

Bawuah, Isaac

## Article

# The moderator role of corporate governance on capital structure-performance nexus: Evidence from Sub-Saharan Africa

Cogent Business & Management

## Provided in Cooperation with:

Taylor & Francis Group

*Suggested Citation:* Bawuah, Isaac (2024) : The moderator role of corporate governance on capital structure-performance nexus: Evidence from Sub-Saharan Africa, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 11, Iss. 1, pp. 1-19, <https://doi.org/10.1080/23311975.2023.2298030>

This Version is available at:

<https://hdl.handle.net/10419/325963>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>

# The moderator role of corporate governance on capital structure-performance nexus: Evidence from Sub-Saharan Africa

Isaac Bawuah

To cite this article: Isaac Bawuah (2024) The moderator role of corporate governance on capital structure-performance nexus: Evidence from Sub-Saharan Africa, Cogent Business & Management, 11:1, 2298030, DOI: [10.1080/23311975.2023.2298030](https://doi.org/10.1080/23311975.2023.2298030)

To link to this article: <https://doi.org/10.1080/23311975.2023.2298030>



© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 25 Jan 2024.



Submit your article to this journal [↗](#)



Article views: 3736



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 12 View citing articles [↗](#)

# The moderator role of corporate governance on capital structure-performance nexus: Evidence from Sub-Saharan Africa

Isaac Bawuah 

Department of Accounting and Finance, School of Business, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

## ABSTRACT

This paper examines the moderator role of the corporate governance (CG) mechanism (board size, board independence, board gender diversity, board meetings, board ownership and institutional ownership) in the capital structure (CS) - Firm performance (FP) nexus using country - and firm - level data for a sample of 100 firms in 7 Sub-Saharan African countries over 2010–2020. In addition, the paper investigates the direct effects of CS on FP. Employing the two-step system generalised methods of moments estimator, this paper extends, as well as offers fresh evidence to current literature. First, the evidence shows that firms with long-term leverage achieve higher performance measured with ROE. However, the findings also show that short-term leverage and total leverage are significantly associated with lower performance measured with ROA, ROE and Tobin's Q. Further, the empirical results reveal that total leverage complements CG mechanism of board independence, board gender diversity, board meetings, managerial ownership and institutional ownership to induce positive and significant effects on FP, with the association being stronger for diverse boards (gender and non-executive directors) and institutional ownership, meanwhile, board size induces a negative association between total leverage and FP. Thus, the results suggest that the CG mechanisms play a positive and significant moderator role between CS and FP. Also, assets tangibility, growth opportunities, financial development and economic growth drive FP. The results are robust to possible endogeneity problems arising from simultaneous issues using the lagged structure and fixed effects methods.

## ARTICLE HISTORY

Received 17 October  
2023  
Revised 13 December  
2023  
Accepted 15 December  
2023

## KEYWORDS

Corporate governance;  
capital structure; firm  
performance; Sub-Saharan  
Africa

## REVIEWING EDITOR



Collins Ntim, Accounting,  
Southampton Business  
School, University of  
Southampton,  
Southampton, Hampshire,  
United Kingdom of Great  
Britain and Northern  
Ireland

## SUBJECTS

Corporate Governance;  
Capital Structure; Firm  
Performance; Sub-Saharan  
Africa

## 1. Introduction

This paper investigates the relationship among capital structure (CS), corporate governance (CG) and financial performance (FP) in selected non-financial listed firms (NLF) in Sub-Saharan Africa (SSA). Modigliani and Miller (1958, 1963) irrelevance theory is important in corporate finance and is a foundation for several theoretical and empirical studies. The main argument of the irrelevance theory is that capital structure (the mix of debts and equity finance) does not drive firm value (Modigliani & Miller, 1963; Ngatno et al., 2021; Sarpong-Danquah et al., 2023). Even though the irrelevance theory has since been invalidated by other theories such as the trade-off theories and the pecking order theories (e.g. Detthamrong et al., 2017; Elmagrhi et al., 2018; Ramli et al., 2019), these theories were largely influenced and inspired by the irrelevance theory. For instance, the static trade-off theory argues that optimal CS is determined by the costs and benefits of debts against equity (Danso et al., 2021; Dao & Le, 2023; Myers, 1984; Nicodano & Regis, 2019). In effect, firms strive to eliminate any deviations from optimal leverage. However, due to refinancing costs and agency conflicts, firms are ineffective in rebalancing leverage. Consequently, researchers recommend corporate governance to maximise shareholders' interests by employing managers to achieve effective capital structure rebalancing (Danso et al., 2021; Liao et al. 2015).

**CONTACT** Isaac Bawuah  [isaacbawuahprof@gmail.com](mailto:isaacbawuahprof@gmail.com)  Department of Accounting and Finance, School of Business, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

Corporate governance is a framework that strengthens board competence and mitigates agency problems (Areneke et al., 2022). Whilst this has received both empirical and theoretical support that effective CG is important in capital structure decisions (Danso et al., 2021; Yakubu & Oumarou, 2023), the moderator role of CG in the capital structure-performance nexus is not adequately explored, particularly in SSA countries. This naturally raises a question: Would CG dimensions condition effective CS to induce a positive effect on FP? This paper addresses this question by focusing on CS and CG of firms in Sub-Saharan Africa.

The perspective of this paper is enriched with the unique characteristics of firms and business environments in SSA. Some financial markets in SSA have experienced surprising growth since 1990. These improvements were reinforced by progress in structural and financial policies such as structural adjustment programs, the proliferation of international banks, successful financial market liberalisation, and the adoption of international financial reporting standards (IFRS) (Khémiri & Noubbigh, 2018), with concomitant rise in intelligibility of financial information, CG policies and private sector restructuring (Khémiri & Noubbigh, 2018). Despite these improvements, several firms in SSA still have weak financial controls, accountability and internal management (Areneke et al., 2022), and often cause their ultimate collapse. For instance, in 2017, due to weak corporate governance and financial indiscipline, the Ghanaian banking sector was distorted (Boachie & Mensah, 2022). Also, during COVID-19, some South African firms' assets were depleted and could not perform their core functions due to poor financial management and capital structure decisions. This paper is motivated by the assumed importance of CG for economic development. In addition, this paper is motivated by the fact that several SSA countries have adopted CG practices, formalised in CG codes, to attract foreign investments and capital (Munisi & Randøy, 2013). Therefore, this paper seeks to investigate the relevance of good CG in influencing CS and FP through which foreign investment can be attracted. Further, there is limited evidence on the moderator role of CG in the CS-FP relationship in SSA.

Studies acknowledge that persistent firm failures and poor firm financing decisions, in part, are caused by weak corporate governance (Ballester et al., 2020; Kyere & Ausloos, 2021). To prevent insolvency and strengthen firms resilience, quality corporate governance characteristics such as board independence, board gender diversity, board meetings, larger board size and board and institutional ownership are encouraged (Ronoowah & Seetanah, 2023; Sarpong-Danquah et al., 2022). In response to enhancing board effectiveness, some countries in SSA have imposed regulations for more non-executive directors, board meetings and female boardroom participation (Abang'a et al., 2022). A diverse board in terms of gender and non-executive directors can facilitate effective management monitoring and board decisions through diverse expertise, knowledge, and perspectives (Boachie & Mensah, 2022; Waweru, 2020). An improvement in board diversity and its associated quality monitoring improves firm financing characteristics (Yakubu & Oumarou, 2023). Consequently, it can be reasoned that CS, CG and FP are interlinked with support from studies suggesting that CG can influence CS, and consequently FP (e.g., Detthamrong et al., 2017; Elmagrhi et al., 2018; Ngatno et al., 2021).

Extensive evidence exists on the relationship between CS and FP (e.g., Ahmed & Afza, 2019; Boshnak, 2023; Dao & Ta, 2020; Farhan et al., 2020; Khémiri & Noubbigh, 2018; Li et al., 2019; Ngatno et al., 2021; Nguyen & Nguyen, 2020; Ronoowah & Seetanah, 2023; Sarpong-Danquah et al., 2023), CG and CS (e.g., Ezeani et al., 2023; Sarpong-Danquah et al., 2023), and CG and FP (e.g. Alodat et al., 2022; Amin et al., 2022; Hordofa, 2023; 2023; Iwasaki et al., 2022; Kao et al., 2019; Karim et al., 2023; Malagila et al., 2021; 2021; Sarpong-Danquah et al., 2022; Zalata et al., 2019)

However, empirical studies on comprehensive CG characterises as moderator variables in the CS-FP nexus seem insufficient, and particularly rare in SSA literature. Consequently, the current paper seeks to make the following contributions to the existing literature. First, by providing empirical evidence for the interaction effect of comprehensive CG measures (board gender diversity, board independence, board size, board meetings, institutional ownership, and board ownership) and capital structure on FP in SSA, the paper provides evidence on whether strong CG dimensions ameliorate the distortions of capital structure decisions on firm performance (return on assets, return on equity and Tobin's Q). Second, this paper provides fresh evidence on the performance effects of CS on firms in SSA. Third, the few studies on CG and FP predominantly exist at the country level but remain rare in cross countries due to the lack of reliable and comprehensive firm-level data across countries in SSA. This study uses hand-collected

cross-country firms' information to address this scarcity in SSA literature. The rest of the paper is organised as follows: [Section 2](#) presents the background of the study. [Section 3](#) reviews theories. [Section 4](#) develops hypotheses. [Section 5](#) presents the research design. [Section 6](#) presents empirical results and discussion. Finally, [Section 7](#) presents a summary and conclusion.

## 2. Background

Since the corporate scandals such as Enron, issues about CG dominate international fora (Bufarwa et al., 2020; Ellili, 2023; Malagila et al., 2021). Recognising the importance of good CG and the fundamental implications of bad CG to corporate firms, most companies have revamped their governance approaches. In the past two decades, several Sub-Saharan African countries have introduced CG codes to ostensibly improve corporate efficacy, stimulate private sector attractiveness, enhance board processes and efficacy in decision-making, and consequently promote sustainable economic development (Areneke et al., 2022). Many countries in SSA including South Africa have replaced existing CG practices such as the King reports of 1994 with internationally inspired CG codes to overturn the lacklustre image of 'patrons late to the party'. In May 2019 the African Union (AU) initiated efforts to develop CG frameworks for its member countries. They note that the codes will hinge on African values and realities. Indirectly, the AU appreciates the incompatibility of the borrowed CG codes to African realities and context and the need to address this issue.

