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ORIGINAL RESEARCH

Does risk management moderate the relationship between CEO power and corporate philanthropy?

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Abstract
By integrating upper echelons, agency, and stakeholder theories, we examine the relationship between CEO power and charitable cash donations. Utilizing a novel hand-collected dataset from the UK's insurance industry, our focus lies particularly on how risk management influences this relationship. We find that CEO power is positively related to charitable giving. However, alternative risk mitigation strategies play a moderating role in the CEO power-donations relationship, suggesting that in firms with alternative risk management strategies, CEOs are less likely to advocate for corporate giving as a method to mitigate business risks. Our results are robust to various endogeneity checks and alternative measures of CEO power. Our paper enriches the comprehension of the motives driving corporate philanthropy.

Keywords CEO power · Philanthropy · CSR · Risk management · Insurance

JEL G22 · G32 · G34

1 Introduction

The motives driving corporate social responsibility (CSR) activities continue to be a subject of great scholarly interest in the finance and management literature (e.g., Deng et al. 2013; Krüger 2015; Masulis & Reza 2015). Hambrick & Mason (1984, p. 193) emphasize that the outcomes of organizations reflect the values and cognitive biases of influential individuals. Ozgen et al. (2024) highlight CEO power as an interdisciplinary concept

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used to elucidate corporate strategic choices and financial outcomes. Unsurprisingly, recent scholarly attention has focused on examining the role played by Chief Executive Officers (CEOs) in CSR decision-making (e.g., Hong & Kostovetsky 2012; Di Giuli & Kostovetsky 2014; McCarthy et al. 2017). In our study, we contribute to this research stream by investigating the impact of CEO power on corporate philanthropy—a distinct form of CSR,[1] while focusing on how risk management strategies interact with CEO power to effectively undermine the 'CSR-as-insurance' function of charitable donations.

Philanthropy is perhaps the most interesting CSR activity of a firm, as it is an important form of discretionary corporate expenditure and involves real cash spending that would otherwise belong to shareholders (e.g., Brammer & Millington 2004 & 2005). Despite the growing literature on CSR, relatively few studies have examined the motives behind philanthropy. In this regard, our research responds directly to the calls of researchers, such as Koh et al. (2014) and Muller et al. (2014), for greater clarity on the boardroom motives for, and intervening firm-specific controls on, the making and implementation of corporate philanthropy. In addition, our work is driven by the recognition that firms' actual CSR expenditures serve as a tangible demonstration of their commitment to CSR activities and contain valuable information. However, despite the significance of such real cash spending, there has been a limited number of studies within the broader CSR literature that have examined this aspect (Bose et al. 2020).[2] In contrast, the CSR disclosure or ratings which are often employed in the literature, do not necessarily capture a company's genuine dedication to engaging in CSR initiatives (e.g., Gao et al. 2016).[3]

There are two main competing views on why organizations donate cash to philanthropic causes. One prevailing view, based on agency theory, considers philanthropy as a self-interested managerial perquisite (e.g., Barnard 1997). Consistent with this view, Masulis & Reza (2015) find that in the United States (US) corporate sector, charitable giving is negatively associated with firm value, suggesting that corporate donations are a significant agency cost for shareholders. Masulis & Reza (2023) further argue that corporate giving distorts investment and financing decisions of a firm. An alternative view, drawing from the stakeholder theory, considers philanthropy as a tool that top executives use to achieve multiple strategic goals. For example, Brammer & Millington (2005) describe corporate giving as a reputation management mechanism, while Lev et al. (2010) find that corporate giving enhances revenue growth by increasing customer satisfaction.

Research grounded in Hambrick & Mason's (1984) upper echelons theory suggests that corporate policies are influenced by the personality traits of the Chief Executive Officer (CEO), such as his/her political ideology (e.g., Chin et al. 2013) and narcissistic or hubristic nature (e.g., Tang et al. 2015; Petrenko et al. 2016). Integrating aspects of upper echelons, agency, and stakeholder theories, we argue that the above two incentives for corporate giving coexist in firms with powerful CEOs. According to agency theory, powerful CEOs are more likely to act opportunistically, and therefore, overspend on donations to enhance their public reputations as socially responsible corporate citizens.[4] Nonetheless, in addition to the private benefits

[1] By specifically focusing on corporate philanthropy, we avoid measurement issues such as those relating to the weightings assigned to composite CSR indices.

[2] Lys, Naughton and Wang (2015) use the ASSET4 social and environmental score as a proxy for CSR expenditure. The environmental capital expenditure used by Clarkson, Li and Richardson (2004) is based on firms from the US pulp and paper industry only. Bose, Saha and Abeysekera (2020) study the value relevance of the CSR expenditure using a sample of Bangladeshi banks.

[3] The limited number of studies on actual CSR expenditure might be due to data availability constraints.

[4] For example, the Waterloo Foundation is a corporate sponsored charity established by David Stevens, CEO of the United Kingdom's (UK) Admiral Insurance plc.

gained by CEOs, corporate giving also represents a firm's social capital, encompassing trust and cooperation from stakeholders (e.g., Lins et al. 2017). Hence, corporate giving can serve as an *ex-ante* 'insurance' mechanism, allowing powerful CEOs to safeguard relational assets by moderating negative assessments from stakeholders (Godfrey 2005). Williams & Barrett (2000) find that when firms violate regulations, their reputation can be negatively affected. They also report that firms engaged in regular charitable donations experience a lesser decline in reputation associated with corporate wrongdoing. Determining the precedence between the two aforementioned motives for CEOs' corporate giving is challenging due to information asymmetry. Nevertheless, in situations where a firm has risk management strategies in place, it becomes less likely for the CEO to persuade the board to rely on corporate giving as a means of mitigating potential business risks. Consequently, alternative risk management approaches may reduce the incentive for powerful CEOs to make significant donations to charitable causes.

Our research utilizes a cross-sectional time-varying panel dataset of UK non-life (property-casualty) insurance firms, chosen due to the suitability of the UK insurance industry for our study. Recent research, exemplified by Adams & Jiang (2017), suggests that idiosyncratic and technically complex financial firms, such as insurers, are often characterized by dominant CEOs who wield significant influence in setting strategic goals and objectives. Moreover, insurers typically maintain ample liquidity, stemming from their collection of risk premiums and realization of investment returns before settling verified claims (Colquitt et al. 1999). This liquidity endows CEOs with discretionary resources for corporate donations.

However, despite the importance of corporate social responsibility (CSR) in contemporary public policy across numerous countries, the insurance industry has been observed to lag behind other sectors in integrating CSR initiatives into business strategy (Adams et al. 2017). Our research timely addresses this gap by examining risk management as a moderating factor for CEOs of insurance firms engaging in a specific aspect of CSR activities – corporate philanthropy.

Our focus on the UK's non-life insurance industry is further justified by the availability of readily accessible and reliable data on corporate donations and risk management. Unlike in many other countries, including the US, where corporate donation disclosures are not mandatory (Masulis & Reza 2015), UK insurance firms are required by the UK's Companies Act (2006, Sects. 382/465) to disclose annual charitable donations exceeding £2,000. This disclosure mandate applies to all companies except small ones with an annual turnover below £6.5 million and total assets of £3.26 million. Notably, however, small insurance firms are not exempt under the UK's Financial Services and Markets Act (FSMA) (2000).

Additionally, the insurance sector offers valuable risk management data, particularly through reinsurance arrangements, where third-party reinsurers cover unexpected losses in exchange for a portion of annual premiums (Doherty & Tinic 1981). Such reinsurance data, publicly disclosed in financial statements and statutory filings, is reliably quantifiable. In contrast, financial derivatives, common in banks and large non-financial firms, serve both hedging and speculative purposes, and their accounting under IFRS 9: Financial Instruments poses challenges in terms of fair value estimation fluctuations, thereby impeding comparability in the analysis of large cross-sectional samples of firms.

We consider a firm's size as an additional reflection of its intrinsic risk profile. Firm size is directly associated with its corporate public profile, as larger firms typically enjoy greater brand-name recognition compared to smaller firms (Adams & Hardwick 1998). Moreover, larger firms are more likely to diversify their risk across various business segments compared with their smaller counterparts.

We use a logit model to examine the likelihood of corporate giving, and a tobit model to explain the determinants of the level of charitable giving We find that CEO power is positively related to both the likelihood and extent of charitable giving. However, we also

observe that powerful CEOs in large or/and heavily reinsured insurance firms tend to donate less to charitable causes. These results remain robust when employing the two-stage least squares (2SLS) estimation approach and alternative aspects of CEO power, such as financial expertise and relative CEO ownership stakes.

In our further analysis, we find that the above associations are predominantly present in sub-samples of UK insurers characterized by weak board monitoring of CEOs. This finding aligns with the predictions of agency theory regarding corporate donations (e.g., Masulis & Reza 2015, 2023) and suggests that firms with weaker corporate governance structures tend to be more philanthropic than tightly controlled and closely monitored entities.

Investigating the effect of CEO power (conditional on risk management) on corporate donations is subject to potential endogeneity issues. To address the endogeneity concerns, we follow the approach suggested by Masulis & Reza (2015) to identify an exogenous source of variation in CEO power. Specifically, we utilize dividend tax reform as a quasi-natural experiment.[5] Beginning in April 2010 and continuing until 2013, an extra tax rate of 42.5% on gross dividends was implemented for individuals with taxable income exceeding £150,000 in the UK. The increase in the personal dividend tax rate (from 32.5% to 42.5%) for high-income taxpayers has the effect of discouraging powerful CEOs from using cash to pay dividends and encouraging them to contribute to charitable causes instead. This impact could be particularly significant in situations where CEO ownership levels are high or when the CEO is employed in an insurance firm that pays high dividends, given that the dividend tax reform directly decreases CEO wealth for an equivalent level of dividend income. Our findings align with the implications of the UK's 2010 dividend tax rate change for CEO incentives, as we observe a significant increase in the CEO power-donation relation following 2010.

