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Article

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Corporate governance and the performance of manufacturing firms in Ghana: Does ownership structure matter?

Beatrice Sarpong-Danquah^{1*}, Kwasi Oko-Bensa-Agyekum¹ and Emmanuel Opoku¹

Abstract: This study investigates the moderating role of ownership structure in the nexus between corporate governance and the financial performance of manufacturing firms in Ghana. The study uses GLS regression to analyze a panel dataset of 7 manufacturing firms over 14 years. We find a positive and significant effect of board size, audit committee independence, and size on firm performance. We, however, find a negative relationship between board remuneration and performance. We observe that block ownership moderates the relationship between board size, board independence, and the financial performance of manufacturing firms. Block shareholdings of the listed manufacturing firms in Ghana play a significant moderating role in the corporate governance-firm performance nexus. This study provides key insights into the influence of block shareholders on corporate governance activities and the eventual impact on the financial performance of manufacturing firms in Ghana, a phenomenon that has not been examined in the literature.

Subjects: Corporate Finance; Business, Management and Accounting; Corporate Governance

Keywords: corporate governance; manufacturing firms; ownership structure; performance; Ghana

Subjects: G34; G32; G30

1. Introduction

The manufacturing industry is historically deemed as the driver of economic growth, and development (Herman, 2016). Thus, effective governance of the sector through systems of rules, practices, and processes is increasingly becoming vital to practitioners and policy makers. Historically, the system of corporate governance has evolved in response to systemic crisis or corporate failures (Adegbite, 2012). The South Sea bubble in the 1700 deemed as the first well-documented corporate governance failure spurred England's revolution of business law and practice (Adda & Hinson, 2006). The crash of the stock market of the United States in 1929 also spurred the revolution of the securities laws (Borgia, 2005). Nonetheless, serious attention was accorded to corporate governance in many developed markets in the late 1900s after the scandals of Enron, Parmalat, Xerox, Anderson, Merrill Lynch and WorldCom (Alimehmeti & Paletta, 2014). This development was further fast-tracked by the mid-1997 Asian crisis and the global financial crisis of the early 2000s that began from the housing market of the US (Ghana, 2002).

In Africa, especially sub-Saharan Africa (SSA), the collapse of many businesses in varying sectors of the economy is largely attributed to corporate governance lapses (Ayandele & EMMANUEL, 2013; Banahene, 2018). In many SSA countries like Nigeria, South Africa and Ghana, the level of corporate governance adherence is low due to a huge enforcement gap, board independence insufficiency; unbalance power and disclosure insufficiency (Moyo, 2010). The collapse of Masterbond and MacMed in the late 1990s (Ntim et al., 2013), and LeisureNet, Regal Bank, Saambou, Fedsure, JCI-Randgold, Fidentia, Africa Bank, Steinhoff and VBS Mutual Bank in the 2000s in South Africa was attributed to poor corporate governance (Kiewit, 2019). The failure of Masterbond engulfed around numerous undetected activities of directors of the organization deemed fraudulent.

In Ghana, the collapse of Divine Sea Foods Limited, Ghana Cooperative Bank Limited, Bonte Gold Mines Limited, Bank for Housing and Construction Limited, Juapong Textiles Limited and Ghana Airways Limited in the early 2000s was largely attributed to poor governance practices (Banahene, 2018). The 2017–18 banking crisis of Ghana that saw the collapses of Beige Bank, UT bank, UniBank, Capital Bank, Construction Bank, Royal Bank, Sovereign Bank was reported by the Bank of Ghana (BoG) to be primarily due to ineffective corporate governance practices (Afolabi, 2018). The board of directors and top managers were either inert or involved in practices that benefited their own interests rather than the progress of the banks (Debrah, 2018).

Furthermore, owing to a lack of experience or greed, bank boards of directors failed in their duty to efficiently promote appropriate account reporting mechanism, and system of external auditing (Cadbury, 1992). The report of BoG suggested that, without the required procedures and adherence to the provisions relevant to Act 930, UniBank had offered an amount of GH¢1.6 billion in sum as loans and advances to shareholders (Kpodo, 2019). The shareholders and their henchmen also illegitimately received GH¢3.7 billion that breached the limit of normal credit and also failed to reveal the amount as part of the loan portfolio of the bank (Selassie, 2018). The evidence from these numerous circumstances is that notwithstanding the existence of governance codes, they can possibly be overridden.

Overriding and non-adherence to corporate governance codes are evidently futile to the performance of firms. The depth of the existing corporate governance literature provides a strong linkage between corporate governance of businesses and performance (Alalade et al., 2019; Ullah & Afgan, 2014; Ullah et al., 2017; Yameen et al., 2019). The studies of Yameen et al. (2019) and Alalade et al. (2019) have shown higher level of firm performances requires good corporate governance practices. Nonetheless, the level of performance of firms ensuing from corporate governance practices is reported in corporate governance literature to be partly associated with ownership structure (Obembe et al., 2010). For instance, in Ghana, foreign owned companies are reported to perform better than locally owned companies due to the differences in corporate governance codes adherence (Selassie, 2018). It is historically asserted that many of the banks that collapsed in Ghana in the past are locally owned (Selassie, 2018). Also, while some scholars view lower ownership concentration as an effective control mechanism to minimize the interest maximization practices of managers against shareholder, others associated with higher monitoring with a highly concentrated ownership as large shareholders were presumed to be active in governance practices of organizations (Obembe et al., 2010).

