The Effectiveness of the UK's Viability Statement in Providing Early Warning Signs of Corporate Distress

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Abstract

The United Kingdom (UK) introduced the "Viability Statement" requiring directors to assess and confirm a company's viability over a period significantly longer than 12 months, along with explanations on how and over what time frame they have assessed the prospects of a company. This study examines the effectiveness of the Viability Statement in providing early warning signals of financial distress relative to directors' going concern statements and auditors' going concern opinions (GCOs). We find that the absence of a viability confirmation serves a strong warning sign of financial distress, particularly over longer horizons (up to five years). In contrast, directors' going concern statement and auditors' GCOs provide stronger warning signals over the initial two-year horizon, but their predictive power diminishes over the longer term. Interestingly, 64% (48%) of observations without viability confirmations do not have directors' (auditors') going concern warnings. We further show that the viability statement requirement increases the likelihood of auditors issuing GCOs for distressed firms, prompting more going concern related Key Audit Matters (KAMs). Finally, we find that while hard, verifiable features of the viability statement (including the viability confirmation and longer viability assessment periods) are linked to lower distress risk, the linguistic features of disclosures, including tone and readability, can be manipulated to influence external perceptions. Our findings shed light on the role of directors' assessment of companies' viability beyond 12 months in enhancing transparency, complementing existing disclosures, and informing both investors and auditors.

1 INTRODUCTION

Over the past decade, high-profile corporate collapses have undermined public trust in corporate disclosures, prompting criticism of the transparency of management disclosures of future uncertainties. Challenging economic conditions, arising from the COVID-19 pandemic, have intensified these concerns—with critics arguing that directors are "leaving it far too late" and burying their heads in the sand (Alberti, 2022). These economic uncertainties, along with a rise in corporate distress and insolvencies, have put a spotlight on a need for the timely provision of early warning signals through management disclosures. Moreover, this is a controversial yet critical topic for investors, as well as a key concern among standard setters (Australian Accounting Standards Board [AASB], 2021; Financial Reporting Council [FRC], 2021; International Financial Reporting Standards [IFRS] Foundation, 2021; International Auditing and Assurance Standards Board [IAASB], 2024a).

Although directors and auditors are expected to provide early warning signals, both regulators and academics have highlighted the inherent difficulties facing directors in self-assessing and disclosing going concern issues—criticising such disclosures as inadequate, self-serving, and frequently tardy (Uang et al., 2006; Financial Reporting Council [FRC], 2011; Bierstaker & DeZoort, 2019; Parliamentary Joint Committee on Corporations and Financial Services [PJC), 2020; AASB, 2021; Bradbury et al., 2022). Further, the efficacy of auditors' going concern opinions (GCOs) in providing early warnings to the market has also been questioned in the press and academic studies (e.g., Hopewood, 1994; Chasan, 2009, 2012; Carson et al., 2013; Brackley et al., 2024).

Our study focuses on an initiative introduced in the United Kingdom (UK) via the Financial Reporting Council (FRC), namely, the Corporate Governance Code 2014: the viability statement. This code was introduced to alert investors to emerging risks by earlier recognising signs of economic and financial distress, thereby reducing unexpected market

shocks and enhancing transparency surrounding a company's prospects (FRC, 2017a). The Code mandates that directors assess and confirm a company's viability over a period significantly longer than 12 months. In particular, the Code requires directors to confirm whether they have a "reasonable expectation" of a company's viability over the period of assessment (i.e. a viability confirmation), explaining how and over what time frame they have assessed the prospects of a company.[1]

Global corporate failures have intensified calls for greater transparency in going concern assessments—and auditing standard-setters are actively working to address this. The IAASB (2024a) is set to release the revised ISA 570 (Going Concern) in response to stakeholder calls for stronger auditor evaluations of management assessments of going concern, as well as greater transparency regarding auditors' work related to going concern assessments. A key change in the revised ISA 570 is a requirement for auditors to include more explicit statements on whether the going concern basis of accounting is appropriate and to disclose how they evaluated management's assessments. However, this change raises concerns that such a confirmation could be misunderstood by users as a positive affirmation of the company's viability, thus widening the expectation gap (IAASB, 2024b). This heightened auditor responsibility prompts a critical question: ultimately, is it the responsibility of management to disclose more detailed information about a company's future viability? This would be a more straightforward approach, offering investors clearer insights at an earlier stage.

Our study leverages the unique introduction of the viability statement policy operating in the UK. In doing so, we contribute to ongoing debate by examining whether, when, and to what extent viability statements serve as effective early warning indicators of financial distress. Additionally, we explore whether the viability statement supports auditors in making going

[1] The viability statement is required in addition to the directors' going concern statement, which is limited to 12 months and typically contains brief, standardized wording.

concern decisions. Our sample comprises UK premium-listed companies on the London Stock Exchange (LSE), which are mandated to provide a viability statement covering the period from 2015 to 2021. We assess financial distress risk by using expected default frequency. [2]

We first examine whether the viability confirmation offers significant incremental explanatory power beyond the disclosures of material uncertainties related to going concern in (a) the directors' going concern statement and (b) the auditor's going concern opinion, to provide earning warning signs of corporate distress. The results show that the absence of a viability confirmation provides significant incremental explanatory power beyond other existing annual report disclosures serving as early warning signals. Furthermore, when considering time horizon, we find that while directors' and auditors' GCOs exhibit stronger predictive power in the short term (one- to two-years ahead), their significance diminishes over the long term. In contrast, the viability confirmation demonstrates greater significance over longer time horizons of up to 5 years. These findings underscore the long-term predictive power of the viability statement, compared to directors' and auditors' GCOs. Interestingly, the absence of a viability confirmation does not necessarily coincide with directors disclosing going concern uncertainties or auditors issuing concern opinions. Specifically, 64% of observations without viability confirmations do not have directors' going concern warnings, and 48% of them do not have auditors' going concern qualifications. As such, our results are consistent with the primary purpose of the viability statement—to assess a company's long-term prospects—while also highlighting the complementary nature of this information with respect to the corporate reporting package.

[2] Since only premium-listed companies are required to comply with the Corporate Governance Code and provide viability statements, it is not feasible to examine extreme events, such as bankruptcy, within this sample. This is because such events are very rare for this group of companies.

In addition to its role in signaling financial distress, we further examine implications of a viability statement requirement on auditors' assessments of going concern. Relatedly, Geiger et al. (2024) report on insights from focused interactions with experienced Dutch audit practitioners, who noted that management's responsibility in viability/going concern disclosures influences auditors' approaches to going concern assessments. The FRC (2019) also advocates for a greater use of viability statements in auditors' going concern assessment processes. To empirically test the impact of the viability statement requirement on auditors' GCOs, we implement a difference-in-differences (DiD) design, which compares the likelihood of GCOs for distressed firms in the UK that are subject to the viability statement requirement (treatment group), against a matched sample of distressed EU firms (control group). Our findings indicate the likelihood of GCOs being issued by auditors for UK distressed firms significantly increased post-requirement. For those without GCOs, we observe an increased likelihood of including going concern related key audit matters (KAMs) for close call cases in the treatment group. These findings suggest that a requirement for management to undertake a viability assessment both supports greater transparency and serves as a valuable source of information for auditors, enhancing their capacity to make informed judgments on going concern issues.

Finally, we examine both the content and presentation of disclosures in the viability statement, recognising this represents more than a binary confirmation. To provide investors with a better understanding of a company's risks, mitigation strategies, and prospects, the viability statement also requires directors to explain the period over which they have assessed a company's prospects and how they have conducted this assessment. We focus on two aspects of viability statement disclosures: (1) the length of the assessment period disclosed (i.e., 1-7 years) and (2) the linguistic features of the viability statement (i.e., tone, length, and readability) using textual analysis. Within the sample of observations with viability confirmations, we find

that a longer assessment period is associated with a lower future distress risk. However, an analysis of textual features reveals that lengthier viability statements, with a less negative tone and lower readability, are related to higher distress risk. These results suggest that while the hard and verifiable features of viability statement – its confirmation and assessment period – are indicative of future distress risk, the soft and discretionary nature of language used creates opportunities for managers to engage in self-serving behaviour and manipulate users' impressions.

Our study makes several contributions. First, it sheds light on whether requiring directors to confirm a company's long-term viability significantly longer than 12 months assists in predicting financial distress. The provision of early warning signals through management disclosures is both a controversial and critical issue for investors. Moreover, regulators and standard setters are particularly concerned about how companies use disclosures as a tool to communicate how they are navigating economic uncertainty (FRC, 2021, IFRS Foundation, 2021; AASB, 2021). Some stakeholders suggest that legislators consider introducing a longer-term assessment of viability and resilience (Accountancy Europe, 2021). Our findings provide empirical support for the predictive power of viability confirmations issued by directors, particularly over longer time horizons. While directors' and auditors' going concern opinions are informative in the short term, their predictive power diminishes beyond two years, whereas viability confirmation consistently offers significant explanatory power over the longer term. By examining the predictive ability of the viability statement alongside going concern opinions, our study highlights the complementary nature of these disclosures with respect to the corporate reporting package.

Second, Geiger et al. (2024) call for research examining management's internal viability assessment and its association with auditor GCO decisions. Our findings indicate that the viability statement compels management to perform thorough internal viability assessments,

which, in turn, serve as an additional source of information for auditors' going concern assessments. Our study sheds light on auditors' reliance on the added transparency provided by the viability statement, demonstrating that managerial internal assessments are key sources of input to auditors' going concern assessments. The findings also contribute to debate surrounding the revised ISA 570, which requires auditors to provide explicit statements about going concern. Our results suggest that, while auditors, as independent third parties, play a critical role in informing capital markets, enhanced disclosures from directors are equally, if not more, important, as auditors rely on management's internal assessment in forming their own judgments.

Third and finally, our study adds to longstanding literature on financial distress prediction, engaging with a recent trend of investigating whether words, in addition to accounting numbers, have predictive power. Prior research on the usefulness of narrative disclosures in predicting financial distress and bankruptcy has produced mixed results. While some studies show that linguistic features possess predictive power (e.g., Boo & Simnett, 2002; Cecchini et al., 2010; Mayew et al., 2015; Lopatta et al., 2017; Elsayed & Elshandidy, 2020; Wang, 2021), others argue that managers may use narratives to manipulate and obscure outsiders' impressions of a firm's prospects (e.g., Merkl-Davies & Brennan, 2007; Davis & Tama-Sweet, 2012; Bonne et al., 2024). Our findings highlight the dual nature of viability statement disclosures. Directors of distressed firms appear to engage in strategic reporting by using less negative and less readable language in viability statements, whereas the verifiable elements, including confirmation and length of the assessment period, are informative to users. These results suggest that both the informativeness of disclosures and their potential to mislead depends on the type of disclosure.

2 BACKGROUND

The viability statement was introduced in response to concerns, following the Global Financial Crisis (GFC), that companies were not adequately considering their long-term viability. Consequently, investors lacked sufficient information about companies' resilience to long-term risks (FRC, 2017a). Prior to the introduction of the viability statement, the going concern statement of directors was their main avenue to provide early warning signals. However, going concern assessments and disclosures have been widely criticised as inadequate. As noted in The Sharman Inquiry (2012), directors are often reluctant to disclose significant doubts about a company's going concern status unless there is no realistic alternative to liquidation, with this occurring in the very late stages of financial distress. This stems from a fear that being open about such doubts may signal that the company is on the brink of collapse. Additionally, the going concern opinion only covers a 12-month horizon, which is insufficient for users to understand long-term risks and prospects. This creates an expectation gap between what is expected by users of the going concern report and what it delivers. The viability statement was introduced to inform investors about risks and recognise signs of economic and financial distress at an earlier stage. Under the 2014 Corporate Governance Code, directors are required to provide a longer-term viability statement and specifically (a) explain how they have assessed the company's prospects, specifying the time period for the assessment, and justifying why that period is appropriate, and (b) state whether they have a reasonable expectation of continuing operations and meeting liabilities as they become due over the assessment period (FRC, 2014).

As the first country requiring directors to confirm a company's viability for a period beyond 12 months, this new regulation has sparked debate. Supporters agree that directors' assessments and disclosures of going concern are inadequate and insufficient, as going concern statements focus too narrowly on their accounting basis, detracting from broader, integrated,

and long-term evaluations of solvency and liquidity risks (FRC, 2013). Directors, with their superior access to private information, are in the best position to inform shareholders about potential liquidity and insolvency risks over the long term, as well as a company's resilience to such shocks (The Investment Association, 2016; McKinsey & Company, 2016). Overall, some companies positively view the viability statement, noting that it has enhanced their internal viability assessments and better integrated risk considerations into their strategic and planning process (McKinsey & Company, 2016; FRC, 2017a).

Critics, however, argue that it is not reasonable to expect directors to commit to a company's future solvency, especially given the constantly changing business environment (ACCA, 2014). The viability statement may be an unnecessary requirement, as companies are already required to issue a going concern statement along with sufficient information on risk positions and prospects in their annual reports (Barclays plc, 2014). Thus, some FTSE350 companies argue that the viability statement has introduced an extra layer of reporting, questioning its value to investors (FRC, 2017a). Moreover, while a viability statement aims to foreshadow liquidity and insolvency risk at an earlier stage, it may be unrealistic to expect directors to claim that a company has no going concern issues for the next 12 months while lacking long-term viability.

Correspondingly, there has been renewed interest from other standard setters regarding providing early warning signals to investors via management disclosures. For example, in the US, a decision requiring directors to report going concern problems was reached in 2014 after a six-year deliberation (Mayew et al., 2015). A primary reason for the US standard setter's lengthy deliberation was concerns over the benefits associated with mandating going concern disclosures. This vacillation of the Financial Accounting Standards Board (FASB) underscores

the controversial nature of this topic.[3] In Australia, a parliamentary inquiry was to improve disclosures concerning managerial assessments of going concern (Parliamentary Joint Committee on Corporations and Financial Services, 2020). At the height of COVID-related uncertainty, the IFRS Foundation (2021) released a document prepared for educational purposes, highlighting its requirements for going concern assessments. The document emphasises that outlook is not limited to 12 months; considering time periods longer than 12 months is not inconsistent with the requirements of IAS 1 (IFRS Foundation, 2021). Following the educational material on going concern issued by the IASB, the AASB (2021) conducted interviews with local stakeholders to discuss the adequacy of going concern disclosures. Participants expressed concerns that the current going concern approach places excessive focus on a 12-month period, with companies being reluctant to consider longer assessment horizons or disclose additional information due to fears of a self-fulfilling prophecy (AASB, 2021).

In sum, whether the viability statement provides any additional useful information, i.e., whether it informs distress risk at an earlier stage and fulfills its intended purpose as envisioned by regulators, remains an open question. Accordingly, our study seeks to contribute to debate on the usefulness of this unique, controversial UK requirement. Given renewed interest from other standard setters in providing early warning signals to investors through management disclosures, our study also offers regulatory implications of relevance to other jurisdictions.

3 LITERATURE REVIEW AND RESEARCH QUESTIONS

3.1 Literature review on the effectiveness of management disclosures providing early warning signs

Since the seminal work of Altman (1968) demonstrating the ability of financial ratios to predict bankruptcy, a large body of literature on the prediction of financial distress and

[3] In 2012, the FASB discontinued the development of a requirement for management to perform a going concern assessment (Whitehouse, 2012).

bankruptcy has evolved (see Beaver, Correia, & McNichols, 2011 for a review). However, Beaver, Correia, and McNichols (2012) revealed a time-series decline in the ability of financial ratios to predict bankruptcy. This was partially attributable to a decline in the quality of accounting numbers due to managerial intervention and an inability of accounting numbers to capture firm fundamentals. Concomitantly, developments in natural language processing as a branch of artificial intelligence dealing with interactions between computers and human language, combined with an explosion of information disclosures, have contributed to a growing interest in examining the predictive power of information beyond financial ratios, such as narrative management disclosures (Jones, 2023).

