040	0.239*	-0.361*	1.000					1.40
(12) LIQUI	-0.098*	-0.019	-0.072*	0.038	-0.182*	-0.035	0.062*	-0.022	-0.284*	0.034	-0.215*	1.000				1.17
(13) GROW	-0.063*	-0.038	0.062*	-0.002	0.004	-0.010	-0.066*	0.043	0.022	0.116*	0.008	-0.042	1.000			1.04
(14) INHERENT	-0.011	0.009	-0.002	0.019	-0.023	-0.084*	-0.074*	-0.070*	-0.128*	-0.034	0.031	-0.072*	-0.035	1.000		1.05
(15) DIV	-0.047	0.013	0.049	-0.083*	0.098*	0.053	-0.003	-0.013	0.079*	0.123*	-0.092*	-0.004	-0.064*	-0.004	1.000	1.04
Mean VIF																1.29

Notes: Research variables are operationally defined in Table II. *Significance at the 5% level

Source: Authors' own work

Table V Main Analysis

Dependent Variable	EAD1		EAD2	
Model:	(1)	(2)	(3)	(4)
VARIABLES	Main effects	Interaction	Main effects	Interaction
AOM	4.226 (1.28)	11.156** (2.31)	0.013 (0.33)	0.114*** (2.6)
EQ	-0.157 *** (-3.75)	-0.124*** (-2.80)	-0.001 *** (-3.13)	-0.0007* (-1.83)
AOM*EQ		-0.191** (-2.28)		-0.002** (-2.01)
FAM_OWN	-40.524 ** (-2.39)	-43.060** (-2.25)	-0.429*** (-2.78)	-0.466*** (-3.07)
INS_OWN	2.072 (0.21)	1.224 (0.12)	0.012 (0.12)	0.000 (0.00)
BS	0.954 (0.91)	1.065 (1.04)	0.004 (0.43)	0.005 (0.63)
Duality	-6.480 (-1.47)	-6.402 (-1.47)	-0.067* (-1.72)	-0.066* (-1.7)
BG	5.366 (0.35)	5.654 (0.37)	0.114 (0.72)	0.118 (0.75)
SIZE	8.010 (0.74)	8.834 (0.82)	0.079 (0.79)	0.091 (0.91)
ROA	-63.073*** (-3.5)	-62.422*** (-3.47)	-0.618*** (-3.6)	-0.609*** (-3.75)
LEV	-43.638*** (-2.75)	-42.133*** (-2.67)	-0.397*** (-2.54)	-0.375*** (-2.43)
LIQUI	-0.126 (-0.51)	-0.131 (-0.56)	-0.001 (-0.55)	-0.001 (-0.62)
GROW	-1.684 (-1.52)	-1.776 (-1.61)	-0.014 (-1.56)	-0.015* (-1.72)
INHERENT	18.000** (1.98)	17.889* (1.97)	0.171** (-1.32)	0.170* (1.97)
DIV	-2.255** (-2.42)	-2.370** (-2.55)	-0.014 (4.41)	-0.015 (-1.51)
Firm Fixed effects	Included	Included	Included	Included
Year	Included	Included	Included	Included
Constant	42.785 (0.45)	33.590 (0.35)	3.973*** (4.41)	3.840*** (4.29)
F-value (overall)	2.90***	3.30***	4.32***	4.95***
R ²	0.149	0.156	0.143	0.159
N	1055	1055	1055	1055
Number of firms	130	130	130	130

Notes: Research variables are operationally defined in Table II. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels respectively. *t*-statistics in parentheses. All models are estimated using firm fixed-effects regressions with standard errors clustered at the firm level. Reported F-statistics are based on firm-clustered robust inference.

Source: Authors' own work

Table VI Robustness checks (change of econometric technique)

