

What Drives Firms' Commitment to Fighting Corruption? Evidence from the UK

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Abstract

The recent leak of the FinCEN files has highlighted the widespread presence of corruption in developing and developed economies, including the UK. Accordingly, this study aims to investigate the factors that drive companies to implement measures for preventing corruption in developed countries using FTSE 350 non-financial firms. Specifically, the research examines the influence of corporate social responsibility (CSR) commitments, board structure, and shareholding structure on adopting strategies, policies, and procedures aimed at countering corruption. Drawing upon agency, stakeholder, and legitimacy theories, our empirical evidence supports that CSR commitments and board independence positively influence firms' engagement in anti-corruption measures. Conversely, institutional and managerial shareholdings are found to have a negative association with firms' efforts to combat corruption. In addition, the study shows that the effect of board characteristics became more pronounced following the enactment of the UK Bribery Act 2010, indicating risk-averse behaviour. Various models, including cross-sectional and Two-stage least squares (2SLS), are employed to analyse the data. Our findings have significant implications for understanding the complex relationship between CSR, corporate governance, and the ethical infrastructure of organisations. Ultimately, our results provide valuable insights for policymakers, companies, and other stakeholders in developing effective strategies, policies, and procedures to combat corruption activities.

KEYWORDS Corporate social responsibility, Corporate governance, Corruption fighting, Shareholding structure, Board structure

JEL Classification D7. G34. M14.

1. Introduction

This study explores the influence of organisational sustainable environmental and social commitments, namely CSR reporting, CSR committee, and CSR performance, as well as board structure and shareholding structure, on organisational anti-corruption policies and commitments within developed countries, specifically focusing on the UK. Over the past decade, corruption has garnered global attention and emerged as a growing predicament within the corporate sphere (Branco & Delgado, 2012; Lombardi et al., 2019). Corporate scandals have underscored corruption as a pressing global ethical quandary and a significant societal issue (Aguilera & Vadera, 2008; Blanc et al., 2019; Changwony & Paterson, 2019; Albu et al., 2022). Existing evidence reveals the extensive prevalence of corruption in international business settings (Islam et al., 2018; Qi et al., 2020). It is not confined solely to developing nations or limited to political or economic systems but rather ubiquitously and permanently (Donadelli et al., 2014; Zeume, 2017; Mazzi et al., 2018; Zhang et al., 2018; Changwony & Paterson, 2019; Mazzi et al., 2019; Reichborn-Kjennerud et al., 2019). The leak of the FinCEN files in September 2020, alongside notable corporate scandals in the United States and Europe, serves as a testament to this reality (Wu, 2005; Watson & Hirsch, 2010). According to the 2012 European Commission Special Eurobarometer, 71% of UK citizens perceive corruption as a major concern within their country, with 64% attributing corruption to "business culture". Furthermore, estimates suggest that corruption has an annual cost of approximately EUR 120 billion to the EU economy, equivalent to around 1% of the EU GDP¹.

Corruption, recognised as an unethical and irresponsible social problem (Branco & Delgado, 2012; Lopatta et al., 2017; Islam et al., 2018; Adelopo & Rufai, 2020), has significant negative repercussions on businesses, economies, and society as a whole (Nguyen & van Dijk,

¹ Commission Communication on Fighting Corruption in the European Union. Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0308:FIN:EN:PDF>.

2012; Zeume, 2017; Mazzi et al., 2018; Blanc et al., 2019; Lombardi et al., 2019; Mazzi et al., 2019; Reichborn-Kjennerud et al., 2019)². Corruption, including bribery, leads to destructive consequences such as hampering competition, reducing transparency, impeding human development, diminishing stock returns, deterring foreign investments, and undermining the rule of law. Therefore, it is considered a major impediment to social, political, and economic progress (Hills et al., 2009; Branco & Delgado, 2012; Nguyen & van Dijk, 2012; Reichborn-Kjennerud et al., 2019). From a business perspective, corruption results in increased operational costs, fines, penalties, damage to reputation, competitive disadvantages, and declining productivity (Luo, 2005; Watson & Hirsch, 2010; Donadelli et al., 2014; Islam et al., 2018; Zhang et al., 2018; Cardoni et al., 2020). The profound impact of corruption underscores the urgent need to combat it. Thus, actions must be taken at the regulatory levels of governments, international institutions, and organisations to combat corruption effectively (Watson & Hirsch, 2010; Zhang et al., 2018; Cardoni et al., 2020). Firms have recently started incorporating anti-corruption efforts into their sustainability agendas (Branco & Delgado, 2012; Blanc et al., 2019). Adopting anti-corruption and anti-bribery commitments reflects the ethical orientation of organisations towards safeguarding stakeholder interests and promoting the well-being of the economy and society at large (Islam et al., 2018). In addition, investors typically avoid environments where corruption inflates the cost of business and undermines the rule of law (Hills et al., 2009; Ullah et al., 2019).

At the firm level, managers or employees can perpetrate corruption on their organisations' behalf (Luo, 2005). When firms exhibit low levels of corporate morale and transparency, the incidence of illegal actions tends to increase. To mitigate the risks associated with corruption and illicit behaviour, firms must implement strategies and policies to monitor

² Corruption is an issue that has been investigated in different disciplines, including ethical, social, cultural, economic and political fields (Lopatta et al., 2017; Islam et al., 2018; Agyei-Mensah & Buerthey, 2019; Adelopo & Rufai, 2020); however, in our study, we focus on corruption on the firm level as an ethical/social problem.

and rectify such misconduct. These initiatives should be based on the firm's ethical culture and sustainable structure. Firms engage in CSR activities and disclose their efforts to legitimise their operations and communicate their commitment to being responsible corporate citizens, acting in the best interests of various stakeholders in an ethical and socially responsible manner (Branco & Delgado, 2012; Lopatta et al., 2017; Lu & Abeysekera, 2021). It is important to note that involvement in unethical and corrupt practices negatively impacts a firm's social and ethical reputation (Watson & Hirsch, 2010; Keig et al., 2015). Therefore, CSR is considered a key driver in the fight against corruption at the firm level (Luo, 2005; Branco & Delgado, 2012; Lopatta et al., 2017). Our study aims to investigate the association between CSR commitments, including CSR reporting, CSR committee, and CSR performance, and firms' adoption of anti-corruption policies and activities. To assess firms' dedication to combating corruption, we employ an index of anti-corruption and bribery provisions obtained from the Thomson Reuters ASSET4 database (recently known as the Refinitiv Eikon database). These provisions encompass corporate strategies, policies, and procedures, such as employee training and whistle-blowing systems (see Table 2). Similarly, we use ASSET4 ESG data to measure CSR performance based on average social and environmental scores. Furthermore, we employ two additional indicators to gauge CSR commitments: the issuance of a stand-alone CSR report and the presence of a CSR committee.

Corporate governance (CG) encompasses key dimensions that integrate business ethics, including the cultivation of moral behaviour (Watson & Hirsch, 2010). Among the fundamental principles for good governance practices, accountability and transparency are essential as they serve to fight corruption by imposing constraints on individuals engaged in corrupt activities within the private sector (Wu, 2005; Phiri & Guven-Uslu, 2019). In addition, the composition and effectiveness of board structures, particularly those characterised by independence and diversity, play a significant role in formulating sustainable policies and strategies to combat

bribery and corruption (Lombardi et al., 2019), thereby reducing corruption risk. However, weak CG practices may give rise to information asymmetries and conflicts of interest, exacerbating the propensity for corrupt practices (Watson & Hirsch, 2010).

As a critical governance mechanism, board independence serves as a primary deterrent against opportunistic behaviours exhibited by management. Although managers may be enticed by the immediate gains associated with bribery, it is in the interests of shareholders not to engage in such illicit activities³. Thus, independent and competent boards act as custodians, fortifying management's bargaining power when confronted with corrupt officials (Wu, 2005).

Similarly, institutional shareholders serve as an effective monitoring mechanism to curb managers' opportunistic and risky behaviour, which includes engaging in socially irresponsible and corrupt activities (Ding et al., 2016; Albu et al., 2022; Sarhan & Al-Najjar, 2022). However, a counterargument posits that well-informed institutional investors, equipped with access to a firm's internal information, may not be inclined to support firms in disclosing their ethical activities, including measures to combat corruption (Cho et al., 2013; Baik et al., 2020). Moreover, managerial shareholding aligns the interests of managers with those of shareholders, enhancing firm value and mitigating the likelihood of engaging in high-risk activities such as corruption. In order to bridge the information asymmetry between internal and external investors, firms need to communicate their efforts to combat corruption to external stakeholders (Werner et al., 2019). Within our study, we investigate the impact of board structure (including board size, percentage of female directors, and board independence) and shareholding structure (encompassing internal and external investors) as monitoring mechanisms to mitigate agency conflicts and reduce information asymmetry. These mechanisms encourage firms to adopt and implement anti-corruption policies and measures.

³ Bribery is a subset of corruption which could be a financial or non-financial stimulation to facilitate getting some benefits that could not be obtained without it (Sanyal, 2005; Lopatta et al., 2017).

Several factors drive the current paper. First, previous research has mainly focused on macro-level drivers of anti-corruption activities, including political, economic, and cultural dimensions (Svensson, 2005; Butler et al., 2009). However, an important research gap exists in the literature when investigating firm-level factors (Nguyen & van Dijk, 2012; Donadelli et al., 2014; Lopatta et al., 2017; Blanc et al., 2019; Cardoni et al., 2020; Albu et al., 2022). Therefore, the primary aim of our study is to explore the influence of the firm's social and environmental behaviour, board structure, and shareholding structure on corporate anti-corruption policies and commitments. By focusing on firm-level analyses, we seek to provide a direct understanding of the variations in corruption prevention commitments observed within a specific national context, as conventional country-level research does not offer a direct elucidation of this issue (Nguyen & van Dijk, 2012).

