FINANCIAL PERFORMANCE AND SOCIAL PERFORMANCE: DOES THE BOARD-LEVEL SUSTAINABILITY FUNCTION MATTER?

Akua Peprah-Yeboah *, Ellis Kofi Akwaa-Sekyi **, Abukari Salifu Atchulo **

* *Corresponding author*, Department of Accounting and Finance, School of Business, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana
Contact details: Kwame Nkrumah University of Science and Technology, Accra Rd, Kumasi, Ghana
** Department of Accounting and Finance, School of Business, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

OPEN ACCESS

How to cite this paper: Peprah-Yeboah, A., Akwaa-Sekyi, E. K., & Atchulo, A. S. (2025). Financial performance and social performance: Does the board-level sustainability function matter? *Corporate Governance and Sustainability Review, 9*(3), 80–89. https://doi.org/10.22495/cgsrv9i3p6

ISSN Online: 2519-898X
ISSN Print: 2519-8971

Received: 30.12.2024
Revised: 17.03.2025; 27.06.2025
Accepted: 07.07.2025

JEL Classification: G30, L25, M14, O55, Q56
DOI: 10.22495/cgsrv9i3p6

Abstract

This study examines the relationship between corporate financial performance (CFP) and corporate social performance (CSP), exploring any inherent non-linearities (Jahmane & Gaies, 2020). Further, it investigates whether a formal ethics function on the board moderates this relationship. Literature suggests sustainability committees encourage investment in corporate social responsibility (CSR) (Velte, 2023; Velte & Stawinoga, 2020). Thus, the CSP should be higher and sustained for firms with such structures on the board. Using data from 239 companies across the largest stock markets in West, East, and Southern Africa (2014–2018), the study applies generalized linear regression models that are fitted to the data with CSP score as the outcome variable, and return on assets (ROA) and return on equity (ROE) as independent variables. Polynomial terms are introduced to capture non-linearity, and the ethics function on the board is introduced as an interaction term. Findings reveal a non-linear relationship between CFP and CSP, where CSP increases with CFP but declines after a threshold. Furthermore, firms with a board-level ethics function demonstrate stronger CSP engagement, suggesting that ethical oversight influences corporate decision-making on social initiatives. The study underscores the vital role of sustainability committees in maintaining CSP as a strategic priority.

Keywords: Corporate Financial Performance, Corporate Social Performance, Slack Resources Theory, Sub-Saharan Africa, Sustainability Committee

Authors' individual contribution: Conceptualization — A.P.-Y.; Validation — A.P.-Y.; Formal Analysis — A.P.-Y.; Data Curation — A.P.-Y.; Writing — Original Draft — A.P.-Y.; Writing — Review & Editing — E.A.-S. and A.S.A.; Visualization — A.P.-Y.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

This study examines corporate financial performance (CFP) as an antecedent of corporate social performance (CSP), a company's social responsibility activity, measured in quantitative terms. The discussion on CSP has typically considered the business case for firms engaging in socially responsible behavior, that is, the notion that doing good leads to improved financial performance (Camilleri, 2022; Nguyen et al., 2025). According to the legitimacy theory, businesses gain acceptance by conforming to the norms and values of the society within which they exist and operate (Vishwanathan et al., 2020). Firms that conform to the norms of the social context within which they exist enjoy

a good reputation and legitimacy, leading to greater stability through the creation of social acceptance and loyalty, the ability to attract highly qualified personnel, and the acceptance of professional bodies (Vishwanathan et al., 2020; Aspal et al., 2023). While the legitimacy effect of corporate social responsibility (CSR) has enjoyed scholarly examination, evidence has been gathered predominantly in developed countries, where stable economic and social structures mean that firms are more likely to value the benefits of investments in social performance. Typically, CSP is considered an integral part of business operations in developed economies, and thus, provisions are made for execution even when the organization is faced with adversity. For instance, a manufacturing company cannot use financial difficulties as an excuse to dispose of industrial waste in an unsafe manner.

By contrast, CSR in developing countries is considered philanthropic and at the discretion of managers (Cheruiyot & Onsando, 2016; Seghyar et al., 2024). Institutionally constrained environments in developing economies, characterized by capital scarcity, lack of oversight, high levels of corruption, and uncertainty, create a business culture of financial survivalism in which firms adopt conservative and capital-hoarding strategies (Julian & Ofori Dankwa, 2013). This risk-averse stance is often accompanied by a perception that CSR is discretionary and has little strategic value. Under such circumstances, there is little governmental pressure on firms to engage in CSR activities. As Domfeh (2004) notes, such governments are often preoccupied first and foremost when dealing with broader economic issues, often focusing on issues relating to market development, such as industrial development and creating job opportunities, and consequently pay little attention to corporate social behavior.

Evidence for this characterization of CSR in Africa was found by Ofori and Hinson (2007) in their study on CSR in Ghana. Here, the primary concern of business managers is the maximization of shareholder returns on their investment, making CSR-related activities subordinate and only pursued where slack or excess resources exist (Julian & Ofori-Dankwa, 2013). In such circumstances, discretionary activities, such as social engagement, may be sidelined and starved of resources in times of adversity. Thus, financial performance is expected to be an antecedent and have a positive correlation with future CSP in developing countries. However, the effect of CFP on CSP has not received adequate scholarly attention, especially in the African business environment.

Further, there is ample evidence that the effect of CSP on CFP is non-linear (Jahmane & Gaies, 2020; Shabbir et al., 2020). First, CSP expenditure has a negative effect on CFP because the return it provides is not enough to cover the expenses involved. With time, CSP accrues gains, such as improved reputation and legitimacy for the company, which in turn results in improved CFP. Thus, eventually, CFP increases with an increase in CSP. However, at some point, the law of diminishing returns kicks in, and this rise in benefits from CSP for the bottom line plateaus. Inspired by this, we investigate the possibility that the inverse relationship, that is, the effect of the prior year's CFP on CSP, may be similarly non-linear in the African context. We expect that, as CFP increases, CSP will increase up to a point and then plateau and begin to decrease, creating a curve. In the African context, due to the discretionary status of CSP, it is pursued only when slack resources are available. Thus, as CFP increases, we expect that future CSP will also increase. However, beyond a certain point, reputational returns to the firm wane as the firm's legitimacy is established; thus, further investments in CSP are no longer seen as essential to the success of the business, resulting in a dip in the curve.

