DO ASSURANCE AND ASSURANCE PROVIDERS ENHANCE COVID-RELATED DISCLOSURES IN CSR REPORTS? AN EXAMINATION IN THE UK CONTEXT

ABSTRACT

Purpose: The COVID-19 pandemic has been adding pressures on companies to commit to their social and ethical responsibilities. CSR reporting is the main tool through which companies communicate their social behaviour and the need for credible information is censorious during the crisis. This paper aims to measure the level of COVID-19 disclosures in CSR reports by using an automated textual analysis technique based on a sample of UK companies and investigate whether the level of disclosure is enhanced for companies that subject their CSR reports to an assurance process.

Design/methodology/approach: Our sample consists of FTSE All-share non-financial listed companies. We employ a computer-aided textual analysis and we use a bag of words to capture COVID-related information in the CSR section of the firm's annual reports.

Findings: The results suggest that the existence of independent external assurance is significantly and positively associated with the provision of COVID-19 information in CSR reports. We also find that when assurance is provided by Big 4 accountancy firm, the disclosure of COVID-related information is enhanced. Furthermore, large companies are more likely to disclose COVID-related information in their CSR reports that are externally assured from top tier accountancy firms suggesting that assurance could be a burden for smaller firms. Overall, the findings suggest that assurance on CSR reports provides an 'insurance-like' protection that mitigates the risks and signals the management's ethical behaviour during the pandemic.

Practical implications: Our approach helps to assess the level of corporate engagement with COVID-19 practices and the extent of related disclosures in CSR reports based on the Covid-19 Secure Guidelines published by the UK government. This helps to emphasise how companies engage and communicate Covid-19 related information to stakeholders through CSR reports and ensure a safe working environment during this pandemic. Managers will need to assess the costs and benefits of purchasing assurance on CSR disclosures giving the ethical signal that assurance sends to the market and protection that it covers during the crisis.

Originality/value: This paper provides a shred of unique evidence of the impact of the existence of external assurance and the type of assurer on the disclosure of COVID-related information in CSR reports. To the best of our knowledge, no study has yet investigated the corporate disclosure on an unforeseen event in CSR reports and the role of CSR assurance in this respect.

1. INTRODUCTION

COVID-19 pandemic has had considerable economic and financial effects worldwide and is considered the toughest challenge since the great depression (He and Harris 2020; Goodell, 2020; Albitar et al., 2020a; Amankwah-Amoah, 2020). Managers are facing challenging decisions regarding their social and ethical behaviour during the pandemic and they need to respond proactively to protect their employees and customers (Levy, 2020). Governments and decision-makers worldwide have established economic and financial measures to help companies under strain from the COVID-19 pandemic. These measures should encourage companies to maintain ethical business practices and fulfil their CSR commitments to all stakeholders (He and Harris 2020). The UK government has issued COVID-19 safety guidelines to ensure a safe working environment (GOV.UK, 2020) and companies will need to follow these guidelines to ensure the safety of their employees, customers, and work environment. Nevertheless, companies are expected to disclose information related to COVID-19 prevention strategies to reduce information asymmetry and signal their performance to the market. Despite the fact that these practices are not strictly enforced, companies' provision of COVID-related information signals their ethical behaviour and how they operate during such a turbulent environment due to COVID-19 pandemic.

Recent research investigating the effect of COVID-19 pandemic has mostly focused on market reactions (Erdem, 2020; Mazur et al., 2020; Salisu and Vo, 2020; Hossain, 2020) and provided theoretical perceptions of the impact of COVID-19 pandemic on financial markets, banking and insurance companies, CSR, auditing, and government and public sector (Goodell, 2020; Donthu and Gustafsson, 2020; Albitar et al., 2020a; He and Harris 2020; Levy,

2020). Other work has focused on the impact of COVID-19 pandemic on environmental awareness, sustainable consumption, and social responsibility (Severo et al., 2020) and the effect of ESG disclosures on corporate financial performance during the COVID-19 crisis (Broadstock et al., 2020). To the best of our knowledge, no study has yet investigated the corporate disclosure on an unforeseen event in CSR reports and the role of CSR assurance in this respect.

Our paper adds to the existing literature on the external assurance of CSR reports (e.g., Cohen and Simnett, 2015; Ballou et al., 2018; Clarkson et al., 2019; Du and Wu, 2019; Hassan et al., 2020; Ruiz-Barbadillo and Martínez-Ferrero, 2020), and is motivated by studies that reflect on the role of CSR assurance in negative event situations. For example, Pflugrath et al. (2011) show that CSR assurance enhances credibility of CSR reports issued after a negative event, and Stuart et al. (2020) show that purchasing assurance on CSR reports signals management's ethical culture and provides 'insurance-like' protection from any potential reaction to future negative incidents. The motivation of our study is to examine whether CSR assurance choices (i.e., the purchase of assurance and assurance provider) enhance the extent of COVID-related disclosures in CSR reports during the COVID-19 crisis. The incentive to purchase voluntary assurance services can be framed in the context of the signalling theory. Assurance can signal that CSR information is reliable and increase the transparency and credibility of information (Simnett et al., 2009; Cohen and Simnett, 2015; Peters and Romi, 2015).