In the case of insurance firms employing alternative risk management mechanisms, the private incentives for powerful CEOs to make substantial donations may become more evident following the 2010 dividend tax reform. Accordingly, powerful CEOs might face stricter scrutiny after 2010 if they intend to donate more. Consistently, we find that the positive coefficient estimates representing the association between CEO power and charitable donations are reduced significantly after 2010, particularly in large firms. Moreover, these effects are concentrated in insurers with high dividends or high CEO ownership, as these sub-samples directly experience a reduction in CEO wealth due to the increase in the dividend tax rate over our sample period.

Our study contributes to the existing literature in several significant ways. Firstly, it expands the limited body of research on the determinants of corporate philanthropy by simultaneously exploring the impacts of CEO power and risk management. While Adams & Hardwick (1998), Brammer & Millington (2004), and Adams et al. (2017) investigate corporate giving using a strategic stakeholder theory framework, the former two studies overlook the potential influence of CEO power on discretionary philanthropy. Adams et al. (2017) examine the correlations between distinct CEO characteristics associated with CEO power, in addition to other corporate governance factors, and corporate donations. However, their evidence presents varied findings without clear substantiation of their predictions.

Conversely, Masulis & Reza (2015, 2023) offer an agency-based explanation for corporate giving determinants but give little consideration to risk management. Our study, to the best of our knowledge, is the first to empirically demonstrate that risk management acts as a critical mediator in shaping corporate donations within firms led by powerful CEOs. By integrating upper echelons, agency, and stakeholder theories, we bridge instrumental economic concepts with the

[5] Masulis & Reza (2015) use the US 2003 dividend tax cut as a quasi-natural experiment for CEO attributes to address a common critique that CEO attributes and corporate giving are endogenously determined.

understanding that influential CEOs must consider broader commercial factors, such as alternative risk management mechanisms, when engaging in corporate philanthropy. Consequently, our paper contributes to a more comprehensive understanding of the motives for corporate philanthropy, including the firm-specific controls that influence decision-making and implementation.

Secondly, this study contributes to the existing research on the strategic implications of influential CEOs (Brahma & Economou 2024). Previous literature shows that the levels of CEO power have the strong link to firm performance (e.g., Yuan et al. 2019), investing and financing decisions (e.g., Bertrand & Schoar 2003), dividend policies (e.g., Hu & Kumar 2004; Adams et al. 2024) and firm innovation (Sariol & Abebe 2017). Our study broadens this understanding by emphasizing the diverse impact of influential CEOs on corporate donations across various scenarios. Consequently, our work aligns with a broader body of research exploring the influence of CEO characteristics on corporate performance and policies (e.g., Piaskowska et al. 2022; Al-Shaer et al. 2023; Lee et al. 2023).

Thirdly, our concentration on a single industry and country offers inherent advantages, mitigating potential confounding factors that often arise in cross-industry and transnational studies. These factors include external elements such as differences in regulatory and fiscal rules, as well as internal considerations like cross-sectional differences in governance systems (O'Sullivan & Diacon 2003; Adams & Jiang 2017). Furthermore, our cross-sectional and time-series sample encompasses a diverse array of insurers varying in size, ownership structures, financial characteristics, and listing statuses. This diversity helps diminish the risk of sample selection bias—a noted issue in prior CSR-related research (e.g., Godfrey et al. 2009; Bae et al. 2021) that exclusively relies on publicly listed corporate data for non-financial firms.

The rest of our paper is organized as follows. In the next section, we present our theoretical framework and hypotheses. The third section provides an overview of the UK context for our study and outlines the research design, including details on the data, modelling procedures, and variable definitions. The fourth section presents our empirical findings. Finally, we conclude our study in the last section.

2 Prior Literature and Hypotheses Development

2.1 Prior Studies on CEO power and CSR

Hambrick & Mason's (1984) upper echelons theory holds that the corporate board is constituted endogenously, and very much reflects the influence, bargaining position, and strength of personality of the lead executive. Therefore, CEOs are likely to have considerable influence in setting strategy, including spending on philanthropic activities.

In agency theory, the owners of firms (principals) delegate decision-making autonomy to the top management team (TMT) (agents) (Eisenhardt 1989). However, CEOs are expected to pursue divergent activities that maximize their 'bounded self-interests', which may run counter to shareholders' wealth maximization objectives (Bosse & Phillips 2016). Such agency incentive conflicts thus warrant the introduction of contractual incentives, and monitoring and control mechanisms to ensure that the TMT acts in ways that maximize the market value of the firm (Jensen & Meckling 1976). This implies that all else equal, the greater the degree of decision-making discretion retained by a CEO, and the more severe information asymmetries between the CEO and owners of firms, then the greater the likelihood of weak corporate governance and non-value-adding decisions being made (Veprauskaite & Adams 2013). Brown et al. (2006) argue that agency theory could help explain observed differences in corporate

giving amongst firms—for example, close monitoring of highly indebted firms by creditors tends to reduce the level of charitable donations. In fact, in the absence of effective monitoring and control by contracting constituents, such as shareholders and creditors, spending on CSR projects can trigger disproportionately high agency costs for shareholders (e.g., in terms of increased administrative time and resources) (Wright & Ferris 1997).

Stakeholder theory—a framework that is also commonly adopted in the CSR literature (e.g., see Adams & Hardwick 1998; Brammer & Millington 2004; Adams et al. 2017) articulates that various constituents have legitimate claims on firm's free cash flows, and as a result, CEOs need to balance (optimize) the potentially conflicting claims of different stakeholders. For example, Adams & Hardwick (1998) note that firms operate within socio-political as well as economic contexts, and as such, external stakeholders (e.g., local communities), at least implicitly expect some 'social payback' from companies through contributions to social causes. Dewing & Russell (2008) further point out that stakeholder perspectives are particularly relevant in the UK's insurance industry where the CEO and directors are statutorily required under the UK's Financial Services and Markets Act (FMSA) (2000) to balance the interests of shareholders, policyholders, industry regulators, amongst others. Additionally, Aguinis & Glavas (2012) argue that in economically and politically salient industries, such as financial services, the CEO and board could voluntarily engage in philanthropy in order to obtain economic and/or political advantages (e.g., tax benefits) as well as secure a favorable public image.

2.2 Baseline Hypothesis

When unrestrained, CEOs may prioritize self-interest over shareholder wealth (Adams et al. 2005), leading to greater decision-making discretion, increased information asymmetries, weaker governance, and potentially non-value-adding choices (Veprauskaite & Adams 2013). Brown et al. (2006) connect agency theory to observed differences in corporate giving; for instance, heightened creditor monitoring in highly indebted firms reduces charitable donations, thus lowering financial default risk. In the banking sector, Wu & Shen (2013) argue that CEOs and boards engage in philanthropy to satisfy stakeholders and enhance public image, benefiting personal prestige more than shareholders directly (Haynes & Hillman 2010). Masulis & Reza (2015, 2023) suggest that boards often defer to CEOs in philanthropy, aligning with self-interested objectives like job retention and shared reputational benefits. Therefore, by integrating the upper echelons, agency, and stakeholder theories, we argue that CEO power is positively associated with the level of corporate philanthropy, acknowledging that. whetherthese aforementioned findings apply to UK insurance firms is an empirical inquiry due to the industry's unique characteristics. Hence, we propose our first hypothesis.

> ***Hypothesis 1***: *Ceteris paribus*, CEO power is positively related to corporate donations in UK insurance firms.

2.3 Risk Management Hypothesis

Adams et al. (2017) discover in the insurance industry that reinsurance serves as a substitute for charitable giving. Unlike using charitable giving as a "CSR-as-insurance" strategy, as portrayed in stakeholder theory, reinsurance, combined with guidance from international partners, offers better future earnings security and balance sheet protection. This renders the

use of discretionary philanthropy by insurance firm CEOs and boards for franchise value protection against major events unnecessary.

Moreover, large, well-diversified insurers benefit from cost reductions, economies of scale and scope, which limit the need for corporate philanthropy (Brammer & Millington 2004). Risk diversification across jurisdictions and products further diminishes risks and regulatory scrutiny. With robust risk management, these insurers are shielded from financial distress or insolvency risks, potentially reducing the inclination for CEOs to advocate philanthropy as an additional risk tool. Therefore, we argue that powerful CEOs in large or heavily reinsured insurers may contribute less to charitable causes compared to peers.

Hypothesis 2: *Ceteris paribus*, the CEO power-corporate donations relationship is inversely influenced by firm size and/or the level of reinsurance.

3 Research Design

3.1 Data

The non-life sector of the UK's insurance market comprises around 300 registered firms, displaying various sizes, ownership structures, and business operations. In 2017, these firms collectively generated approximately £89 billion (US$111 billion) in gross annual premiums (Association of British Insurers, 2019). Our study employs a cross-sectional sample involving 72 commercially active UK-based non-life insurance insurers, covering both publicly and privately owned stocks. This sample spans 15 years, from 1999 to 2013, encompassing a total of 1,023 data points. It represents about a quarter of the market's insurers and constitutes roughly 60% of property-casualty premiums written during the analysis period.

We exclude data related to trust funds, protection and indemnity pools, and onshore company ('captive') insurance funds from our sample selection process because these entities do not primarily underwrite third-party insurance business. Additionally, insurance syndicates at Lloyd's are omitted from our sampling frame due to their triennial, rather than annual, accounting practices until 2005. We also remove cases with incomplete data and insurers in regulatory run-off, referring to insurance pools that are insolvent and closed to new business. Our restricted sample size ($n=72$) could also be attributed to the hand-collected nature of certain data (e.g., donations and corporate governance measures) that were not always available in complete form for all UK insurers, particularly private insurers at the time of the study.

