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COVID-19, Board of Directors and Pessimism in Annual Reports: An Intention to Mitigate Litigation Risk

Khaldoon Albitar[1] | Mahmoud Elmarzouky[2] | ATM Enayet Karim[3] | Ali Meftah Gerged[4,5]

[1]University of Glasgow, Glasgow, UK | [2]University of St Andrews Business School, St Andrews, UK | [3]Queen's University Belfast, Belfast, UK | [4]Sheffield University Management School, The University of Sheffield, Sheffield, UK | [5]Faculty of Economics and Political Science, Misurata University, Misurata, Libya

Correspondence: Khaldoon Albitar (khaldoon.albitar@glasgow.ac.uk)

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ABSTRACT

This study examines the impact of corporate COVID-19 disclosure on the negative tone (pessimism) in annual reports. We also investigate how board size and board independence influence pessimism in annual reports. Using a U.K. sample from 2020, we employ various techniques to explore the COVID-19 disclosure-pessimism nexus. Our findings, supported by Tobit regression and a two-stage least squares (2SLS) model, reveal a positive association between COVID-19 disclosure and pessimism in annual reports. We observe that managers tend to disclose COVID-19 information pessimistically as a risk mitigation strategy, aiming to prevent future earning shocks and potential litigation costs. Interestingly, our results also indicate that large boards and independent directors can bolster governance power, safeguarding firms against potential litigation costs by increasing pessimism in annual reports, both during and beyond the COVID-19 pandemic.

1 | Introduction

COVID-19 pandemic causes substantial financial distress for businesses around the world (OECD 2020; Goodell 2020). According to the Organisation of Economic Co-operation and Development (OECD) countries, the most significant decline in the gross domestic product (GDP) in a quarter was in the United Kingdom by 20%, followed by 13.8% in France and 12.8% in Italy (ONS 2020). Nevertheless, the UK GDP downfall a quarter at the peak of the global economic crisis was only 2.6% (Allen 2010). This shows the magnitude of the economic consequences of COVID-19 on the United Kingdom compared with the 2008 financial crash. Also, Brexit is another factor contributing to increased uncertainty for business in the United Kingdom (BBC News 2020). COVID-19 pandemic is a natural disaster and hit the economy with sheer speed; therefore, unlike the global economic crisis, containing the effect of the COVID-19 pandemic is a tremendous logistical challenge. These challenges, coupled with market uncertainty, can further affect investors' confidence in firms' financial performance and lead to various financial distresses (KPMG 2020; Erdem 2020).

Recently, there has been a growing demand for extra voluntary information and improved corporate reporting quality (Lai, Melloni, and Stacchezzini 2018). As a result of the COVID-19 pandemic, the main focus is to encourage firms to provide stakeholders with more realistic information about its impact on their operations. We have also seen many initiatives from different professional bodies to encourage firms to provide information related to COVID-19 and to increase annual reports' transparency (Financial Reporting Council 2020). The U.K. government has also issued a voluntary COVID-19 secure guideline for safe working practices across the industry to mitigate COVID-19 related impact on the working conditions and increase productivity (GOV.UK 2020). Furthermore, companies are expected to disclose more information related to COVID-19 in annual reports voluntarily. COVID-19 related information as a voluntary disclosure can reduce information asymmetry between managers and investors, reduce analysts' forecast errors and uncertainty in firms' valuations, strengthen communication between stakeholders, increase stakeholders' confidence in the company, and ultimately increase companies' value.

From a managerial perspective, narrative disclosure has become an essential tool to effectively communicate financial and non-financial information between managers and influential stakeholders. Crucially, according to the bank of England, since 2015, 90% of financial information has been taken from text rather than financial statements (Bank of England 2015). In this context, the disclosure tone became an essential element in the narrative sections of financial reporting that plays a key role in the decision-making process (Barkemeyer et al. 2014; Fisher, van Staden, and Richards 2019; Marquez-Illescas, Zebedee, and Zhou 2019).

Corporate governance mechanisms play a crucial role in shaping the narrative tone (Martikainen et al. 2019). Strong corporate governance influences decision-making regarding reporting policies, impacting whether managers present COVID information optimistically to boost investor confidence or negatively to mitigate potential legal risks (Albitar et al. 2023). Board size and independent directors are fundamental governance mechanisms that significantly enhance the board's monitoring effectiveness (Gerged 2021; Shan 2019), and therefore, they might potentially influence the disclosure tone of COVID-19-related information.

Prior research has explored the determinants and consequences of narrative disclosure tone using textual analysis methods (e.g., Loughran and McDonald 2015; Henry and Leone 2016; Fisher, van Staden, and Richards 2019). However, the literature lacks insights into how global or national crises, such as the Global Financial Crisis or the COVID-19 pandemic, affect the voluntary narrative disclosure tone in annual reports. It is unclear whether managers behave optimistically by suppressing negative information to avoid earnings shocks, or whether they provide more transparent and factual information to reduce systematic risk.

Recent studies on the impact of COVID-19 primarily focus on its effects on the U.K. financial market, including market reactions and firm performance (Wang and Xing 2020; Elmarzouky, Albitar, and Hussainey 2021a; Elmarzouky et al. 2021b; Paterson et al. 2024). For example, Elmarzouky, Albitar, and Hussainey (2021) and Elmarzouky et al. (2021b) examine the impact of COVID-19 disclosure on firm performance, considering corporate governance as a moderator in this relationship. Other studies, such as Hao and Dong (2022), investigate the determinants and consequences of COVID-19 disclosures in the narrative sections of annual reports of Chinese listed companies. A recent study by Loughran and McDonald (2023) concludes that COVID-19 disclosure is positively correlated with stock returns, and that some industries severely impacted by COVID-19 barely mentioned the pandemic in their annual report narrative sections.