Furthermore, given that firms are recognised as fundamental units implicated in corrupt activities (Luo, 2005), it becomes of significance to shed light on their role in the problem and the potential benefits they could derive from progress towards solutions, as aptly articulated by Branco and Delgado (2012: 360). Second, introducing the Bribery Act in the UK in 2010 played a key role in shaping the attitudes of UK organisations against bribery and corruption. Hence, we aim to empirically investigate the potential effects of this legislation, which could be comparable to similar regulatory frameworks implemented in other developed countries. Notably, an increasing body of literature has emerged focusing on investigating the impact of corruption on firm-level financial policies and profitability within developed market environments (e.g., Amore & Bennesen, 2013; Smith, 2016). Consequently, our findings aim to complement and extend this existing literature by investigating the determinants of anti-corruption commitments within a comparable environment. By doing so, our research endeavours to provide valuable insights that can inform and guide other developed countries

with similar characteristics in terms of low corruption levels and concerted efforts to combat bribery⁴.

We contribute to the existing body of literature by providing empirical evidence from developed countries, employing UK panel data to examine the determinants of corruption prevention policies and commitments. Through the analysis of a large sample of 2007 firm-year observations, our findings establish a robust and statistically significant positive association between firms' social responsibility commitments (as measured by CSR reporting, CSR committee, and CSR score), as well as board independence, and their unwavering dedication to combating corruption. Furthermore, we report a negative impact of managerial and institutional shareholding on firms' commitment to fighting corruption. Our additional analyses shed further light on the main role of large and independent boards in fostering firms' resolve to combat corruption, particularly after the UK Bribery Act 2010. These empirical results suggest heightened risk aversion among boards after the Act's implementation, with institutional investors playing a significantly negative role in influencing anti-corruption measures. Managers' negative influence on corruption-fighting commitment becomes more neutral following the Act. In addition, our investigation reveals a positive effect of the UK Bribery Act 2010 on the fight against corruption, thus highlighting the Act's significance in promoting and strengthening anti-corruption efforts within our context.

This study builds upon prior research and offers distinct contributions to the field. Firstly, it contributes to the literature on corruption fighting, CSR, and CG. By examining the determinants of corporate anti-corruption commitments within the firm's context, our research expands upon the existing body of knowledge (Branco & Delgado, 2012; Lopatta et al., 2017; Islam et al., 2018; Lombardi et al., 2019). This investigation has significant implications for

⁴ According to Transparency International, in 2020, the UK was ranked 11th among 180 countries on the Corruption Perception Index. Canada, Australia and Hong Kong have also achieved the same rank (11th).

policies and procedures promoting corruption prevention in organisations. Secondly, this study potentially represents a new empirical exploration of the influence of CSR commitments, board structure, and shareholding structure on organisational ethical decision-making through active participation in anti-corruption commitments. Thirdly, our research contributes to the literature on corruption-fighting by investigating the impact of implementing anti-corruption and bribery regulations, indexed by the UK Bribery Act 2010, on corporate commitment to combating corruption and the interrelationship between CSR practices, board structure, shareholding structure, and the commitment to fighting corruption.

This paper is organised as follows: Section 2 provides the background on the impact of CG and CSR on anti-bribery commitments and policies. Section 3 introduces the theoretical framework and hypotheses development. Section 4 demonstrates the empirical methodology and the sample selection. Section 5 provides the main results of the regressions. Robustness tests follow this to validate our findings, and finally, Section 6 concludes.

2. Background: The impact of CSR commitments, board structure, and shareholding structure on corruption prevention commitments

Despite the acknowledged significance of CSR and ethical values in business, firms remain primarily concerned with their survival, growth, and attaining returns for their owners (Adegbite et al., 2019). It is common for corporations to rationalise engaging in corrupt practices as necessary for expediting business operations by circumventing bureaucratic delays, incentivising bureaucrats to work more efficiently, or impeding the entry of potential competitors (Wu, 2005; Branco & Delgado, 2012; Nguyen & van Dijk, 2012; Mazzi et al., 2018; Phiri & Guven-Uslu, 2019; Qi et al., 2020). Furthermore, corruption may be viewed as a means for firms to manage pension funds (Zhang et al., 2018) or gain access to foreign markets (Wu, 2005; Zeume, 2017).

On the contrary, corruption can have significant direct and indirect adverse repercussions for businesses and society, impacting the economy as well. Acts of corruption, including bribery, can result in various financial costs, such as operational or transaction costs, inefficiency, and fines; legal expenses arising from accusations, lawsuits, and penalties; social costs such as damage to reputation; and ethical costs manifesting as declining productivity and compromised corporate culture (Luo, 2005; Hills et al., 2009; Watson & Hirsch, 2010; Donadelli et al., 2014; Islam et al., 2018; Zhang et al., 2018; Cardoni et al., 2020). Accordingly, such negative consequences have a detrimental effect on firm performance. Fisman and Svensson (2007) have documented a negative association between bribery payments and firm growth.

Luo (2005) contends that although the short-term benefits of corruption may outweigh the associated costs in a specific transaction, it is improbable for a firm to rely on corruption to achieve sustained abnormal returns in the long run. Consequently, corporations have a vested interest in adopting policies to combat corruption, as they stand to gain significantly from reduced costs, improved operational efficiency, and a positive reputation (Hills et al., 2009; Watson & Hirsch, 2010). Investors and financial markets highly value corporate transparency and social responsibility, and they act against firms that exhibit a lack of corporate responsibility or engage in corrupt practices (Keig et al., 2015). Thus, combating corruption becomes an integral component of firms' strategic sustainable activities aimed at addressing an issue that impacts the well-being of the firms themselves and society (Hills et al., 2009; Branco & Delgado, 2012).

Corporate social responsibility encompasses various voluntary initiatives companies undertake that address various economic, social, and environmental aspects (Branco & Delgado, 2012). While scholarly attention on CSR predominantly centres around its connection to performance (e.g., Rowley & Berman, 2000; Alsaifi et al., 2020), it is also plausible for

companies to engage in CSR practices driven by moral or ethical considerations without strictly strategic rationale (Becchetti et al., 2012). Recent corporate scandals like the BP oil spill and Volkswagen's fuel emissions scandal indicate irresponsible and non-transparent business conduct. These scandals have had adverse effects on the market value of the respective companies involved. The market reactions observed in these cases underscore the significance of business ethics and corporate responsibility to investors and markets (Becchetti et al., 2012; Ullah et al., 2019). Consequently, CSR initiatives may contribute to addressing ethical practices and combating corruption (Luo, 2006).

Corporate governance aims to enhance a firm's efficiency, promote growth, and instill investor confidence. Consequently, firms are motivated to adopt good governance practices to augment their value (Watson & Hirsch, 2010). Conversely, corruption can impede firm growth through various channels, as elucidated by Luo (2005), including cost, punishment, risk, and image effects. Therefore, firms that embrace effective governance mechanisms are more inclined to combat corruption. Watson and Hirsch (2010) conclude that inadequate CG fosters corporate corruption, as weak governance mechanisms give rise to agency conflicts and information asymmetry. Similarly, Ullah et al. (2019) provide empirical evidence suggesting that a weak regulatory environment and deficient CG tools heighten an organisation's ethical vulnerability.

The level of discretion granted to individual managers within a company, which can be influenced by factors such as the monitoring role of the board of directors (e.g., board size, board independence, and gender diversity), directly impacts the potential for corrupt behaviour by these individuals (Watson & Hirsch, 2010). Consequently, effective boards can help mitigate opportunistic behaviours by management by limiting the bargaining power of managers when engaging in corrupt practices (Wu, 2005). Additionally, institutional shareholders serve as an efficient monitoring mechanism to curb opportunistic and risky

behaviour, including corruption and other socially irresponsible activities (Ding et al., 2016; Albu et al., 2022; Sarhan & Al-Najjar, 2022). Managers with a personal stake in the company are more likely to be motivated to enhance firm value and avoid engaging in illegal and risky activities, including corruption (Werner et al., 2019; Saona et al., 2020).

This study empirically investigates the influence of CSR commitments, board structure, and shareholding structure on the anti-corruption policies and commitments of listed firms in the UK. The UK, along with other common law countries, is renowned for its robust institutional and legal frameworks, which provide a conducive environment for investor protection (La Porta et al., 1998). Notably, it was among the pioneering countries to endorse the OECD Anti-Bribery Convention in 1997. As a result, the UK enacted the Bribery Act 2010 and the Criminal Finances Act 2017 to reinforce the governance systems governing corporate activities (Mukwiri, 2015). These acts impose penalties on corporate offences related to failing to prevent bribery.

Consequently, affected firms must establish anti-bribery strategies and policies, encompassing proportionate procedures, top-level commitment, risk assessment, due diligence, communication and training, and monitoring and review. It is important to highlight the enduring tradition of anti-corruption legislation in the UK, predating the recent Bribery and Corruption Acts of 2010 and 2017. Among these legislative measures are the Public Bodies Corrupt Practices Act of 1889, the Prevention of Corruption Acts of 1906 and 1916, and the Anti-Terrorism, Crime, and Security Act of 2001. Consequently, the UK presents an interesting setting for exploring the factors that drive corporate anti-corruption commitments. The insights gained from such investigations have potential implications for other developed countries operating within a comparable regulatory environment in their fight against corruption.

3. Theoretical framework and hypotheses development

This paper investigates the impact of CSR commitments, board structure, and shareholding structure on the ethical infrastructure of organisations, specifically in relation to corruption prevention. The study adopts a multi-theoretical framework encompassing agency, stakeholder, and legitimacy theories to provide a robust analytical lens for examining these relationships.

The actions and behaviours of managers, including their involvement in corruption or anti-corruption efforts, can be analysed through the lens of agency theory, which examines the relationship between managers (agents) and shareholders (principals). Shareholders delegate authority to managers to run the firm on their behalf. The inherent conflict of interest between managers and shareholders incentivises managers to prioritise their own interests by utilising incomplete contracts and information asymmetry rather than acting in the best interests of shareholders. To protect their personal gains and privileges, managers may engage in corrupt activities in the short term, which may temporarily boost firm performance. However, such actions can expose the firm to legal repercussions and damage its reputation in the long run (Wu, 2005). Managers may also engage in bribery of public officials to establish personal connections and obtain personal benefits (Donadelli et al., 2014).