The use of a panel data design is suitable as it allows the examination of CEO and board decisions regarding charitable contributions over time, considering evolving strategic priorities and preferences. We acknowledge that our analysis faces limitations due to the unavailability of more recent statutory accounting (regulatory) information post-2013 from the commercial database provider Standard & Poor's Synthesys. Nevertheless, our study period encompasses years when Corporate Social Responsibility (CSR) gained direct strategic importance for international financial firms following notable corporate failures after the 2007/8 global financial crisis (e.g., see Cornett et al. 2016). The changes in UK dividend tax rates post-2013 further support the decision to conclude our sample period in 2013.

3.2 Econometric Strategy

We estimate the following equation to test our hypotheses on the determinants of corporate giving.

$$Y_{i,t} = \beta^* X_{i,t} + u_{i,t} (\text{where } u_{i,t} - \text{N } (0\delta 2)) \quad (1)$$

In particular, we adopt a 'volume' (left-censored) tobit model with the assumption that the latent dependent variable ($Y_{i,t}$) – Corporate giving ratio ($CorporateGiving_{i,t}$) – is a non-limited (positive) observation truncated at 0. $X_{i,t}$ is a vector of the explanatory variables described below (and as defined in Table 11 Appendix); $u_{i,t}$ is a normally distributed error term that captures random influences on the variables to be estimated. The subscripts i and t refer to firm and year, respectively. As 590 out of 1023 firm-year observations in our sample do not donate, we also adopt the logit model to determine the probability of $Y_{i,t} > 0$ before examining the determinants of the amount of corporate giving.

To standardize corporate giving data across firms, we largely adhere to the methods outlined by Navarro (1988) and Masulis and Reza (2015). Initially, we scale corporate giving by dividing its amount by total assets. We subsequently apply the natural logarithm to one plus the scaled corporate giving to address the right skewness of the donation data. Recognizing that giving constitutes a small fraction of total assets, we further multiply the logarithmic function by 10^3. Consequently, the dependent variable in the tobit specification becomes log $(1 + DON)$ x 10^3, denoted as the corporate giving ratio.

3.3 CEO power

CEO power is a multifaceted concept encompassing structural, ownership, expertise, and prestige dimensions (Finkelstein 1992). To capture these diverse dimensions, we adopt an approach from recent studies (e.g., Morse et al. 2011; Veprauskaite & Adams 2013; Adams & Jiang 2017) and employ Principal Components Analysis (PCA) to construct a CEO 'power index' based on nine normalized power-related variables. Previous research highlights two analytical advantages of PCA in index construction. Firstly, it combines multiple variables, mitigating issues of multicollinearity and revealing joint effects on firms' CSR decisions. Secondly, PCA assigns weights to each factor in the power index (PINDEX), eliminating the need to determine factor loadings in advance. This flexibility is crucial as different leadership autonomy aspects and firm-level characteristics may differently influence CSR decision-making autonomy. Our use of PCA is theoretically justified, aligning with our focus on the relationship between corporate charitable donations and a composite CEO power measure. While no single measure comprehensively captures CEO power, the nine 'power factors' utilized in our index represent extensively researched dimensions in the literature.

CEO-Chairman Duality One method to bolster structural power on the board is by the CEO simultaneously holding the Chairman position (Hermalin & Weisbach 1998). As per agency theory, CEO-Chairman duality augments CEO autonomy in strategic decisions, possibly resulting in heightened corporate giving if such initiatives bolster the lead executive's public profile and human capital value. In this study, CEO-Chairman duality is denoted by a dummy variable, coded as 1 when the CEO and Chairman functions are not separate, and 0 otherwise.

CEO Tenure The duration of a CEO's tenure significantly influences their structural power and decision-making autonomy within a firm (Brookman & Thistle 2009). During the initial years of assuming the top position, CEOs often heavily rely on the insights of other board members. Consequently, new CEOs might feel less secure and be less inclined toward discretionary philanthropy (Haynes & Hillman 2010). However, over time, CEOs might leverage charitable donations to foster agency and stakeholder relationships, reducing vulnerability to board challenges or removal (Surroca & Tribó, 2008). CEO power tends to increase with tenure as established CEOs, in line with agency theory, could sway the selection of other board members, potentially weakening top-level monitoring and control (Adams & Jiang 2017). We measure CEO tenure by the number of years in their position.

CEO Ownership Chikh & Filbien (2011) observe that a higher proportion of total shares held by the CEO ('ownership power') enhances their influence on strategic decisions, including CSR investments. In this study, we employ a dummy variable coded as 1 if the CEO is a significant shareholder in the firm (i.e., holding disclosed shareholdings exceeding 3% of total shares), and 0 otherwise.

CEO Compensation Core et al. (1999) emphasize that the structure of CEOs' annual compensation significantly influences the corporate governance system and is directly tied to the discretion granted to CEOs in managerial decision-making. Thus, we incorporate two CEO compensation measures, CEO pay and CEO bonus, in constructing our CEO power index to gauge the impact of compensation packages on CEO power. CEO pay represents the annual total compensation received by the CEO (comprising salary, cash bonuses, and other benefits) divided by the total annual compensation of all board directors. This fractional measure potentially indicates the relative decision-making autonomy and power of incumbent CEOs compared to other board members. CEO bonus is denoted as a binary variable, with 1 indicating the CEO receives a performance-related bonus, and 0 otherwise.

CEO Appointment Adams et al. (2005) note that CEOs can be appointed either internally, following a 'pass-the-baton' approach, or externally, through a competitive 'horse race' process. According to their findings, internally appointed CEOs likely possess firm-specific knowledge and alliances with board members, while outsiders may face pronounced information asymmetries, requiring a longer 'learning curve'. This distinction is expected to grant insiders greater structural power and discretion over charitable contributions compared to externally appointed CEOs. To distinguish between internal and external CEO appointments, we utilize a dummy variable where 1 represents internal appointments and 0 represents external appointments.

Over-Committed CEO Fich & Shivdasani (2006) propose that heavily committed ('busy') board members, particularly in intricate financial sectors like insurance, might encounter information disadvantages compared to directors with fewer commitments. According to agency theory, 'busy' CEOs may possess less decision-making autonomy (structural power) than their less 'busy' counterparts, who invest more human capital in the firm, showcasing greater dedication to maximizing shareholders' interests. We gauge a CEO's business commitments using a dummy variable, where 1 signifies a situation where the CEO holds at least one other board appointment, and 0 indicates otherwise.

CEO Financial Expertise CEO financial literacy (expertise power) is anticipated to play a crucial role, especially within the insurance sector, where insurers attract substantial market capital and engage extensively with major institutional investors amid a complex and stringent regulatory landscape (Adams & Jiang 2017). Financial expertise empowers CEOs to evaluate the relative economic merits of discretionary investments, like philanthropy, and wield influence over directors with less financial acumen. We measure CEO financial expertise through a dummy variable, where 1 denotes a CEO holding professional qualifications as an accountant, actuary, or underwriter, and 0 denotes otherwise.

CEO Insurance Experience Bebchuk & Weisbach (2010) propose that industry-specific knowledge, especially in highly technical sectors like insurance, grants senior board-level executives advantages in accessing, processing, and leveraging strategic information, such as the market benefits of philanthropy, ultimately enhancing firm value. Furthermore, industry expertise enables CEOs to bolster their prestige power and public standing, critical attributes in trust-centered industries like insurance (Adams & Jiang 2017). To gauge CEO insurance experience, we utilize a dummy variable, where 1 denotes a CEO with experience in the insurance industry (or closely related fields such as reinsurance), and 0 denotes otherwise.

3.4 Board-Level Control Variables

Previous studies (e.g., Haynes & Hillman 2010) indicate that CEOs' decision-making autonomy can be influenced by board-level governance mechanisms, such as the presence of independent directors. This board oversight can directly affect CSR initiatives, including the evaluation of the broader commercial benefits of philanthropy. To account for the impact of the board of directors on charitable contributions, our analysis incorporates four commonly utilized board composition variables.

Outside Directors Prior research (e.g., Dow 2013) suggests that independent outside directors play a significant role in reducing CEO decision-making autonomy. They closely scrutinize CEO expenditure, including charitable giving. Therefore, we include the proportion of outside directors to total board members as a control variable.

Gender-Mix McGuinness et al. (2017) argue that female directors, for various reasons, tend to balance the needs of different stakeholders more actively than their male counterparts, who may be more shareholder-focused. Female directors are likely to collaborate with powerful CEOs in supporting social initiatives. Hence, we incorporate the proportion of female directors to total directors on the board to capture gender effects on corporate contributions to charitable organizations.

Board Size Guest (2008) suggests that larger boards enhance monitoring capabilities and offer a wider range of business expertise, potentially reducing a CEO's autonomy in philanthropic decisions. In this study, board size is determined by the total number of directors, both inside and outside, on the board.

Board Interaction Armstrong et al. (2010) argue that efficient systems for gathering, processing, and disseminating information at the board level can diminish CEO power and enhance accountability in charitable spending. Adams & Ferreira (2012) propose

that the frequency of board meetings per year serves as a proxy for information flow and analysis. Board interaction is measured by the total number of board meetings held during the year.

3.5 Firm-Level Control Variables

We also incorporate control for six firm-level variables that might influence philanthropic behavior in the UK's non-life insurance industry.

Firm Size Larger firms, according to Adams & Hardwick (1998), tend to allocate more towards charitable causes due to their increased free cash flows. Additionally, larger insurance firms often adopt a broader philanthropic strategy to enhance their national and international franchise value. Firm size is measured using the natural log of total assets.

Return on Assets (ROA) As per Masulis & Reza (2015), financial performance can impact directorial decisions, including charitable contributions. We measure profitability using the return on assets (ROA), calculated as net operating income after interest and tax (NOPAT) divided by total assets.

Reinsurance Cole et al. (2011) note the influence of reinsurers on primary insurers regarding philanthropy. Reinsurers might encourage primary insurers to engage in philanthropy for improved public image and business attraction. Conversely, reinsurance might substitute for philanthropy by addressing the economic concerns of investors, policyholders, and regulators. We measure reinsurance as the annual ratio of premiums ceded to reinsurers to direct premiums written, including reinsurance premiums assumed.