Therefore, the current study fills a gap in prior literature by examining the possible impact of COVID-19 disclosure on pessimism in annual reports and whether this pessimism can be attributed to the board of directors' characteristics. We argue that management decisions tend to support increasing the level of voluntary disclosure in general, including voluntary COVID-19 disclosures, in order to fulfil the needs of powerful stakeholders. This is expected to lead to more credit and recognition of the management efforts and increase the survival prospects in a jumpy and turbulent pandemic situation.

Theoretically speaking, the Dye Box theory suggests that managers will be reluctant to provide optimistic information, and they will be more oriented to disclose COVID-19 information in a negative tone (Dye 1985; Beyer and Dye 2012). This is to eliminate any potential litigation costs in the future (Houston et al. 2019). Further, firms listed in FTSE All-share have a good reputation, and they will always send some warning messages to the market for any potential shock in earnings (Beyer and Dye 2012). Managers, therefore, will be more conservative in their decisions when disclosing information related to COVID-19 to avoid creating false hopes or unrealistic forecasts. In other words, this orientation of management decisions aims to manage shareholders' expectations to avoid triggering any litigation risks in the future. In this situation, according to Dye Box theorists, the pessimism or the negative tone of disclosure in annual reports is believed to protect the management against any shortcomings in future performance during a period of uncertainty (Goodell 2020; Erdem 2020). Thus, this study primarily addresses two key research questions: Does corporate COVID-19 disclosure increase the negative tone (pessimism) in annual reports? We will examine this question using a sample of FTSE All-shares companies in the United Kingdom. Do the size and composition of boards, specifically the presence of more independent directors, influence the level of pessimism in annual reports when companies disclose COVID-related information?

Our findings show a positive correlation between the disclosure of COVID-19-related information and a pessimistic tone in annual reports. The managerial choice to convey COVID-19 information negatively is primarily driven by a desire to minimise potential litigation costs in the future. Our findings also show that the pessimism in annual reports is seen as a protective measure, covering the management from any anticipated shortcomings in their firms' future performance, particularly given the heightened uncertainty stemming from the COVID-19 pandemic. The results further suggest that both board size and board independence positively impact the expression of pessimism in annual reports.

We contribute to the current literature as follows. First, we theoretically address the dearth in extant literature by employing the Dye Box theory to conceptualise the association between COVID-19 disclosure as a type of narrative disclosure and pessimism in annual reports. In this regard, we follow Beyer and Dye (2012), which suggests that firms with high reputations tend to report more negative forecasts to manage powerful stakeholders' expectations in line with Dye Box theory. Second, we exclusively use the Corporate Financial Information Environment (CFIE[1]) software that is developed by El-Haj et al. (2019) to extract the narrative sections from annual reports and measure the COVID-19 disclosure in annual reports in a similar fashion to Albitar, Al-Shaer, and Elmarzouky (2021). Third, to the best of our knowledge, this is the first study to explore the effect of COVID-19 disclosure on pessimism in annual reports. We argue that a management decision to use pessimism or a negative tone in annual reports might cover any negative financial consequences of the COVID-19 pandemic in the future. Additionally, we explore the potential impact of the board of directors' characteristics on pessimism in annual reports during a period of uncertainty.

The rest of the paper is structured as follows: Section 2—literature review and hypotheses development, Section 3—research method, Section 4—empirical results and robustness check, then Section 5 provides conclusion and implications.

2 | Literature Review and Hypotheses Development

2.1 | COVID-19 Disclosure and the Pessimism in Annual Reports

Companies use voluntary disclosure as a mechanism to eliminate agency conflicts by reducing information asymmetry (Wang, Sewon, and Claiborne 2008; Shan 2019); which decreases the company's cost of capital (Hail 2002), decreases uncertainty in estimating stock returns, increases stock prices, and ultimately increase shareholders' wealth and companies' market value (Enache and Hussainey 2019). In addition, voluntary disclosure also enhances shareholders' ability to predict future earnings, which is expected to have a positive impact on firm value (Hassanein, Zalata, and Hussainey 2019).

A body of prior studies focuses on risk disclosure as a type of voluntary disclosure (Allini, Manes Rossi, and Hussainey 2016; Salem, Ayadi, and Hussainey 2019), while others examine the determinants and consequences of forward-looking disclosures (Wang and Hussainey 2013) and the tone of voluntary disclosure (Henry 2008; Huang, Teoh, and Zhang 2014; Loughran and Mcdonald 2016; Aly, El-Halaby, and Hussainey 2018; Fisher, van Staden, and Richards 2019; Shan 2019).

Very few studies explore the determinants and consequences of COVID-19 disclosures in the narrative sections (Elmarzouky, Albitar, and Hussainey 2021a; Elmarzouky et al. 2021b; Hao and Dong 2022; Albitar et al. 2022). Hao and Dong (2022) conclude that high-growth (low-stock) liquidity Chinese firms increase COVID-19 disclosures in the annual reports to reduce information asymmetry. Elmarzouky, Albitar, and Hussainey (2021a) and Elmarzouky et al. (2021b) find a positive relationship between COVID-19 disclosure and firm performance disclosure in the annual reports using a U.K. sample. Albitar et al. (2023) find that ownership concentration has a negative impact on COVID-19 disclosure. A recent study by Loughran and McDonald (2023) concludes that COVID-19 disclosure is positively correlated with stock returns. However, the extant literature lacks empirical investigations of the level of COVID-19 disclosure (Albitar, Al-Shaer, and Elmarzouky 2021) and its impact on pessimism in annual reports. In this regard, influential stakeholders, mainly investors, have demanded extensive disclosures on matters related to the COVID-19 pandemic, which motivates firms to engage in COVID-19 disclosure to meet this need. Thus, drawing on El-Haj et al. (2019) and Albitar, Al-Shaer, and Elmarzouky (2021), this study extends the existing body of literature and aims to (i) measure the level of COVID-19 disclosure among a selected sample of FTSE All-shares in the United Kingdom, (ii) examine the potential impact of COVID-19 disclosure on pessimism (negative tone) in annual reports, and (iii) explore the expected effect of the characteristics of the board of directors on this pessimism.