As a result, corruption leads to agency costs as managers pursue their own interests at the expense of shareholder interests. Watson and Hirsch (2010) argue that ineffective CG exacerbates information asymmetry, thereby contributing to corruption. Similarly, Donadelli et al. (2014) find that agency conflicts are heightened in industries sensitive to corruption. Therefore, the agency problem can be viewed as an ethical dilemma for managers, as they are inclined to prioritise their own interests, and CG mechanisms serve to mitigate this agency problem. Accordingly, board structure (including board size, board independence, and the representation of female directors) and shareholding structure (including managerial and

institutional shareholdings) could play key roles in controlling ethical issues, given that ethical choices are often made within the agent-principal relationship (Ullah et al., 2019). In this study, we examine how board structure and shareholding structure, as monitoring mechanisms, influence organisations' adoption of anti-corruption measures.

The stakeholder theory emphasises the imperative for organisations to uphold socially ethical practices to gain acceptance within the societies in which they operate (Gray et al., 1995). Diverse stakeholders, from employees and customers to shareholders and the broader society, demonstrate a vested interest in corporate social performance, business ethics, and social relationships (Bellucci et al., 2019; Werner et al., 2019). By actively combating corruption, firms demonstrate their commitment to corporate citizenship and social responsibility. This aspect holds particular significance for large publicly listed firms, such as those found in the FTSE 350, due to their extensive stakeholder network compared to smaller enterprises (Reverte, 2009). Consequently, stakeholders exhibit heightened vigilance in monitoring fraud and corrupt practices within these larger firms. Notably, the disclosure of CSR, including comprehensive CSR reports, effectively fosters transparent and meaningful dialogue between firms and their stakeholders, thereby mitigating information asymmetry and fostering trust (Cormier & Magnan, 2007; Bellucci et al., 2019).

Drawing on legitimacy theory, organisations must secure alignment between their business activities and societal goals to maintain ongoing operations (Islam et al., 2018). Consequently, firms' behaviour is influenced by the perceptions of external stakeholders regarding the compatibility of their decisions with societal expectations (Helfaya & Moussa, 2017; Li & Haque, 2019). The ramifications of corruption extend beyond individual firms, impacting other organisations, markets, and society. In this context, legitimacy theory offers valuable insights into why firms that actively engage in ethical, social, and environmental initiatives are more inclined to adopt anti-corruption policies to reinforce their legitimacy and

public standing (Watson & Hirsch, 2010; Islam et al., 2018). Consequently, we posit that societal and cultural values, as manifested through CSR reports, committees, and performance, are key in driving corruption prevention efforts. The development and implementation of robust anti-corruption measures promote ethical conduct and serve as a strategic tool for enhancing a firm's public legitimacy (Waldman et al., 2006; Rodriguez-Dominguez et al., 2009).

To comprehensively examine the determinants of corruption prevention practices, we adopt a multi-theoretical approach encompassing agency, stakeholder, and legitimacy theories. By integrating these complementary frameworks, our study offers a broader and more robust foundation for exploring the intricate relationships between CSR commitments, board structure, shareholding structure, and anti-corruption initiatives. In the subsequent sections, we delve into the intricacies of these relationships and present our empirical findings.

3.1 CSR commitment

Stakeholder theory suggests that firms must consider the interests of various stakeholders, as their support directly impacts firm performance (Freeman, 1984). Socially responsible firms are known to disclose more information regarding their CSR practices, which in turn enhances stakeholders' trust, reduces transaction costs, and mitigates uncertainty related to financial performance (Siegel & Vitaliano, 2007; Cho et al., 2013; Lu & Abeysekera, 2021). Engaging in corrupt activities signifies a breach of a firm's social responsibility (Werner et al., 2019), and it is argued that firms resort to corrupt and unethical behaviour when their CSR commitment is inadequate and weak (Watson & Hirsch, 2010). Therefore, we propose that firms with a strong CSR commitment are less likely to engage in corrupt activities, thereby demonstrating their dedication to fighting corruption.

Although in the short term corruption may offer benefits in specific deals (e.g., granting privileges and bonuses to managers), it is unlikely to lead to sustainable competitive advantages or abnormal profits in the long term (Luo, 2005; Donadelli et al., 2014). Thus, firms with a sustainable CSR strategy have incentives to implement anti-corruption policies to enhance the firm's long-term value and to communicate these initiatives to external parties. Building a moral reputation through involvement in anti-corruption activities can attract stakeholders such as suppliers, customers, and distributors, thereby reducing information asymmetry and transaction costs resulting from repeated interactions over the long term (Luo, 2005; Cho et al., 2013).

Corruption has significant negative consequences not only for businesses but also for society. As a result, companies have recently started incorporating the fight against corruption into their social responsibility agendas (Branco & Delgado, 2012; Blanc et al., 2018). Consequently, a robust CSR disclosure can assist firms in combating corrupt activities (Luo, 2005). By actively implementing measures to prevent corruption, a company conveys a clear external message that it does not tolerate corruption and upholds its responsibility towards society (Watson & Hirsch, 2010). In other words, socially responsible firms are more likely to be motivated to combat corruption due to its potential adverse effects on society (Werner et al., 2019). Lopatta et al. (2017) examine the association between CSR performance and the firm-related risk of corruption and find a negative link between CSR commitment and the risk of firm corruption. Thus, based on the extant theoretical and empirical literature, we hypothesise that:

H1a: Organisational corruption prevention commitment is positively associated with CSR performance.

Firms have shown an increased interest in disclosing their CSR practices through standalone reports encompassing social and environmental information (Helfaya & Moussa, 2017). CSR reports indicate a firm's commitment to CSR and enhance its ethical image (Dhaliwal et al., 2012). By engaging in social and environmental reporting, companies can effectively address reputational damage and foster strong relationships with diverse stakeholders (Helfaya & Moussa, 2017; Bellucci et al., 2019). Consequently, CSR reporting is crucial to reducing information asymmetry (Wu, 2005; Watson & Hirsch, 2010; Bellucci et al., 2019). Dhaliwal et al. (2012) argue that a standalone CSR report provides investors with the necessary information to assess a firm's social responsibility. Therefore, we propose the following hypothesis:

H1b: Organisational corruption prevention commitment is positively associated with issuing a standalone CSR report.

Organisations establish CSR committees to address ethical, social, and environmental concerns, achieve CSR objectives, and demonstrate an unwavering commitment to diverse stakeholders. The empirical studies conducted by Peters and Romi (2014) and Helfaya and Moussa (2017) delve into the key role played by CSR committees, whether they possess a symbolic or substantial nature, in shaping environmental performance and disclosure practices. These investigations reveal that CSR committees contribute significantly to mitigating litigation costs and reputational risks, ultimately influencing the level of environmental disclosure. Consequently, a CSR committee within an organisation may serve as a powerful incentive for firms to publicly demonstrate their steadfast dedication to combating corruption. Based on these empirical insights, our hypothesis is:

H1c: Organisational corruption prevention commitment is positively associated with the existence of a CSR committee.

3.2 Board structure

Board size is a critical CG mechanism that has been linked to various firm activities and performance outcomes. A larger board size may result in reduced coordination among members, thereby diminishing the board's overall effectiveness (Jensen, 1993). Conversely, smaller boards foster better teamwork, improving discussions and decision-making processes (Lipton & Lorsch, 1992; Saona et al., 2020). Drawing on agency theory, prior studies have argued that board size negatively affects corporate fraud prevention (Chen et al., 2006). Ullah et al. (2019) have reported that firms facing ethical vulnerability issues tend to have larger boards than control firms within their sample. Similarly, Garcia-Sanchez et al. (2015) suggest that boards consisting of 15 members or more may hinder the monitoring process and reduce firms' commitment to business ethics.

Furthermore, Donadelli et al. (2014) argue that larger boards are more likely to have directors in direct contact with public officials, increasing the likelihood of engaging in corrupt activities. This indicates that larger boards may exhibit less efficiency in monitoring activities and fail to engage in comprehensive discussions regarding the ethical implications of a firm's operations and decisions. Consequently, we propose the following hypothesis:

H2a: Organisational corruption prevention commitment is negatively associated with board size.

The UK Corporate Governance Code (FRC, 2016) recommends that at least half of the board should consist of independent directors. Independent directors are expected to display a stronger commitment to achieving long-term financial returns that enhance sustainability (Helfaya & Moussa, 2017). Agency theory suggests that independent directors serve as more effective monitors of management as they are driven to maintain their reputation as decision-control specialists (Fama & Jensen, 1983; Saona et al., 2020). Independent directors control

management and minimise ethical issues or corruption (Watson & Hirsch, 2010; Donadelli et al., 2014; Ullah et al., 2019). Board independence reduces information asymmetry between insiders and stakeholders (Lander & Auger, 2008). Lambsdorff (2007) argues that board independence is positively associated with reporting corrupt issues.

Prior research suggests that including independent directors on the board decreases the likelihood of corporate fraud (Chen et al., 2006). Likewise, Garcia-Sanchez et al. (2015) find that independent directors support the implementation of ethical codes. Similarly, Donadelli et al. (2014) suggest that independent directors mitigate corruption risks, particularly in corruption-sensitive industries. Building upon the above discussions and grounded in agency theory assumptions, we propose the following research hypothesis:

H2b: Organisational corruption prevention commitment is positively associated with board independence.

Board gender diversity has gained significant recognition as a fundamental CG measure in the UK (FRC, 2016; Helfaya & Moussa, 2017). The CG literature emphasises that male and female directors possess distinct perceptions concerning ethical issues (Ibrahim et al., 2009; Saona et al., 2020; Cimini, 2022). Simga-Mugan et al. (2005) find that female directors are more sensitive to corporate ethical matters than their male counterparts. For example, Deshpande et al. (2000) argue that female directors are more likely to perceive questionable business practices (and issues) as unethical when compared to male directors. Moreover, Landry et al. (2016) contend that female directors make substantial contributions to boards on ethical, social, and environmental practices. Female directors prioritise stakeholder interests and display greater concern for ethical and social issues, supporting CSR initiatives and ethical activities (Landry et al., 2016; Cimini, 2022). Additionally, it is argued that female directors are sensitive to potential reputational losses. This inclination may incentivise female directors

to avoid ethical risks and engage in sustainable activities proactively (Srinidhi et al., 2011). Therefore, we propose the following hypothesis:

H2c: Organisational corruption prevention commitment is positively associated with the percentage of female directors on the board.