Using event studies and default prediction models, research has documented mixed findings regarding the predictive ability of management disclosures (Smith & Taffler, 2000; Boo & Simnett, 2002; Cecchini et al., 2010; Mayew et al., 2015; Lopatta et al., 2017; Ahmed et al., 2024). In an early study, Smith and Taffler (2000) manually analysed the content of Chairman's statements in the UK. They found that narrative disclosures can predict corporate failure. In the Australian context, Boo and Simnett (2002) examined the content of management's prospective comments in annual reports, finding such comments provided information incremental to those contained in historical financial information regarding a company's future viability. Also, Holder-Webb and Cohen (2007), investigating the disclosure quality of distressed firms, found that firms improved their disclosure quality in the year distress commenced.

More recently, studies have utilised textual analysis to study the predictability of narrative disclosures in annual reports. Cecchini et al. (2010) used computational linguistics tools to create keywords dictionaries, based on the Management's Discussion and Analysis (MD&A) sections of US reports, to demonstrate that combing textual and quantitative information improves bankruptcy prediction. Similarly, In the UK, Elsayed and Elshandidy

(2020) developed a textual measure for corporate failure-related narrative disclosures. They showed that such textual measures significantly predict corporate failure up to two years ahead. Gandhi et al. (2019), using a sample of US banks, found that a negative tone is significantly indicative of the likelihood of delisting, increasing loan loss, and decreasing future performance. Similarly, Ahmed et al. (2024) documented that using a net positive tone in UK annual reports was associated with lower bankruptcy risk.

3.2 Literature review on the effectiveness of directors'/auditors' going concern opinions in providing early warning signs

While the above studies focus on broader disclosures, such as MD&As, chairman statements, and annual reports as a whole, other research focuses on auditors' and/or directors' going concern opinions—given their importance in informing outsiders of potential financial distress and corporate failure (e.g., Kennedy & Shaw, 1991; Hopewood, McKeown, & Mutchler, 1994; Uang et al., 2006; Mayew et al., 2015; Wu et al., 2016; Gutierrez et al., 2020).[4] Gutierrez et al. (2020) focused on auditors' going concern opinions in the US and provided evidence that they offer incremental information predicting client default. Wu et al. (2016) examined UK-incorporated, non-financial companies listed on the LSE that failed between 1997 and 2010. They found only 34% of failed companies received an auditor's going concern modification prior to failure (see Jones, 2023 for a recent review).

Concerning managerial going concern disclosures, Uang et al. (2006) studied mandatory directors' going concern reports for UK firms. They concluded directors' going concern statements convey arbitrary and unhelpful messages to users, with auditor going concern opinions being more informative for predicting subsequent outcomes. Their findings echo the FRC's concerns about the inadequacy of directors' going concern statements. Using

[4] Another stream of literature examines market reactions to auditors' and/or directors' going concern opinions (e.g., Menon & Williams, 2010; Chen et al., 2020; Wang, 2022).

a sample of US firms from 1995 to 2012 to predict bankruptcy, Mayew et al. (2015) examined the roles of textual disclosures in MD&A sections and voluntary management opinions about going concern.[5] Mayew et al. (2015) found that management's voluntary going concern opinion, along with the linguistic tone of the MD&A, provides significant explanatory power when predicting bankruptcy for up to 3 years. Wang (2022) demonstrated that management going concern opinions are more indicative of corporate failures after ASU 2014-15, which requires management to evaluate going concern uncertainties quarterly and provide disclosures in the notes.

In sum, the literature provides mixed evidence on the incremental informativeness of narrative disclosures. On the one hand, managers may have incentives to truthfully disclose credible information to reduce information asymmetry, but, on the other hand, managers may provide misleading information to mask financial distress. Further, conflicting findings concerning the predictive ability of going concern opinions in studies such as Uang et al. (2006), Mayew et al. (2015), and Wang (2022), underscore the contestability of a requirement that directors issue early warnings about a company's prospects. Our study seeks to contribute to this extant literature by examining the informativeness of the viability statement, which was based on a belief that directors' going concern statements are insufficient for informing investors about a company's long-term prospects.

3.3 Hypotheses development

Despite ongoing debate about the effectiveness of management issuing early warning signals via disclosures, little is known about the usefulness of the long-term viability statement. According to Skinner (1994, 1997), managers have incentives to make timely and credible

[5] US managers were not required to disclose any going concern uncertainties until December 2016, approximately eight years after the issue of the related exposure draft, because of concerns about the benefits associated with mandating going concern disclosures.

disclosures due to the threat of litigation for inadequate disclosures. This is because managers need to preserve their reputational capital. And previous studies have found that narrative disclosures are informative when predicting financial distress and bankruptcy, which is consistent with this view (Smith & Taffler, 2000; Boo & Simnett, 2002; Cecchini et al., 2010; Mayew et al., 2015; Wang 2022; Ahmed et al., 2024).

However, managers may be reluctant to disclose bad news for behavioural reasons, especially in less litigious regulatory environments like the UK (where the threat of litigation is less than the US). For example, Kothari et al., (2005) have found evidence suggesting that managers delay the disclosure of bad news due to career concerns. Studies focusing on financial distress and bankruptcy (e.g., Frost, 1997; Mutchler *et al*., 1997; Holder-Webb & Cohen, 2007; Uang et al., 2006) argue that managers are reluctant to signal problems when a firm is in a financially distressed situation: the disclosure of bad news in a viability statement may precipitate firm failure. Moreover, the long-term nature of a viability statement involves great uncertainty due to the constantly changing business environment. This gives managers more leeway to justify withholding unfavourable information.

Additionally, doubts surround whether directors can truly commit to a company's long-term viability. Thus, the viability statement may not add significant value to the existing corporate reporting framework, especially considering long-standing directors' and auditor's going concern disclosures. Intuitively, companies unable to confirm their long-term viability are likely experiencing going concern issues. In such cases, viability confirmation is expected to be subsumed by going concern disclosures, with the former offering no additional informational value. Notwithstanding, viability confirmation may serve as a complementary disclosure to going concern opinions, as envisioned by regulators, given its emphasis on long-term prospects, significantly longer than 12 months. Directors may be reluctant to confirm long-term viability in the face of significant long-term risks and uncertainties, even in the

absence of material uncertainty over the short term. The debate surrounding whether the viability statement complements or substitutes going concern disclosures leads to our first hypothesis in a null form:

H1: The absence of viability confirmation provides no incremental predictive ability of financial distress beyond the material uncertainties related to going concern disclosed by directors and auditors.

In addition to the role of the viability statement in foreshadowing financial distress, such statements could potentially impact auditor judgments. The decision to modify an audit opinion to reflect doubt about a client's ability to continue as a going concern is widely recognised as one of the most challenging judgments that auditors face (Eickemeyer & Love, 2016). Based on interactions with audit practitioners, Geiger et al. (2024) argue management's internal assessments play a significant role in auditor GCO decisions. While earlier studies (e.g., Mutchler, 1984, 1985; Kleinman & Anandarajan, 1999) noted the importance of management's going concern assessment as a key factor in auditor judgment, no research has examined the link between management's internal viability assessments and auditor GCO decisions (Geiger et al., 2024). This research gap arises because such assessments have not been publicly disclosed in the past. However, the viability statement requires management to provide a robust assessment of risks threatening a firm's viability. This potentially gives auditors a more transparent basis for assessing going concern risks.

The mandate of a viability statement presents an opportunity to explore the interplay between managements' viability assessments and auditors' GCO decisions. Given that auditors' GCO decisions hinge not only on their independent assessments but also on the robustness of management internal viability analyses and forecasts, the viability statement of financially distressed firms may provide auditors with insights influencing the likelihood they issue a GCO. Having said this, the direction of this impact is unclear. Viability assessment and disclosure

requirements place heightened pressure on management to perform adequate and robust internal viability analyses, which serve as a critical source of information for auditors and may prompt them to issue more GCOs. Conversely, the viability assessment process may alleviate uncertainties around the prospects of a company, potentially decreasing the likelihood of auditors' issuing GCOs. Therefore, we state the following hypothesis in a null form:

H2: The likelihood of auditor GCOs does not increase following the mandate of the viability statement requirement in the UK.

4 SAMPLE AND METHODOLOGY

4.1 Research sample and models of post-mandate analysis (H1)

The UK enforced the long-term viability statement on premium listed companies for reporting periods beginning on or after 1 October 2014. To examine the predictability of viability statements (H1), we start with commercial equity companies with a premium listing of equity shares on the LSE with fiscal years ending from October 2015 to September 2021. Firms with financial industry codes (i.e., companies with SIC codes between 6000 and 6999) are excluded from the sample because of their differing capital structure and reporting. We then source data required to construct our financial distress measure (*EDF*) and financial ratios from Global Compustat, auditing data from Audit Analytics, and the risk-free rate from the Federal Reserve Bank of St. Louis. At the end of this process, we are left with 2,165 firm-years observations covering 408 unique firms for the analysis with one-year lead EDF. Panel A of Table 1 outlines the sample selection process of post-mandate analysis.

[INSERT TABLE 1 HERE]

To examine the incremental predictability of the absence of viability confirmation beyond directors' and auditors' GCOs, we estimate the following regression models:

$$EDF_{i,t+k} = f\left(VS\_noconfirm_{i,t}, D\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right) \quad (1)$$

$$EDF_{i,t+k} = f\left(VS\_noconfirm_{i,t}, AU\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right) \quad (2)$$

where $EDF_{i,t+k}$ represents the yearly decile-ranked expected default frequency, which measures the distance to default in a probabilistic manner following Bharath and Shumway (2008).[6] Given that the default rate is highly skewed to the right, we use yearly decile-ranked EDF ranging from 0 to 9, where 0 represents high financial distress risk and 9 represents low risk. See Appendix 1 for details on how the expected default frequency is calculated. We estimate model (1) for horizons up to five years ahead (k = 1, 2, 3, 4, and 5). Thus, we examine the time horizon over which viability confirmation and directors' and auditors' GCOs assist in predicting financial distress – in other words, to the time horizon providing early warning signals. This analysis is particularly relevant given that directors are required to report companies' viability over a period significantly longer than 12 months.

In terms of explanatory variables, $VS\_noconfirm$ is an indicator variable equal to one if the viability statement does not confirm that the firm will be able to continue operating or meet liabilities as they fall due over the period of assessment, and zero otherwise. We manually review each observation's viability statement within our sample to identify such confirmations. D_GC, hand-collected from annual reports, is an indicator variable coded as one if directors express uncertainty about the firm being a going concern in the directors' going concern

[6] We use this measure because market-based bankruptcy prediction models have been widely used by both academics and practitioners (e.g., Bharath & Shumway, 2008; Agarwal & Taffler, 2008; Ting et al., 2008; Furfine & Rosen, 2011; Jackson & Wood, 2013; Bao et al., 2019). Alternative proxies for the probability of financial distress include Altman's Z-score (1968) and Ohlson's O-score (1980). However, these accounting models use information derived from financial statements, which is backward-looking and may not be very informative about the prospects of a firm. In contrast, market-based models rely on the market value of a firm's equity. Market prices reflect investors' expectations about a firm's prospects because, they contain forward-looking information, which is better suited to estimating the likelihood that a firm might default in the future. Jackson and Wood (2013), using UK data, find that traditional accounting-based models are outperformed by theoretically driven contingent claims methods. Specifically, Bharath and Shumway's (2008) model outperforms in terms of predictive accuracy (Jackson & Wood, 2013). These findings lend support to the use of Bharath and Shumway's (2008) model as a proxy for the probability of financial distress.

statement, and zero otherwise.[7] AU_GC equals to one if auditors expressed material uncertainty related to going concern in the independent auditor's report, and zero otherwise.[8]

Financial ratios include key indicators used previously in financial distress models and bankruptcy literature, and other control variables (Altman, 1968; Shumway, 2001; Mayew et al., 2015; Gutierrez et al., 2020): that is, ratios of working capital to total assets (*WCTA*), retained earnings to total assets (*RETA*), earnings before interest and taxes to total assets (*EBITTA*), market value of equity to total liabilities (*MVELT*), sales to total assets (*SALETA*), the natural logarithm of total assets (*SIZE*), long-term debt to total assets (*LEV*), cash and cash equivalent holdings to total assets (*CASH*), the natural logarithm of firm age (*AGE*), an indicator variable equal to one if a company reports a net loss, and zero otherwise (*LOSS*), cash flow from operating activities to total assets (*CFO*), and an indicator variable equal to one if total liabilities exceed total assets, and zero otherwise (*NEGEQUITY*). Industry and year fixed effects are included to control for year- and industry-level idiosyncratic differences. Standard errors are clustered by firm.

4.2 Research sample and models of difference-in-differences analysis (H2)

For our difference-in-differences (DiD) analysis examining the viability statement's impact on auditor's GCOs (H2), we extend our sample to include a pre-mandate period, defined as October 2010 to September 2014, spanning four years prior to the release of the UK Corporate Governance Code. We omit the transition period (2014 October – 2015 September) to avoid potential confounding effects. Our post-mandate period spans from October 2015 to September 2019, providing a balanced four-year window before and after the mandating of the

[7] Due to the high correlation ($r = 0.84$) between directors' and auditors' going concern opinions (*D_GC* and *AU_GC*), we include them separately in the regression models to avoid multicollinearity issues.
[8] Auditors' going concern opinions are obtained from the Audit Analytics database and verified against hand-collected data. We identify 10 firm-year observations where Audit Analytics does not record a going concern modification, whereas corresponding independent auditors' reports disclose a material uncertainty related to going concern.

viability statement. We restrict the end of the post-mandate period to September 2019 due to the UK's revised auditing standard ISA 570 on going concern (revised September 2019, effective from December 2019), which requires auditors to more actively challenge the going concern assessments of management. Treated firms are defined as commercial equity companies with a premium listing of equity shares on the LSE, subject to viability statement requirements. We use EU firms as our control group, given that there was no similar market-wide regulation within the EU during our sample period.[9]

Panel B of Table 1 describes the sample selection process for the DiD analysis. For the treatment group, we begin with firm-year observations meeting the following criteria: (1) commercial equity companies being on the LSE with a premium-listing subject to viability statement requirements; and (2) financially distressed, defined as firms reporting either negative net income or negative operating cash flow (Pittman & Zhao, 2020). For the control group, we begin with EU financially distressed firm-year observations available on Global Compustat. Firms with financial industry codes are excluded from the sample. Lasty, we exclude observations with missing financial, market, and auditing data from Global Compustat and Audit Analytics.

The selection process yields 367 firm-year observations in the treatment group and 5,702 in the control group, which we use for our entropy balancing analysis. For the PSM matched sample, we employ one-to-one matching without replacement, setting the caliper width at 0.01. The PSM procedure (detailed later) results in a matched sample of 336 UK firm-year observations and 336 EU firm-year observations.

[9] In the US, the FASB issued Accounting Standards Update (ASU) 2014-15, effective for annual periods ending after December 15, 2016. This requires managers to assess going-concern uncertainty. In the UK, firms listed on the Alternative Investment Market (AIM) segment are not subject to viability statement requirements. These firms are generally younger, growing, riskier, and smaller than those with a premium-listing (Porumb et al., 2021; Gutierrez et al., 2025).

To examine whether the likelihood of auditor GCOs increases following the mandate of the viability statement requirement in the UK (H2), we estimate the following DiD model:

$$AU\_GC_{i,t} = \beta_0 + \beta_1 POST_{i,t} + \beta_2 Treated_{i,t} + \beta_3 POST * Treated_{i,t} + \sum \beta_j Controls_{i,t} + YearFE + IndustryFE + CountryFE + \varepsilon_{i,t} \quad (3)$$

where AU_GC, as defined above, equals one if auditors expressed material uncertainty related to going concern in the independent auditor's report, and zero otherwise. $POST$ is an indicator variable equal to one if the firm-year is in the post-mandate period (i.e., October 2015 to September 2019), and zero if in the pre-mandate period (i.e., October 2010 to September 2014).[10] *Treated* is an indicator variable equal to one for commercial equity distressed firms with a premium listing of equity shares on the LSE, subject to viability statement requirements, and zero for the control sample of EU distressed firms.