Our study further examines how the existence of a sustainability function on the board moderates the CFP-CSP nexus. The literature suggests that sustainability committees encourage investment in CSR (Burke et al., 2019; Velte, 2023; Velte & Stawinoga, 2020). Thus, it is expected that for firms with such structures on the board, the upward rise of the curve will be sustained for longer than for firms without such structures. In other words, the sustainability committee moderated the effect of CFP on CSP. Inspired by these arguments, this study examines the effect of CFP on future CSP activities among sub-Saharan African firms. The functional form of this relationship (to uncover any inherent non-linearities) is explored. Finally, any moderation of this relationship by the existence of a board sustainability committee was assessed.

This study examines the impact of CFP on future CSP in sub-Saharan African firms. Specifically, it seeks the following:

1) Investigate the nature of the CFP-CSP relationship and explore whether it follows a non-linear pattern.

2) Assess the moderating role of board sustainability committees in this relationship.

To achieve these aims, this study addressed the following research questions:

RQ1: How does CFP influence future CSP in sub-Saharan Africa?

RQ2: Does the CFP-CSP relationship exhibit a non-linear pattern?

RQ3: How does the presence of a sustainability function on the board moderate the CFP-CSP relationship?

There is a theoretical basis for the expectation that CSR investments are affected by economic and financial factors. Slack resources theory explains that firms invest more in discretionary activities, such as CSR, when their financial resources improve (Surroca et al., 2010). It posits that, as CSR does not form part of the core mandate of the organization, it may be considered a discretionary activity and is thus subject to financial considerations. An extension of the slack resources theory is a "universally positive" hypothesis, which suggests that CFP will always have a positive effect on CSP (Orlitzky et al., 2003; Surroca et al., 2010). However, the "universally positive" relationship between CSP and CFP may not apply outside of the Global North. Therefore, the reverse relationship may also be different in this context. The peculiar economic, political, and social environments of developing countries lead to nuanced expressions of CSR (Rayman-Bacchus, 2012; Okoye, 2012), which demands a nuanced examination of the CFP-CSP link within that context. For instance, Julian and Ofori-Dankwa (2013) found that CFP had a significant negative relationship with CSP, defying the "universally positive" rule. The relationship between CFP and CSP in Africa is not clearly understood.

The remainder of this paper is structured as follows. Section 2 reviews the pertinent literature. Section 3 presents the methods employed to execute the objectives of this study. Section 4 provides the results of the data analysis. Section 5 discusses these results. Section 6 concludes the paper.

2. LITERATURE REVIEW

2.1. The effect of corporate financial performance on corporate social performance

Slack resources theory provides a good theoretical foundation for the study of the financial antecedents of CSR. This has helped ground research on the effects of financial resource availability on CSR expenditure (Islam et al., 2021). Slack resources are a cushion of spares or uncommitted resources. They are resources beyond the minimum necessary to effectively maintain the organization's operations (Cyert & March, 2015). Nohria and Gulati (1996) describe it as a resource beyond those needed to produce a given level of output. Slack resources are "potentially usable resources" (George, 2005, p. 661) generated by prior financial performance or profitability (Margolis & Walsh, 2003). For research purposes, slack resources have often been operationalized in their literal sense as the ratio of debt to equity (Alessandri et al., 2008) or of current assets to current liabilities (Strike et al., 2006). However, in CSP research, the use of slack resources is related to the underlying conceptual notion (Hillman et al., 2004). In this sense, slack is operationalized as a measure of financial performance. In this context, organizational slack is a consequence of improved profitability, which determines subsequent CSR (Islam et al., 2021).

Following the slack resources theory, it can be argued that a firm's ability and propensity to engage in social involvement increases from a low baseline as financial resources become increasingly available (Fauzi & Idris, 2009; Islam et al., 2021; Waddock & Graves, 1997). Slack resources allow firms to invest in initiatives that do not promise immediate pay-off (Bansal, 2005) and/or that are not exactly a priority. Further, slack resources theory has been shown in the literature to be a good fit for explaining CSR expenditures (Islam et al., 2021; Shahzad et al., 2016; Surroca et al., 2010; Waddock & Graves, 1997). Waddock and Graves (1997) found statistically significant positive relationships between CSP and CFP in both directions; that is, CSP positively impacts CFP, and prior CFP positively impacts CSP. This led them to propose that social and financial performance interact in a "vicious cycle". Orlitzky et al. (2003) conducted a meta-analysis that found further evidence that CSP and CFP interact reciprocally and proposed that they interact in a concurrent directionality.

2.2. The non-linear relationship between corporate financial performance and corporate social performance

The association between CSP and CFP has drawn controversy in the literature. Some studies have found a positive relationship between CSP and CFP (Akben-Selcuk, 2019; Okafor et al., 2021), whereas others have found evidence of an inverse relationship (Brammer et al., 2006). However, the debate on how CSP affects CFP remains unresolved. Currently, the direction of scholarship has shifted from debating the "allies vs. adversaries" dichotomy (Ramanathan, 2018) (CSP either enhances or weakens CFP perpetually), allowing for both conditions to exist together and trying to understand the circumstances under which either might predominate (Chen et al., 2018). One perspective that is garnering momentum is the curvilinear hypothesis, which posits a dynamic, non-monotonic relationship between CSP and CFP (Ramanathan, 2018). In other words, as CSP increases, CFP increases until it reaches a maximum and then begins to decrease.

Following microeconomic theory, much of the literature examining the curvilinear relationship has been founded on the assumption that it is U-shaped (Chen et al., 2018). As investment in CSP begins to rise, firm performance initially declines due to the cost of structural adjustment and agency costs, which are required to increase CSP engagement (Wang et al., 2016). However, after some level of investment, CSP will begin to pay off by increasing access to critical resources, such as customer goodwill, and protecting against losing those resources (e.g., through lawsuits that result in loss of reputation). Drawing from the organizational learning curve perspective, McWilliams and Siegel (2001) posited that explicit and implicit costs of CSR activities may be recovered by a company's learning curve on social engagements. In other words, after firms have invested in CSR over time, the marginal cost of the social projects and initiatives they engage in begins to fall, as they learn to take synergistic opportunities available. Thus, the effect of CSR investment costs on profitability decreases, and financial performance increases.