3.3 Shareholding structure

In the past three decades, institutional investors have emerged as the dominant stakeholders in the corporate ownership landscape of the UK (Aguilera et al., 2006; Ivanova, 2017). This rise to prominence can be attributed to key developments such as the influential Cadbury Committee report in 1992 and subsequent recommendations by the Myners Review in 2001 (Mallin et al., 2005). Furthermore, the 2000 Pension Act mandates pension funds to account for social, environmental, and ethical considerations when formulating investment portfolios. Consequently, institutional investors in the UK have demonstrated a heightened interest in assessing firms' ethical, social, and environmental activities (Aguilera et al., 2006).

One of the key characteristics distinguishing UK institutional investors from their counterparts in other countries, notably the United States, is their inclination to retain shareholdings over extended periods. This deliberate long-term investment strategy facilitates robust monitoring, meticulous scrutiny, and closer engagement with boards and top-level management (Black & Coffee, 1994). As a result, institutional investors in the UK are inclined to adopt a comprehensive and forward-thinking perspective when evaluating the risks and returns associated with their portfolio companies, thereby mitigating strategic risks (Black & Coffee, 1994; Cox et al., 2004; Oh et al., 2011). Fundamentally, UK institutional investors conscientiously consider financial risks and potential rewards as decisive factors informing their investment decisions.

It is argued that investing in socially irresponsible and corrupted firms may be inefficient due to the higher risk exposure these firms face in terms of regulatory and legal actions. As a result, institutional investors are expected to prevent firms from engaging in risky behaviour, such as corruption, by exercising their monitoring power over managerial decisions (Ding et al., 2016; Albu et al., 2022). In this context, institutional investors have the potential to achieve similar returns but with lower risk when they invest in socially and ethically responsible firms (Oh et al., 2011). This argument is supported in the CSR literature, where institutional ownership is consistently reported to be positively associated with ethical practices, sustainability, and CSR activities (e.g., Cox et al., 2004; Mallin et al., 2013).

On the contrary, institutional investors are presumed to possess greater access to social and ethical information about firms than other shareholders (Cho et al., 2013; Baik et al., 2020). As a result, well-informed institutional investors can be viewed as instrumental in disseminating detailed and timely information regarding a firm's social and ethical performance through their trading activities (Cho et al., 2013). Therefore, institutional investors may not exhibit significant interest in firms disclosing their social and ethical activities. Furthermore, institutional fund managers may be compelled to demonstrate improved results more frequently due to the linkage between their compensation and quarterly performance (Graves & Waddock, 1994). This circumstance can lead to a preference for short-term return strategies and projects, irrespective of ethical concerns.

Especially in emerging markets and countries where corruption prevails without significant penalties, it is argued that bribery can facilitate entrepreneurs' entry into new markets by establishing informal associations with public officials (Branco & Delgado, 2012; De Jong et al., 2012). Karpoff et al. (2015) further contend that the benefits of engaging in bribe-paying contracts can outweigh the reputational costs, direct and indirect, except in corporate fraud cases. Consequently, firms adopting measures to combat corruption may face

a competitive disadvantage compared to their rivals (Zeume, 2017). In essence, the decline in firm competitiveness among companies combating bribery due to the loss of lucrative business opportunities and the additional costs associated with reorganising their operations to comply with corruption prevention measures suggests that institutional shareholders may exhibit reluctance to encourage firms to incorporate such measures.

Furthermore, Desender and Epure (2021) and Sarhan and Al-Najjar (2022) argue that CSR activities, including efforts to combat corruption, may be perceived as non-value-added management expenditures in the short term. Consequently, institutional shareholders are motivated to monitor management's opportunistic behaviour that may not contribute significantly to the firm's value enhancement, particularly in "liberal markets" such as the UK. In line with the mixed empirical and theoretical literature, the following hypothesis is proposed:

H3a: Organisational corruption prevention commitment is significantly associated with institutional shareholdings.

Internal investors constitute a group of shareholders who actively participate in the organisation and operations of the company, including implementing anti-corruption measures (Wu, 2005). Managers may be tempted to engage in corrupt activities to gain bonuses or any other rewards, as they may perceive them to enhance short-term company performance. Consequently, managers may be enticed to offer bribes to public officials in exchange for personal benefits and to establish relationships with corrupt individuals (Wu, 2005; Donadelli et al., 2014). Bureaucratic controls can diminish managers' inclination to combat corruption (Werner et al., 2019). Moreover, internal shareholding aligns managers' interests with those of other shareholders who aim to increase company value (Teshima & Shuto, 2008; Saona et al., 2020).

Given that corrupt activities can potentially yield short-term financial gains (Pinto et al., 2008), it is plausible to expect a negative association between internal shareholding and corruption prevention measures (Werner et al., 2019). In addition, an information asymmetry exists between internal and external shareholders due to the former's superior and earlier knowledge of current corporate affairs (Cho et al., 2013). Consequently, internal shareholders can transfer the burden of financial difficulties or corporate corruption onto external shareholders by selling their shares before publicly disclosing such matters (Wu, 2005; Watson & Hirsch, 2010).

However, managers may adopt anti-bribery policies to maintain investor trust in a sustainable business environment. According to Werner et al. (2019), managers with a positive stance against corruption will evaluate corruption prevention measures favourably and recognise the valuable opportunities associated with them. These opportunities may include meeting legal requirements in the country of operation (e.g., UK regulations) and fulfilling stakeholders' expectations. Furthermore, firms are encouraged to communicate their anti-bribery efforts to investors to minimise the information asymmetry between internal and external investors. In line with the inconclusive empirical and theoretical literature, we propose the following hypothesis:

H3b: Organisational corruption prevention commitment is significantly associated with institutional and managerial shareholdings.

4. Research design

4.1 Methodology

Our sample is based on firms listed on the UK FTSE 350 (FTSE 250 and FTSE 100) from 2002 to 2016. The FTSE 350 is one of the well-known stock market indices that includes the largest 350 publicly listed firms in the UK. Corporate social responsibility studies in the UK have

focused on companies listed on the FTSE100 and FTSE350 because these companies fairly reflect the UK's economic and CSR performance (Helfaya & Moussa, 2017; Alsaifi et al., 2020; Sarhan & Al-Najjar, 2022). Data on board structure, shareholding structure, CSR commitments, anti-corruption measures, and financial variables were collected from Thomson Reuters ASSET4 and DataStream (recently known as Refinitiv Eikon). Following recent literature (Helfaya & Moussa, 2017; Lopatta et al., 2017; Adegbite et al., 2019; Sarhan & Al-Najjar, 2022), we employ the ASSET4 scores, as these are comprehensive datasets on corporate social, environmental, and governance information that cover UK firms. DataStream (Eikon Refinitiv) provides ESG data starting from 2002, and the data collection was completed in 2017, whereas the latest year provided is 2016. Similar to previous studies, financial firms were excluded from our sample because these companies are subject to different regulations and financial rules (Lopatta et al., 2017; Agyei-Mensah & Buerthey, 2019). Therefore, out of 350 publicly listed companies, we exclude 121 financial firms and 28 firms with insufficient data. This leaves us with a final sample of 201 non-financial firms to run our models (see Table 1 for more information about sample selection and composition). Based on the availability of anti-corruption measures, CSR commitments, board structure, shareholding structure, and control variables, the final sample consists of 2007 firm-year observations, starting with 45 firm-year observations in 2002 to 191 firm-year observations in 2016, with a clear positive trend in the number of observations until the end of the period of our analysis.

Please insert Table 1 about here

4.2 Model

We employ different regression models in our analysis. The standard errors are robust at time and the cross-section units. We also controlled for endogeneity issues in our regression models. We allow firms to freely enter and exit our sample during the investigated period to avoid any

survivorship bias. Our models are also corrected for any possible problem related to multicollinearity or survival bias. Our main regression equation is as follows⁵:

$$CPC_{it} = \alpha_0 + \beta_1 CSRC_{it} + \beta_2 CSRR_{it} + \beta_3 CSRS_{it} + \beta_4 BSIZE_{it} + \beta_5 BIND_{it} + \beta_6 BDIV_{it} + \beta_7 ISHR_{it} + \beta_8 MSHR_{it} + \beta_9 FSIZE_{it} + \beta_{10} ROE_{it} + \beta_{11} LEV_{it} + \beta_{12} LIQ_{it} + \beta_{13} IDUM_{it} + \beta_{14} YDUM_{it} + \varepsilon_{it} \quad (1)$$

Where CPC refers to corruption prevention commitments, when firms disclose their strategies, policies and procedures against corruption and bribery activities. CSRC is the existence of a CSR committee. CSRR refers to stand-alone CSR reports. CSRS refers to the CSR score. BSIZE refers to board size. BIND is board independence. BDIV is female directors' percentage. ISHR and MSHR refer to the percentage of stocks owned by institutions and insiders, respectively. Control variables include firm size (FSIZE), profitability (ROE), leverage (LEV), liquidity (LIQ), industry dummies (IDUM) and year dummies (YDUM). Table 2 summarises the operational definition of these variables.

The finance literature exploring the “*cause and effect*” of financial decisions including CSR and CG might suffer from endogeneity. In their seminal work, Wintoki *et al.* (2012) argue that it is generally difficult to find exogenous factors in such studies. Hence, we have used lagged board structure and shareholding structure variables as our instruments in the 2SLS models, as this is a common practice in the CG literature (Li *et al.*, 2021). We also empirically tested the validity of our instruments using the Sargan test (reported in our tables), providing evidence that such instruments do satisfy the required conditions related to exogeneity. Additionally, we noted the Shea's partial R-squared in our tables.

Please insert Table 2 about here

⁵ Similar to previous studies in corruption literature, we use ordinary least squares (OLS) as our main model. For example, Lopatta *et al.* (2017) uses OLS to investigate the effect of both CSR performance and financial constraints on firm-level corruption risk.

