

Do Shareholders Fight for Firm Value or Market Value in Emerging Markets? The Mediating Effect of Board Structure Dynamics on Dividend Policy Decision

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Abstract: The paper examines the mediating effect of board structure dynamics on the relationship between dividend payout and shareholders' wealth at the firm level and market level. Panel regression models are used by applying data from 27 listed firms in Ghana between 2010 and 2017. We find that board structure dynamics have a direct effect on shareholders' wealth at both levels. However, the results reveal new evidence that board structure dynamics play a mediating role on the relationship between dividend policy decision and shareholders' wealth only at the market level. We find that independent directors and CEO duality significantly reduce market value of shareholders through dividend payout decision. However, independent directors and longer CEO tenure in office mediate a positive effect on the relationship between dividend policy and shareholders' wealth at the market level. Thus, the mediating effect of board structure dynamics, particularly independent directors and CEO tenure, are important in predicting a positive relationship between dividend policy and shareholders' wealth at the market level than at the firm level. Therefore, regulatory bodies and investors should provide strong board structure dynamics that serve as a mediating mechanism for prudent dividend policy decisions that add value to shareholders' wealth.

1. Introduction

Dividend policy decision has been an important predictive power used to forecast the wealth of shareholders (Ofori-Sasu *et al.*, 2017). Board structure, which involves the collective role of board members and board characteristics, influence dividend payout decision and also builds investors' confidence (Fuzi *et al.*, 2016). Moreover, the various compositions of board structure are key determinants of dividend policy (Alias *et al.*, 2016). Thus, dividend policy decision and characteristics of board structure are critical for enhancing shareholders' wealth. Studies show that directors on the board take prudent decisions on dividend payout in order to influence shareholder wealth. However, in countries where there is weak investor protection, the key questions are: (1) do dividend policy decisions have a direct effect on shareholders' wealth or does dividend policy interact with board structure dynamics to impact shareholders' wealth?; (2) does the mediating effect of board structure dynamics influence the relationship between dividend policy and shareholders' wealth at the firm level or at the market level?

In emerging markets like Ghana, the recent folding up of some firms, including some listed financial institutions, has clearly shown the negative consequences associated with weak internal board structure mechanisms. Thus, the opportunistic behaviour from managers, as well as agency interactions at various levels of the firm affects both dividend payout decision and shareholder wealth either at the firm level or market level. Moreover, successions of unexpected corporate failures have raised explosive concern among researchers (Krechovska and Prochazkova, 2014) regarding corporate board decisions about dividend payout. Evidence from developing literature shows conflicting results between various measures of board structure characteristics and dividend policies in Africa (Kyereboah-Coleman, 2007) and other

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emerging economies (Hussein and Venkatram, 2013). Thus, the mixed results are associated with weak corporate governance, contextual differences, institutional framework as well as differences in the measurement of variables in emerging countries. Moreover, the mediating effect of board structure dynamics on the relationship between dividend policy and shareholder wealth at the firm level or market level has not been empirically analysed and discussed from the emerging economies perspective. This paper focuses on the Ghanaian context to investigate the interactive effect of board structure dynamics and dividend policy on shareholders' wealth.

Dividend policy is one of the strategic financial decisions that lie in the hands of the board of directors. The decision whether to pay out a dividend to shareholders or retain company profit for future gains cannot be ignored among corporations since dividend policy has a positive effect on shareholder wealth (Ofori-Sasu *et al.*, 2017). In addition, the board of directors plays a significant role in influencing dividend policies in order to improve shareholders' wealth. An effective board structure mechanism that ensures a prudent dividend policy decision is evidenced in the attainment of shareholder value (Ranti, 2013).

This paper empirically examines two related hypotheses. First, board structure dynamics (board independence and CEO duality) decrease the market value of shareholders but no relationship exists between these dynamics of the board structure and firm value of shareholders. Second, dividend policy increases shareholder wealth at the market level when interacted with board structure dynamics, but does not improve shareholder wealth at the firm level. Although, a previous study has tested the relationship between dividend policy and shareholder value at the firm level (Ofori-Sasu *et al.*, 2017), there is a dearth of studies that has examined the effect of dividend policy on shareholder wealth at the market level as well as the interaction effect of board structure dynamics on the influence of dividend policy decision on shareholder wealth. The paper is conducted in the context of emerging markets, particularly in Ghana, where the dividend policy framework and board structure dynamics are relatively undeveloped and the firms are the main drivers of economic activities. From an economic policy perspective, it is important to understand whether board structure dynamics mediate the relationship between dividend policy decision and shareholder wealth at the firm level or market level. In this study, dividend policy and board structure dynamics, as well as introducing an interaction term between these dynamics and dividend policy decision were used to predict the outcome of shareholders' wealth generated from the firm or in the market.

The rest of the paper is organized into four sections. A literature review of related studies is contained in Section 2, and Section 3 discusses the data and methodology. The empirical results are contained in Section 4 and Section 5 concludes the study.