According to the Dye Box theory (Dye 1985), firms tend to provide more negative forecasts or pessimistically disclose their information during uncertain times to warn the market about any negative earnings surprises in an effort to mitigate any future litigation costs. In this context, Beyer and Dye (2012) find that managers can establish a reputation for being '*forthcoming*' (disclosing all the received earnings forecasts) by reporting even the most unfavourable forecasts. According to this evidence, we argue that FTSE All-share firms might pessimistically disclose their COVID-19 information to reduce the probabilities of any future litigation costs. In other words, management decisions seem to avoid raising unrealistic expectations for shareholders, especially in a highly uncertain market; thus, it will support disclosing any potential losses, not any potential profits (see Dye 1985; Beyer and Dye 2012).

In this study, we consider COVID-19 disclosure a unique and complicated concept as investors' reaction to it is still highly uncertain in the market (Albitar, Al-Shaer, and Elmarzouky 2021). Crucially, we believe that management decisions to disclose COVID-19-related information in a positive tone might trigger some future litigation risks (Dong and Zhang 2019; Houston et al. 2019); hence, firms tend to prefer avoiding these litigation risks by increasing the level of pessimism in annual reports (Joel et al. 2019; Houston et al. 2019). In the light of the Dye Box theory, we argue that disclosing COVID-19-related information might be associated with pessimism in annual reports. Therefore, we test the first hypothesis as follows:

Hypothesis 1. *Ceteris paribus, there is a positive relationship between the level of COVID-19 disclosure and pessimism in annual reports.*

2.2 | Board Size and the Pessimism in the Annual Reports

Board size is considered one of the fundamental corporate governance mechanisms that significantly impact the directors' effectiveness and performance (Samaha, Khlif, and Hussainey 2015; Salem, Ayadi, and Hussainey 2019; Gerged 2021; Albitar et al. 2020). Arguably, agency theory suggests that board size is conducive to better supervision (La Porta et al. 2000). In contrast, Jensen (1993) suggested that large-sized firms might be associated with less effective coordination and decision-making process. This gives theoretical credibility to Lipton and Lorsh (1992) that indicates that too many directors on a board may harm the decision-making process as the costs of large-sized boards may exceed their benefits when this size negatively influences the coordination among directors and the effectiveness of their performance. Likewise, Yermack (1996) argue that large-sized boards are expected to be less effective in monitoring senior management behaviours. Generally speaking, a large board of directors may ineffectively monitor a company's performance, affecting the quality of voluntary disclosures and the tone of these disclosures.

On the other hand, others believe that a large board is more likely to have a broader range of expertise than a small one, increasing their oversight capabilities. For example, a stream of previous literature finds a positive association between board size and risk disclosure (Allini, Manes Rossi, and Hussainey 2016; Salem, Ayadi, and Hussainey 2019), forward-looking disclosures (Wang and Hussainey 2013) and environmental disclosure (Gerged 2021). Albitar, Al-Shaer, and Elmarzouky (2021) suggest that COVID-19-related disclosure is associated with more negative forecasts. Thus, we argue that the stronger the board of directors, the more power they have over management decisions. This will put pressure on management to avoid any unreal optimistic tone, increasing the level of pessimism in annual reports that reflect disclosure transparency. In theory, firms with large-sized boards may disclose even the most pessimistic forecasts to avoid any future litigation during an era of uncertainty. Therefore, we test the following hypothesis:

Hypothesis 2. *Ceteris paribus, there is a positive relationship between the board size and pessimism in annual reports.*

2.3 | Non-executive Directors and Pessimism in the Annual Reports

Independent directors make the board financially experienced to appreciate many financial complexities and risks that enable boards to contribute to firms' financial stability (Allini, Manes Rossi, and Hussainey 2016; Shan 2019; Gerged, Albitar, and Al-Haddad 2023). It is suggested that the percentage of independent non-executive directors will enhance the board of directors' effectiveness in monitoring management decisions (Srinidhi, Gul, and Tsui 2011). Allini, Manes Rossi, and Hussainey (2016) state that having a greater percentage of independent directors is expected to enhance boards' ability to reduce the asymmetric gap of information between managers and shareholders and increase the quality of reporting. Lopes and Rodrigues (2007) argue that board independence is also attributed to voluntary disclosure quality.

A few studies examined the impact of independent non-executive directors on disclosure tone (Shan 2019), especially in the case of COVID-19 disclosure. For instance, only Fisher, van Staden, and Richards (2019) explored the effect of independent directors on CSR tone and found a negative effect. Relatedly, Patelli and Pedrini (2015) state in their recommendations that the board of directors and the CEO can determine the tone of disclosure, and aggressive financial reporting is correlated with resolute language. They believe that the tone of the CEO's speech is a fundamental way for directors to establish leadership. In this regard, consistent with agency theory and Dye Box theory, Abrahamson and Park (1994) suggest that independent directors are expected to support pessimism in annual reports to minimise the asymmetric gap of information and ensure transparency in voluntary disclosure, especially during the times of uncertainty. Thus, we argue that independent directors will promote the disclosure of information that reflects the actual situation. Given that COVID-19 information is full of uncertainty, and there is no light at the end of the tunnel yet, we believe that independent directors might tend to force management to disclose the pessimistic economic situation created by the COVID-19 pandemic. Therefore, we develop the third hypothesis as follows:

Hypothesis 3. *Ceteris paribus, there is a positive relationship between independent directors and pessimism in annual reports.*

3 | Research Method

3.1 | Sample and Data Collection

We use computerised textual analysis to score the COVID-19 disclosure and measure the pessimism of annual reports (El-haj, Rayson, et al. 2019; Albitar, Al-Shaer, and Elmarzouky 2021). The initial sample of this study includes all UK FTSE All-share non-financial firms that have published their annual reports after March 2020. We focus on the first year of COVID for two reasons: First, the initial period of the pandemic marked an unprecedented and highly volatile time for global markets and businesses. Limiting the study to the first year allows for a concentrated examination of the immediate and acute effects of COVID on firms' disclosures and the tone of their annual reports. Second, the first year of the pandemic is likely to capture the initial reactions and responses of companies to the emerging challenges. It provides a unique opportunity to analyse how companies adapted to the uncertainties, financial implications, and disruptions caused by COVID-19. Understanding this during the first year offers insights into the immediate strategies employed by firms, including how they communicated risks and uncertainties in their annual reports.

