

## Is there relationship between board structures and dividend policy: Evidence from Nigeria

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### ABSTRACT

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Dividends are considered useful in reducing agency conflicts. The board of directors is the topmost organ of an organisation and directors on board play a major role in addressing agency problems. They also ratify the decisions taken by management prior to execution of the decisions. Studies have reported that corporate governance characteristics influence dividend payout. However, little is known about the influence of board structures that include board size, outside directors, and gender on the decision to pay dividends. This paper is aimed at exploring how board characteristics affect the decision to pay dividends. Using 267 firm-year observations (2013-2015) and random effect logit regression, the study finds board size, outside directors on board, as well as the number of female directors to have great influence on the decision to pay dividends.

#### Keywords:

Decision to pay dividends, board structures, Nigeria

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## 1. Introduction

The board of directors is the topmost organ of an organisation. The directors on board play a major role in addressing the issue of agency problems as they hire, fire and compensate top level managers [1]. The board also endorses and monitors vital decisions considered by the management of the organisation prior to their execution.

Dividend payout tends to minimise agency conflicts. It reduces the level of free cash flow that otherwise due to the availability of cash, the management may be tempted to undertake investments that may be beneficial to them at the expense of shareholders [2]. In addition, dividend payout exposes the managers to more scrutiny by the capital market as firms may have to generate funds through the issuance of new capital [3].

The linkage between corporate governance with dividends is documented by [4]. They argued that attributes such as board size, board composition, and board diversity and the propensity to pay dividends mitigate the agency problem. Hence board attributes and the propensity to pay dividends

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complement one another. Having a strong board and paying dividends are two factors that lower the level of agency problem within the firm [5]. Therefore, it is believed that when board size, board composition, and board diversity are higher, dividends may be increased and vice versa. However, evidence on the association between board size, board composition, and board diversity and the propensity to pay dividends remains scarce. Most previous studies have examined the effect of board characteristics on the level of dividend payout [6,7]. However, the decision on the level of dividend payout is considered after the directors have agreed to pay dividends. Hence, the decision to pay dividends is a prerequisite to the decision on the level of dividend and therefore, it is expected that the decision to pay dividends should be determined prior to considering the magnitude of the dividends. Very limited studies have examined the association between the propensity to pay dividends and board size [8], board composition [8–10], and board diversity [11,12]. One of the weaknesses of the previous studies is that they focused on only one or two of the variables under review. None of these studies examined all the variables at the same time. In addition, [13] found inconsistent results with regards to the effect of board size and board independence on the decision to pay dividends. In contrast, this study intends to combine the three board structure variables to examine their influence on the decision to pay dividends. Therefore, this paper seeks to offer additional evidence to the literature on the propensity to pay dividends by answering the following question: does the increase in board size, board composition, and board diversity results in a higher likelihood to pay dividends and vice versa?

This paper employs panel data approach where the sample firms were drawn from the Nigerian listed firms from 2013 to 2015. The authors are motivated from the fact that the attention of most scholars for example [14–16] have been tilted towards determining the fundamental characteristics of firms. The scholars suggested that firm size, investment opportunities or growth, and profitability are the most important factors that drive the decision to pay dividends. Nigeria may serve as a testing environment because a recent study [17] of the firms in the country documented that dividend payments by the firms fluctuate. The recent study noted that there is prevalence of non-dividend payments such that during the last five years, 45 out of 200 listed firms consistently failed to pay dividends to their shareholders.

Meanwhile, corporate governance is seen as a measure to protect the interest of shareholders of the firms [4] and strong governance practices will increase the likelihood of dividend payments. Thus, managers will be forced to disgorge cash to shareholders in the form of dividend payments [18,19].

The Nigerian code of corporate governance was introduced in 2003 given the large scale of corporate financial frauds. The code was revised to address any potential undue advantage that the managers may have and was implemented in 2011. The code, which was issued by the Securities and Exchange Commission of Nigeria is referred to as the Code of Corporate Governance for Public Companies 2011 (2011 SEC Code). Henceforth, firms were instructed to comply with all its pronouncements. Therefore, with the revised 2011 SEC Code in place, it is expected that shareholders will receive higher returns from the firms in the form of dividends, particularly as the 2011 SEC Code originated from common law, which tends to provide better protection as compared to corporate governance (CG) that is based on civil law based [4]. Based on these, Nigeria will serve as a good ground for testing on whether the CG attributes will influence the decision to pay dividends.

This paper is structured into the following sections. Section One consists of the introduction and this is followed by Section Two, which presents the literature review and hypothesis development. Section Three presents the methodology and definition of the variables while Section Four consists of the conclusion and summary.