CG codes, from the functionalist perspective, seek to, inter alia, strengthen board competence, promote accountability, transparency and mitigate agency risks (Al-Ahdal et al., 2020; Ararat et al., 2021; Areneke et al., 2022; Bolourian et al., 2021). Despite the resounding diffusion of CG in SSA, the efficacy of CG codes in SSA remains fundamentally weak and appears not to deliver the expected benefits (Areneke et al., 2022). This has been reinforced by some notable and costly CG-related corporate failures in Ghana, Nigeria, South Africa and Kenya which are known as the front runners in CG diffusion in SSA (Chigudu, 2020). From an interpretive perspective, the weakness or the failure of CG to deliver the anticipated benefits can be attributed to several factors: Lack of fit between CG codes and the realities of countries in SSA regarding how the board must function; the cultural orientations in some SSA countries do not promote some CG practices, especially female boardroom participation; that the CG codes were hastily imposed and accepted by companies in SSA, who to gain international outlook and relevance, accepted, with little genuine intention and capacity to effectively implement them (Areneke et al., 2022). Also, from a critical perspective, the anticipated benefits of CG codes in SSA were overestimated, given the region's weak governance and institutional environments. Moreover, some of the adopted colonial codes in the CG do not strongly address some corporate issues such as stakeholders' rights, minority rights, and board malpractices (Areneke et al., 2022).

Several studies in SSA exist on CG. First, some studies in SSA adopted the normative approach and argue that to improve CG in SSA, efforts must be directed at improving board efficiency (Asongu & Odhiambo, 2020; Okyere et al., 2021; Puni & Anlesinya, 2020; Waweru et al., 2019). Also, from the legal perspectives and debating on the appropriateness of either the soft law or the hard laws in approaching CG, some scholars demonstrate that institutionally dysfunctional countries cannot achieve the full benefits of CG when there are weak governments and policies to sanction intransigent (Aluko & Ibrahim, 2020; Appiah-Kubi et al., 2020). Implying that good CG cannot be achieved unless there is quality governance. Second, other studies focused on the effectiveness of CG codes in promoting accountability, transparency and disclosure and show positive results (e.g. Boachie & Mensah, 2022; Sarpong-Danquah et al., 2022; 2023; Waweru, 2020). These studies, drawing inspiration from agency theory, institutional theory, legitimacy theory and other social theories are with the view that embedding CG codes in firms improves the recruitment of qualified board members, satisfies diverse stakeholders' needs and improves the business environment (Abang'a et al., 2022; Asiedu & Mensah, 2023; Boachie & Mensah, 2022; Sarpong-Danquah et al., 2022). Finally, the last strand of studies attempts to relate CG to important firm activities such as capital structure, dividend policy and economic development (Agyei et al., 2022; Dodoo et al., 2023).

After two decades of CG implementations in Sub-Saharan Africa, particularly in the major diffused CG countries, as well as major scientific studies, this paper raises an important question: Do corporate

governance dimensions significantly influence the link between CS and firm performance? The moderator role of CG on the CS-FP nexus in SSA is less explored in the context of SSA. Therefore, this paper provides valuable contributions to CG codes, corporate finance decisions, literature and theories in SSA.

### 3. Theoretical framework

Theoretically, inefficient capital structure decision has a tremendous consequence on firm performance and cost of capital, and as a result, CS decision remains important managerial decisions (Danso et al., 2021). Firm financing decision was often explained using the Modigliani and Miller (1958, 1963) irrelevance theory (MM) (Danso et al., 2021). The theory argues that capital structure does not drive firm value. It theorises that optimal capital structure does not exist because the anticipated rate of returns is offset by the risks of debts. The MM theory posits that in a perfect market with transaction cost, tax incentives and other investors' homogeneity, capital structure is irrelevant to firm value. This assumption does not hold in the real world where it is expected that an increase in financial leverage will influence management's efficiency, reduce information costs and thus improve a firm financial performance and value (Abdullah & Tursoy, 2021; Jensen, 1986; Jensen & Meckling, 1976). Nonetheless, the irrelevance theory perspective has influenced several other theories on the characteristics of capital structure and their implications on firm performance.

For instance, another theory which has been at the forefront of this debate is the trade-off theory. The trade-off theory argues that a firm achieves optimal CS based on the costs and benefits associated with the use of debts against equity (Danso et al., 2021; Panda et al., 2023). Consequently, a firm can minimise its optimal debt-to-equity ratio.

In contrast, the pecking order theory by Myers (1984) contends that capital structure is determined by information flow (which can be asymmetry) and the desire to reduce the cost of finance. In the presence of information asymmetry, firm financing behaviour is influenced by a hierarchy. The theory states that a firm will prefer internal finance, followed by equity and then debts. According to the theory, firms with more profits will use more internal funds, and therefore less leveraged (Ahmed & Afza, 2019; Danso et al., 2021; Dao & Ta, 2020; Ngatno et al., 2021; Nguyen & Nguyen, 2020).

Another important theory in this debate is the agency theory by Jensen and Meckling (1976). The theory argues that capital structure is driven by agency risk which arises due to the separation of ownership and conflicts of interest between managers and owners, and therefore leverage becomes an effective disciplinary mechanism (Danso et al., 2021). Also, the agency theory predicts between CG and FP. To encourage management to make effective financing decisions, agency theory recommends some corporate governance practices to increase disclosure, transparency and independence in decision-making, which eventually improve firm performance (Danso et al., 2021). In this line of argument, agency theory proposes a positive relationship between CS and FP, and by reducing conflicts and improving financing decisions through good CG, it further predicts a positive relationship between CG and FP. This justifies that CG can induce CS to positively influence FP. Given the limitations in the theory perspectives, and the fact that this study has several variables and investigates the relationships among three concepts (i.e. the effect of CS on FP; and the moderator role of CG variables on the CS-FP nexus), the study uses multi-theoretical approach.

### 4. Literature review and hypotheses development

This section reviews literature and formulates hypotheses. First, it reviews empirical studies on the effects of CS on FP and develops a hypothesis. Second, empirical studies on CS, CG and FP are discussed to inform the hypotheses on the role of CG in CS – FP nexus.

#### 4.1. Effect of capital structure on firm performance

Modigliani and Miller (1958, 1963) irrelevance theory argues that capital structure is irrelevant to drive firm value/performance. In contrast, some scholars argue that debt finance is an effective way to improve firm performance since debt is associated with effective monitoring (Abdullah & Tursoy, 2021; Danso et al., 2021; Detthamrong et al., 2017; Elmagrhi et al., 2018; Ramli et al., 2019). An agency problem arises in firms due



to the separation of ownership between management and owners reinforced by divergent interests (Jensen, 1986; Jensen & Meckling, 1976). In response, agency theory suggests that using leverage can align owners' and manager's interests, and eventually improve FP (Danso et al., 2021; Detthamrong et al., 2017; Jensen & Meckling, 1976), suggesting a positive relationship between CS and FP. Also, in the view of signalling theory, using more debts in CS can signal to the market that the company has profitable prospects, which attract investors, and can improve FP (Harris & Raviv, 1991; Nebie & Cheng, 2023). In contrast, the pecking order theory suggests that a profitable firm will use less debt finance because they have better cash flow and will therefore prefer cheaper internal finance such as retained earnings to debts (Myers & Majluf, 1984). In effect, the pecking order theory predicts a negative relationship between leverage and FP.

The empirical literature on the relationship between CS and FP, generally, produces mixed results. For instance, the relationship between capital structure has been found as positive (e.g. Abdullah & Tursoy, 2021; Detthamrong et al., 2017; Elmagrhi et al., 2018; El-Sayed Ebaid, 2009; Ngatno et al., 2021; Ramli et al., 2019), negative (e.g. Abor, 2007; Ahmed & Afza, 2019; Boshnak, 2023; Dao & Ta, 2020; Dodoo et al., 2023; Farhan et al., 2020; Khémiri & Noubbigh, 2018; Li et al., 2019; Ngatno et al., 2021; Nguyen & Nguyen, 2020; Ronoowah & Seetanah, 2023; Sarpong-Danquah et al., 2023), and insignificant (Al-Taani, 2013). Studies on the negative relationship are premised on the view that the cost of financing distress exceeds the benefits of financing. Noticeably, these studies, especially those from SSA, have been conducted exclusively in a single country (e.g. Ceballos-Mina & Santiago-Ayala, 2019; Ganiyu et al., 2019; Opoku-Asante et al., 2022), except Khémiri and Noubbigh (2018), and therefore provides an opportunity to contribute to the literature in SSA. This study solves the limitations of the previous studies by using three CS measures (short-term leverage, long-term leverage and total leverage) and three performance measures (ROA, ROE and Tobin's Q) while controlling for both firm characteristics such as growth opportunity, asset tangibility and firm size, and macro environments such as finance, economic growth and inflation. Notwithstanding the mixed findings of previous studies on the relationship between CS and FP, this study's first hypothesis to be tested is that:

H1. Capital structure has a negative and significant effect on a firm financial performance.

#### **4.2. The moderating role of CG on CS and FP nexus**

CG is a framework that promotes accountability, discipline and transparency. CG is effective in tackling the agency problem, earnings management and enhancing financial risk disclosure (Bufarwa et al., 2020; Naz et al., 2022). The effectiveness of good CG in mitigating the agency problem has positive implications on capital structure decisions. As indicated earlier, good CG enhances firm monitoring, advisory, independence and supervision by contributing key resources such as skills, experience, diversity, financial knowledge and perspectives to the board (Bufarwa et al., 2020), which can improve CS decisions. CG also provides guidelines for resolving agency problems. However, managers' ability to optimise capital structure and achieve efficiency depends on quality CG (Danso et al., 2021). Generally, a larger board has high diversity in terms of gender and independence and can contribute immensely to effective CS and consequently FP (Sarpong-Danquah et al., 2022). Contrary to this, some studies (e.g., Andoh et al., 2023; Chatterjee & Nag, 2023; Sarpong-Danquah et al., 2023) argue that larger boards are less likely to be effective due to social loafing, and communication problems and can easily be controlled by powerful managers. Hence, with larger boards, higher leverage is an effective CG mechanism to properly align interests (Danso et al., 2021).