The association between business performance and corporate governance is reported to depend on firm-specific variables (Boachie, 2021). In governance mechanisms, the most recognizable difference is in the structure of ownership of individual firms within countries (Mishra & Kapil, 2017). Thus, ownership structure as a firm-specific characteristic has largely been deemed endogenous by the equilibrium hypothesis theory of Demsetz (1983), which does not presume any systematic association between business performance and ownership structure (Demsetz & Villalonga, 2001). Demsetz argues that the endogeneity function of ownership structure is imperative in the estimation of its effect on performance. Also, notwithstanding the importance of

ownership structure to the practice of corporate governance and the eventual performance of businesses, not many studies have investigated the moderating role of ownership structure in the association between firm performance and the governance mechanism of manufacturing firms.

In Ghana, studies on the association between firm performance and corporate governance in the manufacturing sector are limited with focus largely in the banking sector. (See, e.g., Boachie, 2021). Among these limited studies looking at the link between business performance and corporate governance (e.g., Boachie, 2021; Sarpong-Danquah et al., 2018), none looks at the moderating role of ownership structure of the manufacturing firms. It is against this backdrop that this study examines the moderating role of ownership structure in the association between corporate governance and performances of manufacturing companies in Ghana. Although Boachie (2021) examines the moderating role of ownership structure in the nexus between corporate governance and financial performance in Ghana, the author focuses on the banking sector. Due to the operational differences in the financial and manufacturing sector, it is imperative to empirically examine this relationship in the manufacturing sector in order to provide meaningful insight specific to the sector.

This study makes several contributions to the literature and practice. Foremost, this study contributes to the growing literature on the influence of corporate governance on the financial performance of manufacturing firms. This makes significant contribution to the literature as we provide empirical evidence from the context of manufacturing firms, a phenomenon that is missing in the literature. Second, we contribute to the literature by investigating the moderating role of ownership structure in the link between corporate governance and the financial performance of manufacturing firms. Evidence from this study will inform policy makers on the role played by the ownership of manufacturing firms in the overall performance of companies. Empirical evidence on how block ownership, for instance, affects the performance of manufacturing firms is important as this will provide key insights to policy makers and regulators on the subject of the ownership structure of manufacturing firms. With the literature largely silent on the manufacturing sector, this study makes an important empirical contribution.

The next section of the paper provides theoretical framework for studying corporate governance and firm performance. The third section reviews relevant empirical literature on the key corporate governance characteristics considered in this study. The fourth section describes the data and research methods. The penultimate section presents the research findings. The last section concludes the study with policy implications and suggestions for future studies.

2. Theoretical framework

This study is based on the agency theory of corporate governance, which explains the relationship between managers (agents) and owners (principals) of a firm (Fama & Jensen, 1983; Jensen & Meckling, 1976). Due to a lack of incentives to control asset management, multiple ownership is a challenge to firms according to the agency theory. When agents prioritize their own interests over those of shareholders, the agency conflict emerges, affecting shareholder value maximization. Information asymmetry, or a lack of information transparency between shareholders and managers is a characteristic of the agency problem. According to the agency theory, there is an expectation of a fall in the value of shareholders when conflict of interests exists between agents and principals. Consequently, as a curative measure, firms either increase the agents' (managers) incentives to align their interest with that of the principal (shareholders) or get managers to pursue the interest of shareholders through effective monitoring by the board of directors. Corporate governance mechanisms such as the independence of the board, gender diversity and audit committee independence have the potential to influence how agents manage companies which may influence the financial performance of companies. Independent directors, for instance, are more likely to act in the interest of shareholders to reduce the agency problem and result in higher performance. Again, (Adams & Ferreira, 2009) postulates that women directors are more dynamic and effective monitors as a result, gender-diverse boards play a vital monitoring role and helps to

discipline self-interested managers. Furthermore, proponents of the agency theory postulates that the formulation of the audit committee is one of the measures developed to decrease the agents' self-serving nature. They argue that the audit committee helps decrease information asymmetry, offer prodigious monitoring to help reduce the agents' selfish interest to the barest minimal. Also, the ownership structure of companies can affect corporate governance practices and influence performance. The capacity for institutional owners, for instance, to effectively monitor managers may help to reduce the agency problem which in turn leads to an improvement in the financial performance of companies.

3. Empirical literature review

We identify some key characteristics of corporate governance that may influence the financial performance of manufacturing firms. These include; board independence, board size, board gender diversity, audit committee, board remuneration and ownership structure.

3.1. Board independence

The representation of more non-executive directors on corporate boards is perceived to make the board independent. From an angle, it is said that inside directors (executives) are more conversant with a company's operations and hence are relatively better positioned to ensure that senior managers adhere to good corporate management practices (Nanka-Bruce, 2009). Conversely, it is proposed that non-executive directors serve as independent monitoring members of the board to guarantee that internal competition stimulates behaviors that maximize shareholder value. As a result, it is said that having non-executive directors on the board enhances the independence of the board, and this invariably enhances corporate governance and safeguard the interest of all stakeholders, particularly minority shareholders' rights (Gao, 2010). The empirical evidence on how this relates to company performance is inconclusive. For instance, Chung et al. (2003) find that board independence affects performance positively through the ability of outside directors to provide effective management-monitor activities. However, Minton et al. (2011) and Aktan et al. (2018) find a negative association between the proportion of outside directors and firm value. On the other hand, Sarpong-Danquah et al. (2018), Kao et al. (2018), Enilolobo et al. (2019), and Boachie (2021) find a positive and significant relation. In contrast, Bokpin (2013) and Adeabah et al. (2018) found a negative effect of board independence on financial performance in Ghana.

