Asymmetric Timeliness in Bad News Recognition and Corporate Financial Resilience: The Moderating Role of COVID-19 in Egypt

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Abstract

This study investigates whether the asymmetric timeliness in recognizing bad news (a key feature of conditional conservatism) enhances corporate resilience, and whether this relationship is moderated by the COVID-19 crisis, in Egypt. Firm resilience is captured through two dimensions: financial distress, measured by Altman Z-scores, and investment inefficiency, measured as the deviation from expected investment based on firm fundamentals. Conditional conservatism (bad news timeliness) is measured using two proxies: a return-based measure capturing earnings sensitivity to negative stock returns, and an accrual-based measure reflecting timely loss recognition in response to negative operating cash flows. Using a panel dataset of 115 non-financial firms listed on the Egyptian Exchange from 2018 to 2023, we find that bad news timeliness is positively associated with financial stability, while only the return-based measure significantly reduces investment inefficiency. Importantly, the COVID-19 pandemic moderated these relationships with respect to financial distress. Specifically, the effectiveness of return-based conservatism in mitigating distress weakened during the crisis, reflecting the limited role of market signals in periods of systemic uncertainty. In contrast, accrual-based conservatism became more influential, highlighting the importance of internal financial discipline when external conditions are highly volatile. However, we find limited evidence that bad news timeliness significantly mitigated investment inefficiency during the pandemic, suggesting that investment decisions were likely driven by external constraints beyond the influence of reporting practices. These findings offer both theoretical and practical insights into the governance role of conservative reporting in enhancing firm resilience, particularly in emerging market settings exposed to economic shocks.

Keywords: Conditional Conservatism; Bad News Recognition; Corporate Resilience; Financial Distress; Investment Efficiency; Emerging Markets; COVID-19.

عدم تماثل توقيت الاعتراف بالأخبار السلبية والمرونة المالية للشركات: الدور المعدل لجائحة كورونا في مصر

الملخص

يهدف هذا البحث إلى دراسة أثر عدم تماثل توقيت الاعتراف بالأخبار السلبية ـ باعتباره أحد السمات الجوهرية للتحفظ المحاسبي المشروط ـ على تعزيز المرونة المالية للشركات المصرية، مع اختبار ما إذا كانت جائحة كورونا قد قامت بدور معدل في هذه العلاقة. وقد تم قياس المرونة المالية للشركات من خلال بُعدين رئيسيين: مخاطر التعثر المالي (باستخدام نموذج(Altman Z-Score)، وكفاءة القرارات الاستثمارية (من خلال قياس انحراف الاستثمارات الفعلية عن الاستثمارات المتوقعة بناءً على الأسس الاقتصادية للشركة). كما تم قياس توقيت الاعتراف بالأخبار السلبية باستخدام مؤشرين: مؤشر يعتمد على العوائد السوقية لقياس حساسية الأرباح تجاه العوائد السلبية، ومؤشر آخر يعتمد على التعديلات المحاسبية المرتبطة بالتدفقات النقدية التشغيلية السالبة. وبالاعتماد على بيانات لعدد 115 شركة غير مالية مقيدة بالبورصة المصرية خلال الفترة من 2018 إلى 2023، أظهرت النتائج أن الشركات التي تتمتع بتحفظ محاسبي أكبر في توقيت الاعتراف بالأخبار السلبية كانت أكثر قدرة على تحقيق الاستقرار المالي وتقليل مخاطر التعثر. كما كشفت النتائج أن التحفظ المعتمد على العوائد السوقية كان أكثر فاعلية في تحسين كفاءة الاستثمار، مقارنة بالتحفظ القائم على التعديلات المحاسبية. الأهم من ذلك أن جائحة كورونا قامت بدور معدل في هذه العلاقة؛ حيث أظهرت النتائج أن تأثير التحفظ القائم على العوائد السوقية في خفض مخاطر التعثر المالي قد تراجع خلال أزمة كورونا، نتيجة ضعف كفاءة الإشارات السوقية في ظل حالة عدم اليقين، بينما برزت أهمية التحفظ القائم على التعديلات المحاسبية كآلية للانضباط المالي الداخلي حيث انها أكثر فاعلية في دعم الاستقرار المالي للشركات أثناء الأزمة. ومع ذلك، لم تظهر الأدلة الكافية لدعم تأثير تحفظ توقيت الاعتراف بالأخبار السلبية على كفاءة الاستثمار خلال فترة الجائحة، وهو ما يعكس هيمنة القيود الخارجية والظروف الاقتصادية القهرية على قرارات الاستثمار خلال تلك الفترة. وتساهم هذه النتائج في تقديم مساهمات نظرية وتطبيقية حول دور الحوكمة المحاسبية وسياسات التحفظ المحاسبي في تعزيز مرونة الشركات المالية، لاسيما في الأسواق الناشئة المعرضة للصدمات الاقتصادية.

الكلمات المفتاحية: التحفظ المحاسبي المشروط، الاعتراف بالأخبار السلبية، المرونة المالية للشركات، التعثر المالي، كفاءة الاستثمار، الأسواق الناشئة، جائحة كورونا.

1. Introduction

High-quality financial reporting plays a fundamental role in strengthening corporate governance and promoting market efficiency. Both the International Financial Reporting Standards (IFRS) and the Egyptian Accounting Standards (EAS) emphasize the principle of prudence, particularly in circumstances involving uncertainty, such as the recognition of impairments, provisions, and contingent liabilities (IASB, 2018; Egyptian Financial Regulatory Authority, 2022). While grounded in standard-setting objectives, these reporting practices are closely aligned with the notion of conditional conservatism developed in the accounting literature. Conditional conservatism reflects the asymmetric timeliness in recognizing bad news (particularly economic losses) relative to good news, with the aim of mitigating managerial over-optimism and protecting investors and creditors in uncertain environments (Basu, 1997; LaFond & Watts, 2008).

Building on this perspective, Basu (1997) provides seminal evidence that accounting systems governed by conservative principles tend to incorporate negative economic information into earnings more promptly than positive information. This reporting asymmetry -commonly referred to as conditional conservatism- is widely regarded as a key governance mechanism that enhances financial transparency, reduces agency conflicts, and strengthens creditor protection (Watts, 2003; LaFond & Watts, 2008; Mahmoodi et al., 2025). The underlying logic of this asymmetry lies in the application of stricter verification thresholds for recognizing gains than for recognizing losses, rendering the reporting practice conditional upon the sign of the underlying economic news. This feature of financial reporting is particularly important in settings characterized by heightened uncertainty, weaker investor protection, and limited access to external capital, conditions that often prevail in emerging markets such as Egypt (Balboula & Shemes, 2025).

In this context, there has been increasing attention to the role of the asymmetric timeliness in recognizing bad news in strengthening corporate resilience, that is, the firm's ability to withstand financial shocks and maintain efficient resource allocation during periods of adversity (Francis & Martin, 2010; García Lara et al., 2016). Timely recognition of bad news is argued to allow managers to address problems earlier, reallocate resources efficiently, and signal credibility to external stakeholders (Ahmed & Duellman, 2011; Kim & Zhang, 2016). Nevertheless, despite the extensive literature on conditional conservatism in developed economies, there is limited empirical evidence on how this reporting behavior translates into tangible resilience outcomes, such as reduced financial distress or improved investment efficiency, particularly in

emerging markets with unique institutional and economic challenges (Ghazalat & AlHallaq, 2024).

Emerging markets like Egypt present a unique environment where firms often operate under considerable economic volatility, limited investor protection, and evolving governance frameworks (Balboula and Shemes, 2025; Balboula and Elfar, 2023, 2024). These conditions amplify the stakes of conservative reporting and its potential to mitigate risks in times of financial stress (LaFond & Watts, 2008). Prior research in developed economies suggests that prompt recognition of economic losses strengthens corporate governance by facilitating earlier intervention and heightening external monitoring (García Lara et al., 2016). However, evidence from emerging economies remains relatively sparse, despite their growing importance in the global marketplace (Ghazalat & AlHallaq, 2024). Moreover, the COVID-19 pandemic created an unprecedented shock to firms globally, disrupting cash flows, increasing uncertainty, and testing the effectiveness of financial reporting mechanisms under crisis conditions (Balboula and Metawea, 2021). Prior literature suggests that conditional conservatism plays a governance role in crisis periods by mitigating financial instability and supporting managerial decision-making (Biddle et al., 2020). Yet, the evidence on how this role operates during systemic crises in emerging markets remains scarce and inconclusive.