Further, frequent board meetings are associated with quality monitoring (Nainggolan et al., 2023) which has a positive effect on capital structure decisions. In contrast, regular board meetings limit the time required for other important firm activities by managers (Jatana, 2023), which can negatively affect CS decisions and FP. In addition, firms with more non-executive directors are more likely to use less leverage due to competence and neutrality advantages, and consequently improve FP (Eldaia et al., 2023). In contrast, more non-executive members may displace the internal members who have access to key firm information and this may negatively affect the board's effectiveness (Pernelet & Brennan, 2023). Also, ownership type can mitigate agency problems. For instance, board ownership is expected to be associated with less agency and information costs, and thus reduce managers' incentives to use debt finance (Iwasaki et al., 2022; Karim et al., 2023).

Scientific studies that investigated the association between CS and FP although voluminous, are not sufficient, and also mainly focused on developed countries (e.g. Dao & Ta, 2020; Farhan et al., 2020; Ngatno et al., 2021; Nguyen & Nguyen, 2020). In addition, the findings from these studies are mixed (e.g. Abdullah & Tursoy, 2021; Ahmed & Afza, 2019; Boshnak, 2023; Dao & Ta, 2020; Detthamrong et al., 2017; Khémiri & Noubbigh, 2018; Ngatno et al., 2021; Ramli et al., 2019; Ronoowah & Seetanah, 2023). These studies acknowledged the interrelation of governance mechanisms and advised companies to select the one that effectively suits their needs. They further observe that CS reduces agency costs, in support of the agency perspective (Jensen & Meckling, 1976), while good CG mitigates agency conflicts, implying the interrelationship between CG and CS based on their association with agency cost. They note that good CG enhances effective capital structure decisions (Danso et al., 2021; Ronoowah & Seetanah, 2023). Given the role of CS in agency costs, it is expected that when interacted with CG will have a positive implication on FP. For instance, a study by Ngatno et al. (2021) in Indonesia examined the moderating role of CG on CS-FP nexus using 506 rural banks. Employing the moderated regression, they find that short-term CS improves FP, while long-term CS hurts FP. Interestingly, they found a positive moderator role of board commissions on CS and FP, while board size and ownership concentration could not significantly moderate CS and FP nexus. Also, a study by Detthamrong et al. (2017) in Thailand using 493 firms from 2001 to 2014 found that CS mediates audit committees and FP for larger firms. In summary, previous studies show that board independence positively and significantly affects firm performance (e.g. Kao et al., 2019; Malagila et al., 2021), board gender diversity impacts FP positively by mitigating agency cost and managerial opportunism (e.g. Amin et al., 2022; Hordofa, 2023; Malagila et al., 2021; Zalata et al., 2019), board meetings and board size impact positively on FP (e.g. Hordofa, 2023; Sarpong-Danquah et al., 2022; Waris & Haji Din, 2023), board ownership impacts positively on FP (e.g. Alodat et al., 2022; Iwasaki et al., 2022; Karim et al., 2023). Similarly, the monitoring hypothesis suggests that administrative opportunism can be reduced with institutional ownership (Alodat et al., 2022; Hong & Linh, 2023).

An observable limitation of the studies in SSA is their failure to consider the possible moderating effects of comprehensive CG variables (board meetings, independence, institutional and managerial ownership, board gender diversity and board size) on capital structure and firm performance, except Ronoowah and Setaanah (2023). The limitation of Ronoowah and Seetanah (2023) study is their use of limited CG variables. This highlights the opportunity to address the gap. However, the extent that more diverse (gender and independence) firms achieve higher FP than a firm with less diversity (Danso et al., 2021; Ezeani et al., 2023), and the fact that firms with good CG achieve better CS (Abdullah & Tursoy, 2021; Detthamrong et al., 2017; Ramli et al., 2019), it can be reasoned that CG can moderate CS to achieve higher FP as predicted by agency theory.

In Africa in general and Sub-Saharan Africa in particular, there is a strong advocacy and public policy commitment to improve CG by encouraging board diversity. The Security and Exchange Commissions of many SSA countries recommend a sufficiently diverse board to effectively supervise CS decisions to improve FP (Areneke et al., 2022). Good CG is needed to achieve general economic development. For instance, when firms become highly geared due to weak CG, financial crises are imminent (Detthamrong et al., 2017), citing popular crises such as the Global financial crises (GFC) in 2007 and the Asian financial crises in 1997, as consequences of poor CS decisions originated from weak CG (Detthamrong et al., 2017). Therefore, the paper hypothesises that;

H2: Quality CG moderates the association between CS and FP, with the association being stronger (weaker) in firms with strong (weak) CG mechanisms.

## 5. Research design

The financial information needed to compute the dependent variable, FP (return on assets, return on equity and Tobin's Q), the independent variable, CS (long-term leverage, short-term leverage and total leverage) and the moderator variable, CG (board independence, board size, board gender diversity, board meetings, board ownership and institutional ownership) are hand collected from the selected listed non-financial firms audited annual reports from Africa financials for the period 2010 to 2020. The



firm-specific control variables (growth opportunity, firm size and asset tangibility) are also extracted from the firm's annual statements. The macroeconomic control variables (economic growth, financial development and inflation) are obtained from the World Development Indicators (WDI) database. Financial firms are excluded because these business types are subjected to different CG and CS environments and regulations (Zalata et al., 2019). The criterion used to select the sample was exclusively based on data availability and accessibility from the firm's annual reports for the study period. The criterion was informed by several reasons. First, the study is limited to listed firms because the CS, CG and firm-specific control variables were manually collected, which is considered highly laborious (Ntim, 2013). Listed firms are mandated to publish their audited reports to the public. This criterion allows the researcher to obtain a panel analysis, which is considered more robust to econometric problems (Elmagrhi et al., 2018). The year 2010 was selected because several firms started to report on comprehensive CG measures. Again, 2020 was selected because it is the last year for which several annual reports were publicly available to extract most of the study's variables. The data is screened and cleaned to obtain 100 listed companies with readily available data on the study's variables. These companies are sampled from seven (7) countries: 15 listed companies in Ghana, 15 listed companies in Nigeria, 25 listed companies in South Africa, 15 listed companies in Kenya, 10 listed companies in Mauritius, 10 listed companies from Tanzania and 10 listed companies from Botswana. The final sample with sufficient data, consists of 100 firms' of 1000 firm-year observations over the 2010–2020 period.

### 5.1. Estimation method

The study employs the system generalised methods of moments (SGMM) technique (Arellano & Bond, 1991) to estimate the models. The dynamic panel estimator helps to overcome simultaneity bias and country-specific effects. GMM eliminates country-specific effects and assists in transforming the independent variables as instruments to eliminate simultaneity bias. The SGMM pools the strengths of the first difference and level equations to produce better approximations than the original GMM. GMM is suitable for studies like this with a very short time dimension and a relatively large individual dimension ( $T < N$ ). The Hansen test checks for overidentifying restrictions to determine whether the instruments used in the estimation are valid or not, that is, it is used to check whether instruments are uncorrelated with some set of residuals. In addition, the AR (2) tests for model validity.

Table 1 summarises the variables used in the analysis. To test H1 (i.e. to answer the first research objective: (the effect of CS on FP), this paper uses three main variables. First, following previous empirical studies (e.g., Detthamrong et al., 2017; El-Faitouri, 2014; Elmagrhi et al., 2018), three main performance measures are used as dependent variables. They are return on assets (ROA), return on equity (ROE) and Tobin's Q (TQ). Second, consistent with prior studies (e.g., Detthamrong et al., 2017; Khémiri & Noubbigh, 2018; Sarpong-Danquah et al., 2023), the ratio of short-term debt, long-term debt and total debt to total assets are the main independent variables (CS). Third, CG (board independence, board gender diversity, institutional ownership, board ownership, board meetings and board size). To prevent omitted variable bias (Gujarati, 2022), this paper adds a set of control variables considered to affect FP. In particular, the paper controls for firm size, growth opportunities, asset tangibility, financial development, economic growth and inflation, following the literature (Almeida & Campello, 2007; Detthamrong et al., 2017; Khémiri & Noubbigh, 2018). Assuming, the hypothesised associations are linear, the GMM model is specified as follows:

$$FP_{i,t} = \beta_1 FP_{i,t-1} + \beta_2 CS_{i,t} + \sum_{i=1}^6 \beta_i CONTS_{i,t} + e_{i,t} \quad (1)$$

Where FP is the main dependent variable (i.e. ROA, ROE and Tobin's Q); CS is the main independent variable (short-term leverage, long-term leverage and total leverage); and CONTS are the control variables including firm size, growth opportunities, asset tangibility, financial development, economic growth and inflation.

To test H2 (i.e. to answer the research question: whether CG dimensions moderate the association between CS and FP), the variables are divided into 4. First, the main dependent variable is FP defined

**Table 1.** Variables summary.

Variable	Acronym	Type of variable	Measurement
Return on assets	ROA	Dependent	Earnings after interest and tax divided by total assets
Return on equity	ROE	Dependent	Earnings before interest and tax divided by total equity
Tobin's Q	TQ	Dependent	((Book value of assets+ market value of equity)-book value of equity)/book value of assets))
Short-term leverage	STL	Independent	Short-term debt is divided by total assets.
Long-term leverage	LTL	Independent	Long-term debt divided by total assets
Total leverage	TL	Independent	The ratio of total debt to total assets
Board size	BS	Moderator	Total number of board members in a year
Board gender diversity	BGD	Moderator	The ratio of female board members and board size
Board independence	BI	Moderator	The ratio of non-executive board members and board size
Board meetings	BM	Moderator	The number of board meetings in a year
Institutional ownership	IO	Moderator	Proportion of stock held by institutions
Board ownership	BO	Moderator	Proportion of stocks held by board members
Assets intangibility	AI	Control	Property, plant and equipment
Growth opportunity	GO	Control	Market-to-book ratio
Firm size	FS	Control	Natural logarithm of total assets
Inflation	INF	Control	Consumer price index
Financial development	FD	Control	Domestic credit to private sector development (% GDP)
Economic growth	GDPGR	Control	Gross domestic product growth rate

Source: Author's elaboration from literature.

as ROA, ROE and Tobin's Q. Second, the main independent variable is CS defined by total leverage. Third, to investigate the moderator role of CG dimensions on CS and FP nexus, interaction variables are generated between each CG mechanism ((board size (BS), board independence (B\_IND), board meetings (BM), board gender diversity (BGD), board ownership (BO), and institutional ownership (IO)) and total leverage (TL) (i.e. BS\*TL, B\_IND\*TL, BM\*TL, BGD\*TL, BO\*TL, and IO\*TL). Finally, the same variables as appeared in Equation 1 are controlled, as indicated in Equation 2.

$$FP_{i,t} = FP_{i,t-1} + \gamma_{i,t} + \emptyset_{i,t} + \sum_{i=1}^6 \beta_i CONTS_{i,t} + e_{i,t} \quad (2)$$

Where  $FP_{i,t-1}$  is the lagged FP,  $\gamma_{i,t}$  is the set of explanatory variables,  $\emptyset_{i,t}$  is the set of moderator variables, and  $\beta_i CONTS_{i,t}$  are set of control variables.