3.2. Board size

Board size defines the number of individual directors on the board of organizations. It is a key component in defining the performance of boards of businesses. Ghana's corporate governance laws mandates that boards of publicly traded firms be sufficiently sized. The directors on the board should be sufficient to meet the commercial needs of the organization (CMA, 2002). Furthermore, the Board's size should not be too huge to prevent interactive debate during board meetings, nor should it be too small to prevent the inclusion of broader experience and abilities to increase the efficacy of the Boards (CMA, 2002). According to the agency theory, the efficacy of group communication decreases at a particular group size. As a result, self-serving managers put pressure on boards to grow beyond their value-maximizing size, resulting in an inverse relationship between board size and performance. There are conflicting findings on the link between board size and performance. For instance, Aldehayyat et al. (2017) and Enilolobo et al. (2019) report a negative association. On the other hand, Gurusamy (2017), Aktan et al. (2018), and Handriani and Robiyanto (2019) find a positive and statistically significant connection. Using different measures for performance in Ghana, board size has been found to relate to firm performance positively (Abor & Fiador, 2013; Adeabah et al., 2018; Boachie, 2021) and negatively (Fiador, 2013).

3.3. Board gender diversity

Diversity of boards in terms of background of education, gender, study areas, skills and experience are perceived to impact the performance of boards of businesses (Adams & Ferreira, 2009). Gender diversity is highly recognized through regulations in many European countries notwithstanding the newness of gender diversity on the board of businesses to the US. For instance, there are

legislations in the Iceland, Spain, Norway, and France that demands at least 40% representation of boards of publicly traded businesses by women (Aghion et al., 2013). Nonetheless, inconclusive association between diversity of boards and performance of businesses has been reported in the corporate governance literature. There are many scholarly studies that seem to suggest that higher level of board diversity is good for higher performance (Ararat et al., 2010). The performance benefit of gender diversity is larger for organizations with two or more female participation on corporate boards and audit committees, according to Chijoke-Mgbame et al. (2020). Reguera-Alvarado et al. (2017) find that a rise in the number of women directors relates positively to higher economic results. In contradiction to the studies that reported direct linkage between the diversity of the board and performance of businesses, there are also several studies (Meah & Chaudhory, 2019; Shehata et al., 2017) that also reported adverse linkage between the diversity of the board of businesses performance. There other studies that also report no significant linkage between diversity of gender boards of businesses and performance (Aldehayyat et al., 2017; Fernández-Temprano & Tejerina-Gaite, 2020).

3.4. Audit committee

The audit committee evaluates the methods for maintaining and assessing the effectiveness of internal control systems on a regular basis with both internal and external auditors, as well as management (Zhou et al., 2018). Because of the audit committee's role of monitoring and maintaining the integrity of the financial information of firms, it is one of the most important mechanisms of corporate governance (Tornyeva & Wereko, 2012). The efficiency of the audit committee is largely determined by the committee's qualities, such as its size and independence (Dellaportas et al., 2012; Herdjiono & Sari, 2017). Larger audit committees tend to lose concentration and be less engaged than smaller committees (Boachie, 2021). Conversely, with a small number of members, an audit committee lacks diversity of skills and information, and hence becomes ineffective. Nonetheless, an audit committee of the right size would allow members to use their experience and expertise in the best interests of stakeholders. Several studies in different countries have reported positive linkage between the size of the audit committees of businesses and performance (e.g., Aldamen et al., 2012; Al-Matari et al., 2012; Kyereboah-Coleman, 2007; Tornyeva & Wereko, 2012). Some studies have also revealed negative linkage between audit committee characteristics in the form of size and independence and performance (Gurusamy, 2017; Lam & Lee, 2012; Romano et al., 2012). Bansal and Sharma (2016), Aldehayyat et al. (2017), and Zhou et al. (2018) also report an insignificant relation between audit committee and firm performance.

3.5. Board remuneration

The remuneration packages of listed companies are crucial to attracting quality executives and corporate directors. Also, in an attempt to stimulate higher level of firm performance and profitability, board members are motivated through incentives in the form of remuneration to enhance their efforts in the decision-making process and strategic planning (Ibrahim et al., 2019). Nonetheless, there is persistent scholarly debate on the relationship between the remuneration of board directors and the performance of listed companies. Whereas some scholars believe that higher board remuneration significantly motivate board executives be active and effective in the execution of their duties (Harymawan et al., 2020), other school of thought also believe that remuneration of board does not necessarily stimulate higher performance from board members (Aggarwal & Ghosh, 2015). Several studies in the extant corporate governance literature report positive and significant effect of board executives' remuneration on the performance of listed businesses (e.g., Aslam et al., 2019; Harymawan et al., 2020; Lemma et al., 2020). However, Akter et al. (2020) reports a negative association between board remuneration and firm performance.

3.6. Ownership structure

Differences in ownership structure could affect operational decisions of firms and consequently impact on their financial performance. For instance, inside owners often appoint family members rather than external professional managers in crucial managerial positions

(Shen et al., 2018). In most cases, family management with concentrated ownership inhibits the flow of fresh ideas or results in insufficient managerial decision-making capacity (Morck, 1996). From the agency theory, agency problems result from the separation of ownership and control of firms. The ownership structure is a strategy to reduce asymmetric information disclosure between insiders and outsiders in capital markets (Shah & Hussain, 2012). Managerial ownership, for instance, aligns managers' and shareholders' interests to minimize agency problems (Jensen & Murphy, 1990), which then enhances the overall performance of companies. Whereas Agrawal and Knoeber (1996) and Daily and Dalton (2004) find ownership structure to improve performance, Chiang and Chia (2005) finds a negative relation. In line with the argument of Boachie (2021), we argue also in this study that, corporate governance practices in manufacturing firms are largely influenced by the structure of ownership. This is because, the form of corporate governance practices adopted for a firm may depend to an extent on the owners of the firm. Considering the importance of corporate governance to firms, the structure of ownership may determine corporate governance practices and how corporate governance affects the financial performance of manufacturing firms.