Liquidity Firms with surplus resources are more inclined to donate, as suggested by prior research (e.g., Cheung 2016). Therefore, we include liquidity, defined as the fraction of annual cash and cash equivalents to total assets, in our analysis.

Ownership Structure Varying ownership structures, as per Cornelli et al. (2013), affect managerial oversight costs and benefits. Blockholder investors often counterbalance excessive CEO power, ensuring that CSR decisions are not solely profit-driven. We use the fraction of shares held by the top three shareholders to represent ownership structure.

Age Well-established firms, noted by Giroud & Mueller (2010), might utilize philanthropy to solidify their competitive position. Therefore, we consider the number of years an insurer has been operating in the industry.

4 Empirical Results

In this section of the paper, we report and analyse our empirical results.

Table 1 Summary (descriptive) statistics

	Panel A: Pooled (*N* = 1023)					Panel B: Donators (*N* = 433)	Non-Donators (*N* = 590)	
	MEAN	MEDIAN	STD	MIN	MAX	MEAN	MEAN	t/χ^2
Don (£m)	0.07	0	0.32	0	4.4	0.17	0	8.82***
CEO Duality	0.1	0	0.29	0	1	0.06	0.12	-3.33***
CEO Tenure (years)	4.05	4	2.62	1	22	4.3	3.86	2.69***
CEO ownership	0.38	0	0.49	0	1	0.64	0.19	14.46***
CEO Pay	0.24	0.24	0.08	0.16	2.5	0.24	0.24	0.53
CEO Bonus	0.91	1	0.28	0	1	0.94	0.89	2.78***
CEO Internal	0.41	0	0.49	0	1	0.37	0.44	-2.29**
CEO Busy	0.29	0	0.46	0	1	0.18	0.38	-6.81***
CEO Financial Expert	0.54	1	0.5	0	1	0.67	0.44	7.01***
CEO Insurance experienced	0.66	1	0.47	0	1	0.79	0.56	7.65***
% Outside Directors	0.61	0.63	0.09	0.2	0.8	0.63	0.6	6.15***
% Females on the Board	0.04	0	0.09	0	0.4	0.08	0.02	10.94***
Board Size	7.97	8	2.29	4	14	9.05	7.17	14.18***
Annual Board Meetings	11.96	12	5.09	3	26	14.88	9.82	18.00***
Log Firm Size	4.61	3.93	1.73	2.48	9.58	5.77	3.76	22.52***
ROA	0.11	0.1	0.06	-0.22	0.7	0.11	0.1	4.45***
Reinsurance	0.31	0.31	0.07	0.19	0.75	0.31	0.31	1.48
Liquidity	0.18	0.2	0.08	0.03	0.5	0.17	0.18	-1.66*
% Shares of top-3 investors	0.71	0.7	0.22	0.3	1	0.72	0.71	0.47
Firm Age (years)	45.91	32	33.87	0	133	51.68	41.68	4.71***

This table presents the descriptive statistics for the pooled sample from 1999 to 2013 and the mean values for the donators and non-donators respectively during the period of analysis. The level of donations is measured in £ millions. A t-test is used to examine differences in the means of the continuous variables between donators and non-donators. A χ^2 test is used to test the independence between categorical firm characteristics and the amount donated. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively (two-tail). The average (unlogged) mean value of total assets (firm size) for the period of analysis is £752 million

4.1 Summary Statistics

We report the summary (descriptive) statistics for all individual variables used in this study during our sample period 1999–2013 in Table 1.

Panel A of Table 1 gives the summary statistics for the pooled sample, consisting of 1,023 data points. It reveals that approximately 42% (433 out of 1,023) of the UK insurers in our sample donate to charities. The average value of charitable donations is approximately £70,000 per year, which shows a modest increase compared to the average contribution of £50,000 reported by Adams et al. (2017) using data from1999 to 2010. Roughly, 90% of annual corporate donations are targeted at local charitable causes or channelled through UK registered charities. Moving on to the characteristics of CEOs, we observe

that the CEO also holds the position of Chairman in only 10% of our firm-year observations. This is consistent with UK corporate governance guidelines, which have advocated the separation of the CEO and Chairman positions in order to improve the effectiveness of within-board monitoring and reduce the risk of CEO entrenchment since the publication of the Cadbury Report (1992). The average CEO tenure for our entire sample period is approximately four years, which aligns with the average of five years reported by O'Sullivan & Diacon (2003) in their analysis of corporate governance practices in the UK's life insurance sector. Also, 38% of CEOs on average hold ownership rights in the insurers they manage, while the total average annual compensation of CEOs relative to that of all board members is 24%. In addition, on average, 91% of insurers throughout our analysis period have CEO bonus plans, and 41% of firm-year observations involve internally appointed CEOs, indicating that over half of the insurers actively seek external talent for their CEO positions. About one-third of the CEOs are considered 'busy' as they hold at least one additional board appointment. On average, slightly over half (54%) of the CEOs possess a professional financial qualification, and nearly two-thirds of CEOs have a background in the insurance industry.

Panel A of Table 1 also presents statistics for board-level and firm-specific characteristics in the pooled sample. On average, 60% of directors are outsiders, aligning with UK corporate governance guidelines, including the Cadbury Report (1992). Panel A of Table 1 also highlights the remarkably low proportion of females on the boards of our panel sample of insurers, accounting for only 4%. The mean board size is approximately eight directors, in line with Hardwick et al. (2011) governance-efficiency study of UK life insurers. The average number of annual board meetings is approximately 12 per year. The mean values for firm size, ROA, reinsurance, and the liquidity ratio are 4.61 (unlogged = £700 million), 0.11, 0.31, and 0.18, respectively. Roughly two-thirds of shares in our sample are held by the top three shareholders, and the average length of time operating in the UK market is 46 years.

In Panel B of Table 1, we further examine the distributional features of insurers that contribute to charities and those that do not. We compare the means of various variables between the two groups using t-tests for continuous variables and Chi-square ($\chi 2$) tests for categorical variables. We find that, except for CEO pay and reinsurance, the mean values of the considered variables differ significantly between donators and non-donators. Notably, CEOs of donating insurers are more likely to work in firms with an independent Chairman and tend to have a higher level of shareholdings in the insurer compared to their counterparts in non-donating insurers. CEOs of donators also tend to have longer tenures in their positions. Moreover, while CEOs of donators are less likely to be internally appointed or considered 'busy' due to other board appointments, a higher proportion of them possess financial expertise or an insurance background.

Regarding board-level variables, insurers that contribute to charitable causes tend to have a higher proportion of independent outsiders and female directors on their boards. Their boards are also larger in size and hold more frequent meetings per year compared to insurers that do not engage in philanthropy. As expected, donating insurers generally represent larger, more profitable, and more established firms.

Table 2 presents the results from the PCA. In Panel A, we present the correlation matrix of the nine CEO power variables used to compute the CEO power index. We observe that the correlation coefficients between each of the CEO characteristic variables are not significantly high, suggesting that these variables capture different aspects of CEO power. Panel B of Table 2 reports the rotated principal component weights (loadings) for the CEO decision-making power index. The primary drivers of this index are CEOs' financial expertise and insurance industry experiences, but the index is attenuated by CEOs who also hold the

Table 2 Principal component analysis (PCA) for the CEO power proxy

Panel A: Correlation Matrix									
	CEO Duality	*CEO Tenure*	*CEO Ownership*	*CEO Pay*	*CEO Bonus*	*CEO Internal*	*CEO Busy*	*CEO Financial Expert*	*CEO Insurance Experienced*
CEO Duality	1								
CEO Tenure	-0.10***	1							
CEO Ownership	0.00	0.09**	1						
CEO Pay	-0.04	-0.00	-0.03	1					
CEO Bonus	-0.53***	0.07*	0.10**	0.02	1				
CEO Internal	0.15***	0.14***	0.00	0.06*	-0.20***	1			
CEO Busy	0.19***	-0.05	-0.12***	-0.04	-0.16***	0.32***	1		
CEO Financial Expert	-0.06	-0.01	0.18***	0.04	-0.06*	-0.11***	-0.20***	1	
CEO Insurance Experienced	-0.10**	0.12***	0.26***	-0.04	0.00	-0.05	-0.10***	0.40***	1
Panel B: Index Weight									
CEO Power Index	-0.45	0.12	0.26	0.01	0.42	-0.35	-0.43	0.33	0.34
Panel C: Descriptive Statistics for CEO Power Proxies									
	Pooled						Donators	Non-Donators	t
	MEAN	MEDIAN	STD	MIN	MAX		MEAN	MEAN	
CEO Power	0.00	0.28	1.39	-5.00	1.95		0.56	-0.41	11.86***

This table provides the results of the principal component analysis (PCA), which is used to create the proxy for CEO power. Panel A reports the correlation coefficients. Panel B reports the weight of each component in the CEO power proxy, and panel C provides the descriptive statistics for the CEO power proxy. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests

Table 3 Correlation Matrix

	DON	*PINDEX*	*OUTS*	*FEM*	*BSIZE*	*MEET*	*SIZE*	*LEV*	*REINS*	*LIQUIDITY*	*CONC*
CEO Power	0.20***										
% Outside Directors	0.04	0.45***									
% Females on the Board	0.29***	0.26***	0.12***								
Board Size	0.29***	0.51***	0.44***	0.44***							
Annual Board Meetings	0.31***	0.43***	0.38***	0.34***	0.65***						
Log Firm Size	0.34***	0.37***	0.16***	0.45***	0.61***	0.64***					
Leverage	-0.06	0.22***	0.18***	-0.05	0.11***	0.04	-0.00				
Reinsurance	-0.03	-0.05	-0.06*	0.14***	0.02	-0.02	-0.05	0.05			
Liquidity	-0.01	-0.06*	-0.07*	0.01	-0.09**	-0.02	-0.02	-0.05	-0.02		
% Shares of top-3 investors	-0.04	-0.28***	-0.13***	0.12***	0.06	-0.02	0.09**	-0.07*	0.10**	0.16***	
Firm Age	0.26***	0.24***	0.09**	0.25***	0.20***	0.22***	0.28***	-0.02	-0.21***	-0.08*	-0.16***

Table 3 presents Pearson correlation coefficients for the matrix between independent and dependent variables used in this study for the whole sample in 1999–2013. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests

Chairman position and have significant outside commitments. Panel C of Table 2 provides key descriptive statistics for the CEO power index. We also differentiate between donators and non-donators to test differences in the means of the CEO power index for the two groups. Insurers that contribute to charities have higher mean values for the CEO power index compared to insurers that do not engage in charitable causes. The differences in mean values between the two groups are highly statistically significant ($p \leq 0.01$ or lower, two-tail).