We control for variables expected to impact our dependent variable, AU_GC. First, we control for financial distress risk, including the ranked expected default frequency (*EDF*) and Altman Z-Score (*Zscore*). We expect that firms with a lower *EDF* and *Zscore*, indicating a higher probability of financial distress, are associated with a higher likelihood of receiving auditor's GCO. Second, we control for other financial ratios that capture a company's financial condition, along with other control variables from previous models, including the natural logarithm of total assets (*SIZE*), long-term debt to total assets (*LEV*), cash and cash equivalents to total assets (*CASH*), the natural logarithm of firm age (*AGE*), cash flow from operating activities to total assets (*CFO*), and an indicator variable, *NEGEQUITY*, equal to one if total liabilities exceed total assets, and zero otherwise. Third, we control for auditor characteristics,

[10] The transition period (2014 October – 2015 September) is excluded to avoid potential confounding effects.

including Big 4 audit firms (*BIG4*) and auditor tenure (*TENURE*). Fourth, we include fixed effects for industry, year, and country, clustering standard errors by firm.

We estimate the DiD model using a (1) propensity score-matched and (2) entropy balancing-matched control group of EU firms. For PSM, we begin by running a probit regression on the full sample of treated and control group firms for generating propensity scores using the following model:

$$Treated_{i,t} = \beta_0 + \sum \beta_j Covariates_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t} \quad (4)$$

where the dependent variable is $Treated_{i,t}$, as defined above. The set of covariates, $\sum Covariates_{i,t}$, includes all control variables from Model 3: *Zscore, EDF, SIZE, LEV, CASH, AGE, CFO, NEGEQUITY, BIG4,* and *TENURE*. We also include year and industry fixed effects. We employ a one-to-one matching without replacement, setting the caliper width at 0.01. The PSM procedure generates 336 pairs of matched treated and control firm-year observations. Entropy balancing is an equal percent bias reducing matching method using the full sample, which ensures that covariate imbalance improves after matching (Hainmueller, 2012). We use entropy balancing to generate weights for each of the observations in the control group, such that the post-weighting mean and variance of the covariates are virtually identical between the treatment and control groups (Ge et al., 2020).

As an additional analysis, we examine the impact of the viability statement on KAMs disclosed in audit reports. Going concern issues are addressed within KAM sections under two scenarios: first, when auditors identify the material uncertainty related to going concern and disclosure it as a KAM; and second, when the going concern issue requires significant auditor attention but is not deemed severe enough to be raised under the material uncertainty section (Camacho-Minano et al., 2024). We therefore restrict the sample to those that do not have

material uncertainty related to going concern raised in their audit reports (i.e., $AU\_GC = 0$). This enables us to explore whether the viability statement provides additional insights that prompt KAM disclosures for close call cases – that is, a going concern issue that is not deemed severe enough to be raised under the material uncertainty section but still requires significant auditor attention during the audit process.

UK premium-listed firms were required to comply with the expanded audit reporting requirement beginning in September 2013, whereas similar requirements were only implemented in the EU from December 2016. Thus, we are unable to apply the DiD analysis to KAM disclosures as we do with auditors' going concern opinions. Nonetheless, we conduct a comparative analysis to assess the likelihood of financially distressed treated versus control firms having going concern topics raised in the KAM section. We do so by estimating the following model:

$$KAM\_GC_{i,t} = \beta_0 + \beta_1 Treated_{i,t} + \sum \beta_j Controls_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t} \quad (5)$$

where $KAM\_GC_{i,t}$, obtained from Audit Analytics, equals one if auditors identify going concern as a KAM in the independent auditor's report, and zero otherwise. *Treated* is an indicator variable equal to one for commercial equity firms with a premium listing of equity shares on the LSE, subject to viability statement requirements, and zero for the control sample of EU firms. We include the same set of control variables as Model 3, and control for industry and year fixed effects.[11]

The sample period for this analysis consists of firm-year observations with fiscal years ending between December 2016 and 2021 to allow for sufficient observations. The sample is limited to financially distressed firms and those without material uncertainty related to going concern raised in their audit reports (i.e., $AU\_GC = 0$). Consistent with the analysis above, we

[11] Country fixed effects are not included because the variable of interest is *Treated*.

estimate the model using both a propensity score-matched and an entropy balancing-matched control group of EU firms. Matching parameters include all covariates in model (3). There are 305 firm-year observations in the treatment group and 1,402 in the control group, which we use for our entropy balancing analysis. For the PSM matched sample, we employ one-to-one matching without replacement, setting the caliper width at 0.01. The PSM procedure results in a matched sample of 259 UK firm-year observations and 259 EU firm-year observations.

5 RESULTS

5.1 Descriptive statistics

Table 2, Panel A, provides the descriptive statistics for the variable used in post-mandate analyses. An average firm in our sample has a one-year lead EDF of 0.5%, while the median is an extremely small value (2.0e-100), indicating that most firms have negligible default risk. The distribution of EDF is highly skewed to the right (lower default probabilities), which is consistent with our sample comprising the largest listed companies in the UK. These companies typically have strong financial positions, better governance frameworks, and diversified revenue streams that mitigate default risk. Therefore, we use yearly decile-ranked EDF, ranging from 0 to 9, where 0 represents high financial distress risk and 9 represents low risk.[12] The statistics of early warning signals in annual reports, in Panel A, reveal that non-confirmation in the viability statement (*VS_noconfirm*) appears in 1.5% of observations, as expected of the largest listed companies in the UK.[13] Material uncertainty related to going concern expressed in the directors' statement (*D_GC*) is present in 4.3% of the sample, and uncertainty expressed in the auditors' report (*AU_GC*) shows a higher frequency at 5.4%.

[12] We also rerun Models (1) and (2) using the natural logarithm of EDF. We find that *VS_noconfirm* remains statistically significant in the two- to five-year-ahead analyses but loses its significance at the one-year horizon.
[13] Upon reviewing observations where there is no viability confirmation, the reasons for non-confirmation include: 1) the absence of a viability statement; 2) assessment of a company's viability without a definitive confirmation; and 3) directors being unable to confirm due to material uncertainty or an inability to provide confirmation beyond the period covered by the going concern assessment. We further explore the predictability of variations within the majority of observations with viability confirmation in the additional analyses section.

[INSERT TABLE 2]

Panel B presents descriptive statistics separately for those firm-year observations with and without a viability confirmation. Observations without viability confirmation (*VS_noconfirm* = 1) have lower EDF_{t+1}, with a mean of 1.364, compared to observations with viability confirmation (*VS_noconfirm* = 0), which have a mean EDF_{t+1} of 4.020. Observations without viability confirmation also have relatively (a) lower working capital, retained earnings, earnings before interest and taxes, and higher frequency of reporting losses; (b) smaller size; and (c) greater leverage ratio, lower market value of equity to total liabilities, and higher frequency of negative equity. These differences in means indicate that observations without viability confirmation generally have worse financial conditions than observations with viability confirmation.

Panel C displays the distribution of directors' and auditors' going concern statement when viability confirmation is absent and present. While observations without viability confirmation exhibit higher percentages of directors (*D_GC*: t = -9.334) and auditors (*AU_GC*: t = -12.200) disclosing material uncertainties related to going concern, the absence of a viability confirmation does not necessarily coincide with directors disclosing going concern uncertainties or auditors issuing concern opinions. Specifically, 64% of observations without viability confirmations do not have directors' going concern warnings, and 48% of them do not have auditors' going concern qualifications. This discrepancy appears alarming and can be confusing to information users, but it could be due to the different time horizons of the assessments, i.e., the viability statement is assessed using 3-5 year horizons while directors' going concern and auditors' going concern assessments are made for a 12-month period.

Lastly, Table 3 compares the statistics of the treatment and control groups for our DiD analysis. As shown in Panel A, after applying PSM, there are no statistically significant differences ($p > 0.10$, two-tailed) in the means of any of the covariates between treatment and

matched control observations. Panel B shows that the mean and variance of covariates for the treatment and control groups become approximately equal after entropy balancing.

[INSERT TABLE 3]

5.2 Regression Results

5.2.1 Predictability of viability confirmation

We first examine whether $VS\_noconfirm_t$ provides incremental information, relative to directors' going concern disclosures (D_GC_t) and auditor's going concern opinions (AU_GC_t) (H1). Table 4 Columns (1) – (5) and Columns (6) – (10) report the results of estimating Model (1) and Model (2) for horizons up to five years ahead, respectively. The coefficient on $VS\_noconfirm_t$ is negative and statistically significant across all columns, suggesting that the absence of viability confirmation provides incremental contributions to predictive ability over all horizons. In particular, the coefficient on $VS\_noconfirm_t$ is only significant at the 5% and 10% levels in the one-year ahead analysis (Columns [1] and [5]) but shows higher significance across a longer horizon, peaking in the five-year ahead analysis (Columns [5] and [10]). In contrast, the coefficients on D_GC_t and AU_GC_t are negative and statistically significant up to the two-year and three-year horizon, whereas D_GC_t shows stronger significance in the one-year-ahead analysis and AU_GC_t exhibits higher significance in the one- and two-year ahead analyses. The results imply that D_GC_t and AU_GC_t exhibit stronger predictive power in the short term but this diminishes over the long term, consistent with the short-term focus of going concern assessments. In terms of financial ratios, we find that $RETA_t$, $EBITTA_t$, $MVELT_t$, $LOSS_t$, and CFO_t are significantly associated with EDF_{t+1}, while the significance of coefficients on $MVELT_t$, $LOSS_t$, and CFO_t declines over time (Campbell et al., 2008; Bharath & Shumway, 2008; Beaver et al., 2005).

[INSERT TABLE 4]

Overall, these findings show the long-term predictive power of non-confirmation of viability compared to directors' going concern disclosures and auditor's going concern opinions, which aligns with the main purpose of viability statements to provide assessments regarding long-term prospects. The results highlight the complementary role of the viability statement within the corporate reporting package and inform debate about the necessity of mandating such disclosures.

5.2.2 Impact of viability statement mandate on auditor GCOs

Table 5 Columns (1) and (2) present the results of estimating Model (3) using propensity score-matched and entropy balancing-matched control groups of EU distressed firms, respectively.[14] We find that the interaction term *Post* * *Treated* is positive and significant at the 5% level in both the propensity score-matched and entropy balancing-matched samples. This suggests, on average, that treatment firms are more likely to receive auditors' going concern modification opinions compared to matched EU firms after the viability statement mandate. The findings align with the insights presented by Greiger et al. (2024), whose interactions with audit practitioners indicate that auditors rely on management's internal assessments in the GCO decision-making process. The results further suggest that the viability statement requirement compels management to provide a more rigorous assessment of risks threatening the firm's viability, thereby offering auditors a clearer and more transparent basis for evaluating going concern risks. This underscores the importance of management assessment of distress risks as a critical input for auditors' going concern evaluations.

[INSERT TABLE 5]

[14] The variable *Post* was omitted due to collinearity with year-fixed effects. In the propensity score-matched (entropy balancing-matched) logistic regression, which includes year, industry, and country fixed effects, 244 (156) observations were dropped due to perfect prediction of failure or success.

The control variables, including *Zscore, EDF, SIZE, AGE, CFO, NEGEQUITY, and BIG4*, are consistent with expectations. The results suggest that smaller and younger firms with higher distress risk, lower liquidity, negative equity, and those audited by a Big 4 firm, are more likely to receive going concern modification opinions from auditors. However, the coefficient on *LEV* is negative and significant in the entropy-balancing matched sample, suggesting that firms with higher levels of long-term debt are less likely to receive auditors' going concern opinions. This may be the case because riskier companies are less able to secure long-term loan financing (Liu, Cullinan, & Zhang, 2020).

In sum, the results in Table 5 demonstrate the impact of the UK's viability statement mandate on auditors' GCO decisions, as evidenced by the increased likelihood of GCOs for treated firms relative to matched EU firms, post-mandate.

5.2.3 Impact of viability statement mandate on key audit matters

Table 6 reports results from the additional analyses on the impact of viability statement policy on the inclusion of going concern as a KAM in auditors' reports. Columns (1) and (2) present the results of estimating Model (5) using propensity score-matched and entropy balancing-matched control groups of EU distressed firms, respectively. [15] The variable of interest, *Treated*, is positive and significant at the 1% level in both the propensity score-matched and entropy balancing-matched samples. The findings support and supplement the findings in Table 5 by demonstrating that treated firms – UK companies subject to the viability statement requirements – are more likely than matched EU firms to have going concern topics raised in the KAM section.

[INSERT TABLE 6]

[15] In the propensity score-matched (entropy balancing-matched) logistic regression with year and industry fixed effect, 31 (93) observations were dropped due to perfect prediction of failure or success.

6 ADDITIONAL ANALYSES

6.1 Quality of viability statement disclosures

Unlike the director's going concern statement that makes a binary distinction between the presence or absence of material uncertainty related to going concern, the viability statement requires more than just a confirmation of viability—it also requires supporting explanations regarding the period over which a company's prospects have been assessed and how this assessment was conducted. In this section, we analyse disclosures in the viability statements based on the key attributes of high-quality viability reporting, as outlined in the FRC (2017b) Developments in Corporate Governance and Stewardship 2016 report. We do so to shed light on variations in the content of variability statements. We present this descriptive information in Appendix 2A. The FRC (2017b) emphasizes the importance of explaining the rationale behind the chosen assessment period. As shown in Appendix 2A, most observations (94%) with viability confirmations in our sample provided some justification for the selected period, while 6% did not. The report (FRC, 2017b) also recommends disclosing key assumptions or qualifications underpinning viability assessments and linking it to principal risk disclosures. We observe that 44% included discussions of assumptions or qualifications used, and 51% explicitly linked their assessments to principal risks. Lastly, the FRC (2017a) encourages greater transparency regarding modeling approaches, such as stress testing, scenario analysis, and sensitivity analysis. In our sample, 86% provided some information about their modeling approach, with scenario analysis and stress testing being the most common methods. Overall, the viability statement appears to contain some useful information about the risks of the company. Appendix 2B presents an example of a viability statement from Fresnillo's 2015 annual report, which was endorsed in Schroders' letter to FTSE 100 investee companies as an insightful disclosure.

6.2 Predictive ability of the viability assessment period and viability statement disclosure

While the main analysis focuses on the predictability of the presence/absence of viability confirmation, the absence of viability confirmation represents an extreme event, accounting for only 1.5% of the sample. In this section, we explore the predictive ability of characteristics shared by most observations with respect to viability confirmations.

One variation we capture regarding viability statement disclosure is the length of the period over which directors assessed and confirmed a company's prospects. Intuitively, directors who confirm the company's prospects over a longer time horizon are more confident in the company's viability, with less exposure to shocks enabling a longer forward-looking horizon. However, if the length of the assessment and confirmation period primarily depends on the nature of the business and its planning horizon or is merely used to reassure outsiders without substantial backing, it may not be predictive of future distress risk. Therefore, we examine whether the length of the assessment period serves as a predictive indicator of financial distress, and, if so, over what time horizon, by estimating the following regression model on firm-year observations with viability confirmation:

$$EDF_{i,t+k} = f\left(VS\_period_{i,t}, D\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right) \quad (6)$$

We manually collect the assessment period disclosed ($VS\_period_{i,t}$) from the viability statement. Among observations with viability confirmation (N = 2132), the average assessment period is 3.19 years, with a minimum of 1 year and a maximum of 7 years.[16] Consistent with the UK FRC's findings of its review of companies' viability statements (FRC, 2021), the most common period of assessment is 3 years, observed in 83% of the sample.