4. Data and methodology

The population of this study consists of all listed manufacturing firms (8) in Ghana. Out of this population, we purposively sample 7 of these manufacturing companies based on the availability of data. Of the total 39 firms listed on the Ghana Stock Exchange, 8 are manufacturing firms. From the total 8 manufacturing firms, 7 met the inclusion criteria of full data for the period of 2006 to 2019. Data for the selected manufacturing firms are obtained from the published annual reports of the firms. The main variables in the study are corporate governance, ownership structure and firm performance. Corporate governance is measured with board independence, board size, board gender diversity, audit committee size and board remuneration. Ownership structure is decomposed into block/concentrated ownership and state ownership. Financial performance, our dependent variable, is proxied with the Tobin's Q. The measurement of the variables is presented in Table 1.

4.1. Model specification

In this paper, we examine the effect of corporate governance on the financial performance of manufacturing firms in Ghana. The baseline model used in the study is specified below;

$$\begin{aligned} \text{TOBQ}_{it} = & \alpha + \beta_1 \text{BIND}_{it} + \beta_2 \text{BSZ}_{it} + \beta_3 \text{BGD}_{it} + \beta_4 \text{ACI}_{it} + \beta_5 \text{ACS}_{it} + \beta_6 \text{BRE}_{it} \\ & + \beta_7 \text{BOWN}_{it} + \beta_8 \text{GOWN}_{it} + \beta_9 \text{FSZ}_{it} + \beta_{10} \text{FAGE}_{it} + \beta_{11} \text{MCAP}_{it} + \beta_{12} \text{MBV}_{it} \\ & + \varepsilon_{it} \end{aligned} \quad (1)$$

Where TOBQ_{it} is the Tobin's Q of manufacturing firm i at time t ; BIND_{it} is board independence for firm i at time t ; BSZ_{it} is the board size of firm i at time t ; BGD_{it} is board gender diversity for firm i at time t ; ACI_{it} is audit committee independence for firm i at time t ; ACS_{it} is audit committee size of firm i at time t ; BRE_{it} is board remuneration for firm i at time t ; BOWN_{it} is board ownership for firm i at time t ; GOWN_{it} is government ownership for firm i at time t ; FSZ_{it} is firm size for firm i at time t ; FAGE_{it} is firm age for firm i at time t ; MCAP_{it} is market capitalization for firm i at time t ; and MBV_{it} is market to book value of firm i at time t .

β_1, β_2 etc. represent the corresponding coefficients of the variables. ε is the idiosyncratic error term. The subscripts i and t range from 1 to N and 1 to T , correspondingly, where N is the number of manufacturing firms and T is the number of periods in the dataset. Further, we introduce an interaction between ownership structure and corporate governance. We do this to examine the moderating effect of ownership structure on the nexus between corporate governance and firm performance. We express this in a model as follows;

$$\begin{aligned} \text{TOBQ}_{it} = & \sum_{i=1}^6 \beta_1 \text{Corporate Governance Variables}_{it} + \sum_f^2 \alpha_1 \text{Ownership Structure Variables}_{it} \\ & + \sum_{q=1}^p \sigma_q (\text{Corporate Governance}_{it} * \text{Ownership Structure Variables}_{it}) \\ & + \sum_{k=1}^N \theta_k \text{Control Variable}_{sit} + \varepsilon_{it} \end{aligned} \quad (2)$$

Table 1. Measurement of variables

Notations	Name of variable	Measurement/Definition of variables
Dependent Variable		
Firm Performance		
TOBQ	TOBIN'S Q	Market value of equity divided by the replacement cost of total assets
Control Variables		
FSZ	Firm Size	Log of total assets of firms
FAGE	Firm Age	Total number of years a firm has been in existence
MCAP	Market Capitalization	Market Capitalization in US Dollar
MBV	Market to Book Value	Market to Book value of firm
Independent Variables		
Board Characteristics		
BIND	Board Independence	Number of non-executive directors divided by total number of directors
BSZ	Board Size	The total number of directors on the board of a firm for each financial year
BGD	Board Diversity (Gender)	Percentage of total number of Females on the board of a company
BRE	Board Remuneration	Proportion of fixed remuneration in a year (Fixed remuneration/total remuneration)
Audit Committee		
ACI	Audit Committee Independence	The total number of non-executive directors in the audit committee per total number of directors
ACS	Audit Committee Size	Total number of directors on the audit committee of a firm for each financial year
Moderating Variables		
Ownership Structure		
BOWN	Block Shareholding	The sum of all shareholdings in excess of 5 percent
GOWN	Government shareholding	The percentage of shares held by the top 5 shareholders who are state owners

Source: Authors' Compilation

Where $\beta_k, k = 1, \dots, 6$ are the coefficients of the corporate governance variables; $\alpha_1, f = 1 - 2$ represent the coefficients of the ownership structure variables. σ_q denotes the coefficients of the interactive terms between corporate governance and ownership structure. θ_k shows the coefficients of the control variables while ε_{it} is the random error term.