## 2. Literature Review and Hypothesis Development

### 2.1 Board Structures

Corporate governance mechanisms could be either internal or external. The internal form of the CG mechanisms are basically the attributes of board structures. According to [20], regulatory bodies tend to focus their attention more on the internal mechanisms. Board of directors' related attributes or characteristics are one of these internal mechanisms. These internal mechanisms are incorporated with a view to control the entrenched managers or provide solution to the agency conflicts. The agency conflicts arise as a result of the modern corporate settings where ownership and control are separated [21]. The external form of CG mechanisms is considered as a last resort. It consists among others of the market for corporate control, takeovers, and market monitoring [22]. Both internal and external mechanisms are structured towards protecting the shareholders.

#### 2.1 Board Size

Board size refers to the total number of directors who sit on the board of a company. It includes the independent, executive, and non-executive directors. Evidence has shown that there are divergent views with regards to the size of the board. The first group is of the view that the size of the board ought to be small which they claim that it provides better monitoring role in the firm and has less probability of free riding problems [23,24]. This argument lends support from the perspective of the agency theory.

Contrary to the above position, some scholars such as [25-27] indicated that a large board will encompass heterogeneous directors that are rich in resources. These resource rich directors may provide and connect the firm with its outside environment. The last group of scholars contended that the size of the board should be in line with its operations [28,29]. This means that when the organisation is small, then the board is expected to be small and vice versa. Irrespective of the size of the board whether large, medium or small, one important thing is that there should be directors on board of every firm who can assist in resolving conflict of interest between management and the owners.

Empirical evidence has revealed that the likelihood to pay dividends and the board size are positively related. In line with their hypothesis, [8] have found that the propensity to pay dividends and the board size are positively correlated. This implies that when a firm has a larger board, the shareholders obtain a higher return from their investments in the form of dividends. This finding is in line with [30] who found a significant positive association between the likelihood to pay dividends and the board size using 264 listed firms on the Istanbul Stock Exchange. Similar evidence was also established when examining the level of dividend payout [31-33], which is in accordance with the outcome model where paying dividends serves as a control against the tendencies of managers to consume free cash flow. Moreover, the agency theory requires the board to be small in size which will enable effective and efficient monitoring [23]. Further, [19] concluded that firms that are susceptible to agency problems are expected to demonstrate greater propensity to pay dividends and vice versa. Therefore, this study hypothesizes that:

H1: Positive association between the decision to pay dividends and board size prevails

## 2.2 Board Composition

Board composition in this paper refers to the proportion of non-executive directors sitting on the board [34]. Theories have suggested that the basic role of the non-executive directors is to monitor the management to ensure that the interests of the agent and the principal are aligned on one hand [21]. On the other hand, it has also been asserted that the non-executive directors play a major role in advising and linking the firm with external environment [35]. They are expected to be the critics, bring in independent opinions to the board, and contribute to the diversity given their skills and expertise that will lead to higher performance [36]. In this regard, one may draw inference on the rationale behind the 2011 SEC Code that requires all listed firms to have more outside directors on the board. Thus, outside directors are selected based on their expertise and capabilities to bring greater performance to the firm. This argument is in line with [37] who found that firms that increase the number of their outside directors have an improvement in their operating performance and higher share prices in the market.

As the agency theory predicted the outside directors to be a tool for providing protection to the shareholders particularly the minority [38,39], this implies that firms with greater number of outside directors are likely to demonstrate stronger governance practices. Studies have established that a higher percentage of outside directors on the board is an indication of a higher likelihood to pay dividends [9]. For this reason, the free cash flow will not be left in the hands of managers that may invest the cash at the expense of the owners of the firm [2,40] and hence, dividends mitigate the agency costs [3,41]. In line with this argument, the study hypothesizes that:

H2: Decision to pay dividends is positively associated with greater number of outside directors

## 2.3 Board Diversity

Board diversity refers to the inclusion of female directors on the board. Previous studies have linked diversity in gender to the agency theory. These theorists demonstrated that female directors have greater impact on the agency costs. Accordingly, [42] supported their prediction that having a higher proportion of female directors present on the board reduces agency costs. The results showed that increasing diversity may have advantageous effects for firms for instance improving board monitoring [43]. Besides the agency theory that highlighted the importance of female directors on the board, status characteristics theory is also considered as a theory that can explain diversity in terms of gender [44]. It states that individuals of low status are expected to have increased levels of ability such that the high status of others will be perceived as the same as theirs [45]. [46] reported that for a female to be considered as an individual with high ability, she must present additional evidence of ability more than what is required from a male. The study also found that more female directors of the Fortune 1000 companies have advanced degrees as compared to their male counterparts.