In addition, requiring supporting explanations in the viability statement may provide directors with an opportunity to communicate their superior knowledge to investors, thereby

[16] While the UK Corporate Governance Code (FRC, 2014) requires that the viability assessment period should be significantly longer than 12 months, there are still some observations (albeit a small number) that cover a period of 12 months.

reducing information asymmetry through the disclosure of useful information. However, the discretionary nature of supporting explanations may allow greater room for managing outsiders' impressions. How these are disclosed is subject to managerial strategic decisions and can be used to signal stronger future prospects or to obscure a company's performance (Vasilescu & Weir, 2023). We further capture the linguistic features of the viability statement (i.e., how it is disclosed) using textual analysis, including negative linguistic tone (*VS_neg*), readability (*VS_fog*), and length (*VS_words*)[17]. We estimate the following regression model on firm-year observations with viability confirmation:

$$EDF_{i,t+1} = f\big(VS\_neg_{i,t}, VS\_fog_{i,t}, VS\_words_{i,t},\ D\_GC_{i,t},\ Financial\ Ratios_{i,t},\ Fixed\ Effects_{i,t}, \varepsilon_{i,t}\big) \quad (7)$$

$VS\_period_{i,t}$ is the natural logarithm of the period over which directors have confirmed the viability of the company. $VS\_neg_{i,t}$ is the fraction of negative words to total words in the viability statement, multiplied by -1, using the negative word list developed by Loughram and McDonald (2011). A higher $VS\_neg_{i,t}$ represents a lower proportion of negative words in the viability statement. We focus only on negative words to measure the tone of viability disclosures, as Loughran and McDonald (2011) indicate that the tone of negative words has a far more pervasive effect, with limited incremental value for other categories like positive words. We use the modified Fog index ($VS\_fog_{i,t}$), developed by Kim, Wang, and Zhang (2019), to measure the readability of the viability statement. The higher the modified Fog Index, the more complex and difficult the viability statement is to read. The modified Fog Index is

[17] We first downloaded all annual reports of commercial equity companies with a premium listing of equity shares on the LSE with fiscal years ending from October 2015 to 2021. Firms under financial industry codes were excluded. Viability statements were manually extracted from the annual reports and converted into txt format. Before conducting textual analysis, we applied standard pre-processing techniques, including the removal of line breaks, tabulators, Unicode-wide characters, and redundant blank spaces. The text was then tokenized, with single-character words and stop words removed. For stop word identification, we relied on the list provided by McDonald (2017). To construct the textual analysis algorithms, we used Python, particularly the NLTK and textstat packages.

based on the Fog Index but is adjusted for a list of multisyllabic words, addressing concerns raised by Loughran and McDonald (2014) about the Fog index.[18] $VS\_words_{i,t}$ is the logarithm of total number of words in the viability statement.

We find that the average percentage of negative words (*VS_neg*) is 2.703%, which is higher than the 1.53% of negative words in the MD&A section reported by Loughran and McDonald (2015). This is not surprising given the risk-focused nature of the viability statement and its intended role as an early warning tool. The mean value of the modified Fog index is 15.946, indicating that, on average, a reader needs around 16 years of formal education to understand the text of our sample viability statements on a first reading. The length of viability statements, after removing stop words, ranges from 81 to 1,127 words, with an average of 296 words.

Table 7 presents the regression results of estimating Model (6) and Model (7). In Column (1), the coefficient on *VS_period* is positive and statistically significant at the 5% level, suggesting that a longer period over which directors have assessed and confirmed the company's viability is associated with a lower distress risk. Columns (2) and (3) present the results of Model (5) for two- and three-year horizons. The coefficient on *VS_period* remains negative and marginally significant for the two-year horizon[19] but loses significance for the three-year horizon and beyond. Together, with the findings in the main analysis, these results show that the viability statement – its confirmation and the assessment period – is informative and indicative of future distress risk.

[18] The Fog Index is calculated as 0.4 × (average number of words per sentence + percentage of complex words). However, Loughran and McDonald (2014) noted that this index may not accurately reflect the readability of financial documents, as many commonly used words, such as "corporation," "management," and "operations," are straightforward for investors to understand, even though they are classified as complex. In response, Kim et al. (2019) introduced a modified Fog Index, which accounts for this issue by identifying 2,028 multisyllabic words that are simple for investors, adjusting the Fog Index calculation accordingly. Our results are qualitatively similar to using the traditional Fog Index to measure readability.

[19] When controlling for *AU_GC* instead of *D_GC* in this model, the coefficient on *VS_period* is not significant at the conventional level in the two-year ahead analysis.

[INSERT TABLE 7]

In Column (4), we report the predictive ability of the linguistic features of viability statements. The coefficients on *VS_neg* (p < 5%), *VS_fog* (p < 10%) and *VS_words* (p < 10%) are negative and significant for the one year ahead distress risk.[20] This suggests that less readable and lengthier viability statements with less negative sentiment are associated with higher distress risk. While aforementioned findings suggest that viability confirmation and the assessment period are informative of future distress risk, an examination of the linguistic features of the viability statement reveals that managers are likely to influence outsiders' impressions by strategically manipulating the tone and obfuscating textual disclosures. The results imply that such soft features of viability statements, particularly in terms of tone and complexity, may be leveraged as tools of impression management whereby managers intentionally make ambiguous or difficult to interpret disclosures to reduce negative reactions from capital market participants, although the effects appear to be transient. The strategic use of language in viability statements may stem from a fact that the language used in viability statements is difficult to verify and challenge ex-post, unlike the explicit viability confirmation and its associated period.

6.3 Predictability of viability statements incremental to market variables

We provide further evidence of the robustness of the predictability of viability statements by comparing them against a benchmark model including directors' or auditors' going concern opinions, financial ratios, and market-based measures. Market-based variables capture a comprehensive information set, incorporating both public and private information. We include market-based variables that have been commonly used in prior literature: 1) $RSIZE_t$,

[20] When controlling for *AU_GC* instead of *D_GC* in this model, the results are robust. We do not present results on distress risk beyond one year as we do not find a significant predictive power for these linguistic features beyond one year.

defined as the logarithm of the firm's market capitalization divided by the capitalization of the market index, both measured at the fiscal year-end; 2) $EXRET_t$, defined as the cumulative returns of the firm minus the cumulative return of the market over the 12 months leading up to the fiscal year-end; and 3) $SIGMA_t$, defined as the standard deviation of the residuals from a model of monthly firm returns on market returns for the 12 months leading up to the fiscal year-end (Shumway, 2001; Mayew et al., 2015; Gutierrez et al., 2020; Jones, 2023).[21]

Table 8 presents the results of estimating the model with market variables for horizons up to five years ahead. The coefficient on *RSIZE* is positive, and the coefficient on *SIGMA* is negative, both statistically significant across the one- to five-year ahead analyses, consistent with prior findings (e.g., Beaver et al., 2005, 2012). In Columns (1) – (5), which include directors' GCOs, the coefficient on *VS_noconfirm* in the one-year ahead analysis, although negative as predicted, is not significant. However, it becomes statistically significant in longer horizons, as shown in Columns (2) – (5), peaking in the five-year-ahead analysis ($p < 0.01$). It is noteworthy that the coefficients on *D_GC* become insignificant across all one- to five-year-ahead analyses when market-based variables are included. In Columns (6) – (10), which include auditors' GCOs, we find that *AU_GC* is statistically significant in the two-year-ahead analysis, while *VS_noconfirm* is significant in the three- to five-year horizons.

While the significance of *VS_noconfirm* is reduced upon adding market-based variables, it is important to note that this is incremental to market-based variables, which capture a rich and comprehensive mix of information beyond that provided in annual reports alone. These results suggest that viability statements still add value in longer horizons.

[INSERT TABLE 8 HERE]

[21] Because market data are not available for all firm-year observations within the sample, the analysis with market variables is based on a reduced sample of 2,125 firm-year observations.

6.4 Alternative financial distress measure

The results presented above utilise the yearly decile-ranked expected default frequency (EDF) as the measure of financial distress. Below, we use the Altman Z-Score as an alternative measure. *Zscore_D* is a dummy variable that is equal to one if the Altman (1968) Z-Score is below 1.81, and zero otherwise (Ahmed et al., 2024). We run logistic regressions in all columns with the same control variables as the main analysis.[22] As shown in Table 9, the coefficients on *D_GC* and *AU_GC* are significantly positive at the 5% level over the one-year horizon, whereas *VS_noconfirm* is significantly and positively associated with *Zscore_D* at the 5% level across the two- to five-year-ahead analyses. The results reaffirm the complementary role of viability statements and directors' and auditors' GCOs, where the absence of a viability confirmation is associated with a higher likelihood of financial distress over longer horizons, while directors' and auditors' GCOs provide warning signals in the short term.

[INSERT TABLE 9 HERE]

6.5 Alternative DiD analysis sample period and PSM specification

The DiD analysis in the main results section spans a four-year window both before and after the mandate of a viability statement. To test the robustness of these results, we use a three-year window before and after the mandate. The results (untabulated) are qualitatively similar for this shorter sample period.

In addition, given that results in PSM samples can be sensitive to minor adjustments in the matching process, we assess the robustness of our findings across various PSM specifications. Specifically, we adjust the caliper distance to 0.05 and 0.005. Our main findings are robust to these alternative PSM design choices (untabulated).

[22] The sample size using *Zscore_D* is smaller than the sample size of the main analysis due to the inclusion of industry fixed effects. For example, in the one-year-ahead model, 138 observations were dropped because of perfect prediction of failure or success.

7 CONCLUSION

This study investigates the informativeness of UK viability statements in relation to providing early warning signs of corporate financial distress and its impact on auditors' going concern evaluations. Our findings provide empirical support for the effectiveness of viability confirmations providing early warning signs of corporate distress, particularly with respect to longer time horizons. While directors' and auditors' GCOs are more informative in the short term, their significance declines beyond two years. In contrast, the absence of a viability confirmation remains significantly associated with financial distress risk over a five-year horizon, highlighting the viability statement's long-term predictive power. These results also underscore the complementary role of viability statements within the corporate reporting framework, providing early warning signals beyond traditional financial metrics and existing going concern disclosures.

In addition to the informativeness of viability statements predicting financial distress, we assess the impact of viability statement requirements on auditors' going concern opinions. Using a DiD design, we find that UK distressed firms subject to the viability statement mandate are more likely to receive GCOs compared to matched EU firms after the mandate. Additionally, these firms are more likely to have going concern topics raised in the KAM section. This suggests that viability statements compel managers to conduct more rigorous risk assessments, which, in turn, provide auditors with useful information for evaluating going concern risks. These findings align with insights from audit practitioners, who emphasize that management's internal viability assessments play a key role in auditors' evaluations (Geiger et al., 2024).

Given that only 1.5% of the sample does not provide a viability confirmation, making it a rare and extreme case, we further explored the effectiveness of other characteristics of our sample to provide early warnings of corporate distress. We find that longer viability

assessment periods are linked to lower distress risk, suggesting that companies confident in their long-term stability tend to adopt longer assessment horizons. However, our textual analysis reveals that the linguistic features of viability disclosures can be manipulated. Less readable and lengthier disclosures with a less negative tone are associated with higher financial distress risk, indicating that soft characteristics of viability statements can potentially be used by managers to strategically obscure negative information.

Our findings have important policy and regulatory implications, particularly ongoing debate over the adequacy of going concern disclosures and the need for enhanced transparency. Corporate failures and economic uncertainties have heightened scrutiny of the use of disclosures to communicate corporate viability, drawing increased attention from standard setters and regulators. The International Accounting Standards Board (IASB, 2022) Third Agenda Consultation shows that many respondents rated going concern as a high-priority potential project. There is a growing concern among users that these assessments focus too narrowly on a 12-month period, often presenting a binary conclusion without providing context on risks or underlying financial pressures (AASB, 2021). Yet, preparers are often reluctant to extend their assessment horizon or disclose information due to its sensitive nature (AASB, 2021). Our findings suggest that longer-term viability statements could potentially address these gaps by serving as early warning signals, complementing the short-term and binary nature of going concern disclosures.

The practical implications of our results are timely. For investors, the study shows the predictive value of viability confirmations, where the absence of a confirmation is strongly associated with higher financial distress risk. The survey conducted by the FRC (2017a) shows that the long-term viability of a company is important to 87% of investors when making investment decisions. By integrating viability statement disclosures into their risk assessment models, investors can improve their ability to forecast financial distress and make more

informed investment decisions. Investors should also be cautious of firms that use overly complex language or avoid clear negative disclosures, as these could signal an attempt to obscure financial difficulties. For auditors, the study suggests that viability statements can serve as an important tool in going concern judgements, particularly as the findings indicate that auditors rely on the viability of managers' assessments when forming their judgments.

Finally, we acknowledge certain caveats limiting the conclusions drawn and highlighting the need for future research. First, only premium-listed companies in the UK are required to comply with viability statement requirements. This has limited our study to examining extreme events—such as bankruptcies or loan defaults—within this specific sample. Second, our study provides initial evidence on the informativeness of viability statements. It is noteworthy that the absence of viability confirmation represents an extreme event. This prompted us to leverage other variations in viability statements among observations with viability confirmation, including the assessment period and linguistic features, in the additional analyses. Future research could use advanced machine learning techniques, such as topic modeling, to analyze specific topics disclosed within viability statements.

Nonetheless, our study remains highly relevant for several reasons. First, our findings establish a baseline understanding of how viability disclosures function as early warning signals for financial distress. This foundation is critical for future research aiming to apply more sophisticated techniques to refine and enhance prediction models. Second, although advanced machine learning techniques may provide interesting insights, they often require large datasets and face interpretability challenges when applied to narrative disclosures. Our approach, by contrast, provides practically interpretable findings that are relevant to policymakers, auditors, and investors, facilitating a deeper understanding of how viability statements complement traditional financial disclosures. Additionally, further research could explore investor reactions to viability statements to assess their market impact and decision-

usefulness, offering insights into whether these statements alter risk perception or valuation. Such research would extend our work by addressing how market participants interpret and act on the information provided in viability statements.

References

ACCA. (2014). *Proposed revisions to the UK corporate governance code*. Financial Reporting Council. Retrieved June 12, 2019, from https://www.frc.org.uk/getattachment/9b3f53df-707c-4937-99dd-7cf187f38c5d/Association-of-Chartered-Certified-Accountants-res;.aspx

Accountancy Europe. (2021). *Going concern: Recommendations to strengthen the financial reporting ecosystem*. Retrieved December 15, 2023, from https://www.accountancyeurope.eu/wp-content/uploads/2022/12/2020_Accountancy_europe_recommendations_Going-concern-summary.pdf

Agarwal, V., & Taffler, R. (2008). Comparing the performance of market-based and accounting-based bankruptcy prediction models. *Journal of Banking & Finance, 32*(8), 1541-1551. https://doi.org/10.1016/j.jbankfin.2007.07.014

Ahmed, Y., Elsayed, M., & Xu, B. (2024). Bankruptcy in the UK: Do managers talk the talk before walking the walk? *British Journal of Management, 35*(4), 2011-2031. https://doi.org/10.1111/1467-8551.12714

Alberti, S. (2022). Directors 'leaving it far too late' as UK insolvencies surge. *AccountancyAge.* Retrieved May 18, 2024, Retrieved from https://www.accountancyage.com/2022/12/15/directors-leaving-it-far-too-late-as-uk-insolvencies-surge/

Altman, E. I. (1968). Financial ratios, discriminant analysis, and the prediction of corporate bankruptcy. *The Journal of Finance, 23*(4), 589-609. https://doi.org/10.1111/j.1540-6261.1968.tb00843.x

Bao, M. X., Billett, M. T., Smith, D. B., & Unlu, E. (2020). Does other comprehensive income volatility influence credit risk and the cost of debt?. *Contemporary Accounting Research*, *37*(1), 457-484.