2. Literature Review

2.1 Theoretical Review

Shareholders are interested in maximizing their wealth either at the firm level or market level. In corporate finance, there are two main concepts underlying shareholders' wealth maximization, that is, whether corporate board structure and dividend policy decision are relevant or irrelevant to shareholders' value maximization. These concepts can be explained by theories in corporate finance (Abor, 2007). In corporate governance literature, the behaviour of the board of directors and the structure of the board are explained by agency theory; stakeholder theory (Hill and Jones, 1992); stewardship theory (Donaldson and Davis, 1991); and resource dependency theory (Pfeffer and Salancik, 1978). Agency theory occurs when agents prioritize their own benefits at the expense of shareholders, which eventually affects value maximization of shareholders. An agency problem can be caused by information asymmetry where there is less information disclosure between shareholders and managers. For agency theory, shareholders' value is expected to fall when there is a conflict of interest between managers and owners of the firm. Donaldson and Davis (1991) argued contrary to the agency theory and propounded the stewardship theory that there is no agency problem since the CEO has the ultimate responsibility to perform well. Shareholders have the interest of maximizing their wealth. Thus, stakeholder theory advocates that the interest of the firm lies on stakeholders and that the firm must be managed in the interest of these stakeholders. The resource dependency theory explains how the external resources of firms affect the behaviour of the firm. Companies are able to achieve their objectives based on the various resources they depend on. The non-executive directors of the board are able to use resources, particularly information that is not internally available to the firm and at the same time favours shareholders' interest.

On the other hand, the quest to maximize shareholders' wealth is influenced by existing theories that explain the relevance of dividend policy. Jensen and Meckling (1976) indicated that agency theory enables managers to pay high dividends to

shareholders and also reduce the internal cash flows subject to both management discretion and board decision. Another theory underlying dividend policy is the 'pecking order theory', where firms prefer internal sources of funds at a cheaper cost over debts, and would prefer debt over external equity because of the higher cost associated with equity funds. The residual theory reflects dividend policy where firms would prefer ploughing back profits (retained earnings or residual earnings) after identifying growth opportunities from positive net present value projects, rather than paying out dividends. In relation to bird-in-hand theory, dividend policy reflects share price appreciation where insiders are forced to allocate some profits or all profits for dividend payment decision purposes (i.e., retaining earnings for capital gains or paying a dividend to shareholders). Dividend payout is less risky to capital gains from price appreciation because a dividend is paid immediately it is declared, while capital gains reflect in the future (Bhattacharya, 1979). Tax-preference effect theory indicates the relevance of taxes to dividend policy decisions. Thus, favourable tax treatment of capital gains over dividend yield forces investors to prefer a low dividend payout to a high dividend payout. This implies that firms should keep low dividend payouts to avoid attracting a high tax payout. In terms of dividend irrelevant theory, Miller and Modigliani (1961) argued that investors are indifferent between capital gains and the dividend payout decision, especially in a perfect capital market. The signalling theory states that 'dividend policy decisions signal or communicate information about firm's future to potential investors' (Lintner, 1956) and therefore, an increase in dividend payments reflects high cash flows in the future.

2.2 Board Structure Dynamics and Dividend Policy Decision

As defined by Mayer (1997), 'ways of aligning the interest of investors and managers and ensuring that firms operate efficiently for the benefit of investors' is referred to as corporate governance. However, the emergence of corporate governance was motivated by the financial crisis that hit the Asian Stock Markets, partly because of weak corporate governance among the firms in South East Asia. This triggered the development of more robust corporate governance measures that restored the confidence of shareholders. The composition of board structure depends on size of board members, CEO duality, CEO tenure in office, and board independence. These characteristics of board structure are what this paper uses as the dynamics of board structure. Outside directors act independently to protect the interest of shareholders. Thus, a high proportion of outside directors may positively affect shareholders' value (Nicholson and Kiel, 2007). Dalton *et al.* (2003) claim that larger board size increases board diversity and knowledge, and eventually improves shareholder wealth. Gul and Leung (2004) posit that CEO duality, a situation where the CEO doubles as the board chairperson and executive director, results in ineffective board supervision.

The payment of dividend is considered as a source of cash flows to shareholders. Dividend policy helps managers as well as board members to decide how much each shareholder should receive in relation to dividend payments (Ross *et al.*, 2008). When a firm generates profits, part of the profit could be retained and the other part could also be paid to shareholders as dividend (Abdulkadir *et al.*, 2016). The decision is made by the board of trustees of the company, in accordance with dividend policy. They can also decide to pay all as dividend or plough back all profits into the firm. The price of a share is attributed to the amount of dividend distributed to shareholders, either as cash or share dividend (Adelegan, 2003). Dividend policy decisions may impact the value of the firm in two ways, either through retained earnings, which causes growth or appreciation in the value of the firm, or through a dividend payment to induce investors to trade the stocks of dividend paying firms. Thus, the value of firms that trade in the stock market are influenced by dividend policy.

3. Empirical Literature

Empirical studies have shown the effect of board structure characteristics on the dividend policy decision. Alias *et al.* (2016) examined the relationship between board structure, free cash flow and dividend per share, using 361 non-financial listed firms in Malaysia over the 2002–2007 period. From their findings, dividend per share increases when board structure is characterized by a large number of independent directors. Moreover, independent directors and free cash flow on dividend were positively and significantly related. They found that an increase in board size decreases dividend per share due to agency cost. Further, CEO duality and dividend per share were negatively and significantly associated. Studies also show that a stronger board governance structure pays out higher dividends (Adjaoud and Ben-Amar, 2010). In terms of the relationship between board structure and shareholders' wealth, some studies (e.g. Dzingai and Fakoya, 2017) highlight that board size and

independent boards positively affect firm value; CEO duality has a negative impact on firm value; and CEO tenure in office influences firm value. However, these studies measured shareholders' value using accounting ratios at the firm level. Ofori-Sasu *et al.* (2017) examined the effect of the dividend policy decision on shareholders' value of listed companies in Ghana using market value per share held by shareholders, and they found that dividend per share improved shareholders' value of listed firms in Ghana.