Accordingly, although prior studies have examined the role of conditional conservatism in mitigating financial distress and curbing suboptimal investment behavior (Hong et al., 2019; Biddle et al., 2020), two important gaps remain. First, much of the literature focuses on developed markets, leaving open questions about whether similar benefits hold in emerging markets like Egypt, where weak enforcement and institutional constraints may alter the effectiveness of conservative reporting. Second, while some scholars address the link between conservatism and reduced bankruptcy risk or improved investment efficiency, fewer studies systematically assess both outcomes in a single emerging-market context — especially during disruptive periods such as COVID-19. Thus, the literature lacks a cohesive understanding of how distinct metrics of conservatism (e.g., accrual-based vs. return-based) perform when facing macroeconomic and financial shocks.

The Egyptian context provides an important setting for addressing this gap. Firms listed on the Egyptian stock Exchange operate within a challenging environment characterized by volatile macroeconomic conditions, high inflation rates, exchange rate fluctuations, and relatively underdeveloped financial markets (Balboula and Shemes, 2025). Moreover, corporate ownership structures in Egypt remain highly concentrated, with family and state ownership playing a significant role, while the enforcement of investor protection mechanisms and governance frameworks continues to evolve (World Bank,

2021; Balboula and Shemes, 2025). These characteristics raise important questions about the extent to which conservative reporting practice -whether driven by external market discipline or internal managerial prudence- can effectively enhance financial stability and improve investment efficiency in such an environment. Therefore, this study addresses the following research questions:

RQ1: Does asymmetric timeliness in Bad News recognition (conditional conservatism) enhance corporate financial resilience by reducing financial distress and mitigate investment inefficiency among Egyptian listed firms?
RQ2: How does the COVID-19 pandemic moderate the relationship between conditional conservatism and corporate financial resilience, specifically in terms of financial distress and investment efficiency?

To answer these research questions, we used panel data from 115 non-financial firms listed on the Egyptian Exchange between 2018 and 2023. We employed ordinary least squares (OLS) regression models with sector and year fixed effects to account for industry and time-specific factors. Corporate resilience was assessed through two complementary measures: the Altman Z-score as a proxy for financial distress, and investment inefficiency, measured as the absolute deviation from expected investment levels. Asymmetric timeliness in bad news recognition was captured using two firm-level measures: a return-based measure, reflecting the sensitivity of earnings to stock return shocks, and an accrual-based measure, capturing the responsiveness of accruals to negative operating cash flows (CFO). To explore the impact of the COVID-19 crisis, we included an interaction term to examine whether the relationship between bad news recognition and firm resilience was moderated during the pandemic period.

Our findings provide clear evidence that the timely recognition of bad news plays an important role in enhancing corporate financial resilience in Egypt. While both return-based and accrual-based measures contribute to stronger financial health, their effectiveness varies depending on the outcome studied and the broader economic environment. The COVID-19 crisis weakened the role of market-based signals in mitigating financial distress but reinforced the importance of accrual-based reporting discipline, reflecting internal financial adjustments. However, the role of conservative reporting in improving investment efficiency appears more limited during systemic crises, where external constraints and uncertainty tend to dominate investment decisions.

This study offers insights that are both theoretically meaningful and practically relevant. From a theoretical perspective, the study extends the conditional conservatism literature to an emerging market context characterized

by high uncertainty, concentrated ownership, and evolving governance structures. It adds to prior research by shifting the focus from traditional financial performance outcomes to firm resilience, a critical dimension for survival and long-term sustainability. Importantly, the study examines how the COVID-19 crisis shaped the relationship between conservative reporting and corporate resilience, offering new evidence on the boundary conditions under which conditional conservatism operates. Moreover, by comparing return-based and accrual-based measures of timeliness, the study sheds light on their relative effectiveness in mitigating adverse financial outcomes.

From a practical standpoint, the findings hold important implications for regulators, auditors, managers, and investors operating in Egypt and similar emerging markets. For regulators and standard setters, the evidence underscores the value of timely loss recognition in strengthening financial reporting frameworks and promoting transparency. For auditors, the results highlight the governance role of conservative reporting as a mechanism for enhancing accountability and reducing information risk. For managers, the findings emphasize the importance of adopting prudent financial reporting practices as part of a broader risk management strategy, particularly in volatile environments. Finally, for investors, understanding the link between conservative accounting and corporate resilience provides valuable insights for evaluating firm risk and making more informed investment decisions in emerging market settings.

2. Literature Review and Hypotheses Development

2.1 Timeliness in Bad News Recognition and Corporate Resilience

One essential component of high-quality financial reporting is the prompt recognition of economic losses in financial accounts, often known as conditional conservatism (Basu, 1997). This reporting practice aligns with widely accepted accounting standards (IASB, 2018; FASB, 2010), which emphasize prudence in recognizing losses more promptly than gains under conditions of uncertainty. Specifically, businesses that adopt conditional conservatism are more likely to recognize negative earnings news (such as economic losses or asset impairments) earlier than positive news (such as unrealised gains).

Recent literature has further highlighted that accounting conservatism tends to intensify during periods of global financial crises, reflecting firms' need to manage heightened risk and uncertainty (Wimalawansa, 2020; Donthu & Gustafsson, 2020). Beyond its risk-management role, conservative accounting promotes efficient corporate governance, reduces agency conflicts, and

increases transparency by lessening the information asymmetry between management and external stakeholders (Watts, 2003; LaFond & Watts, 2008).

It has long been hypothesized that conditional conservatism, which is the asymmetric timeliness of recognizing economic losses in comparison to profits, improves governance in financial reporting (Basu, 1997; Watts, 2003). By limiting managerial discretion over reported profits and expediting the recognition of bad news while postponing the acceptance of good news, this reporting strategy reduces agency conflicts between managers and external stakeholders (Ball & Shivakumar, 2005). In situations with significant contracting frictions, like knowledge asymmetry, financial constraints, and insufficient investor protection, conditional conservatism is especially beneficial (LaFond & Watts, 2008). Early loss recognition lowers creditor risk, makes debt contracting easier, and improves managerial accountability from the standpoint of contracting (Watts, 2003). Moreover, firms operating in more conservative accounting environments benefit from lower costs of equity and debt capital, reflecting investor confidence in prudent reporting practices (Li, 2015). Accordingly, companies with higher conditional conservatism are thought to be more resilient to negative economic shocks by making better investment choices and lowering their risk of financial hardship (García Lara, et al., 2016).

Agency theory serves as a major theoretical pillar for conditional conservatism. This view holds that conservatism limits managerial opportunism by avoiding postponements in recognition of losses, which in turn reduces incentives to exaggerate company performance or underestimate risk exposure (Watts, 2003). Particularly in emerging markets where investor protection is lower and information asymmetries are higher, early loss recognition can help managers take prompt corrective action, enhancing resource allocation and risk management. Empirical evidence from India — an emerging market similar to Egypt — confirms that accrual-based conservatism plays a significant role in recognizing bad news in a timelier manner than good news (Afsheena & Santhakumar, 2020). In Egypt, where businesses operate in institutional frameworks with lower investor protection and higher information risk, this asymmetric treatment of earnings and losses is especially significant (Balboula and Shemes, 2025; Balboula and Metawea, 2021). In these situations, timely loss recognition can be essential for boosting external monitoring, reducing agency conflicts, and boosting stakeholder confidence (LaFond and Watts, 2008).

From a corporate resilience perspective, by allowing businesses to modify operations, control risks, and reallocate resources in reaction to negative shocks, this reporting approach can enhance decision-making (Francis and Martin, 2010). Additionally, early loss recognition can help avoid overly optimistic

financial reporting, which could otherwise postpone essential corrective actions (Roychowdhury, 2006; García Lara et al., 2016). Nonetheless, agency problems may lead managers, particularly in high-risk environments, to delay bad news disclosure for personal gains, such as preserving stock-based compensation or avoiding market penalties (Kyriakou et al., 2024; Imhoff, 2003; Benmelech et al., 2010).

The advantages of timeliness of bad news in enhancing business resilience are continuously shown by empirical research. For example, Khan and Watts (2009) created a popular metric for assessing firm-level conditional conservatism (the "C-Score") and demonstrated how well it captures timely loss recognition. They also found that firms with higher levels of conservatism have lower risk of financial distress and stock price crashes. In a similar vein, Kim and Zhang (2016) discovered that conditional conservatism considerably lowers the likelihood of stock price crashes, especially for companies with high levels of information asymmetry. However, the long-standing debate acknowledges that while conservatism improves reliability, it may reduce earnings persistence due to the earlier recognition of losses, which affects future earnings smoothing (Penman & Zhang, 2002). These results support the idea that timely recognition of unfavourable news improves stability and lowers uncertainty by averting unanticipated negative market reactions. Additionally, according to Biddle et al., (2020) conditional conservatism improves company resilience by lowering the chance of bankruptcy and increasing investment efficiency, according to empirical research. Both unconditional and conditional conservatism considerably reduce the likelihood of bankruptcy in the context of U.S. companies. This is accomplished through mechanisms like cash preservation and earnings management mitigation.