Due to COVID-19 pandemic, companies face challenging decisions regarding social performance and ethical thinking, and they need to conduct COVID prevention strategies to protect their employees and customers (Levy, 2020; Manuel and Herron, 2020). This paper aims to assess the degree of corporate disclosure on the COVID-19 pandemic in CSR reports and investigate whether such disclosure is improved for companies that subject their CSR

reports to an assurance process. We contribute to the CSR assurance literature in several ways. First, we employ a computer-aided textual analysis technique to examine COVID-19 disclosures in CSR reports of UK companies. The use of textual analysis for qualitative information has been applied in several studies, and its importance is being recognised by different researchers (Clarkson et al., 2020; Andreou et al., 2020; Elmarzouky et al. 2020). Second, we investigate the impact of the existence of external assurance and the type of assurer on the disclosure of COVID-related information in CSR reports. As a result, we examine the role that CSR assurance could play during a negative event. Third, we investigate whether there is a heterogeneity in the effect of assurance and assurance provider and COVID-19 related disclosures in CSR reports when comparing big and small firms due to recourse implications during the pandemic.

Using a sample of UK firms that published their annual reports in 2020, we assess the degree of COVID-related disclosures in CSR reports and find that the existence of independent external assurance has a positive and significant association with COVID-related information measured using both the frequency of COVID-related words appearing in the reports and a dummy variable. We also find that when assurance is provided by Big4 accountancy firm, the disclosure of COVID-related information is enhanced. When we divide the sample into large and small firms, our result suggests that large companies are more likely to disclose COVID-related information in their CSR reports that are externally assured by a Big4 accountancy firm because they have the required resources to cover such cost than smaller firms. We further explore the influence of CSR-sensitive industries on the impact of CSR assurance and assurance provider on COVID-related disclosures, and our results are consistent.

The remainder of this paper is structured as follows. Section 2 provides a theoretical framework and develops the study's hypotheses. Section 3 describes the study's methodology,

including variable measurement, model specification, and sample selection. Section 4 analyses the study's findings. Finally, Section 5 concludes.

2. THEORY AND HYPOTHESES DEVELOPMENT

CSR reporting has attracted considerable attention from the academic community (Ballou et al. 2018; Boiral et al., 2019; Michelon et al. 2019). Studies show that assurance of CSR reports reduces stakeholders' pressures because it enhances transparency and increases reporting quality (Ballou et al., 2018; Martínez-Ferrero et al., 2018; Boiral et al., 2019). It can also improve the credibility and reliability of CSR reports (Simnett et al. 2009; Birkey et al., 2016; Du and Wu, 2019; Hassan et al., 2020). The voluntary assurance of CSR reports will encourage firms to disclose more reliable and accurate information and strengthen companies' commitment to sustainability (Cohen and Simnett, 2015; Birkey et al., 2016; Ballou et al., 2018; Hassan et al., 2020).

According to the signalling theory, companies with a proactive strategy and better ethical and social performance have incentives to provide more information to stakeholders to signal their positive practices and concerns for the environment and society (Clarkson et al., 2019). These companies will be willing to assure their CSR reports to signal stakeholders their commitment to sustainability (Mahoney et al., 2013; Gerged et al., 2018). Signalling theory suggests that while engaging in CSR assurance can impose costs, companies will buy assurance when the benefits outweigh the associated costs (Bangoli and Watts, 2017; Hassan et al., 2020). Companies may purchase assurance for their CSR reports to signal that they are socially responsible corporate citizen (Bagnoli and Watts, 2017; Hassan et al., 2020). Moreover, companies that voluntarily purchase professional assurance on a voluntary disclosure can distinguish themselves from less socially responsible companies (Clarkson et al., 2015) and

they choose to obtain high-quality assurance to distinguish their levels of socially responsible activities (Bagnoli and Watts, 2017).

Assurance provider can play a crucial role in enhancing the quality of CSR reports (Martínez-Ferrero et al., 2018; Du and Wu, 2019; Hassan et al., 2020). In the UK institutional setting, firms can purchase assurance services from a wide variety of providers such as Big4 accounting firms (Deloitte, E.Y., KPMG, and PwC), non-Big4 accounting firms (e.g., Grant Thornton), and specialist consultant and engineering services firms (e.g., Bureau Veritas).[1] Assurance providers can vary in their background and expertise (Perego and Kolk, 2012). In the absence of generally accepted reporting standards for CSR reporting and the complexity of CSR reporting content, high skilled assurance provider is required to enhance the quality of CSR reports (Cohen and Simnett, 2015; Martínez-Ferrero et al., 2018). Research shows that top tier accountancy firms are more likely to provide higher quality assurance services because those firms have better experience in conducting detailed tests and analytical procedures (Gürtürk and Hahn, 2016; Farooq and de Villiers, 2019). CSR reports that have been assured by top tier accounting firms will have higher credibility because those firms have better expertise in risk assessment and consideration of materiality in providing assurance (Al-Shaer and Zaman 2019; Hummel et al., 2019). This can ease stakeholders' concerns about the transparency of CSR reports and enhance their confidence (Simnett et al., 2009; Martínez-Ferrero et al., 2018; Hassan et al., 2020; Boiral and Heras-Saizarbitoria, 2020).

