Corporate governance and financial performance of banks in Ghana: the moderating role of ownership structure

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Abstract

Purpose – The purpose of this paper is to investigate the moderating effect of ownership on the links between corporate governance and financial performance in the context of Ghanaian banks.

Design/methodology/approach – The current study used a sample of 23 banks and the multiple regression method to analyze a panel dataset of 414 from banks over an 18-year period.

Findings – The findings revealed that audit independence, chief executive officer (CEO) duality, non-executive directors and banks size have a positive impact on performance. The findings also revealed that foreign ownership has an interacting effect between corporate governance and profitability.

Practical implications – The practical implications of the current study demonstrated that good corporate governance creates value and must be invigorated for the interest of all stakeholders. Foreign ownership has an interacting effect between corporate governance and performance. Policymakers should formulate policies for attracting foreign investors.

Originality/value – Interestingly, this study is the first of its kind that exclusively chose ownership structure to interact between corporate governance and bank performance in Ghanaian perspective. Such new insights on this relationship provide useful information to the government, academics, policymakers and other stakeholders. The growing economies of African countries, and the inadequate governance–performance literature in African context, have created a demand to appreciate the governance parameters in these countries and its influence on firm's performance.

Keywords Ghana, Banks, Firm size, Corporate governance, Ownership structure, Firm performance

Paper type Research paper

1. Introduction

From the financial intermediation theory or dealership theory, banks are economic agents that maximize profits and operate to increase the value of shareholders and stakeholders (Williams, 2007; Ho and Saunders, 1981). That is, shareholders are interested in value maximization, which may be achieved through profit maximization. In the quest of creating value for shareholder and stakeholders of banks, there is a separation of ownership from management, which may lead to a potential conflict of interest following the agency problem concept. However, Fama and Jensen (1983) advance that the board of directors of an organization, including banks, is the highest firm-level governance framework that is charged with the responsibility of aligning the interest of shareholders to that of corporate insiders (managers) to curb conflict of interest arising from the principal–agent relationship. For instance, Weisbach (1988) show that the board of an organization is a primary defense line that is implemented with the duty of protecting and advancing the interest of shareholders. More recently, Adeabah *et al.* (2019) also advance that the board of directors is the best efficient solution to protecting shareholders interest or value against the selfish interest of incumbent management.

Following the growing literature on corporate governance, the agency and stakeholder theories emerged. While the agency theory believes that the single objective of managers is to protect and maximize the value of shareholders because the managers have been hired to act

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in the best interest of the shareholders, the agency theory has received a lot of backlash for failing to protect the interest of other stakeholders who may not have a financial or monetary interest in the organization. Hence, the emergence of the stakeholder theory (Kusi *et al.*, 2018), which advances that managers must not solely focus on protecting and maximizing the value of shareholder but should also protect and serve the interest of other stakeholders (see Freeman, 1984; Freeman and Gilbert, 1988). As a result of these competing theories, several studies have attempted to explore whether corporate governance structures promote stakeholder value maximizations (Kusi *et al.*, 2018, 2017).

In the context of Ghana, weak or poor corporate governance structures have been mentioned to be a major cause of the recent 2017–2018 financial crises in Ghana. The Governor of Bank of Ghana, at the annual dinner of the chartered institute of bankers in December 2017, advanced that serious liquidity squeeze, non-adherence to credit management principles and procedures and failure of corporate governance within some banks had contributed heavily to the banking crises in Ghana leading to reduced banking sector performance and increased insolvency. Before this, Aboagye and Ahenkora (2018) had predicted that worsening credit risk exposure of banks, especially local banks, would lead to reduced capital ratios, implying insolvency of banks in Ghana. From these, it is intuitively obvious that corporate governance and ownership structures may affect banking performance, although empirical results are yet to address this assertion in Ghana. That is, while studies on corporate governance in Ghana are abundance (see Darko *et al.*, 2016; Fiador, 2013; Abor and Fiador, 2013; Bokpin, 2013), how ownership structures modulate the relationship between corporate governance and banking performance is scanty and less discussed in the empirical literature. It is believed that ownership structures influence corporate governance to affect banking performance in a number of ways. First, following the theory of firms' ownership structure (Jensen and Meckling, 1976), which is an integration of agency, property rights and finance theories and developed by Jensen and Meckling (1976), it advances that ownership structure of a firm determines the rights and duties of stakeholders. It, hence, shapes how corporate governance structures influence the long- and short-term goals of the firms. Second, following prior studies (see Meriläinen, 2016; Shen *et al.*, 2018) that show ownership structures can influence financial outcomes, it is intuitively clear that a possible modulating effect of ownership structures between corporate governance and banking performance exist, although not empirically examined yet in the literature, especially in the corporate governance empirical literature in Ghana. In the light of the above, this research proposes a novel approach by investigating the interacting effect of the ownership structures on the relationship between corporate governance and financial performance for the first time to the best of my knowledge. Additionally, the recent banking events in the Ghanaian banking sector give room to revisit the relationship between corporate governance structures and bank performance, while considering the bank's ownership structures given the observed potential role, it plays between corporate governance and banking performance in Ghana.

This research focuses on the role of ownership structure between corporate governance and bank performance. In contrast to the work of Okpara (2011), this research focuses on Ghanaian banks. For instance, Bokpin (2013) shows that ownership structures such as foreign and private ownerships are more effective and efficient compared to their counterparts, implying that some form of ownership structures may better enhance the relationship between corporate governance and banking performance. Yet, there are no empirical results to this effect in the context of Ghana to the best of our knowledge. It is against this background that this study attempts to investigate the interrelationship between corporate governance, ownership structure and bank performance in Ghana.

This paper offers several contributions to the literature. First, this study extends the empirical literature on the influence of corporate governance on banks financial performance.

Second, it makes a novel attempt to investigate the moderating effect of ownership on the association between corporate governance and financial performance. The author shows that foreign ownership can act as a check to ensure that banks use good governance to enhance performance. The remainder of this paper proceeds as follows. Section 2 provides an overview of empirical literature on the subject matter. Section 3 presents the sample selection and summary statistics. Section 4 discusses the main findings of the empirical analysis. Finally, Section 5 concludes the study.

2. Conceptual framework

Corporate governance has become a popular target of academic research because of its significant effect on the firm. The failure and closure of several banks in Ghana coupled with the liberalization of economies have led to a huge call for enhanced corporate governance (Lavelle, 2002). Important research topics in corporate governance include the board of directors, management remuneration, shareholders and corporate governance policies (Bebchuk and Weisbach, 2010; Paniagua *et al.*, 2017). This study's conceptual framework is based on the agency theory, which amalgamates the relationship between agents and principals. It is the most widely used conceptual framework to examine corporate governance (Fama and Jensen, 1983; Jensen and Meckling, 1976). Multiple ownership represents a challenge to the firm, according to this theory, because of a lack of incentives to control asset management (Grossman and Hart, 1986). The agency theory occurs when agents prioritize their benefits at the expense of shareholders; which eventually affects value maximization of shareholders. Agency problem can be caused by information asymmetry where there is less information disclosure between shareholders and managers. For the agency theory, shareholders' value is expected to fall when there is a conflict of interest between managers and owners of the firm. Efficient corporate governance is important especially for firms in developing countries, as it can enhance managerial quality and vibrancy as well as help with raising capital (Okpara, 2011). This study identifies five key areas of corporate governance that affect financial performance: board size, chief executive officer (CEO) duality, non-executive directors, audit committee size and ownership.