	FE (two way clustered)		GEE		FGLS		OLS	
Model:	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
VARIABLES	Main Effect	Interaction	Main Effects	Interaction	Main effects	Interaction	Main effects	Interaction
AOM	4.226 (1.06)	11.156* (1.81)	3.548 (1.26)	9.812*** (2.65)	4.318** (1.965)	8.590*** (2.659)	3.102 (2.92)	8.375* (4.866)
EQ	-0.157* (-1.69)	-0.124* (-1.67)	-0.172*** (-5.30)	-0.142*** (-4.15)	-0.060*** (0.017)	-0.045** (0.018)	-0.199*** (0.043)	-0.174*** (0.045)
AOM*EQ		-0.192** (-2.05)		-0.172** (-2.57)		-0.115*** (0.043)		-0.145* (0.086)
FAM_OWN	-40.525** (-2.37)	-43.060** (-2.37)	-5.759 (-0.50)	-7.494 (-0.65)	-2.607 (7.230)	-2.938 (7.120)	7.111 (9.391)	6.074 (9.462)
INS_OWN	2.073 (0.20)	1.224 (0.12)	3.802 (0.61)	3.406 (0.55)	-0.519 (3.545)	-0.575 (3.487)	4.456 (5.282)	4.390 (5.310)
BS	0.954 (0.78)	1.065 (0.85)	-0.565 (-0.99)	-0.529 (-0.93)	-1.621*** (0.322)	-1.623*** (0.317)	-1.406*** (0.394)	-1.414*** (0.394)
Duality	-6.481 (-1.35)	-6.403 (-1.33)	-3.347 (-1.23)	-3.376 (-1.24)	0.799 (1.566)	0.905 (1.536)	0.581 (2.556)	0.486 (2.544)
BG	5.366 (0.34)	5.655 (0.36)	0.579 (0.05)	0.711 (0.06)	-6.735 (6.326)	-6.215 (6.221)	-5.802 (9.202)	-5.793 (9.192)
SIZE	8.011 (0.86)	8.835 (0.95)	11.557*** (3.96)	11.668*** (4.00)	10.247*** (1.525)	10.346*** (1.498)	12.946*** (2.083)	12.997*** (2.084)
ROA	-63.073*** (-3.89)	-62.422*** (-3.92)	-66.476*** (-5.24)	-65.619*** (-5.19)	-36.345*** (7.203)	-35.543*** (7.121)	-66.500*** (11.984)	-65.241*** (12.096)
LEV	-43.638** (-2.41)	-42.134** (-2.31)	-30.544*** (-3.51)	-29.595*** (-3.40)	-4.529 (5.240)	-3.866 (5.203)	-22.908*** (7.097)	-22.219*** (7.136)
LIQUI	-0.126 (-0.51)	-0.132 (-0.57)	-0.260 (-1.21)	-0.264 (-1.23)	-0.177** (0.084)	-0.166** (0.080)	-0.356** (0.160)	-0.362** (0.154)
GROW	-1.684 (-1.62)	-1.777* (-1.77)	-1.529 (-1.42)	-1.607 (-1.50)	-0.518 (0.602)	-0.481 (0.586)	-1.419 (0.977)	-1.478 (0.969)
INHERENT	18.001*** (2.74)	17.890** (2.56)	6.387 (0.96)	6.434 (0.97)	1.900 (3.548)	2.159 (3.498)	0.418 (4.703)	0.467 (4.702)
DIV	-2.256*** (-2.67)	-2.370*** (-2.92)	-2.564* (-1.83)	-2.672* (-1.91)	-2.081*** (0.667)	-2.103*** (0.671)	-3.151*** (1.195)	-3.255*** (1.180)
Firm Fixed effects	Included	Included						
Industry			Included	Included	Included	Included	Included	Included
Year	Included	Included	Included	Included	Included	Included	Included	Included
Constant	42.785 (0.52)	33.590 (0.41)	21.067 (0.85)	18.975 (0.76)	25.789** (12.39)	23.933** (12.178)	14.369 (17.74)	13.155 (17.80)
Observations	1,055	1,055	1055	1055	1055	1055	1055	1055
Number of firms	130	130	130	130	130	130	130	130
F-value (Overall)	92.69***	170.65***					7.05***	7.50***
R ²	0.486	0.490					0.180	0.183
Wald test			178.60***	186.14***	300.86***	318.01***		
Heteroscedasticity test					0.000	0.000		
Autocorrelation test					0.000	0.000		

Notes: Research variables are operationally defined in Table II. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively. Robust standard errors are displayed in parenthesis. For the two-way clustered FE Model, standard errors are two-way clustered by firm and year.