Even though CSR assurance has attracted considerable attention from the academic community, more research work is deemed necessary to further investigate whether CSR assurance contributes to the provision of COVID-related disclosures in CSR reports.

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[1]The International Federation of Accountants (IFAC) defines third-party assurance as "an engagement in which a practitioner expresses a conclusion designed to enhance the degree of confidence of the intended users other than the responsible party about the outcome of the evaluation or measurement of a subject matter against criteria." See International Standard on Assurance Engagements, 2013. ISAE 3000 Revised - for IAASB.pdf (ifac.org).

Stakeholders are demanding companies to disclose information in relation to COVID-prevention strategies and to explain their social and ethical behaviour during this pandemic (Broadstock et al., 2020; Levy, 2020). We would therefore expect that, according to signalling theory, companies that disclose COVID-related information in their CSR reports will purchase assurance to signal that the company is a socially responsible corporate citizen (Bagnoli and Watts, 2017). Companies will need to signal their ethical behaviour during the pandemic through CSR disclosures to show that they are creating COVID-secure environment for their employees, customers, and the public. Under these volatile conditions, we have seen many initiatives by the UK governments, professional bodies, and the Financial Reporting Council (FRC) to help firms deal with the pandemic which may affect the provision of COVID-19 related information through corporate reporting (Albitar et al., 2020a). However, there is no mandatory requirement for entities to disclose information on facilitating a COVID-secure environment to protect their stakeholders. In light of the aforementioned discussion of the role of external assurance and assurance provider in enhancing the transparency and credibility of CSR disclosures, we investigate the association between the adoption of external assurance and type of assurer and the provision of COVID-related disclosures in CSR reports and propose the following hypotheses:

H1: Ceteris paribus, there is an association between the adoption of CSR assurance and COVID-related disclosures in CSR reports.

H2: Ceteris paribus, there is an association between CSR assurance provider and COVID-related disclosures in CSR reports.

Company size is one of main factor that has an impact on political vulnerability since size represents the public presence, and large companies have the time and resources needed for voluntary disclosure (Milne, 2002). Larger companies, or those most visible, face reputational challenges that smaller and less visible companies do not. The profiles of these

companies give rise to the incurrence of costs necessary to manage these reputation challenges, which Watts & Zimmerman (1979) referred to as political costs. These might include, *inter alia*, the need to manage reputation with a range of initiatives including the voluntary disclosure of areas of interest to those demanding information or reassurances. Industry also attracts public attention especially certain industries that engage in activities with substantial impact on society or the environment. Certain industries endure high regulatory costs or contain large companies that make high profit and thus attract public attention (Milne, 2002).

It is likely that legitimacy-based explanations are based on similar suppositions to political costs in that those companies with a specific size or activity vulnerabilities have been found to disclose more in those areas, conceivably to offset, nullify or address legitimacy gaps. In keeping with a legitimacy-based explanation, legitimacy gaps are more likely to open up when there is a pre-existing vulnerability occasioned by public exposure or industry sector (Deegan et al., 2000; Campbell, 2003). Stakeholders exhibit greater pressure on companies that are more visible. Voluntary disclosure of highly visible companies could help achieve legitimacy and gain public image (Dawkins and Fraas, 2011; Albitar et al., 2020b; Li et al., 2020). According to resource-based view framework, companies with resource endowments, such as greater size with higher profit invest in specific competitive advantage generating resources and engage in projects, including CSR projects (Barney et al., 2001; Russo and Fouts, 1997; Li et al., 2020; Liao et al., 2020). Several studies show that larger companies are more likely to adopt assurance (Simnett et al., 2009; Zorio et al. 2013; Fernandez-Feijoo et al. 2015). Big-sized firms are more likely to produce CSR reports and obtain higher quality assurance than small-sized firms since they have the required resources to do so. Furthermore, the cost of socially responsible activities differs across industries because of the use of different production technologies and facilities. Firms in mining industries or those whose production

facilities are suspected of offering poor working conditions are under greater scrutiny and are more likely to purchase higher quality assurance (Bagnoli and Watts, 2017). Based on the above discussion, we propose the following hypothesis:

H3: Ceteris paribus, there is heterogeneity in the impact of assurance and assurance provider on COVID-related disclosures in CSR reports when considering different firms' size and different CSR sensitive industries.

3. RESEARCH METHODS

3.1. Sample

We use a sample of FTSE All-share non-financial listed companies that their annual reports were published in 2020. We downloaded the annual reports from companies' websites. We mainly focused on CSR's narrative reporting as this has been claimed to be an effective means of communication between managers and stakeholders (Barkemeyer et al. 2014; Fisher et al., 2019). To extract the CSR narrative sections in annual reports, we use an automated textual analysis technique and utilise the Corporate Financial Information Environment (CFIE) software created by Lancaster University. CFIE is a research programme that explores accounting and financial market text using natural language processing and corpus linguistics methods (El-Haj et al., 2019). We exploit it to score the COVID-19 disclosure in CSR reports. We collect other related variables from Eikon database.