4.2. Estimation technique

Due to the small number of panels (7 manufacturing firms listed on the GSE) relative to larger time series of 14, a robust method like the generalized method of moments (GMM) estimation technique is violated (Phillips, 2019); and hence the reliance of this study on the ordinary least square (OLS)

method. Standard linear regression models assume that errors in the dependent variable are uncorrelated with the independent variable(s). Nonetheless, based on the fact that there is possibility of some of the independent variables correlating with the error term and the possibility of heteroskedasticity, the generalized least square (GLS) regression method was employed. Due to incomplete information for some of our variables, we use an unbalanced panel data set to estimate our models. As a result of this, the number of observations for each model varies based on the variables included in the model.

5. Empirical results and discussion

5.1. Descriptive statistics

We provide the descriptive statistics for the variables used in this study in Table 2. TOBIN'S Q as a measure of the performance of the firms was 4.5% on average. The high TOBIN'S Q value of 4.5, which is greater than 1, indicates overvaluation of the value of stocks of the listed manufacturing firms in Ghana. The table shows that the total asset of the manufacturing firms (FSZ) between the financial years of 2006 and 2019 is \$350,191.78, on average. The average age or years of operation (FAGE) of the studied 7 manufacturing firms listed on the Ghana Stock Exchange is 18 years. Averagely, the market capitalization of the manufacturing firms listed on the Ghana Stock Market between 2006 and 2019 business years was \$2.7 per annum. The market to book value of the manufacturing firms (MBV) between the periods of 2006 and 2019 was \$8.5 per annum on average.

The independence of the board, which is the number of the non-executive directors per the total number of directors is 66.2 percent on average. Thus, the independent director representation is higher than the executive directors. The boards of the listed manufacturing in Ghana are therefore highly independent. The size of the board (BSZ) of the listed manufacturing firms was about 8 directors for each financial year on average. The size of the board of the listed manufacturing firms is in line with the suggestion of Lipton and Lorsch (1992) that about nine or eight board membership is the perfect size, and description of the optimal size of board of eight or seven by Jensen (1993). The diversity of the board (BGD) of the manufacturing firms was about 16.0% on average,

Table 2. Descriptive statistics

Variables	Obs	Minimum	Maximum	Mean	Sd
FSZ (\$)	77	117,327.50	1,320,383.0	350,191.78	26,643.77
FAGE	77	1	29	18.0	8.4
MCAP	68	.84	6.1	2.7	1.4
MBV	77	0	325.1	8.5	37.0
BIND	78	0	91.7	66.2	19.8
BSZ	78	4	16	8.3	2.3
BGD	78	0	50	16.0	10.2
ACI	78	0	100	77.1	26.1
ACS	78	2	4	3.3	.73
BRE	77	0.4	0.6	0.2	.14
BOWN	72	27	90	73.9	.57
GOWN	72	0	8	.57	1.9
TOBQ	77	.25	162.4	4.5	18.6

Note: Firm Size (FSZ), Firm Age (FAGE), Market Capitalization (MCAP), Market to Book Value (MBV), Board Independence (BIND), Board Size (BSZ), Board Diversity (BGD), Audit Committee Independence (ACI), Audit Committee Size (ACS), Remuneration Committee (BRE), Block Shareholding (BOWN), Government shareholding (GOWN).

Source: Authors' Estimation

which indicates that the proportion of females on the boards of the firms was 0.16. Thus, for every 100 board members of the listed manufacturing firms, only 16 members were likely to be females. This implies that many of the manufacturing firms listed on the Ghana Stock Market had no female board membership in the studied financial period.

The independence of the audit committee (ACI) as measured by the total number of non-executive directors in the audit committee per total number of directors was 77% on average. The size of the audit committees (ACS) of the manufacturing firms listed on the Ghana Stock Market was 3.3 members on average. Thus, the total number of directors on the audit committee of the listed manufacturing firms for each financial year was about 3 members. The mean value of BRE of 0.2 shows that the proportion of fixed remuneration in a year (BRE) of the listed manufacturing firms in Ghana is 0.20. It is therefore evident that only 20% of the total remuneration of the listed manufacturing firms is fixed. In terms of structure, about 0.6% shares of the manufacturing firms listed on the Ghana Stock Market is owned by the state. The sum of all shareholdings of the manufacturing firms listed on the Ghana Stock Market in excess of 5 percent (BOWN) was about 74% on average.

5.2. Correlation matrix

We present results for the correlations between our variables in Table 3 to examine the presence or otherwise of multicollinearity. The results from Table 3 do not suggest the presence of multicollinearity between the independent variables. Firm age (FAGE) and Firm size (FSIZ) show the highest correlation (0.717), which is below the 0.80 threshold recommended by Kennedy (2008). This is also confirmed by the mean VIF of 4.58 which is below 10, suggesting that, there is no multicollinearity between the explanatory variables employed in the study. Table 3 shows that board independence (BIND) positively and statistically significantly correlates with performance (TOBIN'S Q) ($r = .282, P < .05$). Thus, increasing independence of boards of manufacturing firms is associated with increasing performance (TOBIN'S Q) of the firms. This is consistent with studies such as Aktan et al. (2018) and Enilolobo et al. (2019). The size of the boards (BSZ) of manufacturing firms positively and statistically significantly correlated with performance (TOBIN'S Q) ($r = .383, P < .05$). Thus, increasing size of the boards of manufacturing firms is associated with increasing performance (TOBIN'S Q) of the firms. Also, diversity of boards (BGD) of manufacturing firms positively and statistically significantly correlated with performance (TOBIN'S Q) ($r = .285, P < .05$) indicating that, increasing female membership of the boards of manufacturing firms is associated with increasing performance (TOBIN'S Q) of the firms.