Barclays plc. (2014). *Proposed revisions to the UK corporate governance code*. Financial Reporting Council. Retrieved June 12, 2019, from https://www.frc.org.uk/getattachment/14304502-ec9b-4fd4-a794-8cc1400b9a3e/Barclays-plc-response;.aspx

Beaver, W. H., Correia, M., & McNichols, M. F. (2011). Financial statement analysis and the prediction of financial distress. *Foundations and Trends® in Accounting, 5*(2), 99-173. https://doi.org/10.1561/1400000016

Beaver, W. H., Correia, M., & McNichols, M. F. (2012). Do differences in financial reporting attributes impair the predictive ability of financial ratios for bankruptcy? *Review of Accounting Studies, 17*, 969-1010. https://doi.org/10.1007/s11142-012-9199-9

Beaver, W. H., McNichols, M. F., & Rhie, J. W. (2005). Have financial statements become less informative? Evidence from the ability of financial ratios to predict bankruptcy. *Review of Accounting Studies, 10*, 93-122. https://doi.org/10.1007/s11142-005-1531-6

Bharath, S. T., & Shumway, T. (2008). Forecasting default with the Merton distance to default model. *The Review of Financial Studies, 21*(3), 1339-1369. https://doi.org/10.1093/rfs/hhn044

Bierstaker, J. L., & DeZoort, F. T. (2019). The effects of problem severity and recovery strategy on managers' going concern judgments and decisions. *Journal of Accounting and Public Policy*, *38*(5), 106682.

Boo, E. F., & Simnett, R. (2002). The information content of management's prospective comments in financially distressed companies: A note. *Abacus, 38*(2), 280-295. https://doi.org/10.1111/1467-6281.00103

Boone, J., Hao, J., Linthicum, C., & Pham, V. (2024). Impression management strategy—The relationship between accounting narrative thematic bias and financial graph distortion. *The British Accounting Review, 101389.* https://doi.org/10.1016/j.bar.2024.101389

Brackley, J., Jabbour, M., Ji, J., Jose, T., Leaver, A., & Tischer, D. (2024). *Reward for failure: The paradox of audit partners' record payouts amidst poor audit quality.* The Audit Reform Lab. Retrieved April 1, 2025, from https://auditreformlab.group.shef.ac.uk/downloads/reward-for-failure.pdf

Bradbury, M., Fargher, N., Potter, B., & Taylor, S. (2022). Going concern uncertainty: What do firms disclose?. *Australian Accounting Review*, *32*(3), 294-314.

Campbell, J. Y., Hilscher, J., & Szilagyi, J. (2008). In search of distress risk. *The Journal of finance*, 63(6), 2899-2939.

Carson, E., Fargher, N. L., Geiger, M. A., Lennox, C. S., Raghunandan, K., & Willekens, M. (2013). Audit reporting for going-concern uncertainty: A research synthesis. *Auditing: A Journal of Practice & Theory*, *32*(Supplement 1), 353-384.

Cecchini, M., Aytug, H., Koehler, G. J., & Pathak, P. (2010). Making words work: Using financial text as a predictor of financial events. *Decision Support Systems, 50*(1), 164-175. https://doi.org/10.1016/j.dss.2010.07.002

Chasan, E. (2009). *Going-concern warnings increasingly less accurate*. Reuters. Retrieved April 1, 2025, from https://www.reuters.com/article/business/going-concern-warnings-increasingly-less-accurate-idUSN23388962/

Chasan, E. (2012). *Going concern opinions on life support with investors.* The Wall Street Journal. Retrieved April 1, 2025, from https://www.wsj.com/articles/BL-CFOB-2623?msockid=1ba03a2b02a46551077a2f66037a64e5

Chen, S., Hu, B., Wu, D., & Zhao, Z. (2020). When auditors say 'No,' does the market listen?. *European Accounting Review*, *29*(2), 263-305.

Davis, A. K., & Tama-Sweet, I. (2012). Managers' use of language across alternative disclosure outlets: earnings press releases versus MD&A. *Contemporary Accounting Research*, *29*(3), 804-837.

Eickemeyer, J. H., & Love, V. J. (2016). The concerns with going concern. *The CPA Journal, 86*(1), 6.

Elsayed, M., & Elshandidy, T. (2020). Do narrative-related disclosures predict corporate failure? Evidence from UK non-financial publicly quoted firms. *International Review of Financial Analysis, 71*, 101555. https://doi.org/10.1016/j.irfa.2020.101555

Financial Reporting Council (FRC). (2013). *FRC raises the bar for risk management.* Retrieved June 12, 2019, from https://www.frc.org.uk/news/november-2013/frc-raises-the-bar-for-risk-management

FRC. (2014). *The UK corporate governance code.* Retrieved June 12, 2019, from https://media.frc.org.uk/documents/UK_Corporate_Governance_Code_-_September_2014.pdf

FRC. (2017a). *Lab project report: Risk and Viability Reporting*. Retrieved June 12, 2019, from https://www.frc.org.uk/getattachment/76e21dee-2be2-415f-b326-932e8a3fc1e6/Risk-and-Viability-Reporting.pdf

FRC. (2017b). *Developments in Corporate Governance and Stewardship 2016.* Retrieved June 12, 2019, from https://www.fundacionmicrofinanzasbbva.org/revistaprogreso/wp-content/uploads/2017/02/doc_developments-in-corporate-governance-and-stewardship-frc.pdf

FRC. (2019). *FRC strengthens going concern audit standard.* Retrieved July 19, 2023, from https://www.frc.org.uk/news-and-events/news/2019/09/frc-strengthens-going-concern-audit-standard/

FRC. (2021). *Thematic review: Viability and going concern.* Retrieved July 19, 2023, from https://media.frc.org.uk/documents/Going_Concern_and_Viability_Statements.pdf

Frost, C. A. (1997). Disclosure policy choices of UK firms receiving modified audit reports. *Journal of Accounting and Economics, 23*(2), 163-187. https://doi.org/10.1016/S0165-4101(97)00006-2

Furfine, C. H., & Rosen, R. J. (2011). Mergers increase default risk. *Journal of Corporate Finance, 17*(4), 832-849. https://doi.org/10.1016/j.jcorpfin.2011.03.003

Gandhi, P., Loughran, T., & McDonald, B. (2019). Using annual report sentiment as a proxy for financial distress in US banks. *Journal of Behavioral Finance, 20*(4), 424-436. https://doi.org/10.1080/15427560.2019.1622791

Ge, W., Matsumoto, D., Wang, E. J., Zhang, J. L., & Thomas, W. (2020). The price of being foreign: Stock market penalties associated with accounting irregularities for US-listed foreign firms. *Contemporary Accounting Research*, *37*(2), 1073-1106.

Geiger, M. A., Gold, A., & Wallage, P. (2024). Practitioner perspectives on going concern opinion research and suggestions for further study: Part 2—Reporting environment and the decision-making process. *Accounting Horizons, 38*(2), 169-178. https://doi.org/10.2308/horiz.2023-064

Gutierrez, E., Krupa, J., Minutti-Meza, M., & Vulcheva, M. (2020). Do going concern opinions provide incremental information to predict corporate defaults? *Review of Accounting Studies, 25*(4), 1344-1381. https://doi.org/10.1007/s11142-020-09549-1

Gutierrez, E., Minutti-Meza, M., Tatum, K. W., & Vulcheva, M. (2025). The consequences of expanded audit reports for small and risky companies. *Contemporary Accounting Research*.

Hainmueller, J. (2012). Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political analysis*, *20*(1), 25-46.

Holder-Webb, L., & Cohen, J. R. (2007). The association between disclosure, distress, and failure. *Journal of Business Ethics, 75*, 301-314. https://doi.org/10.1007/s10551-006-9250-3

Hopwood, W., McKEOWN, J. C., & Mutchler, J. F. (1994). A reexamination of auditor versus model accuracy within the context of the going-concern opinion decision. *Contemporary Accounting Research*, *10*(2), 409-431.

International Accounting Standards Board (IASB). (2022). *Third agenda consultation feedback statement.* Retrieved February 4, 2025, from https://www.ifrs.org/content/dam/ifrs/project/third-agenda-consultation/thirdagenda-feedbackstatement-july2022.pdf

International Auditing and Assurance Standards Board (IAASB). (2024a). *Going concern*. Retrieved February 4, 2025, from https://www.iaasb.org/consultations-projects/going-concern

IAASB. (2024b). *Going concern – Feedback and issues*. Retrieved February 4, 2025, from https://www.iaasb.org/_flysystem/azure-private/2024-05/20240618-IAASB-Going%20Concern-Agenda%20Item%203%20-%20Feedback%20and%20Issues%20%28final%29.pdf

International Financial Reporting Standards (IFRS) Foundation. (2021). *Going concern—a focus on disclosure.* Retrieved March 3, 2022, from https://www.ifrs.org/content/dam/ifrs/news/2021/going-concern-jan2021.pdf

Jackson, R. H., & Wood, A. (2013). The performance of insolvency prediction and credit risk models in the UK: A comparative study. *The British Accounting Review, 45*(3), 183-202. https://doi.org/10.1016/j.bar.2013.06.007

Jones, S. (2023). A literature survey of corporate failure prediction models. *Journal of Accounting Literature*, *45*(2), 364-405. https://doi.org/10.1108/JAL-08-2022-0086

Kennedy, D. B., & Shaw, W. H. (1991). Evaluating financial distress resolution using prior audit opinions. *Contemporary Accounting Research*, *8*(1), 97-114.

Kim, C., Wang, K., & Zhang, L. (2019). Readability of 10-K reports and stock price crash risk. *Contemporary Accounting Research, 36*(2), 1184-1216. https://doi.org/10.1111/1911-3846.12453

Kleinman, G., & Anandarajan, A. (1999). The usefulness of off-balance sheet variables as predictors of auditors' going concern opinions: An empirical analysis. *Managerial Auditing Journal, 14*(6), 273-285. https://doi.org/10.1108/02686909910280279

Kothari, S. P., Shu, S., & Wysocki, P. D. (2009). Do managers withhold bad news? *Journal of Accounting Research, 47*(1), 241-276. https://doi.org/10.1111/j.1475-679X.2008.00318.x

Krishnan, J., Krishnan, J., Lee, E. I., & Maex, S. (2024). Management going concern reporting by firms whose auditors are not concerned. Fox School of Business Research Paper, Donald G. Costello College of Business at George Mason University Research Paper.

Liu, H., Cullinan, C. P., & Zhang, J. (2020). Modified audit opinions and debt contracting: Evidence from China. *Asia-Pacific Journal of Accounting & Economics, 27*(2), 218-241. https://doi.org/10.1080/16081625.2018.1473812

Lopatta, K., Gloger, M. A., & Jaeschke, R. (2017). Can language predict bankruptcy? The explanatory power of tone in 10-K filings. *Accounting Perspectives, 16*(4), 315-343. https://doi.org/10.1111/1911-3838.12150

Loughran, T., & McDonald, B. (2011). When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *The Journal of Finance, 66*(1), 35-65. https://doi.org/10.1111/j.1540-6261.2010.01625.x

Loughran, T., & McDonald, B. (2014). Measuring readability in financial disclosures. *The Journal of Finance, 69*(4), 1643-1671. https://doi.org/10.1111/jofi.12162

Mayew, W. J., Sethuraman, M., & Venkatachalam, M. (2015). MD&A disclosure and the firm's ability to continue as a going concern. *The Accounting Review, 90*(4), 1621-1651. https://doi.org/10.2308/accr-50971

McDonald, B. (2017). *Stop words list.* Retrieved 21 December, 2021, from http://www3.nd.edu/~mcdonald/Word_Lists.html

McKinsey & Company. (2016). *Risky business: UK plc assesses its viability.* Retrieved June 12, 2019, from https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Europe/Risky%20business%20UK%20plc%20assesses%20its%20viability/Risky%20business%20UK%20plc%20assesses%20its%20viability.ashx

Menon, K., & Williams, D. D. (2010). Investor reaction to going concern audit reports. *The Accounting Review*, *85*(6), 2075-2105.

Merkl-Davies, D. M., & Brennan, N. M. (2007). Discretionary disclosure strategies in corporate narratives: Incremental information or impression management? *Journal of Accounting Literature, 27*, 116-196.

Merton, R. C. (1974). On the pricing of corporate debt: The risk structure of interest rates. *The Journal of Finance, 29*(2), 449–470. https://doi.org/10.1111/j.1540-6261.1974.tb03058.x

Muñoz-Izquierdo, N., Pincus, M., & Wellmeyer, P. (2024). Are key audit matter disclosures useful in assessing the financial distress level of a client firm?. *The British Accounting Review*, *56*(2), 101200.

Mutchler, J. F. (1984). Auditor's perceptions of the going-concern opinion decision. *Auditing: A Journal of Practice & Theory, 3*(2), 17-30.

Mutchler, J. F. (1985). A multivariate analysis of the auditor's going-concern opinion decision. *Journal of Accounting Research, 23*(2), 668-682. https://doi.org/10.2307/2490924

Mutchler, J. F., Hopwood, W., & McKeown, J. M. (1997). The influence of contrary information and mitigating factors on audit opinion decisions on bankrupt companies. *Journal of Accounting Research, 35*(2), 295-310. https://doi.org/10.2307/2491361

Myers, L. A., Schmidt, J. J., & Wilkins, M. S. (2014). An investigation of recent changes in going concern reporting decisions among big N and non-big N auditors. *Review of Quantitative Finance and Accounting*, 43(1), 155–172.

Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research, 18*(1), 109-131. https://doi.org/10.2307/2490395

Parliamentary Joint Committee on Corporations and Financial Services (PJC). (2020). *Regulation of auditing in Australia: Interim report.* Retrieved February 4, 2025, from https://parlinfo.aph.gov.au/parlInfo/download/committees/reportjnt/024330/toc_pdf/RegulationofAuditinginAustralia.pdf;fileType=application%2Fpdf

Pittman, J., & Zhao, Y. (2020). Debt covenant restriction, financial misreporting, and auditor monitoring. *Contemporary Accounting Research*, *37*(4), 2145-2185.

Porumb, V. A., Zengin-Karaibrahimoglu, Y., Lobo, G. J., Hooghiemstra, R., & De Waard, D. (2021). Expanded auditor's report disclosures and loan contracting. *Contemporary Accounting Research*, *38*(4), 3214-3253.

Shumway, T. (2001). Forecasting bankruptcy more accurately: A simple hazard model. *The Journal of Business, 74*(1), 101-124. https://doi.org/10.1086/209665

Skinner, D. J. (1994). Why firms voluntarily disclose bad news. *Journal of Accounting Research, 32*(1), 38-60. https://doi.org/10.2307/2491386

Skinner, D. J. (1997). Earnings disclosures and stockholder lawsuits. *Journal of Accounting and Economics, 23*(3), 249-282. https://doi.org/10.1016/S0165-4101(97)00010-4

Smith, M., & Taffler, R. J. (2000). The chairman's statement—A content analysis of discretionary narrative disclosures. *Accounting, Auditing & Accountability Journal, 13*(5), 624-647. https://doi.org/10.1108/09513570010353738

The Investment Association. (2016). *Guidelines on viability statements.* Retrieved June 12, 2019, from https://www.theia.org/sites/default/files/2019-06/20161101-CG-Guidance-viability-statements.pdf

The Sharman Inquiry. (2012). *Going concern and liquidity risks: Lessons for companies and auditors. Final report and recommendations of the panel of inquiry.* Retrieved June 12, 2019, from https://media.frc.org.uk/documents/Sharman_Inquiry_-_Final_Report.pdf

Ting, W., Yen, S. H., & Chiu, C. L. (2008). The influence of qualified foreign institutional investors on the association between default risk and audit opinions: Evidence from the Chinese stock market. *Corporate Governance: An International Review*, *16*(5), 400-415. https://doi.org/10.1111/j.1467-8683.2008.00699.x

Uang, J. Y., Citron, D. B., Sudarsanam, S., & Taffler, R. J. (2006). Management going-concern disclosures: Impact of corporate governance and auditor reputation. *European Financial Management, 12*(5), 789–816. https://doi.org/10.1111/j.1468-036X.2006.00278.x

Vasilescu, C., & Weir, K. H. (2023). Brexit disclosure—Companies' honest or bogus perceptions of risk? *Journal of Accounting and Public Policy, 42*(3), 107034. https://doi.org/10.1016/j.jaccpubpol.2023.107034

Wang, J. (2022). Management going concern disclosure, mitigation plan, and failure prediction—Implications from ASU 2014-15. *The Accounting Review, 97*(4), 417-446. https://doi.org/10.2308/TAR-2020-0348

Wang, K. (2021). Is the tone of risk disclosures in MD&As relevant to debt markets? Evidence from the pricing of credit default swaps. *Contemporary Accounting Research*, *38*(2), 1465-1501.