3.2. Dependent Variable

To measure COVID-19 disclosures in CSR reports, we followed previous literature for constructing a bag of words in the domain of narrative disclosures (Linsley and Shrives 2006; Loughran and McDonald, 2011; Andreou et al., 2020). We use the wordlist developed by Elmarzouky et al. (2020) that is constructed based on the Covid-19 Secure Guidelines published by the UK Government (GOV.UK, 2020). We score the annual reports using the

CFIE software. We double-check the score manually for a random sample of CSR reports to assess the reliability of the measurement. The results remain consistence. Following Elmarzouky et al. (2020), we also used Nvivo 12 pro as another validation of the measurement by re-scoring a random sample of CSR reports, and the results remain consistence. Appendix 1 shows an examples of the original word list used for measuring COVID-19 disclosure.

3.3. Explanatory Variables

External assurance helps enhance information transparency and increase the completeness and credibility of CSR reports (Hodge et al., 2009; Pflugrath et al., 2011; Zorio et al., 2013; Al-Shaer and Zaman, 2018). Our variables of interest are the existence of external assurance and type of assurer. CSR_ *assurance* is measured using a dummy variable equal to 1 if CSR disclosure is externally assured and zero otherwise. Prior literature argues that assurance service is perceived to be higher when assurance provider is a top tier accountancy firm (Junior et al., 2014; Al-Shaer and Zaman, 2018). Assurance provider (Assurance_ *type*) is measured using a scale where Assurance_ *type* equals 3 if assurance is provided by Big4 accounting firm, 2 if assurance is provided by non-Big4 accounting firm, 1 if assurance is provided by non-accounting firm, 0 if no assurance service is provided. This scaling will allow us to provide preliminary evidence on whether assurance quality affects the disclosure of COVID-related information in CSR reports.

Prior literature shows a link between governance variables and CSR disclosure (Husted and de Sousa-Filho, 2019; Al-Shaer et al., 2017; Majumder et al., 2017; Ullah et al., 2019; Chan et al., 2020). We thus include some corporate governance variables. We expect that the existence of board-level CSR committee, measured using a dummy variable equals 1 if a committee exists and zero otherwise, to impact the disclosure of COVID-related information in CSR reports. We also include board size (BODSIZE) measured by the number of board members, board independence (BODIND) measured by the proportion of independent

directors on the board, and board diversity (BODDIV) measured by the proportion of female directors on the board.

Prior literature suggests it is important to control for firm-specific characteristics when examining CSR reporting (Simnett et al. 2009; Nazari et al., 2017; Muslu et al., 2019). Larger firms with greater resources have opportunities to increase the scale and scope of their social and environmental activities and to disclose them (Al-Shaer et al., 2017). We control for firm size measured by the natural log of total assets. Firm resources are represented by profitability measured by return on assets (ROA) and TOBINSQ calculated by dividing the sum of firm equity value, book value of long-term debt, and current liabilities by total assets. We also control for financial leverage (LEV) measured by debt to total assets ratio, representing the firm's risk perception, and firm loss (LOSS) using an indicator variable equals one when the current year's net income is negative and zero otherwise. We control the firm's CSR performance in the previous year (ESG_*perf*) measured using the ESG score from ASSET4 database. Finally, we control for the length of a document (Length) measured by the natural log of total word count in the CSR section and industry by grouping firms in the sample using the one-digit Standard Industry Classification (SIC) codes.

3.4. Empirical Model

We construct the multivariate regression model below to examine the association between the adoption of external assurance and assurance provider and the provision of COVID-related disclosures in CSR reports. The variables used in this study are defined in Table I. Industry dummies are created based on the SIC one-digit industry classification.

$$
\begin{aligned}
COVID_{score} = \ & \beta_0 + \beta_1 CSR_{assurance} + \beta_2 Assurance_{type} + \beta_3 CSR_{committee} + \beta_4\, ESG_{perf} \\
& + \beta_5 BODSIZE + \beta_6 BODIND + \beta_7\, BODDIV + \ \beta_8 LEV + \beta_9 ROA + \beta_{10} TOBINSQ \\
& + \beta_{11} LOSS + \ \beta_{12} SIZE + \beta_{13} Length + \beta_{14} Industry\ dummies + \ \epsilon
\end{aligned}
$$

[Table I about here]

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics

Table II reports descriptive statistics for key variables in our model. The mean value of COVID_*score* is 1.646 representing the average frequency of COVID_relared words disclosed in the CSR section, where the minimum number of words is zero, and the maximum is 40 words indicating that the majority of our sample companies have a low level of COVID related information in the CSR reports. During the pandemic, companies are facing a challenging situation and few companies have clear strategies of how to maintain social behaviour and ethical thinking to protect their employees and customers. The mean value of COVID_*dummy* is 0.333, indicating that on average, 33% of our sample firms disclose COVID-related information in the CSR reports. The mean value of CSR_*assurance* 0.659 indicating that on average, 66% of our sample firms get their report externally assured and the mean value of Assurance_*type* is 1.984 suggesting that a large proportion of our sample firms have independent external assurance from non-Big4 accounting firms. The mean value of CSR_*committee* is 0.728 and suggests that on average, 73% of our sample firms have a separate CSR committee. We find the mean board size (BODSIZE) is 8.584, board independence (BODIND) is 0.608 which means that on average, two-thirds of our sample firms have independent directors, and on average, 28.4% of board members are females. The mean value of ESG_*perf* is 102.491. Regarding firm-specific variables, we find the mean firm size (SIZE) is £8,380,000,000, return on assets (ROA) is 0.047, TOBINSQ is 0.878, leverage is 0.690, and LOSS is 0.156 which suggests that on average, 16% of our sample firms reported a loss.