Source: Authors' own work

Table VII Sub-sample analysis

	High audit quality		Low audit quality		Large Firms		Small firms	
Model:	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
VARIABLES	Main Effects	Interaction	Main effects	Interaction	Main effects	Interaction	Main effects	Interaction
AOM	-6.207 (-1.13)	-0.648(-0.07)	8.812** (2.46)	13.992** (2.64)	0.188 (0.04)	11.763* (1.74)	9.948** (2.4)	12.405* (1.82)
EQ	-0.198** (-2.25)	-0.184*(-1.91)	-0.156*** (-3.07)	-0.123** (-2.31)	-0.156*** (-2.69)	-0.114* (1.89)	-0.146** (-2.54)	-0.130** (-2.12)
AOM*EQ		-0.104(-0.72)		-0.170** (-2.00)		-0.279*** (3.21)		-0.078 (-0.69)
FAM_OWN	5.868 (0.15)	7.198(0.19)	-49.815** (-2.35)	-51.639** (-2.37)	-35.032 (-1.51)	-39.715*(1.73)	-74.004** (-2.04)	-75.106** (-2.05)
INS_OWN	-10.556 (-0.8)	-11.015(-0.85)	12.709 (1.17)	11.841 (1.07)	-1.733 (0.14)	-2.053 (0.17)	7.702 (0.49)	7.097 (0.45)
BS	-1.343 (-0.91)	-1.197 (-0.86)	1.884 (1.42)	1.955 (1.5)	0.618 (0.54)	0.795 (0.74)	0.397 (0.27)	0.431 (0.30)
Duality	4.428 (0.39)	3.972 (0.34)	-9.010* (-1.69)	-8.601 (-1.62)	-2.058 (-0.42)	-2.213 (0.45)	-11.100 (-1.57)	-10.946 (-1.56)
BG	-21.532 (-0.48)	-21.725 (-0.48)	14.355 (0.82)	14.800 (0.84)	12.079 (0.46)	13.573 (0.52)	14.567 (0.77)	14.372 (0.76)
SIZE	-18.066 (-0.84)	-16.869 (-0.78)	10.297 (0.78)	11.392 (0.86)	22.581** (2.06)	22.554** (2.15)	-19.046 (-1.14)	-18.380 (-1.08)
ROA	-49.319 (-1.39)	-46.650 (-1.32)	-64.843*** (-3.12)	-64.881***(-3.13)	-63.170*** (-2.74)	-60.086** (2.63)	-49.160 (-1.74)	-49.600* (-1.76)
LEV	-48.787 (-1.30)	-47.588 (-1.26)	-42.934** (-2.4)	-42.137**(-2.35)	-48.131** (-2.24)	-46.463** (2.15)	-30.369* (-1.35)	-29.852 (-1.32)
LIQUI	-6.313 (-1.63)	-6.331 (-1.61)	-0.076 (-0.3)	-0.077 (-0.31)	-2.0958** (-2.64)	-2.009*** (2.56)	0.007 (0.03)	0.004 (0.02)
GROW	-1.0482 (-0.38)	-1.0466 (-0.38)	-1.663 (-1.38)	-1.771 (-1.47)	-4.751*** (-2.86)	-5.110*** (3.17)	0.367 (0.27)	0.359 (0.26)
INHERENT	30.097 (1.28)	29.959 (1.26)	11.911 (1.22)	12.267 (1.26)	-5.400 (-0.35)	-4.502 (0.29)	23.993** (2.32)	24.123** (2.33)
DIV	-1.659 (-0.68)	-2.082 (-0.84)	-2.796** (-2.43)	-2.682** (-2.42)	-2.076 (1.53)	-1.965 (1.54)	-3.303* (-1.72)	-3.434*(-1.75)
Firm Fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Year	Included	Included	Included	Included	Included	Included	Included	Included
Constant	304.17(1.5)	291.78(1.42)	16.69 (0.14)	4.98(0.04)	-88.667(-0.85)	-92.01(-0.92)	273.97*(1.98)	267.76*(1.91)
F-value (overall)	3.16***	3.49***	3.11***	3.49***	5.07***	6.6***	4.22***	4.86***
R ²	0.109	0.111	0.18	0.192	0.13	0.146	0.244	0.245
N	265	265	776	776	527	527	528	528
Number of firms	43	43	109	109	80	80	74	74

Notes: Research variables are operationally defined in Table II. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively. *t*-statistic are displayed in parenthesis. The subsamples of audit quality is partitioned into "Low Audit Quality" (firms audited by a non-Big 4 firm) and "High Audit Quality" (firms audited by a Big 4 firm). This is a standard proxy for external audit quality in the literature (e.g., Francis *et al.*, 2009). Audit quality subsamples are for firms for which complete audit firm data is available (N=1041). Subsample sizes are reported for each model. We acknowledge that the smaller sample size for some specifications (e.g., N=265 for the high audit quality subsample) increases the risk of Type II error, and these results should be interpreted with caution.