Conservatism's role in enhancing the corporate resilience extends beyond the financial distress to include efficient capital investment. Hong et al., (2019) discover that conditional conservatism improves access to external financing by lessening the sensitivity of investments to cash flow volatility. This result is further supported by García Lara et al. (2016), who show that conservative companies in developed markets are more likely to restrain excessive expenditure when agency costs are high and boost investment in environments that are prone to underinvestment. According to García Lara et al. (2016), conservatism helps businesses make more effective investment choices by resolving debt-equity disputes, reducing underinvestment, and facilitating their access to outside funding. According to their findings, conservatism can greatly improve business resilience by directing managers towards wise investment choices and bringing resource allocation closer to the company fundamentals. Similarly, even for complicated and opaque investment categories like research and development, conservative reporting lowers the chance of overinvestment.

Additionally, Ahmed and Duellman (2011) provided additional evidence in support of these findings by showing that conservative accounting techniques are linked to increased future cash flows and profitability as well as a decrease in managerial propensity for unprofitable (negative net present value) investments. Andreou et al. (2017) further demonstrate that conservatism can lessen financial instability by lowering the probability of stock price crashes for smaller financial organizations during volatile credit cycles, despite their primary focus on banks. Their findings highlight the general idea that conservative reporting might improve stability during economic downturns. While much of the prior evidence derives from developed markets, these arguments are particularly pertinent to emerging economies like Egypt, which frequently face heightened economic volatility and institutional frictions (Balboula and Shemes, 2025). This is consistent with recent emerging-market evidence demonstrating that the governance role of conservatism is amplified under financial distress and weak investor protection (Afsheena & Santhakumar, 2020; Ghazalat & AlHallaq, 2024; Liu & Zhang, 2023).

Nevertheless, despite the broad acceptance of conservatism's role in developed economies, relatively few studies explore its implications in emerging markets, where institutional gaps and governance issues are more pronounced. Using data from the MENA region, Ghazalat and AlHallaq (2024) discover that accrual-based conservatism considerably lowers financial distress as measured by Altman Z-scores. Additional evidence from China is shown by Liu and Zhang (2023), who demonstrate that conditional conservatism improves investment efficiency by reducing both over- and under-investment, even in the presence of state ownership arrangements that may erode market-based governance mechanisms. They also point out that the impact of conservatism may be lessened in companies that are the target of governmental intervention or politically motivated loans, underscoring the fact that conservatism's governance function is context-dependent. Further, Wen-Hsin et al. (2011) demonstrate that financial distress increases the earnings sensitivity difference (ESD), particularly through the accruals component of earnings, reflecting a stronger role for accrual-based conservatism in distressed firms.

Collectively, these studies support the argument that timely loss recognition through conditional conservatism functions as an effective governance mechanism, fostering financial stability and efficient resource allocation. Building on the theoretical justifications and empirical data presented above, this study investigates conditional conservatism using two different metrics: an accounting-based metric (accrual-based timeliness, following Ball & Shivakumar, 2005) that reflects the responsiveness of accrual adjustments to negative operating cash flows, and a market-based metric (return-based timeliness, following Basu, 1997) that captures the sensitivity of

reported earnings to negative stock returns. In the context of emerging markets, both metrics seek to capture the asymmetric recognition of bad news and its possible effects on company resilience. In light of this, we propose the following hypothesis:

> ***H1:*** *Firms exhibiting higher asymmetric timeliness in bad news recognition—captured through return-based and accrual-based conditional conservatism—are associated with greater corporate resilience, reflected in lower financial distress and reduced investment inefficiency.*

2.2 The moderating role of COVID-19

The outbreak of the COVID-19 pandemic in early 2020 introduced an unprecedented level of uncertainty and operational disruption for firms worldwide. In particular, the pandemic triggered severe financial challenges in emerging markets, where firms typically operate with weaker institutional infrastructure and limited financial flexibility (Acharya & Steffen, 2020; D'Augusta et al., 2022). Firms faced declining sales, cash flow shortages, supply chain interruptions, and heightened default risk (Cui et al., 2021; Hashim et al., 2024). The abrupt fall in stock markets, combined with reduced access to external financing, increased firms' vulnerability to financial distress and constrained their ability to allocate resources efficiently (Balboula and Metawea, 2021; International Monetary Fund, 2020). These conditions magnified the relevance of reliable financial information, particularly concerning firms' exposure to economic losses and their capacity to withstand shocks. Indeed, recent evidence suggests that firms with more conservative accounting practices exhibited better stock return performance during the COVID-19 outbreak, as conditional conservatism helped mitigate information asymmetry and enhanced investor confidence under heightened uncertainty (Cui et al., 2021).

Within this context, conditional conservatism, characterized by the asymmetric recognition of losses over gains, is expected to play an enhanced governance role (LaFond & Watts, 2008; Balakrishnan et al., 2016). By compelling firms to recognize bad news in a timely manner, conservative reporting mitigates information asymmetry between managers and external stakeholders (Kim & Pevzner, 2010). Such early recognition of losses provides creditors, investors, and regulators with prompt signals about a firm's risk exposure, enabling more effective monitoring and facilitating corrective actions (Roychowdhury, 2006; García Lara et al., 2016). Moreover, the benefits of conditional conservatism during crises appear particularly pronounced for firms operating without implicit government guarantees, such as non-state-owned enterprises (SOEs), where conservative reporting plays a crucial governance

role in reducing market concerns (Cui et al., 2021). This role becomes particularly valuable during systemic crises like COVID-19, when uncertainty surrounding future cash flows is elevated, and when external parties demand credible and transparent reporting to guide their decisions (Cui et al., 2021).

Recent studies highlight that the COVID-19 pandemic not only intensified firm-level financial distress but also heightened investor attention and market volatility, thereby affecting the information environment (Cui et al., 2021; Wang et al., 2021; D'Augusta et al., 2022). This heightened reliance on financial reporting during market downturns underscores the critical importance of accounting information quality, as investors tend to discount speculative signals and focus more on fundamental financial data when uncertainty rises (Al-Qudah et al., 2022; Cui et al., 2021). However, the extent to which conditional conservatism supports corporate resilience during crisis periods may depend on how it is measured. Prior studies suggest that return-based conservatism — which captures firms' responsiveness to market signals (Basu, 1997; Ball & Shivakumar, 2005) — may lose effectiveness when capital markets become distorted or excessively volatile, as occurred during COVID-19 (Lang & Maffett, 2011; Brennan et al., 2022). In contrast, accrual-based conservatism, which reflects internal accounting discipline over cash flow reporting (Ball & Shivakumar, 2005; Pae, 2007), may become more influential during crises, as stakeholders rely less on market indicators and more on firms' reported fundamentals (Cui et al., 2021; Al-Qudah et al., 2022). This distinction suggests that crisis environments may either weaken or reinforce the resilience-enhancing effect of conditional conservatism, depending on the mechanism through which bad news is recognized. Notably, the observed benefits of conditional conservatism during the pandemic were consistent across alternative measures of conservatism, including C-Score, earnings skewness, and accrual-based metrics, reinforcing the robustness of this relationship (Cui et al., 2021).

Building on the preceding discussion, this study argues that the effectiveness of conditional conservatism in enhancing firm resilience is contingent upon the broader economic environment, particularly during periods of systemic crisis such as the COVID-19 pandemic. While conservative reporting practices generally promote financial stability by facilitating early recognition of losses and improving stakeholder monitoring, the unprecedented uncertainty and market disruptions caused by COVID-19 may have altered the channels through which this reporting behavior influences firm outcomes. Specifically, we expect that return-based conservatism, which relies on the informativeness of stock prices, may exhibit weakened effectiveness during the pandemic, given the heightened market volatility and distorted price signals. In contrast, accrual-based conservatism, which reflects managerial discretion in timely loss recognition based on internal performance, may play a more

prominent role in mitigating financial distress and supporting firm stability when external conditions are highly uncertain. Accordingly, we hypothesize that

> ***H2:*** *The relationship between asymmetric timeliness in bad news recognition and both financial distress and investment inefficiency is significantly moderated by the COVID-19 pandemic. Specifically, the resilience-enhancing effect of conditional conservatism may be either amplified or diminished during the pandemic period, depending on whether bad news is recognized through market-based signals or internal accrual-based reporting.*

3. Methodology

This study investigates the relationship between asymmetric timeliness in earnings recognition and corporate financial outcomes—specifically, financial distress and investment inefficiency—using a panel dataset of Egyptian listed firms. We follow a multi-stage empirical strategy detailed below. This study employs a quantitative panel data approach to investigate the role of conditional conservatism, proxied by asymmetric timeliness in loss recognition, in mitigating financial distress and investment inefficiency among Egyptian publicly listed firms. We adopt a combination of well-established accounting-based and market-based measures to construct key dependent and independent variables.