It is obvious that the dividend payout decision is relevant and impacts shareholders' wealth (Sarwar, 2013); board structure characteristics also influence shareholders' value (Dzingai and Fakoya, 2017) and the structure of corporate board influences dividend policy decision — which translates into impacting shareholders' wealth (Amidu, 2007). Aspects of board structure, namely board duality, independence and size, have been found to promote corporate decisions in the interest of shareholders (Brickley *et al.*, 1997). However, it appears that the mediating effect of board structure on the relationship between dividend payout decision and shareholders' wealth maximization is scarce in empirical literature from the perspective of emerging economies. That is, if board structure dynamics have a role to play by influencing dividend policy decision, does this role affect the firm value or market value of shareholders?

The study looks at how different dynamics of board structure interact with the dividend policy decision to influence shareholders' wealth and whether the impact is concentrated on shareholders' wealth at the firm level or market level.

4. Data and Methodology

The study examines the mediating effect of corporate board structures on the relationship between dividend policy decision and shareholders' wealth. The study used a panel data of 27 firms listed on the Ghana Stock Exchange market for an 8-year period (2010–2017). This is because the dataset for the selected listed companies were available for the specified period in the study. Data for the macroeconomic variables were obtained from Bank of Ghana Data scope for the specified years. The study employed the random effect estimation model because firms included in the sample were randomly selected, the entity's error term is uncorrelated with predictor variables, and the listed firms existed before the start of the period under study. Moreover, the study used the Hausman test to confirm whether the random effect model was appropriate (Table 1).

4.1 Empirical Estimation

The model specifications employed in the study are shown below.

1. Mediating effect of board structure on the relationship between dividend policy decision and shareholders' wealth at the market level:

$$\begin{aligned}
 MVA_{it} = & \beta_0 + \beta_1 DIVPOLICY_{it} + \beta_2 BIND_{it} + \beta_3 BODSIZE_{it} + \beta_4 CEOD_{it} + \beta_5 CEOT_{it} \\
 & + \beta_6 (BIND * DPS)_{it} + \beta_7 (BODSIZE * DPS)_{it} + \beta_8 (CEOD * DPS)_{it} + \beta_9 (CEOT * DPS)_{it} + \beta_{10} FIRMSIZE_{it} \\
 & + \beta_{11} OVHDEXP_{it} + \beta_{12} FIRMAGE_{it} + \beta_{13} FIRM RISK_{it} + \beta_{14} FAT_{it} + \beta_{15} TAX_t + \beta_{16} GDPgrowth_t + \beta_{17} INTrate_t \\
 & + \beta_{18} INFrate_t + \mu_{it}
 \end{aligned} \tag{1}$$

2. Mediating effect of board structure on the relationship between dividend policy decision and shareholders' wealth at the firm level:

$$\begin{aligned}
 ROA_{it} = & \alpha_0 + \alpha_1 DIVPOLICY_{it} + \alpha_2 BIND_{it} + \alpha_3 BODSIZE_{it} + \alpha_4 CEOD_{it} + \alpha_5 CEOT_{it} \\
 & + \alpha_6 (BIND * DPS)_{it} + \alpha_7 (BODSIZE * DPS)_{it} + \alpha_8 (CEOD * DPS)_{it} + \alpha_9 (CEOT * DPS)_{it} + \alpha_{10} FIRMSIZE_{it} \\
 & + \alpha_{11} OVHDEXP_{it} + \alpha_{12} FIRMAGE_{it} + \alpha_{13} FIRM RISK_{it} + \alpha_{14} FAT_{it} + \alpha_{15} TAX_t + \alpha_{16} GDPgrowth_t + \alpha_{17} INTrate_t \\
 & + \alpha_{18} INFrate_t + \varepsilon_{it}
 \end{aligned} \tag{2}$$

Table 1: Summary of variables

Variable		Measurement	Expectations
Dependent variables			
Shareholders' wealth	Market level: market value added (MVA_{it})	$(Marketvalueofequity)_{it} - (Bookvalueofequity)_{it}$	Expected to increase as firm value increases
	Firm level: Firm value (ROA_{it}):	$\frac{Net\ Profit_{it}}{Total\ Assets_{it}}$	Positive as net profits increase
Independent variables			
Dividend policy decision	Dividend per share ($DIV\ POLICY_{it}$), which is a dummy variable	$DIV\ POLICY = \frac{Dividend\ Paid_{it}}{Number\ of\ shares_{it}} \geq 0$ (>0 if firm paid dividend; 0 if firm did not pay dividend in a particular year)	Positive/negative
Board structure dynamics	Board independence ($BIND_{it}$)	Dummy variable: 1, when the number of non-executives members are more than the number of executive members, and 0 otherwise	Positive/negative
	Board size ($BODSIZE_{it}$)	Total number of board members	Positive/negative
	CEO duality ($CEOD_{it}$)	Dummy variable: 1, if CEO is also the chairperson /vice chairperson of the board, otherwise 0	Positive/negative
	CEO tenure ($CEOT_{it}$)	Number of years a CEO has been in office	Positive/negative
Mediating variable	Interaction terms between board structure dynamics and dividend policy	Board independence multiplied by dividend per share ($BIND * DPS_{it}$)	Positive/negative
		Board size multiplied by dividend per share ($BODSIZE * DPS_{it}$)	Positive/negative
		CEO duality multiplied by dividend per share ($CEOD * DPS_{it}$)	Positive/negative
		CEO tenure multiplied by dividend per share ($CEOT * DPS_{it}$)	Positive/negative
Control variables			
Firm specific variables	Firm size ($FIRM\ SIZE_{it}$)	Natural log of total assets	Positive/negative
	Overhead costs ($(OVHD\ EXP)_{it}$)	$\frac{Overhead\ Expenses_{it}}{Total\ Assets_{it}}$	Negative/positive
	Firm age ($FIRM\ AGE_{it}$)	Number of years since its incorporation	Positive/negative
	Firm risk ($FIRM\ RISK_{it}$)	σROA	Positive
	Tangibility (FAT_{it})	$\frac{Fixed\ Assets_{it}}{Total\ Assets_{it}}$	Positive/negative
Macroeconomic variables	Corporate tax (TAX_{it})	Corporate tax per year	Negative
	GDP growth ($GDP\ growth_t$)	$\frac{GDP_t - GDP_{t-1}}{GDP_{t-1}}$	Positive
	Interest rate ($INRate_t$)	Interest rate per year	Positive
	Inflation rate ($INFrate_t$)	Inflation rate per year	Positive/negative