2.1 Board size

The board of directors are the ultimate governing body of a firm, appointed by the shareholders with voting rights. The board comprised of the executive and non-executive directors with the sole responsibility of seeking the interest of all stakeholders. According to the resource dependence theory, larger boards will improve firm performance, leading to a positive relationship between board size and firm performance (Dalton *et al.*, 1999). However, the agency theory posits that the effectiveness of group communication diminishes beyond a certain group size. Consequently, there is pressure from self-serving managers to expand board size beyond its value-maximizing level leading to an inverse relationship between board size and performance. Empirical research reports conflicting results concerning the relationship between board size and performance. For instance, Nguyen *et al.* (2014) and Haider and Fang (2016) report an inverse relation. This association is consistent with the view that both coordination and agency problems become more severe as board size increases. Conversely, Chen *et al.* (2005) and Black *et al.* (2006) do not find a statistically significant association. Kiel and Nicholson (2003) find board size to be positively correlated with firm value. Accordingly, a larger board size brings more resources to firms and therefore, might improve their performance. In Ghana, based on different measurements of performance and periods, board size has been both positively (Abor and Fiador, 2013; Adeabah *et al.*, 2019) and negatively (Fiador, 2013) related to firm performance.

2.2 Board composition

The agency theory emphasizes that the board will monitor the managers' behavior to protect shareholders' interests (Fama and Jensen, 1983; Jensen and Meckling, 1976). Consequently, the directors must be independent. This research defines an independent director as an independent outside director, a director who has no operational relationship with the firm, other than a seat on the board. The boards of directors must have some degree of independence from management to effectively fulfil their monitoring role. The board composition refers to how executive and non-executive directors are represented on the board. The roles and functions of these parties go hand in hand to better the management of an organization. The presence of executive directors on the board is highly essential as they bring their vast knowledge and expertise in specific areas to the benefit of the organization. In line with the agency theory, the resource dependence theory similarly suggests that a board of directors will provide essential resources for a company, and therefore, a higher proportion of independent directors will have a positive impact on corporate performance.

However, they may lack stands to monitor and discipline the CEO since they report to him/her. For this reason, Klein *et al.* (2005) argued that more outside independent directors on the board improves firm performance and image. Several studies have tested for the effect of outside directors' representation on the board on performance, and the results are mixed. Rosenstein and Wyatt (1990) find that stock markets react positively to the appointment of outside directors. Hossain *et al.* (2000) also find a positive relationship between higher levels of board independence and firm performance. Chung *et al.* (2003) find that board independence affects performance positively through the ability of outside directors to provide effective management-monitor activities. However, Bhagat and Black (2002) find a negative association between the proportion of outside directors and firm value. On the other hand, Prevost *et al.* (2002) and Connelly and Limpaphayom (2004) do not find a statistically significant relationship. Bukair and Rahman (2015) argued that Islamic banks' performance is not affected by board composition. By contrast, Bokpin (2013) and Adeabah *et al.* (2019) found a negative effect of board independence on financial performance in Ghana.

2.3 Audit committee

Previous research reported that the effectiveness of audit committees is largely dependent on the characteristics of the committee, such as its size and independence (Dellaportas *et al.*, 2012; Herdjiono and Sari, 2017). The audit committee serves as one of the most important mechanisms as far as corporate governance is concerned because of its role of monitoring and maintaining the credibility and integrity of the financial information provided by an organization (Tornyeva and Wireko, 2012). The committee, therefore, must have enough members to carry out its responsibilities to be effective in controlling and monitoring managers' behavior (Vicknair *et al.*, 1993). For example, Pucheta-Martí nez and De Fuentes (2007) found that audit committee size affects the probability of companies receiving audit reports containing errors or non-compliant qualifications. However, the results from earlier studies on the effect of audit committee size on company performance are not conclusive. Dalton *et al.* (1999) reported that audit committees become ineffective if they are either too small or too large.

An audit committee with larger size tends to lose focus and be less participative than those of smaller size. On the other hand, an audit committee with a small number of members lacks a diversity of skills and knowledge and hence becomes ineffective. However, an audit committee of the right size would allow members to use their experience and expertise in the best interests of stakeholders. Convincingly, the right size of the audit committee may largely depend on the culture, legal and economic environment, members skills and the complexity of firms' operations. Research by Eichenseher and Shields (1985) and Menon and Williams (1994)

found a weak association between the size of the audit committee and company performance. However, Aldamen *et al.*'s (2012) examination of the effect of audit committee characteristics on performance during the financial crisis concluded that smaller committees with more experience and financial expertise were positively and significantly associated with firm performance. Besides, Al-Matari *et al.*'s (2013) study of the same relationship revealed a significant relationship with company performance. This positive relationship is supported by the resource dependence theory (Aldamen *et al.*, 2012). According to this theory, the effectiveness of an audit committee increases when the size of the committee increases, because it has more resources with which to address the issues faced by the company.

2.4 Chief executive officer duality

This mechanism refers to the positions likely to be held by the CEO of an organization. On the topic of corporate governance and financial performance, the discussion on CEO duality is mostly met by the CEO acting both as the chief executive officer and chairing the board of directors. Tornyeva and Wereko (2012) indicated that these positions are the most powerful in the organization; hence, its concentration in the hands of a single person often leads to decisions that do not promote the interest of shareholders. Kajola (2008), according to his research, reported that agency problems are high when the same person occupies both positions.

When the CEO is also the chairperson, the capacity of the board to monitor the CEO is weaker (Jensen, 1993). Gul and Leung (2004) suggest that CEOs who also serve as board chairpersons could reduce the board's ability to exercise effective control over management and thereby negatively affect performance. Brickley *et al.* (1997) argue that there are also costs associated with having two persons holding the CEO and chairperson titles. They find no evidence that firms with separate persons perform better than those with the same person holding both titles. By contrast, Pi and Timme (1993) find that firms with one person holding both titles have less cost efficiency and performance than those with two persons holding the two titles. Cornett *et al.* (2008) detect a negative relation between CEO duality and firm performance. Abor and Fiador (2013) find no relationship between CEO duality and bank performance in Ghana.

2.5 Ownership structure

Differences in ownership structure could lead to differences in banks' operational strategies because of customer preferences, information quality and production methods (Luu *et al.*, 2019). Inside owners often appoint family members rather than external professional managers in critical managerial positions (Carney, 2005; Shen *et al.*, 2018). Family management with concentrated ownership usually reduces the flow of new ideas or leads to insufficient managerial capabilities in decision-making (Morck, 1996). According to the agency theory, the separation of ownership and control of a firm creates agency problems (Jensen and Meckling, 1976). Moreover, the issues between managers and shareholders can be mitigated by offering managers incentives in the form of managerial ownership in shares of the firm. Managerial ownership aligns managers' and shareholders' interests to minimize agency problems (Jensen and Murphy, 1990). Consequently, the value of managerial ownership enhances as the firm's overall performance improves. Empirical evidence concerning the relationship between director ownership and corporate performance is mixed. While Agrawal and Knoeber (1996) and Daily and Dalton (2004) found results consistent with agency prediction, Chiang (2005) found that director shareholding was statistically significant but negatively related to corporate performance. Han and Suk (1998) documented that increase in director ownership led to better corporate performance; however, excessive insider ownership resulted in worse corporate performance.