3.1 Data and Sample

The data come from two main sources: (i) firm-level firms' reporting (including balance sheet and income statement variables), and (ii) daily market data capturing stock prices and returns. The initial sample comprises 115 non-financial firms listed on the Egyptian Exchange, covering the fiscal years from 2018 to 2023. Financial institutions such as banks were excluded due to their distinct reporting standards and regulatory environment. While the full panel includes 690 firm-year observations (115 firms × 6 years), the effective sample used in the empirical analysis was reduced to 435 observations. This reduction stems from two necessary steps in constructing key variables. First, lagged variables such as total assets and earnings required omitting the initial year of each firm's data. Second, the estimation of conditional conservatism measures—particularly the asymmetric timeliness coefficients—was based on a rolling regression window that required at least three consecutive years of data per firm, leading to the exclusion of earlier years where such estimation was not feasible. Observations with missing or extreme values were handled using appropriate filters and winsorization when necessary.

Table 1: Sample Distribution by Sector

Sector	# of Observation	%
Food, Beverages, and Tobacco	86	20%
Communication, Media, and Information Technology	14	3%
Trade and Distributors	10	2%
Transportation and Shipping Services	16	4%
Educational Services	15	3%
Non-Banking Financial Services	24	6%
Industrial Services, Products, and Automotive	17	4%
Healthcare and Pharmaceuticals	42	10%
Tourism and Entertainment	11	3%
Real Estate	83	19%
Utilities	4	1%
Contracting and Engineering Construction	20	5%
Textiles and Durable Goods	35	8%
Building Materials	15	3%
Basic Resources	43	10%
Total	**435**	100%

3.2 Variable Construction

3.2.1 Dependent Variables (Corporate Resilience)

This study investigates firm resilience through two complementary lenses: financial vulnerability and resource allocation efficiency. Financial distress is captured using the Altman Z-Score, a well-established measure of a firm's likelihood of bankruptcy. Investment inefficiency, on the other hand, reflects deviations from optimal investment levels, indicating the firm's capacity to make sound investment decisions in the face of uncertainty. Together, these measures offer a comprehensive view of resilience by assessing both financial stability and managerial adaptability.

Financial Distress (Altman Z-score): Following Altman et al. (1995), we compute the Altman Z-score for emerging markets as our primary measure of financial health. The Z-Score is calculated using:

$$Z\_core = 3.25 + 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

Where X_1 is Working Capital divided by Total Assets; X_2 is Retained Earnings divided by Total Assets; X_3 is Net Income Before Tax divided by Total Assets (used as a proxy for EBIT); and X_4 is Equity divided by Total Liabilities.

Investment Inefficiency: Following Biddle et al. (2009), we measure investment inefficiency as the absolute residual from the following expected investment model:

$$\mathrm{Inv}_{i,t} = \alpha + \beta_1\,\mathrm{SalesGrowth}_{i,t} + \beta_2\,\mathrm{CashFlow}_{i,t} + \varepsilon_{i,t}$$

Where $\mathrm{Inv}_{i,t}$ is the investments which is calculated as Total Property, Plant & Equipment divided by Total Assets (serving as a proxy for capital expenditures), $\mathrm{SalesGrowth}_{i,t}$ is the year-over-year percentage change in Net Sales, and $\mathrm{CashFlow}_{i,t}$ is Operating Cash Flow divided by Total Assets. The absolute value of the residuals $\varepsilon_{i,t}$ from this regression represents the degree to which a firm deviates from its expected investment level, with larger deviations indicating higher investment inefficiency (Inv_Ineff):

$$\mathrm{Inv\_Ineff}_{i,t} = \left|\varepsilon_{i,t}\right|$$

3.2.2 Independent Variables (Asymmetric Timeliness)

Prior research highlights that conditional conservatism, particularly the timeliness of loss recognition, can be measured through alternative approaches that capture different dimensions of reporting behavior. The return-based model (Basu, 1997) reflects the sensitivity of earnings to external market signals, which reflect the market's assimilation of bad news into earnings. The accrual-based model (Ball & Shivakumar, 2005) captures internal accounting responses to negative operating performance, which focus on managerial discretion in recognizing losses relative to operating cash flows. These measures are often viewed as complementary, as they reflect distinct mechanisms through which conservative reporting may influence firm outcomes (Pae, 2007; García Lara et al., 2011). However, recent studies also note that these proxies may yield varying results depending on firm characteristics, market environments, or data availability (Liu & Skerratt, 2019). In line with this literature, this study employs both return-based and accrual-based measures to provide a more comprehensive assessment of how the asymmetric timeliness of bad news relates to corporate resilience in an emerging market context.

(1) Return-Based Timeliness

Following Basu (1997), we estimate a firm-level regression for each company with at least three years of data:

$$\begin{aligned}\mathrm{Earnings\_scaled}_{i,t} &= \alpha + \beta_1 \mathrm{Stock\_Return}_{i,t} + \beta_2 \mathrm{D\_negStock\_Return}_{i,t} \\ &+ \beta_3\left(\mathrm{Stock\_Return}_{i,t} \times \mathrm{D\_negStock\_Return}_{i,t}\right) + \varepsilon_{i,t}\end{aligned}$$

Where $Earnings\_scaled_{i,t}$ is defined as Net Income divided by lagged Total Assets, $Stock\_Return_{i,t}$ represents the firm's annual compounded stock return, and $\_negStock\_Return_{i,t}$ is a dummy variable equal to 1 if the firm's return is negative in a given year, and 0 otherwise. The interaction term β_3 captures asymmetric timeliness in bad news recognition through earnings ($Time\_Ret$). Specifically, it reflects the degree of conditional conservatism, indicating whether firms recognize economic losses more promptly than gains. A higher β_3 implies a stronger asymmetry in the timeliness of loss recognition.

Daily returns are computed as the percentage change in daily stock prices. This ensures that daily return observations are aggregated to form a complete and comparable annual return measure per firm-year. Firms with insufficient or irregular trading data are excluded from this step to maintain data quality. These returns are compounded at the annual level as follows:

$$\text{Annual\_Return}_{\text{i,t}} = \prod_{\text{d}\in\text{t}} \left(1 + \text{daily\_return}_{\text{i,d}}\right) - 1$$

(2) Accrual-Based Timeliness

We also apply an accrual-based measure of asymmetric timeliness, following Ball and Shivakumar (2005). Specifically, we run rolling regressions using a three-year window for each firm, estimating the following model:

$$\begin{aligned}\text{TA\_scaled}_{\text{i,t}} = \alpha + \beta_1 \text{CFO\_scaled}_{\text{i,t}} + \beta_2 \text{D\_negCFO}_{\text{i,t}} \\ + \beta_3 \left(\text{CFO\_scaled}_{\text{i,t}} \times \text{D\_negCFO}_{\text{i,t}}\right) + \varepsilon_{\text{i,t}}\end{aligned}$$

Where $TA\_scaled_{i,t}$ is defined as the difference between Net Income and Operating Cash Flow scaled by lagged Total Assets, $CFO\_scaled_{i,t}$ is Operating Cash Flow scaled by lagged Total Assets, and $D\_negCFO_{i,t}$ is a dummy equal to 1 if CFO is negative, and 0 otherwise. The interaction term β_3 captures asymmetric timeliness in bad news recognition through accruals ($Time\_Acc$). Specifically, it reflects the degree of conditional conservatism, indicating whether firms recognize negative operating cash flows (bad news) more promptly in accruals compared to positive performance.

3.2.3 Control Variables

We include standard financial and governance variables shown to influence financial distress and investment behavior: ROA (Return on Assets), ROE (Return on Equity), Leverage (Total Debt / Total Assets), FirmAge (Years since listing), Big4 (Dummy for auditing by Big4 firm), Liquidity (Current Assets / Current Liabilities), Cash Holdings (Cash / Total Assets), Ownership

Concentration (Percentage of shares held by top shareholders), and Sector and Year Fixed Effects

3.3 Model Specification

To test the study's core hypotheses, we estimate a set of panel regressions that evaluate how asymmetric earnings timeliness (conditional conservatism) affects two dimensions of firm resilience: financial distress and investment inefficiency. We employ ordinary least squares (OLS) regression models with sector and year fixed effects, using firm-level panel data. All models include a comprehensive set of control variables commonly associated with firm performance and risk.