4.3 Variables measurement

To measure the corruption prevention commitment, we use ASSET4 assessment data of anti-bribery provisions for 15 years (2002-2016). The anti-bribery provisions consist of seven indicators that show a firm's commitment against corruption, including strategies, policies and procedures to combat corruption such as employee training and whistle-blowing systems (Table 2). ASSET4 records "Yes" or "No" for each indicator so that we assign the value of one to "Yes" and zero to "No". All values are summed up from zero to seven. A higher score in anti-bribery provisions means better anti-bribery management. Other past studies have created/used indices to measure anticorruption disclosure/commitment. For example, Blanc et al. (2019) use an un-weighted anti-corruption index containing 13 categories which was provided by Transparency International in 2012. Blanc et al. (2019) examine the relationship between cultural secrecy and disclosures of anti-corruption efforts by 105 large multinational firms in 2011, included in the Transparency International report in 2012 "Transparency in Corporate Reporting: Accessing the World's Largest Companies". Lopatta et al. (2017) create their corruption score by using content analysis of firms' disclosure in their annual reports. They used a list of key words that reflected the risk of corrupt activities. Their analysis is limited to a sample of the 79 largest publicly listed multinational firms for a 6-year period between 2007 and 2012. Therefore, our study contributes to corruption literature by using different measures of corruption at the firm-level, which is based on the well-known and extensively used ASSET4 Datastream database (Lopatta et al., 2017; Desender & Epure, 2021). Other past studies create corruption scores using content analysis (e.g., Lopatta et al., 2017), which suffers content analysis measurement bias that could affect its reliability and validity (Sarhan & Ntim, 2018). Additionally, the Transparency International 2012 index was used to create scores for a certain number of the largest multinational firms (105 listed companies) for a short period of time between 2012 and 2014. Therefore, this index cannot be reused on

different datasets. Notably, the corruption at a firm level is difficult to measure as it is a complex concept (Lopatta et al., 2017). Therefore, we use an index that shows firms' commitment to engaging in activities and policies against corruption. In other words, we do not claim that our index shows the effectiveness of anti-corruption activities, yet it is more about disclosing such activities to the outside stakeholders. Corruption fighting mechanisms are used to reduce systematic risk. However, there is material debate about their effectiveness (Adelopo & Rufai, 2020).

The first group of independent variables is related to CSR practices/commitments. This paper uses three proxies to measure CSR practices including: (i) the issuance of a stand-alone CSR report, (ii) the existence of a CSR committee, and (iii) CSR score. Consistent with previous studies, we use stand-alone CSR reports, existence of a CSR committee and CSR score as measures for CSR commitment. Firm issuance of CSR reports and/or having CSR committees can indicate a strong commitment towards being more socially responsible, and hence are keener on fighting corruption. For example, Helfaya & Moussa, (2017) use CSR strategy score, board CSR orientation, CSR committee and stand-alone CSR report as proxies for the board's CSR strategy and orientation. Similarly, Lopatta et al. (2017) employ social and environmental scores, a firm's presence in a sustainability index and a stand-alone CSR report, to measure CSR performance/commitment. The second group of independent variables is board structure (size, independence and percentage of female directors) and shareholding structure (institutional and managerial shareholdings).

We control for different firm-specific factors that could influence organisational ethical practices. Following other studies, we control for firm size, measured as the natural log of total assets (Donadelli et al., 2014; Helfaya & Moussa, 2017; Lopatta et al., 2017). Smaller firms are keen to survive and grow rather than being perceived as good citizens (Amato & Amato, 2007). They also have limited resources to adopt a code of ethics (Aguilera & Vadera, 2008).

Thus, we expect a positive relationship between firm size and commitment to fighting corruption. We also control for profitability, measured as return on equity (ROE) (Helfaya & Moussa, 2017; Lopatta et al., 2017; Agyei-Mensah & Buerter, 2019). Firms' financial performance plays a key role in understanding business and ethical behaviours (Ullah et al., 2019). We expect a positive relationship between firm profitability and fighting corruption.

Firm leverage (LEV) is also added to our models measured as the ratio of total debt to total assets (Lopatta et al., 2017; Agyei-Mensah & Buerter, 2019). Higher leverage will encourage firms facing financial constraints to avoid the risk of severe penalties due to pressure from debtholders. Therefore, companies with greater monitoring pressure from external debtholders are expected to experience a significant increase in anti-corruption measures. Liquidity (LIQ) is measured by current assets divided by total assets (Lopatta et al., 2017; Agyei-Mensah & Buerter, 2019). We expect a negative relationship between liquidity and commitment to fighting corruption as liquidity may facilitate bribery payment. Previous studies observed that some industries are corruption sensitive (Donadelli et al., 2014). Thus, we controlled for industry classification (IDUM) and years (YDUM) (Donadelli et al., 2014; Helfaya & Moussa, 2017).

5. Results and discussion

5.1. Descriptive statistics

Table 3 presents the summary statistics for our full sample of firms, including the anti-corruption measures and other variables. The results indicate that the average corruption prevention commitments (CPC) value is 37.65%. Our findings reveal that the average commitment to combating corruption in our sample is relatively lower compared to previous studies. For instance, Blanc et al. (2019) report an average anti-corruption disclosure level of 69.23% for the 105 largest publicly listed companies included in the Transparency International

report in 2012. The disparity in average CPC values between our study and previous research could be attributed to differences in firm size. Furthermore, the summary statistics show that 68.89% of the sampled firms have a standalone CSR report, 63.88% have a CSR committee, and the average CSR score is 65.47%, indicating a relatively strong commitment to CSR among the sampled firms. These mean values align reasonably well with Helfaya and Moussa's (2017) findings, which reported mean values of 74.75% for stand-alone CSR reports and 68.75% for CSR committees. In terms of board characteristics, the average board size is 9.53, with a majority of independent directors (66.25%). Female directors represent 12.85% of the total board size. These board characteristics statistics are consistent with previous studies that utilise board size, gender diversity, and board independence as explanatory variables (e.g., Helfaya and Moussa, 2017; Alsaifi et al., 2020). Lastly, institutional and insider shareholders hold an average of 10.65% and 5.21% of the shares, respectively. These ownership statistics are reasonably comparable to the existing literature on CG and shareholding structures (e.g., McKnight & Weir, 2009; Elmagrhi et al., 2020).

Please insert Table 3 about here

We also report the correlation matrix in Table 4, and the results show no high-bivariate correlations among the variables and hence multicollinearity is not a problem.

Please insert Table 4 about here

5.2. Regression Results

Table 5 presents the results of our cross-sectional time series model with clustered standard errors (we cluster for firms and control the year effects in our model and hence our standard errors are robust at time and the cross-section units). We use the OLS method in Models 1 to 4 where we include time and industry dummies to control any unobserved effects not captured in our models. Models 1 and 3 include the CSR standalone report (CSRR), Models 2 and 3

include the CSR committee (CSRC), and Model 4 includes the CSR performance (CSRS). The results in Models 1 to 4 indicate that there is a positive significant association between the standalone CSR report (CSRR), CSR committee (CSRC), CSR performance (CSRS) and the corruption prevention commitment (CPC). This result is consistent with *H1a*, *H1b*, and *H1c*, indicating that firms with high CSR performance, CSR reports and CSR committees are more committed to anti-corruption activities. Consistent with stakeholder and legitimacy theories, our findings indicate that socially responsible organizations are committed to fighting corruption to be accepted and to legitimise their operations within their societies. Additionally, our results support the findings of past papers which document the effect of CSR commitments on minimising corporate corruption risk (e.g., Lopatta et al., 2017).

Please Insert Table 5 about here

As regards board structure, we find evidence for a positive association between board independence (BIND) and anti-corruption commitments (Models 1 to 4), supporting *H2b*. This result is consistent with the agency theory and supports the arguments of previous studies that independent directors are an effective governance tool (Watson & Hirsch, 2010; Donadelli et al. 2014; Ullah et al., 2019) and thus encourage firms to commit to fighting corrupt activities. The coefficients of board size (BSIZE) and percentage of female directors (BDIVE) are not found to be significant, and hence *H2a* and *H2c* are not supported, suggesting that board size and gender diversity are not among variables which affect corporate decisions related to fighting corruption. Our results are consistent with past papers which report an insignificant effect of board size and/or percentage of female directors on corruption/anti-corruption activities (e.g., Chen et al., 2006; Ullah et al., 2019). Possible reasons for these results could be that large boards and/or high percentage of female directors are reluctant to incorporate corruption prevention measures, which could involve additional implementation costs and may negatively affect their business.

From an ownership structure's point of view, the results in Table 5 show that both institutional shareholding (ISHR) and insiders' shareholding (MSHR) are negative and significantly related to anti-corruption commitments (CPC). These results are consistent with *H3a and H3b*, which expect a significant association between shareholding structure and commitment to fighting corruption. This supports the view that both institutional and insider investors have more information that helps in their monitoring role than other shareholders. Therefore, they are less interested in disclosing their commitment to fighting corruption. Our findings are consistent with previous studies which find a negative effect of institutional and/or insiders' ownership on voluntary disclosure (e.g., Baik et al., 2020) and CSR performance (Desender & Epure, 2021; Sarhan & Al-Najjar, 2022). Our findings may also indicate that bribery-fighting companies could face a decline in firm competitiveness due to the loss of profitable business, and the additional cost of reorganising their business to comply with the applied corruption prevention measures (Zeume, 2017; Werner et al., 2019). This suggests that institutional and internal shareholders may be reluctant to encourage firms to incorporate corruption prevention measures.

Additionally, with regard to our control variables, we find that there is a positive association between firm size (FSIZE) and anti-corruption activities (CPC). This might indicate that large firms have enough resources to invest in anti-corruption activities and policies. Therefore, large firms are more likely to fight corruption. They usually have a large customer base and geographically dispersed operations. Thus, they are more likely to be exposed to greater scrutiny (Saiia et al., 2003), which drives them to avoid being involved in corrupted activities and disclosing more commitment to fighting corruption and therefore gaining a positive public image (Amato & Amato, 2007; Lopatta et al. 2017). Blanc et al. (2019) document an insignificant effect of firm size on anti-corruption disclosure.

To control for any possible endogeneity issue, we re-estimate our main equation using the 2SLS method. The tests for endogeneity show some evidence of endogeneity in our board structure and shareholding structure factors. We use lagged endogenous variables as instruments⁶. The results are reported in Models 5 to 8 of Table 5. Our findings for the CSR activities/commitments show that there is a positive significant effect of our three CSR practices on inducing firms to engage in anti-corruption activities. These findings are consistent with the previous literature and our reported findings using the OLS method reported in models 1 to 4 of Table 5. As regards the board characteristics, we report similar results for board independence and, thus, we argue that independent boards are key governance tools to encourage managers to fight corruption. As for ownership structure, we report similar findings as reported in Models 1 to 4 of Table 5, and hence we suggest that institutional investors and managerial owners are negatively associated with corporate efforts to fight corruption.