## 5.2. Dependent variables

The study uses firm performance as the dependent variable and is defined by three measures: ROA which is the ratio of earnings after interest and tax to total assets (Elmagrhi et al., 2018; Khémiri & Noubbigh, 2018); ROE, defined as the ratio of earnings before interest and tax to total equity; and Tobin's Q calculated as the total assets minus book value of equity plus the market value of equity, all divided by total assets (El-Faitouri, 2014), as indicated in Table 1.

## 5.3. Independent variables

The main independent variable is capital structure (CS) defined by three measures as the ratio of total debt (TD), long-term debt (LTD) and short-term debt (STD) to total assets (Elmagrhi et al., 2018; Khémiri & Noubbigh, 2018; Ronoowah & Seetanah, 2023).

## 5.4. Moderator variable

The paper uses CG variables as moderators. They are board size (the total number of people serving on the board); board gender diversity (the ratio of female board members and board size); board independence (ratio of non-executive board members and board size); board meetings (the number of meetings held by the board in a year); board ownership (proportion of stocks held by board members); institutional ownership (the proportion of stock held by institutions), as presented in Table 1.

## 5.5. Control variables

The paper added a number of firm-specific control variables including firm size (the natural logarithm of total assets), growth opportunity (market to book), assets tangibility (property, plant and equipment), and year dummies. Firms' assets tangibility influences CS by providing firms with an important channel for accessing funds since they can pledge their tangible assets as collaterals (Almeida & Campello, 2007). Also, firms with growth opportunities have access to cheaper finance. In addition, other macroeconomic variables such as financial development (domestic credit to private sector development) control differences in financial market development, economic growth (GDP growth rate) and inflation also control the macroeconomic stability that may affect firm performance.

## 6. Empirical results and discussion

### 6.1. Descriptive statistics and Pearson pairwise correlation analysis

Table 2 reports descriptive statistics of the study's dependent, independent, moderator and control variables from 2010 to 2020. The results clearly show a widespread for all variables examined. ROA, ROE and Tobin's Q have a mean of 0.603, 0.804 and 2.906, respectively indicating that the selected listed firms are characterised with better financial position. Total debt (TD) ranges from 20.6% to 100% with a mean of 53.4%, indicating that the firms are highly geared. The mean of board gender diversity (BGD) indicates that 30.6% of all board members are females, implying that on average, firms in Sub-Saharan Africa have 69.4% male dominated boards. Also, the mean of board independence (B\_IND) indicates that 63% of all board members are non-executive directors. The mean board size (BS) is 8 members, ranging from 5 to 16 members. Board meetings (BS) range between a minimum of 4 meetings to a maximum of 18 meetings in a year. Concerning the control variables, including, FS, AT, FD, INF, GDPGR, and GO, they all show a wide variation in the variables.

Table 3 reports Pearson's correlation. The test is important to identify any potential multicollinearity problems. The results show a somewhat weak correlation (no correlation is above the 0.7 threshold) between the variables (Kennedy, 2008), suggesting no serious multicollinearity problem. Observably, there is a strong link between the CS and the FP variables. For instance, the negative correlation between TL and the FP measures (ROA, ROE and TQ) is consistent with the study's predictions and findings and

**Table 2.** Descriptive statistics.

Variables	Obs	Mean	Std. dev	Min	Max
Firm performance					
ROA	1000	0.603	0.305	0.010	1.707
ROE (%)	1000	0.804	0.352	0.056	13.098
Tobin's Q	987	2.906	0.550	1.490	5.433
Capital structure					
LTL (%)	1000	0.781	0.187	0.110	1.095
STL (%)	1000	0.805	0.205	0.156	1.034
TD (%)	1000	0.534	0.497	0.206	1.076
Corporate governance					
BS	889	8.765	2.076	5.075	16.076
BGD (%)	780	0.306	0.4065	0.108	0.865
BM	1000	4.097	1.785	1.000	18
B_IND (%)	997	0.630	0.148	0.214	1
BO (%)	709	0.406	0.266	0.000	0.954
IO (%)	886	0.322	0.213	0.000	0.987
Control variables					
FS	1000	6.043	1.223	2.207	11.075
AT	798	0.708	0.178	0.305	1.053
GO	802	0.004	0.064	-2	0.503
FD	904	0.342	0.407	0.407	0.876
GDPGR	991	0.543	0.307	-0.543	1.043
INF	901	18.065	0.663	0.305	-0.024

Notes: ROA denote return on assets; ROE denote return on equity; LTL denotes long-term leverage; STL denotes short-term leverage; BS denotes board size; BGD denotes board gender diversity; B\_IND denotes board independence; BM denotes frequency of board meetings; BO denotes board ownership; IO denotes institutional ownership; FS denotes firm size; AT denotes assets tangibility; GO denotes growth opportunities; FD denotes financial development; GDPGR denotes Gross domestic product growth rate; INF denotes inflation. Table 1 fully defines all the variables used. Source: Author's construction.

corroborates prior studies (e.g. Ahmed & Afza, 2019; Boshnak, 2023; Dao & Ta, 2020; Khémiri & Noubbigh, 2018; Ronoowah & Seetanah, 2023). Similarly, the CG variables correlate positively with the FP measures, indicating that good CG provides useful advisory and monitoring functions to a firm which translates into higher FP (Kao et al., 2019; Malagila et al., 2021). The correlation here does not necessarily imply a causal relationship.

## 6.2. Empirical results on the effect of capital structure on firm performance

First, to answer the first research question (i.e. the effect of CS on FP), Table 4 presents the empirical findings of the impact of CS on FP. Specifically, Table 4 contains results relating to the effect of short-term leverage (STL), long-term leverage (LTL) and total leverage (TL) on ROA, ROE and Tobin's Q. The results are presented in Models 1–6. Models 1, 3 and 5 regress the CS variables (STL, LTL and TL) with no control variables on ROA, ROE and Tobin's Q respectively. Models 2, 4 and 6 added the control variables. The results show that the previous year's ROA, ROE and Tobin's Q have a positive and significant impact on the current year's ROA, ROE and Tobin's Q respectively. Models 1, 4 and 6 reveal that STD is negatively associated with ROA, ROE and Tobin's Q. From model 4, long-term leverage has a positive and significant ( $\beta=0.211$ ,  $p<0.05$ ) association with ROE, consistent with the trade-off theory. The findings suggest that some firms in SSA use more long-term debt to benefit from tax savings of debt. Also, the use of long-term debt can mitigate agency costs, and therefore exerts a positive effect on FP. Further, the use of debts signals that the firm has brighter prospects, which attract investors and consequently improve FP. The positive results between LTL and FP are not consistent with the study's prediction, however, agree with other studies (e.g. Abdullah & Tursoy, 2021; Detthamrong et al., 2017; Elmagrhi et al., 2018; El-Sayed Ebaid, 2009; Ngatno et al., 2021; Ramli et al., 2019).

In contrast, from Models 2, 4 and 6, total leverage has a negative and significant ( $\beta=-0.241$ ,  $p<0.01$ ;  $\beta=-0.356$ ,  $p<0.01$ ;  $\beta=-0.384$ ,  $p<0.01$ ) effect on ROA, ROE and Tobin's Q, respectively, thereby providing support for H1. The negative association between TL and FP nexus is consistent with the prediction of the pecking order theory and other empirical studies (e.g. Abor, 2007; Ahmed & Afza, 2019; Boshnak, 2023; Dao & Ta, 2020; Doodoo et al., 2023; Farhan et al., 2020; Khémiri & Noubbigh, 2018; Li et al., 2019; Ngatno et al., 2021; Nguyen & Nguyen, 2020; Ronoowah & Seetanah, 2023; Sarpong-Danquah et al., 2023). Profitable firms will prefer internal finance to external finance. When there is a surge in interest rates specific to a firm, the cost of capital increases. Abnormal interest rates lower returns on assets, and consequently return on equity decreases. In this situation, the lender seems to earn more than investors. Therefore, profitable firms rely on cheaper internal finance such as retained earnings rather than using exorbitant external debts. In summary, the trade-off theory holds for long-term leverage and ROE in SSA, while the pecking order theory holds for short-term debt and total debt and FP.

## 6.3. The moderator role of CG mechanism on CS-FP nexus

Finally, to answer the second research question (i.e. the moderator role of CG mechanism on CS and FP nexus), the empirical SGMM estimation relating to investigating the potential moderating role of CG mechanism (i.e. BS, B\_IND, BGD, BM, BO and IO) between CS and FP relationship are reported in Models 7 – 12 of Table 5. Models 7, 9 and 11 are estimated with no control variables, while Models 8, 10 and 12 add the control variables. Generally, the interaction variables provide evidence of moderating effects of CG structure on the association between CS and FP, which supports the study's prediction. For instance, the coefficient of B\_IND\*TL on ROA, ROE, and TQ in Models 8, 9 and 12 of Table 5 are statistically significant ( $\beta=0.145$ ,  $p<0.01$ ;  $\beta=0.154$ ,  $p<0.01$ ;  $\beta=0.208$ ,  $p<0.01$ ), respectively. Similarly, the coefficients of BGD\*TL on ROE and Tobin's Q in Models 10 and 12 are statistically significant ( $\beta=0.287$ ,  $p<0.01$ ;  $\beta=0.087$ ,  $p<0.01$ ). The statistically significant positive effect of BM\*TL on ROA and ROE in Models 8 and 10; the statistically significant positive effect of IO\*TL on ROA and Tobin's Q in Models 8 and 10; and the statistically significant positive effect of BO\*TL on ROA and TQ in Models 8 and 12 provide support for H2. However, the coefficients of BS\*TL on ROE in Model 9 of Table 5 are statistically and negatively significant which is not consistent with the prediction of H2, and supports Chatterjee and Nag (2023) that larger boards are not effective in driving FP.