5. Empirical Results and Discussion

The study presents descriptive statistics of the variables. Summary statistics and Pearson's correlation are used to screen and test the reliability of the dataset. These are presented in order to ensure consistency, efficiency, reliability and robustness of findings.

Table 2 shows the summary statistics of the variables employed in the shareholders' wealth maximization models estimated between 2010 and 2017 of listed firms in Ghana. The summary statistics is employed to screen for outliers which have the potential to affect the efficiency, consistency and biasness of the estimated coefficients. However, the summary statistics do not show any evidence of outliers. Table 3 reports the Pearson Correlation Coefficient matrix to check for possible multicollinearity between the explanatory variables. For multicollinearity to occur, the correlation coefficient between two

Table 2: Summary statistics

Variable	Mean	Std. dev.	Min.	Max.	VIF
<i>MVA</i>	17.8616	1.9858	12.1115	22.6282	–
<i>ROA</i>	0.08006	0.1647	–0.7066	0.6581	–
<i>DIV POLICY</i>	0.0894	0.3409	0	1	1.29
<i>BIND</i>	0.7216	0.4495	0	1	1.40
<i>BODSIZE</i>	8.0455	2.2034	3	13	1.65
<i>CEOD</i>	0.0625	0.2428	0	1	1.41
<i>CEOT</i>	2.9432	1.7129	1	7	1.76
<i>OVHD EXP</i>	0.1731	0.3239	–0.1728	3.5774	1.34
<i>FIRM SIZE</i>	18.1215	2.3011	12.5436	22.2546	2.54
<i>FIRM RISK</i>	0.1485	0.3784	0.0063	2.5396	1.47
<i>FIRM AGE</i>	36.0284	21.7999	5.00	104	1.31
<i>FAT</i>	0.6819	3.3125	0.00005	41.4867	1.07
<i>TAX</i>	0.1619	0.4426	–3.3263	1.7113	1.19
<i>GDP Growth</i>	5.4426	3.0219	1.68	11.25	2.06
<i>INTrate</i>	14.3155	4.2888	8.9	23	1.93
<i>INFrate</i>	12.3060	3.8614	8.73	19.25	1.53

Notes: Significant level: p -value < 1% (***): VIF mean = 1.62.

variables should be 0.7 or more (Kennedy, 2008). As shown in Table 2, we observe no presence of the multicollinearity problem among the variables as confirmed by a mean variance inflation factor (VIF) of 1.62 and each of the variables has a VIF below 10 (see Table 3). The study proceeds to analyse the interactions between board structure, dividend policy decision and shareholders' wealth.

5.1 Regression Results and Discussion

The regression results depict how the interaction between board structure dynamics and the decision to pay dividend impact shareholders' wealth. We employ the Hausman test to choose whether the fixed effect model or the random effect model is appropriate. From Table 3, a χ^2 statistic from the Hausman test is not significant; indicating that the random effect estimation is preferred to the fixed effect. The robust standard error was used to correct for heteroscedasticity and autocorrelation while year trend dummies were employed to control for endogeneity and omitted variable biases. To begin, the study examines the relationship between board structure dynamics and shareholders' wealth at the firm level and at the market level (see Table 4).

From Table 4, the negative and significant relationship between board independence and shareholders' wealth suggests that increasing the number of non-executive directors on the board will increase board diversity, which leads to a situation that makes it difficult for independent directors to have cohesiveness in decision making due to large size (board independence), thus decreasing shareholders' wealth at the market level and firm level. Board size was positively and significantly related to shareholders' wealth at the market level and firm level which supports the work by Hussein and Venkatram (2013). CEO duality was negatively and significantly associated to shareholders' wealth at market level but had no significant effect on shareholder wealth at the firm level; which implies that the presence of CEO duality decreases the wealth of shareholders at the market level but does not influence the wealth of shareholders at the firm level, which supports the work by Kyereboah-Coleman (2007). CEO tenure in office has a negative and significant relationship with shareholders' wealth in the market but it has a positive relationship with shareholders' wealth at the firm level. The result indicates that CEOs who stay longer in their position, focus more on firm value creation (Abor, 2007) rather than creating value at the market level; thus, decreasing the shareholders' wealth.

From Table 4, we show that board structure dynamics that are statistically significant to shareholders' wealth at the market level include board independence, board size, CEO duality and CEO tenure whereas board independence, board size and CEO tenure are statistically significant to shareholders' wealth at the firm level. We observe that board structure dynamics have an inconsistent relationship with shareholders' wealth at both levels.