We excluded all the financial firms due to the differences in disclosure regulations and C.G. provisions in line with prior literature (e.g., Mangena, Priego, and Manzaneque 2020; Gerged, Albitar, and Al-Haddad 2023). We excluded firms that are missing the necessary data for the variables used in our analysis. Data has been collected from Bloomberg terminal and Eikon databases. We have additionally downloaded the annual reports from the firms' own websites.

3.2 | Research Model

The paper uses a multivariate regression model to investigate the relationship between COVID-19 disclosure and pessimism in annual reports. Following a stream of prior C.G. literature (e.g., Kiesewetter and Manthey 2017; Harjoto 2017; Salem et al. 2020), we employed Ordinary Least Squares (OLS) regression to test our hypotheses. We rigorously checked that all assumptions for OLS were met to validate the model results. Linearity and independence of residuals were confirmed by visually inspecting scatter plots of the dependent variable against each predictor and by applying the Durbin-Watson test (Durbin-Watson statistic = 2.03), which showed no significant deviations from linearity or autocorrelation. Homoscedasticity was verified using the

Breusch-Pagan test, and the residuals were confirmed homoscedastic, indicating no systematic change in the spread of residuals. Normality of residuals was examined through Q–Q plots and the Shapiro–Wilk test; results confirmed normality, justifying the use of OLS. Additionally, no perfect multicollinearity was found among the predictors, as confirmed by Variance Inflation Factor (VIF) scores, which averaged around 4, well below the threshold of 10. By confirming these assumptions, we ensured the reliability of the regression model's estimates (Wagner 2005), providing robust results that accurately reflect the relationships between board characteristics, COVID-19 disclosure, and pessimism in annual reports. The model is specified as follows:

$$\begin{aligned} Pessimism = {} & \beta_0 + \beta_1 Covid + \beta_2 BSize + \beta_3 IND + \beta_4 GD + \beta_5 A\_Com\_Ind \\ & + \beta_6 Leverage + \beta_7 ROA + \beta_8 TA + \beta_9 Industry\ dummies + \epsilon \end{aligned} \tag{1}$$

where Pessimism refers to the pessimism within annual reports; COVID refers to the COVID disclosure; BSize refers to board size; IND is Independent non-executive directors; G.D. refers to gender diversity; A_Com_Ind is audit committee independence; Leverage is financial leverage measured by total debt to total equity; ROA is return on assets; T.A. refers to firm size measured by total assets; β denotes the coefficient; industry dummies to control for industry effect; and ε is the error term.

3.3 | Variables Definitions and Measurement

3.3.1 | Dependent Variable

Pessimism within annual reports (Pessimism): The main variable of interest is the pessimism in the annual reports. Two measurements have been adopted to estimate pessimism in annual reports, following Henry (2008) and Loughran and Mcdonald (2011). We apply Henry's (2008) wordlist to estimate pessimism in annual reports. The wordlist of Henry (2008) contains 85 negative (pessimistic) words. We also apply Loughran and McDonald's (2011) wordlist as an alternative measure to pessimism in annual reports. Loughran and McDonald's (2011) wordlist is considered more comprehensive than other dictionaries as it contains 2329 negative words. It was created based on a financial document (10-K filings); thus, it is more applicable to financial reporting and business communication research than other general dictionaries, such as Harvard or Diction (Loughran and McDonald 2016; Bassyouny, Abdelfattah, and Tao 2020).

3.3.2 | Independent Variables

Our independent variables are COVID disclosure and board size and independent non-executive directors.

3.3.2.1 | COVID Disclosure (COVID). Our first independent variable is COVID disclosure. A disclosure wordlist typically measures the extent of corporate disclosure by counting the frequency of words regarding a particular issue (Hoberg and Moon 2017; Andreou, Harris, and Philip 2020). This study applies three steps to measure COVID-19 disclosure in annual reports. First, we use the wordlist developed by Elmarzouky et al. (2021b), constructed and developed based on the COVID-19 Secure Guidelines published by the U.K. Government (GOV. UK 2020). Second, we score the annual reports using the CFIE software developed by El-Haj, Alves, et al. (2019), which is called (CFIE-FRSE). Appendix A (Table A1) shows some examples of the original wordlist used for measuring COVID-19 disclosure. Third, to ensure the measurement's reliability and validity, we investigate the extent of COVID-19 disclosure by scanning a sample of annual reports for randomly selected firms in the United Kingdom (Albitar, Al-Shaer, and Elmarzouky 2021; Elmarzouky, Albitar, and Hussainey 2021a; Elmarzouky et al. 2021b). Companies may choose to mitigate these risks by adopting a more pessimistic tone in their annual reports (Joel et al. 2019; Houston et al. 2019). Therefore, we argue that the disclosure of COVID-19-related information is likely linked to increased pessimism in annual reports.

3.3.2.2 | Board Size (BSize). The second independent variable is board size. The number of directors on a firm's board is used to measure board size (Lone, Ali, and Khan 2016; Husted and Sousa-Filho 2018; Orazalin 2019). A large board of directors may monitor a company's performance, influencing the quality and tone of its voluntary disclosures. We assume that firms with large boards may disclose more pessimistic information to mitigate potential future litigation risks during periods of uncertainty.

3.3.2.3 | Independent Non-executive Directors (IND). The third independent variable is the independent non-executive directors, which is measured by the percentage of independent directors within the board (Samaha, Khlif, and Hussainey 2015; Salem, Ayadi, and Hussainey 2019). We argue that independent directors may increase the pessimism in annual reports to reduce litigation risk, especially during times of uncertainty.