Considering control variables, Models 5 to 8 of Table 5 show that large firms (FSIZE) and firms with high levels of leverage (LEV) are more likely to fight corruption, consistent with our predictions. However, the coefficients of profitability (ROE) and liquidity (LIQ) variables are insignificant in all modules presented in Table 5. These results are consistent with past studies (e.g., Lopatta et al., 2017; Blanc et al., 2019), indicating profitability and liquidity are not among the determinants of corporate decisions to incorporate corruption fighting measures in our sample. Possible reasons for these results could be that firms with high levels of profitability and liquidity are not keen to incorporate corruption prevention measures which could involve additional implementation costs and may negatively affect their business.

⁶ Similar to other studies incorporating CG as independent variables (Elmagrhi et al., 2020), statistics show some evidence of endogeneity in the reported models and hence the 2SLS models were used in this study. Using one year lagged board structure and shareholding structure variables as instruments is a commonly used practice due to the difficulty of finding right instruments for such variables. Studies such as Wintoki et al. (2012) and Hoechle et al. (2012) have recommended such an approach when using board structure and shareholding structure variables. Our instruments are valid as the Sargan test is not statistically significant.

Accordingly, our findings highlight the significant role of CSR activities and performance in promoting a commitment to combatting corruption. Specifically, our study reveals that firms with a strong CSR performance, characterised by the issuance of CSR stand-alone reports and the establishment of a dedicated CSR committee, are more inclined to embrace business ethics and actively engage in anti-corruption efforts, as compared to socially irresponsible firms. Furthermore, we posit that the implementation of effective governance practices, such as board independence, can further enhance a firm's commitment to fighting corruption. On the other hand, our research indicates that the presence of insider and institutional investors has a detrimental impact on organizational commitment to combating corruption. Notably, our findings remain robust even when controlling for potential endogeneity issues.

5.3. Additional Analysis and Robustness Checks

First, the UK bribery Act 2010 adopts a broad definition of the criminal offences of bribery (such as bribing others, being bribed, as well as bribing a foreign public official). The Bribery Act changes the basis for corporate criminal liability from focusing on personnel misconduct within the firm to focusing on the quality of the system governing the company's activities (Mukwiri, 2015). The Act enforces fines on corporate offenses for failing to prevent bribery. Section 9 of the Bribery Act 2010 asks the Secretary of the state to disclose guidance related to anti-bribery procedures. The Bribery Act also requires affected firms to create anti-bribery strategies and policies.

In a study based on a sample of US firms over the period from 1992-2014, Zalata et al. (2018) examine the effect of female CEOs on earnings management (extent of classification shifting) before and after the passage of the Sarbanes-Oxley (SOX) Act. They report that classification shifting by female CEOs declined following the passage of the SOX Act,

suggesting that female CEOs are more risk-averse, but less ethically sensitive than their male counterparts. Therefore, we argue that the Bribery Act 2010 may have an influence on the attitude of firms' CSR activities, board characteristics and ownership structure in fighting bribery and corruption. We report the results in Table 6.

Please insert Table 6 about here

The results show that CSR commitments' coefficients (CSR performance, CSR standalone report and CSR committee) are positive and significant before and after introducing this act. Based on our analysis, it can be concluded that socially responsible firms consistently demonstrate ethical behaviour and a strong commitment to combatting corruption, regardless of the presence of legislations that specifically require firms to address corruption. This suggests that companies with a robust CSR framework, characterised by high environmental and social performance scores, the issuance of a dedicated CSR standalone report, and the establishment of a CSR committee, are more likely to exhibit a heightened dedication to fighting corruption, regardless of the legal context in which they operate. Furthermore, our findings indicate that board size and independence play a significant and positive role, particularly following the implementation of the Bribery Act 2010, in the efforts to combat corruption. It appears that after the enactment of the Act, boards are more inclined to demonstrate their commitment to fighting corruption, possibly due to increased awareness and risk aversion. Furthermore, the findings presented in Table 6 reveal a negative impact of institutional investors on anti-corruption measures, which becomes more pronounced following the enactment of the Act (Models 5 and 6). This observation aligns with the argument put forth by Zeume (2017) that anti-corruption regulations may put UK firms at a disadvantage compared to their competitors. Consequently, institutional shareholders may be inclined to discourage corporate commitment to fighting corruption. However, the negative influence of managers investors on the commitment to combat corruption becomes more neutralised after

the Act. This suggests that the Bribery Act 2010 has an important role in mitigating the self-opportunistic behaviour exhibited by insider owners. Additionally, we introduce a dummy variable to represent the period following the Act (Models 9 to 12). The results presented in Models 9 to 12 are consistent with our previous models and demonstrate a significant positive effect of the dummy variable on the commitment to fighting corruption, highlighting the significance of the Bribery Act 2010 in the fight against corruption.

Second, we further investigate the effect of CSR commitments, board structure and shareholding structure on corruption prevention commitments when corporate corruption risks differ. Prior empirical studies indicate that corruption prevention infrastructure is influenced by the level of corruption risk in companies (Donadelli & Persha, 2014; Donadelli et al., 2014). Our study follows the Donadelli et al.'s (2014) approach, which classified "corruption-sensitive industries" based on the stronger relationship between corruption and financial performance in such industries. Thus, we re-run Equation 1 by splitting our sample into high-corruption sensitive industries (HCSI) (consumer services, oil and gas and technology) and low-corruption sensitive industries (LCSI). Results reported in Table 7 show a positive significant relationship between the existence of CSR report (CSRR), CSR performance (CSRS), board independence (BIND) and firm adoption of anti-corruption commitment (CPC) in both high and low-corruption sensitive industries. However, there is some evidence of the positive effect of the CSR committee (CSRC) and board size (BSIZE) on corruption fighting commitment only in low corruption sensitive industries. One possible reason for this result is that, in developed countries, non-government organizations and the media may provide more effort to monitor high corruption sensitive industries (Islam et al. 2018). Furthermore, there is limited evidence that female directors have a positive influence on corporate efforts to fight corruption in high corruption sensitive industries, while they are neutral in low corruption-sensitive industries. This suggests that female directors tend to avoid risks in high-corrupted industries by

supporting firm corruption fighting policies. Finally, we report a negative effect of ownership structure variables in both high and low corruption sensitive industries.

Please insert Table 7 about here

Third, past papers have documented a positive effect of executive compensation structure as a governance mechanism on firm CSR performance (Hong et al. 2016; Sarhan & Al-Najjar, 2022). Therefore, we investigate the possible impact of connecting executive compensation to a firm's environmental, social and governance (ESG) performance (ESGCOMP) on commitment to fighting corruption. We therefore re-run Equation 1 after including ESGCOMP as an independent variable. We measure ESGCOMP as a dummy variable. It takes one if executive compensation is connected to the firm's ESG performance and zero otherwise. The results reported in Models 9 and 10 of Table 7 show no significant impact of connecting executive compensation to ESG performance (ESGCOMP) on anti-corruption measures. This means other board structure measures (e.g., board independence) and shareholding structures (e.g., managerial and institutional shareholdings) could be more effective in directing corporate commitment to fighting corruption compared to connecting executive compensation to ESG performance. One plausible explanation for this finding is that executives may struggle to fully grasp the ultimate impact of combatting corruption on the broader economy and society.

Fourth, some previous studies found that different dimensions of CSR activities may have different effects on corporate behaviours (e.g., Laguir et al., 2015). Therefore, we run different models representing social (SOCS) and environmental (ENVS) scores and a dummy variable (CSRDUM) to represent high commitment to CSR activities (higher "one" and lower "zero" than the median of the CSR score, which is the average of the two CSR dimensions; social and environmental scores). We report the results in Table 8 and our main variables of interest are ENVS, SOCS, and CSRDUM. The results show that all these variables are

positively and significantly associated with the commitment to fighting corruption. Therefore, these results are consistent with our previous findings. The findings in Table 8 indicate that fighting corruption is linked with different dimensions/pillars (i.e., Social and Environmental) of the CSR.

Please insert Table 8 about here

Finally, we run different models with different board structure factors as dummy variables for the majority of board independence (takes one if more than 50% of the board is independent directors and zero otherwise) and the presence of female directors (takes one if there are female directors on the board and zero otherwise). The findings were similar to the reported results and thus, for parsimony, we do not report these models in our paper. Therefore, it is worth noting that our results are robust after controlling for possible endogeneity issues.

6. Discussion and Conclusion:

This paper contributes to the limited empirical literature on combating corruption at the firm level within the context of developed countries. By analysing a sample of listed firms on the UK FTSE 350, we aim to enhance the understanding of various organisational-level factors determining a firm's commitment to fighting corruption, which is a crucial step in addressing this issue.

Using a dataset of 2007 UK firm-year observations across different non-financial industries, we provide new evidence on the relationship between CSR practices, board structure, shareholding structure, and the commitment to fighting corruption in publicly listed firms in the UK. Our findings demonstrate a significantly positive influence of CSR performance, the issuance of stand-alone CSR reports, and the presence of a CSR committee on a firm's commitment to combating corruption. Furthermore, independent directors play a critical role as a governance tool in encouraging firms to fight corruption. Additionally, we

observe a negative association between shareholders, both institutional and insider, and the commitment to fighting corruption.

Moreover, we investigate the impact of the UK Bribery Act 2010 before and after its passage. Our results suggest that larger boards and independent directors are more risk-averse than ethically sensitive when fighting corruption. Furthermore, following the enactment of the UK Bribery Act 2010, the negative impact of institutional investors on anti-corruption measures becomes more significant, while the negative influence of managers on corruption-fighting commitments becomes more neutral. We also find a positive and significant effect of the UK Bribery Act 2010 on fighting corruption.