Table 3: Pearson's correlation matrix

	<i>DIV</i>	<i>POLICY</i>	<i>BIND</i>	<i>BODSIZE</i>	<i>CEOD</i>	<i>CEOT</i>	<i>FIRM-SIZE</i>	<i>OVHD</i>	<i>EXP</i>	<i>FIRM AGE</i>	<i>FIRM RISK</i>	<i>GDP Growth</i>	<i>INTrate</i>	<i>INFrate</i>	<i>TAX</i>	<i>FAT</i>
<i>DIV POLICY</i>	1.0000															
<i>BIND</i>	-0.2554	1.0000														
<i>BODSIZE</i>	0.1357	0.2782	1.0000													
<i>CEOD</i>	-0.0669	-0.2586	-0.1335	1.0000												
<i>CEOT</i>	-0.1827	-0.0058	-0.0826	0.0773	1.0000											
<i>FIRM SIZE</i>	0.1534	0.3035	0.5253	-0.3878	0.1257	1.0000										
<i>OVHD EXP</i>	-0.0480	-0.0937	0.0400	0.3176	-0.0518	-0.3818	1.0000									
<i>FIRM AGE</i>	-0.1732	-0.0330	-0.0807	0.2156	0.0836	-0.1493	0.0211	1.0000								
<i>FIRM RISK</i>	-0.0570	-0.2366	-0.2469	0.0997	0.0378	-0.4181	0.1527	-0.1940	1.0000							
<i>GDP Growth</i>	0.0535	0.0631	-0.0416	-0.0482	0.3581	0.0908	-0.1116	0.0480	0.0419	1.0000						
<i>INTrate</i>	-0.0699	0.1144	0.0526	-0.0318	0.4425	0.1606	-0.0830	0.0492	-0.0321	0.0635	1.0000					
<i>INFrate</i>	-0.0217	-0.0102	0.0589	0.0099	-0.1538	-0.0334	0.1300	-0.0269	-0.0960	-0.4994	-0.2491	1.0000				
<i>TAX</i>	0.0542	0.0523	-0.0052	0.1028	-0.0847	-0.0391	0.0739	-0.2818	0.2170	-0.0788	-0.0228	-0.0005	1.0000			
<i>FAT</i>	-0.0186	0.0552	0.1032	-0.0216	-0.0677	0.1060	-0.0350	0.0658	-0.0057	0.0686	-0.0564	-0.0503	-0.0170	1.0000		

Table 4: Effect of board structure dynamics on shareholders' wealth

	Market value (MVA)		Firm value (ROA)	
	Fixed effect (1)	Random effect (2)	Fixed effect (3)	Random effect (4)
<i>BIND</i>	-1.4685*** (0.5014)	-1.4561*** (0.5168)	-0.0781*** (0.0264)	-0.0797*** (0.0280)
<i>BODSIZE</i>	1.4481*** (0.5467)	1.2586** (0.5471)	0.0267 (0.0251)	0.0094** (0.0049)
<i>CEOD</i>	-3.7500*** (0.7108)	-3.7143*** (0.8593)	0.2021 (0.2088)	0.1762 (0.2082)
<i>CEOT</i>	-0.3736*** (0.1456)	-0.4031** (0.1727)	0.0019 (0.0045)	0.0131*** (0.0033)
<i>FIRM SIZE</i>	0.4471*** (0.0748)	0.4661*** (0.0751)	0.0007 (0.0112)	0.0032 (0.0126)
<i>OVHD EXP</i>	0.3597** (0.1580)	0.3219** (0.1636)	0.0597 (0.048)	0.0553 (0.0503)
<i>FIRM AGE</i>	0.0067 (0.0101)	0.0069 (0.0093)	0.0017** (0.0008)	0.0018** (0.0008)
<i>FIRM RISK</i>	5.7693** (2.926)	6.1648** (3.1267)	-0.2496 (0.2536)	-0.1432 (0.2755)
<i>GDP growth</i>		0.0306 (0.0546)		-0.0073*** (0.0027)
<i>INTrate</i>		0.0211 (0.0476)		-0.0061** (0.0030)
<i>INFrate</i>		0.0741** (0.0349)		-0.0022 (0.0033)
<i>_cons</i>	5.4628 (2.5159)	4.6436 (2.5942)	-0.0715 (0.2797)	0.0428 (0.1903)
<i>R-square</i>	0.3494	0.3627	0.2071	0.2396
Hausman test				
Chi ² (9)	4.75	4.32	1.53	5.52
Prob > chibar ²	0.8559	0.6649	0.9092	0.7864

Notes: Number in parentheses are *t*-statistics. Significant levels: *** 1%, ** 5% and * 10%.

Further, we analyse the mediating effect of board structure dynamics on the relationship between dividend policy decision and shareholders' wealth maximization at the firm level and at the market level by using the random effect model. We run five different models for the first and second equations above to check for robustness and consistencies in the signs (positive and negative) attached to the coefficient of the regressors.

Board structure dynamics directly affect shareholders' wealth (see Table 4), however, the random effect estimation results in Table 5 reveal that the dynamics of board structure are not statistically strong in predicting shareholders' wealth when dividend policy decision and the interaction terms were introduced in the models. From Table 5, we observe that board size and CEO tenure in office had no significant relationship with shareholders' wealth. Board independence was negative and significantly linked to market value in model 6, but the relationship was inconsistent across the estimation models. The results show that board structure dynamics had no significant relationship with shareholders' wealth at the firm level. However, CEO duality was negative and significantly associated with shareholders' wealth at the market level and the relationship was consistent.