**Table 3.** Correlation matrix.

Var	ROA	ROE	TQ	TL	LTL	STL	BS	B_IND	BGD	BM	IO	BO	FD	GDPGR	INF	FS	AT	GO
ROA	1																	
ROE	0.543*	1																
TQ	0.231	0.043	1															
TL	-0.01*	-0.10*	0.03*	1														
LTL	-0.21*	0.001	0.21*	0.42*	1													
STL	0.003	-0.23*	0.301*	0.52*	0.42*	1												
BS	0.211	0.031	0.432*	-0.054	-0.021	0.004	1											
B_IND	0.06*	0.043	0.019	-0.006	0.20*	0.05	0.231*	1										
BGD	0.032*	-0.034	0.03*	-0.005	0.021	-0.043	0.003	0.054	1									
BM	0.034	0.043	0.003	-0.09	0.043	0.007	0.003	0.087	0.032	1								
IO	0.023	0.002	0.078	0.054	0.032	0.065	0.120	0.064	0.087	0.202	1							
BO	0.056	0.007	0.084	0.021	0.043	0.007	0.091	-0.003	0.010	-0.108	0.013*	1						
FD	0.213*	0.032	0.007	0.094	0.265*	0.085	0.061	0.043	0.065	0.076	0.070	0.090	1					
GDPGR	0.342*	0.208	0.107	0.006	0.086	0.004	0.031	-0.086	-0.45*	0.432*	-0.006	-0.054	0.001	1				
INF	0.021	-0.076	0.275*	0.065	0.109	0.041	0.064	0.432*	0.321*	0.906	0.125	0.076	0.038	0.054	1			
FS	0.054	0.054	0.134	0.061	0.107	0.342*	0.007	0.050	0.321*	0.185	0.316*	0.015	0.003	-0.287*	0.149	1		
AT	0.086	0.175	0.085	0.208*	0.087	0.207	0.065	0.341*	0.176	0.078	0.043	0.208*	0.109	0.344*	0.043	0.002	1	
GO	0.065	0.002	0.050	0.216*	0.019	-0.065	0.066	0.055	0.051	0.043	0.052	0.001	-0.05	0.053	0.245*	0.050	0.108	1

Note: \*denotes a 5% significance level. ROA denotes return on assets; ROE denotes return on equity; TQ denotes Tobin's Q; LTL denotes long-term leverage; STL denotes short-term leverage; BS denotes board size; BGD denotes board gender diversity; B\_IND denotes board independence; BM denotes the frequency of board meetings; BO denotes board ownership; IO denotes institutional ownership; FS denotes firm size; AT denotes assets tangibility; GO denotes growth opportunities; GDPGR denotes Gross domestic product growth rate; INF denotes inflation. Table 1 fully defines all the variables used.

Source: Author's construction.

**Table 4.** SGMM results for capital structure and firm performance.

Variable	ROA		ROE		TOBIN'S Q	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
L1	0.024*** (0.004)	0.035*** (0.009)	0.245*** (0.024)	0.035*** (0.006)	0.541* (0.214)	0.354*** (0.080)
Capital structure variables						
Short-term leverage	−0.054*** (0.004)	0.025 (0.120)	0.251 (0.354)	−0.035*** (0.008)	0.054 (0.324)	−0.254*** (0.041)
Long-term leverage	0.651 (0.684)	−0.065 (0.354)	0.356*** (0.110)	0.211** (0.093)	0.254 (0.321)	0.245 (0.111)
Total leverage	−0.024*** (0.002)	−0.241*** (0.021)	−0.342*** (0.042)	−0.354*** (0.142)	0.432 (0.345)	−0.384*** (0.120)
Control variables						
Firm size						
Asset tangibility		0.254*** (0.024)		0.025*** (0.004)		0.254 (0.147)
Growth opportunities		0.341*** (0.020)		0.341** (0.120)		0.412 (0.471)
Inflation		−0.214 (0.241)		0.102** (0.021)		0.214 (0.341)
Financial development		0.521** (0.241)		0.214 (0.200)		0.432 (0.321)
GDPGR		0.051 (0.224)		0.231** (0.062)		0.432 (0.381)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Hansen	0.654	0.876	0.765	0.564	0.556	0.876
AR (2)	0.541	0.441	0.643	0.543	0.753	0.341

Notes: Robust standard errors are in parentheses, \*\*\*, \*\* and \* denote 1, 5 and 10 per cent significant levels, respectively. The insignificant Hansen test values of models 1–6 indicate the absence of overriding identity. Source: Author's construction.

Overall, the CG dimensions (board independence, board gender diversity, board ownership, board meetings, board ownership and institutional ownership) moderate the association between CS and FP, with the association being stronger for diverse boards (gender and non-executive) and institutional ownership. This study is consistent with other studies that find that firms with a diverse board have lower leverage. Non-executive directors, driving on their independence and experience, with a sense of high reputational loss on slight board incompetence, mitigate management's high risk-taking behaviours, which improve FP (Kao et al., 2019; Malagila et al., 2021). In addition, more female board representation is associated with lower leverage (Danso et al., 2021; Ezeani et al., 2023; Nguyen et al., 2020), and eventually improves FP (Amin et al., 2022; Hordofa, 2023; Malagila et al., 2021; Zalata et al., 2019). Noticeably, reforms to increase female boardroom participation have been argued on the basis that women are systematically, cognitively, physiologically and psychologically different from men in that women are less competitive, and aggressive, as expected from corporate executives, and therefore have a unique ability that makes them more risk averse, ethical, independent, objective, conservative. These unique skills help them to advise and monitor for less leverage, and consequently improve firm performance (Zalata et al., 2019). The results also show a significant effect of board meetings on the CS-FP nexus. Regular board meetings suggest that the board is effectively monitoring and advising on management activity and decisions which can have a substantial influence on CS decisions and eventually FP (Hordofa, 2023; Waris & Haji Din, 2023). The positive moderator effect of board ownership on the CS and FP nexus can be explained by the fact that when the board owns a share, in theory and practice, they become co-owners of the firm and have a higher stake and incentive to supervise effective CS decision to achieve higher FP (e.g. Iwasaki et al., 2022; Karim et al., 2023; Li-Kai et al., 2015). Similarly, institutional ownership (which include bank, pension funds, insurance companies and mutual funds) are more effective in supervising effective CS decision and FP (Alodat et al., 2022; Hong & Linh, 2023). These institutional owners usually are not interested in short-term profit but rather long-term firm performance.

Firms in Sub-Saharan Africa, in general, are not effective at using debts for tax interest shields and investment opportunities. More often, a high debt does not lead to better monitoring as proposed by Agency theory, instead renders firms leveraged and vulnerable to bankruptcy. Therefore, the board ensures that management is using less debt in financing the business. In summary, a firm with quality



**Table 5.** The moderator role of CG mechanism in the CS-FP nexus.

Variable	ROA		ROE		TOBIN'S Q	
	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
L1	0.214*** (0.021)	0.321*** (0.06)	0.021*** (0.002)	0.205** (0.091)	0.305 (0.410)	0.305 (0.254)
BS	0.364 (0.452)	-0.264 (0.432)	0.405*** (0.154)	0.056 (0.076)	-0.034 (0.098)	-0.254 (0.376)
B_IND	0.241*** (0.025)	0.204*** (0.020)	0.410*** (0.054)	0.350*** (0.140)	0.410 (0.321)	0.054 (0.041)
BGD	-0.241 (0.100)	0.354*** (0.054)	0.421*** (0.196)	0.302** (0.103)	0.206*** (0.032)	0.415 (0.241)
BM	-0.214 (0.351)	0.601 (0.341)	1.351 (1.035)	0.262 (0.351)	0.308*** (0.024)	0.305* (0.140)
IO	0.054 (0.031)	0.354 (0.214)	0.045 (0.032)	0.465*** (0.021)	0.307** (0.106)	0.209** (0.043)
BO	0.0307 (0.021)	0.405** (0.107)	0.025*** (0.003)	0.235*** (0.050)	0.020 (0.035)	0.035 (0.024)
TL	-0.241 (0.035)	-0.241*** (0.030)	-0.041 (0.245)	-0.024*** (0.003)	-0.201*** (0.035)	-0.325*** (0.054)
BS*TL	0.054 (0.029)	0.354 (0.254)	-0.214*** (0.025)	0.044 (0.987)	0.035 (0.097)	0.006 (0.014)
B_IND*TL	0.054*** (0.006)	0.145*** (0.024)	0.154*** (0.050)	0.025 (0.354)	0.242 (0.164)	0.208*** (0.035)
BGD*TL	0.687 (0.872)	-0.548 (0.687)	0.098 (0.784)	0.287*** (0.025)	0.058 (0.364)	0.087*** (0.009)
BM*TL	0.284*** (0.065)	0.254** (0.084)	0.241 (0.205)	0.087** (0.020)	0.054 (0.897)	0.087 (0.587)
IO*TL	0.097 (0.058)	0.548** (0.158)	-0.205 (0.108)	0.065 (0.254)	0.087 (0.065)	0.214*** (0.036)
BO*TL	0.068*** (0.009)	0.187*** (0.035)	0.068 (0.074)	0.365 (0.287)	0.342 (0.298)	0.065*** (0.007)
FS		0.054 (0.098)		-0.191 (0.159)		0.245** (0.045)
AT		0.543*** (0.154)		1.9468 (7.22)		0.643*** (0.231)
GO		0.564*** (0.206)		0.246** (0.078)		2.404 (3.790)
INF		-0.307*** (0.031)		-0.509 (0.700)		0.043 (0.021)
FD		0.349*** (0.065)		0.654 (0.409)		-0.251 (0.115)
GDPGR		0.608 (0.642)		0.407** (0.132)		0.054*** (0.005)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Hansen	0.654	0.254	0.602	0.703	0.321	0.432
AR (1)	0.342	0.430	0.568	0.106	0.543	0.412
AR (2)	0.576	0.667	0.801	0.431	0.765	0.543

Note: \*, \*\* and \*\*\* denote 10%, 5% and 1% significance levels. Robust standard errors are in parentheses. ROA denote return on assets; ROE denotes return on equity; TQ denotes Tobin's Q; LTL denotes long-term leverage; STL denotes short-term leverage; BS denotes board size; BGD denotes board gender diversity; B\_IND denotes board independence; BM denotes the frequency of board meetings; BO denotes board ownership; IO denotes institutional ownership; FS denotes firm size; AT denotes assets tangibility; GO denotes growth opportunities; FD denotes financial development; GDPGR denotes Gross domestic product growth rate; INF denotes inflation. Table 1 fully defines all the variables used. Source: Author's construction.