Table 3 reports the Pearson correlation coefficient matrix for the variables used in this study. The correlations between our CEO power index and the donation variable (i.e., *DON*) are, as expected, positive and statistically significant (at $p \leq 0.05$ or lower, two-tail). While many other variable associations are statistically significant, most are only moderately so. Furthermore, the computed variance inflation factors are less than 10, indicating that multicollinearity is not problematic in the present study (e.g., see Kennedy 2003).

4.2 Baseline Results

Table 4 presents the results of the logit analysis examining the relation between CEO power and the likelihood of philanthropy. The dependent variable is defined as a dummy that equals 1 if an insurer donates in year *t*, and 0 otherwise. We employ firm fixed-effects in these logit regressions. Table 5 reports the results of the random-effects tobit analysis investigating the relationship between CEO power and the level of philanthropy. Following Masulis & Reza (2015), we scale corporate giving by total assets, take the natural logarithm of one plus this scaled measure, and then multiply it by 1000. As a result, the dependent variable in our tobit regressions, the corporate giving ratio, is log (1 + corporate giving/total assets) × 1000. The corporate giving ratio is left-censored at zero in these tobit regressions.

To assess the sensitivity of the explanatory variables to changes in the predicted probability of the corporate donation decision, the coefficient estimates are also transformed to represent the marginal effects. These marginal effects are evaluated at the means of the regressor variables, which are computed by averaging individual observation responses. The marginal effects for the dummy variables are calculated as the discrete change in the dependent variable as it changes from 0 to 1 (Greene 2003).

Tables 4 and 5 show that CEO power is positively associated with both the likelihood and amount of donations to charitable causes (at $p \leq 0.01$, two-tail), providing support for hypothesis 1. In Hypothesis 2, we predict that the relationship between CEO power and corporate donations is moderated by firm size and reinsurance spending. To test this hypothesis, we construct two dummy variables, namely *Large* and *Heavy*. The former (latter) takes a value of 1 for firms whose size (reinsurance) exceeds the median values of the sampled firms. We then create separate interaction terms between our CEO power proxy and these two dummy variables (*CEO power* × *Large* and *CEO power* × *Heavy*). Additionally, we include an interaction term that combines all three variables (*CEO power* × *Large* × *Heavy*) to complete our analysis. These interactions allow us to examine the relationship between CEO power and corporate donations in conjunction with firm size and reinsurance.

The results reported in Table 5 show a significantly negative estimated coefficient for the interaction between CEO power and large firms (*CEO power* × *Large*), as well as the interaction between CEO power and heavily reinsured firms (*CEO power* x *Heavy*) ($p \leq 0.05$, two-tail). This indicates that powerful CEOs in large and/or heavily reinsured insurers tend to donate relatively less to charitable causes. This can be

Table 4 Determinants of the likelihood of corporate giving

		(1)	(2)	(3)
	Expected Sign	*Don Dummy*	*Don Dummy*	*Don Dummy*
CEO Power	+		0.44***	0.93***
			(5.13)	(3.70)
CEO Power×*Large*	-			-0.22
				(-0.75)
CEO Power×*Heavy*	-			-1.22***
				(-4.01)
CEO Power×*Large*×*Heavy*				0.73**
				(1.98)
Large		2.77***	2.88***	3.13***
		(12.96)	(13.03)	(13.17)
% Outside Directors		2.90**	2.27*	2.29
		(2.22)	(1.67)	(1.70)
% Females on the Board		3.10***	2.62**	2.36*
		(2.65)	(2.16)	(1.90)
Board Size		0.03	-0.05	-0.06
		(0.41)	(-0.69)	(-0.88)
Annual Board Meetings		0.20***	0.20***	0.22***
		(8.13)	(7.90)	(8.17)
ROA		7.44***	7.03***	8.48***
		(4.14)	(3.78)	(4.38)
Liquidity		-2.38**	-2.42**	-2.68**
		(-2.10)	(-2.10)	(-2.21)
% Shares of top-3 investors		-1.66***	-1.13**	-1.07**
		(-3.64)	(-2.38)	(-2.22)
Firm Age		0.00	-0.00	-0.00
		(0.15)	(-0.20)	(-0.80)
Heavy		0.06	-0.04	0.04
		(0.34)	(-0.22)	(0.19)
Firm Fixed Effects		Yes	Yes	Yes
Log Likelihood		-369.42	-355.92	-342.37
Observations		1023	1023	1023
CEO Power×*Large* + *CEO Power*×*Heavy* + *CEO Power*×*Large*×*Heavy*				-0.71***
($\chi 2$)				(6.06)
CEO Power + *CEO Power*×*Large* + *CEO Power*×*Heavy* + *CEO Power*×*Large*×*Heavy*				0.22
($\chi 2$)				(2.22)

Note: This table presents the logit regression results that test the associations between the CEO power proxy and an insurer's likelihood of corporate donation. Reported in parentheses are t-statistics unless being stated differently. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests. *Large* is equal to 1 if firm size is greater than the median value of the sampled firms. *Heavy* is equal to 1 if reinsurance is greater than the median value of the sampled firms. Definitions for other variables are reported in Table 11 Appendix. The intercept term is included in the regression and is suppressed for brevity

Table 5 Tobit analysis—determinants of corporate giving ratio

	Expected Sign	(1) *Giving Ratio*	(2) *Giving Ratio*	(3) *Giving Ratio*	(4) dy/dx
CEO Power	+		0.32***	0.87***	0.20***
			(5.29)	(6.29)	(6.38)
CEO Power×*Large*	-			-0.66***	-0.15***
				(-4.14)	(-4.16)
CEO Power×*Heavy*	-			-0.70***	-0.16***
				(-3.92)	(-3.94)
CEO Power×*Large*×*Heavy*				0.68***	0.16***
				(3.14)	(3.14)
Large		1.35***	1.33***	1.38***	0.32***
		(8.36)	(8.31)	(8.60)	(9.44)
% Outside Directors		2.21**	1.61*	1.35	0.31
		(2.47)	(1.79)	(1.51)	(1.52)
% Females on the Board		1.05	0.70	0.80	0.18
		(1.27)	(0.86)	(1.01)	(1.01)
Board Size		-0.19***	-0.25***	-0.22***	-0.05***
		(-4.57)	(-5.92)	(-5.10)	(-5.03)
Annual Board Meetings		0.07***	0.07***	0.07***	0.02***
		(4.46)	(4.12)	(4.31)	(4.35)
ROA		2.27**	1.64	1.41	0.32
		(2.10)	(1.53)	(1.32)	(1.32)
Liquidity		-2.08***	-2.15***	-2.05***	-0.47***
		(-2.68)	(-2.82)	(-2.68)	(-2.68)
% Shares of top-3 investors		-1.07***	-0.59*	-0.62**	-0.14**
		(-3.44)	(-1.85)	(-1.96)	(-1.97)
Firm Age		0.00	0.00	0.00	0.00
		(1.02)	(0.31)	(0.23)	(0.23)
Heavy		0.02	0.00	0.07	0.02
		(0.15)	(0.01)	(0.58)	(0.58)
Year Fixed Effects		Yes	Yes	Yes	Yes
Log Likelihood		-1064.93	-1051.69	-1039.90	-1039.90
Observations		1023	1023	1023	1023
Left censored observations		590	590	590	590
CEO Power×*Large* + *CEO Power*×*Heavy* + *CEO Power*×*Large x Heavy*				-0.68***	-0.15***
($\chi 2$)				(16.14)	(16.42)
CEO Power + *CEO Power*×*Large* + *CEO Power*×*Heavy* + *CEO Power*×*Large*×*Heavy*				0.19**	0.05**
($\chi 2$)				(3.70)	(3.70)

This table presents the results that explain an insurer's amount of corporate giving. Columns (1)-(3) are based upon the random-effects tobit model. Columns (4) present the marginal-effects of the tobit model as reported in Column (3) evaluated at sample means for the continuous variables respectively. Marginal-effects for discrete dummy variables are computed for the change from 0 to 1. *Large* is equal to 1 if firm size is greater than the median value of the sampled firms. *Heavy* is equal to 1 if reinsurance is greater than the median value of the sampled firms. Definitions for other variables are reported in Table 11 Appendix. Reported in parentheses are t-statistics unless being stated differently. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests. The intercept term is included in the regression and is suppressed for brevity

attributed to the fact that these insurers are adequately protected against the risks of insolvency and reputational loss due to their diversified risk profile. Consequently, it becomes more challenging for these CEOs to persuade other board members about the necessity of corporate donations as an alternative risk management tool, as predicted in hypothesis 2.

At the bottom of Table 5, we report that powerful CEOs in both large and heavily reinsured insurers (*CEO power*×*Large*×*Heavy*) donate significantly less compared to other firms with the same level of CEO power, although we also observe a positive CEO power-donations relation within large and heavily reinsured firms. We observe similar patterns in Table 4, but the interaction term *CEO power*×*Large* is not statistically significant. Taken together, our findings align with the predictions made in hypothesis 2.