The results show that shareholders' wealth is maximized at the market level when the dividend policy decision is taken. We observe that the dividend policy decision positively and significantly affects shareholders' wealth at the market level. However, the decision to pay a dividend has no significant effect on shareholders' wealth at the firm level. Moreover, the results provide evidence to support that the dividend policy decision predicts shareholders' wealth at the market level, rather than firm level. The first lag of dividend policy was positive and significantly associated with shareholders' wealth. This suggests that the previous year's decision to pay out a dividend to shareholders improves shareholders' wealth at both the market and firm levels. This supports the residual theory where insiders of a firm prefer to retain their profits for capital gains. The results give the indication that in the current year, firms in Ghana prefer to retain their profits for capital appreciation in order to increase shareholders' wealth at the market level. Thus, in the current year, the dividend policy decision will not significantly influence shareholders' wealth at the firm level since insiders of the firm prefer ploughing back rather than paying out a dividend.

Introducing dividend policy and the interaction term (*BIND * DIV POLICY*) improves the marginal effect and the significance level associated with board independence. Thus, the mediating effect of board independence (i.e., interaction term between board independent and dividend policy) on the dividend policy decision causes a negative and significant relationship between board independence and shareholders' wealth at the market level. The implication is that non-executive directors will prefer paying out dividend rather than ploughing back earnings for future gains — leading to a decrease in shareholders' wealth at the market level. However, the interaction term between dividend policy and board independence has a positive and

Table 5: Random effect estimation: Mediating effect of board structure dynamics in predicting the relationship between dividend policy decision and shareholders' wealth

Variables	Shareholders' wealth (market level)							Shareholders' wealth (firm level)						
	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14				
<i>DIV POLICY</i>	1.790*** (0.426)	1.554*** (0.346)	2.863** (1.125)	1.793*** (0.425)	0.448 (0.503)	0.00864 (0.0202)	-0.0174 (0.0186)	0.127 (0.0920)	0.0206 (0.0183)	-0.0256 (0.0389)				
<i>DIV POLICY_{t-1}</i>	0.970*** (0.322)	0.970*** (0.322)		0.932*** (0.339)		0.638 (0.743)		0.975*** (0.326)		1.218*** (0.0989)				
<i>BIND</i>	-0.451 (0.307)	-0.712** (0.291)	-0.440 (0.318)	-0.443 (0.299)	-0.409 (0.337)	-0.0437 (0.0349)	-0.0724 (0.0445)	-0.0425 (0.0349)	-0.0177 (0.0160)	-0.0426 (0.0361)				
<i>BODSIZE</i>	-0.00576 (0.00376)	-0.00452 (0.00302)	-0.00495 (0.00401)	-0.00579 (0.00377)	-0.00466 (0.00386)	0.000365 (0.000321)	0.000502** (0.000231)	0.000455 (0.000302)	0.000261 (0.000344)	0.000393 (0.000341)				
<i>CEOD</i>	-1.967*** (0.391)	-1.932*** (0.444)	-1.937*** (0.399)	-1.934*** (0.373)	-1.965*** (0.410)	0.00637 (0.145)	0.0103 (0.148)	0.00968 (0.145)	0.126 (0.115)	0.00642 (0.146)				
<i>CEOT</i>	-0.204 (0.131)	-0.167 (0.105)	-0.191 (0.128)	-0.204 (0.131)	-0.203 (0.127)	0.00816 (0.0146)	0.0122 (0.0127)	0.00966 (0.0143)	0.00937 (0.0135)	0.00819 (0.0146)				
<i>BIND*DIV POLICY</i>		6.266*** (0.956)					0.690*** (0.204)							
<i>BODSIZE* DIV POLICY</i>			-0.00977 (0.00639)					-0.00108 (0.000943)						
<i>CEOD* DIV POLICY</i>				-18.26 (22.94)					-66.43*** (9.672)					
<i>CEOT* DIV POLICY</i>					1.202*** (0.435)					0.0307 (0.0286)				
<i>FIRMSIZE</i>	0.293*** (0.0447)	0.277*** (0.0534)	0.289*** (0.0454)	0.292*** (0.0456)	0.266*** (0.0553)	0.00687 (0.00580)	0.00519 (0.00781)	0.00650 (0.00592)	0.00441 (0.00605)	0.00618 (0.00642)				
<i>OVHD EXP</i>	0.825 (0.558)	0.751 (0.457)	0.800 (0.556)	0.829 (0.567)	0.748 (0.537)	0.109** (0.0502)	0.101* (0.0541)	0.106** (0.0506)	0.124** (0.0505)	0.107** (0.0509)				
<i>FIRIMAGE</i>	0.0121*** (0.00228)	0.0116*** (0.00318)	0.0120*** (0.00225)	0.0120*** (0.00226)	0.0128*** (0.00261)	0.000829*** (0.000261)	0.000766** (0.000347)	0.000818*** (0.000269)	0.000535 (0.000433)	0.000847*** (0.000254)				
<i>FIRMIRISK</i>	0.403** (0.172)	0.357** (0.160)	0.411** (0.183)	0.403** (0.174)	0.371* (0.218)	0.0386 (0.0406)	0.0335 (0.0394)	0.0395 (0.0400)	0.0374 (0.0468)	0.0378 (0.0410)				
<i>FIRIMAGE²</i>	4.515*** (0.834)	4.292*** (0.767)	4.497*** (0.821)	4.520*** (0.838)	4.460*** (0.810)	0.0329 (0.0734)	0.00832 (0.0680)	0.0309 (0.0727)	0.0487 (0.0751)	0.0315 (0.0725)				
<i>FAT</i>	-0.0156 (0.0144)	-0.0230*** (0.00892)	-0.0159 (0.0148)	-0.0154 (0.0145)	-0.0156 (0.0148)	-0.00230** (0.000998)	-0.00313* (0.00174)	-0.00234** (0.000956)	-0.00182* (0.00109)	-0.00231** (0.000993)				
<i>TAX</i>	0.177	0.139	0.173	0.176	0.172	-0.0315** (0.00998)	-0.0357** (0.00174)	-0.0320** (0.000956)	-0.0350*** (0.00109)	-0.0316** (0.000993)				