5.3. Regression results

Table 4 presents regression results from examining the relationship between corporate governance, ownership structure and financial performance of manufacturing firms in Ghana using the generalized least square (GLS) regression method. Specifically, 5 regression models are estimated. First, we examine the independent effect of corporate governance characteristics on financial performance. In the second model, we investigate the independent influence of corporate governance and the control variables on profitability. Next, we analyze the independent effect of audit committee size and audit committee independent on performance. Following this, we examine the independent effect of audit committee variables and control variables on financial performance. In the last model, we investigate the influence of corporate governance mechanisms, audit committee variables and control variables on financial performance. The Tobin's Q is used as the dependent variable in all of our models.

5.3.1. Corporate governance and firm performance

Table 4 shows the effect of corporate governance mechanisms on the financial performance of manufacturing firms in Ghana. From the table, board independence and board size are observed to be statistically significant and positively related to firm performance in model 5. This suggests that, the presence of independent directors and a larger board size enhance the financial performance

Table 3. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	TOBQ	1.000											
2	FSIZ	0.226	1.000										
3	FAGE	0.262*	0.717*	1.000									
4	MCAP	0.284*	-0.141	-0.524*	1.000								
5	MBV	0.347*	0.306*	0.335*	0.210	1.000							
6	BIND	0.282*	-0.293*	-0.403*	-0.008	-0.033	1.000						
7	BSZ	0.383*	0.620*	0.169	0.149	0.406*	1.000						
8	BGD	0.285*	0.013	0.229	-0.138	0.192	-0.344*	1.000					
9	BRE	0.315*	-0.402*	-0.413*	-0.118	-0.025	0.304*	0.036	1.000				
10	ACI	0.262*	-0.256*	-0.027	-0.480*	0.046	-0.165	0.290*	0.356*	1.000			
11	ACS	0.485*	0.461*	0.483*	0.190	0.663*	0.372*	0.174	-0.309*	-0.127	1.000		
12	BOWN	0.492*	0.233	0.266*	-0.119	-0.395*	-0.110	-0.117	-0.471*	-0.596*	-0.182	1.000	
13	GOWN	0.395*	0.399*	0.443*	-0.340*	0.097	0.132	0.192	-0.023	0.163	0.265*	0.092	1.000

Note: Firm Size (FSZ), Firm Age (FAGE), Market Capitalization (MCAP), Market to Book Value (MBV), Board Independence (BIND), Board Size (BSZ), Board Diversity (BGD), Audit Committee Independence (ACI), Audit Committee Size (ACS), Remuneration Committee (BRE), Block Shareholding (BOWN), Government shareholding (GOWN). * Indicates significance at the 5% significance level.

Source: Authors' Estimation

of manufacturing firms in Ghana. This evidence is consistent with studies such as Dzingai and Fakoya (2017) who also find board independence to positively influence profitability. Anuar and Rashid (2015) and Chung et al. (2003) assert that, the presence of independent directors helps to reduce conflict of interests between agents and principals of companies and consequently extend positive effects on profitability. Our finding also supports this assertion. Further, audit committee size is found to be positive and significantly related to manufacturing firms' financial performance. This evidence suggests that, a larger audit committee size yield positive benefits to firms as members bring on board diverse experiences and skills.

On our control variables, firm size is found to be negative and significantly related to firm performance, indicating that, an increase in the assets of manufacturing firms may constrain their financial performance. evidence contradicts the finding of Boachie (2021) who find the size of banks to positively influence their financial performance. This may be due to the operational differences of banks and manufacturing firms. Banks are able to generate income from their main asset (loans). However, an increase in the size of a manufacturing firm may reflect in the form of a fixed asset which may become redundant and not generate income, putting negative pressure on profitability. Firm age, Market capitalization, and Market to Book Value are found to be statistically significant and positively related to financial performance. This indicates that, an increase in these factors significantly results in an increase in the profitability of manufacturing firms in Ghana.

5.3.2. Ownership structure and firm performance

Two models were estimated to evaluate the effect of ownership structure on the performance of manufacturing firms (See Table 5). We first examine the independent influence of ownership structure variables on the financial performance of manufacturing firms without control variables. We then examine how ownership structure affects financial performance in the presence of control variables. In both models, we find block shareholding to be statistically significant and negatively related to financial performance. However, government ownership exerts no significant influence on the financial performance of manufacturing firms in Ghana. The block shareholding evidence suggests that, an increase in the shareholding of block shareholders has adverse effects on the profitability of manufacturing firms. This is consistent with Alipour and Amjadi (2011) and Foroughi and Fooladi (2011) who also report a negative association between block ownership and firm performance. According to Brickley et al. (1988) there is high exposure of risk as a result of ineffectiveness in monitoring which results in poor business performance as large shareholders are forced into aligning with management as they perceive such alignment as essential to their interest.