[Table II about here]

Table III reports the Pearson correlation matrix for variables used in our analysis. We find that CSR_*assurance*, Assurance_*type*, CSR_*committee,* ESG_*perf*, BODDIV, and SIZE are positively correlated with COVID_*dummy,* indicating a significant overall positive association. The Pearson correlation coefficients provided in Table III do not evidence serious multicollinearity problems. The variance inflation factor (VIF) ranges between 1.15 (lowest value) and 2.24 (highest value), and the average value is 1.60. This also suggests the absence of multicollinearity.[2]

[Table III about here]

4.2. Multivariate Analysis

We report the findings of our regression tests in this section. COVID_*score* is a count variable, and thus we use negative binomial specification, and COVID_*dummy* is a dichotomous variable, and thus we use probit regression. Table IV shows that CSR_*assurance* has a positive and significant association with COVID_*score* at 5% level (coeff=1.2418, *t*=2.21) and with COVID_*dummy* at 5% level (coeff=0.7095, *t*=1.98). Assurance_*type* has a positive and significant association with COVID_*score* at 1% level (coeff=0.5399, *t*=2.69) and with COVID_*dummy* at 1% level (coeff=0.5453, *t*=3.03).[3] Our finding supports our hypotheses that when companies provide independent external assurance of their CSR reports and when the assurance provider is a Big4 accounting firm, they are more likely to disclose COVID-related information. Additionally, we find that BODDIV has a positive and significant association with COVID_*score* at 5% level (coeff=4.4199, *t*=2.50) and COVID_*dummy* at 1% level

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[2] We conduct similar correlations when using COVID_*score* as the dependent variable (untabulated).
[3] CSR_*committee,* on the other hand, do not show to have an impact on both COVID_*score* and COVID_*dummy* possibly due to the lack of significant variations in the values of this variable in our regression tests.

(coeff=4.0573, *t*=3.28) suggesting that when firms have more female directors on the board, they would have stronger corporate governance. As a result, the disclosure of COVID-related information is more pronounced. Based on the theoretical perspective from signalling theory, our finding supports the argument that companies that provide disclosures on CSR information will purchase assurance to signal that the company is a socially responsible corporate citizen (Bagnoli and Watts, 2017). CSR assurance signals a positive ethical culture and provides an 'insurance-like' protection during times of crisis (Stuart et al., 2020).

[Table IV about here]

In Table V, we divide the sample into small-sized firms and big-sized firms based on the median to check whether our results are impacted by the size factor. Splitting the sample into small and large-sized firms helps analyse the effect of independent external assurance and assurance provider beyond any size effect. Our result for the sample of large firm shows that CSR_*assurance* has a positive and significant association with COVID_*score* at 10% level (coeff=1.644, *t*=1.74), and with COVID_*dummy* at 5% level (coeff=1.6097, *t*=2.32). Assurance_*type* has also positive and significant association with COVID_*score* at 5% level (coeff=0.5357, *t*=1.69) and with COVID_*dummy* at 5% level (coeff=0.5394, *t*=2.12). Among corporate governance variables, we find BODSIZE have a positive and significant association with COVID_*score* at 10% level (coeff=1.7434, *t*=1.70) and with COVID_*dummy* at 5% level (coeff=0.2761, *t*=2.46) and BODDIV has a positive and significant association with COVID_*score* at 1% level (coeff=8.6329, *t*=2.87) and with COVID_*dummy* at 5% level (coeff=7.667, *t*=2.55). Among firm-specific variables, LEV shows a negative and significant association with COVID_*dummy* at 5% level (coeff=-4.6852, *t*=-2.53). TOBINSQ shows to have a negative and significant association with COVID_*score* at 10% level (coeff=-5.0124, *t*=-1.72)

and with COVID_*dummy* at 5% level (coeff=-6.162, *t*=-2.27) and LOSS is positive and significant with COVID_*score* at 5% level (coeff=1.968, *t*=2.53) and with COVID_*dummy* at 5% level (coeff=1.9117, *t*=2.12) suggesting that companies that are less profitable and companies that are incurring losses are more likely to be disclosing COVID-related information in CSR reports. Managers of companies suffering from financial constraints might have more pressures about the firm current performance and disclose more information about COVID-19 engagement practices.

Our results for the sample of small firms are less significant for our variables of interest, and only Assurance_*type* shows to be positive and significant at 10% level. The demand for assurance may place an increased drain on resource use when there is an insufficient market for resources (Al-Shaer and Zaman, 2018). This is more likely to pertain to small firms and explain the weaker effects of CSR external assurance and assurance provider on COVID-related disclosures. Small firms may perceive that the incremental cost of external assurance outweighs the benefits, and such costs are hard to overcome, especially during the COVID-19 pandemic that affects the world economy and threatens firms' survival.