Continued

Table 5 (Continued)

Variables	Shareholders' wealth (market level)					Shareholders' wealth (firm level)				
	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
<i>GDP Growth</i>	(0.240) -0.0459 (0.0945)	(0.222) -0.0803 (0.101)	(0.241) -0.0445 (0.0982)	(0.241) -0.0466 (0.0943)	(0.241) -0.0760 (0.0920)	(0.0152) 0.00895*** (0.00219)	(0.0178) 0.00516*** (0.00254)	(0.0151) 0.00911*** (0.00260)	(0.0119) 0.00642*** (0.00152)	(0.0154) 0.00818*** (0.00257)
<i>INTrate</i>	-0.00312 (0.0751)	-0.0146 (0.0826)	-0.000556 (0.0769)	-0.00369 (0.0750)	-0.0214 (0.0755)	0.00363* (0.00191)	0.00237 (0.00230)	0.00392* (0.00230)	0.00156* (0.000928)	0.00317 (0.00223)
<i>INFrata</i>	0.0294 (0.0602)	0.0110 (0.0652)	0.0310 (0.0619)	0.0291 (0.0600)	0.0209 (0.0604)	0.00549*** (0.00176)	0.00347* (0.00194)	0.00568*** (0.00200)	0.00451*** (0.000995)	0.00527*** (0.00190)
<i>ytrend</i>	-0.242 (0.196)	-0.207 (0.224)	-0.258 (0.207)	-0.241 (0.196)	-0.212 (0.194)	-0.0150* (0.00858)	-0.0112 (0.00711)	-0.0168* (0.00867)	-0.0114 (0.0103)	-0.0143 (0.00871)
Constant	10.61*** (1.438)	11.40*** (1.701)	10.57*** (1.521)	10.63*** (1.426)	11.38*** (1.535)	-0.248*** (0.0916)	-0.161 (0.129)	-0.253*** (0.0999)	-0.181 (0.119)	-0.228** (0.107)
Observations	210	210	210	210	210	216	216	216	216	216

Notes: Numbers in parentheses are *t*-statistics. Significant levels: *** 1%, ** 5% and * 10%. Models 5 to 9 show the estimations for dividend policy and board structure dynamics and its effect on shareholders' wealth at the market level. Models 10 to 14 show the estimations for dividend policy and board structure dynamics and its effect on shareholders' wealth at the firm level.

significant effect with shareholders' wealth at the market level and firm level. This gives the indication that non-executive directors (board independence) encourage dividend payout decisions in order to increase shareholders' wealth at the market level and firm level.

Introducing an interaction term between CEO tenure and dividend policy ($CEOT * DIV POLICY$) does not cause a significant effect between board structure dynamics and shareholders' wealth. However, the interaction term ($CEOT * DIV POLICY$) was positive and significantly linked to shareholders' wealth at the market level, indicating that the mediating effect of CEO tenure on dividend policy leads to an increase in shareholders' wealth at the market level. This shows that CEO tenure has no direct effect on shareholders' wealth but has a partial mediating effect on the relationship between dividend policy and shareholders' wealth at the market level.

On the other hand, although the interaction term between CEO duality and dividend policy had no significant impact on the relationship between board structure dynamics and shareholders' wealth at the firm level, there was a negative and significant effect between the interaction term and shareholders' wealth at the firm level. We observe that CEO duality has no direct effect on shareholders' wealth at the firm level but it has a mediating effect on dividend policy to influence shareholders' wealth at the firm level. This suggests that CEOs become chief executive directors and also chair the board to take prudent dividend policy decisions that favour shareholders' wealth at the firm level. Further, overhead cost was positively and significantly (5 per cent) associated with shareholders' wealth at the firm level. This indicates that spending more on inside directors provides a form of incentives that motivate them to work efficiently to improve firm value.

We observe that GDP growth, interest rate and inflation rate had a positive and significant association with shareholders' wealth at the firm level. This suggests that board structure dynamics and dividend policy decisions maximize shareholders' wealth at the firm level effectively in a macroeconomic environment. Thus, external environmental factors are important for predicting shareholders' wealth at the firm level.

5.2 Discussion Summary

The paper finds out whether shareholders maximize their wealth at the firm level or at the market level by employing the random effect model to analyse the mediating effect of board structure dynamics on the relationship between dividend policy decision and shareholders' wealth. First, we find that board structure dynamics have a direct effect on shareholders' wealth maximization at both the market level and firm level. We find a stronger direct effect of independent directors, board size, and CEO tenure on shareholders' wealth maximization at the market level and firm level. However, CEO duality has a direct effect on shareholders' wealth only at the market level. Moreover, it is noticeable that board size increases shareholder wealth at both levels whereas board independence decreases shareholder wealth at both levels. CEO duality and CEO tenure decrease shareholders' wealth at only the market level. The relationship between CEO tenure and shareholders' wealth was not consistent at both levels of wealth maximization.