CG achieves lower CS (Abdullah & Tursoy, 2021; Detthamrong et al., 2017; Ramli et al., 2019; Ronoowah & Seetanah, 2023), which improves FP.

Concerning the control variables in Table 5, the coefficients of asset tangibility are significant and positive on the performance measures. The results support both the trade-off and the pecking order theories of the positive tangibility-leverage performance relationship. Firms' tangible assets, as collateral, allow them to secure finance at a lower cost which improves FP (Danso et al., 2021; Khémiri & Noubbigh, 2018). Similarly, growth opportunity has a positive coefficient on FP. Firms with growth opportunities can access lower finance and achieve FP (Khémiri & Noubbigh, 2018). Expectedly, economic growth and financial developments have positive and significant effects on FP. Development in the financial systems and economic prosperity offers opportunities for firm growth. Inflation, however, has the expected negative sign on FP since SSA is characterised by high inflation and it is expected to be deleterious to FP.

**Table 6.** Additional analysis relating to H1 and H2 for lagged structure and fixed effects estimators.

Variables	ROA		ROE		TOBIN'S Q	
	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
L1	0.214*** (0.021)	0.321*** (0.06)	0.025*** (0.006)	0.205** (0.091)	0.305 (0.410)	0.054*** (0.006)
BS		0.230 (0.107)		0.654** (0.387)		0.543 (0.342)
B_IND		0.218**** (0.031)		0.345** (0.102)		9.594*** (3.098)
BGD		0.025*** (0.002)		0.207 (0.321)		14.777 (14.077)
BM		2.370 (2.440)		0.454** (0.125)		−1.400 (1.385)
IO		0.145 (0.245)	.	0.254*** (0.035)		0.0001 (0.160)
BO		−1.219 (1.183)		0.035*** (0.003)		0.940 (0.784)
STL	−0.354*** (0.025)		−0.248 (0.314)		−0.713 (.555)	
LTL	0.035 (0.122)		0.014 (0.061)		0.564 (0.670)	
TL	0.040 (0.075)	−0.184 (0.192)	0.354* (0.145)	2.347 (0.156)	0.064 (0.152)	0.453* (0.113)
BS*TL		−0.273 (0.785)		−0.668 (0.789)		−0.086 (0.359)
B_IND*TL		0.204*** (0.014)		0.510 (0.907)		0.265*** (0.007)
BGD*TL		0.579 (0.710)		0.246 (0.109)		1.072 (0.469)
BM*LTL		0.273 (0.785)		0.342** (0.032)	−2.417 (2.734)	0.025 (0.587)
IO*TL		0.277 (0.451)		0.298 (0.419)	−.502 (.939)	0.121 (0.249)
BO*TL		0.745 (0.554)		0.325 (0.639)	3.022 (2.00)	0.648 (0.207)
FS	−0.089 (0.328)	−0.229 (0.200)	−3.095** (1.408)	−0.191 (0.159)	12.911 (22.089)	0.358*** (0.035)
AT	0.119 (0.031)	−6.811 (7.187)	0.354 (0.125)	1.9468 (7.22)	−35.873** (21.22)	2.404 (3.790)
GO	0.035 (0.004)	0.208*** (0.045)	0.405* (0.147)	0.547*** (0.154)	(−1.564)	0.713 (0.555)
INF	−0.350*** (0.036)	0.003 (0.563)	0.024 (0.095)	−0.324 (0.060)	0.034 (0.180)	−0.564 (−0.670)
FD	0.032*** (0.009)	0.307*** (0.023)	0.342*** (0.024)	0.432** (0.100)	0.035 (0.528)	0.453** (0.106)
GDPGR	0.354 (0.148)	0.043 (0.769)	0.065 (0.044)	0.548** (0.141)	0.432 (0.705)	0.056 (0.022)
Constant		0.407*** (0.100)		0.317*** (0.090)		−0.548 (0.254)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Hansen	0.453		0.362		0.178	
AR (2)	0.543		0.453		0.207	
AR (2)	0.165		0.376		0.378	
Adjusted R-squared		0.578		0.654		0.387
p-Value		0.000		0.000		0.000

Note: \*, \*\* and \*\*\* denote 10%, 5% and 1% significance levels. Robust standard errors are in parentheses. ROA denote return on assets; ROE denotes return on equity; TQ denotes Tobin's Q; LTL denotes long-term leverage; STL denotes short-term leverage; BS denotes board size; BGD denotes board gender diversity; B\_IND denotes board independence; BM denotes the frequency of board meetings; BO denotes board ownership; IO denotes institutional ownership; FS denotes firm size; AT denotes assets tangibility; GO denotes growth opportunities; FD denotes financial development; GDPGR denotes Gross domestic product growth rate; INF denotes inflation. Table 1 fully defines all the variables used. Source: Author's construction.

#### 6.4. Robustness analysis

The study performs further analysis as robustness tests. A lagged structure model has been estimated to control potential endogeneity problems arising from simultaneous problems on; (i) the SGMM effect of CS on FP by lagging the independent variables and the control variables on the current year's FP in Models 13, 15 and 17 of Table 6. (ii) the fixed effect technique was also used to estimate the moderating Models (the effect of CG mechanism on CS and FP nexus) in Models 14, 16 and 18 of Table 6. Observeable, the findings in Models 13, 15 and 17 of Table 6 indicate that the earlier results are robust

to possible endogeneity problems from the simultaneous relationship between CS and FP. In addition, the fixed effects results in Models 14, 16 and 18 reveal that the earlier findings are robust to different estimators.

## 7. Summary and conclusion

International scandals such as Enron reinforced the call to improve CG practices in Sub-Saharan Africa. In addition, the business environment in Africa in general and Sub-Saharan African countries in particular, are characterised with low accountability, transparency, weak CG structures and poor corporate finance and management decisions. Coupled with some CG-induced business failures in this region, several reforms and legislations have been introduced to promote business activities and enhance good CG practices. In response, several studies have examined how CG affect board behaviour in decision-making. Consequently, a scholarship has been established between the effect of CG on FP and CG on CS. However, an area that has so far been largely unexplored is whether CG dimensions can moderate the association between CS and FP. To address this gap, this paper examines the moderator role of CG mechanism in the CS and FP relationship using country - and firm - level data for a sample of 100 non-financial listed firms in 7 Sub-Saharan Africa countries over 2010–2020. In addition, the paper investigates the direct effect of CS on FP from 2010 to 2020. Employing the two-step system generalised methods of moments estimator, this paper extends, as well as offers fresh evidence on the relationship between CG and FP. First, the evidence shows that firms with long-term leverage achieve higher performance measured with ROE. However, the findings also show that short-term leverage and total leverage are significantly associated with lower performance measured with ROA, ROE and Tobin's Q. Second, this paper extends, as well as contributes to the current literature by investigating the moderator role of CG mechanism on the CS-FP nexus. The paper finds that CS complements CG mechanism of board independence, board gender diversity, board meetings, managerial ownership and institutional ownership to induce positive and significant effects on FP, with the association being stronger for diverse boards (gender and non-executive directors) and institutional ownership, meanwhile, board size induces a negative association between CS and FP. In summary, the results suggest that CG mechanisms (B\_IND, BGD, IO, BO and BM) have a positive moderator role in the relationship between CS and FP. The results are robust to lagged structure and fixed effects estimators.

Observably, female boardroom participation and non-executive directors are more committed to, and effective in performing their fiduciary duties, as board directors who can reduce managerial opportunism in CS and improve management monitoring through their expected attributes of independent, conservative, objective and responsible. Also, the fact that board members who own shares are co-owners of the company, and the fact that institutional owners prefer long-term firm performance to short-term profits, they can monitor and advise better CS decisions, and consequently improve FP.

Therefore, this paper provides useful theoretical and practical insights. First, despite increasing attention on CG, existing studies have mainly focused on either CG and FP, CS and FP or CG and CS and mostly based on a single theory or country. This study offers new insights by using a multi-theoretical framework i.e. agency theory, pecking order theory and trade-off theory to explain the link between CS and FP based on CG mechanism. Second, the findings have useful implications for firms in SSA. For instance, the results show that short-term leverage and total leverage contribute significantly to lower FP. However, long-term leverage contributes significantly to higher FP. This suggests that firms in SSA may need to look at their financing strategies to achieve optimal CS. In addition, the findings reveal that board diversity (gender and non-executive directors), meetings and ownership (board and institutions), positively explain the relationship between total leverage and FP. Thus, regulatory bodies and firms must commit to ensuring quality CG practices to achieve higher FP.

In terms of expansion, the paper focuses on Sub-Saharan Africa, and therefore future studies can expand the hypothesis (H1 and H2) in different regions since the only studies on the moderator or the mediator role of CG or CS on CS and FP, or CG on FP nexus are only provided for by Detthamrong et al. (2017) in Thailand, Ngatno et al. (2021) in Indonesia and Elmagrhi et al. (2018) in UK. Further, future studies can investigate the topic with other control variables to see whether the results will change.

## Disclosure statement

The author has no relevant financial or non-financial interests to disclose.

## About the author

**Isaac Bawuah** holds a post graduate certificate in Finance and an undergraduate certificate in banking and Finance from Kwame Nkrumah University of Science and Technology (KNUST), Ghana. His research interest includes Corporate Governance, Climate Finance, Institutional Quality, Sustainable Development and Assessment in Sub-Saharan Africa.

## ORCID

Isaac Bawuah  <http://orcid.org/0000-0003-0555-1576>

## Data availability statement

The data and materials supporting this work can be accessed at: 10.6084/m9.figshare.24316291.