Empirical evidence supports the notion that female directors play a vital role in the firm's settings. Studies have found that female directors tend to be more focused than the male directors and they require more detailed information prior to considering a decision [47]. This is in conformity to the findings [48] that the female directors are effective and efficient both at board and committee levels and therefore may lead to downsizing of audit fees. Thus, the female directors will use their expertise and experience to exercise their duty diligently. Additionally, [49] compared the boards in terms of gender and documented that the boards with higher gender diversity pay higher dividends. This finding is an indication that females on board may use dividends to reduce agency costs of the firm.

In conclusion, [12] reported that females on board influence the likelihood of dividend payments positively thus providing better monitoring activities as the percentage of female directors increases. Hence this study hypothesizes that:

H3: Decision to pay dividends and board diversity are positively related

### **3. Methodology**

The study employed secondary data using panel data approach that covers a period of three years between 2013 and 2015. This period is an important period that marks the beginning of full compliance of the revised 2011 SEC Code for the listed firms. The sample comprises non-financial firms listed on the main market of the Nigerian Stock Exchange. The financial firms were excluded as the factors influencing their dividend payout decisions are different and the results may be biased [50]. Furthermore, the financial sector is also obliged to comply with the Central Bank of Nigeria (CBN)'s Code of Corporate Governance 2014 and prudential guidelines in addition to the 2011 SEC Code. A final sample of 89 firms were selected based on the availability of the information required to conduct the analysis, thus obtaining 267 firm-year observations. Following [51], data on board structures variables were hand collected from the annual reports of the selected firms. Because the dependent variable is a binary, the study uses logit regression model. In addition, random effect panel is used because it controls for other unobserved heterogeneity of firm characteristics. The method is also used by [52]. Random effects also provides better p-values, and are more efficient estimator results [53]

#### *3.1 Definition of Variables*

Following Hu and Kumar [10] and Sharma [9], a binary number '1' is used when a firm pays dividends and '0' for otherwise as a proxy for the propensity to pay dividends as the dependent variable. The independent variables for the model include board size, board composition, and board diversity. Board size is measured as the total number of directors that occupy the board seat of a firm [8]. Board composition is measured as the percentage of non-executive directors on the board [6,34], and lastly board diversity is measured as the number of female directors at a particular time [11,12].

#### *3.2 Control Variables*

A set of control variables are also included in the general model to include return on assets. These are measured as the ratio of accounting earnings before interest and taxes to the book value of assets [30], firm age that is the number of years since listing [10], and current sales less previous sales divided by previous sales as a measure of investment growth [54].

#### *3.3 Model of the Study*

Stated below is the model that will be used to estimate the relationship between the dependent and independents variables:

$$\text{DIVDUMMY}_{it} = \beta_0 + \beta_1 \text{BSIZE}_{it} + \beta_2 \text{BCOMP}_{it} + \beta_3 \text{BFEM}_{it} + \beta_4 \text{ROA}_{it} + \beta_5 \text{INVST}_{it} + \beta_6 \text{FAGE}_{it} + \text{eit} \quad (1)$$

where; DIVDUMMY is a binary the dependent variable '1' a firm pays dividend, otherwise '0' BSIZE = board size; BCOMP = board composition; BFEM= female directors on board; ROA= return on asset; INVST= investment growth; FAGE= age of the firm.

#### 4. Findings and Discussion

This section reports the descriptive statistics and the correlation matrix for the whole sample firms as well as dividend payers and non-payers. It also captures the main regression results.

**Table 1**  
Descriptive statistics for the full sample (n= 267 firms)

Variable	Obs.	Mean	Std. Dev	Min	Max
BSIZE	267	8.786517	2.189201	5	17
BCOMP	267	0.6796042	0.1417781	0.222222	0.888889
BFEM	267	1.041199	0.855207	0	5
ROA	267	0.0297954	0.1244576	-0.932631	0.719351
INVST	267	0.0304319	0.3604047	-0.859957	5.02721
FAGE	267	23.2809	12.71343	5	50

Significant levels are at \*\*\*1% \*\*5% & \*10%, respectively. \* *P-values* are one-tailed on predicted direction.