This study argues that the firm's corporate governance practices depend on the firm's ownership structure. Basically, the firm adopts good corporate governance practices to handle agency problems for firms' stakeholders' benefits. Therefore, shareholders are expected to use other good governance practices as monitoring and incentive mechanisms to control agency problems.

Furthermore, types of good governance practices adopted by the firm depend on the types of owners. This implies that different owners may exhibit distinct behavior and preferences toward certain corporate governance practices. This is likely to influence a firm's good corporate governance practices (Munisi *et al.*, 2014). In this respect, it is argued that types of the ownership structure of the firm affect types and level of good governance practices adopted.

2.6 Foreign ownership

If a large portion of shares of a corporation is being held by foreign shareholders, it may signal that foreign investors have confidence in those companies. Foreign institutional investors may have better technology and quality of research and can play the monitoring and disciplinary roles than others. Aggarwal *et al.* (2005) find that greater transparency and disclosure are positively associated with US mutual fund investment in emerging markets. Douma *et al.* (2006) provide that foreign institutional investors have superior monitoring abilities, resource endowments and skills to use to their advantage. Thus, foreign ownership has monitoring incentives and positively impacts corporate governance outcomes (Ni *et al.*, 2017; Yang and Ren, 2017). Extant research suggests that among institutional investors, foreign institutional investors play a more important role than domestic institutional investors in improving firm-level governance (e.g. Gillan and Starks, 2003; Ferreira and Matos, 2008; Aggarwal *et al.*, 2011), which promotes investment efficiency.

They could exert direct or indirect influence on managers' actions through intervention, meetings with managers, voicing their interests to corporate management or voting with their feet (Ferreira and Matos, 2008). Moreover, Huang and Shiu (2009) argue that foreign institutional investors of Taiwanese stocks may enjoy long-run information advantages, positively influence the firm's operations and thus be able to improve corporate performance. Prior research indicated that foreign ownership has a positive effect on a firm's operational efficiency (Bentivogli and Mirenda, 2017). Li *et al.* (2015) proposed that large foreign ownership could mitigate stock return volatility and seems to play a stabilizing or monitoring role in emerging stock markets. Choi *et al.* (2012) also mention that both foreign blockholders and foreign board members can provide expertise and independent monitoring over management.

3. Data and methodology

The dataset comprises of 23 banks operating in Ghana for the period 2006–2018. Data were obtained from multiple sources, including the annual reports of the banks. The corporate governance index is based on four provisions; board of directors, audit, CEO duality and non-executive directors. The ownership structure is decomposed into director ownership, foreign ownership and local ownership. Data on banks specific variables were obtained from Bankscope and the Bank of Ghana database website. Data for macroeconomic variables were collected from the World Development Indicators database. The construction of these variables for the empirical analysis is discussed in Table 1.

Variable(s)	Full form	Measurements
Panel A: firm performance measure		
ROA	Return on asset	Net income/total asset
Panel B: independent variables		
ACS	Audit committee size	The number of audit committee members
NEXD	Non-executive directors	Percentage of independent directors on the board
BSZ	Board size	The number of directors on the board
CEOD	CEO duality	1 = CEO is also chairman 0 = CEO is not chairman
LINSOWN	Local institutional ownership	Shares held by institutions investors/total shares held by banks
FOROWN	Foreign ownership	
BOWN	Board ownership	The proportion of shares owned by directors on the board
Panel C: control variables		
SIZE	Firm size	Natural logarithm of the firm total assets
INFL	Inflation	Consumer price index (CPI) growth rate
NPL	Credit risk	Loan loss provisions over total loans
EXCR	Exchange rate	Exchange rate between Ghana Cedi and the American dollar (US$) at December 31 of each year
DEPO	Deposits	Total deposit as at December 31 each year
GDPG	GDP growth	The yearly real GDP growth

Table 1. Measurement of variables

3.1 Model specification

This paper examines the effect of corporate governance on bank performance, the moderating role of ownership structure. The baseline model is expressed as:

Bank performance = f (Corporate Governance, Ownership, Control Variables)

First, the author runs a panel regression to investigate the direct association between corporate governance and financial performance. Second, the author shows an independent effect of corporate governance and ownership structure on bank performance. From the baseline model, the two objectives above are analyzed using:

$$\begin{aligned} \mathrm{ROA}_{it} = {} & \alpha + \beta_1 \mathrm{ACS}_{it} + \beta_2 \mathrm{NEXD}_{it} + \beta_3 \mathrm{BSZ}_{it} + \beta_4 \mathrm{CEOD}_{it} + \beta_5 \mathrm{INSOWN}_{it} + \beta_6 \mathrm{FOROWN}_{it} \\ & + + \beta_7 \mathrm{NPL}_{it} + \beta_8 \mathrm{SIZE}_{it} + \beta_9 \mathrm{DEPO}_{it} + + \beta_{10} \mathrm{GDPG}_{t} + \beta_{11} \mathrm{INFL}_{t} + \beta_{12} \mathrm{EXCR}_{t} \\ & + \varepsilon_{it....} \end{aligned} \tag{1}$$

where ROA is the ratio of net income to total asset of bank i at time t; ACS_{it} is the audit committee size of bank i at time t; NEXD_{it} is the non-executive directors of bank i at time t; BSZ_{it} is the board size of bank i at time t; CEOD_{it} is the CEO duality of bank i at time t; INSOWN_{it} is the institutional ownership of bank i at time t; FOROWN_{it} is the foreign ownership of bank i at time t; ; NPL_{it} is the NPL ratio of bank i at time t; SIZE_{it} is the size of bank i at time t; DEPO_{it} is the deposit of bank i at time t; GDPG is the GDP growth; INFL_{it} is the inflation adjusted; EXCR is the exchange rate.

β_1, β_2, etc. are the corresponding coefficient vectors. 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 banks and T is the number of periods in the dataset.

Besides, the study introduces an interaction between ownership structure and corporate governance. This is done to examine the interaction effect of ownership in explaining the relationship between corporate governance and bank performance. This is expressed as:

$$\begin{aligned} \mathrm{ROA}_{it} = & \sum_{l=1}^{4} \beta_1 \ \text{Corporate Governance Variables}_{it} \\ & + \sum_{f}^{2} \alpha_1 \ \text{Ownership Structure Variables}_{it} \\ & + \sum_{q=1}^{p} \sigma_q (\text{Corporate Governance}_{it} * \text{Ownership Structure Variables}_{it}) \\ & + \sum_{k=1}^{N} \theta_k \text{Control Variables}_{ijt} + \varepsilon_{it} \end{aligned} \tag{2}$$

where β_k, $k = 1, \ldots, 4$ are the coefficients of the corporate governance variables; $\alpha_1, f = 1$–2 represent the coefficient of ownership structure variables; σ_q denotes the coefficients of the interaction terms between corporate governance and ownership structure. θ_k represents the parameter coefficient for the control variables, and ε_{it} is the composite error term.