3.3.1 Main Effects

To evaluate whether timelier loss recognition enhances corporate resilience, we estimate the following panel data model:

$$\text{Resilience}_{i,t} = \alpha + \beta_1 \text{Timeliness}_{i,t} + \beta_2 \text{Controls}_{i,t} + \text{Sector FE} + \text{Year FE} + \varepsilon_{i,t}$$

Where $\text{Resilience}_{i,t}$ denotes the dependent variable, capturing either financial distress or investment inefficiency, depending on the specification. Specifically, we use the Altman Z-score ($\text{Z\_Score}_{i,t}$) to proxy financial distress, and absolute residuals from an investment model ($\text{Inv\_Ineff}_{i,t}$) to proxy investment inefficiency. $\text{Timeliness}_{i,t}$ refers to the proxy used to capture conditional conservatism, either return-based ($Time\_Ret_{i,t}$) or accrual-based ($Time\_Acc_{i,t}$), and $\text{Controls}_{i,t}$ represents the set of firm-level covariates. Sector and year fixed effects are included to account for unobservable heterogeneity across industries and time. Separate estimations are performed for each outcome variable, allowing us to assess how conditional conservatism relates to different dimensions of firm resilience.

3.3.2 Moderation Effects

To investigate whether the association between asymmetric timeliness and firm resilience was altered by the COVID-19 pandemic, we introduce an interaction term between the timeliness measure and a pandemic indicator. The regression specification is as follows:

$$\text{Resilience}_{i,t} = \alpha + \beta_1\,\text{Timeliness}_{i,t} + \beta_2\,\text{COVID}_t + \beta_3\left(\text{Timeliness}_{i,t} \times \text{COVID}_t\right) + \beta_4\,\text{Controls}_{i,t} + \text{Sector FE} + \text{Year FE} + \varepsilon_{i,t}$$

Where COVID_t is a dummy variable equal to 1 if year $t \geq 2020$, and 0 otherwise. $\text{Resilience}_{i,t}$ denotes the dependent variable, capturing either financial distress or investment inefficiency, depending on the specification. The interaction term β_3 captures whether the influence of asymmetric timeliness on the outcome differs during the pandemic period. Separate models are estimated for each outcome variable to compare the protective effects of conditional conservatism across financial distress and investment inefficiency in response to systemic economic shocks.

3.4 Emprical Results

3.4.1 Descriptive Statistics

Table 2 presents summary statistics for the main variables used in the analysis. The sample comprises 435 firm-year observations. The average Altman Z-score is approximately 6.93, with a standard deviation of 2.31. The minimum observed Z-score is –1.25, while the maximum reaches 8.82, suggesting considerable variation in firms' financial health across the sample. As for investment inefficiency, the mean absolute residual is 0.148, with a minimum of 0.001 and a maximum of 0.58. This indicates that some firms deviate substantially from expected investment levels. Regarding the timeliness proxies, the return-based measure (Time_Ret), which captures asymmetric earnings sensitivity to stock returns, has a mean of 0.124 and a standard deviation of 0.712. Its distribution ranges from –1.10 to 2.72. The accrual-based measure (Time_Acc), derived from the interaction of cash flow and a negative cash flow indicator, shows a slightly negative average of –0.055 and spans from –0.845 to 2.837. Control variables are broadly in line with expectations for Egyptian listed firms. The average return on assets (ROA) is 6.2%, and return on equity (ROE) averages 12.3%, though both exhibit moderate dispersion. Leverage is relatively low in this sample, with a mean of 4.1%, and about one-third of firms are audited by Big Four accounting firms. Firm age ranges from 9 to 54 years, with a mean of roughly 36 years. Liquidity, measured as a ratio of current assets to current liabilities (Liquidity), averages 1.84. Meanwhile, cash holdings represent 9.6% of total assets on average, with a wide spread across firms. Finally, ownership concentration is relatively high, with an average of 64.8%, consistent with the concentrated ownership structures often seen in emerging markets. Overall, the descriptive statistics reveal substantial variation

across firms in financial condition, investment efficiency, and accounting conservatism, providing a strong basis for further econometric analysis.

To assess the potential for multicollinearity among explanatory variables, we computed Variance Inflation Factors (VIFs) for all regressors included in the models. As shown in Table X, none of the variables exhibit a VIF exceeding the commonly used threshold of 10, indicating that multicollinearity is not a serious concern.

Table 2: Descriptive Statistics

	Count	**Mean**	**Std**	**Min**	**Max**	**VIF**
Z_Score	435	6.930	2.310	-1.250	8.822	--
Inv_Ineff	435	0.148	0.114	0.001	0.580	--
Time_Ret	435	0.124	0.712	-1.104	2.722	1.120
Time_Acc	435	-0.055	0.628	-0.845	2.837	1.107
ROA	435	0.062	0.088	-0.136	0.257	5.411
Leverage	435	0.041	0.075	0.000	0.304	1.719
FirmAge	435	35.791	18.472	9.000	54.000	3.664
Big4	435	0.337	0.473	0.000	1.000	1.691
Liquidity	435	1.840	0.910	0.432	3.196	1.713
Cash	435	0.096	0.120	0.001	0.427	2.123
ROE	435	0.123	0.159	-0.185	0.524	5.405
Own_Cons	435	0.648	0.241	0.253	1.000	5.620

3.4.2 Correlation Analysis

The preliminary correlation matrix provides insights into the bivariate relationships between the main variables of interest. As shown in Table 3, the Z_Score, used as a proxy for financial health (where higher values indicate lower distress), is negatively correlated with both measures of timeliness: Time_Ret (–0.107) and Time_Acc (–0.242), though only the latter is statistically significant. These negative coefficients suggest that higher levels of conditional conservatism, interpreted as timelier recognition of bad news, are associated with lower Z_Scores, and hence greater financial distress, in the raw data. This finding appears counter to expectations that more conservative accounting should enhance resilience. However, these are unconditional correlations that do not account for firm-level heterogeneity or other confounding variables. The direction and significance of these associations may change once control variables and fixed effects are included in the regression models. Similarly, Inv_Ineff, defined as the absolute deviation from expected investment, is negatively correlated with both timeliness proxies: Time_Ret (–0.159) and Time_Acc (–0.022). The negative relationship for Time_Ret is

statistically significant, suggesting that firms with more timely loss recognition tend to deviate less from optimal investment levels, consistent with the theoretical view that conditional conservatism improves investment efficiency.

In terms of control variables, Z_Score is strongly positively correlated with ROA (0.568) and Liquidity (0.732), and negatively correlated with Leverage (–0.294), as expected. These associations support the validity of the Z-score as a distress indicator. For Inv_Ineff, negative correlations with ROA (–0.331), Cash (–0.366), and ROE (–0.328) imply that more profitable and cash-rich firms exhibit less investment inefficiency. Notably, Time_Ret is moderately correlated with several control variables, including Leverage (0.196) and FirmAge (0.156), while Time_Acc shows a negative relationship with ROA (–0.175) and OwnCons (–0.124), although most of these relationships are modest in magnitude. These interdependencies underscore the need to control for firm-specific characteristics in multivariate analyses. Overall, the raw correlations offer a preliminary understanding but should be interpreted with caution. In the subsequent regression models, we assess whether these relationships hold after accounting for firm-level controls and fixed effects.

Table 3: Correlation Matrix

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
(1) Z_Score	1.000											
(2) Inv_Ineff	-0.32*	1.000										
(3) Time_Ret	-0.107	-0.159*	1.000									
(4) Time_Acc	-0.242*	-0.022	0.066	1.000								
(5) ROA	0.568*	-0.331*	0.066	-0.175*	1.000							
(6) Leverage	-0.294*	0.147	0.196*	0.039	-0.085	1.000						
(7) FirmAge	-0.128	-0.099	0.156*	0.079	-0.068	-0.003	1.000					
(8) Big4	0.046	-0.011	-0.015	0.012	0.060	0.222*	0.090	1.000				
(9) Liquidity	0.732*	-0.148	-0.100	-0.092	0.329*	-0.325*	-0.193*	-0.052	1.000			
(10) Cash	0.285*	-0.366*	0.095	-0.002	0.389*	-0.19*	-0.114	-0.203*	0.281*	1.000		
(11) ROE	0.316*	-0.328*	0.083	0.001	0.801*	0.083	0.054	0.136	0.086	0.282*	1.000	
(12) Own_Cons	0.033	-0.030	0.158*	-0.124	0.283*	0.116	0.041	-0.011	-0.030	0.175*	0.242*	1.000

3.4.3 Main Regression Results:

3.4.3.1 Effect of Timeliness in Bad News Recognition on Financial Distress

The central objective of this study is to examine whether timelier recognition of economic losses—captured through proxies of conditional conservatism—is associated with reduced financial distress, as measured by the Altman Z-Score. Table 4 reports the results of two regression models. Model 1 presents findings using the return-based timeliness measure (Time_Ret) derived from stock return interactions, while Model 2 utilizes the accrual-based measure (Time_Acc) based on rolling regressions of accruals on cash flows. The coefficient on Time_Ret is positive and statistically significant at the 5% level ($\beta = 8.093$; $t = 2.452$; $p < 0.05$), indicating that firms with greater return-based timeliness in bad news recognition tend to exhibit higher Z-Scores, implying lower financial distress. Similarly, Time_Acc is positively associated with Z-Score and significant at the 5% level ($\beta = 1.462$; $t = 2.082$; $p < 0.05$), reinforcing the conclusion that accrual-based conservatism is also linked to stronger financial health. These findings are consistent with the notion that early recognition of bad news enhances firm resilience during periods of financial stress.