To test these hypotheses, Barnett and Salmon (2006) examine the relationship between the financial performance of mutual funds and the number of social screens used in social investment funds. They found that as the number of social screens used in investment appraisal increased, financial returns first declined but then rebounded as the screens reached a maximum. Similarly, Park and Lee's (2009) examination of the relationship between reputational ratings and accounting-based CFP found a U-shaped effect. Wang et al. (2016) found that in the international construction industry, the relationship between CSR and CFP (measured by return on assets [ROA] and earnings per share [EPS]) is curved. Han et al. (2016) expanded the definition of social responsibility to include governance. Their study confirmed a negative (U-shaped) relationship between environmental activity and CFP, whereas the governance responsibility performance score presented a positive (inverse U-shaped) relationship.

Not all evidence in the literature supports this view of the CSP-CFP relationship. Wang et al. (2008) found that as corporate philanthropy (amount spent on charity) increases, CFP (measured by ROA and Tobin's Q) also increases to a maximum point and then begins to fall. While they also found a curved relationship between the two variables, it was inverted. Lankoski (2008) also demonstrated an inverted-U relationship between CSR outcomes and economic performance, such that as the marginal costs of CSR activities increase, marginal revenues decline, reach a minimum, and then increase.

Overall, empirical evidence shows that the intensity of the influence of CSR costs and

benefits on firm performance constantly changes; thus, a linear model is insufficient to explain this relationship (Salzmann et al., 2005). One perspective sees financial performance as a determinant of social responsibility, while another sees it as a consequence. This study seeks to determine whether this relationship is non-linear. Drawing from the perspective that CSP is discretionary (at least in part) (Carroll, 1991), the decision to invest in it is affected by the availability of excess resources. Therefore, this study posits that as financial performance increases, firms' access to slack resources increases, as does their capacity to invest more in CSP to a maximum, and then it will decline. As the utility derived from CSR investment peaks, further investments in CSR decrease CFP (Barnette & Salomon, 2012).

2.3. The moderating effect of the board-level sustainability function

Firms are increasingly restructuring their conventional corporate governance systems to include functions dedicated to stakeholder management in response to the rising demand for social accountability and sustainability. Burke et al. (2019), for instance, report that as many as 65% of the S and P (S&P) 100 firms and about a fifth of the Russell 1000 in the US have such a function on their boards. These board-level committees are also popular among firms whose operations are environmentally sensitive. There is broad heterogeneity in the focus and functioning of such committees, spanning from general responsibilities for sustainability to concern for specific stakeholder-related issues. However, while the responsibilities of these committees may vary widely, their fundamental goal is to provide some form of oversight for stakeholder relationships and extend corporate accountability to non-shareholder stakeholder groups.

For this study, the sustainability function is defined as the extension of the corporate governance system, set up to account for the impact of doing business on various stakeholder groups, following the definition of Burke et al. (2019). These committees aim to concretize the corporate governance-sustainability nexus through a formal and visible commitment to stakeholders. By stakeholders, we refer to the community, employees, environment, consumers, and suppliers. There is little empirical evidence of the link between sustainability committees and social performance in the literature, and the little evidence that exists is inconsistent (Saa et al., 2025; Walls et al., 2012). While Saa et al. (2025) found no association between the existence of such committees and either environmental performance or environmental metrics in executive compensation, Eccles et al. (2014) found that highly sustainable companies are more likely to adopt such committees. Overall, there seems to be more evidence in corporate governance literature that board-level committees have positive effects on social performance (Beasley et al., 2000; Klein, 1998; Uzun et al., 2004). Klein (1998) and Uzun et al. (2004) attest to the fact that governance via committee specialization influences corporate outcomes. Based on the above, it is expected that the existence of a board-level committee dedicated to sustainability issues will positively influence the firm's investment in CSP, thus extending the rise of the curve.

3. RESEARCH METHODOLOGY

3.1. Study design

This study employed a panel research design using firm-level data extracted from annual reports over multiple years. Panel data, which combines cross-sectional and time-series elements, allows for a more comprehensive analysis of CFP and CSP trends while controlling for unobserved heterogeneity.

Alternative research designs include cross-sectional and time series approaches. A cross-sectional design analyzes data at a single point in time, making it suitable for identifying relationships between variables, but limiting insights into changes over time. A time-series design focuses on trends within a single entity or group over time, capturing temporal dynamics but lacking cross-sectional variation.

The panel design was chosen for this study because it provides a richer analytical framework, enabling the examination of both within-firm and between-firm variations. This approach improves the estimation accuracy, mitigates omitted variable bias, and allows for more robust causal inferences. By leveraging firm-level panel data, the study effectively explores how CFP influences CSR decisions while accounting for firm-specific and temporal effects

3.2. Study population and sample

The study population comprised listed sub-Saharan African companies because of the unique business and social environment of the region. The region has some of the poorest countries in the world and is incredibly socio-culturally diverse. The sample consists of firms listed on the two largest stock markets by market capitalization in each of the three geographical regions of sub-Saharan Africa (West Africa, East Africa, and Southern Africa). Data on the five years (2014–2018) of both CFP and CSP collected from each company were analyzed. Thus, each company was represented at least five times in the sample. Companies were included based on the availability and accessibility of published annual reports during the study period. A total of 239 companies were included in the study. Financial companies are excluded because they conduct business under a separate regulatory framework with different reporting requirements from most other companies. Some of the CSP measures analyzed have little meaning in the context of their unique regulatory environment (Kansal & Singh, 2012). Data from any reporting year lacking enough published financial data to estimate the CFP measures were excluded from the analyses (i.e., ROA and ROI). This could happen, for example, if the value of a company's total assets (required for estimating the ROA measure) for a reporting year is not available.

3.3. Data and measures

Data was sourced from the published financial statements of the selected companies during the study period. Financial reports have been found to be a reliable and comprehensive source of financial and other data for listed firms, in part because they are required to meet disclosure and auditing requirements (Samkin & Schneider, 2010).