The author expects ownership structure to moderate the effect of corporate governance on bank performance.

3.2 Measurement and expectations

This section presents the expectations of the variables in the econometric analysis.

3.2.1 Dependent variable. Several variables have been used as a proxy for firms' financial performance such as return on assets (ROA), return on equity (ROE), market to book value (MVA) and Tobin's *Q*. Following the literature, a firm's performance is measured using ROA (van Essen *et al.*, 2015; Roudaki and Bhuiyan, 2015). ROA is computed as operating profit after tax, divided by total assets.

3.2.2 Independent variable. The main independent variables are corporate governance mechanisms, including ownership structure. This research employs five corporate governance variables as independent variables. That is, the separation of CEO and chairman, proportion of non-executive directors on the board, audit committee size and board size and ownership. It is generally argued that large boards are less effective and easier for CEOs to control the firms. The cost of managing problems is also high on large boards, complicating the decision-making processes (Coles *et al.*, 2008). It has, on the other hand, been argued that smaller boards reduce the possibility of free-riding and, therefore, have the tendency of enhancing firm performance (Yermack, 1996; Eisenberg *et al.*, 1998). Board size is measured as the total number of board members. Similarly, the size of an audit committee is estimated as the number of audit committee members. The presence of independent directors on corporate boards is an effective mechanism to reduce the potential disagreement between management and shareholders. John and Senbet (1998) argued that a board is more independent if it has more non-executive directors. Some studies, however, reported a negative relationship between board independence and firm performance (Bhagat and Bolton, 2019). The presence of independent directors on the board intends to improve their performance; therefore, this research expects its positive impact on firm performance. The proportion of non-executive directors is defined as the number of non-executive directors divided by the total board of directors. It is debated that there is a conflict of interest and higher agency costs when the position of CEO coincides with the board chairman (Ehikioya, 2009), and it is suggested that the two positions should be separated. There is another argument that when the CEO doubles as board chair, it allows the CEO to make decisions without any unnecessary influence of bureaucratic structures. As the chairman holds the most critical decisions and could influence the boards, the separation between CEO and

chairman can lead to an effective board (Bouaziz, 2014). Khiari (2013) argued that a merge between CEO and chairman role could lead to a conflict of interests and therefore wrong disclosure. As the chairman makes the most critical decisions and could influence the boards, the separation between CEO and chairman can lead to an effective board (Bouaziz, 2014). Khiari (2013) argued that a merge between CEO and chairman role could lead to a conflict of interests and therefore wrong disclosure.

CEO duality indicates whether the CEO is also the chair of the board. This is a binary variable 1 = CEO duality, 0 = otherwise.

The nature of ownership of a firm is an important aspect of its governance structure and serves as an extra monitoring device on the operations of the firm. While institutional investors have strong motives to alleviate managerial opportunism and control managers' exploitation of investors (Shleifer and Vishny, 1997), they can better monitor the behavior of directors. Besides, Choi *et al.* (2012) suggested that institutional investors may support independent directors in their monitoring and thereby contribute to firm performance (Lin and Fu, 2017). This research measures institutional shareholding by the percentage of shares held by institutions divided by the total number of shares with the company. It is, therefore, expected that institutional ownership has a positive relationship with firm performance. Dahlquist and Robertsson (2001) indicated that foreign investors' role is similar to that of institutional investors. Also, foreign investors usually have less connection with insiders than domestic investors, and hence can monitor insiders more effectively (Ng *et al.*, 2009). Therefore, it is expected that foreign ownership also has a positive impact on firm performance. Previous researchers found a positive association between foreign shareholding and firm performance (Bentivogli and Mirenda, 2017). Board ownership according to Al Farooque *et al.* (2007) and Ghazali (2010) affects firms performance. Al Farooque *et al.* (2007) assume that the relationship between board ownership and financial performance is not linear. On the other hand, Munisi (2019) argues that the ownership structure also determines corporate governance. Therefore, a simultaneous equations model is used in this analysis. Board ownership is significantly influential in firm decisions, especially in developing nations. Traditionally, directors, as significant shareholders, had a powerful personal incentive to exercise effective oversight. It was the equity ownership that created an effective agency. To recreate this powerful monitoring incentive, directors must become substantial shareholders once again. This is the theoretical underpinning behind the current movement toward equity-based compensation for corporate directors. The idea is to reunite ownership and control through meaningful director stock ownership and hence better management monitoring. Underpinning this theory, however, assumes that directors' equity ownership does create more active monitoring.

3.2.3 Control variables. This research used six variables as predictors of banks financial performance as control variables, namely, firm size, gross domestic product (GDP) growth, exchange rate, inflation, non-performing loans and banks deposit. Log of assets is used as a measure of firm size (Anderson and Reeb, 2003; Bhatt and Bhattacharya, 2015). Larger firms enjoy economies of scale and could need "better" governance to respond to their more complex operations (Black *et al.*, 2006). Log of assets is found to have an impact on the performance of the firms (Bhatt and Bhattacharya, 2015). When economic activity decreases, the demand for loans and deposits decreases and negatively affects the profit margin Sufian and Chong (2008), Demirguc-Kunt and Huizinga (1999). GDP is considered proxy for business cycle. Moussa (2015), Bunda and Desquilbet (2008), and Choon *et al.* (2013) found a positive impact of GDP on bank liquidity, while Valla *et al.* (2006), Dinger (2009), Vodova (2011) and Aspachs *et al.* (2005) established negative relationships between the two. Depreciation of domestic currency and inflation have the potential of eroding the values of banks assets (Driver and Windram, 2007). Moussa (2015) empirically studied banks of the Tunisia, and the findings revealed that the impact of changes in inflation rates

on bank liquidity is negative. Credit risk is one of the main variables affecting bank performance, as it exhibits the loss probability because of the failure of the borrower to fulfil its obligations to the bank (Mansur *et al.*, 1993). The literature usually expresses it by the ratio of loan loss reserves to gross or net loans granted by banks. The growth of deposits is a variable that can have either a positive or negative impact on banks' profitability. A higher rate of growth of deposits can increase market share, turnover and by extension profitability (Gul *et al.*, 2011). However, deposits are costs. A higher rate of deposits growth can mean a higher increase in banks' operating costs.

4. Results and discussion

The descriptive statistics of the variables employed for the study are presented in Table 2. The explanatory variables include foreign bank ownership, corporate governance variables, bank performance, firm-specific variables and macroeconomic variables. The summary statistics allow screening for outliers, which may affect efficiency, consistency and biasness of the estimated coefficients. The variance inflation factor (VIF) shows the acceptability of the variables in the dataset, following a rule of thumb threshold of 10. The Shapiro–Wilk normality test (Swilk) is used to test for the null hypothesis of no normal distribution. The descriptive statistics confirm no existence of an outlier, variables are all acceptable in the model (mean VIF of 1.35) and conclude that the variables are normally distributed around the mean (p-value > z for the Swilk test).