Source: Authors' own work

Table VIII Additional Analysis

	GMM		FE (Factor variable Notation)		FE (Change of Moderating Variable)	
Model	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Main Effects	Interaction	Main Effects	Interaction	Main Effects	Interaction
L.EAD	0.112*** (0.02)	0.107*** (0.02)				
AOM 1			8.819* (1.89)	14.390* (1.73)		
AOM 2			1.899 (0.24)	18.732* (1.84)		
AOM	5.657** (2.72)	9.592** (4.60)			4.058 (1.25)	12.473* (1.82)
EQ	-0.145*** (0.03)	-0.106*** (0.03)	-0.157*** (-3.76)	-0.127*** (-2.87)		
CFC					-0.195*** (-4.30)	-0.160*** (-3.32)
AOM*CFC						-0.199* (-1.75)
AOM*EQ		-0.134** (0.06)				
AOM 1 * EQ				-0.143 (-1.25)		
AOM 2 * EQ				-0.503** (-2.28)		
FAM_OWN	-40.351*** (14.04)	-42.963*** (13.95)	-40.403** (-2.39)	-43.321*** (-2.61)	-43.172*** (-2.61)	-45.947*** (-2.82)
INS_OWN	3.40 (9.89)	3.482 (10.06)	2.668 (0.27)	1.689 (0.17)	1.932 (0.21)	1.267 (0.14)
BS	-1.914* (1.07)	-1.306 (1.00)	0.957 (0.92)	1.061 (1.04)	0.943 (0.90)	1.088 (1.06)
Duality	-2.618 (3.04)	-0.530 (2.82)	-6.560 (-1.49)	-6.553 (-1.51)	-6.204 (-1.44)	-6.009 (-1.42)
BG	-2.922 (10.25)	-3.905 (10.22)	5.708 (0.37)	6.224 (0.40)	6.634 (0.43)	5.279 (0.34)
SIZE	5.892 (5.74)	6.771 (5.84)	7.793 (0.71)	8.482 (0.78)	9.511 (0.88)	9.545 (0.89)
ROA	-27.018** (11.92)	-20.63* (11.53)	-63.186*** (-3.49)	-62.416*** (-3.46)	-59.947*** (-3.42)	-59.627*** (-3.41)
LEV	-31.759** (13.45)	-26.038** (12.44)	-43.358*** (-2.78)	-41.829*** (-2.69)	-46.027*** (-2.79)	-44.646*** (-2.71)
LIQUI	-0.188 (0.14)	-0.209 (0.15)	-0.116 (-0.47)	-0.128 (-0.55)	-0.130 (-0.52)	-0.137 (-0.59)
GROW	0.273 (0.83)	-0.032 (0.83)	-1.737 (-1.58)	-1.819* (-1.65)	-1.934* (-1.82)	-2.011* (-1.90)
INHERENT	-3.115 (11.66)	-2.071 (11.99)	18.439** (2.02)	18.641** (2.03)	17.079* (1.85)	18.150* (1.97)
DIV	-2.523*** (0.95)	-2.396** (0.96)	-2.165** (-2.27)	-2.296** (-2.42)	-2.239** (-2.54)	-2.233** (-2.49)
Firm Fixed Effects			Included	Included	Included	Included
Year Dummies	Included	Included	Included	Included	Included	Included
Constant	48.399 (51.41)	31.353 (51.95)	44.19 (0.46)	36.44 (0.38)	31.96 (0.34)	28.57 (0.30)
Wald test	233.38***	254.61***				
Number of instruments	57	58				
AR (2) test (p-value)	0.210	0.276				
Sargan test (p-value)	0.530	0.432				
F-value (overall)			2.85***	3.20***	2.88***	3.07***
R ²			0.151	0.159	0.161	0.168
N	883	833	1,055	1,055	1,055	1,055
Number of firms	130	130	130	130	130	130

Notes: Research variables are defined in Table II. This table presents coefficients from GMM and firm-fixed effects regressions. *t*-statistics, based on standard errors clustered by firm, are displayed in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. The dependent variable is EAD1. Model (2,4,6) includes interaction terms and is the preferred specification.

Source: Authors' own work

Table IX Predicted EAD by AOM and EQ

EQ	AOM Standard (AOM=0)	Qualified (AOM=2)	Effect of qualified opinion (Difference)
Low-EQ	86.1	100.3	+14.2
High-EQ	77.8	59.4	-18.4

Notes: Predictions in days, generated from the FE interaction model (Table VIII, Model 4). Low/High-EQ are defined as one standard deviation below and above the sample mean, respectively. All other variables are held at their respective mean values. The 'Difference' column calculates the marginal effect of a qualified opinion (AOM=2 vs. AOM=0) at each level of Earning Quality, illustrating its economic magnitude.