3.3.3 | Control Variables

G.D.: Gender diversity is measured by the percentage of women on boards (Elmarzouky, Albitar, and Hussainey 2021a; Elmarzouky et al. 2021b; Shohaieb, Elmarzouky, and Albitar 2022). Firms with more gender diversity tend to provide more performance information associated with COVID-19 disclosure (Elmarzouky, Albitar, and Hussainey 2021a; Elmarzouky et al. 2021b).

A_Com_Ind: Audit committee independence is measured by the percentage of independent non-executive directors in audit committees (Carcello and Neal 2003). Audit committee members play an important role in protecting shareholders' interests (Dwekat et al. 2020). Audit committee independence is one of the most important attributes that may significantly affect the COVID-19-related disclosure level. Audit committee independence has a negative influence on COVID-19 disclosure (Abdelhak et al. 2023).

Leverage: Financial leverage is measured by total debt to total equity (Albitar 2015). The level of financial leverage within a firm may influence the reporting of both positive and negative news information as it can impact the perceived financial stability and risk profile, shaping management's inclination to convey optimistic or pessimistic narratives (Aly, El-Halaby, and Hussainey 2018).

Return on Assets (ROA): ROA is used as a control variable proxying profitability (Aouadi and Marsat 2018; Kao, Hodgkinson, and Jaafar 2018; Aly, El-Halaby, and Hussainey 2018). Good financial performance serves as a compelling incentive for increased disclosure, especially in conveying positive news. Profitable firms with higher return on assets (ROA) possess more compelling narratives and a greater ability to bear the costs of disclosure. Consequently, firms with better ROA may tend to communicate more optimistically, displaying less pessimism in their narratives (Aly, El-Halaby, and Hussainey 2018).

Total assets (T.A.): Total assets variable is used as a proxy for firm size (Bernardi and Stark 2018; Aouadi and Marsat 2018; Kao, Hodgkinson, and Jaafar 2018; Elmarzouky et al. 2022a; Elmarzouky, Hussainey, and Abdelfattah 2022b). Firm size has a significant impact on the tone of annual reports, as larger companies with substantial assets may have greater resources and stability, influencing the narrative tone to reflect their financial strength and potentially shaping a more positive discourse (Albitar et al. 2023).

4 | Empirical Results

4.1 | Descriptive Statistics

Table 1 shows the number of observations for the COVID-19 disclosure, Henry (2008) and Loughran and McDonald (2011) disclosure is 223. However, we have missing data for the 'Board Size' (BSize) and 'Independent Non-executive Director' (IND) in the EIKON and Bloomberg databases. The lowest number of observations is for the BSize (221 observations); because of that, our final sample size consists of 221 full observations for our variables of interest. The mean of Henry's Negativity (H.N.) and Loughran and McDonald's Negativity (L.M.) is 40.529 and 104.166, with the max score of 112 and 306 and the min score being zero. Therefore, the LMN index has the highest word match for negativity in the sample data. Similarly, the COVID-19 disclosure max score is 232 and the min score zero, reflecting that some firms have not disclosed any COVID-19 related information.

Table 2 provides a clear explanation of the variation of the index score by industry. Table 2 shows that the COVID-19 disclosure and negativity tone score varies significantly across the different industries in the United Kingdom, which reflects that some industries are more sensitive to the COVID-19 crisis than others; some industries were more dominated by the COVID-19, while others show less response to this issue. The mean for COVID-19 related disclosure score is the highest, 137.50, in the Telecommunication industry, and it is near to the mean for L.M. (score 101 and overall mean 104.17) and H.N. in the upper spectrum for the mean score (59.25 > overall mean 40.53). However, the higher negativity score for L.M. is in the Utility sector, with a mean of 131.67 (which is the second highest scoring sector for COVID-19). Whereas H.N.'s high scoring sector is Health Care, and the COVID-19 score is 98.11, which is higher than the overall mean COVID-19 score of 52.323. Similarly, the lower amount of COVID-19 disclosure is in the Technology industry with a mean score of 24.69, where the negativity tone score for L.M. is on the lower side of the overall L.M. mean (mean 86.23 < overall mean 104.17), and the H.N. score is 40.77 close to the overall mean 40.53. Although we measured the COVID-19 disclosure based on the COVID-19 Secure Guideline published by the U.K. government, the descriptive statistics of the mean analysis indicate that COVID-19 related disclosure varies in the same direction as the variation of the negativity tones measurement.

4.2 | Correlation Matrix

Table 3 shows the correlation matrix for the dependent and independent variables. It shows the correlation between the L.M. negativity (pessimism) and COVID-19, BS, IND, ROA and T.A. Following the descriptive statistics, we found that COVID-19 disclosure has a significant positive correlation with the L.M. pessimism index. So, with the increase in the COVID-19 disclosure tone score of L.M., pessimism increased in annual reports. Also, the correlation between L.M. and B.S., IND and T.A. are significantly positive. The correlation sign for these variables is in line with our expectations. We also found a significant positive correlation between COVID-19 and B.S. and also between B.S. and both the IND and T.A. Therefore, a larger board disclosed more COVID-19 related

TABLE 1 | Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
HenryNeg2008	223	40.529	30.182	0	112
LMnegativity	223	104.166	66.275	0	306
COVID-19	223	52.323	79.743	0	232
BSize	221	8.67	2.112	5	16
IND	221	60.282	13.914	7.143	100
GD	223	29.911	11.374	11.111	62.5
A_Com_Ind	223	92.259	15.315	14.286	100
Leverage	217	0.874	4.62	0.409	23.57
ROA	212	0.312	1.149	−5	10
TA	212	21.19	1.47	17.673	26.365

TABLE 2 | Mean of COVID-19 disclosure and pessimism index by industry.