From the descriptive statistics, *profitability, measured as return on asset* (ROA) recorded a mean of 1.604, ranging from −22.03 and 7.43. Hence, the return on asset among banks in Ghana is relatively low among Ghanaian banks. The standard deviation (3.887) suggests that there is a relatively high variation in ROA across the banks in the sample. The mean of foreign ownership for banks in Ghana is 61%. A mean of 50.2% for ACS suggests that about half the total directors are in the audit committee. This indicates relatively high variability across the sample for banks in Ghana. Credit risk recorded a mean (std. dev) of 97.859 (51.553), which indicates that banks in Ghana are highly exposed to risk. Bank size recorded a mean of 6.193, suggesting that banks in Ghana have a large size compared with the minimum and maximum bank size of 2.39 and 8.199, respectively. Bank deposit funds recorded a mean (std. dev) of 0.773 (0.118) per cent with relatively low variation. For the macroeconomic indicators, exchange rates recorded an average (std. dev) of 1.759 (0.579) rate to the dollar, ranging between 0.916 and 2.687. This indicates that exchange rates in Ghana are relatively high compared to other developed countries (WDI database). The GDP per capita recorded a mean (std. dev) of 6.99 (3.05), indicating that Ghana has experienced high levels of macroeconomic imbalances over the periods.

Variable	Obs	Mean	Std. dev.	Min	Max	SWILK
ROA	200	1.604	3.887	−22.03	7.43	0.000***
FOROWN	299	0.609	0.489	0	1	0.000***
ACS	285	0.502	0.501	0	1	0.000***
CEOD	285	0.088	0.283	0	1	0.000***
BSZE	285	9.2	4.664	1	23	0.000***
NEXD	285	0.222	0.242	0	0.7	0.000***
GDPG	298	6.99	3.05	1.44	12.424	0.000***
EXCR	298	1.759	0.579	0.916	2.687	0.000***
INFL	252	12.222	2.862	8.727	19.251	0.000***
NPL	253	97.859	51.553	6.4	186.616	0.000***
SIZE	200	6.193	1.003	2.398	8.199	0.000***
DEPOSIT	198	0.773	0.118	0.104	1.177	0.000***

Table 2.
Summary statistics

4.1 Correlation matrix

The correlation results are presented in Table 3. The author employed the Pearson correlation coefficient to check for possible multicollinearity between the explanatory variables. The results from the correlation matrix generally do not suggest the existence of that multicollinearity as confirmed by a mean VIF of 2.1, and each of the variables has a VIF below 10 (Table 3).

The regression result is presented in Table 4 to ascertain the true relationship between ownership, corporate governance and profitability while controlling for some indicators.

4.2 Regression results

The study examines the relationship between ownership, corporate governance and bank profitability in Ghana. First, the study analyzes the independent effect of corporate governance mechanisms on profitability. Second, it investigates the independent effect of corporate governance, ownership sand performance. Lastly, it investigates the moderation effect of ownership in explaining the impact of corporate governance mechanism on bank profitability.

Table 4 presents the results that estimate the direct effect of corporate governance structures on bank profitability. The study used four robust estimation techniques to check for consistencies in the signs of the coefficients. These include the pooled ordinary least squares (OLS), fixed-effect regression, random-effect regression and the two-staged least squares (2SLS). This is shown below:

The regression result for the fixed- and random-effect models are presented, and all assumptions in relation to the distribution of data variables in the model were tested for normality. The study employed the Hausman test to ascertain whether the fixed effect or the random effect is more appropriate. From Table 4, a χ^2 statistic from the Hausman test is not significant, indicating that the random effect estimation is preferred to the fixed effect. The Breusch–Pagan test and Hausman test favor the random estimation. The study also presents the 2SLS to check for consistency in the results. This research reports the results based on the random effect, which are robust to standard errors.

In Model 3, there is an evidence that ACS has a positive and significant effect on bank profitability. This suggests that banks with large audit committee are able to improve on bank profitability since different members bring on board a variety of skills. CEO duality has a positive and significant relationship with banking profitability. This agrees with the stewardship theory that managers protect the interest of shareholders to mitigate agency problems. Thus, managers who play the role as the chairman of the board have the incentive to provide strong supervision that may maximize firm value. Non-executive directors have a positively and significantly linked to profitability of banks. This shows that increasing the number of non-executive director results in a significant increase in bank profitability. Independent non-executive directors bring their diverse expertise on board, oversee the actions of inside directors and protect the interest of shareholders' (Bliss, 2011). The findings support the earlier assertions of Annuar and Rashid (2015) and Chung *et al.* (2003) that board independence ensures that conflict of interest do not occur between agents and managers, so banks that have large non-executive directors may increase bank profitability. Again, the finding is consistent with recent empirical findings of Dzingai and Fakoya (2017) who had a positive relationship between board independence and firm value. On the contrary, Adeabah *et al.* (2019) found an inverse relationship with performance. Consistent with Huang (2010), board ownership is statistically significant to explain the changes in profitability of banks. The results with ROE and MVA were statistically similar, as shown in Table 5.

In terms of the control variables, firm size has a positive and significant relationship with bank profitability. This indicates that larger firm size increases shareholder value. Exchange

Table 3.
Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) ROA	1.000											
(2) OWN	0.048	1.000										
(3) ACS	0.267	−0.054	1.000									
(4) CEOD	0.083	−0.384	0.143	1.000								
(5) BSIZE	−0.029	−0.070	−0.166	−0.432	1.000							
(6) NEXD	0.319	0.129	0.651	−0.301	−0.012	1.000						
(7) GDPG	0.108	0.001	0.029	−0.013	0.001	−0.012	1.000					
(8) EXCR	−0.024	−0.002	−0.011	−0.013	−0.009	0.001	0.503	1.000				
(9) INFL	−0.170	0.003	−0.051	0.013	−0.005	−0.025	*−0.715*	−0.218	1.000			
(10) NPL	0.131	−0.014	−0.521	−0.203	−0.007	−0.143	0.000	0.057	0.025	1.000		
(11) SIZE	0.456	−0.096	0.196	−0.038	0.008	0.311	0.271	0.433	−0.182	0.093	1.000	
(12) DEPOSIT	0.077	−0.149	−0.148	−0.188	−0.078	0.102	0.099	0.004	−0.112	0.196	0.322	1.000

Note(s): Figure in italics represents the highest correlation coefficient; variables are defined as in Table 1