Whitehouse, T. (2012). FASB decides against going concern disclosure. *Compliance Week.* Retrieved June 12, 2019, from https://www.complianceweek.com/fasb-decides-against-going-concern-disclosure/16957.article

Wu, C. Y. H., Hsu, H. H., & Haslam, J. (2016). Audit committees, non-audit services, and auditor reporting decisions prior to failure. *The British Accounting Review, 48*(2), 240-256. https://doi.org/10.1016/j.bar.2015.09.002

Appendix 1 Expected Default Frequency

The Expected Default Frequency (EDF) metric is based on Merton's (1974) option pricing structural default model. After constructing the distance to default (DD), following Bharath and Shumway (2008), we calculate EDF using a cumulative normal distribution function. The structural default model depends on two key assumptions, that: (1) the total firm value follows a Brownian motion, and (2) total debt is treated as a discount bond maturing at time T. The value of equity is determined using the standard option pricing formula:

$$E = A\,N(d_1) - e^{\{-r_f T\}D}N(d_2)$$

where:

- E represents the firm's equity value,
- A is the total asset value (firm value),
- r_f is the risk-free rate,
- D is the face value of total debt,
- N(·) denotes the cumulative standard normal distribution function

The parameters d_1 and d_2 are given by:

$$d_1 = \frac{\ln\left(\frac{A}{D}\right) + (r + 0.5\sigma_A^2)T}{\sigma_A\sqrt{T}}$$

$$d_2 = d_1 - \sigma_A\sqrt{T}$$

where σ_A represents the firm's asset volatility, and T is the time to maturity. Since asset volatility is unobservable, it is estimated using the observable equity volatility through the relationship:

$$\sigma_E = \left(\frac{A}{E}\right)N(d_1)\sigma_A$$

Finally, the Expected Default Frequency (EDF) is derived by mapping the distance to default into a cumulative normal distribution function:

$$EDF = N\,(-DD) = N\,(-\frac{\ln\left(\frac{A}{D}\right) + (\lambda + 0.5\sigma_A^2)T}{\sigma_A\sqrt{T}})$$

where EDF represents the probability of default based on the distance to default (DD), and λ is the expected return on assets over the forecasting period. If the Merton model holds, then one would expect low value of EDF to imply a lower distress. Given the fact that default rate is highly skewed in the right, we use yearly decile-ranked EDF ranging from 0 to 9 where 0 represents high financial distress risk and 9 represents low.

Appendix 2A Viability Statement Disclosures

	Yes	No	Total
Justification for the chosen assessment period	2,010 (94%)	122 (6%)	2,132 (100%)
Assumption or qualifications underpinning the assessment	929 (44%)	1,203 (56%)	2,132 (100%)
Linkage to the principal risk disclosure	1,081 (51%)	1,051 (49%)	2,132 (100%)
Information of modeling approach	1823 (86%)	309 (14%)	2,132 (100%)

Appendix 2B Example Viability Statement (Fresnillo plc, 2015)

Viability Statement

In accordance with provision C.2.2 of the 2014 revision of the UK Corporate Governance Code, and taking into account the Group's current position and its principal risks for a period longer than the twelve months required by the going concern statement, the Board established a working team to make recommendations on the preparation of the viability statement.

This team included two designated Directors, the CEO, CFO, COO, Head of Business Planning, and Head of Risk, with the Audit Committee overseeing the process.

After analysing various options, a period of five years, to December 2020, was chosen for the purpose of the viability assessment, in line with the Company's five-year forecast period normally used to evaluate liquidity and contingency plans which is key to us given that Fresnillo covers the full value chain from exploration to mine operation. It allows for modelling of capital expenditure and development programmes planned during the timeframe and reflecting cash flows generated by the projects currently under development. Due to the long business cycles in the mining industry, the Directors believed a shorter time period would be insufficient to perform an in depth analysis of viability.

Reporting on the Company's viability requires the Directors to consider those principal risks that could impair the solvency and liquidity of the Company. In order to determine those risks the Directors robustly assessed the Group-wide principal risks and operation-specific risks by undertaking consultations with Executive Management, mine managers and other personnel across the operations. Through these conversations the Directors also identified low probability, high loss scenarios – 'singular events' – with the potential magnitude to severely impact the solvency and/or liquidity of Fresnillo.

For the purpose of assessing the Group's viability, the Directors identified that of the principal risks detailed on page 37 the following are the most important to the assessment of the viability of the Group:

A. 'Impact of global macroeconomic developments', specifically volatility in the prices of gold and silver over a period of time
B. Access to land
C. 'Potential actions by the government' which could include a delay in obtaining permits and/or new restrictive regulations
D. Project delivery risks
E. Environmental incidents

It was determined that none of the individual risks, except for prices, would in isolation compromise the Group's viability. The Directors therefore went on to group principal risks into the following severe but plausible scenarios, in each case determining the risk proximity (how soon could the risk occur) and velocity (the speed with which the impact of a risk will be felt):

Scenario 1
Impact of global macroeconomic developments

Over a period of a year, precious metal prices fall and then remain at a low level for the following four years of the viability period, varying between US$972-US$1,033/oz for gold and US$14.0-US$14.8/oz for silver. To create this impartial projection for the future low metal price environment, an average of the three lowest forecasts from each year of the assessment were used, based on consensus estimates published by Bloomberg at the end of December 2015. This low metal price environment was deemed to be the most significant risk and pervasive across the Company. *(Principal risk A)*

Scenario 2
Bench collapse at an open pit mine

A landslide occurs covering the lower pit of one of our mines. Due to the unexpected nature of the event, fatalities occur. Production is gradually then ramped back up and re-established to full capacity. *(Singular event)*

Scenario 3
Tailings dam breach at a mine

A tailings dam collapses and tailings are released into the surrounding area, causing environmental damage. A fund is created by the Company to be used to remediate and compensate for any damages caused. The investigation into the causes of the event is drawn out and further time is needed for all environmental permits to be reinstated. As a result the mine remains closed throughout the viability assessment period. *(Principal risk E)*

Scenario 4
Flooding at a mine

A mine floods as a result of cutting into an unforeseen fault containing water, which then enters the mine and exceeds pumping capacity, thereby halting production. Production ramp-up to pre-event levels commences once management determines that it is safe to do so. *(Singular event)*

Scenario 5
Action by the Government at a mine

Explosives are stolen on site causing authorities to suspend the explosives permit at the mine. Production is halted at the mine whilst an investigation into the matter is completed. Once permits have been restored, production ramps back up to pre-event levels. *(Principal risk C)*

Scenario 6
Access to land at a mine

Conflicts with local communities arise resulting in the Company having to cease operations, until negotiations can be finalised and the land can be re-occupied. *(Principal risk B)*

Scenario 7
A project suspension due to Government actions

Due to local opposition, sufficient pressure is mounted on the Government by environmental groups leading to the Government declaring the zone surrounding the project a protected area and withdrawing all environmental permits, thereby resulting in the project being suspended for the duration of the viability period, while mitigating actions can be established. *(Principal risks C & D)*

The scenarios on the previous page are hypothetical and extremely severe for the purpose of creating outcomes that have the ability to threaten the viability of the Group; however, multiple control measures are in place to prevent and mitigate any such occurrences from taking place. In the case of these scenarios arising, various options are available to the Company in order to maintain liquidity so as to continue in operation, such as suspending some or all of the following capital expenditures: Pyrites plant (US$176.3 million), Orisyvo (US$393.3 million), Centauro Deep (US$363.8 million) and Centauro Extension (US$155.0 million), which are described in more detail on pages 50 to 65. A further option available to the Company is the reduction of exploration expenses by up to 50% on an annual basis (USD$71 million annual average). To quantify the impact on the Group's viability from the expected financial impact and remediation period for each of the above risks, management benchmarked its own experience against publicly available information on relevant and similar incidents in the mining industry.

All scenarios were first evaluated using average metal prices[1], and modelled to occur when each scenario would have the most significant impact on cash resources. Once the mitigation plans of deferring capital expenditure had been applied to the extent necessary, there was no threat to the viability of the Group. To create a more stringent test and further challenge the resilience of the Group, all scenarios were then overlaid with scenario one, (low metal prices) and then re-evaluated.

After these had been modelled, the only scenario that caused a certain degree of stress to cash flows was scenario number three in combination with the low metal prices scenario (number one), albeit the Directors consider the assumptions used for this scenario were greatly amplified for the purposes of this assessment. In addition to suspending capital expenditure, a further mitigating action could include a 50% reduction in the exploration budget for the first three years.

Strong risk management and internal control systems are in place (see page 36) throughout the Company. Through the internal control systems, the Directors monitor key variables that have the ability to impact the liquidity and solvency of the Company and are confident that management is able to sufficiently mitigate any situations as they might occur. Nevertheless, as a result of this assessment certain actions for the reinforcement of controls and their monitoring have been identified and will be implemented to further strengthen the control environment.

Based on the results from these scenarios, and having considered the established controls for the risks and the available mitigating actions, the Directors have a reasonable expectation that the Group will be able to continue in operation and meet its liabilities as they fall due over the five-year period of their detailed assessment. This longer-term assessment process supports the Directors' statements on both viability, as set out above, and going concern, made below.

[1] Analyst consensus, Bloomberg, December 2015: Analyst Gold & Silver Forecasts.

Appendix 3 Variable Definitions

Variable	Definition	Source
EDF_{t+k}	Yearly decile-ranked expected default frequency for fiscal year *t+k,* ranging from 0 to 9, where 0 represents high financial distress risk and 9 represents low risk. Expected default frequency is calculated following Bharath and Shumway (2008). Please see Appendix 1 for details.	Compustat and Federal Reserve Bank of St. Louis
$VS\_noconfirm_t$	An indicator variable equal to one if the viability statement does not confirm that the firm will be able to continue in operation or meet liabilities as they fall due over the period of assessment at fiscal year-end *t*, and zero otherwise.	Manual collection from Annual Reports
D_GC_t	An indicator variable equal to one if directors expressed uncertainty about the firm being a going concern in the directors' going concern statement at fiscal year-end *t*, and zero otherwise.	Manual collection from Annual Reports
AU_GC_t	An indicator variable equal to one if auditors expressed material uncertainty related to going concern in the independent auditor's report at fiscal year-end *t*, and zero otherwise.	Audit Analytics
VS_period_t	Natural logarithm of the period over which the directors have confirmed the viability of the company in the viability statement for fiscal year *t.*	Manual collection from Annual Reports
VS_neg_t	The fraction of negative words to the total words in the viability statement for fiscal year *t*, multiplied by -1, using the negative word list developed by Loughram and McDonald (2011).	Textual analysis from Annual Reports
VS_fog_t	The modified Fog Index of the viability statement for fiscal year *t*. The Fog Index is calculated as (words per sentence + percentage of complex words) × 0.4. The 2,028 words identified by Kim et al. (2019) as exceeding three syllables but not considered difficult to understand in a financial context are reclassified as simple words when calculating the modified Fog Index.	Textual analysis from Annual Reports
VS_word_t	Natural logarithm of total number of words in the viability statement for fiscal year *t.*	Textual analysis from Annual Reports
$WCTA_t$	Working capital (current assets minus current liabilities) divided by total assets.	Compustat
$RETA_t$	Retained earnings divided by total assets.	Compustat
$EBITTA_t$	Earnings before interest and taxes divided by total assets.	Compustat
$SALETA_t$	Sales divided by total assets.	Compustat
$MVETL_t$	Market value of equity (stock price at the end of the fiscal year multiplied by shares outstanding) divided by total liabilities.	Compustat
$SIZE_t$	Natural logarithm of total assets.	Compustat
LEV_t	Long-term debt divided by total assets.	Compustat
$CASH_t$	Cash and cash equivalents divided by total assets.	Compustat
AGE_t	The number of years since the firm's first appearance in Compustat.	Compustat

$LOSS_t$	An indicator variable equal to one if a firm reports a negative net income, and zero otherwise.	Compustat
CFO_t	Cash flow from operating activities divided by total assets.	Compustat
$NEGEQUITY_t$	An indicator variable equal to one if total liabilities exceed total assets, and zero otherwise.	Compustat
KAM_GC_t	An indicator variable equal to one if going concern is identified as one of the key audit matter topics in the independent auditor's report, and zero otherwise.	Audit Analytics
$BIG4_t$	An indicator variable equal to one if the firm has a Big 4 auditor, and zero otherwise.	Compustat
$TENURE_t$	Nature logarithm of the number of consecutive years the company has retained the auditor as of the end of year *t.*	Compustat
$Zscore_t$	Altman Z-score, calculated as 1.2 × (working capital/assets) + 1.4 × (retained earnings/assets) + 3.3 × (earnings before interest/assets) + 0.6 × (market value of equity/total liabilities) + 0.999 × (sales/assets).	Compustat
$Treated_t$	An indicator variable equal to one for commercial equity firms with a premium listing of equity shares on the LSE, subject to viability statement requirements, and zero for the control sample of EU firms.	Issuer list archive from London Stock Exchange and Compustat
$Post_t$	An indicator variable equal to one if the firm-year is in the post-mandate period (i.e., October 2015 to September 2019), and zero if in the pre-mandate period (i.e., October 2010 to September 2014). The transition period (2014 October – 2015 September) is excluded to avoid potential confounding effects.	
$RSIZE_t$	Natural logarithm of the firm's market capitalization divided by the capitalization of the market index, measured at the fiscal year-end *t*.	Compustat and Thomson Reuters
$EXRET_t$	The cumulative returns of the firm minus the cumulative return of the market over the 12 months leading up to the fiscal year-end *t.*	Compustat and Thomson Reuters
$SIGMA_t$	The standard deviation of the residuals from a model of monthly firm returns on market returns for the 12 months leading up to the fiscal year-end *t.*	Compustat and Thomson Reuters
$Zscore\_d_{t+k}$	An indicator variable equal to one if the Altman Z-Score is below 1.81, and zero otherwise. Z-score is calculated as 1.2 × (working capital/assets) + 1.4 × (retained earnings/assets) + 3.3 × (earnings before interest/assets) + 0.6 × (market value of equity/total liabilities) + 0.999 × (sales/assets).	Compustat

TABLE 1 Sample Selection Process

Panel A: Sample for Post-mandate Analysis	Firm-year observations	
Commercial equity companies with a premium listing on LSE with fiscal years ending from 2015 October to 2021	3,534	
Less firm-years with financial industry codes	(875)	
Less firm-years with missing data to compute dependent and control variables	(494)	
Main Sample	2,165	
Panel B: Sample for Difference-in-Differences Analysis	Treatment firm-year observations	Control firm-year observations
Financially distressed commercial equity companies with a premium listing on LSE and financially distressed EU firms (2010 October – 2019 September)	614	12,447
Less firm-years with financial industry codes	(6)	(56)
Less firm-years during the transitional period	(76)	(1,482)
Less firm-years with missing data to compute control variables	(165)	(5,207)
Entropy balancing sample	367	5,702
Propensity score matching sample	336	336