4.3 2SLS Results

We also estimate 2SLS regressions using the difference between a firm-year observation's measure of CEO power and the annual industry-wide estimate of CEO power as an instrumental variable. This approach is based on the logic that the level of charitable donations by a specific insurance firm is unlikely to be influenced by the industry-wide average level of CEO power. We utilize the deviation of firm-level CEO power from the industry average CEO power as an instrument to introduce variation in the data.

The results of the 2SLS regressions are shown in Table 6. The instrumental variables are found to be positive and highly significant in the first-stage regressions, suggesting that they pass the relevance tests. In the second-stage regressions, where CEO power is instrumented from the first-stage, CEO power exhibits a significantly positive coefficient, while the interaction terms—*CEO power*×*Large* and *CEO power*×*Heavy*—exhibit significantly negative coefficient estimates. Thus, the 2SLS results align with the findings obtained from the logit and tobit analyses.

4.4 GMM Results

We also apply the Arellano and Bond (1991) and Arellano and Bover (1995) first-difference estimator using the one-step system GMM approach, which offers robustness against heteroscedasticity and correlation in the error term.[6] Specifically, we utilise lagged values of potentially endogenous variables—namely, *giving ratio*, *CEO Power*, *CEO Power*×*Large*, *CEO Power*×*Heavy*, and *CEO Power*×*Heavy*×*Large*—as instruments in the first-difference equation. The GMM-SYS results, along with relevant diagnostics, are presented in Table 7. The results demonstrate similarity to both our baseline and 2SLS results.

[6] When utilizing the two-step system GMM approach, our conclusions regarding the statistics of the main variables of interest remain consistent. However, the high Hansen statistics in the two-step system GMM regressions suggest potential instrument proliferation, which may lead to overfitting of endogenous variables.

4.5 Alternative Definitions of CEO Power

As an additional robustness check, we conduct a Tobit analysis using a variety of CEO characteristics as alternative definitions of CEO power to assess the reliability of our empirical results, as prior research (e.g., Ozgen et al. 2024) suggests that CEO power is a multifaceted concept. Instead of using the first index constructed by PCA as in our analyses above, we adopt the second PCA index to proxy for CEO power. Furthermore, instead of using the PCA index, we employ the following CEO characteristics individually to proxy for CEO power: CEO pay, CEO ownership, a dummy variable indicating whether a CEO is a financial expert (*CEO Financial Expert*), and a dummy variable indicating whether a CEO has insurance industry experience (*CEO Insurance Experienced*). The definitions of these measures are provided in the Table 11 Appendix. CEO pay and CEO ownership are commonly used in prior studies as proxies for CEO power (e.g., Jiraporn & Chintrakarn 2013). Financial expertise and insurance experience are more specific traits that effectively capture the concept of CEO power in the insurance industry (Adams & Jiang 2017).

As shown in Table 8, we find positive and significant coefficient estimates on *CEO power* for all these alternative definitions. Additionally, we find negative and significant coefficients on the interaction term *CEO power*×*Large*. We also observe negative and significant estimated coefficients on the interaction term *CEO power*×*Heavy* for all definitions except CEO ownership. These results generally align with those reported previously, providing further support to our findings.

4.6 Sub-sample Analysis

In Table 9, we categorize our firm-year observations based on two indicators of corporate governance 'quality' that have been utilized in previous studies: board independence (e.g., see Dow 2013) and the number of main board meetings per year (e.g., see Adams & Ferreira 2012). We predict that powerful CEOs are more likely to make corporate donations as agency conflicts intensify. Additionally, we expect that robust risk management mechanisms, as captured by firm size and reinsurance, can help mitigate agency conflicts arising from powerful CEOs. Therefore, we anticipate that the positive relationship between CEO power and corporate donations is moderated by firm size and/or reinsurance in insurance firms with weaker governance structures.

We classify a board as independent if a majority of its directors are unaffiliated outsiders. We classify a board as having frequent meetings if the number of meetings per year is ≥ 12 (i.e., at least one main board meeting on average per month). The partitioned numbers adopted are the sample medians for the respective variables. We find that the effects of CEO power on the amount donated, as well as the moderating effects of firm size and/or reinsurance on the CEO power-donation relation, are concentrated in sub-samples characterized by weaker corporate governance. These results support our predictions.

4.7 A Quasi-Natural Experiment

To address concerns regarding the potential endogeneity of corporate giving and CEO power, we employ the UK 2010 dividend tax increase as a quasi-natural experiment, following the approach of Masulis & Reza (2015). The dividend tax rate in the UK was raised from a maximum of 32.5% to 42.5% starting in April 2010 and lasting until 2013. Masulis

Table 6 Two-stage least squares (2SLS) analysis—determinants of corporate giving ratio

	(1) 1st Stage	(2)	(3)	(4)	(5) 2nd Stage
	CEO Power	*CEO Power×Large*	*CEO Power×Heavy*	*CEO Power ×Large×Heavy*	*Giving Ratio*
CEO Power					0.29***
					(5.90)
CEO Power×Large					-0.21***
					(-3.27)
CEO Power×Heavy					-0.21***
					(-3.44)
CEO Power×Large×Heavy					0.22**
					(2.42)
Average CEO Power	0.92***				
	(92.79)				
Average CEO Power×Large		0.98***			
		(106.42)			
Average CEO Power×Heavy			1.01***		
			(110.88)		
Average CEO Power×Large×Heavy				1.01***	
				(86.33)	
Large	-0.11***	-0.02***	0.01	-0.01	-0.09***
	(-11.89)	(-2.87)	(1.15)	(-1.06)	(-3.40)
% Outside Directors	1.07***	-0.05	0.26**	0.22***	-0.15
	(7.38)	(-0.54)	(2.51)	(2.77)	(-0.38)
% Females on the Board	1.25***	0.67***	-0.12	0.22***	1.07***

Table 6 (continued)

	(1) 1st Stage	(2)	(3)	(4)	(5) 2nd Stage
	CEO Power	*CEO Power*×*Large*	*CEO Power*×*Heavy*	*CEO Power* ×*Large*×*Heavy*	*Giving Ratio*
	(8.54)	(6.57)	(-1.13)	(2.71)	(2.71)
Board Size	0.12***	0.01	0.00	0.00	-0.11***
	(16.84)	(0.93)	(0.27)	(0.80)	(-4.90)
Annual Board Meetings	0.01***	0.01***	-0.00	0.00	0.03***
	(3.96)	(2.88)	(-0.97)	(0.24)	(3.43)
ROA	0.02	-0.25**	-0.01	-0.21**	-0.18
	(0.13)	(-2.06)	(-0.06)	(-2.13)	(-0.37)
Liquidity	0.31**	-0.25***	0.06	-0.22***	-0.90**
	(2.28)	(-2.77)	(0.68)	(-2.97)	(-2.57)
% Shares of top-3 investors	-0.13**	-0.02	0.05	0.02	-0.11
	(-2.36)	(-0.67)	(1.41)	(0.66)	(-0.76)
Firm Age	0.00**	-0.00	0.00	-0.00	0.00
	(2.49)	(-0.77)	(0.66)	(-0.20)	(0.77)
Heavy	-0.02	0.04***	0.00	0.04***	-0.07
	(-0.93)	(2.87)	(0.25)	(3.51)	(-1.27)
Year Fixed Effects	No	Yes	Yes	Yes	Yes
Observations	1,023	1,023	1,023	1,023	1,023
R-squared	0.94	0.94	0.94	0.90	0.12

This table presents the 2SLS estimation results for the determinants of corporate giving ratio. Both the first stage and the second stage regression results are reported. The difference between a firm's annual CEO power and the mean annual CEO power of the sample is used as an instrument for CEO power. The above also applies to the interaction terms involving the use of CEO power including *CEO power* x *Large*, *CEO power* x *Heavy*, and *CEO Power* x *Large* x *Heavy*. *Large* is equal to 1 if firm size is greater than the median value of the sampled firms. *Heavy* is equal to 1 if reinsurance is greater than the median value of the sampled firms. Definitions for other variables are reported in Table 11 Appendix. Reported in parentheses are t-statistics computed using heteroskedasticity robust standard errors. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests

Table 7 System GMM—determinants of corporate giving ratio

	Expected Sign	(1) *Giving Ratio*	(2) *Giving Ratio*
CEO Power	+	0.53***	0.59***
		(25.06)	(26.58)
CEO Power×*Large*	-		-0.54***
			(-15.68)
CEO Power×*Heavy*	-		-0.40***
			(-16.02)
CEO Power×*Large*×*Heavy*			0.50***
			(11.96)
Large		0.05**	0.07***
		(2.09)	(3.16)
% Outside Directors		-0.75***	-0.54***
		(-4.90)	(-3.91)
% Females on the Board		0.01	0.55***
		(0.09)	(4.20)
Board Size		-0.22***	-0.16***
		(-28.77)	(-21.51)
Annual Board Meetings		0.00	0.02***
		(0.40)	(6.18)
ROA		-0.74***	-0.17
		(-3.87)	(-1.00)
Liquidity		-1.18***	-1.00***
		(-9.66)	(-8.72)
% Shares of top-3 investors		0.48***	0.05
		(8.25)	(1.00)
Firm Age		-0.00***	-0.00
		(-4.19)	(-0.11)
Heavy		-0.04**	-0.08***
		(-2.05)	(-4.01)
Year Fixed Effects		Yes	Yes
AR (1) p value		0.01	0.01
AR (2) p value		0.74	0.57
Difference-in-Hansen Test p value		0	0
Observations		951	951
Lag Range Used		1–2	1–2