Table 4.
Regression result: corporate governance and bank performance

Variables	(Pooled OLS) Model 1	(Pooled OLS) (2) Model 2	FE Model 3	FE Model 4	RE Model 5	RE Model 6	2SLS Model 7	2SLS Model 8
INSOWN	1.750***		1.696***		1.750***		2.746***	
	(0.564)		(0.272)		(0.278)		(0.805)	
BOWN		−2.089***		−2.036**		−2.089***		−2.078***
		(0.567)		(0.688)		(0.677)		(0.746)
ACS	1.731*	1.602	1.749**	1.607**	1.731***	1.602***	1.997**	1.600*
	(0.992)	(0.995)	(0.628)	(0.518)	(0.639)	(0.530)	(0.952)	(0.911)
CEOD	4.572***	1.178	4.537***	1.219**	4.572***	1.178**	5.595***	1.185
	(1.056)	(0.890)	(1.007)	(0.444)	(1.046)	(0.488)	(1.518)	(1.365)
BSZ	0.141*	0.0434	0.143**	0.0453	0.141***	0.0434	0.185**	0.0435
	(0.0853)	(0.0828)	(0.0458)	(0.0436)	(0.0456)	(0.0419)	(0.0790)	(0.0692)
NEXD	2.274	0.670	2.101	0.622	2.274*	0.670	2.005	0.680
	(1.459)	(1.588)	(1.274)	(0.848)	(1.281)	(0.849)	(1.831)	(1.920)
GDPG	0.0435	0.0635			0.0435	0.0635	0.0379	0.0635
	(0.107)	(0.107)			(0.0519)	(0.0526)	(0.120)	(0.117)
EXR	−2.221**	−2.133**			−2.221***	−2.133***	−2.187***	−2.133***
	(0.895)	(0.853)			(0.570)	(0.569)	(0.695)	(0.679)
INFL	−0.126	−0.117			−0.126***	−0.117**	−0.125	−0.117
	(0.109)	(0.106)			(0.0451)	(0.0483)	(0.107)	(0.105)
NPLTGL	0.0237**	0.0241**	0.0238***	0.0242***	0.0237***	0.0241***	0.0256***	0.0241***
	(0.00943)	(0.00928)	(0.00500)	(0.00526)	(0.00500)	(0.00525)	(0.00651)	(0.00631)
FSIZE	1.790***	1.619***	1.774***	1.611***	1.790***	1.619***	1.781***	1.620***
	(0.502)	(0.484)	(0.444)	(0.439)	(0.442)	(0.438)	(0.336)	(0.334)
DEPO	−0.916	−1.411	−0.334	−0.866	−0.916	−1.411	0.428	−1.420
	(3.713)	(3.560)	(4.545)	(4.821)	(4.400)	(4.687)	(2.860)	(2.662)
Constant	−10.39**	−5.718	−15.43***	−10.47***	−10.39***	−5.718**	−12.74***	−5.720*
	(4.095)	(3.677)	(3.257)	(2.635)	(3.208)	(2.817)	(3.610)	(2.998)
Observations	130	130	130	130	130	130	130	130
R-squared	0.423	0.442	0.398	0.417			0.412	0.442
Number of years			9	9	9	9		

Note(s): Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Variables	(ROE) Model 5	(ROE) Model 6	Market-book value Model 7	Market-book value Model 8
INOWN	2.724*		1.614**	
	(1.513)		(0.730)	
BOWN		−10.15*		−2.166***
		(5.655)		(0.791)
ACS	−5.786	−4.877	−1.771***	−1.852***
	(11.86)	(10.15)	(0.284)	(0.213)
CEOD	14.52**	3.961*	−1.345***	−4.659***
	(6.798)	(2.312)	(0.466)	(1.293)
BSZ	−0.703*	−0.925**	−0.109**	−0.202**
	(0.398)	(0.418)	(0.0507)	(0.0822)
NEXD	39.11**	29.75**	0.555	−1.162
	(18.80)	(13.04)	(0.616)	(1.083)
GDPG	0.399	0.464	−0.0944**	−0.0748
	(0.447)	(0.406)	(0.0423)	(0.0477)
EXR	−12.11***	−11.47***	−1.092***	−0.993***
	(2.282)	(2.270)	(0.200)	(0.189)
INFL	−0.238	−0.186	−0.0909*	−0.0809
	(0.391)	(0.346)	(0.0499)	(0.0522)
NPLTGL	0.0349	0.0474	−0.0105***	−0.00978***
	(0.0927)	(0.0817)	(0.00257)	(0.00272)
FSIZE	11.92***	11.03***	0.354**	0.175
	(1.886)	(1.881)	(0.143)	(0.111)
DEPO	−37.01**	−31.62	−2.797*	−3.040**
	(18.05)	(21.67)	(1.441)	(1.310)
Constant	−17.77	−8.677	22.81***	27.18***
	(12.20)	(12.67)	(2.136)	(1.826)
Observations	130	130	130	130
Number of years	9	9	9	9

Note(s): Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 5.
Random-effect model using ROE and MBV as dependent variables

was negatively and significantly linked to bank profitability. This suggests that exchange rate risk exposures of banks reduce the profitability of banks. Next, we investigate the independent effect of ownership, corporate governance and bank profitability in Ghana.

4.3 Independent effect of ownership, corporate governance structures and bank profitability

The author proxied two different types of ownership, including foreign bank ownership and local bank ownership. Ownership and corporate governance variables are introduced in the same model to ascertain whether there is a direct or indirect relationship. Similarly, using pooled OLS, fixed-effect regression, random-effect regression and the 2SLS, the result is presented in Table 6.

From Table 6, foreign bank ownership has a positive and significant relationship with bank profitability. This suggests that banks whose shareholders are dominated by foreign counterparts may be risk-takers and would bring diverse or more advanced systems, in terms of decision-making, that may enhance bank performance. This agrees with earlier works by Adika *et al.* (2018), who explained that conflict of interest between agents and owners can be minimized through ownership control. For this reason, owners are expected to elect the directors to monitor management to maximize their interest. Thus, a good ownership structure, dominated by foreign counterparts is superior to promoting corporate decisions. It also influences bank profitability through risk-taking behavior. Local bank ownership has a

Table 6.
Interaction effect – corporate governance, foreign ownership and performance

Variables	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 1	(6) Model 2	(7) Model 3	(8) Model 4	(9) Model 1	(10) Model 2	(11) Model 3	(12) Model 4
INOWN	0.213	1.261***	−3.974**	−0.215	1.882	5.814*	−13.25	−3.400	2.772***	2.052**	0.639	2.812***
	(0.462)	(0.327)	(1.659)	(0.457)	(4.443)	(3.097)	(8.283)	(3.848)	(0.929)	(0.837)	(0.438)	(0.731)
ACS	1.292				7.048				−0.221			
	(0.809)				(5.157)				(0.358)			
CEOD		2.501***				10.28**				−0.415		
		(0.847)				(4.034)				(0.760)		
BSZ			−0.309***				−1.952***				−0.114	
			(0.117)				(0.731)				(0.102)	
NEXD				0.969				13.14				0.408
				(0.995)				(9.603)				(1.057)
INOWN*ACS	1.277**				4.584				−1.509**			
	(0.583)				(6.571)				(0.587)			
INOWN*CEOD		–				–				–		
INOWN*BSZ			0.519***				1.787*				0.167	
			(0.183)				(1.013)				(0.114)	
INOWN*NEXD				2.950*				20.75				−2.524***
				(1.588)				(13.58)				(0.838)
GDPG	0.0381	0.0380	0.0361	0.0632	0.170	0.172	0.179	0.375	−0.101**	−0.103**	−0.105**	−0.115**
	(0.0527)	(0.0540)	(0.0525)	(0.0599)	(0.538)	(0.571)	(0.572)	(0.460)	(0.0435)	(0.0459)	(0.0469)	(0.0500)
EXR	−2.412***	−2.679***	−2.544***	−2.486***	−12.21***	−13.51***	−13.34***	−11.70***	−0.974***	−0.825***	−0.776***	−0.929***
	(0.565)	(0.606)	(0.565)	(0.573)	(2.168)	(2.380)	(2.466)	(2.349)	(0.197)	(0.188)	(0.203)	(0.193)
INFL	−0.127***	−0.136***	−0.141***	−0.128**	−0.258	−0.297	−0.325	−0.234	−0.0941*	−0.0870*	−0.0894*	−0.0902
	(0.0440)	(0.0460)	(0.0468)	(0.0549)	(0.468)	(0.492)	(0.492)	(0.375)	(0.0481)	(0.0523)	(0.0522)	(0.0561)
NPLTGL	0.0189***	0.0116***	0.0199***	0.0113***	0.0650	0.0277	0.0558	0.0374	−0.00579**	−0.00144	0.00231	−0.00171
	(0.00443)	(0.00421)	(0.00671)	(0.00418)	(0.0711)	(0.0542)	(0.0490)	(0.0578)	(0.00291)	(0.00225)	(0.00306)	(0.00303)
FSIZE	2.026***	2.345***	2.164***	2.012***	12.95***	14.52***	14.07***	11.55***	0.229***	0.0733	0.0141	0.245**
	(0.424)	(0.435)	(0.395)	(0.441)	(1.882)	(1.746)	(1.882)	(2.027)	(0.0879)	(0.0754)	(0.0660)	(0.114)
DEPO	−3.209	−3.735	−3.052	−4.650	−25.89	−28.91	−31.11	−31.96	−1.448	−0.467	0.340	−0.698
	(4.677)	(5.102)	(4.437)	(5.068)	(19.30)	(23.00)	(24.39)	(24.09)	(1.491)	(1.775)	(1.684)	(1.678)
Constant	−6.218**	−6.363*	−3.371	−3.803	−35.79***	−35.35***	−13.37*	−21.24**	19.97***	19.37***	19.65***	18.64***
	(3.083)	(3.403)	(2.516)	(3.180)	(6.106)	(7.259)	(7.859)	(8.701)	(1.891)	(2.545)	(1.748)	(2.216)
Observations	130	130	130	130	130	130	130	130	130	130	130	130
Number of years	9	9	9	9	9	9	9	9	9	9	9	9