According to economic interpretation, these findings imply that conservative reporting techniques, whether prompted by internal accounting changes or market signals, assist businesses in navigating financial uncertainty by facilitating the early recognition of risks and possible losses. Such prompt identification probably makes it easier to allocate resources more wisely, have external stakeholders watch the situation more closely, and take corrective action sooner when unfavourable circumstances arise.

Among the control variables, Liquidity shows a strong and consistent positive relationship with Z-Score in both models, significant at the 1% level, suggesting that firms with better short-term solvency tend to be more financially stable. Big4 audit affiliation also shows a positive and statistically significant effect (at the 10% level in the return-based model and at the 1% level in the accrual-based model), implying a possible link between external audit quality and firm resilience. Cash holdings, while negatively associated with distress in both specifications, are marginally significant in the accrual-based model ($p < 0.10$), which may reflect precautionary cash accumulation among financially weaker firms. Notably, the model incorporating Time_Acc explains more variation in financial distress, with an adjusted R^2 of 0.447, compared to 0.166 in the return-based model, suggesting that accrual-based measures may more directly capture underlying financial conservatism tied to firm performance.

Therefore, these results provide strong support for H1, indicating that asymmetric timeliness in bad news recognition, whether return-based or accrual-based, significantly contributes to mitigating financial distress and enhancing corporate financial stability. Timelier recognition of bad news appears to correspond with stronger financial health, especially in the context of an emerging market like Egypt.

Table 4: Effect of Timeliness in Bad News Recognition on Financial Distress

Dependent Variable	**Z_Score**	
	Model 1	**Model 2**
Intercept	-2.786 -(0.239)	2.084 (0.248)
Time_Ret	8.093** (2.452)	—
Timel_Acc	—	1.462** (2.082)
ROA	15.576 (0.323)	-23.345 -(0.465)
Leverage	-51.556 -(1.479)	-5.107 -(0.139)
FirmAge	-0.153 -(1.221)	-0.183 -(1.279)
Big4	9.622* (1.865)	15.537*** (2.688)
Liquidity	5.918*** (8.591)	9.571*** (10.877)
Cash	-24.372 -(1.030)	-46.881* -(1.796)
ROE	30.146 (1.199)	3.212 (0.124)
Own_Cons	7.512 (0.744)	-0.9031 -(0.083)
Sector FE	Yes	Yes
Year FE	Yes	Yes
R-squared	0.22	0.525
Adjusted R-squared	0.166	0.447
F-statistic	4.035	6.727
Observations	435	435

Notes: Significance levels: *p < 0.10, **p < 0.05, ****p < 0.01*.

3.4.3.2 Effect of Timeliness in Bad News Recognition on Investment Inefficiency

In addition to examining financial distress, this study investigates whether firms that recognize bad news more promptly are also better at avoiding inefficient investment. Table 5 summarizes the regression results where the dependent variable is Inv_Ineff, defined as the absolute deviation from expected investment based on sales growth and cash flow fundamentals.

Model 1 presents the results using the return-based measure of timeliness (Time_Ret), while Model 2 reports findings from the accrual-based proxy (Time_Acc). The coefficient on Time_Ret is negative and statistically significant at the 1% level ($\beta = -0.022$; $t = -2.619$; $p < 0.01$), indicating that firms exhibiting more timely recognition of losses in their returns are more likely to invest efficiently. This result supports the notion that conservative reporting, through early loss recognition, may improve managerial discipline in capital allocation decisions.

In contrast, the coefficient on Time_Acc is small and statistically insignificant ($\beta = 0.003$; $t = 1.128$), suggesting that the accrual-based timeliness measure does not exhibit a robust relationship with investment inefficiency in this sample. There are a number of reasons why this association is weaker. It might indicate that market signals and external financing constraints have a greater direct impact on investment decisions, especially in emerging markets, than internal accounting adjustments alone. Therefore, the possibility that return-based signals are more immediately observable to investors and managers when making investment decisions. Because different measures (i.e. Time_Acc, Time_Ret) may capture different mechanisms through which conservative reporting influences company behavior, this distinction emphasizes the need of employing several proxies for conservatism.

Among the control variables, Leverage is positively associated with investment inefficiency and significant in the return-based model ($\beta = 0.272$; $p < 0.01$), suggesting that more indebted firms may face greater difficulty in aligning investment with fundamentals. Cash holdings are negatively and strongly associated with inefficiency in both models, significant at the 1% level, reinforcing the idea that firms with better internal liquidity are more flexible and effective in deploying resources. FirmAge is negatively associated with Inv_Ineff, significant at the 5% level in Model 1 and at the 10% level in Model 2, implying that more mature firms tend to make investment decisions that are closer to expected benchmarks. While ROE is marginally significant and negative in the accrual-based model ($p < 0.10$), other financial performance indicators such as ROA and Big4 affiliation are statistically insignificant across both specifications. The model using Time_Ret explains a slightly higher proportion of the variation in investment inefficiency (adjusted $R^2 = 0.262$) compared to the accrual-based model (adjusted $R^2 = 0.252$), although both demonstrate moderate explanatory power.

Taken together, the findings offer partial support for H1. While return-based timeliness of bad news recognition is associated with lower investment inefficiency, the accrual-based measure shows no significant effect in this regard, highlighting the varying mechanisms through which conservatism influences investment behavior.

Table 5: Effect of Timeliness in Bad News Recognition on Investment Inefficiency

Dependent Variable	**Inv_Ineff**	
	Model 1	**Model 2**
Intercept	0.190*** (8.408)	0.199*** (7.171)
Timel_Ret	-0.022*** -(2.619)	—
Timel_Acc	—	0.003 (1.128)
ROA	-0.193 -(1.538)	-0.045 -(0.278)
Leverage	0.272*** (3.005)	0.178 (1.523)
FirmAge	-0.001** -(2.516)	-0.001* -(1.868)
Big4	-0.021 -(1.570)	-0.028 -(1.472)
Liquidity	0.0001 -(0.232)	0.0001 -(0.006)
Cash	-0.204*** -(3.357)	-0.350*** -(4.154)
ROE	-0.05 -(0.763)	-0.141* -(1.699)
Own_Cons	0.031 (1.158)	0.024 (0.653)
Sector FE	Yes	Yes
Year FE	Yes	Yes
R-squared	0.325	0.367
Adjusted R-squared	0.262	0.252
F-statistic	5.145	3.201
Observations	435	435

Notes: Significance levels: *p < 0.10, **p < 0.05, ****p < 0.01*.

3.4.4 Moderation Results:

3.4.4.1 Timeliness in Bad News Recognition, COVID-19, and Financial Distress

To further explore how the relationship between the timeliness in loss recognition and financial distress may have been shaped by the COVID-19 pandemic, we estimate an interaction model in which timeliness measures are interacted with a COVID indicator. This dummy variable equals 1 for years 2020 and beyond and 0 otherwise. Table 6 presents the regression results examining whether the impact of conditional conservatism on Altman Z-scores differs during crisis periods.

Model 1 shows the results using the return-based timeliness measure (Time_Ret) and its interaction with the COVID-19 dummy. The coefficient on Time_Ret remains positive and highly significant ($\beta = 18.858$; $t = 3.710$; $p < 0.01$), suggesting that, on average, firms with greater return-based conditional conservatism exhibit higher Z-scores, indicating stronger financial health. However, the interaction term Time_Ret × COVID-19 is negative and statistically significant ($\beta = –17.338$; $t = –2.769$; $p < 0.01$), implying that the beneficial effect of timeliness in loss recognition on financial resilience was weaker during the COVID-19 period. This may reflect the fact that the pandemic introduced systemic uncertainty and abrupt disruptions that overwhelmed the typical benefits of early loss recognition. This finding has economic significance since it implies that whereas prompt loss recognition typically promotes firm stability, the extraordinary disruptions and increased uncertainty brought on by COVID-19 might have outweighed the usual governance advantages of market-based conservatism. External market signals may lose their dependability during systemic crises, or businesses may experience operational and financial limitations that restrict their capacity to respond to early warnings included in stock returns.