A content analysis approach was employed to extract data from the published reports.

The outcome measure was a CSP score derived as the first principal component obtained from a principal component analysis of 23 summary CSP measures estimated based on the corporate, social, environmental, and energy emissions (CSEEE) index. As the aim is to provide a context-specific measure of CSP, the measures of the CSEEE index developed by Kansal and Singh (2012) were adopted. CSEEE was chosen because it was developed in a developing country (India) and provides a comprehensive list of CSR activities. The index comprises 98 activities in seven categories: community development, human resource engagement, product/service innovation, environment, energy, emissions of carbon and other harmful gases, and other CSR activities.

Relevant information from published reports was extracted using a keyword-based text-searching and parsing algorithm. Keywords were selected to represent the key domains of the CSEEE framework. This algorithm applies a rank order to the keywords to ensure that the most relevant information is first extracted. The algorithm was implemented in Python, using the Candy PDF tool. The resulting text data were manually checked and graded as follows:

- 0 if the activity was not reported on;
- 1 if the activity was reported on but not quantified in monetary terms;
- 2 if the activity was quantified in monetary terms.

Grading was performed independently by two assessors. The results were then cross-checked to ensure accuracy. Any conflicts were resolved by a third assessor, who manually checked the source documents. For this study, multiple accounting measures of CFP, namely return on assets (ROA) and return on equity (ROE), are used. This is informed by the focus on internal decision-making systems that determine the level of non-market investment (specifically, investment in CSP). The independent variables are measures of CFP (ROA and ROE). Both ROA and ROE are widely recognized and accepted measures of financial performance. Accounting-based indicators, such as a firm's ROA, ROE, or earnings per share (EPS), are influenced by internal decision-making mechanisms and managerial performance through the allocation of discretionary funds to different projects (such as CSP-oriented activities) (Wartick & Cochran, 1985). Accounting-based measures have the advantage of being available to all companies and are standardized in a way that allows for easy comparison. However, they suffer from the handicap of being historical. Furthermore, while absolute measures (e.g., net profit) fail to account for company size (Al-Tuwaijri et al., 2004), accounting ratios, such as ROA and ROE, suffer from industry bias due to the varying age and structure of assets across industries in a sample consisting of companies from different industries (Galant & Cadez, 2017). Again, the moderating effect of the board-level sustainability function, as indicated by the existence of a sustainability committee, is examined. A dual data-entry approach was employed to extract data from financial statements to ensure data quality. Conflicts in the resulting CFP data were resolved through consensus.

The study adjusted for the firm's listing age, industrial sector, firm size (measured as total assets in millions or USD), and whether a firm was multinational.

3.4. Statistical analysis

Unadjusted and adjusted generalized linear regression models (with an identity link and normally distributed errors) were fitted to the data, with the CSP score as the outcome variable and *ROA* and *ROE* as independent variables. The general form of these models is as follows:

$$CSP_{it} = \beta_0 + \beta_1\left(CFP_{i(t-1)}\right) + \beta_2(Covariates_{t0}) + \beta_3(Sustainabilityfunction_{t0}) + \varepsilon \quad (1)$$

where, *CFP* refers to either ROA or ROE, and β_2 represents a vector of coefficients for the included covariates given above. To explore the non-linearity in the effect of CFP on CSP, polynomial terms (quadratic and cubic terms) were included. This study compares the models with and without non-linear terms using likelihood ratios. Year- and country-fixed effects terms are included in some of the models to account for secular trends and country-fixed effects. The correlation between observations from the same company is accounted for by estimating the robust variances in the statistical analyses.

4. RESULTS

The characteristics of the sample are presented in Table 1 (see Appendix). The sample is categorized according to whether the firm has a formal board-level sustainability function. As Table 1 shows, South Africa contributes the most firms (almost 60%) to the sample, while Ghana is the least represented, at about 3%. Slightly more than half (53%) of the sample has a board-level ethics function, which varies considerably by country. Approximately 36% of the firms are multinational, and the majority (43%) are involved in secondary economic activities. All the companies are relatively old, with half of them having been incorporated for at least 45 years, and similar proportions have been listed on the stock exchange for more than 20 years. The companies reported a median ROA of approximately 3% and ROE of approximately 7% over the study period. This is similar for firms with and without board-level sustainability functions.

Table 2 shows the results of the unadjusted and adjusted regression models for ROA and ROE, respectively. The models were adjusted for incorporation age, industrial sector, and the existence of a sustainability committee. All models included fixed-effects terms for country and year to account for variations due to secular trends and between-country differences in the drivers of CSP. The unadjusted models showed no significant association between the CFP measures (ROA and ROE) and CSP. The adjusted model shows that the industrial sector and the existence of a sustainability committee are associated with CSP, but CFP measures are again not predictors of CSP. Table 3 shows the results of adding non-linear terms (quadratic and cubic terms) to the models for CSP vs. CFP. As before, all models included country- and year-fixed effects. These models were tested against their corresponding models from Table 2 using likelihood ratio tests (Table 5). From these results, there was little statistical evidence to support non-linearity in the relationship between CFP and CSP.

Table 4 shows the results of the regression models, including non-linear terms for CFP, as well as the interaction terms between the indicator of having a sustainability committee and the CFP terms (linear and non-linear). The overall significance of the interactions between the indicator of having a sustainability committee was tested, and the CFP was measured using likelihood ratio tests between these models and their corresponding models without the interaction terms (Table 5). The results show that the interaction terms significantly improve the model fit for both unadjusted and adjusted non-linear models. CSP is generally higher for firms with a sustainability committee function than for those without it. For firms with sustainability committees, CSP generally increases with increasing CFP up to a certain limit and then decreases. For firms without a sustainability committee, a similar pattern is observed for ROE. However, CSP decreases with increasing ROA.

5. DISCUSSION

In this study, slack resources theory was examined with a focus on the non-linearity of the CFP-CSP nexus in sub-Saharan Africa. Again, the role of the board-level sustainability committee in moderating this relationship was investigated. The study finds that, considering the presence of a sustainability committee, CFP has a non-linear effect on CSP, and the sustainability committee moderates this relationship. The relationship between CSP and CFP differs considerably between firms with and without sustainability committees. Firms with sustainability committes consistently outperform those without on CSR issues. Interestingly, for firms without a sustainability committee, an inverse relationship between CFP and CSP is found, as in Julian and Ofori-Dankwa (2013).