Source: Authors' own work

Figures

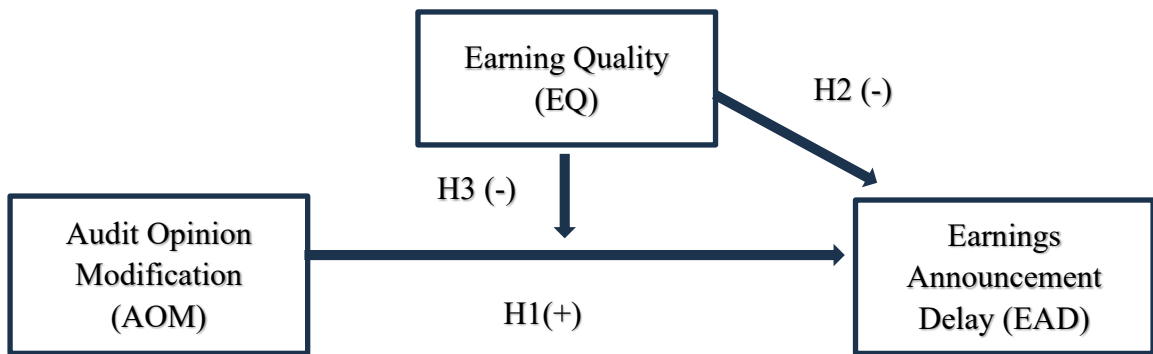


Figure 1 : Research Theoretical Framework
Source: Authors’ own work

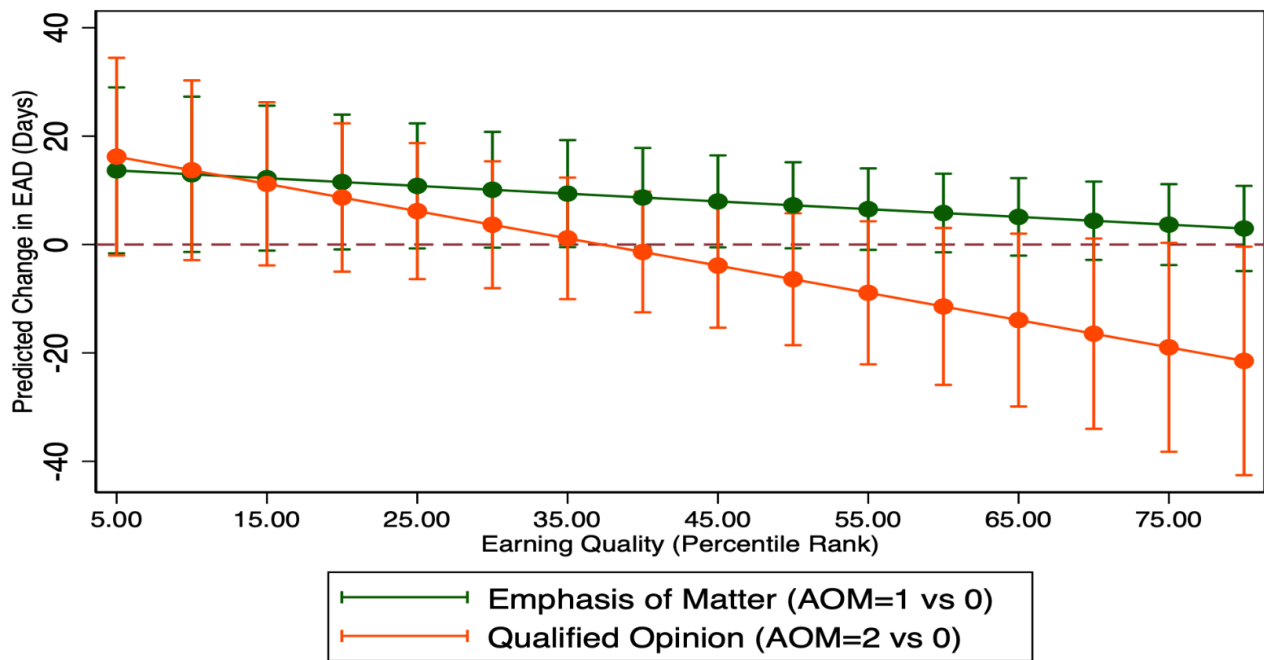


Figure 2 : Marginal Effect of AOM on EAD conditional on EQ Level
Notes: Confidence intervals for AOM=1 consistently include zero, indicating the effect is not statistically significant at any level of EQ
Source: Authors’ own work