## References

- Abang'a, A. O. G., Taurigana, V., Wang'ombe, D., & Achiro, L. O. (2022). Corporate governance and financial performance of state-owned enterprises in Kenya. *Corporate Governance*, 22(4), 1–20. <https://doi.org/10.1108/CG-01-2021-0007>
- Abdullah, H., & Tursoy, T. (2021). Capital structure and firm performance: Evidence of Germany under IFRS adoption. *Review of Managerial Science*, 15(2), 379–398. <https://doi.org/10.1007/s11846-019-00344-5>
- Abor, J. (2007). Debt policy and performance of SMEs: Evidence from Ghanaian and South African firms. *The Journal of Risk Finance*, 8(4), 364–379. <https://doi.org/10.1108/15265940710777315>
- Agyei, S. K., Obuobi, N. K., Isshaq, M. Z., Abeka, M. J., Gatsi, J. G., Boateng, E., & Amoah, E. K. (2022). Country-level corporate governance and Foreign Portfolio Investments in Sub-Saharan Africa: The moderating role of institutional quality. *Cogent Economics & Finance*, 10(1), 2106636. <https://doi.org/10.1080/23322039.2022.2106636>
- Ahmed, N., & Afza, T. (2019). Capital structure, competitive intensity and firm performance: Evidence from Pakistan. *Journal of Advances in Management Research*, 16(5), 796–813. <https://doi.org/10.1108/JAMR-02-2019-0018>
- Al-Ahdal, W. M., Alsamhi, M. H., Tabash, M. I., & Farhan, N. H. (2020). The impact of corporate governance on the financial performance of Indian and GCC listed firms: An empirical investigation. *Research in International Business and Finance*, 51, 101083. <https://doi.org/10.1016/j.ribaf.2019.101083>
- Almeida, H., & Campello, M. (2007). Financial constraints, asset tangibility, and corporate investment. *Review of Financial Studies*, 20(5), 1429–1460. <https://doi.org/10.1093/rfs/hhm019>
- Alodat, A. Y., Salleh, Z., Hashim, H. A., & Sulong, F. (2022). Corporate governance and firm performance: Empirical evidence from Jordan. *Journal of Financial Reporting and Accounting*, 20(5), 866–896. <https://doi.org/10.1108/JFRA-12-2020-0361>
- Al-Taani, K. (2013). The relationship between capital structure and firm performance: Evidence from Jordan. *Journal of Finance and Accounting*, 1(3), 41–45. <https://doi.org/10.11648/j.jfa.20130103.11>
- Aluko, O. A., & Ibrahim, M. (2020). Institutions and the financial development–economic growth nexus in sub-Saharan Africa. *Economic Notes*, 49(3), e12163. <https://doi.org/10.1111/ecno.12163>
- Amin, A., Ur Rehman, R., Ali, R., & Ntim, C. G. (2022). Does gender diversity on the board reduce agency costs? Evidence from Pakistan. *Gender in Management: An International Journal*, 37(2), 164–181. <https://doi.org/10.1108/GM-10-2020-0303>
- Andoh, J. A., Abugri, B. A., & Anarfo, E. B. (2023). Board Characteristics and performance of listed firms in Ghana: Corporate Governance. *Corporate Governance: The International Journal of Business in Society*, 23(1), 43–71. <https://doi.org/10.1108/CG-08-2020-0344>
- Appiah-Kubi, S. N. K., Malec, K., Maitah, M., Kutin, S. B., Pánková, L., Phiri, J., & Zaganjori, O. (2020). The impact of corporate governance structures on foreign direct investment: A case study of West African countries. *Sustainability*, 12(9), 3715. <https://doi.org/10.3390/su12093715>
- Ararat, M., Claessens, S., & Yurtoglu, B. B. (2021). Corporate governance in emerging markets: A selective review and an agenda for future research. *Emerging Markets Review*, 48, 100767. <https://doi.org/10.1016/j.ememar.2020.100767>
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2), 277–297. <https://doi.org/10.2307/2297968>

- Areneke, G., Khlif, W., Kimani, D., & Soobaroyen, T. (2022). 13. Do corporate governance codes matter in Africa? In *Research handbook on corporate board decision-making* (p. 273). Elgar.
- Asiedu, M. A., & Mensah, E. (2023). Re-examining the corporate governance–firm performance nexus: Fresh evidence from a causal mediation analysis. *Cogent Economics & Finance*, 11(1), 2223414. <https://doi.org/10.1080/23322039.2023.2223414>
- Asongu, S. A., & Odhiambo, N. M. (2020). Inequality thresholds, governance and gender economic inclusion in sub-Saharan Africa. *International Review of Applied Economics*, 34(1), 94–114. <https://doi.org/10.1080/02692171.2019.1645817>
- Ballester, L., González-Urteaga, A., & Martínez, B. (2020). The role of internal corporate governance mechanisms on default risk: A systematic review for different institutional settings. *Research in International Business and Finance*, 54, 101293. <https://doi.org/10.1016/j.ribaf.2020.101293>
- Boachie, C., & Mensah, E. (2022). The effect of earnings management on firm performance: The moderating role of corporate governance quality. *International Review of Financial Analysis*, 83, 102270. <https://doi.org/10.1016/j.irfa.2022.102270>
- Bolourian, S., Angus, A., & Alinaghian, L. (2021). The impact of corporate governance on corporate social responsibility at the board-level: A critical assessment. *Journal of Cleaner Production*, 291, 125752. <https://doi.org/10.1016/j.jclepro.2020.125752>
- Boshnak, H. (2023). The impact of capital structure on firm performance: Evidence from Saudi-listed firms. *International Journal of Disclosure and Governance*, 20(1), 15–26. <https://doi.org/10.1057/s41310-022-00154-4>
- Bufarwa, I. M., Elamer, A. A., Ntim, C. G., & AlHares, A. (2020). Gender diversity, corporate governance and financial risk disclosure in the UK. *International Journal of Law and Management*, 62(6), 521–538. <https://doi.org/10.1108/IJLMA-10-2018-0245>
- Ceballos-Mina, O. E., & Santiago-Ayala, L. E. (2019). Capital structure-firm value nexus: The moderating role of profitability. *Revista Finanzas y Política Económica*, 11(2), 375–386.
- Chigudu, D. (2020). Public sector corporate governance: Zimbabwe's challenges of strategic management in the wake of sustainable development. *Academy of Strategic Management Journal*, 19(1), 1–13.
- Chatterjee, C., & Nag, T. (2023). Do women on boards enhance firm performance? Evidence from top Indian companies. *International Journal of Disclosure and Governance*, 20(2), 155–167. <https://doi.org/10.1057/s41310-022-00153-5>
- Danso, A., Fosu, S., Owusu-Agyei, S., Ntim, C. G., & Adegbite, E. (2021). Capital structure revisited. Do crisis and competition matter in a Keiretsu corporate structure? *International Journal of Finance & Economics*, 26(4), 5073–5092. <https://doi.org/10.1002/ijfe.2055>
- Dao, B. T. T., & Ta, T. D. N. (2020). A meta-analysis: Capital structure and firm performance. *Journal of Economics and Development*, 22(1), 111–129. <https://doi.org/10.1108/JED-12-2019-0072>
- Dao, T. T. B., & Le, T. H. (2023). Optimal capital structure of Vietnamese listed firms-finance industry and consumer discretionary industry. *Cogent Social Sciences*, 9(2), 2245238. <https://doi.org/10.1080/23311886.2023.2245238>
- Detthamrong, U., Chancharat, N., & Vithessonthi, C. (2017). Corporate governance, capital structure and firm performance: Evidence from Thailand. *Research in International Business and Finance*, 42, 689–709. <https://doi.org/10.1016/j.ribaf.2017.07.011>
- Dodoo, R. N. A., Kumi, M., & Mangudhla, T. (2023). The effect of capital structure on firm performance: empirical evidence from an emerging economy. *EuroMed Journal of Management*, 5(1), 83–99. <https://doi.org/10.1504/EMJM.2023.128241>
- Eldaia, M., Hanefah, M., & Marzuki, A. (2023). The moderating role of Shariah committee quality on the relationship between the board of directors' effectiveness and the performance of Malaysian Takaful. *Competitiveness Review: An International Business Journal*, 33(1), 62–84. <https://doi.org/10.1108/CR-09-2021-0123>
- El-Faitouri, R. (2014). Board of Directors and Tobin's Q: Evidence from UK firms. *Journal of Finance and Accounting*, 2(4), 82–99.
- Ellili, N. O. D. (2023). Bibliometric analysis on corporate governance topics published in the Journal of Corporate Governance: The International Journal of Business in Society. *Corporate Governance: The International Journal of Business in Society*, 23(1), 262–286. <https://doi.org/10.1108/CG-03-2022-0135>
- Elmagrhi, M. H., Ntim, C. G., Malagila, J., Fosu, S., & Tunyi, A. A. (2018). Trustee board diversity, governance mechanisms, capital structure and performance in UK charities. *Corporate Governance: The International Journal of Business in Society*, 18(3), 478–508. <https://doi.org/10.1108/CG-08-2017-0185>
- El-Sayed Ebaid, I. (2009). The impact of capital-structure choice on firm performance: Empirical evidence from Egypt. *The Journal of Risk Finance*, 10(5), 477–487. <https://doi.org/10.1108/15265940911001385>
- Ezeani, E., Kwabi, F., Salem, R., Usman, M., Alqatamin, R. M. H., & Kostov, P. (2023). Corporate board and dynamics of capital structure: Evidence from UK, France and Germany. *International Journal of Finance & Economics*, 28(3), 3281–3298. <https://doi.org/10.1002/ijfe.2593>
- Farhan, N. H., Tabash, M. I., Alsamhi, M. H., & Yahya, A. T. (2020). The relationship between capital structure and firm performance: Empirical evidence from the Indian service sector. *International Journal of Sustainable Economy*, 12(2), 140–162. <https://doi.org/10.1504/IJSE.2020.110262>