5.3.3. The interaction effect between ownership and corporate governance structures on the financial performance of manufacturing firms

In this section of the study, 4 models were tested to evaluate the moderating role of ownership structure in the link between corporate governance and the performance of manufacturing firms. In models 8 and 9, we examine the interaction effect of ownership structure and corporate governance on performance without and with control variables respectively. In models 10 and 11, we assess the interaction effect of ownership structure and audit committee variables without and with control variables respectively. From Table 6 we find that, government ownership does not significantly moderate either the relationship between corporate governance and firm performance or the relationship between audit committee and firms' financial performance. However, block ownership is found to significantly and positively moderate the relationship between board independence, board size, board remuneration and the performance of manufacturing firms in Ghana. For board size (model 8), it is evident that the sign of the negative coefficient has changed after the interaction (0.016). However, there is a decrease in the size of the negative coefficient from -1.285 (without moderation) to -1.269 ($-1.285 + 0.016$) in model 8 of Table 6. Similarly, for board remuneration, the magnitude of the negative influence on performance decreases from -2.249 (without moderation) to -2.225 ($-2.249 + 0.024$) in model 8.

Table 4. GLS regression of corporate governance and firm performance

TOBQ	Model 1	Model 2	Model 3	Model 4	Model 5
Controls					
—FSZ		-1.051(0.217)***		-0.329(0.186)*	-0.772(0.188)***
—FAGE		0.209(0.026)***		0.039(0.025)	.134(0.026)***
—MCAP		0.464(0.063)***		0.175(0.081)**	0.298(0.072)***
—MBV		0.015(0.001)***		0.016(0.002)***	0.016(0.001)***
Board variables					
—BIND	0.000 (0.007)	0.016(0.004)***			0.012(0.003)***
—BSZ	0.091 (0.051)*	0.099(0.031)***			0.076(0.027)***
—BGD	0.009 (0.012)	0.008(0.006)			-0.002(0.006)
—BRE	-0.080 (0.031)***	0.414(0.143)**			0.373(0.119)
Audit Committe					
—ACI			0.013(0.005)***	0.012(0.006)**	0.005(0.005)
—ACS			0.709(0.146)***	0.657(0.119)***	0.537(0.010)***
—_cons	-0.271(0.692)	-2.101(0.862)**	-2.762(0.649)***	-2.204(0.876)**	-2.976(0.883)***
Number of obs	76	68	76	68	68
Number of groups	7	5	7	5	5
Wald chi2	12.10	233.54	27.61	207.57	368.22
Prob > chi2	0.0166	0.000	0.000	0.000	0.000
Log likelihood	-106.9759	-41.23521	-100.812	-44.29698	-28.68065

Note: **, * and *** indicate significance at the 10%, 5% and 1% significance levels respectively. Standard errors are in parentheses. Firm Size (FSZ), Firm Age (FAGE), Market Capitalization (MCAP), Market to Book Value (MBV), Board Independence (BIND), Board Diversity (BGD), Board Size (BSZ), Board Independence (ACI), Audit Committee Size (ACS), Remuneration Committee (BRE), Block Shareholding (BOWN), Government shareholding (GOWN).

Source: Authors' Estimation

Table 5. GLS regression of ownership structure and firm performance

TOBQ	Model 6	Model 7
Controls		
—FSZ		−0.338(0.189)*
—FAGE		0.132(0.020)***
—MCAP		0.322(0.054)***
—MBV		0.013(0.002)***
Ownership		
—BOWN	−0.017(0.006)***	−0.027(0.004)***
—GOWN	0.057(0.058)	0.016(0.032)
_cons	1.877(0.469)***	0.730(0.558)
Number of obs	72	68
Number of groups	6	5
Wald chi2	8.18	210.58
Prob > chi2	0.0167	0.000
Log likelihood	−97.38763	−43.92784

Note: *, ** and *** indicate significance at the 10%, 5% and 1% significance levels respectively. Standard errors are in parentheses. Firm Size (FSZ), Firm Age (FAGE), Market Capitalization (MCAP), Market to Book Value (MBV), Board Independence (BIND), Board Size (BSZ), Board Diversity (BGD), Audit Committee Independence (ACI), Audit Committee Size (ACS), Remuneration Committee (BRE), Block Shareholding (BOWN), Government shareholding (GOWN).

Source: Authors' Estimation

The results in model 8 are consistent with those in model 9, when control variables are introduced. In model 9, the sign of the coefficients for board independence, board size and board remuneration are significant after the interaction. It is evident that the sign of the coefficients has changed after the interaction. However, the magnitude of the negative influence has reduced from −0.043 (without moderation) to −0.042 (−0.043 + 0.001) for board independence (model 9). For board size, there is a decrease from −0.455 (without moderation) to −0.449 (−0.455 + 0.006) whereas for board remuneration, there is a decrease from −0.459 (without moderation) to −0.450 (−0.459 + 0.009). These moderation results suggest that, block ownership reduces the negative influence of board size and board remuneration on the performance of manufacturing firms. We attribute this positive influence of block ownership to the supervisory and monitoring capacity of block shareholders which helps to reduce agency conflict. We are therefore led to the conclusion that, in the presence of block shareholders, the negative influence of board size and board remuneration on financial performance is reduced.

Block shareholders have the capacity to monitor and affect decisions regarding the number of board directors, independent directors and the remuneration of directors. They therefore ensure that the board has an effective size with enough number of independent directors in order to ensure a reduction in the agency problem. Moreover, we find the interaction between block ownership and audit committee size to exert a significant negative influence on the financial performance of manufacturing firms in Ghana (model 11). The sign of the coefficient of audit committee does not change after the interaction. However, the size of the coefficient decreases from 1.403 (without moderation) to 1.386 (−0.017 + 1.403). This suggests that, block ownership reduces the positive influence of audit committee size on the financial performance of manufacturing firms. Block owners may prefer smaller audit committee sizes in order to control corporate costs which reduces the positive benefits on performance as the size of audit committees increases.