Model 2 focuses on the accrual-based timeliness proxy (Time_Acc) and its interaction with COVID-19. Interestingly, both the main effect and the interaction term are positive and statistically significant at the 5% level ($\beta = 0.722$; $t = 2.093$), suggesting that the role of accrual-based conservatism in enhancing financial stability became more pronounced during the pandemic. Unlike the return-based results, the interaction effect here reinforces the benefit of conservative reporting during crisis periods, potentially because accruals capture more internal financial adjustments that may not be immediately visible in market returns. On other words, the accrual-based conservatism reflects internal financial discipline and risk management practices, which may become particularly valuable when external conditions are volatile or capital markets are disrupted.

Control variables generally behave in line with earlier findings. Liquidity continues to show a strong and highly significant positive relationship with Z-scores in both models, reinforcing the idea that firms with more liquid assets are more financially resilient. Big4 audit affiliation is positively related to Z-score and statistically significant in both models, consistent with the view that external monitoring is beneficial for financial stability. Cash holdings remain negatively associated with financial distress and are marginally significant in the accrual-based model. Other variables such as ROA, Leverage, and FirmAge do not show statistically significant effects in these specifications.

Overall, these moderation results suggest that while conditional conservatism—particularly return-based—generally supports financial

resilience, its effectiveness during extreme economic shocks like COVID-19 may vary depending on the measurement approach. The weakening of the return-based benefit during the pandemic highlights the unique nature of systemic crises, while the continued significance of accrual-based measures points to the importance of accounting-based adjustments during such periods. Therefore, these results provide partial support for H2. While the resilience-enhancing effect of return-based conditional conservatism on financial distress weakened during the COVID-19 pandemic, the role of accrual-based conservatism became more pronounced, reinforcing the importance of internal reporting discipline under heightened uncertainty.

Table 6: Moderation Effects of Timeliness in Bad News Recognition and COVID-19 on Financial Distress

Dependent Variable	**Z_Score**	
	Model 1	**Model 2**
Intercept	-4.912 -(0.424)	1.437 (0.260)
COVID-19	7.449 (1.567)	1.437 (0.260)
Timel_Ret	18.858*** (3.710)	
Timel_Ret × COVID-19	-17.338*** -(2.769)	
Timel_Acc		0.722** (2.093)
Timel_Acc × COVID-19		0.722** (2.093)
ROA	14.793 (0.309)	-24.074 -(0.484)
Leverage	-44.062 -(1.270)	-6.375 -(0.176)
Firm Age	-0.141 -(1.133)	-0.187 -(1.327)
Big4	9.120* (1.781)	15.645*** (2.729)
Liquidity	5.899*** (8.635)	9.548*** (10.960)
Cash	-20.422 -(0.869)	-47.107* -(1.819)
ROE	30.005 (1.203)	3.418 (0.134)
Own_Cons	7.117 (0.710)	-0.784 -(0.073)
Sector FE	Yes	Yes
Year FE	Yes	Yes
R-squared	0.235	0.525

Adjusted R-squared	0.179	0.454
F-statistic	4.225	7.4
Observations	435	435

Notes: Significance levels: *p < 0.10, **p < 0.05, ****p < 0.01*.

3.4.4.2 Timeliness in Bad News Recognition, COVID-19, and Investment Inefficiency

To assess whether the COVID-19 pandemic moderated the effect of timeliness in bad news on investment behavior, Table 7 presents the results of regression models where timeliness proxies are interacted with a COVID-19 dummy variable. This dummy takes the value of 1 for years 2020 and beyond, and 0 otherwise. The dependent variable is investment inefficiency (Inv_Ineff), measured as the absolute deviation from expected investment based on firm fundamentals.

In the return-based specification (Model 1), the interaction term Time_Ret × COVID-19 is statistically insignificant (β = –0.005; t = –0.268), and the main effect of Time_Ret is also not significant (β = –0.018; t = –1.120). This suggests that return-based conditional conservatism, by itself or in combination with the pandemic period, is not significantly associated with investment efficiency in this model specification. While the direction of the coefficients is consistent with the expectation that timely loss recognition could reduce inefficient investment, the lack of statistical significance indicates that this effect may not be robust when market-based timeliness is used. This conclusion might be a reflection of the nature of crisis times, when external factors like supply chain interruptions, demand shocks, and cash shortages have a greater influence on investment choices than conservative reporting or signals from the market.

Additionally, the results for the accrual-based specification (Model 2) similarly show no significant effect of either Time_Acc (β = 0.002; t = 1.237) or its interaction with COVID-19 (also β = 0.002; t = 1.237). These findings indicate that accrual-based timeliness, though meaningful in the financial distress analysis, does not appear to influence the extent of over- or under-investment in this context. One possibility is that investment decisions during and after COVID-19 were driven more by external macroeconomic constraints and strategic firm responses than by accounting conservatism alone.

Among the control variables, Cash consistently shows a negative and highly significant relationship with investment inefficiency in both models, suggesting that firms with higher cash reserves were better positioned to align investment with fundamentals. Leverage is positively and significantly related

to inefficiency in the return-based model, pointing to the possibility that more highly leveraged firms face constraints or agency problems that hinder efficient capital allocation. Firm Age is negatively associated with investment inefficiency in both models and statistically significant, implying that more mature firms tend to manage investment more efficiently, possibly due to greater experience or more developed internal controls. In contrast, variables such as ROA, ROE, Liquidity, and Big4 auditor affiliation do not show consistent or significant effects. These results indicate that internal profitability and audit quality, while important in some settings, do not appear to meaningfully influence investment efficiency under the current model specifications.

Overall, these findings suggest that the moderating role of COVID-19 in shaping the link between conditional conservatism and investment inefficiency is rather limited in this setting. Neither the return-based nor the accrual-based measures of timeliness showed a significant influence during the pandemic period. This implies that conservative reporting, while important for financial transparency, may not have been enough on its own to prevent inefficient investment behavior when firms were facing extraordinary external pressures. In times of severe crisis like COVID-19, investment decisions are likely to be driven more by external shocks, liquidity constraints, and strategic survival choices than by financial reporting signals. Therefore, the results do not provide sufficient evidence to support H2 with respect to investment inefficiency, highlighting that the governance role of conditional conservatism in this area appears less pronounced under conditions of systemic uncertainty.

Table 7: Moderation Effects of Timeliness in Bad News Recognition and COVID-19 on Investment Inefficiency

Dependent Variable	**Inv_Ineff**	
	Model 1	**Model 2**
Intercept	0.151*** (8.463)	0.131*** (7.210)
COVID-19	0.060*** (6.432)	0.131*** (7.210)
Timel_Ret	-0.018-(1.120)	
Timel_Ret × COVID-19	-0.005 -(0.268)	
Timel_Acc		0.002 (1.237)
Timel_Acc × COVID-19		0.002 (1.237)

ROA	-0.194 -(1.541)	-0.044 -(0.272)
Leverage	0.273*** (3.002)	0.177 (1.538)
Firm Age	-0.001** -(2.508)	-0.001* -(1.835)
Big4	-0.021-(1.575)	-0.029 -(1.503)
Liquidity	0.0001 -(0.230)	0.0001 -(0.020)
Cash	-0.204*** -(3.351)	-0.352*** -(4.220)
ROE	-0.049 -(0.747)	-0.136* -(1.667)
Own_Cons	0.031 (1.158)	0.025 (0.687)
Sector FE	Yes	Yes
Year FE	Yes	Yes
R-squared	0.325	0.366
Adjusted R-squared	0.259	0.262
F-statistic	4.948	3.51
Observations	435	435

Notes: Significance levels: *p < 0.10, **p < 0.05, ****p < 0.01*.