Table 1 depicts the average board size for the entire sample that is nine members with a minimum of five and a maximum of 17 members. The results of the descriptive statistics also indicate that the average composition of the non-executive directors on the board of the listed non-financial services firms is 68%. The firms hire a minimum of about 22% and a maximum of 90% of non-executive directors. The results show that the sampled firms responded to the 2011 SEC Code that requires firms to have more outside directors. Further, the mean of the number of female directors on the board is one and the maximum is five. In examining the firms' characteristics, the statistics show that the firms generated on average 3% on its return on assets (ROA). The minimum, maximum, and standard deviation of the return on assets (ROA) of the firms are -0.93%, 72%, and 12.4% respectively. Moreover, the firms have a mean score of annual growth on sales of 3%. For the age of the firms, the minimum age since listing is 5 years while there are some firms that have been listed on the Nigerian stock exchange for about 50 years.

**Table 2**  
Descriptive statistics for the payers and non-payers

Variable	Payers: Div=1, (n=160)				Non-payers: Div=0, (n=107)				t-value
	Mean	Std Dev	Min	Max	mean	Std Dev	Min	Max	
BSIZE	9.269	2.242	5	17	8.065	1.9	5	13	0.0000
BCOMP	0.719	0.117	0.222	0.889	0.621	0.156	0.231	0.875	0.0000
BFEM	1.363	0.739	1	5	0.561	0.791	0	3	0.0000
ROA	0.068	0.104	-0.398	0.719	-0.029	0.130	-0.932	0.257	0.0000
INVST	0.030	0.188	-0.655	0.733	0.031	0.522	-0.856	5.027	0.9931
FAGE	25.112	12.55	5	50	20.542	12.516	5	42	0.0038

Significant levels are at \*\*\*1% \*\*5% & \*10%, respectively. \* *P-values* are one-tailed on predicted direction.

For the statistical comparison between dividend paying and non-paying firms, Table 2 shows that paying firms tend to have distinct attributes in both governance and financial characteristics. The size of the board for the paying firms has a mean value of nine as compared to eight for the non-paying firms. For the presence of outside directors on the board, the paying firms have a mean of 71.9% compared to 62.1% for the non-paying firms. In terms of gender diversity, the paying firms have a minimum of one female on board, whereas the non-paying firms have none. The dividend payers earn 7% return on assets which is far greater than 3% loss for the non-payers.

Annual sales growth as a proxy for investment growth of the paying and non-paying firms were found to be similar at approximately 3%. Lastly the mean years since listing for the payers is 25 years while that of the non-payers it is 20 years. This shows that the paying firms are mature and hence, consistent with [54] that dividend paying firms are older and more mature as compared to the non-payers.

Tests of mean differences in Table 4.2 also indicate that board size, composition, and diversity are significantly higher ( $p < 0.01$ ,  $p < 0.01$ , and  $p < 0.01$  respectively) in dividend paying firms. In addition to that, return on assets and age of the firms are also statistically significantly higher ( $p < 0.01$  and  $p < 0.01$  respectively) in firms that pay dividends. These imply that the dividend paying firms are more profitable and older than the non-dividend paying firms.

**Table 3**  
*Correlation Matrix of Study*

Variable	DIVDUMMY	BSIZE	BCOMP	BFEM	ROA	INVST	FAGE
DIVDUMMY	1.0000						
BSIZE	0.2699*	1.0000					
BCOMP	0.3403*	-0.0242	1.0000				
BFEM	0.4603*	0.3702*	0.2303*	1.0000			
ROA	0.3844*	0.0669	0.2013*	0.2238*	1.0000		
INVST	-0.0006	-0.0451	0.0062	0.0990	0.1220*	1.0000	
FAGE	0.1765*	0.0751	0.0494	0.1936*	0.1300*	0.0453	1.0000

Significant levels are at \*\*\*1% \*\*5% & \*10%, respectively. \* *P-values* are one-tailed on predicted direction. DIVDUMMY is the dependent variable '1' a firm pays dividend, otherwise '0' is a proxy of propensity to pay dividend; BSIZE is the number of directors on board; BCOMP is the proportion of outside directors on board; BFEM is the number of female directors on board; ROA is the return on asset as a proxy for profitability, as the ratio of accounting earnings before interest and taxes to the book value of assets; INVST as a proxy of investment growth measured as the current sales less previous sales divided by previous sales, and FAGE is the age of the firm since listing on the NSE market.

Table 3 reports the correlation matrix. The correlation was run to ascertain the relationship between the dependent and independent variables for a sample of 267 firm-year observations. The dependent variable that is the decision to pay dividends is positively and significantly associated with board size, board composition, and board diversity as well as the return on assets and the firm's age. However, the decision to pay dividend is negatively related to sales growth. Furthermore, the highest correlation between the independent variables, which is between board size and board diversity is 0.3702, less than the 0.80 thresholds. [55] posited that the correlation between explanatory variables that is more than 0.8 will likely to have a serious multicollinearity threat. Moreover, calculation of Variance-Inflation-Factor (VIF) was also conducted. The results indicate that none of the variables go beyond the threshold of 10. The highest VIF is 1.32 and the mean VIF is 1.13, which are far below the upper limit of 10 that will pose a multicollinearity problem [55].