This table presents the one-step system GMM estimation results for the determinants of corporate giving ratio. The t-statistics are reported in parentheses, while ***, **, * indicate statistical significance at the 1%, 5% and10% levels respectively in two-tail tests. The lags of variables including *Giving Ratio*, *CEO Power*, *CEO Power*×*LARGE*, *CEO Power*×*HEAVY* and *CEO Power*×*LARGE*×*HEAVY* are used as their instruments to control for potential endogeneity. The values reported for the Difference-in-Hansen test are the p-values (two-tail) for the null hypothesis of the validity of the instruments. AR(1) and AR(2) report the p-values (two-tail) for first-order and second-order auto-correlated disturbances in the first-difference equations. *Large* is equal to 1 if firm size is greater than the median value of the sampled firms. *Heavy* is equal to 1 if reinsurance is greater than the median value of the sampled firms. Definitions for other variables are reported in Table 11 Appendix

Table 8 Robustness check: Alternative definitions for CEO power in tobit analyses on determinants of corporate giving ratio

	(1) CEO Power Index 2	(2)	(3) CEO Pay	(4)	(5) CEO Ownership	(6)	(7) CEO Financial Expert	(8)	(9) CEO Insurance Experienced	(10)
	Giving Ratio	dy/dx	Giving Ratio	dy/dx	Giving Ratio	dy/dx	Giving Ratio	dy/dx	Giving Ratio	dy/dx
CEO Power	1.51***	0.34***	19.87***	4.57***	2.09***	0.49***	2.11***	0.50***	1.65***	0.38***
	(8.22)	(8.97)	(5.12)	(5.10)	(8.15)	(8.34)	(8.30)	(8.47)	(5.59)	(5.70)
CEO Power×Large	-1.60***	-0.36***	-10.94***	-2.52***	-2.32***	-0.54***	-1.66***	-0.39***	-1.40***	-0.32***
	(-7.84)	(-8.48)	(-2.94)	(-2.93)	(-7.46)	(-7.60)	(-5.57)	(-5.66)	(-3.96)	(-4.00)
CEO Power×Heavy	-1.61***	-0.37***	-20.15***	-4.63***	0.39	0.09	-3.21***	-0.75***	-0.83**	-0.19**
	(-6.88)	(-7.33)	(-5.13)	(-5.11)	(0.66)	(0.66)	(-8.67)	(-8.95)	(-2.49)	(-2.50)
CEO Power×Large×Heavy	1.75***	0.40***	3.91***	0.90***	-0.08	-0.02	2.62***	0.61***	0.69**	0.16**
	(6.58)	(6.94)	(3.65)	(3.67)	(-0.13)	(-0.13)	(7.04)	(7.23)	(2.31)	(2.32)
Large	1.36***	0.31***	3.48***	0.80***	1.85***	0.43***	1.51***	0.36***	2.10***	0.48***
	(8.32)	(9.31)	(3.87)	(3.88)	(9.83)	(10.96)	(7.24)	(7.74)	(7.57)	(8.07)
% Outside Directors	2.09**	0.48**	2.55***	0.59***	1.82**	0.42**	2.22**	0.52***	1.86**	0.43**
	(2.40)	(2.41)	(2.88)	(2.89)	(2.06)	(2.07)	(2.57)	(2.58)	(2.09)	(2.10)
% Females on the Board	0.99	0.22	1.25	0.29	0.94	0.22	1.13	0.26	0.97	0.22
	(1.23)	(1.23)	(1.55)	(1.55)	(1.19)	(1.19)	(1.47)	(1.47)	(1.18)	(1.18)
Board Size	-0.18***	-0.04***	-0.15***	-0.03***	-0.12***	-0.03***	-0.19***	-0.05***	-0.20***	-0.05***
	(-4.32)	(-4.24)	(-3.50)	(-3.46)	(-2.92)	(-2.88)	(-4.84)	(-4.75)	(-4.34)	(-4.29)
Annual Board Meetings	0.08***	0.02***	0.07***	0.02***	0.08***	0.02***	0.07***	0.02***	0.06***	0.01***
	(4.79)	(4.86)	(4.32)	(4.37)	(4.84)	(4.89)	(4.78)	(4.83)	(3.76)	(3.80)
ROA	2.15**	0.49**	2.47**	0.57**	1.98*	0.46*	2.43**	0.57**	1.26	0.29
	(2.07)	(2.08)	(2.31)	(2.33)	(1.84)	(1.85)	(2.33)	(2.34)	(1.15)	(1.15)
Liquidity	-1.12	-0.26	-1.34*	-0.31*	-1.19	-0.28	-1.89**	-0.44**	-2.35***	-0.54***
	(-1.48)	(-1.48)	(-1.73)	(-1.73)	(-1.55)	(-1.55)	(-2.51)	(-2.51)	(-3.04)	(-3.05)
% Shares of top-3 investors	-1.23***	-0.28***	-1.32***	-0.30***	-1.44***	-0.33***	-1.09***	-0.26***	-0.87***	-0.20***

Table 8 (continued)

	(1) CEO Power Index 2	(2)	(3) CEO Pay	(4)	(5) CEO Ownership	(6)	(7) CEO Financial Expert	(8)	(9) CEO Insurance Experienced	(10)
	Giving Ratio	dy/dx	Giving Ratio	dy/dx	Giving Ratio	dy/dx	Giving Ratio	dy/dx	Giving Ratio	dy/dx
	(-3.96)	(-3.99)	(-4.26)	(-4.28)	(-4.53)	(-4.57)	(-3.62)	(-3.63)	(-2.79)	(-2.80)
Firm Age	0.00*	0.00*	-0.00	-0.00	-0.00	-0.00	0.00	0.00	0.00	0.00
	(1.89)	(1.88)	(-0.38)	(-0.38)	(-0.87)	(-0.87)	(1.25)	(1.25)	(1.25)	(1.25)
Heavy	0.06	0.01	4.30***	0.99***	0.22	0.05	0.83***	0.20***	0.31	0.07
	(0.44)	(0.44)	(4.57)	(4.55)	(1.22)	(1.22)	(4.33)	(4.35)	(1.27)	(1.27)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Log Likelihood	-1011.70		-1042.66		-1013.33		-1009.85		-1040.78	
N	1023	1023	1023	1023	1023	1023	1023	1023	1023	1023
Left Censored Observations	590	590	590	590	590	590	590	590	590	590

Alternative definitions for CEO power are adopted in this table. CEO Power Index 2 is the second component constructed by the PCA. CEO Pay, CEO Ownership, CEO Financial Expert and CEO Insurance Experienced are the four components used in the PCA. This table presents the results that explain an insurer's amount of corporate giving based upon the random-effects tobit model and the marginal-effects of the tobit model as evaluated at sample means for the continuous variables respectively. Marginal-effects for discrete dummy variables are computed for the change from 0 to 1. Reported in parentheses are t-statistics unless being stated differently. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests. The intercept term is included in the regression and is suppressed for brevity. Variable definitions are reported in Table 11 Appendix

& Reza (2015) argue that changes in personal income tax rates influence CEOs' decision-making regarding private benefits. Faced with a 10% increase in the maximum dividend tax rate, powerful CEOs may choose to retain cash within their firms and consume private benefits in alternative ways rather than distributing cash as dividends and facing higher income taxes. This behavior is expected to reduce the relative costs associated with such consumption, particularly among CEOs in insurance firms that pay higher dividends or have higher levels of CEO ownership.

We generate a dummy variable, denoted as '*Post*', which takes a value of 1 for the period 2010–2013 and 0 for the period 1999–2009. In Column (1) of Table 10, consistent with agency predictions, we find that corporate giving increases after the 2010 dividend tax reform (the coefficient of *Post* is positive and significant at 1% level). Furthermore, the impact becomes more pronounced as CEO power increases, as evidenced by the significantly positive coefficient estimate for the interaction term *Post*×*CEO power* in Column (2) of Table 9 ($p \leq 0.01$, two-tail). Firm size, as an alternative risk management mechanism, helps to mitigate the positive relationship between CEO power and donations following the 2010 dividend tax reform (the coefficient of the interaction term *Post*×*CEO power*×*Large* is negative and significant at 5% level, two tail, as shown in Column 2). With reduced relative costs for CEOs pursuing their private interests after the reform, effective risk management mechanism may serve to alleviate agency problems associated with powerful CEOs. Notably, these findings are primarily observed in insurance firms characterized by high dividend payments or high CEO ownership.

5 Conclusion

We examine the empirical relationship between CEO power and charitable cash donations in the UK's non-life insurance industry, specifically investigating the impact of risk management on this association. We find a positive link between CEO power and charitable giving in insurance firms, indicating that influential CEOs use philanthropy to bolster their human capital value and promote CSR profiles. Moreover, this relationship is moderated by firm size-related diversification and reinsurance spending. Specifically, powerful CEOs in larger or heavily reinsured firms allocate less to philanthropy, relying on risk management measures for reputation protection. In this way, and contrary to proponents of the 'insurance-as-CSR' perspective, such as Godfrey et al. (2009), the use of reinsurance by insurance firms effectively substitutes for philanthropy as protection against litigation risk. As such, future 'insurance-as-CSR' research should control for the moderating effects of alternative risk management tools before making definitive judgments on the effectiveness of philanthropy as a risk management device. The importance of reinsurance in supporting corporate solvency, and hence, the power position of insurance CEOs, also hints at a priority rating of stakeholders in the insurance industry, with community-based philanthropic interests ranking lower than key contracting constituents, such as investors, policyholders, and managers. In this way, our research adds to the extant stakeholder literature on corporate donations (e.g., Adams & Hardwick 1998).