The study finds that the proposition of slack resources theory holds true in that in the institutionally challenged environment of the sub-region, social responsibility is considered discretionary and thus only pursued where there are excess resources available (Islam et al., 2021). The study's findings, however, suggest that even when financial performance is increasing and excess resources are available, it does not automatically translate into more social responsibility activities. The presence of a mechanism of advocacy is imperative if excess resources are to be channeled towards socially responsible behavior. A sustainability committee on the board has been shown to be one such mechanism. These results are consistent with those of Biswas et al. (2018), who found that the presence of a sustainability committee improved environmental performance.

Furthermore, the findings show that, even when a sustainability committee exists, the increase in social performance as a result of excess financial resources has a limit beyond which CSP falls, even as CFP increases. This finding contradicts the universally positive hypothesis proposed by Waddock and Graves (1997). Intuitively, in a context where there is no external regulation and firms perceive CSR to be discretionary and thus voluntary, as the utility derived from CSR investment peaks, further investments in CSR decrease despite rising financial performance (Barnette & Salomon, 2012).

The usage of resources may be informed by different considerations when corporate decision makers are consistently presented with a perspective that considers their social responsibility. Thus, the CSP advocacy role of the sustainability committee is essential in ensuring that CSP remains high on the agenda of firms.

6. CONCLUSION

First, the study's findings contribute to theory by disproving the "universally positive hypothesis" of the slack resources theory. From these findings, in the institutionally constrained environment of sub-Saharan Africa, the availability of slack resources does not always mean that firms invest in CSR engagements. This study confirms the context-specific nature of CSR. The relationship between financial and social performance is nuanced in the sub-Saharan African context. Again, firms with sustainability committees are found to be more engaged in CSR than those without.

Furthermore, in terms of the practical and policy implications of the study, the findings suggest that corporate governance is instrumental in CSP. Dedicated board-level sustainability committees have been shown to greatly improve CSP. Consequently, managers and boards may find the results of this study useful in the design of strategies to improve CSP through a board committee. By instituting specialized CSP functions on the board, they can signal their commitment to CSR to their stakeholders. Again, since the presence of a sustainability committee is associated with better CSP outcomes, investors may screen for potential investments by the existence of such board committees. Finally, the study may be of interest to regulators and policymakers because the findings suggest that specialized board sustainability committees enhance and optimize sustainability performance through effective CSR strategies. This evidence may motivate regulators and policymakers to implement CSR practices and sustainability-related policies. To promote effective CSR practices, sustainability-related policies, laws, regulatory authorities, and policymakers may consider establishing specialized board sustainability committees to constantly monitor the implementation of CSR practices and sustainability-related policies among listed firms.

There are some caveats to note with this study. The sample comprised 239 companies listed on stock exchanges, representing some of the largest companies in their respective countries, which are powerful market actors. Thus, it could be criticized that the study is not representative of reporting in general, as it does not include small and medium-sized enterprises (SMEs). However, this limitation is inherent to most studies on CSR, as they have focused on large companies and neglected CSR reporting by SMEs.

Second, there are some limitations with respect to the operationalization of the dependent variables. Despite the existence of multiple measures of financial performance, the ROA and ROE measures, two accounting measures, were chosen over market measures like Tobin's Q. This was mainly due to a lack of access to data on firms' market valuation. This limitation presents an opportunity for further research. Future studies can employ market-based measures such as Tobin's Q (market value/total assets) or MVA (market value–book value of equity and debt).

Furthermore, the effects of board sustainability committees were examined without accounting for

other corporate governance mechanisms affecting a firm's CSP investment. Therefore, future studies may contribute to the current literature by analyzing the effects of other internal and external governance mechanisms on corporate sustainability performance. Despite these limitations, this study contributes to the current literature by providing empirical evidence that board sustainability committees affect CFP in terms of social performance. Hence, the findings of the study highlight one important mechanism that might explain how the presence of a sustainability committee affects corporate environmental and social performance.

REFERENCES

Akben-Selcuk, E. (2019). Corporate social responsibility and financial performance: The moderating role of ownership concentration in Turkey. *Sustainability, 11*(13), Article 3643. https://doi.org/10.3390/su11133643

Alessandri, P., Robertson, D., & Wright, S. (2008). Miller and Modigliani, predictive return regressions and cointegration. *Oxford Bulletin of Economics and Statistics, 70*(2), 181–207. https://doi.org/10.1111/j.1468-0084.2007.00499.x

Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. *Accounting, Organizations and Society, 29*(5–6), 447–471. https://doi.org/10.1016/S0361-3682(03)00032-1

Aspal, P. K., Singh, M., & Jeet, V. (2023). Empirical relationship between corporate social responsibility disclosures and financial performance: The impact of firm's intangible resources [Special issue]. *Journal of Governance & Regulation, 12*(4), 369–378. https://doi.org/10.22495/jgrv12i4siart17

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal, 26*(3), 197–218. https://doi.org/10.1002/smj.441

Barnett, M. L., & Salomon, R. M. (2006). Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance. *Strategic Management Journal, 27*(11), 1101–1122. https://doi.org/10.1002/smj.557

Barnett, M. L., & Salomon, R. M. (2012). Does it pay to be really good? Addressing the shape of the relationship between social and financial performance. *Strategic Management Journal, 33*(11), 1304–1320. https://doi.org/10.1002/smj.1980

Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Lapides, P. D. (2000). Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms. *Accounting Horizons, 14*(4), 441–454. https://doi.org/10.2308/acch.2000.14.4.441

Biswas, P. K., Mansi, M., & Pandey, R. (2018). Board composition, sustainability committee and corporate social and environmental performance in Australia. *Pacific Accounting Review, 30*(4), 517–540. https://doi.org/10.1108/PAR-12-2017-0107

Brammer, S., Brooks, C., & Pavelin, S. (2006). Corporate social performance and stock returns: UK evidence from disaggregate measures. *Financial Management, 35*(3), 97–116. https://doi.org/10.1111/j.1755-053X.2006.tb00149.x