Table 4 above provides the regression results of the model. The finding reveals that firms having greater number of board members have greater likelihood of paying cash dividends ( $p < 0.05$ ). This result is consistent with Hypothesis 1 that is board size and dividend decision are positively related.

The result is in line with [8,30–33] that found positive association between board size and dividend decision. This means that firms with greater number of directors on the board may have more expertise and professionals that are vast in knowledge and experience. Moreover, these directors may be more likely to protect and promote the interest of shareholders through disbursing cash. The larger board may offer better monitoring since there are more directors that can challenge the decisions that favour the interests of the chief executive [31]. The result also supports the agency theory that dividends serve as a mean of protecting shareholders [4,41].

**Table 4**

Logistic regression results

Variables	Obs.	Coef.	Std. Err.	Z	P> z
BSIZE	267	0.4087107	0.196194	2.08	0.037**
BCOMP	267	6.437821	2.358903	2.73	0.006***
BFEM	267	2.558925	0.6393284	4.00	0.000***
ROA	267	12.64123	3.569266	3.54	0.000***
INVST	267	-0.226916	0.7114236	-0.32	0.750
FAGE	267	0.0212793	0.0282515	0.75	0.451
Cons	267	-10.32475	2.91564	-3.54	0.000***
Wald chi2 (6)				29.41***	
Cragg & Uhler's (Nagelkerke) R <sup>2</sup>				0.541	
Maximum likelihood (Cox &Snell) R <sup>2</sup>				0.401	
McFadden's Adj R <sup>2</sup>				0.341	
Class accuracy: overall				85.39%	
Case Divdummy=1				91.25%	
Case Divdummy=0				76.64%	

Significant levels are at \*\*\*1% \*\*5% & \*10%, respectively

The decision to pay dividends is also linked to board composition which is the number of outside directors on the board. The empirical evidence shows a positive and significant association between board composition and the decision to pay dividends. The level is established at  $p < 0.01$  as shown in Table 4. Hence, having a greater number of outside directors on board will ensure that dividends are paid to shareholders and thus mitigating the agency costs. The self-interested manager may be disciplined by the capital market since the firm may have to raise capital through the market when the need arises, therefore subjecting the manager to capital market monitoring [3]. The findings are in line with previous evidence that is the greater number of outside directors increases the likelihood of distributing higher dividends [8,9,13,34]. Hence, the evidence supports the complementary role that outside directors and dividends play within the firm's settings.

The last hypothesis which is about the effect of gender on the decision to pay dividends is also supported. The study established a positive and significant relationship between female directors on board and the likelihood of dividend payment. Thus, the study fails to reject the hypothesis. The evidence corroborates the findings of various studies such as [11] and [12] among others that is females on board will likely protect the shareholders by affecting the payment of dividends. Hence, the findings lend support to agency theory that dividends mitigate the agency conflict between managers and owners of the firm [42]. Further, status characteristics theory is also supported by this result. The theory posited that individuals of low status are expected to demonstrate higher levels of ability such that the high status of others such as the males that dominate the board will be perceived as the same as theirs [45]. In this regard, the female director(s) will like to show extra efforts such that she proves to be capable of handling corporate board issues and protecting the firm owners at board and committee levels [48].

Besides the primary variables used in the study, return on assets, sales growth, and firm age were used as control variables. For the control variables, the study finds that return on assets is the only control variable that is statistically significant and with the expected sign. The result implies that profitable firms are more likely to pay dividends and the results support the findings of [9,10].

## 5. Conclusion

The study examined the influence of some board characteristics on the decision to pay dividends. The analysis found that greater number of directors on board, higher number of outside directors, and the number of female directors on board have the likelihood to influence dividend decisions. This result has implication on the 2011 SEC Code and the owners of the firms. The findings imply that the 2011 SEC Code has great influence on the dividend decision and therefore, the regulatory authority should continue to ensure that all non-compliant firms are encouraged to comply as it will enhance shareholders' confidence and thereby encouraging more investment in the capital market. On the shareholders' part, the results should continue to motivate them to support policies that will bring in more outside and female directors during the general meetings. Similarly, the shareholders should support a board that is relatively large as the members may challenge decisions that favour the self-dealing manager.

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