Table 6. GLS regression of ownership structure as a moderator

TOBQ	Model 8	Model 9	Model 10	Model 11
Controls				
—FSZ		-0.796(0.187)***		-0.317(0.176)*
—FAGE		0.198(0.023)***		0.093(0.028)***
—MCAP		0.388(0.051)***		0.230(0.084)***
—MBV		0.013(0.001)***		0.015(0.001)***
Board x'tics				
—BIND	-0.070(0.053)	-0.043(0.030)		
—BSZ	-1.285(0.448)***	-0.455(0.267)*		
—BGD	0.013(0.058)	0.040(0.028)		
—BRE	-2.249(0.479)***	-0.459(0.268)*		
Audit Committee				
—ACI			-0.023(0.054)	-0.001(0.030)
—ACS			0.178(0.978)	1.403(0.545)**
Ownership				
—BOWN	-0.244(0.083)***	-0.119(0.049)*	-0.055(0.081)	0.020(0.045)
—GOWN	-2.183(1.417)	-0.770(0.692)	0.104(0.956)	-0.162(0.532)
Moderators				
—GOWN×BIND	0.011(0.007)	0.003(0.004)		
—GOWN×BSZ	0.136(0.119)	0.057(0.058)		
—GOWN×BGD	0.001(0.006)	0.002(0.003)		
—GOWN×BRE	0.267(0.456)	-0.051(0.220)		
—GOWN×ACI			0.003(0.005)	0.002(0.003)
—GOWN×ACS			-0.089(0.174)	0.018(0.099)
—BOWN×BIND	0.001(0.001)	0.001(0.000)*		
—BOWN×BSZ	0.016(0.005)***	0.006(0.003)*		
—BOWN×BGD	-0.001(0.001)	-0.001(0.000)		
—BOWN×BRE	0.024(0.007)***	0.009(0.003)***		
—BOWN×ACI			0.000(0.001)	0.000(0.000)
—BOWN×ACS			0.007(0.015)	-0.017(0.009)*
_cons	21.910(7.246)***	8.217(4.354)*	3.698(6.491)	-2.242(3.586)
Number of obs	72	68	72	68
Number of groups	6	5	6	5
Wald chi2	68.00	455.30	45.52	285.62
Prob > chi2	0.000	0.000	0.000	0.000
Log likelihood	-77.32185	-22.49269	-83.62397	-35.81811

Note: *, ** and *** indicate significance at the 10%, 5% and 1% significance levels respectively. Standard errors are in parentheses. Firm Size (FSZ), Firm Age (FAGE), Market Capitalization (MCAP), Market to Book Value (MBV), Board Independence (BIND), Board Size (BSZ), Board Diversity (BGD), Audit Committee Independence (ACI), Audit Committee Size (ACS), Remuneration Committee (BRE), Block Shareholding (BOWN), Government shareholding (GOWN).

Source: Authors' Estimation

6. Conclusion and implications

This study examined the effect of corporate governance and ownership structure on the financial performance of manufacturing firms in Ghana. Although the influence of corporate governance on firms' performance has been extensively studied in Ghana (Abor, 2007; Abor & Fiador, 2013; Bokpin, 2013; Sarpong-Danquah et al., 2018), it is necessary to examine the role played by

ownership structure in this nexus. Boachie (2021) investigates this phenomenon in the banking sector of Ghana. However, due to the operational differences between banking and manufacturing firms, it may not be appropriate to apply findings from the banking sector to the manufacturing sector. It is therefore crucial to provide empirical evidence specific to the manufacturing sector in Ghana, a contribution this study seeks to make to the literature. Our findings show that, board characteristics such as board independence, board size, and board remuneration are all positively and significantly related to the performance of the manufacturing firms. However, board gender diversity has no significant influence on the financial performance of manufacturing firms in Ghana. Audit committee independence and audit committee size are also found to significantly and positively affect financial performance. Board remuneration significantly and positively affects financial performance. Government ownership is found to exert no significant influence on performance. Block ownership is found to influence financial performance significantly and negatively. Government ownership does not moderate the relationship between corporate governance and financial performance. Block ownership, however, moderates the relationship between board size, board independence and the financial performance of manufacturing firms.

Our findings have important implications for theory and practice. This study demonstrates that manufacturing firms can improve their financial performance by having a higher number of independent directors on their boards. Also, a relatively larger size of the board proves beneficial to the financial performance of manufacturing firms as they tap into a wide range of experience and expertise as suggested by Cadbury (1992). This study supports the theorized effect of corporate governance practices on the performance of firms. In the context of this study, the practiced corporate governance in the form of board independence, and the audit committee independence stimulate higher performance of listed manufacturing firms in Ghana. Policy makers and regulators are recommended to restrict and limit the number of shares to be held by block shareholders as this can be detrimental to the financial performance of manufacturing firms. Manufacturing firms in Ghana are recommended to increase the number of independent directors on their boards. Also, the remuneration packages of directors should be regularly reviewed and improved in order to encourage effective monitoring by directors. Again, we recommend to manufacturing companies to ensure independence of the audit committee by increasing the number of independent directors on the audit committee as this enhances financial performance. We base this study on the moderating role of ownership structure in the nexus between corporate governance and financial performance of manufacturing firms. Future studies can look at different moderators and test for mediations in the link between corporate governance and performance. Future studies can also replicate this study using firms in the service and Agro industries.

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