Industry	Mean (COVID-19)	Mean (LM Pessimism)	Mean (Henry-Pessimism)
Basic materials	38.67	121.14	30.67
Consumer discretionary	54.34	107.84	46.10
Consumer staples	51.88	122.94	47.18
Energy	50.89	105.11	16.67
Health care	98.11	110.22	55.44
Industrials	33.55	111.96	43.18
Real estate	60.94	68.68	29.32
Technology	24.69	86.23	40.77
Telecommunications	137.50	101.00	59.25
Utilities	103.83	131.67	49.00

TABLE 3 | Pairwise correlations with L.M. negativity (pessimism).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) LM-pessimism	1.000								
(2) COVID-19	0.220*	1.000							
	(0.001)								
(3) BSize	0.365*	0.235*	1.000						
	(0.000)	(0.004)							
(4) IND	0.351*	0.049	0.188*	1.000					
	(0.000)	(0.545)	(0.020)						
(5) GD	−0.130	0.046	0.003	−0.058	1.000				
	(0.052)	(0.498)	(0.967)	(0.478)					
(6) A_Com_Ind	−0.009	0.049	0.034	−0.025	−0.026	1.000			
	(0.890)	(0.469)	(0.675)	(0.757)	(0.700)				
(7) Leverage	0.023	0.007	−0.065	0.091	−0.005	0.070	1.000		
	(0.731)	(0.917)	(0.435)	(0.270)	(0.943)	(0.302)			
(8) ROA	−0.040	0.031	−0.065	0.033	−0.055	−0.023	0.020	1.000	
	(0.565)	(0.653)	(0.429)	(0.686)	(0.425)	(0.744)	(0.776)		
(9) TA	0.527*	0.181*	0.598*	0.195*	−0.151*	−0.065	−0.133	−0.025	1.000
	(0.000)	(0.008)	(0.000)	(0.016)	(0.028)	(0.349)	(0.057)	(0.722)	

*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

information. Also, a company with a larger size demonstrates more directors on the board. Moreover, a larger board contains more independent non-executive directors; companies with substantial asset sizes have a better effective corporate governance mechanism.

Table 4 shows a similarly identical correlation as Table 3. Here, H.N. pessimism is also significantly positive with the COVID-19 disclosure. Our COVID-19 variable has a significant positive correlation with B.S., and B.S. is correlated with the IND and T.A.; also, IND has a significant relationship with T.A. So, we investigate the VIF score to check the multicollinearity problem in our model. However, our investigation shows no sign of multicollinearity.[2] This means that the multicollinearity issue is unlikely to be a serious statistical problem that might affect the results of the multivariate analysis.

TABLE 4 | Pairwise correlations with H.N. Negativity (pessimism).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Henry-pessimism	1.000								
(2) COVID-19	0.238*	1.000							
	(0.000)								
(3) BSize	0.211*	0.235*	1.000						
	(0.009)	(0.004)							
(4) IND	0.236*	0.049	0.188*	1.000					
	(0.003)	(0.545)	(0.020)						
(5) GD	−0.100	0.046	0.003	−0.058	1.000				
	(0.138)	(0.498)	(0.967)	(0.478)					
(6) A_Com_Ind	−0.044	0.049	0.034	−0.025	−0.026	1.000			
	(0.512)	(0.469)	(0.675)	(0.757)	(0.700)				
(7) Leverage	0.087	0.007	−0.065	0.091	−0.005	0.070	1.000		
	(0.203)	(0.917)	(0.435)	(0.270)	(0.943)	(0.302)			
(8) ROA	−0.055	0.031	−0.065	0.033	−0.055	−0.023	0.020	1.000	
	(0.429)	(0.653)	(0.429)	(0.686)	(0.425)	(0.744)	(0.776)		
(9) TA	0.235*	0.181*	0.598*	0.195*	−0.151*	−0.065	−0.133	−0.025	1.000
	(0.001)	(0.008)	(0.000)	(0.016)	(0.028)	(0.349)	(0.057)	(0.722)	

*$p < 0.1$.
**$p < 0.05$.
***$p < 0.01$.

4.3 | Multivariate Analysis

We used different regression models to estimate the impact of COVID-19 disclosure, board size and independent non-executive director on the pessimism of the annual report. To validate our results, we used two different tone measurement dictionaries. In addition to the OLS (ordinary least squares), we use 2SLS (Two-Stage least squares) and Tobit regression analysis. We use the 2SLS model to reduce the standard error and Tobit regression to avoid the impact of score censoring by the index.

The Tobit model is a censored regression designed to estimate linear relationships when the dependent variable is either right-censored or left-censored (Winship and Western, 2016; Karim, Albitar, and Elmarzouky 2021). Since our main dependent variable, pessimism in annual reports, cannot be negative (i.e., it is right-censored at zero), the Tobit model is an appropriate choice for our analysis. We also employ 2SLS regression to address potential endogeneity issues (McDonough and Millimet 2017). In this context, we plan to use uncertainty in annual reports as an instrumental variable.

All of our regression models provide the same estimation for our variables. Our result shows a significant positive relationship between the level of COVID-19 disclosure and pessimism in annual reports at a 1% significance level. The results remained significantly positive when we used both tone measurement dictionaries. Disclosing more information in the public domain should signal the business's transparency and effectiveness, leading to an increase in firm value. COVID-19 pandemic caused sheer uncertainty in the market; therefore, all businesses are struggling to cope with this uncertainty and have no idea how to navigate out of this crisis (Elmarzouky, Albitar, and Hussainey 2021a; Elmarzouky et al. 2021b). Although disclosing more information about the true underlying economics of the entity should increase the value of the business and reduce the agency conflict. However, our result shows that disclosing more COVID-19 related information is positively associated with the negative tone in annual reports. This is consistent with the Dye Box theory's argument that COVID-19 disclosure is positively associated with pessimism in annual reports. In line with Beyer and Dye (2012), we suggest that the uncertainty, the going concern, and instability that are facing companies during the pandemic have greatly contributed to strengthening this relationship. This finding aligns with existing literature which emphasises that COVID-19 disclosure tends to elevate uncertainty in annual reports. Firms often present COVID-19-related information with reduced certainty and a lack of clarity regarding the anticipated impact of the pandemic on their businesses in the United Kingdom (Elmarzouky, Albitar, and Hussainey 2021a; Elmarzouky et al. 2021b). The management decision to disclose COVID-19 related information in a negative tone is expected to manage shareholders' expectations and reduce potential litigation costs in the future.