Burke, J. J., Hoitash, R., & Hoitash, U. (2019). The heterogeneity of board-level sustainability committees and corporate social performance. *Journal of Business Ethics, 154*(4), 1161–1186. https://doi.org/10.1007/s10551-017-3453-2

Camilleri, M. A. (2022). Strategic attributions of corporate social responsibility and environmental management: The business case for doing well by doing good! *Sustainable Development, 30*(3), 409–422. https://doi.org/10.1002/sd.2256

Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons, 34*(4), 39–48. https://doi.org/10.1016/0007-6813(91)90005-G

Chen, C.-J., Guo, R.-S., Hsiao, Y.-C., & Chen, K.-L. (2018). How business strategy in non-financial firms moderates the curvilinear effects of corporate social responsibility and irresponsibility on corporate financial performance. *Journal of Business Research, 92*, 154–167. https://doi.org/10.1016/j.jbusres.2018.07.030

Cheruiyot, T. K., & Onsando, P. (2016). Corporate social responsibility in Africa: Context, paradoxes, stakeholder orientations, contestations and reflections. In A. Stachowicz-Stanush (Ed.), *Corporate social performance in the age of irresponsibility — Cross national perspective* (pp. 89–110). Information Age Publishing, Inc. https://www.researchgate.net/publication/309410494_Corporate_Social_responsibility_in_Africa_Context_Paradoxes_Stakeholder_Orientations_Contestations_and_Reflections

Cyert, R., & March, J. (2015). Behavioral theory of the firm. In J. B. Miner (Ed.), *Organizational behavior 2: Essential theories of process and structure* (pp. 78–95). Routledge.

Domfeh, K. A. (2004). Managing the environment in a decade of administrative reforms in Ghana. *International Journal of Public Sector Management, 17*(7), 606–620. https://doi.org/10.1108/09513550410562275

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes. *Management Science, 60*(11), 2835–2857. https://www.jstor.org/stable/24550546

Fauzi, H., & Idris, K. M. (2009). The relationship of CSR and financial performance: New evidence from Indonesian companies. *Issues in Social and Environmental Accounting, 3*(1), Article 66. https://doi.org/10.22164/isea.v3i1.38

Galant, A., & Cadez, S. (2017). Corporate social responsibility and financial performance relationship: A review of measurement approaches. *Economic Research-Ekonomska Istrazivanja, 30*(1), 676–693. https://doi.org/10.1080/1331677X.2017.1313122

George, G. (2005). Slack resources and the performance of privately held firms. *Academy of Management Journal, 48*(4), 661–676. https://doi.org/10.5465/amj.2005.17843944

Han, J.-J., Kim, H. J., & Yu, J. (2016). Empirical study on relationship between corporate social responsibility and financial performance in Korea. *Asian Journal of Sustainability and Social Responsibility, 1*, 61–76. https://doi.org/10.1186/s41180-016-0002-3

Hillman, A. J., Keim, G. D., & Schuler, D. (2004). Corporate political activity: A review and research agenda. *Journal of Management, 30*(6), 837–857. https://doi.org/10.1016/j.jm.2004.06.003

Islam, S. M. T., Ghosh, R., & Khatun, A. (2021). Slack resources, free cash flow and corporate social responsibility expenditure: Evidence from an emerging economy. *Journal of Accounting in Emerging Economies, 11*(4), 533–551. https://doi.org/10.1108/JAEE-09-2020-0248

Jahmane, A., & Gaies, B. (2020). Corporate social responsibility, financial instability and corporate financial performance: Linear, non-linear and spillover effects — The case of the CAC 40 companies. *Finance Research Letters, 34*, Article 101483. https://doi.org/10.1016/j.frl.2020.101483

Julian, S. D., & Ofori-Dankwa, J. C. (2013). Financial resource availability and corporate social responsibility expenditures in a Sub-Saharan Economy: The institutional difference hypothesis. *Strategic Management Journal, 34*, 1314–1330. https://doi.org/10.1002/smj.2070

Kansal, M., & Singh, S. (2012). Measurement of corporate social performance: An Indian perspective. *Social Responsibility Journal, 8*(4), 527–546. https://doi.org/10.1108/17471111211272101

Klein, A. (1998). Firm performance and board committee structure. *The Journal of Law and Economics, 41*(1), 275–304. https://doi.org/10.1086/467391

Lankoski, L. (2008). Corporate responsibility activities and economic performance: A theory of why and how they are connected. *Business Strategy and the Environment, 17*(8), 536–547. https://doi.org/10.1002/bse.582

Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly, 48*(2), 268–305. https://doi.org/10.2307/3556659

McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review, 26*(1), 117–127. https://doi.org/10.5465/amr.2001.4011987

Nguyen, T. T. L., Dang, N. H., Tran, M. D., & Nguyen, V. L. (2025). The relationship between sustainability reporting and financial performance under a meta-analysis. *Corporate Governance and Sustainability Review, 9*(1), 42–55. https://doi.org/10.22495/cgsrv9i1p4

Nohria, N., & Gulati, R. (1996). Is slack good or bad for innovation? *Academy of Management Journal, 39*(5), 1245–1264. https://doi.org/10.2307/256998

Ofori, D. F., & Hinson, R. E. (2007). Corporate social responsibility (CSR) perspectives of leading firms in Ghana. *Corporate Governance, 7*(2), 178–193. https://doi.org/10.1108/14720700710739813

Okafor, A., Adusei, M., & Adeleye, B. N. (2021). Corporate social responsibility and financial performance: Evidence from U.S tech firms. *Journal of Cleaner Production, 292*, Article 126078. https://doi.org/10.1016/j.jclepro.2021.126078

Okoye, A. (2012). Exploring the relationship between corporate social responsibility, law and development in an African context: should government be responsible for ensuring corporate responsibility? *International Journal of Law and Management, 54*(5), 364–378. https://doi.org/10.1108/17542431211264250

Olateju, D. J., Olateju, O. A., Adeoye, S. V., & Ilyas, I. S. (2021). A critical review of the application of the legitimacy theory to corporate social responsibility. *International Journal of Managerial Studies and Research, 9*(3), 01–06. https://doi.org/10.20431/2349-0349.0903001