[Table V about here]

We examine the impact of CSR sensitive industries in Table VI. We include industry as a categorical variable following Sierra et al. (2013) and Al-Shaer and Zaman (2018) and assign a value of 1-5 based on firms' CSR-sensitive activities.[4] We assign a value of 1 if the company belongs to technology and telecommunication industry, a value of 2 if the company belongs to consumer services and health care industry, a value of 3 if the company belongs to

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[4] We have 14 companies out of 243 (5.76%) belong to technology and telecommunication industry, 166 companies out of 243 (68.31%) belong to consumer services and health care industries, 35 companies out of 243 (14.4%) belong to consumer goods industry, and 7 companies out of 243 (11.11%) belong to basic materials, utilities, and construction industries. We have only one company that belongs to the oil and gas industry.

consumer goods industry, a value of 4 if the company belongs to necessary materials, utilities and construction industry, and a value of 5 if the company belongs to oil and gas industry. Our findings are consistent with previous findings presented in Table IV and show that the existence of independent external assurance and the type of assurer have a positive and significant association with both COVID_*score* and COVID_*dummy*. Overall, findings in Tables V and VI support our hypothesis on the heterogeneity in the impact of assurance and assurance provider on COVID-related disclosures in CSR reports when considering different firms' size and different CSR sensitive industries.

[Table VI about here]

5. SUMMARY AND CONCLUSIONS

The COVID-19 pandemic has been affecting the global economy and adding pressures on companies to commit to their CSR matters during the crisis. Companies are facing challenging decisions regarding their social and ethical behaviour and they will need to respond proactively to protect their employees and customers (Levy, 2020). The independent external assurance of CSR reports helps enhance the transparency and credibility of reported information (Zorio et al., 2013). Companies' willingness to voluntary engage in the independent external assurance is likely to affect the level of COVID-related disclosures in CSR reports. This study investigates the impact of the existence of external assurance and the type of assurer on the disclosure of COVID-related information in CSR reports.

Based on a sample of UK firms that publish their annual reports in 2020, we use a computer-aided textual analysis and use a bag of words to captures the COVID-related information in the CSR section of firm's annual reports. Our findings show that the existence of independent external assurance has a positive and significant association with COVID-

related information measured using both the frequency of words appearing in the reports (COVID_*score*) and a dummy variable (COVID_*dummy*). We also find that when assurance is provided by Big4 accountancy firm, the disclosure of COVID-related information is enhanced. We also divide the sample into large and small firms and find that large companies are more likely to disclose COVID-related information in their CSR reports that are externally assured from a top tier accountancy firm because they have the required resources to cover such cost than smaller firms. We further explore the influence of CSR-sensitive industries on the impact of CSR assurance and assurance provider on COVID-related disclosures, and our results are consistent.

During the COVID-19 pandemic, many companies have been accused of neglecting health risks of workers and customers (Levy, 2020). Corporate managers are responsible for engaging in CSR initiatives that use CSR disclosure choices as an 'insurance-like' protection (Lee, 2020, Stuart et al., 2020) that would emphasise health and community resilience (Levy, 2020). Companies will need to signal their ethical behaviour during the pandemic through CSR disclosures and the voluntary purchase of CSR assurance to mitigate the risks from irresponsible activities (e.g., safety or health issues) and protect their reputation and survival. Even though CSR assurance is still trailing among many companies, smaller companies in particular, due to its voluntary nature and cynicism about its net benefit (Stuart et al., 2020), a company that voluntary undertakes CSR assurance helps enhance perceptions of its ethical culture and intention to make disclosures subject to independent assessments (Stuart et al., 2020).

We recognise the heavy impact of the COVID-19 pandemic on companies' financial resilience and the underlying effect of the current economic crisis on corporate commitments to CSR. Managers will need to assess the costs and benefits of purchasing assurance on CSR disclosures giving the ethical signal that CSR assurance sends to the market and protection

that it covers during negative events (Stuart et al., 2020). Assurance signals a positive ethical culture and removes the burdens otherwise associated with businesses' self-serving motives (Bagnoli and Watts, 2017). From a regulatory perspective, standard-setters and policymakers could consider issuing guidelines and establish reporting regulations for CSR disclosure practices to develop CSR policies in times of crisis. This might increase corporate engagement with CSR and improve sustainable performance. The success of such initiatives however will depend, inter-alia, on the disclosure of credible CSR related information. Our findings may help to inform regulators of the importance of CSR assurance choices in providing protection during the pandemic.

Our paper has a few limitations that provide opportunities for future research. The findings are restricted to UK companies that published their annual reports in the first half of 2020. Future study can expand on the sample size to get an overview of COVID-19 disclosure and capture the changes of reporting practices. Future research can investigate whether new CSR initiatives emerge during the pandemic (Lee, 2020), which will impact on existing CSR disclosures and assurance choices. Finally, research can also supplement our study by conducting interviews with various assurance providers and providing insights into CSR assurance providers' role within particular organisational and institutional settings during or after the pandemic.