TABLE 5 | Multivariate analysis of L.M. pessimism.

Variables	(OLS) LM pessimism	(Tobit) LM pessimism	(2SLS) LM pessimism
COVID-19	0.177***	0.177***	0.640*
	(0.0643)	(0.0623)	(0.338)
BSize	0.151**	0.151**	0.330
	(0.714)	(0.629)	(3.746)
IND	0.931***	0.931***	0.849**
	(0.336)	(0.326)	(0.383)
GD	−0.369	−0.369	−0.855*
	(0.387)	(0.375)	(0.492)
A_Com_Ind	−0.166	−0.166	−0.465
	(0.305)	(0.296)	(0.417)
Leverage	0.698	0.698	0.912
	(0.844)	(0.818)	(1.029)
ROA	1.058	1.058	−0.0989
	(4.191)	(4.061)	(4.756)
TA	380.9***	380.9***	317.9***
	(96.50)	(93.50)	(113.7)
Constant	−1113***	−1113***	−86.4**
	(288.8)	(279.9)	(350.8)
Observations	212	212	212
R-squared	0.345		0.164

Note: Standard errors in parentheses.
*$p<0.1$.
**$p<0.05$.
***$p<0.01$.

TABLE 6 | Multivariate analysis of H.N. negativity.

Variables	(OLS) Henry pessimism	(Tobit) Henry pessimism	(2SLS) Henry pessimism
COVID-19	0.0907***	0.0907***	0.450*
	(0.0335)	(0.0325)	(0.163)
BSize	0.297**	0.297**	0.639
	(0.115)	(0.371)	(1.808)
IND	0.325*	0.325*	0.298
	(0.175)	(0.170)	(0.185)
GD	−0.246	−0.246	−0.315
	(0.202)	(0.195)	(0.137)
A_Com_Ind	−0.0414	−0.0414	−0.144
	(0.159)	(0.154)	(0.201)
Leverage	0.588	0.588	0.698
	(0.440)	(0.426)	(0.496)
ROA	−1.754	−1.754	−2.166
	(2.184)	(2.117)	(2.295)
TA	31.02	31.02	8.081
	(50.30)	(48.73)	(54.86)
Constant	−79.46	−79.46	8.506
	(150.5)	(145.9)	(169.3)
Observations	212	212	212
R-squared	0.153		0.053

Note: Standard errors in parentheses.
*$p<0.1$.
**$p<0.05$.
***$p<0.01$.

Furthermore, Table 5 shows that board size (B.S.) is significantly and positively associated with the L.M. negativity score. Suggesting that firms with higher board size will be more motivated to limit managers' opportunism, leading to a more negative tone in the annual reports. Moreover, our empirical evidence suggests that the independent directors (IND) on boards are significantly positively related to the L.M. negativity score, which aligns with our expectations. This results consistent with prior research that shows firms with more independent directors provides a less a more pessimistic tone in annual reports including CSR reports in the United Kingdom (Albitar et al. 2023). Independent directors are anticipated to support a pessimistic tone in annual reports particularly in periods of uncertainty (Abrahamson and Park 1994). This implies that during the market instability, board size and independence effectively influence management decisions to produce value relevant COVID-19 information to reveal their companies' suffering in order to avoid any litigation costs in the future, according to the Dye Box theory (Dye 1985).

Further, as it can be seen in Table 6, we also validated our results by replacing L.M. with H.N. pessimism; it is evident that our primary variable, COVID-19, is significantly and positively attributed to pessimism in annual reports across all the adopted regression models (OLS; 2SLS and Tobit). The coefficient of the association between COVID-19 disclosure and H.N. negativity is 0.0907. Therefore, for every 100 COVID-19 related words, the disclosure will result in an approximately 9% increase in pessimism (by the measure of the H.N. pessimism index) in the annual report. The difference of change between pessimism for every 100 COVID-19 related word disclosure between L.M. (17%) and H.N. (9%) is approximately 2.13 (19/8.9 = 2.13). This significant difference can be related to their score in the sample mean (LM 104.17/HN 40.53 = 2.57). Although IND is positively and significantly related to pessimism, B.S. is insignificantly related to pessimism in all models for the H.N. negativity tone measure.

4.4 | Robustness Check

We perform the robustness check of our estimates for COVID-19 disclosure and pessimism in annual reports by investigating

TABLE 7 | L.M. negativity by sub-sample group.

	BS ≥ 9	BS < 9	IND ≥ 60	IND < 60
Variables	LM pessimism	LM pessimism	LM pessimism	LM pessimism
COVID-19	0.174**	0.209	0.203**	0.109
	(0.0824)	(0.144)	(0.0863)	(0.119)
BSize	−0.977	5.150	−4.095	6.281*
	(6.288)	(7.958)	(5.201)	(3.209)
IND	0.394	0.847*	0.124	0.251
	(0.721)	(0.459)	(1.343)	(0.577)
GD	−0.747	−0.195	−0.261	−0.0783
	(0.714)	(0.570)	(0.586)	(0.536)
A_Com_Ind	−0.419	0.439	0.179	−0.547
	(0.568)	(0.415)	(0.481)	(0.400)
Leverage	−1.625	−0.0657	−0.563	0.830
	(6.896)	(1.541)	(1.688)	(0.926)
ROA	−24.37	2.741	15.49	−0.740
	(22.03)	(4.770)	(10.79)	(4.295)
TA	403.1**	319.8**	599.4***	208.9
	(170.9)	(143.8)	(146.5)	(153.9)
Constant	−1059**	−997.8**	−1699***	−555.1
	(508.1)	(431.4)	(434.8)	(467.0)
Observations	105	107	102	110
R-squared	0.320	0.219	0.390	0.265