This study contributes to the literature in several meaningful ways. First, it adds to the existing research on corruption, CSR, and CG by examining the determinants of corporate anti-corruption commitments within the firm's domain. This research has important implications for policy-making procedures to promote corruption prevention in firms. Second, to our knowledge, this is the first study to empirically investigate how board structure, shareholding structure, and CSR commitments can influence organisational ethical decisions through engagement in anti-corruption commitments. Third, our paper explores the effect of the UK Bribery Act 2010 on the corporate commitment to fighting corruption and the interrelationship between CSR practices, board structure, shareholding structure, and the commitment to fighting corruption.

Our findings have practical implications for firms, regulators, policymakers, and society. Building upon the CSR and CG literature, our results encourage firms emphasise on CSR practices and adopt effective governance mechanisms, as these actions can help in the fight against corruption. By doing so, firms can mitigate the detrimental effects of unethical activities on their own operations, the economy, and society. Similarly, our findings indicate that implementing corruption-fighting regulations encourages firms to incorporate anti-

corruption strategies, procedures, and policies. Additionally, we highlight the positive effect of board size and independence, as well as the neutralised effect of managerial shareholdings, on a firm's commitment to fighting corruption, particularly after the enactment of the UK Bribery Act 2010. Therefore, regulators and policymakers in other countries are encouraged to introduce similar corruption-fighting regulations to mitigate the negative consequences of corruption on the economy and society. Various stakeholders, including society itself, who are interested in corporate efforts to combat corruption, can appreciate firms' commitments to social responsibility, as evidenced by their CSR performance, the presence of a CSR committee, and the publication of stand-alone CSR reports, as well as board structure (precisely, board independence) and shareholding structure (both managerial and institutional) in influencing a firm's commitment to fighting corruption.

Similar to previous CSR, CG and corruption literature, this study has some limitations. First, we used one country to investigate anti-corruption activities. Other studies can use cross-country analysis, including emerging markets to add additional insights into our knowledge of factors impacting firm-level anti-corruption activities. In addition, our sample consists of large firms (FTSE 350). More studies are needed to examine anti-corruption efforts in the area of SMEs. We also analysed the available data related to board structure and shareholding structure. However, other studies can investigate other mechanisms, such as CEO characteristics (e.g., tenure, experience and age), to enrich our understanding of factors influencing firm-level anti-corruption activities. Finally, future studies are invited to create different firm-level anti-corruption measures and compare them with our index and other past papers' measures (e.g., Lopatta et al. 2017; Blanc et al. 2019) to enhance the validity of the corruption prevention measures and, thus, the results.

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Table 1: Sample selection and composition

	Number of firms
UK FTSE 350 firms	350
Less:	
Financial firms	121
Less:	
Companies with missing CPC, CSR, board structure and shareholding structure data	28
Total final sample	201
Industry	
Basic materials	19
Consumer goods	27
Consumer services	61
Health care	14
Industrials	55
Oil and gas	8
Technology	6
Telecommunications	5
Utilities	6
Total final sample	201

Table 2: Summary of variables and measures

Dependent variable	
CPC	The anti-corruption commitment score is constructed with seven indicators related to anti-bribery/corruption provisions, which are collected from ASSET4. The indicators are 1) whether the company mentions public commitment to avoid bribery and corruption at the senior management and the board level, 2) states anti-bribery and anti-corruption in its code of conduct, 3) has internal management tools over bribery and corruption like whistle blowing systems, or hotlines, 4) has a policy to withstand bribery and corruption in its business transactions, 5) communicates relevant issues with employees at the organizational processes, 6) has relevant employee trainings, and 7) whether the company is a signatory of the "Partnering Against Corruption Initiative (PACI)" from the World Economic Forum. ASSET4 records "Yes" or "No" for each indicator so that we assign the value of one to "Yes" and zero to "No". All values are aggregated and the total score ranges from zero to seven; scaled to a value between 0% and 100%
Independent variables	
CSRC	A dummy variable that takes one if a CSR committee exists and zero otherwise
CSRR	A dummy variable that takes one if the company issues a stand-alone CSR report and zero otherwise
CSRS	Corporate social responsibility score which is the average of two CSR dimensions; social and environmental scores.
BSIZE	The total number of board members at the end of the fiscal year
BIND	The percentage of non-executive board members
BDIV	The percentage of women on the board of directors
ISHR	The percentage of total shares owned by investment banks or institutions. In general, only holdings of 5% or more are counted as strategic
MSHR	The percentage of total shares owned by employees, or by those with a substantial position in a company
Control variables	
FSIZE	Natural log of book value of total assets
ROE	The percentage of net income / average of last year's and current year's common equity
LEV	The percentage of total debt / total assets
LIQ	The percentage of current assets / total assets
YDUM	Dummies for the years 2002 to 2016 inclusive
IDUM	Dummies for each of the nine main industries: basic materials; oil and gas; industrial; customer goods; customer services; health care; technology; utilities and telecommunication

Table 3: Summary of descriptive statistics of all variables

Variable	Mean	Std. Dev.	Min	25%	75%	Max
CPC	37.646	31.174	0.000	0.000	100	100
CSRR	68.887	46.307	0.000	0.000	100	100
CSRC	63.876	48.048	0.000	0.000	100	100
CSRS	65.469	23.590	8.145	49.130	85.805	97.785
BSIZE	9.532	2.553	4.000	8.000	11	21
BIND	66.251	12.455	25.000	57.140	75	100
BDIV	12.854	10.893	0.000	0.000	20	62.5
ISHR	10.653	11.875	0.000	0.000	18	70
MSHR	5.206	13.675	0.000	0.000	1	77
FSIZE	14.782	1.534	9.943	13.100	15.310	19.746
LEV	24.941	17.332	0.000	10.100	34.85	99.201
ROE	16.828	38.881	-98.240	6.050	29.020	99.970
LIQ	38.672	21.454	0.000	24.310	54	99.821

Variables are defined in Table 2.

Table 4: Correlation matrix

	CSRR	CSRC	CSRS	BSIZE	BIND	BDIV	ISHR	MSHR	FSIZE	LEV	ROE	LIQ
CSRR	1											
CSRC	0.502***	1										
CSRS	0.493***	0.489**	1									
BSIZE	0.102***	0.173***	0.348***	1								
BIND	0.265***	0.22***	0.231***	0.164***	1							
BDIV	0.296***	0.267***	0.293***	0.135***	0.22***	1						
ISHR	-0.321***	-0.299***	-0.159***	-0.090***	-0.237***	-0.228***	1					
MSHR	-0.038***	-0.027	-0.212***	-0.122***	0.022	-0.101***	-0.133***	1				
FSIZE	0.327***	0.399***	0.597***	0.572***	0.359***	0.244***	-0.250***	-0.065***	1			
LEV	0.037*	0.088***	0.111***	0.073***	0.043***	0.084***	-0.044*	0.003***	0.196***	1		
ROE	-0.028	-0.010	-0.044**	-0.026	-0.001***	0.0174	-0.001	-0.004	-0.107***	-0.021**	1	
LIQ	-0.064***	-0.084***	-0.084**	-0.168***	-0.140***	-0.067***	0.132***	0.039***	-0.298***	-0.420***	0.045***	1

Variables are defined in Table 2; *** p<0.01, ** p<0.05, * p<0.1.

Table 5: OLS and 2SLS regression results

Model	OLS				2SLS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CSRR	0.142*** (0.026)		0.125*** (0.025)		0.140*** (0.015)		0.126*** (0.0151)	
CSRC		0.092*** (0.022)	0.065*** (0.021)			0.081*** (0.013)	0.054*** (0.013)	
CSRS				0.005*** (0.001)				0.005*** (0.000)
BSIZE	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.0017 (0.004)	0.004 (0.003)	0.004 (0.003)	0.0036 (0.0031)	0.004 (0.003)
BIND	0.003*** (0.000)	0.001*** (0.000)	0.003*** (0.000)	0.002** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.004*** (0.000)	0.003*** (0.001)
BDIV	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	-0.001 (0.000)
ISHR	-0.001** (0.000)	-0.002** (0.000)	-0.001** (0.000)	-0.001** (0.000)	-0.005*** (0.001)	-0.004*** (0.001)	-0.005*** (0.000)	-0.003*** (0.001)
MSHR	-0.002** (0.000)	-0.002** (0.001)	-0.002** (0.0008)	-0.001 (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001*** (0.000)
FSIZE	0.064*** (0.009)	0.066*** (0.009)	0.058*** (0.009)	0.033*** (0.009)	0.055*** (0.005)	0.058*** (0.005)	0.051*** (0.005)	0.028*** (0.005)
LEV	0.038 (0.072)	0.035 (0.076)	0.029 (0.070)	0.035 (0.066)	0.089** (0.035)	0.085** (0.036)	0.077** (0.035)	0.070** (0.034)
ROE	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.0001)	0.001 (0.001)
LIQ	0.013 (0.058)	0.018 (0.060)	0.007 (0.059)	-0.031 (0.058)	0.037 (0.031)	0.044 (0.031)	0.0311 (0.030)	-0.011 (0.029)
Constant	-1.060*** (0.145)	-1.099*** (0.152)	-0.988*** (0.152)	-0.892*** (0.141)	-0.976*** (0.105)	-1.032*** (0.108)	-0.925*** (0.106)	-0.876*** (0.099)
YDUM	Included	Included	Included	Included	Included	Included	Included	Included
IDUM	Included	Included	Included	Included	Included	Included	Included	Included
Observations	2,007	2,007	2,007	2,007	1,786	1,786	1,786	1,786
R-squared	0.550	0.538	0.556	0.597	0.532	0.520	0.537	0.259
Sargan Test					0.197	0.170	0.216	0.400

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; Variables are defined in Table 2. For our IV models, the first stage Shea's partial R-squared for the instrumented variables are high (than the reported R-squared in the Table), with the highest around 0.84 for managerial ownership and lowest is for board independence of around 0.55 with one exception in institutional ownership that has around 0.22 in our models, showing that our instruments are valid.