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Table 1: Variables Definition

CSR Assurance	= 1 if CSR information is externally assured, 0 otherwise.
CSR Assurance Provider	= 3 if assurance is provided by Big4 accounting firm; 2 if assurance is provided by non-Big4 accounting firm; 1 if assurance is provided by non-accounting firm; 0 if no assurance service is provided
SUSCOM	= 1 if a board level sustainability committee exists, 0 otherwise.
ESG_*perf*	ESG performance composite measure generated from a weighted score of firms' social, environmental and governance indicators from Thomson Reuters' Assets4 (in previous year).
BODSIZE	Number of directors on the board
BODIND	Proportion of independent directors on the board
BODDIV	Proportion of female directors on the board
LEV	Debt to total asset ratio
ROA	Return on assets ratio measured by net income to total assets
TOBINSQ	Sum of firm equity value, book value of long-term debt, and current liabilities divided by total asset
LOSS	An indicator variable equal to one when the current year's net income is negative, and zero otherwise
SIZE	Natural log of total assets
Length	Length of the document measured by the natural log of total number of words in the CSR section
IND	Industry dummy. Grouping industries using the DataStream Industry Classification Benchmark (ICB) Level 1 industries, creating ten groups

Table 2: Descriptive Statistics

Variables	N	Mean	SD	Min	Max
COVID_score	243	1.646091	4.806832	0	40
COVID_dummy	243	0.3333333	0.4723775	0	1
CSR_assurance	243	0.6588235	0.4755051	0	1
Assurance_type	243	0.7613169	0.8817628	0	3
SUSCOM	243	0.7283951	0.4457053	0	1
ESG_perf	242	102.4909	31.30142	28.43861	185.5065
BODSIZE	243	8.584362	2.101771	4	16
BODIND	243	0.6083462	0.1429224	0.125	1
BODDIV	243	0.2843536	0.1001816	0	0.5714286
LEV	243	0.6900631	1.879777	-14.51104	7.844407
ROA	243	0.0473287	0.0864786	-0.4222273	0.4379708
TOBINSQ	243	0.8777013	0.1076318	0.3155324	1.00014
LOSS	243	0.8436214	0.3639636	0	1
TOTAL ASSETS	243	8380000000	30900000000	91100000	295000000000
Readability	243	41.06513	30.05657	-106.8853	248.9067

Variables winsorised to adjust for outliers. Variables are as defined in Table 1.

Table 3: Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
COVID_dummy	1													
CSR_*assurance*	**0.3162**	1												
Assurance_*type*	**0.2910**	**0.7107**	1											
SUSCOM	**0.1178**	0.0268	0.0762	1										
ESG_*perf*	**0.2268**	**0.1630**	**0.1934**	**0.4581**	1									
BODSIZE	0.061	0.0277	**0.1402**	**0.2981**	**0.2572**	1								
BODIND	0.0227	-0.0491	0.0751	0.0731	**0.1929**	0.0312	1							
BODDIV	**0.1310**	-0.0154	0.0534	0.0886	**0.2933**	0.0557	**0.2896**	1						
LEV	0.0506	**0.1317**	**0.1634**	0.0311	-0.0143	-0.0133	0.0044	0.0585	1					
ROA	-0.0654	0.0802	0.006	-0.0769	-0.0278	-0.0092	**0.1127**	**0.1454**	-0.1296	1				
TOBINSQ	-0.1017	0.0752	-0.0113	**-0.2004**	**-0.1643**	**-0.1232**	0.0296	-0.0402	**-0.1117**	0.2145	1			
LOSS	0.0401	0.0165	0.0506	-0.0846	-0.0244	0.0281	**0.1952**	0.1027	-0.0507	**0.6196**	0.0691	1		
SIZE	**0.1496**	0.0936	**0.3103**	**0.3479**	**0.4187**	**0.5547**	**0.1937**	**0.2415**	**0.2049**	**-0.1373**	**-0.2722**	-0.0086	1	
Readability	**0.3369**	0.083	0.0497	-0.0451	-0.0262	-0.0926	-0.039	-0.1026	0.0979	-0.0329	-0.0288	**0.1069**	-0.0234	1

This table reports the Pearson correlation matrix between the variables used in the analyses, where coefficients in bold indicate significance at the 5% level or better. Variables are as defined in Table 1.

Table 4: Regression Results for the Full Sample

	Negative Binomial Regression	Probit Regression
Variables	COVID_*score*	COVID_*dummy*
CSR_*assurance*	**1.2408****	**0.7095****
	[2.21]	[1.98]
Assurance_*Type*	**0.5399*****	**0.5453*****
	[2.69]	[3.03]
SUSCOM	0.0177	0.0655
	[0.04]	[0.22]
ESG_*perf*	0.1323	0.0337
	[1.03]	[0.38]
BODSIZE	0.445	**0.183***
	[0.58]	[1.38]
BODIND	-0.5206	-0.3079
	[-0.48]	[-0.32]
BODDIV	**4.4199****	**4.0573*****
	[2.50]	[3.28]
LEV	-0.0822	**-1.6579****
	[-0.67]	[-2.01]
ROA	-2.416	-2.3803
	[-0.87]	[-1.41]
TOBINSQ	-1.4655	-1.0447
	[-0.83]	[-0.80]
LOSS	-0.0874	-0.0647
	[-0.16]	[-0.14]
SIZE	-0.2068	-0.1661
	[-1.35]	[-1.44]
Readability	**0.0253*****	**0.0172*****
	[5.94]	[2.78]
IND	Included	Included
Intercept	-2.0035	0.046
	[-0.60]	[0.02]
Wald chi2(14)	58.12	45.24
R-squared		0.2819
N	243	243

* p<0.1, ** p<0.05, *** p<0.01. Variables are as defined in Table 1.