Our research further enriches CSR literature by highlighting how comprehensive risk management strategies impact powerful CEOs' incentives regarding philanthropy, with potential applications in other financially significant and regulated sectors, such as the banking industry. The findings of the present study could also have potential regulatory and/or public policy relevance, given the increasing profile of social and environmental strategic matters in the financial services sector. Indeed, institutional pressure from

Table 9 Subsample analysis based on firm governance: Determinants of the corporate giving ratio

	(1) Board Independence = 1	(2) Board Independence = 0	(3) Frequent Board Meeting = 1	(4) Frequent Board Meeting = 0
CEO Power	0.08	1.03***	-0.16	0.93***
	(0.37)	(6.50)	(-0.68)	(4.88)
CEO Power × Large	-0.06	-0.79***	0.24	-0.60**
	(-0.25)	(-4.18)	(1.01)	(-2.00)
CEO Power × Heavy	-0.22	-0.80***	0.11	-0.75***
	(-0.88)	(-3.50)	(0.39)	(-2.78)
CEO Power × Large × Heavy	0.36	0.72**	-0.23	0.66
	(1.30)	(2.56)	(-0.78)	(1.62)
Large	0.82***	1.82***	1.12***	2.26***
	(4.36)	(7.69)	(7.06)	(5.91)
% Outside Directors	6.31**	0.12	2.51***	-1.51
	(2.49)	(0.09)	(2.75)	(-0.90)
% Females on the Board	0.20	2.98***	2.71***	-3.99**
	(0.25)	(2.67)	(3.99)	(-2.05)
Board Size	-0.01	-0.40***	-0.04	-0.22**
	(-0.31)	(-6.36)	(-0.94)	(-2.29)
Annual Board Meetings	0.09***	0.06***	-0.01	0.11
	(4.93)	(2.72)	(-0.42)	(1.31)
ROA	4.11***	-0.32	3.63***	-0.40
	(3.60)	(-0.20)	(3.78)	(-0.17)
Liquidity	4.19***	-7.77***	3.68***	-10.65***
	(4.79)	(-6.79)	(4.70)	(-6.10)
% Shares of top-3 investors	-0.94**	-0.57	-1.11***	-0.34
	(-2.53)	(-1.28)	(-3.50)	(-0.47)
Firm Age	-0.01***	0.01***	-0.00***	0.02***
	(-3.13)	(4.10)	(-2.65)	(4.02)
Heavy	0.51***	-0.35*	0.45***	-0.75**
	(3.06)	(-1.94)	(3.61)	(-2.57)
Year Fixed Effects	Yes	Yes	Yes	Yes
Log Likelihood	-448	-500.13	-561.59	-360.58
Observations	441	582	544	479
Left Censored Observations	209	381	234	356

This table presents the random-effects tobit regression results that explain an insurer's corporate giving ratio across different subsamples. We classify a board as independent (Independent Board = 1) if at least 63% of directors are independent. We classify a board as having frequent meetings if the number of meetings per year ≥ 12. Reported in parentheses are t-statistics unless being stated differently. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests. The intercept term is included in the regression and is suppressed for brevity. Definitions for other variables are reported in Table 11 Appendix

Table 10 A natural experiment using the impact of the 2010 individual dividend tax increase on corporate giving ratio

	(1) All	(2) All	(3) High Dividend	(4) Low Dividend	(5) High CEO Ownership	(6) Low CEO Ownership
CEO Power		0.77	2.09**	-0.38	0.66***	-0.43**
		(1.33)	(2.11)	(-1.76)	(3.36)	(-2.04)
CEO Power×Large		-0.53	-1.90**	0.73**	-0.20	0.42
		(-1.09)	(-1.97)	(2.01)	(-0.94)	(1.48)
CEO Power×Heavy		-0.65	-2.08*	0.35	0.67	-0.08
		(-1.23)	(-1.95)	(1.36)	(0.42)	(-0.35)
CEO Power×Large×Heavy		0.56	1.87*	-0.39	-1.16	0.21
		(1.14)	(1.76)	(-1.00)	(-0.73)	(0.58)
Post	0.74***	-0.03	-0.36	-0.12	0.43	-1.40**
	(3.52)	(-0.06)	(-0.54)	(-0.20)	(0.92)	(-2.14)
Post×CEO Power		1.16***	1.19***	0.18	1.47***	0.43
		(2.58)	(3.97)	(0.61)	(4.47)	(0.56)
Post×CEO Power×Large		-1.14**	-1.08***	-0.66	-0.89***	-0.95
		(-2.49)	(-3.01)	(-1.39)	(-3.12)	(-1.00)
Post×CEO Power×Heavy		-0.42	-0.72*	0.84	-1.19	1.40*
		(-0.58)	(-1.68)	(1.08)	(-0.31)	(1.66)
Post×CEO Power×Large×Heavy		0.80	0.81	-0.15	1.00	-0.07
		(1.11)	(1.53)	(-0.18)	(0.26)	(-0.06)
Large		1.50***	0.66	2.41***	0.71***	2.13***
		(3.68)	(0.98)	(4.01)	(2.75)	(7.77)
% Outside Directors		0.98	1.20	2.36	-4.04***	1.02
		(0.67)	(0.80)	(1.00)	(-3.49)	(0.75)
% Females on the Board		1.05	0.26	1.88	0.98	3.36**

Table 10 (continued)

	(1) All	(2) All	(3) High Dividend	(4) Low Dividend	(5) High CEO Ownership	(6) Low CEO Ownership
		(0.62)	(0.20)	(0.72)	(1.16)	(2.40)
Board Size		-0.24	-0.01	-0.27**	-0.24***	0.14*
		(-1.59)	(-0.10)	(-2.09)	(-5.00)	(1.75)
Annual Board Meetings		0.08*	0.03	0.10**	-0.01	0.19***
		(1.76)	(0.77)	(1.97)	(-0.72)	(6.41)
ROA		1.81	1.43	-1.65	-2.84***	11.56***
		(0.61)	(0.54)	(-0.46)	(-2.67)	(5.06)
Liquidity		-1.76	1.79	-3.76	-5.67***	4.41***
		(-0.54)	(0.51)	(-1.43)	(-5.57)	(3.71)
% Shares of top-3 investors		-0.67	-0.85	-0.79	-0.90**	-2.04***
		(-1.01)	(-1.25)	(-0.84)	(-2.15)	(-3.66)
Firm Age		-0.00	0.00	-0.01	0.00**	-0.02***
		(-0.03)	(0.06)	(-1.16)	(2.11)	(-4.31)
Heavy		0.05	0.70*	-0.11	0.74***	0.07
		(0.15)	(1.84)	(-0.30)	(3.84)	(0.30)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1023	1023	498	525	392	631
Left Censored Observations 590		590	172	418	115	475

This table presents the tobit regression results that explain an insurer's corporate giving ratio using the 2010 individual dividend tax increase as a natural experiment. We classify a firm-year observation into the high dividend group if its dividend earnings ratio is higher than sample average dividend distributions. We also use the sample average CEO ownership to partition our firm-year observations into high and low CEO ownership subgroups. *Post* takes the value of one for the year 2010 and onward (2010 being the dividend tax increase year) and zero otherwise. Robust standard errors are clustered at the firm level. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels respectively in two-tail tests. Variable definitions are reported in Table 11 Appendix. The intercept term is included in the regression and is suppressed for brevity

political agents could therefore make insurance industry CEOs, particularly those in large and highly reinsured insurers, more clearly realize the importance of increasing discretionary investment in CSR initiatives. This is particularly the case with the financing of community projects that could help mitigate losses from climate-related risks, such as flooding. Moreover, our results could be of interest to private equity firms, which are recently taking large equity stakes in insurance firms (Kirti & Sarin 2024). For example, private equity firms looking to maximize their investments in insurance firms may consider giving philanthropic initiatives less emphasis than creating future value by financially re-engineering their acquisitions — for example, by restructuring their balance sheets by changing asset portfolios and reinsurance and reserving techniques.

Acknowledging limitations, such as sample size and the restricted time series, our data offer insights into insurers operating during significant economic and regulatory changes. Focusing on the UK's non-life insurance industry helps minimize biases stemming from institutional differences such as the tax treatment of corporate donations. Despite limitations, our study provides a valuable benchmark for future CSR investigations in industries where risk management and CEO power data can be acquired, potentially through the application of primary research methods, like interviews and/or direct surveys of managers and/or other key stakeholders, such as investors.

Appendix

Table 11 Variable definitions

Variables	Definition
Dependent Variables	
DON	Amount of annual corporate donations during the year divided by total assets, measured in £ millions
DON Dummy	Dummy variable equal to 1 if a firm donates in year t, 0 otherwise
Giving Ratio	$\text{Log}(1+DON) \times 10^3$
Variables Used to Construct the CEO Power Index	
CEO Duality	Dummy variable equal to 1 if the CEO and Chairman positions are not separate, 0 otherwise
CEO Tenure	Number of years the CEO has been in position
CEO Ownership	Dummy variable equal to 1 if the CEO is also a major shareholder of the company (i.e., with the ownership level greater than 3%), 0 otherwise
CEO Pay	Annual value of total compensation the CEO received (including salary, cash bonuses and other benefits) divided by the total annual compensation of all directors on the board
CEO Bonus	Dummy variable equal to 1 if the CEO receives performance-related bonus pay and 0 otherwise
CEO Internal	Dummy variable equal to 1 if the CEO is appointed internally, 0 otherwise
CEO Busy	Dummy variable equal to 1 if the CEO has at least one other board appointment, and 0 otherwise
CEO Financial Expert	Dummy variable equal to 1 if the CEO is a professionally qualified accountant, actuary or underwriter
CEO Insurance Experienced	Dummy variable equal to 1 if the CEO has an insurance background, 0 otherwise
Board Level Variables	
% Outside Directors	% independent outside directors on the board
% Females on the Board	Gender diversity—% females on the board
Board Size	Board size—the total number of board members
Annual Board Meetings	Number of board meetings per year
Firm-Specific Variables	
Log Firm Size	The natural logarithm of total assets
ROA	Return on assets – measured as NOPAT/total assets
Reinsurance	Reinsurance ceded divided by gross written premiums
Liquidity	Liquidity—measured as (cash + short-term deposits)/total assets
% Shares of top-3 investors	% shares in issue held by the top-3 shareholders

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