Table 2 Descriptive Statistics

Panel A: Descriptive Statistics of Variables used in Post-mandate Analysis

Variable	N	Mean	SD	p25	p50	p75
EDF_{t+1} (Raw)	2165	0.005	0.0685	1.0e-183	2.0e-100	1.6e-100
EDF_{t+1} (Ranked)	2165	3.979	2.795	2.000	4.000	6.000
$VS\_noconfirm_t$	2165	0.015	0.123	0.000	0.000	0.000
$WCTA_t$	2165	0.100	0.189	-0.024	0.078	0.195
$RETA_t$	2165	0.411	0.228	0.275	0.428	0.566
$EBITTA_t$	2165	0.078	0.090	0.042	0.073	0.114
$SALETA_t$	2165	0.987	0.765	0.492	0.792	1.219
$MVETL_t$	2165	2.832	4.082	0.711	1.600	3.142
$SIZE_t$	2165	7.088	1.784	5.858	7.012	8.276
LEV_t	2165	0.209	0.169	0.070	0.196	0.298
$CASH_t$	2165	0.100	0.096	0.036	0.073	0.130
AGE_t	2165	3.060	0.667	2.833	3.178	3.401
$LOSS_t$	2165	0.202	0.402	0.000	0.000	0.000
CFO_t	2165	0.094	0.083	0.052	0.088	0.129
$NEGEQUITY_t$	2165	0.033	0.178	0.000	0.000	0.000
D_GC_t	2165	0.043	0.203	0.000	0.000	0.000
AU_GC_t	2165	0.054	0.226	0.000	0.000	0.000
VS_period_t	2132	1.161	0.202	1.099	1.099	1.099
VS_neg_t (%)	2132	-2.703	1.449	-3.629	-2.532	-1.653
VS_fog_t	2132	15.946	2.909	13.985	15.806	17.700
VS_word_t	2132	5.691	0.594	5.257	5.666	6.118

Panel B: Partition by *VS_noconfirm*

	$VS\_noconfirm_t = 0$ (N = 2,132)			$VS\_noconfirm_t = 1$ (N = 33)			t-stat of diff. in
Variables	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	means
EDF_{t+1}	4.020	4.000	2.785	1.364	0.000	2.089	5.454***
$WCTA_t$	0.102	0.079	0.187	-0.052	-0.004	0.254	4.660***
$RETA_t$	0.414	0.428	0.221	0.222	0.406	0.464	4.830***
$EBITTA_t$	0.079	0.073	0.088	0.019	0.014	0.185	3.804***
$SALETA_t$	0.985	0.793	0.755	1.125	0.583	1.284	-1.040
$MVETL_t$	2.859	1.609	4.106	1.113	0.648	1.157	2.441**
$SIZE_t$	7.124	7.045	1.752	4.741	4.304	2.237	7.720***
LEV_t	0.207	0.195	0.166	0.307	0.216	0.306	-3.383***
$CASH_t$	0.100	0.072	0.096	0.116	0.076	0.125	-0.944
AGE_t	3.061	3.178	0.670	2.972	3.091	0.405	0.767
$LOSS_t$	0.197	0.000	0.398	0.515	1.000	0.508	-4.527***
CFO_t	0.095	0.088	0.081	0.084	0.062	0.168	0.722
$NEGEQUITY_t$	0.029	0.000	0.167	0.303	0.000	0.467	-8.940***
D_GC_t	0.038	0.000	0.191	0.364	0.000	0.489	-9.334***
AU_GC_t	0.047	0.000	0.211	0.515	1.000	0.508	-12.200***

Panel C: Distribution of Director and Auditor Going Concern by *VS_noconfirm*

	$D\_GC = 0$	$D\_GC = 1$	Total	$AU\_GC = 0$	$AU\_GC = 1$	Total
$VS\_noconfirm = 0$	2,051	81	2,132	2,032	100	2,132
$VS\_noconfirm = 1$	21	12	33	16	17	33
Total	2,072	93	2,165	2,048	117	2,165

Note: This table includes descriptive statistics for the variables in our post-mandate analysis. Panel A uses all observations in our post-mandate sample. Panel B partitions the sample based on the presence or absence of viability confirmation and reports the difference in means. Panel C shows the distribution of directors' and auditors' disclosures of material uncertainties related to going concern based on viability confirmation. ***, **, and * indicate statistical significance at 0.01, 0.05, and 0.10 levels, respectively. Refer to Appendix 3 for variable definitions.

Table 3 Post-Matching Comparison between Treatment and Control Groups

Panel A: PSM Post-Matching Comparison					
Variable	Treatment (N = 336)	Control (N = 336)	Difference	t-stat	p-value
$Zscore_t$	3.048	3.658	-0.610	-1.28	0.202
EDF_t	3.912	4.080	-0.168	-0.74	0.459
$SIZE_t$	6.306	6.281	0.025	0.16	0.876
LEV_t	0.280	0.282	-0.002	-0.09	0.931
$CASH_t$	0.099	0.109	-0.010	-1.10	0.272
AGE_t	2.698	2.723	-0.025	-0.75	0.453
CFO_t	0.008	-0.006	0.014	1.38	0.169
$NEGEQUITY_t$	0.068	0.074	-0.006	-0.30	0.765
$BIG4_t$	0.813	0.786	0.027	0.87	0.387
$TENURE_t$	1.842	1.871	-0.029	-0.44	0.660

Panel B: Entropy Balancing Post-Matching Comparison				
	Treatment (N = 367)		Control (N = 5,702)	
Variable	Mean	Variance	Mean	Variance
$Zscore_t$	2.992	28.970	2.990	28.940
EDF_t	3.910	9.251	3.909	9.246
$SIZE_t$	6.442	4.204	6.439	4.203
LEV_t	0.287	0.051	0.287	0.050
$CASH_t$	0.096	0.010	0.010	0.010
AGE_t	2.736	0.323	2.735	0.322
CFO_t	0.011	0.016	0.011	0.016
$NEGEQUITY_t$	0.065	0.061	0.065	0.061
$BIG4_t$	0.828	0.143	0.828	0.143
$TENURE_t$	1.904	0.847	1.904	0.847

Note: This table compares control variables between treatment and matched control firms using PSM (Panel A) and Entropy Balancing (Panel B). Treatment firms consist of non-financially distressed UK firms with a premium listing on the LSE, subject to viability statement requirements, while control firms are non-financially distressed EU firms. Distressed firms are defined as those reporting either negative net income or negative operating cash flow. For the PSM-matched sample, we use one-to-one matching without replacement, with a caliper width of 0.01, and all covariates are included as matching parameters. Refer to Appendix 3 for variable definitions.

Table 4 Predictive Ability of Viability Confirmation

VARIABLES	(1) EDF_{t+1}	(2) EDF_{t+2}	(3) EDF_{t+3}	(4) EDF_{t+4}	(5) EDF_{t+5}	(6) EDF_{t+1}	(7) EDF_{t+2}	(8) EDF_{t+3}	(9) EDF_{t+4}	(10) EDF_{t+5}
VS_noconfirm$_t$	-0.8361**	-0.9309**	-1.5149***	-1.4980***	-2.0612***	-0.7188*	-0.8029**	-1.4077***	-1.4740***	-1.9961***
	(0.040)	(0.022)	(0.002)	(0.003)	(0.001)	(0.069)	(0.046)	(0.004)	(0.004)	(0.001)
D_GC$_t$	-0.4786**	-0.3537*	-0.4741	-0.2585	0.0557					
	(0.029)	(0.090)	(0.138)	(0.568)	(0.924)					
AU_GC$_t$						-0.7232***	-0.7890***	-0.5758*	-0.2309	-0.1769
						(0.001)	(0.000)	(0.079)	(0.641)	(0.776)
WCTA$_t$	-0.2313	0.0348	-0.1945	-0.9496	-1.1310	-0.2857	-0.0437	-0.2308	-0.9659	-1.1779
	(0.729)	(0.960)	(0.804)	(0.231)	(0.180)	(0.667)	(0.950)	(0.769)	(0.224)	(0.170)
RETA$_t$	1.2784*	1.1867	1.1695	2.0165**	2.3640**	1.2771*	1.1680	1.1683	2.0362**	2.3769**
	(0.084)	(0.129)	(0.163)	(0.011)	(0.010)	(0.081)	(0.131)	(0.159)	(0.010)	(0.010)
EBITTA$_t$	2.5349*	1.8255	3.8674**	4.5960***	4.8414**	2.4501*	1.6788	3.7307**	4.5985***	4.8692**
	(0.055)	(0.178)	(0.011)	(0.008)	(0.025)	(0.063)	(0.213)	(0.016)	(0.008)	(0.024)
SALETA$_t$	-0.0147	0.0266	0.0369	0.1690	0.1370	-0.0136	0.0257	0.0400	0.1726	0.1377
	(0.918)	(0.864)	(0.826)	(0.318)	(0.445)	(0.923)	(0.867)	(0.811)	(0.305)	(0.441)
MVETL$_t$	0.1105***	0.1062***	0.0851***	0.0732**	0.0773**	0.1109***	0.1077***	0.0855***	0.0729**	0.0776**
	(0.000)	(0.000)	(0.003)	(0.022)	(0.040)	(0.000)	(0.000)	(0.003)	(0.023)	(0.039)
SIZE$_t$	0.1950***	0.2361***	0.2092***	0.1902**	0.1486*	0.1863***	0.2228***	0.2040***	0.1893**	0.1447*
	(0.002)	(0.000)	(0.003)	(0.012)	(0.085)	(0.003)	(0.001)	(0.004)	(0.013)	(0.092)
LEV$_t$	-0.8698	-0.6068	-0.0109	1.4498*	1.8449*	-0.7961	-0.5053	0.0403	1.4799*	1.8758*
	(0.224)	(0.439)	(0.990)	(0.100)	(0.078)	(0.262)	(0.514)	(0.962)	(0.089)	(0.075)
CASH$_t$	-0.9008	-0.9458	-0.4464	0.6695	1.2603	-0.8720	-0.9107	-0.4256	0.6928	1.2653
	(0.311)	(0.323)	(0.689)	(0.581)	(0.375)	(0.319)	(0.333)	(0.701)	(0.566)	(0.372)
AGE$_t$	0.3263**	0.2551*	0.2448	0.2037	0.2064	0.3290**	0.2581*	0.2446	0.2037	0.2093
	(0.022)	(0.082)	(0.118)	(0.202)	(0.224)	(0.022)	(0.078)	(0.118)	(0.202)	(0.218)
LOSS$_t$	-0.9601***	-0.7229***	-0.1754	-0.0239	-0.1159	-0.9351***	-0.6867***	-0.1644	-0.0194	-0.1123
	(0.000)	(0.000)	(0.389)	(0.912)	(0.634)	(0.000)	(0.000)	(0.419)	(0.928)	(0.643)
CFO$_t$	3.3085***	3.5718***	2.9421**	1.7279	0.8250	3.2940***	3.5259***	3.0215**	1.7294	0.7570
	(0.003)	(0.005)	(0.042)	(0.270)	(0.664)	(0.003)	(0.005)	(0.039)	(0.270)	(0.690)
NEGEQUITY$_t$	0.4348	0.3051	-0.1795	-0.2734	0.1096	0.4711	0.3474	-0.1379	-0.2420	0.1269
	(0.354)	(0.522)	(0.724)	(0.651)	(0.883)	(0.310)	(0.455)	(0.782)	(0.692)	(0.867)
Constant	0.7727	0.4560	0.1112	-0.7678	-0.9717	0.8300	0.5601	0.1456	-0.7803	-0.9546
	(0.330)	(0.580)	(0.897)	(0.367)	(0.344)	(0.290)	(0.491)	(0.865)	(0.356)	(0.348)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,165	1,875	1,534	1,199	856	2,165	1,875	1,534	1,199	856
R-squared	0.481	0.465	0.452	0.426	0.429	0.483	0.467	0.453	0.426	0.429

Note: This table includes results from the following OLS regressions.

$EDF_{i,t+k} = f\left(VS\_noconfirm_{i,t}, D\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right)$; (Columns 1 – 5).

$EDF_{i,t+k} = f\left(VS\_noconfirm_{i,t}, AU\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right)$; (Columns 6 – 10).

Industry and year fixed effects are denoted as Industry FE and Year FE, respectively. All p-values reported in parentheses are two-sided and calculated based on standard errors adjusted for firm clustering. ***, **, and * indicate statistical significance at 0.01, 0.05, and 0.10 levels, respectively. Refer to Appendix 3 for variable definitions.

Table 5 Impact of Viability Statement Mandate on Auditor GCOs

VARIABLES	(1) AU_GC_t	(2) AU_GC_t
$Treated_t$	-0.3828	1.4375
	(0.717)	(0.120)
***Post * Treated**$_t$	**2.0904****	**1.3245****
	(0.034)	**(0.017)**
$Zscore_t$	-0.1161	-0.1586***
	(0.424)	(0.004)
EDF_t	-0.4051***	-0.2890***
	(0.002)	(0.000)
$SIZE_t$	-0.5467***	-0.5120***
	(0.002)	(0.000)
LEV_t	-0.7411	-2.0185***
	(0.575)	(0.008)
$CASH_t$	0.4949	-0.8064
	(0.842)	(0.600)
AGE_t	-1.0965**	-0.5151*
	(0.031)	(0.087)
CFO_t	-10.6071***	-3.7078***
	(0.000)	(0.000)
$NEGEQUITY_t$	2.6117**	2.0241***
	(0.031)	(0.000)
$BIG4_t$	-0.2752	0.7351**
	(0.676)	(0.015)
$TENURE_t$	0.5126*	0.0202
	(0.086)	(0.901)
Constant	-3.2422	1.4369
	(0.243)	(0.451)
Industry FE	YES	YES
Year FE	YES	YES
Country FE	YES	YES
Observations	428	5,913
Pseudo R2	0.457	0.433

Note: Columns (1) and (2) present results from the following logistic regressions using propensity score-matched and entropy balancing-matched control group of EU distressed firms, respectively.
$AU\_GC_{i,t} = \beta_0 + \beta_1 Post_{i,t} + \beta_2 Treated_{i,t} + \beta_3 Post * Treated_{i,t} + \sum \beta_j Controls_{i,t} + YearFE + IndustryFE + CountryFE + \varepsilon_{i,t}$ (Columns 1 and 2).
Industry, year, and country fixed effects are denoted as Industry FE, Year FE and Country FE, respectively. The variable *Post* was omitted due to collinearity with the year-fixed effects. In the propensity score-matched (entropy balancing-matched) logistic regression with industry and country fixed effects, 244 (156) observations were dropped due to perfect prediction of failure. All p-values reported in parentheses are two-sided and calculated based on standard errors adjusted for firm clustering. ***, **, and * indicate statistical significance at 0.01, 0.05, and 0.10 levels, respectively. Refer to Appendix 3 for variable definitions.

Table 6 Impact of Viability Statement Mandate on Auditor Going Concern KAM

VARIABLES	(1) KAM_GC_t	(2) KAM_GC_t
Treated$_t$	**2.1387*** **	**1.9620*** **
	(0.000)	**(0.000)**
$Zscore_t$	-0.4495***	-0.5866***
	(0.002)	(0.001)
EDF_t	-0.0973*	-0.0461
	(0.079)	(0.485)
$SIZE_t$	-0.3768***	-0.5284***
	(0.000)	(0.000)
LEV_t	-0.0129	0.0889
	(0.986)	(0.917)
$CASH_t$	-0.6686	-0.2627
	(0.659)	(0.878)
AGE_t	0.3138	0.7282*
	(0.341)	(0.077)
CFO_t	-3.5789**	-5.5645***
	(0.032)	(0.007)
$NEGEQUITY_t$	1.1661*	1.8874***
	(0.088)	(0.004)
$BIG4_t$	0.5820	0.6539
	(0.173)	(0.228)
$TENURE_t$	-0.0656	-0.1230
	(0.655)	(0.456)
Constant	-9.8993	-0.9189
	(0.128)	(0.598)
Industry FE	YES	YES
Year FE	YES	YES
Observations	487	1,614
Pseudo R2	0.353	0.321

Note: Columns (1) and (2) present results from the following logistic regressions using propensity score-matched and entropy balancing-matched control group of EU distressed firms, respectively.

$$KAM\_GC_{i,t} = \beta_0 + \beta_1 Treated_{i,t} + \sum \beta_j Controls_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t}$$

Industry and year fixed effects are denoted as Industry FE and Year FE, respectively. In the propensity score-matched (entropy balancing-matched) logistic regression with industry fixed effect, 31 (93) observations were dropped due to perfect prediction of failure. All p-values reported in parentheses are two-sided and calculated based on standard errors adjusted for firm clustering. ***, **, and * indicate statistical significance at 0.01, 0.05, and 0.10 levels, respectively. Refer to Appendix 3 for variable definitions.