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies, 24*(3), 403–441. https://doi.org/10.1177/0170840603024003910

Park, S.-Y., & Lee, S. (2009). Financial rewards for social responsibility: A mixed picture for restaurant companies. *Cornell Hospitality Quarterly, 50*(2), 168–179. https://doi.org/10.1177/1938965509331814

Ramanathan, R. (2018). Understanding complexity: The curvilinear relationship between environmental performance and firm performance. *Journal of Business Ethics, 149*(2), 383–393. https://doi.org/10.1007/s10551-016-3088-8

Rayman-Bacchus, L. (2012). Corporate responsibility and sustainable development. *International Journal of Law and Management, 54*(5). https://doi.org/10.1108/ijlma.2012.01054eaa.002

Saa, V. Y., Morrison, E. A., Adu, D. A., & Joseph, D. (2025). Unravelling the relationship among corporate sustainability initiatives, executive compensation and corporate carbon performance: New insights from African countries. *Journal of Accounting Literature*. Advance online publication. https://doi.org/10.1108/JAL-03-2024-0052

Salzmann, O., Ionescu-Somers, A. M., & Steger, U. (2005). The business case for corporate sustainability: Literature review and research options. *European Management Journal, 23*(1), 27–36. https://doi.org/10.1016/j.emj.2004.12.007

Samkin, G., & Schneider, A. (2010). Accountability, narrative reporting and legitimation: The case of a New Zealand public benefit entity. *Accounting, Auditing and Accountability Journal, 23*(2), 256–289. https://doi.org/10.1108/09513571011023219

Seghyar, N., El Hammoumi, A., & Berdi, A. (2024). Corporate social responsibility management for labeled companies in the emerging market: A study of corporate strategy. *Corporate & Business Strategy Review, 5*(4), 121–133. https://doi.org/10.22495/cbsrv5i4art11

Shabbir, M. S., Aslam, E., Irshad, A., Bilal, K., Aziz, S., Abbasi, B. A., & Zia, S. (2020). Nexus between corporate social responsibility and financial and non-financial sectors' performance: A non-linear and disaggregated approach. *Environmental Science and Pollution Research, 27*(31), 39164–39179. https://doi.org/10.1007/s11356-020-09972-x

Shahzad, A. M., Mousa, F. T., & Sharfman, M. P. (2016). The implications of slack heterogeneity for the slack-resources and corporate social performance relationship. *Journal of Business Research, 69*(12), 5964–5971. https://doi.org/10.1016/j.jbusres.2016.05.010

Strike, V. M., Gao, J., & Bansal, P. (2006). Being good while being bad: Social responsibility and the international diversification of US firms. *Journal of International Business Studies, 37*(6), 850–862. https://doi.org/10.1057/palgrave.jibs.8400226

Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal, 31*(5), 463–490. https://doi.org/10.1002/smj.820

Surroca, J., Tribo, J. A., & Waddock, S. A. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal, 31*(5), 463–490. https://doi.org/10.1002/smj.820

Uzun, H., Szewczyk, S. H., & Varma, R. (2004). Board composition and corporate fraud. *Financial Analysts Journal, 60*(3), 33–43. https://doi.org/10.2469/faj.v60.n3.2619

Velte, P. (2022). Meta-analyses on corporate social responsibility (CSR): A literature review. *Management Review Quarterly, 72*(3), 627–675. https://doi.org/10.1007/s11301-021-00211-2

Velte, P. (2023). Sustainable institutional investors and corporate biodiversity disclosure: Does sustainable board governance matter? *Corporate Social Responsibility and Environmental Management, 30*(6), 3063–3074. https://doi.org/10.1002/csr.2537

Velte, P., & Stawinoga, M. (2020). Do chief sustainability officers and CSR committees influence CSR-related outcomes? A structured literature review based on empirical-quantitative research findings. *Journal of Management Control, 31*(4), 333–377. https://doi.org/10.1007/s00187-020-00308-x

Vishwanathan, P., van Oosterhout, H., Heugens, P. P. M. A. R., Duran, P., & van Essen, M. (2020). Strategic CSR: A concept building meta-analysis. *Journal of Management Studies, 57*(2), 314–350. https://doi.org/10.1111/joms.12514

Visser, W. (2009). Corporate social responsibility in developing countries. In A. Crane, D. Matten, A. McWilliams, J. Moon, & D. S. Siegel (Eds.), *The Oxford handbook of corporate social responsibility* (pp. 473–500). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199211593.003.0021

Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial performance link. *Strategic Management Journal, 18*(4), 303–319. https://doi.org/10.1002/(SICI)1097-0266(199704)18:4%3C303::AID-SMJ869%3E3.0.CO;2-G

Walls, J. L., Berrone, P., & Phan, P. H. (2012). Corporate governance and environmental performance: Is there really a link? *Strategic Management Journal, 33*(8), 885–913. https://doi.org/10.1002/smj.1952

Wang, H., Choi, J., & Li, J. (2008). Too little or too much? Untangling the relationship between corporate philanthropy and firm financial performance. *Organization Science, 19*(1), 143–159. https://doi.org/10.1287/orsc.1070.0271

Wang, H., Lu, W., Ye, M., Chau, K. W., & Zhang, X. (2016). The curvilinear relationship between corporate social performance and corporate financial performance: Evidence from the international construction industry. *Journal of Cleaner Production, 137*, 1313–1322. https://doi.org/10.1016/j.jclepro.2016.07.184

Wartick, S. L., & Cochran, P. L. (1985). The evolution of the corporate social performance model. *The Academy of Management Review, 10*(4), 758–769. https://doi.org/10.2307/258044