- Ganiyu, Y. O., Adelopo, I., Rodionova, Y., & Samuel, O. L. (2019). Capital structure and firm performance in Nigeria. *African Journal of Economic Review*, 7(1), 31–56.
- Gujarati, D. N. (2022). *Basic econometrics*. Prentice Hall.
- Harris, M., & Raviv, A. (1991). The theory of capital structure. *The Journal of Finance*, 46(1), 297–355. <https://doi.org/10.1111/j.1540-6261.1991.tb03753.x>
- Hong, N. T. H., & Linh, T. K. (2023). Institutional investors, corporate governance and firm performance in an emerging market: Evidence from Vietnam. *Cogent Economics & Finance*, 11(1), 2159735. <https://doi.org/10.1080/23322039.2022.2159735>
- Hordofa, D. F. (2023). The impact of board gender diversity on capital structure: Evidence from the Ethiopian banking sector. *Cogent Business & Management*, 10(3), 2253995. <https://doi.org/10.1080/23311975.2023.2253995>
- Iwasaki, I., Ma, X., & Mizobata, S. (2022). Ownership structure and firm performance in emerging markets: A comparative meta-analysis of East European EU member states, Russia and China. *Economic Systems*, 46(2), 100945. <https://doi.org/10.1016/j.ecosys.2022.100945>
- Jatana, C. (2023). Board characteristics and CEO turnover–performance relationship: Evidence from India. *Corporate Governance: The International Journal of Business in Society*, 23(4), 766–799. <https://doi.org/10.1108/CG-01-2022-0038>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76, 323–329.
- Kao, M. F., Hodgkinson, L., & Jaafar, A. (2019). Ownership structure, board of directors and firm performance: Evidence from Taiwan. *Corporate Governance: The International Journal of Business in Society*, 19(1), 189–216. <https://doi.org/10.1108/CG-04-2018-0144>
- Karim, S., Naeem, M. A., Meero, A. A., & Rabbani, M. R. (2023). Examining the role of gender diversity on ownership structure-sustainable performance nexus: Fresh evidence from emerging markets. *Environmental Science and Pollution Research International*, 30(15), 42829–42844. <https://doi.org/10.1007/s11356-021-17459-6>
- Kennedy, P. (2008). *A guide to econometrics*. John Wiley & Sons.
- Khémiri, W., & Noubbigh, H. (2018). Determinants of capital structure: Evidence from sub-Saharan African firms. *The Quarterly Review of Economics and Finance*, 70, 150–159. <https://doi.org/10.1016/j.qref.2018.04.010>
- Kyere, M., & Ausloos, M. (2021). Corporate governance and firms' financial performance in the United Kingdom. *International Journal of Finance & Economics*, 26(2), 1871–1885. <https://doi.org/10.1002/ijfe.1883>
- Li, K., Niskanen, J., & Niskanen, M. (2019). Capital structure and firm performance in European SMEs: Does credit risk make a difference? *Managerial Finance*, 45(5), 582–601. <https://doi.org/10.1108/MF-01-2017-0018>
- Liao, L. K., Mukherjee, T., & Wang, W., (2015). Corporate governance and capital structure dynamics: An empirical study. *Journal of Financial Research*, 38(2), 169–192. <https://doi.org/10.1111/jfir.12057>
- Malagila, J. K., Zalata, A. M., Ntim, C. G., & Elamer, A. A. (2021). Corporate governance and performance in sports organisations: The case of UK premier leagues. *International Journal of Finance & Economics*, 26(2), 2517–2537. <https://doi.org/10.1002/ijfe.1918>
- Modigliani, F., & Miller, M. (1963). Corporate income taxes and the cost of capital: A correction. *American Economic Review*, 53, 443–453.
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the investment theory. *American Economic Review*, 48, 261–297.
- Munisi, G., & Randøy, T. (2013). Corporate governance and company performance across Sub-Saharan African countries. *Journal of Economics and Business*, 70, 92–110. <https://doi.org/10.1016/j.jeconbus.2013.08.003>
- Myers, S. (1984). The capital structure puzzle. *The Journal of Finance*, 39(3), 575. <https://doi.org/10.2307/2327916>
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221. [https://doi.org/10.1016/0304-405X\(84\)90023-0](https://doi.org/10.1016/0304-405X(84)90023-0)
- Nainggolan, Y. A., Prahmila, D. I., & Syaputri, A. R. (2023). Do board characteristics affect bank risk-taking and performance? Evidence from Indonesian and Malaysian Islamic banks. *Journal of Management and Governance*, 27(4), 1115–1145. <https://doi.org/10.1007/s10997-022-09625-w>
- Naz, M. A., Ali, R., Rehman, R. U., & Ntim, C. G. (2022). Corporate governance, working capital management, and firm performance: Some new insights from agency theory. *Managerial and Decision Economics*, 43(5), 1448–1461. <https://doi.org/10.1002/mde.3466>
- Nebie, M., & Cheng, M. C. (2023). Corporate tax avoidance and firm value: Evidence from Taiwan. *Cogent Business & Management*, 10(3), 2282218. <https://doi.org/10.1080/23311975.2023.2282218>
- Ngatno, Apriatni, E. P., Youlianto, A. (2021). Moderating effects of corporate governance mechanism on the relation between capital structure and firm performance. *Cogent Business & Management*, 8(1), 1866822. <https://doi.org/10.1080/23311975.2020.1866822>
- Nguyen, H. T., & Nguyen, A. H. (2020). The impact of capital structure on firm performance: Evidence from Vietnam. *The Journal of Asian Finance, Economics and Business*, 7(4), 97–105. <https://doi.org/10.13106/jafeb.2020.vol7.no4.97>
- Nguyen, T. H. H., Ntim, C. G., & Malagila, J. K. (2020). Women on corporate boards and corporate financial and non-financial performance: A systematic literature review and future research agenda. *International Review of Financial Analysis*, 71, 101554. <https://doi.org/10.1016/j.irfa.2020.101554>



- Nicodano, G., & Regis, L. (2019). A trade-off theory of ownership and capital structure. *Journal of Financial Economics*, 131(3), 715–735. <https://doi.org/10.1016/j.jfineco.2018.09.001>
- Ntim, C. G. (2013). An integrated corporate governance framework and financial performance in South African-listed corporations. *South African Journal of Economics*, 81(3), 373–392. <https://doi.org/10.1111/j.1813-6982.2011.01316.x>
- Okyere, S. A., Fiador, V., & Sarpong-Kumankoma, E. (2021). Earnings management, capital structure, and the role of corporate governance: Evidence from sub-Saharan Africa. *Managerial and Decision Economics*, 42(6), 1525–1538. <https://doi.org/10.1002/mde.3324>
- Opoku-Asante, K., Winful, E. C., Sharifzadeh, M., & Neubert, M. (2022). The relationship between capital structure and financial performance of firms in Ghana and Nigeria. *European Journal of Business and Management Research*, 7(1), 236–244. <https://doi.org/10.24018/ejbmr.2022.7.1.1282>
- Panda, A. K., Nanda, S., Hegde, A. A., & Yadav, A. K. K. (2023). Receptivity of capital structure with financial flexibility: A study on manufacturing firms. *International Journal of Finance & Economics*, 28(2), 1981–1993. <https://doi.org/10.1002/ijfe.2521>
- Pernelet, H. R., & Brennan, N. M. (2023). Impression management at board meetings: Accountability in public and in private. *Accounting, Auditing & Accountability Journal*, 36(9), 340–369. <https://doi.org/10.1108/AAAJ-09-2022-6050>
- Puni, A., & Anlesinya, A. (2020). Corporate governance mechanisms and firm performance in a developing country. *International Journal of Law and Management*, 62(2), 147–169. <https://doi.org/10.1108/IJLMA-03-2019-0076>
- Ramli, N. A., Latan, H., & Solovida, G. T. (2019). Determinants of capital structure and firm financial performance—A PLS-SEM approach: Evidence from Malaysia and Indonesia. *The Quarterly Review of Economics and Finance*, 71, 148–160. <https://doi.org/10.1016/j.qref.2018.07.001>
- Ronoowah, R. K., & Seetanah, B. (2023). The moderating and mediating effects of corporate governance and capital structure on firm performance: Empirical evidence from an emerging market. *Managerial Finance*, 49(9), 1377–1399. <https://doi.org/10.1108/MF-08-2022-0382>
- Sarpong-Danquah, B., Adusei, M., & Al-Faryan, M. A. S. (2023). The role of judicial efficiency in the board size-financial performance nexus: Evidence from microfinance institutions. *Social Sciences & Humanities Open*, 8(1), 100584. <https://doi.org/10.1016/j.ssaho.2023.100584>
- Sarpong-Danquah, B., Adusei, M., & Frimpong, J. M. (2023). The capital structure–firm performance nexus: The role of judicial efficiency. *Managerial and Decision Economics*, 44(3), 1585–1600. <https://doi.org/10.1002/mde.3768>
- Sarpong-Danquah, B., Adusei, M., & Magnus Frimpong, J. (2023). Effect of board gender diversity on the financial performance of microfinance institutions: Does judicial efficiency matter? *Annals of Public and Cooperative Economics*, 94(2), 495–518. <https://doi.org/10.1111/apce.12396>
- Sarpong-Danquah, B., Oko-Bensa-Agyekum, K., & Opoku, E. (2022). Corporate governance and the performance of manufacturing firms in Ghana: Does ownership structure matter? *Cogent Business & Management*, 9(1), 2101323. <https://doi.org/10.1080/23311975.2022.2101323>
- Waris, M., & Haji Din, B. (2023). Impact of corporate governance and ownership concentrations on timelines of financial reporting in Pakistan. *Cogent Business & Management*, 10(1), 2164995. <https://doi.org/10.1080/23311975.2023.2164995>
- Waweru, N. (2020). Business ethics disclosure and corporate governance in Sub-Saharan Africa (SSA). *International Journal of Accounting & Information Management*, 28(2), 363–387. <https://doi.org/10.1108/IJAIM-07-2019-0091>
- Waweru, N., Mangena, M., & Riro, G. (2019). Corporate governance and corporate internet reporting in sub-Saharan Africa: the case of Kenya and Tanzania. *Corporate Governance*, 19(4), 751–773. <https://doi.org/10.1108/CG-12-2018-0365>
- Yakubu, I. N., & Oumarou, S. (2023). Boardroom dynamics: The power of board composition and gender diversity in shaping capital structure. *Cogent Business & Management*, 10(2), 2236836. <https://doi.org/10.1080/23311975.2023.2236836>
- Zalata, A. M., Ntim, C. G., Choudhry, T., Hassanein, A., & Elzahr, H. (2019). Female directors and managerial opportunism: Monitoring versus advisory female directors. *The Leadership Quarterly*, 30(5), 101309. <https://doi.org/10.1016/j.leaqua.2019.101309>