Table 5: Additional Analysis: Size Effect

	Large Firms		Small firms	
	Probit	Negative Binomial	Probit	Negative Binomial
Variable	COVID_*dummy*	COVID_*score*	COVID_*dummy*	COVID_*score*
CSR_*assurance*	**1.6097****	**1.6440***	-0.8183	0.6295
	[2.32]	[1.74]	[-0.90]	[0.67]
Assurance_*type*	**0.5394****	**0.5357****	**1.5722***	**0.9736***
	[2.12]	[1.69]	[2.41]	[2.23]
SUSCOM	0.2599	0.0846	0.1895	-0.0855
	[0.45]	[0.13]	[0.33]	[-0.13]
ESG_*perf*	0.1659	0.0937	0.0888	0.1266
	[0.97]	[0.41]	[0.60]	[0.59]
BODSIZE	**0.2761****	**1.7434***	-0.141	-1.0079
	[2.46]	[1.70]	[-0.89]	[-0.71]
BODIND	**-3.9742***	-0.6175	-0.9865	-2.2276
	[-1.85]	[-0.26]	[-0.71]	[-1.41]
BODDIV	**8.6329*****	**7.6670****	**4.3271****	**5.4125****
	[2.87]	[2.55]	[1.99]	[2.03]
LEV	**-4.6852****	-0.0864	0.1558	-0.1124
	[-2.53]	[-0.34]	[0.10]	[-0.55]
ROA	2.8294	4.7873	-2.8594	-4.9788
	[0.51]	[0.89]	[-0.73]	[-1.11]
TOBINSQ	**-6.1620****	**-5.0124***	0.1785	-1.6618
	[-2.27]	[-1.72]	[0.06]	[-0.45]
LOSS	**-1.9117****	**-1.9680****	1.074	1.5782
	[-2.12]	[-2.53]	[1.05]	[1.37]
SIZE	-0.2814	-0.3447	0.4477	0.2266
	[-1.46]	[-1.40]	[1.02]	[0.44]
Readability	**0.0248*****	**0.0318*****	**0.0302***	**0.0239*****
	[3.35]	[4.85]	[1.79]	[3.47]
IND	Included	Included	Included	Included
Intercept	5.6352	2.6575	-14.2716	-8.5895
	[1.21]	[0.43]	[-1.50]	[-0.78]
Wald chi2(14)	44.52	51.11	35.83	32.45
R-squared	0.4103		0.3666	
N	88	88	80	80

* p<0.1, ** p<0.05, *** p<0.01. Variables are as defined in Table 1.

Table 6: Additional Analysis: Industry Effect

Variable	Negative Binomial Regression COVID_score	Probit Regression COVID_dummy
CSR_assurance	**0.7102****	**1.2436****
	[1.97]	[2.22]
Assurance_type	**0.5344*****	**0.5240*****
	[3.00]	[2.62]
SUSCOM	0.0797	0.0373
	[0.27]	[0.09]
ESG_perf	0.0455	0.1386
	[0.51]	[1.08]
BODSIZE	0.0814	0.4819
	[1.38]	[0.63]
BODIND	-0.254	-0.4229
	[-0.27]	[-0.40]
BODDIV	**4.001*****	**4.4272****
	[3.25]	[2.52]
LEV	**-1.6155****	-0.0675
	[-1.97]	[-0.56]
ROA	-2.3715	-2.4689
	[-1.37]	[-0.88]
TOBINSQ	-0.9214	-1.1643
	[-0.73]	[-0.68]
LOSS	-0.0714	-0.1131
	[-0.16]	[-0.20]
SIZE	-0.1674	-0.2118
	[-1.44]	[-1.38]
Flesch	**0.0174*****	**0.0252*****
	[2.84]	[5.94]
Sustainability Sensitive Industries	Included	Included
Wald chi2(14)	59.63	45.85
Intercept	0.7944	-1.2057
	[0.31]	[-0.37]
R-squared		0.2839
N	243	243

* p<0.1, ** p<0.05, *** p<0.01. Variables are as defined in Table 1.

Following Sierra et al. (2013) and assign a value of 1-5 based on firms' CSR-sensitive activities. We assign a value of 1 if the company belongs to technology and telecommunication industry, a value of 2 if the company belongs to consumer services and health care industry, a value of 3 if the company belongs to consumer goods industry, a value of 4 if the company belongs to basic materials, utilities and construction industry, and a value of 5 if the company belongs to oil and gas industry.