APPENDIX

Table 1. Descriptive statistics

Characteristic	*Overall, N = 1,195*	*Has a sustainability committee 0, N = 558*	*Does not have a sustainability committee 1, N = 637*	*p-value*
Country:				< 0.001
Botswana	45 (3.8%)	41 (7.3%)	4 (0.6%)	
Ghana	35 (2.9%)	29 (5.2%)	6 (0.9%)	
Kenya	130 (11%)	121 (22%)	9 (1.4%)	
Mauritius	65 (5.4%)	54 (9.7%)	11 (1.7%)	
Nigeria	225 (19%)	204 (37%)	21 (3.3%)	
South Africa	695 (58%)	109 (20%)	586 (92%)	
Internationalization:				0.3
Local	425 (36%)	208 (37%)	217 (34%)	
Multinational	770 (64%)	350 (63%)	420 (66%)	
Sector:				0.032
Primary	340 (28%)	176 (32%)	164 (26%)	
Secondary	510 (43%)	238 (43%)	272 (43%)	
Tertiary	345 (29%)	144 (26%)	201 (32%)	
Listing age	21 (9, 32)	23 (8, 36)	18 (9, 30)	0.6
Incorporation age	45 (26, 67)	47 (28, 61)	40 (23, 70)	0.077
ROA	0.03 (0.00, 0.08)	0.03 (0.00, 0.09)	0.02 (0.00, 0.07)	0.4
ROE	0.07 (0.00, 0.16)	0.08 (0.00, 0.20)	0.06 (0.00, 0.14)	0.035
Report year:				0.9
2014	239 (20%)	111 (20%)	128 (20%)	
2015	239 (20%)	112 (20%)	127 (20%)	
2016	239 (20%)	105 (19%)	134 (21%)	
2017	240 (20%)	114 (20%)	126 (20%)	
2018	238 (20%)	116 (21%)	122 (19%)	
PCA score	-0.6 (-3.0, 2.7)	-2.6 (-4.6, -0.3)	1.6 (-1.0, 4.1)	< 0.001

Note: PCA — Principal component analysis. Statistics presented: N (%); Median (IQR); Statistical tests performed: Chi-square test of independence; Wilcoxon rank-sum test.

Table 2. Linear models

Variable	*Unadjusted*		*Unadjusted*		*Adjusted*		*Adjusted*	
ROA (Lagged)	0.012	(-0.065, 0.089)			0.028	(-0.016, 0.072)		
ROE (Lagged)			0.001	(-0.057, 0.059)			-0.001	(-0.055, 0.053)
Sector: Secondary					-1.414***	(-1.969, -0.860)	-1.475***	(-2.026, -0.925)
Sector: Tertiary					-1.929***	(-2.495, -1.362)	-2.075***	(-2.641, -1.509)
Incorporation age					0.012**	(0.004, 0.019)	0.011**	(0.003, 0.019)
Sustainability committee					1.182**	(0.411, 1.954)	1.201**	(0.428, 1.975)
N. of obs.	927		921		863		856	
AIC	5142.517		5112.777		4406.042		4363.412	

*Note: AIC — Akaike information criterion. *** p < 0.001; ** p < 0.01; * p < 0.05.*

Table 3. Non-linear models

Variable	*Unadjusted*		*Unadjusted*		*Adjusted*		*Adjusted*	
ROA	-0.07	(-0.258, 0.119)			0.012	(-0.111, 0.134)		
ROA**2	0	(-0.003, 0.003)			-0.000	(-0.002, 0.002)		
ROA**3	0	(-0.000, 0.000)			0.000	(-0.000, 0.000)		
ROE			0.058	(-0.121, 0.236)			0.133	(-0.018, 0.284)
ROE**2			-0.001	(-0.003, 0.002)			-0.001	(-0.004, 0.001)
ROE**3			0	(-0.000, 0.000)			-0.000	(-0.000, 0.000)
Sector					-1.925***	(-2.493, -1.358)	-2.110***	(-2.674, -1.545)
Listing age (yrs.)					0.012**	(0.004, 0.019)	0.011**	(0.003, 0.019)
Sustainability committee					1.182**	(0.409, 1.955)	1.232**	(0.453, 2.011)
N. of obs.	927		921		863		856	
AIC	5145.39		5116.413		4409.993		4364.741	

*Note: Adjusted models are adjusted for country and year fixed effects terms, industrial sector, incorporation year, and the presence of a sustainability committee. *** p < 0.001; ** p < 0.01; * p < 0.05.*

Table 4. Non-linear models with interaction

Variable	*Unadjusted*		*Unadjusted*		*Adjusted*		*Adjusted*	
ROA	-0.065	(-0.247, 0.118)			-0.048	(-0.220, 0.124)		
ROA**2	0.003	(-0.001, 0.007)			-0.002	(-0.005, 0.002)		
ROA**3	-0.000	(-0.000, 0.000)			0.000	(-0.000, 0.000)		
ROA x SC	0.226*	(0.002, 0.449)			0.213	(-0.015, 0.442)		
ROA**2 x SC	-0.002	(-0.006, 0.002)			0.004	(-0.001, 0.008)		
ROA**3 x SC	0.000	(-0.000, 0.000)			-0.000	(-0.000, 0.000)		
ROE			0.065	(-0.075, 0.205)			0.060	(-0.126, 0.245)
ROE**2			-0.001	(-0.003, 0.002)			-0.001	(-0.003, 0.002)
ROE**3			-0.000	(-0.000, 0.000)			-0.000	(-0.000, 0.000)
ROE x SC			0.243	(-0.082, 0.568)			0.204	(-0.103, 0.511)
ROE**2 x SC			-0.001	(-0.005, 0.003)			0.000	(-0.004, 0.004)
ROE**3 x SC			-0.000	(-0.001, 0.000)			-0.000	(-0.000, 0.000)
N. of obs.	927		921		863		856	

*Note: Models include interaction terms between a sustainability committee and all other adjustment variables. Adjusted models are adjusted for country and year fixed-effects terms, industrial sector, incorporation year, and presence of a sustainability committee. *** p < 0.001; ** p < 0.01; * p < 0.05.*

Table 5. Comparison of model p-values

Models to compare	*p-values*
Non-linear unadjusted vs. linear unadjusted (ROA)	0.569
Non-linear unadjusted vs. linear unadjusted (ROE)	0.834
Non-linear adjusted vs. linear adjusted (ROA)	0.975
Non-linear adjusted vs. linear adjusted (ROE)	0.263
Unadjusted interaction vs. non-linear unadjusted (ROA)	4.95e-51
Unadjusted interaction vs. non-linear unadjusted (ROE)	4.58e-50
Adjusted interaction vs. non-linear adjusted (ROA)	0.000678
Adjusted interaction vs. non-linear adjusted (ROE)	0.00146