Note: Standard errors in parentheses.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

whether the COVID-19 disclosure could impact pessimism in annual reports when considering different board sizes and different percentages of independent directors. The observations were divided into two sub-groups based on the mean of the board size (BSize) and board independence (IND). Our result shows that; COVID-19 related disclosure is significantly and positively associated with L.M. only when the IND and BSize ≥ respective mean values (Table 7). Larger board size and/or more independent non-executive directors on boards appeared to enhance the governance power over management decisions to realistically (in the case of COVID-19) and pessimistically report their forecasts to avoid litigation costs in future by managing influential stakeholders' expectations. Robust board characteristics lead to more engagement in voluntary COVID-19 disclosure, given the current unstable situation of the market; this additional information is expected to be associated with pessimism. However, this might contradict the firm's primary motive of wealth maximisation. Setting a negative tone will provide a distress signal in the stock market, which can cause a significant wealth reduction for the business owners (Beyer and Dye 2012). UK FTSE 1 year average share return is approximately negative by 20% until September 2020 (London Stock Exchange 2020). The same scenario is across the other global financial markets. Some experts argued that, as the COVID-19 pandemic hits all around the globe, the COVID-19-related risks are expected to be systematic (Sharif, Aloui, and Yarovaya 2020). Thus, in an effort to mitigate this systematic risk, management decisions might be supportive of disclosing pessimistic forecasts in their firms' annual reports in line with the market pessimism to avoid investors' shock of future negative earnings.

Also, the COVID-19 disclosure-pessimism nexus results are consistent in the sub-sample analysis for the H.N. pessimism score (Table 8). This analysis also indicates that when there is a larger board size and greater board independence, COVID-19 disclosure is significantly associated with the pessimistic tone of annual reports.

5 | Conclusion

This paper explores whether corporate COVID-19 disclosure increases the negative tone (pessimism) in annual reports

TABLE 8 | H.N. Negativity by sub-sample group.

	BSize ≥ 9	BSize < 9	IND ≥ 60	IND < 60
Variables	**Henry pessimism**	**Henry pessimism**	**Henry pessimism**	**Henry pessimism**
COVID-19	0.0931*	0.107	0.114**	0.0749
	(0.0517)	(0.0738)	(0.0494)	(0.0450)
BSize	1.846	0.329	−4.486	4.658***
	(3.794)	(4.080)	(2.972)	(1.216)
IND	0.268	0.456*	1.247	0.0689
	(0.435)	(0.235)	(0.767)	(0.219)
GD	−0.522	−0.167	−0.168	0.00907
	(0.431)	(0.292)	(0.335)	(0.203)
A_Com_Ind	0.110	0.0265	0.224	−0.183
	(0.343)	(0.213)	(0.275)	(0.152)
Leverage	3.208	1.605**	2.070**	−0.149
	(4.161)	(0.790)	(0.965)	(0.351)
ROA	−1.743	−1.548	−2.007	−0.921
	(13.30)	(2.445)	(6.167)	(1.627)
TA	52.10	−11.92	149.0*	−74.93
	(103.1)	(73.75)	(83.73)	(58.30)
Constant	−150.4	42.54	−482.8*	237.4
	(306.6)	(221.2)	(248.5)	(176.9)
Observations	45	74	78	63
R-squared	0.155	0.158	0.211	0.306

Note: Standard errors in parentheses.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

among a selected sample of FTSE All-shares in the United Kingdom. Furthermore, we explore the effect of two key corporate governance mechanisms, namely board size and board independence, on pessimism. Different multivariate regression estimations, including OLS, 2SLS, and Tobit models, were used based on FTSE All-share data published in 2020. The results show that disclosing COVID-19 related information is positively associated with pessimism in annual reports. Building upon the Dye Box theory perspective (Dye 1985; Beyer and Dye 2012), managers of FTSE All-share firms are more oriented to disclose COVID-19 information in a negative tone to warn the market about any expected losses in an attempt to mitigate the systematic risks and avoid future earning shock. This management decision is mainly related to eliminating any potential litigation costs in the future. Furthermore, pessimism in annual reports is expected to cover the management against any shortcomings in their firms' future performance, especially with the high level of uncertainty that is caused by the COVID-19 pandemic. The results also indicate that board size and board independence positively influence pessimism in annual reports.

This study's findings provide practical implications for a wide range of stakeholders. For investors, grasping the association between board composition and a conservative bias in financial reporting can guide investment strategies. Evidence suggests that firms with expansive, autonomous boards are likely to display enhanced governance and transparency, qualities vital for sustained investment viability.

For policymakers and standard-setters, the findings indicate that board attributes significantly shape the narrative tone of COVID-19 disclosures. This insight could drive the creation of regulations and standards aimed at bolstering corporate governance frameworks, especially in terms of board size and autonomy. By promoting larger and more independent boards, policymakers can facilitate stronger oversight and encourage prudent accounting practices during crises, which may reduce litigation risks.

Moreover, regulators might consider endorsing policies that encourage larger board sizes, as these could intensify oversight and curb managerial self-serving behaviours. Additionally, fostering the appointment of independent directors could be beneficial, as their involvement appears to lead to more meticulous and realistic financial reporting, thereby enhancing both transparency and accountability. We have only focused on the FTSE All-share non-financial firms; hence, further research might consider the COVID-19 disclosure-pessimism nexus among financial institutions. Additionally, this study was limited to a single-country setting; thus, future researchers are recommended to expand our empirical evidence to a multi-country setting, such as the European Union, South East Asia, etc.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data available on request from the authors.

Endnotes

[1] CFIE is a research programme exploring accounting and financial market text using natural language processing (NLP) and corpus linguistics methods (El-Haj et al. 2019).

[2] We do not report VIF test in this section for simplicity.

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Appendix A

TABLE A1 | Examples of COVID-19 keywords.

Covid#
Corona#
Pandemic
Lockdown
Epidemic
Social distancing
Hand washing
Face covering
Face mask
Safety measures
Working from home
Working online
Infectious
Reopen
Safe returning
Quarantine

Source: Elmarzouky et al. (2021b).