Table 6: Regression results after and before the passage of the UK Bribery Act 2010

Model	After 2010		Before 2010		After 2010		Before 2010		2010 dummy			
	OLS		OLS		2SLS		2SLS		OLS		2SLS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
CSRR	0.165*** (0.050)		0.085*** (0.022)		0.147*** (0.0258)		0.105*** (0.0201)		0.123*** (0.0255)		0.126*** (0.0151)	
CSRC	0.102*** (0.035)		0.036 (0.022)		0.086*** (0.020)		0.0358* (0.0194)		0.065*** (0.021)		0.054*** (0.013)	
CSRS		0.006*** (0.001)		0.002*** (0.000)		0.006*** (0.000)		0.003*** (0.001)		0.004*** (0.000)		0.004 (0.000)
DUM2010									0.193* (0.105)	0.247** (0.105)	0.176** (0.082)	0.248*** (0.078)
BFSIZE	0.007 (0.007)	0.006 (0.006)	-0.003 (0.004)	-0.003 (0.004)	0.010** (0.004)	0.009** (0.004)	-0.005 (0.005)	-0.004 (0.004)	0.002 (0.004)	0.001 (0.004)	0.003 (0.003)	0.003 (0.003)
BIND	0.003** (0.001)	0.003*** (0.001)	0.001* (0.000)	0.001 (0.000)	0.005*** (0.000)	0.004*** (0.000)	0.002** (0.000)	0.001* (0.001)	0.002*** (0.000)	0.002*** (0.000)	0.003*** (0.000)	0.003*** (0.000)
BDIV	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.001)	0.001 (0.001)	-0.001 (0.001)	0.001 (0.000)	-0.001 (0.000)
ISHR	-0.002* (0.001)	-0.002 (0.001)	-0.001* (0.000)	-0.001 (0.000)	-0.005*** (0.002)	-0.004*** (0.001)	-0.006** (0.003)	-0.004* (0.002)	-0.001** (0.000)	-0.001* (0.000)	-0.004*** (0.001)	-0.003** (0.001)
MSHR	-0.0005 (0.001)	0.001 (0.000)	-0.003*** (0.000)	-0.002*** (0.001)	-0.001* (0.000)	0.001 (0.000)	-0.004*** (0.001)	-0.003*** (0.000)	-0.001** (0.000)	-0.001 (0.000)	-0.002*** (0.000)	-0.001*** (0.000)
FBSIZE	0.049*** (0.012)	0.016 (0.011)	0.064*** (0.011)	0.050*** (0.013)	0.039*** (0.007)	0.011 (0.0074)	0.061*** (0.010)	0.048*** (0.010)	0.058*** (0.001)	0.033*** (0.009)	0.051*** (0.005)	0.029*** (0.005)
LEV	-0.004 (0.082)	0.015 (0.072)	0.034 (0.068)	0.043 (0.070)	0.049 (0.047)	0.036 (0.043)	0.070 (0.058)	0.078 (0.057)	0.028 (0.070)	0.035 (0.066)	0.077** (0.035)	0.069** (0.033)
ROE	0.001 (0.000)	0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	-0.001 (0.001)	-0.001 (0.001)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)
LIQ	0.012 (0.081)	-0.043 (0.078)	-0.002 (0.064)	-0.016 (0.064)	0.048 (0.042)	-0.015 (0.040)	0.015 (0.049)	-0.004 (0.048)	0.006 (0.059)	-0.031 (0.058)	0.0311 (0.031)	-0.013 (0.029)
Constant	-0.752*** (0.215)	-0.574*** (0.191)	-0.932*** (0.200)	-0.887*** (0.207)	-0.711*** (0.160)	-0.566*** (0.147)	-0.789*** (0.218)	-0.899*** (0.141)	-0.996*** (0.153)	-0.899*** (0.141)	-0.925*** (0.106)	-0.903*** (0.100)
YDUM	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
IDUM	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Observations	1,024	1,024	835	835	969	969	673	673	2,007	2,007	1,786	1,786
R-squared	0.474	0.563	0.451	0.466	0.449	0.528	0.429	0.457	0.558	0.599	0.537	0.582
Sargan Test					0.7037	0.217	0.8010	0.465			0.215	0.232

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; DUM2010 is a dummy variable that takes one for years after 2010 and zero otherwise; other variables are defined in Table 2. For our IV models, the first stage Shea's partial R-squared for the instrumented variables are high, with the highest around 0.92 for managerial ownership and lowest is for board independence of around 0.55 with one exception in institutional ownership that has around 0.35 in our models, showing that our instruments are valid.

Table 7: Regression results for high and low corruption sensitive industries and ESG related compensation

Model	HCSI		LCSI		HCSI		LCSI		ESGCOMP	
	OLS				2SLS				OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CSRR	0.118*** (0.0317)		0.132*** (0.037)		0.122*** (0.023)		0.132*** (0.0201)			
CSRC	0.036 (0.029)		0.086*** (0.028)		0.017 (0.0220)		0.077*** (0.017)			
CSRS		0.004*** (0.000)		0.005*** (0.000)		0.003*** (0.000)		0.005*** (0.000)		
ESGCOMP									-0.009 (0.022)	-0.005 (0.013)
BFSIZE	-0.001 (0.004)	-0.001 (0.005)	0.004 (0.007)	0.006 (0.006)	-0.001 (0.004)	-0.001 (0.003)	0.010* (0.005)	0.012** (0.005)	0.001 (0.000)	0.002 (0.003)
BIND	0.003** (0.001)	0.002** (0.001)	0.002* (0.001)	0.002 (0.001)	0.004*** (0.001)	0.00431*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.0031*** (0.001)	0.004*** (0.000)
BDIV	0.002 (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.002*** (0.000)	0.001 (0.001)	-0.001 (0.000)	-0.001 (0.000)	0.001 (0.001)	0.001 (0.000)
ISHR	-0.003* (0.001)	-0.002 (0.001)	-0.001 (0.001)	-0.001 (0.000)	-0.006*** (0.002)	-0.004** (0.002)	-0.004** (0.001)	-0.003** (0.001)	-0.002** (0.001)	-0.004*** (0.001)
MSHR	-0.001 (0.001)	-0.001 (0.001)	-0.002** (0.001)	-0.001 (0.001)	-0.001** (0.000)	-0.001 (0.000)	-0.002*** (0.000)	-0.001** (0.000)	-0.001** (0.000)	-0.002*** (0.000)
FSIZE	0.065*** (0.014)	0.043*** (0.015)	0.052*** (0.012)	0.023* (0.012)	0.057*** (0.009)	0.038*** (0.009)	0.041*** (0.008)	0.015* (0.008)	0.074*** (0.000)	0.063*** (0.006)
LEV	-0.008 (0.114)	-0.021 (0.118)	0.068 (0.094)	0.083 (0.078)	0.043 (0.059)	0.016 (0.057)	0.132*** (0.045)	0.127*** (0.042)	0.079 (0.100)	0.133*** (0.041)
ROE	0.001 (0.000)	0.0002 (0.0002)	-0.001 (0.001)	-0.001 (0.0002)	0.001 (0.000)	0.0002 (0.001)	-0.001 (0.000)	-0.001 (0.000)	0.015 (0.000)	0.012 (0.000)
LIQ	0.014 (0.084)	-0.033 (0.086)	0.004 (0.084)	-0.020 (0.078)	0.011 (0.050)	-0.040 (0.049)	0.052 (0.041)	0.021 (0.038)	0.0207 (0.069)	0.034 (0.037)
Constant	-0.899*** (0.223)	-0.703*** (0.217)	-0.946*** (0.202)	-0.870*** (0.187)	-0.769*** (0.173)	-0.720*** (0.166)	-0.869*** (0.142)	-0.824*** (0.133)	-1.233*** (0.156)	-1.171*** (0.116)
YDUM	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
IDUM	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Observations	747	747	1,260	1,260	668	668	1,118	1,118	1,459	1,287

R-squared	0.545	0.565	0.546	0.604	0.535	0.559	0.513	0.571	0.554	0.544
Sargan Test					0.545	0.268	1.10	1.134		1.83

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; ESGCOMP is a dummy variable the takes one if executive compensation is connected to firm's ESG performance and zero otherwise; other variables are defined in Table 2. For our IV models, the first stage Shea's partial R-squared for the instrumented variables are high, with the highest around 0.82 for managerial ownership and lowest is for board independence of around 0.52 with one exception in institutional ownership that has around 0.19 in our models, showing that our instruments are valid.

Table 8: Regression results for different CSR dimensions and CSR dummy variable

Model	OLS			2SLS		
	(1)	(3)	(3)	(4)	(5)	(6)
ENVS	0.003*** (0.000)			0.003*** (0.000)		
SOCS		0.004*** (0.000)			0.004*** (0.000)	
CSR DUM			0.176*** (0.020)			0.168*** (0.012)
B SIZE	0.001 (0.004)	0.002 (0.004)	0.001 (0.004)	0.002 (0.003)	0.005* (0.003)	0.004 (0.003)
BIND	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.003*** (0.000)
B DIVE	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.000)	-0.001 (0.000)	0.001 (0.000)
ISHR	-0.001** (0.000)	-0.001** (0.000)	-0.001** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003** (0.001)
MSHR	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.001)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.001)
F SIZE	0.043*** (0.009)	0.040*** (0.009)	0.047*** (0.008)	0.038*** (0.005)	0.034*** (0.005)	0.041*** (0.005)
LEV	0.052 (0.072)	0.021 (0.064)	0.045 (0.074)	0.090*** (0.034)	0.062* (0.034)	0.085** (0.034)
ROE	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)
LIQ	-0.028 (0.058)	-0.001 (0.058)	-0.012 (0.056)	-0.007 (0.030)	0.016 (0.029)	0.005 (0.030)
Constant	-0.956*** (0.144)	-0.972*** (0.138)	-0.889*** (0.141)	-0.917*** (0.102)	-0.950*** (0.101)	-0.868*** (0.103)

YDUM	Included	Included	Included	Included	Included	Included
IDUM	Included	Included	Included	Included	Included	Included
Observations	2,007	2,007	2,007	1,786	1,786	1,786
R-squared	0.575	0.590	0.577	0.558	0.571	0.562
Sargan Test				0.065	0.554	0.145

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; ENV5 is the environmental score, SOCS is the social score, and CSRDUM is a dummy variable that takes one if CSR score is higher than the median of the sample's CSR score and zero otherwise; other variables are defined in Table 2. For our IV models, the first stage Shea's partial R-squared for the instrumented variables are, with the highest around 0.83 for managerial ownership and lowest is for board independence of around 0.54 with one exception in institutional ownership that has around 0.21 in our models, showing that our instruments are valid.