4. Discussion and Conclusions

This study investigates whether firms that recognize bad news more quickly, a key feature of conservative financial reporting, are more resilient, particularly in mitigating the financial distress and reducing the investment inefficiency, and whether this relationship was influenced by the COVID-19 crisis. Drawing on the context of Egyptian firms, this study provides new empirical evidence on the role of conservative financial reporting in emerging markets where firms often operate in environments characterized by economic volatility, information asymmetry, and still developing governance (Balboula and Shemes, 2025; Balboula and Metawea, 2021). To explore this question, we use two firm-level measures of asymmetric timeliness in bad news recognition that capture how timely firms are in reflecting negative information in their financial statements. The first measure is the return-based measure which captures the sensitivity of earnings to stock return shocks, with the interaction term β3 reflecting timely loss recognition in response to bad news (negative returns), capturing the extent to which firms incorporate bad news from market signals into reported profits. The second measure is the accrual-based measure captures the sensitivity of accruals to negative operating cash flows, with β3 reflecting managerial conservatism in promptly recognizing bad news in

accruals relative to the cash flows, which looks at how quickly firms recognize losses through accruals when facing negative operating cash flows, reflecting managerial decisions in financial reporting. Together, these measures allow us to assess whether timely loss recognition, either driven by market pressures or internal reporting practices, plays a role in supporting corporate resilience.

The main findings suggest that conditional conservatism, whether measured using return-based or accrual-based proxies, is positively associated with lower financial distress. Firms that recognize bad news more promptly (either through earnings sensitivity to negative stock returns or through accrual adjustments in response to poor operating cash flows), tend to exhibit higher Altman Z-Scores, which means it is signaling stronger financial stability. This evidence supports the long-standing argument in the accounting literature that conservative reporting enhances the firm resilience, particularly in contexts of financial uncertainty (Basu, 1997; Watts, 2003), by facilitating early recognition of risks. This evidence supports prior studies which argue that early loss recognition facilitates more effective monitoring by investors and creditors, improves contracting efficiency, and enables managers to take corrective actions at an earlier stage (LaFond & Watts, 2008; García Lara et al., 2016; Biddle et al., 2020). The findings also show that accrual-based conservatism provides stronger explanatory power for financial distress outcomes than return-based measures. This may reflect the nature of accounting-based adjustments, which are often more closely tied to internal firm performance and less influenced by short-term market volatility. In practice, this implies that firms with more conservative accounting practices embedded in their accrual policies may be better positioned to maintain financial resilience during periods of operational or macroeconomic uncertainty. These findings are consistent with prior research suggesting that accrual-based conservatism better captures internal managerial reporting discretion, which plays a critical role in mitigating financial distress, especially in emerging markets where external monitoring is weaker (Ball & Shivakumar, 2005; Pae, 2007).

When examining the effect of conditional conservatism on investment inefficiency, the evidence is more nuanced. Return-based timeliness shows a negative and significant association with investment inefficiency, indicating that firms recognizing bad news more quickly in their stock returns are less likely to engage in over- or under-investment behavior. This finding aligns with the view that conservative reporting strengthens managerial discipline, helps align investment decisions with firm fundamentals and mitigates agency problems in investment decisions (Hong et al., 2019; García Lara et al., 2016). However, the accrual-based measure of conservatism does not display a statistically significant relationship with investment efficiency in this setting. This result highlights the complexity of investment decision-making,

particularly in emerging markets, where external financing constraints, market conditions, and strategic considerations may outweigh the influence of accounting signals alone or overshadow the role of accounting-based conservatism (Liu & Zhang, 2023; Ghazalat & AlHallaq, 2024). The stronger effect of return-based conservatism on investment efficiency aligns with prior studies emphasizing the role of market signals and investor expectations in disciplining managerial investment decisions (Basu, 1997; Ball & Shivakumar, 2005). This distinction is consistent with the broader literature highlighting how different measures of conservatism capture distinct reporting dynamics (Khan & Watts, 2009; García Lara et al., 2011; Liu & Skerratt, 2019). Overall, the findings of this study complement and extend prior research by confirming the relevance of conditional conservatism in reducing financial distress (Khan & Watts, 2009; Biddle et al., 2020), while also providing a more cautious view regarding its role in improving investment efficiency, particularly in settings characterized by economic uncertainty and institutional frictions.

In addition, the moderation study offers valuable information on how conditional conservatism changed during the COVID-19 pandemic. Although the findings support the idea that conservatism generally promotes financial resilience, the mechanics of this association seem to have changed during the pandemic. Although the return-based measure of conservatism continued to have a positive correlation with financial health, the pandemic considerably reduced its positive impact. This research highlights the unique characteristics of systemic crises such as COVID-19, where conventional governance mechanisms, such as market-based loss recognition signals, can be overpowered by widespread uncertainty, sudden operational interruptions, and liquidity issues. However, accrual-based conservatism continued to play a meaningful role in enhancing financial stability during the crisis. The positive and significant interaction between accrual-based timeliness and the pandemic period suggests that internal financial discipline, embedded in accounting practices, becomes even more valuable when external market conditions are highly volatile. This finding reinforces the idea that during periods of systemic uncertainty, internal accounting adjustments captured by accrual-based conservatism become particularly valuable as external market signals lose reliability. For finance practitioners, this highlights the importance of robust internal risk management and conservative reporting practices that do not rely solely on market signals, especially during periods of crisis or economic downturn.

Regarding the investment inefficiency, the moderating role of conditional conservatism during COVID-19 was limited. Neither return-based nor accrual-based measures displayed significant interaction effects with the pandemic period. This suggests that investment decisions during systemic crises may be

driven more by external factors that impose constraints such as supply chain disruptions, demand shocks, and access to capital, rather than by conservative financial reporting alone. While conditional conservatism appears to support financial stability and distress mitigation, its capacity to improve investment efficiency, particularly during periods of heightened uncertainty, may be less pronounced.

The findings of this study offer important implications for regulators, standard-setters, auditors, and corporate managers, particularly in emerging markets where economic volatility and institutional weaknesses amplify firms' exposure to financial distress. First, regulators and policy makers in Egypt and similar emerging economies should consider strengthening disclosure regulations that promote timely loss recognition and enhance the credibility of financial reporting. As the results suggest, accrual-based conservatism plays a particularly valuable role in mitigating financial distress during periods of heightened uncertainty, such as systemic crises. Regulatory reforms that encourage firms to adopt more disciplined accrual practices, supported by clear guidance on loss provisioning, impairment testing, and risk disclosures, could improve market confidence and financial stability. Second, for auditors and external monitors, the evidence reinforces the importance of exercising greater professional skepticism in evaluating firms' earnings quality during crisis periods. Audit firms, especially those operating in environments prone to shocks, should emphasize the assessment of accrual management policies and ensure that reported losses adequately reflect firms' operational risks and cash flow conditions. Strengthening audit quality around conditional conservatism not only enhances financial transparency but also supports early risk detection and mitigation efforts.

Third, corporate managers should view conservative reporting not merely as a compliance requirement but as a strategic risk management tool. The results highlight that firms embedding conservatism into their internal reporting frameworks, particularly in accruals related to operating cash flows, are better positioned to withstand periods of financial stress. Managers are encouraged to institutionalize prudent reporting practices that facilitate timely identification of emerging risks, enable faster managerial response, and sustain investor trust during volatile market conditions. Finally, for investors and financial analysts, the findings underscore the need to carefully differentiate between market-based and accounting-based signals when assessing firm resilience, especially during crisis episodes. In environments where stock market signals become distorted or overly reactive, greater reliance should be placed on accounting fundamentals — such as accrual-based measures of conservatism — to evaluate firms' financial health and risk exposure. Overall, this study advocates for a more proactive governance approach that recognizes the dual role of conditional

conservatism: not only in enhancing reporting quality under normal conditions but also in strengthening firms' capacity to navigate periods of systemic uncertainty.

Although the contribution of this study, it has some limitations that open opportunities for future research. First, the analysis focuses on Egyptian listed firms, which operate within the specific institutional and regulatory environment of an emerging market. While this setting provides valuable insights, the findings may not fully generalize to developed economies with stronger governance structures or different financial reporting systems. Future research could extend this work by comparing firms across different countries or institutional settings to explore how conservatism operates under varying regulatory conditions. Second, this study captures conditional conservatism using well-established return-based and accrual-based proxies. However, these measures may not fully reflect firms' broader disclosure strategies or narrative reporting practices during crises. Future studies may consider incorporating textual analysis or disclosure quality metrics to capture additional dimensions of transparency and risk communication. Third, although the study controls for key firm characteristics, there may still be unobserved factors, such as managerial ability, board oversight, or internal control systems, that influence both conservative reporting and firm resilience. Further research could explore how governance mechanisms interact with conservatism in shaping firms' ability to navigate periods of economic stress. Finally, this study focuses on the COVID-19 pandemic as an exogenous shock to test the role of conservatism in enhancing resilience. Future research could examine whether similar patterns hold under other types of crises, such as financial market crashes, geopolitical events, or environmental disruptions, to provide a broader understanding of how conservative reporting supports firms' long-term stability in an increasingly uncertain world.

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