Table 7 Predictive Ability of Viability Statement Disclosures

VARIABLES	(1) EDF_{t+1}	(2) EDF_{t+2}	(3) EDF_{t+3}	(4) EDF_{t+1}
VS_period$_t$	0.7148**	0.6426*	0.5780	
	(0.038)	(0.087)	(0.187)	
VS_neg$_t$				-0.1017**
				(0.036)
VS_fog$_t$				-0.0509*
				(0.078)
VS_words$_t$				-0.3072*
				(0.053)
D_GC$_t$	-0.4017*	-0.4036*	-0.6407*	-0.3721
	(0.087)	(0.059)	(0.081)	(0.102)
WCTA$_t$	-0.4493	-0.1437	-0.1683	-0.3714
	(0.527)	(0.849)	(0.842)	(0.590)
RETA$_t$	1.3578*	1.4256*	1.2788	1.3999*
	(0.084)	(0.097)	(0.168)	(0.069)
EBITTA$_t$	3.1752**	2.5873*	4.0031**	3.3724**
	(0.016)	(0.060)	(0.018)	(0.012)
SALETA$_t$	-0.0243	0.0392	0.0218	-0.0099
	(0.871)	(0.810)	(0.902)	(0.948)
MVETL$_t$	0.1150***	0.1044***	0.0843***	0.1166***
	(0.000)	(0.000)	(0.003)	(0.000)
SIZE$_t$	0.2024***	0.2406***	0.2187***	0.2115***
	(0.001)	(0.000)	(0.003)	(0.000)
LEV$_t$	-0.9781	-0.4844	-0.0136	-0.9093
	(0.224)	(0.596)	(0.989)	(0.254)
CASH$_t$	-0.6717	-0.5549	-0.0983	-0.7184
	(0.482)	(0.598)	(0.938)	(0.447)
AGE$_t$	0.3258**	0.2590*	0.2399	0.3064**
	(0.024)	(0.081)	(0.134)	(0.026)
LOSS$_t$	-0.9212***	-0.7289***	-0.1672	-0.9107***
	(0.000)	(0.000)	(0.410)	(0.000)
CFO$_t$	2.8914**	3.2309**	3.3648**	2.6950**
	(0.015)	(0.021)	(0.036)	(0.024)
NEGEQUITY$_t$	0.4197	0.3668	-0.0479	0.3797
	(0.402)	(0.468)	(0.931)	(0.443)
Constant	-0.1395	-0.5058	-0.7290	2.9174**
	(0.877)	(0.593)	(0.455)	(0.041)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	2,132	1,845	1,510	2,132
R-squared	0.471	0.453	0.433	0.474

Note: This table includes results from the following OLS regressions.
$EDF_{i,t+k} = f\left(VS\_period_{i,t}, D\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right)$; (Columns 1 – 3).
$EDF_{i,t+1} = f\left(VS\_neg_{i,t}, VS\_fog_{i,t}, VS\_words_{i,t},\ D\_GC_{i,t},\ Financial\ Ratios_{i,t},\ Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right)$; (Column 4).
Industry and year fixed effects are denoted as Industry FE and Year FE, respectively. All p-values reported in parentheses are two-sided and calculated based on standard errors adjusted for firm clustering. ***, **, and * indicate statistical significance at 0.01, 0.05, and 0.10 levels, respectively. Refer to Appendix 3 for variable definitions.

Table 8 Incremental Predictive Ability of Viability Confirmation Relative to Market Variables

VARIABLES	(1) EDF_{t+1}	(2) EDF_{t+2}	(3) EDF_{t+3}	(4) EDF_{t+4}	(5) EDF_{t+5}	(6) EDF_{t+1}	(7) EDF_{t+2}	(8) EDF_{t+3}	(9) EDF_{t+4}	(10) EDF_{t+5}
$VS\_noconfirm_t$	-0.4587	-0.6611*	-1.0954**	-1.0081**	-1.6404***	-0.3931	-0.5617	-1.0461**	-1.0307**	-1.6000***
	(0.221)	(0.069)	(0.019)	(0.042)	(0.001)	(0.290)	(0.129)	(0.028)	(0.044)	(0.002)
$RSIZE_t$	0.7511***	0.6294***	0.5932***	0.6333***	0.4159*	0.7411***	0.6132***	0.5895***	0.6345***	0.4146*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.059)	(0.000)	(0.000)	(0.000)	(0.001)	(0.061)
$EXRET_t$	47.5384	26.9081	35.7418	18.0164	-46.3442	46.9270	27.7122	35.0364	18.2513	-47.6020
	(0.144)	(0.418)	(0.323)	(0.684)	(0.307)	(0.149)	(0.403)	(0.334)	(0.682)	(0.295)
$SIGMA_t$	-36.0836***	-26.6455***	-32.8894***	-28.4076***	-26.5535***	-35.9707***	-26.2561***	-32.8002***	-28.4226***	-26.4771***
	(0.000)	(0.000)	(0.000)	(0.008)	(0.004)	(0.000)	(0.000)	(0.000)	(0.008)	(0.004)
D_GC_t	-0.1742	-0.1104	-0.1580	0.0261	0.1462					
	(0.421)	(0.593)	(0.601)	(0.952)	(0.786)					
AU_GC						-0.3553	-0.5254**	-0.2326	0.0741	-0.0610
						(0.112)	(0.025)	(0.449)	(0.878)	(0.923)
$WCTA_t$	-0.1605	0.0695	-0.1685	-0.7542	-1.1334	-0.1935	0.0017	-0.1858	-0.7455	-1.1624
	(0.787)	(0.915)	(0.818)	(0.325)	(0.170)	(0.744)	(0.998)	(0.800)	(0.334)	(0.168)
$RETA_t$	0.8604	1.0115	1.1570	1.9622**	2.3953***	0.8554	0.9871	1.1526	1.9606**	2.3969***
	(0.228)	(0.156)	(0.111)	(0.010)	(0.007)	(0.228)	(0.162)	(0.110)	(0.010)	(0.008)
$EBITTA_t$	0.2662	0.6982	2.8124*	3.1278*	3.5616*	0.2318	0.6045	2.7562*	3.1342*	3.5817*
	(0.827)	(0.589)	(0.055)	(0.053)	(0.098)	(0.849)	(0.638)	(0.063)	(0.053)	(0.095)
$SALETA_t$	-0.0870	-0.0243	0.0210	0.1345	0.0946	-0.0871	-0.0261	0.0219	0.1339	0.0937
	(0.493)	(0.862)	(0.890)	(0.395)	(0.583)	(0.491)	(0.851)	(0.885)	(0.395)	(0.586)
$MVETL_t$	0.0345	0.0431*	0.0315	0.0192	0.0498	0.0361	0.0463*	0.0322	0.0190	0.0503
	(0.153)	(0.088)	(0.254)	(0.537)	(0.187)	(0.136)	(0.067)	(0.247)	(0.544)	(0.183)
$SIZE_t$	-0.5924***	-0.4201***	-0.4103***	-0.4789***	-0.3054	-0.5878***	-0.4149***	-0.4093***	-0.4791***	-0.3072
	(0.000)	(0.002)	(0.007)	(0.008)	(0.153)	(0.000)	(0.002)	(0.007)	(0.008)	(0.150)
LEV_t	-1.3606**	-0.9760	-0.0936	1.3306	1.7407*	-1.3170*	-0.8973	-0.0702	1.3221	1.7579*
	(0.044)	(0.169)	(0.902)	(0.124)	(0.097)	(0.051)	(0.201)	(0.926)	(0.126)	(0.097)
$CASH_t$	-1.0101	-1.2158	-0.6664	0.4956	1.3372	-0.9945	-1.2015	-0.6594	0.4930	1.3287
	(0.210)	(0.171)	(0.525)	(0.672)	(0.340)	(0.213)	(0.171)	(0.527)	(0.673)	(0.344)
AGE_t	0.2949**	0.2174	0.2213	0.2999*	0.2909*	0.2961**	0.2203	0.2215	0.2993*	0.2928*
	(0.019)	(0.105)	(0.143)	(0.057)	(0.086)	(0.019)	(0.102)	(0.143)	(0.057)	(0.083)

$LOSS_t$	-0.6751***	-0.4360**	0.1032	0.0939	-0.1442	-0.6609***	-0.4068**	0.1083	0.0923	-0.1442
	(0.000)	(0.012)	(0.597)	(0.657)	(0.562)	(0.000)	(0.020)	(0.578)	(0.660)	(0.561)
CFO_t	2.8998***	2.8169**	1.7291	0.8667	0.1641	2.8873***	2.7764**	1.7661	0.8710	0.1119
	(0.007)	(0.027)	(0.218)	(0.576)	(0.934)	(0.007)	(0.030)	(0.213)	(0.574)	(0.955)
$NEGEQUITY_t$	0.5743	0.3851	-0.0282	-0.3552	0.1079	0.5914	0.4082	-0.0156	-0.3637	0.1058
	(0.161)	(0.371)	(0.955)	(0.565)	(0.888)	(0.149)	(0.339)	(0.974)	(0.561)	(0.892)
Constant	13.7979***	11.1413***	10.1403***	9.4770***	5.9805*	13.6838***	10.9813***	10.1022***	9.4915***	5.9816*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.062)	(0.000)	(0.000)	(0.000)	(0.001)	(0.063)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,125	1,843	1,501	1,171	836	2,125	1,843	1,501	1,171	836
R-squared	0.534	0.498	0.484	0.454	0.447	0.535	0.499	0.484	0.454	0.447

Note: This table includes results from the following OLS regressions.

$EDF_{i,t+k} = f\left(VS\_noconfirm_{i,t}, Market\ Variables_{i,t}, D\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right)$; (Columns 1 – 5).

$EDF_{i,t+k} = f\left(VS\_noconfirm_{i,t}, Market\ Variables_{i,t}, AU\_GC_{i,t}, Financial\ Ratios_{i,t}, Fixed\ Effects_{i,t}, \varepsilon_{i,t}\right)$; (Columns 6 – 10).

Industry and year fixed effects are denoted as Industry FE and Year FE, respectively. All p-values reported in parentheses are two-sided and calculated based on standard errors adjusted for firm clustering. ***, **, and * indicate statistical significance at 0.01, 0.05, and 0.10 levels, respectively. Refer to Appendix 3 for variable definitions.

Table 9 Alternative Financial Distress Measure

VARIABLES	(1) Zscore d_{t+1}	(2) Zscore d_{t+2}	(3) Zscore d_{t+3}	(4) Zscore d_{t+4}	(5) Zscore d_{t+5}	(6) Zscore d_{t+1}	(7) Zscore d_{t+2}	(8) Zscore d_{t+3}	(9) Zscore d_{t+4}	(10) Zscore d_{t+5}
VS_noconfirm$_t$	2.0962	2.3777**	2.9995**	3.1985**	3.9740**	2.0516	2.3630**	2.9671**	3.1885**	4.1360**
	(0.166)	(0.040)	(0.015)	(0.029)	(0.017)	(0.167)	(0.036)	(0.012)	(0.025)	(0.019)
D_GC$_t$	1.2275**	0.6612	0.3924	-0.0050	1.0159					
	(0.043)	(0.140)	(0.332)	(0.993)	(0.509)					
AU_GC$_t$						1.2789**	0.4712	0.5188	0.0471	-0.4847
						(0.049)	(0.422)	(0.451)	(0.961)	(0.799)
WCTA$_t$	-1.9489*	-1.3197	-1.3009	-2.4257**	-1.9931	-1.9531*	-1.3152	-1.2802	-2.4178**	-2.1367*
	(0.095)	(0.253)	(0.275)	(0.050)	(0.107)	(0.090)	(0.245)	(0.263)	(0.042)	(0.080)
RETA$_t$	-3.5049***	-3.9720***	-4.0450***	-3.5412**	-4.4880***	-3.5086***	-4.0041***	-4.0390***	-3.5357**	-4.5720***
	(0.008)	(0.004)	(0.005)	(0.018)	(0.004)	(0.008)	(0.004)	(0.005)	(0.019)	(0.003)
EBITTA$_t$	-5.5885**	-5.0140*	-8.0516***	-6.2456*	-9.2527***	-5.4917**	-5.0623*	-7.9996***	-6.2204*	-9.5224***
	(0.035)	(0.052)	(0.008)	(0.061)	(0.009)	(0.039)	(0.056)	(0.010)	(0.071)	(0.010)
SALETA$_t$	-1.7553***	-1.3550***	-1.2423***	-1.1059***	-1.1958***	-1.7650***	-1.3618***	-1.2440***	-1.1054***	-1.2152***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.002)	(0.000)	(0.000)	(0.000)	(0.002)	(0.001)
MVETL$_t$	-0.4818***	-0.1903*	-0.0931	-0.0294	0.0026	-0.4766***	-0.1872*	-0.0929	-0.0296	0.0084
	(0.003)	(0.091)	(0.256)	(0.673)	(0.967)	(0.003)	(0.095)	(0.256)	(0.673)	(0.889)
SIZE$_t$	-0.0769	-0.0762	-0.1097	-0.2185**	-0.1977*	-0.0727	-0.0788	-0.1066	-0.2174**	-0.2102*
	(0.326)	(0.362)	(0.242)	(0.046)	(0.082)	(0.345)	(0.336)	(0.246)	(0.044)	(0.059)
LEV$_t$	-0.5447	-1.3714	-1.0695	0.2055	-0.1268	-0.5678	-1.3714	-1.0960	0.1986	-0.0318
	(0.691)	(0.357)	(0.526)	(0.907)	(0.943)	(0.676)	(0.355)	(0.502)	(0.910)	(0.986)
CASH$_t$	1.0390	-0.1876	-0.6956	-1.7789	-1.5108	1.0440	-0.2043	-0.6887	-1.7806	-1.3424
	(0.554)	(0.904)	(0.689)	(0.372)	(0.419)	(0.545)	(0.897)	(0.685)	(0.369)	(0.481)
AGE$_t$	-0.1314	-0.1110	-0.0739	-0.0321	-0.0119	-0.1256	-0.1094	-0.0710	-0.0321	-0.0015
	(0.285)	(0.405)	(0.640)	(0.869)	(0.955)	(0.305)	(0.412)	(0.654)	(0.869)	(0.994)
LOSS$_t$	0.3679**	0.3079	0.0364	0.0997	0.0356	0.3645**	0.3097	0.0281	0.0977	0.0425
	(0.045)	(0.156)	(0.883)	(0.713)	(0.922)	(0.047)	(0.153)	(0.908)	(0.710)	(0.903)
CFO$_t$	-6.2952***	-5.8399***	-3.3184*	-5.3382**	-1.1872	-6.3390***	-5.8263***	-3.3308*	-5.3486**	-1.2363
	(0.001)	(0.001)	(0.094)	(0.029)	(0.696)	(0.001)	(0.001)	(0.094)	(0.031)	(0.682)
NEGEQUITY$_t$	-0.0785	-0.7649	-0.8159	-0.6518	-1.0994	-0.0990	-0.7820	-0.8346	-0.6515	-1.0797
	(0.918)	(0.333)	(0.346)	(0.403)	(0.281)	(0.899)	(0.325)	(0.322)	(0.400)	(0.291)
Constant	5.1419***	4.7027***	4.8265***	4.9636***	5.7117***	5.0422***	4.7078***	4.7497***	4.9430**	5.8646***
	(0.000)	(0.005)	(0.007)	(0.009)	(0.004)	(0.001)	(0.006)	(0.009)	(0.011)	(0.003)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,048	1,904	1,560	1,186	915	2,048	1,904	1,560	1,186	915
Pseudo R2	0.494	0.438	0.418	0.400	0.424	0.495	0.438	0.419	0.400	0.424

Note: This table presents the results of using the Altman Z-Score as the distress measure, where *Distress_d* equals one if the Altman (1968) Z-Score is below 1.81, and zero otherwise. Industry and year fixed effects are denoted as Industry FE and Year FE, respectively. All p-values reported in parentheses are two-sided and calculated based on standard errors adjusted for firm clustering. ***, **, and * indicate statistical significance at 0.01, 0.05, and 0.10 levels, respectively. Refer to Appendix 3 for variable definitions.