Note(s): Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

negative and significant relationship with bank profitability. This suggests that banks that are dominated by local counterparts reduce bank profitability. This is because a conflict of interest may arise from banks dominated by local owners, since external investors may not have control over them when making decisions. This has the potential to reduce bank profitability.

From Table 6, there is evidence that ACS has a positive and significant effect on bank profitability in the presence of ownership (see Models 5–12). This suggests that banks that engage more audit committee members to monitor processes can increase bank profitability. CEO duality was positively and significantly associated with bank profitability when ownership was introduced in the model (all models, 5–12). This is consistent with the earlier results and implies a direct relationship with the profitability of banks. The results indicate that the coefficient of board independence is significantly positive in all the models. This shows that increasing the number of non-executive directors results in a significant increase in bank performance when ownership was introduced. This confirms the above result and indicates a direct relationship between independent non-executive directors and bank profitability. Again, this finding shows that increasing the number of non-executive directors on the board increases board diversity, which leads to a reduction in agency costs and a positive impact on profitability. However, NED was insignificant in the 2SLS model, indicating a direct but insignificant relationship. Board size was positively and significantly related to bank profitability. This shows that large board size increases banks value, confirming the above results.

4.4 Interaction effect between ownership and corporate governance structures on bank profitability

The independent effect of ownership, corporate governance structures on bank profitability has been established. To find out how ownership structure moderates the relationship between corporate governance structures and bank profitability, an interaction term between ownership and the governance variables is introduced and re-run the model, using the random effect model estimation. The result is presented in Table 7.

After introducing the interaction term between ownership and ACS, the result indicates that ownership and ACS enter the regression with insignificant coefficient (see Model 13 from Table 7). The interaction term is positive and significant. This suggests that ownership has a role to play in moderating the effect of audit independent on bank profitability. In Model 14, ownership and CEO duality positively impacted bank performance when the interaction term was introduced. The interaction term was positive and significant. This suggests that foreign bank ownership increases the positive effect of CEO duality and profitability of banks. The implication is that banks with CEO duality will increase bank profitability when bank ownership is dominated by foreign shareholders. In Model 15, ownership and board size negatively affect bank performance when the interaction term was introduced. This is not consistent with our earlier results. However, the interaction term was positive and significant. This indicates that ownership reverses the negative relationship between board size and profitability. Thus, the effect of board size on profitability reduces with greater foreign ownership. The implication is that banks with small board size will increase bank profitability when banks are dominated by foreign shareholders. In Model 16, the coefficient of ownership was negative and insignificant, while non-executive was positive and insignificant. This is not expected. However, the interaction term was positive and significant. This suggests that ownership has a role to play in moderating the effect of non-executive directors on bank profitability. Similar results were obtained using both ROE and MBV, as shown in Table 8.

Table 7.
Interaction effect – corporate governance, board ownership and performance

Variables	ROA Model 1	ROA Model 2	ROA Model 3	ROA Model 4	ROE Model 5	ROE Model 6	ROE Model 7	ROE Model 8	MVA Model 9	MVA Model 10	MVA Model 11	MVA Model 12
BOWN	−2.536**	−2.421***	−0.990	−3.874***	−16.40	−13.71**	−3.832	−19.17*	−2.817***	−1.698***	2.095***	−1.131**
	(1.068)	(0.715)	(0.815)	(1.492)	(10.64)	(6.368)	(5.812)	(10.38)	(0.781)	(0.578)	(0.642)	(0.490)
ACS	1.504***				4.802				−2.678***			
	(0.352)				(8.046)				(0.564)			
CEOD		0.584				0.463				−2.676***		
		(0.486)				(3.294)				(0.623)		
BSZ			0.0536*				−0.456				0.142***	
			(0.0301)				(0.310)				(0.0500)	
NEXD				−0.339				10.49				−0.512
				(1.193)				(10.23)				(0.393)
BOWN*ACS	0.623				8.138				2.656***			
	(0.898)				(9.988)				(0.629)			
BOWN*CEOD		1.219**				0.0527				4.039*		
		(0.444)				(0.0450)				(2.275)		
BOWN*BSZ			−0.169**				−1.049				−0.391***	
			(0.0667)				(0.818)				(0.126)	
BOWN*NEXD				6.450*				31.15				−1.400
				(3.615)				(22.61)				(1.124)
GDPG	0.0626	0.0661	0.0602	0.0818*	0.306	0.327	0.287	0.450	−0.0799*	−0.0792*	−0.100*	−0.0897**
	(0.0507)	(0.0499)	(0.0474)	(0.0429)	(0.480)	(0.486)	(0.510)	(0.507)	(0.0463)	(0.0462)	(0.0551)	(0.0436)
EXR	−2.110***	−2.390***	−2.387***	−2.188***	−10.17***	−11.88***	−12.21***	−10.33***	−0.616***	−0.616***	−0.613**	−0.694***
	(0.560)	(0.576)	(0.575)	(0.489)	(2.828)	(2.611)	(2.765)	(2.825)	(0.174)	(0.184)	(0.240)	(0.157)
INFL	−0.116**	−0.120**	−0.127***	−0.107**	−0.193	−0.204	−0.268	−0.131	−0.0824*	−0.0764	−0.0993*	−0.0834*
	(0.0478)	(0.0470)	(0.0437)	(0.0444)	(0.409)	(0.409)	(0.436)	(0.416)	(0.0472)	(0.0496)	(0.0584)	(0.0466)
NPLTGL	0.0242***	0.0159***	0.0164***	0.0216***	0.0968*	0.0527	0.0571	0.0885**	−0.00278	0.000934	0.00462	0.000921
	(0.00535)	(0.00478)	(0.00474)	(0.00671)	(0.0577)	(0.0450)	(0.0392)	(0.0429)	(0.00278)	(0.00225)	(0.00319)	(0.00341)
FSIZE	1.592***	1.926***	1.934***	1.639***	10.18***	12.18***	12.53***	9.898***	−0.221***	−0.249***	−0.199**	−0.119*
	(0.448)	(0.429)	(0.419)	(0.398)	(2.789)	(2.365)	(2.311)	(2.568)	(0.0669)	(0.0940)	(0.0882)	(0.0643)
DEPO	−1.813	−2.591	−2.729	−3.504	−17.73	−21.25	−24.85	−26.78	−1.250	−0.702	0.125	0.255
	(4.760)	(5.007)	(4.696)	(4.576)	(21.16)	(24.30)	(26.53)	(24.84)	(1.952)	(1.887)	(1.981)	(1.544)
Constant	−4.473**	−3.904	−4.146*	−2.353	−23.30**	−23.49***	−17.74**	−15.90**	24.83***	22.92***	20.46***	21.45***
	(2.269)	(2.881)	(2.514)	(2.512)	(11.79)	(5.876)	(7.561)	(6.977)	(2.126)	(1.974)	(1.936)	(1.691)
Observations	130	130	130	130	130	130	130	130	130	130	130	130
Number of years	9	9	9	9	9	9	9	9	9	9	9	9

Note(s): Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 8.
Effect of foreign ownership and board ownership on firm performance

Variables	Foreign ownership				Board ownership			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
ACS	−0.363				−0.796*			
	(0.473)				(0.459)			
CEOD		−32.09				−27.42		
		(1.038e+06)				(359,523)		
BSZ			−0.0408				0.0392	
			(0.0456)				(0.0480)	
NEXD				*2.042***				*−2.210***
				(0.967)				*(0.917)*
GDPG	0.0159	0.0298	0.0154	0.0259	0.0512	0.0541	0.0485	0.0376
	(0.0873)	(0.0979)	(0.0873)	(0.0887)	(0.0913)	(0.0928)	(0.0905)	(0.0920)
EXR	0.00968	−0.00228	0.0595	0.238	0.468	0.562	0.595	0.434
	(0.501)	(0.546)	(0.495)	(0.507)	(0.534)	(0.532)	(0.525)	(0.541)
INFL	−0.00119	0.00871	−0.00247	0.00331	0.0292	0.0392	0.0322	0.0260
	(0.0780)	(0.0862)	(0.0780)	(0.0793)	(0.0833)	(0.0849)	(0.0831)	(0.0837)
NPLTGL	−0.00135	−0.00389	0.000633	0.00245	0.00729	0.00937**	0.0110***	0.0101**
	(0.00444)	(0.00412)	(0.00368)	(0.00383)	(0.00457)	(0.00400)	(0.00395)	(0.00414)
FSIZE	−0.0987	−0.232	−0.155	−0.382	−0.636**	−0.735***	−0.777***	−0.583**
	(0.240)	(0.264)	(0.227)	(0.259)	(0.257)	(0.242)	(0.247)	(0.257)
DEPO	−3.363	−8.285***	−3.105	−3.444	5.006**	4.699**	5.493***	5.581**
	(2.167)	(3.164)	(2.078)	(2.232)	(2.176)	(2.146)	(2.119)	(2.181)
Constant	3.960*	8.884***	4.039*	4.221*	−1.978	−1.867	−2.807	−2.669
	(2.293)	(3.308)	(2.275)	(2.349)	(2.277)	(2.276)	(2.259)	(2.265)
Observations	130	130	130	130	130	130	130	130
Number of years	9	9	9	9	9	9	9	9

Note(s): Robust standard errors in parentheses.*Significant at 10%; **significant at 5%; ***significant at 1%

4.5 Robustness checks

To ensure consistent, reliability and efficiency of the models, a number of tests and actions were undertaken. First, outliers were screened for by examining the descriptive statistics table, and no outliers were detected. Second, employing the Shapiro–Wilk normality test, it proved that all the variables are normally distributed around their mean. Third, Pearson's correlation was also employed to check for multicollinearity. Following Kennedy (2008) who set the multicollinearity threshold to 0.7, there was no evidence of multicollinearity. Analysis based on dependent and independent variables may be subject to endogeneity problems concerning corporate governance items and firm characteristics. This is because firms may adopt a package of corporate governance practices as a response to mitigate their agency problems (Lasfer, 2006). For example, corporate governance practices may change following changes in the firm's performance or ownership structure (Munisi *et al.*, 2014). Concerning this study, a change in ownership structure may be influenced by a change in corporate governance practices that are subject to reverse causality. Following previous studies such as Mollah *et al.* (2012), the endogeneity problem is dealt with by running simultaneous equation. More than one independent variable aside return on asset, has been used in the model as a robustness test. Consistent with the literature, ROE (Mollah *et al.*, 2012) and MVA (Al Farooque *et al.*, 2007; Ghazali, 2010; Mollah *et al.*, 2012) were used, and the results were essentially the same.

5. Conclusion and implications

This paper investigated the effect of corporate governance and ownership structure of Ghanaian banks on performance. Emerging economies are becoming increasingly important in the world economy, and although the effect of corporate governance and ownership on firms' performance in Ghana has been increasingly studied (Abor, 2007; Bokpin, 2011; Abor and Fiador, 2013), further study about the banks from this region is required. The results of the study document that corporate governance and ownership structure have a significant effect on bank performance in Ghana. This is because the corporate governance guidelines are being followed by banks, and foreign investors are scrutinizing the firm activities. The main findings in this study are, first, the results show that institutional ownership is negatively related to ROA. Second, the audit committee size, CEO duality and non-executive directors are found to be positively associated with bank performance. Third, board size and size of banks are found to be positively related to performance. These findings are consistent with both theoretical and empirical literature on corporate governance, ownership and bank performance.

These findings have implications for managers, policymakers, researchers and investors in general and those in developing countries in particular. The results of this research advocate that banks that comply with good corporate governance practices can expect to achieve higher performance. Theoretically, it implies that good corporate governance practices lead to reduced agency costs. Also, an increase in board size leads to better performance only when it adds diversity to the board; therefore, the author supports the suggestion by Cadbury (2002) that those with different backgrounds and perspectives should be appointed for the posts of non-executive directors. Policymakers are recommended to encourage local firms to accept certain levels of institutional foreign ownership to spread and adapt their corporate governance practices. Foreign institutional investors normally provide new and better technological capabilities and technical assistance to local firms and customers, which enable firms to enhance their performance. Accordingly, investors are recommended to consider foreign ownership as one of the performance determinants when planning their investments.

This research is based on a small sample of banks and may not represent the entire developing countries. First, future research can involve more banks. Second, future research could go deeper in exploring the real reasons behind the positive impact of foreign ownership on firms' performance and could consider more dimensions of corporate governance such as directors' remuneration and gender diversity. Third, future work should be extended to cover other industries such as manufacturing and oil and gas. Finally, for policy formulation and decision-making, it is also relevant to test the reverse causality.

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