Shareholders fight for wealth maximization at the firm level and market level but they do so through the dividend policy decision and board structure dynamics. Thus, shareholder wealth maximization is a function of board structure dynamics and the dividend policy decision. In our second analysis, we introduce dividend policy and interaction terms between board structure dynamics and dividend policy to predict shareholders' wealth. The rationale is to investigate the mediating effect of board structure dynamics on dividend policy decisions and whether the decision to pay out a dividend translates into shareholder wealth maximization at the market level or firm level.

Introducing dividend policy and interaction terms neutralizes the relationship between board structure dynamics and shareholders' wealth at the firm level. Thus, board structure dynamics do not have a direct impact on shareholders' wealth at the firm level when there is an interaction effect of dividend policy. We observe that the dividend policy decision positively and significantly affects shareholders' wealth at the market level. We find that the mediating role of board independence causes a negative and significant relationship between board independence and shareholders' wealth at the market level. However, the interaction term between board independence and dividend policy increases shareholders' wealth at the market level and firm level. The implication is that outside directors make a prudent dividend payout decision in favour of shareholders' wealth maximization at both levels. Moreover, the interaction term, that is, the mediating effect of CEO tenure on dividend policy, leads to an increase in shareholders' wealth at the market level. This implies that CEOs stay longer in office to influence dividend policy decisions in order to increase shareholders' wealth in

the market. We observe that CEO duality has no direct effect on shareholders' wealth at the firm level but it plays a mediating role on the relationship between dividend policy decision and shareholders' wealth by reducing shareholders' wealth at the firm level (see Table 5, model 13).

6. Conclusion and Policy Implication

In conclusion, the study used the random effect model to provide evidence that board structure dynamics alone play an effective role in influencing shareholders' wealth at the market level and firm level. Our findings reveal that independent directors and CEO duality have a direct negative effect on shareholders' wealth at the market level. However, the relationship between board structure dynamics and shareholders' wealth maximization is inconsistent but the dynamics play a strong, effective and mediating role on the relationship between dividend policy decision and shareholders' wealth only at the market level. Thus, board structure dynamics is more effective for predicting shareholders' wealth at the market level in the presence of the dividend policy decision. Specifically, we find that independent directors indirectly reduce the market value of shareholders only but they provide a better dividend policy decision (through dividend payout) in order to increase shareholders' wealth at both levels. This is because the outside directors of the firms prefer earnings retention to dividend payout in seeking shareholder value maximization at the market level but prefer dividend payout in order to maximize shareholders' wealth at both levels.

CEO duality reduces market value directly without a dividend policy framework, but it mediates through dividend policy to increase firm value. Also, CEO tenure indirectly influences shareholder wealth by mediating through dividend policy to increase market value. We can deduce from the findings that independent directors and CEO tenure mediate a positive effect on the relationship between dividend policy and shareholders' wealth only at the market level. This suggests that independent directors as well as the CEO's longer stay in office influence the dividend policy decision in such a way that shareholders' wealth will be increased at the market level.

Thus, shareholders fight for market value maximization since the mediating effect of board structure dynamics, particularly, independent directors and CEO tenure, are important in predicting the relationship between dividend policy and shareholders' wealth at the market level than at the firm level. Therefore, outside directors should put in place strong board mechanisms and a dividend policy framework that increases shareholders' wealth. A CEO, who doubles as board chairman and managing director of the firm should focus on policies that maximize shareholder wealth, both at the firm level and market level. CEOs should be encouraged (by incentive plan) to maintain an increasing wealth of shareholders, as long as they stay in office. Finally, regulatory bodies and investors should provide strong and effective board structure dynamics that serve as a mediating mechanism for prudent dividend policy decisions that add value to shareholders' wealth. The study suggests that further research should extend datasets to include more emerging economies in Africa with longer time periods and test the robustness of the results. Future studies can also look at various measures of board structure characteristics and dividend policies and how these variables interact with shareholders' wealth at different levels from the perspective of firms across different groups in sub-Saharan Africa and the world at large.

References

- Abdulkadir, R. I., N. A. H. Abdullah and W. C. Wong (2016), 'Dividend Payment Behaviour and its Determinants: The Nigerian Evidence', *African Development Review*, Vol. 28, No. 1, pp. 53–63.
- Abor, J. (2007), 'Corporate Governance and Financing Decisions of Ghanaian Firms', *The International Journal of Business in Society*, Vol. 7, No. 1, pp. 83–92.
- Adelegan, O. (2003), 'The Impact of Growth Prospect, Leverage and Firm Size on Dividend Behaviour of Corporate Firms in Nigeria', *African Development Review*, Vol. 15, No. 1, pp. 35–41.
- Adjaoud, F. and W. Ben-Amar (2010), 'Corporate Governance and Dividend Policy: Shareholders' Protection or Expropriation?' *Journal of Business Finance and Accounting*, Vol. 37, No. 5 & 6, pp. 648–67.

- Alias, N., M. H. Yaacob, R. A. Rahim and F. M. Nor (2016), 'Board Structure, Free Cash Flow and Dividend per Share in Malaysia Listed Firms: An Empirical Study of Interaction Effect', *Malaysian Journal of Society and Space*, Vol. 12, No. 2, pp. 58–67.
- Amidu, M. (2007), 'How Does Dividend Policy Affect Performance of the Firm on Ghana Stock Exchange', *Investment Management and Financial Innovations*, Vol. 4, No. 2, pp. 103–12.
- Bhattacharya, S. (1979), 'Imperfect Information, Dividend Policy, and "the Bird in the Hand" Fallacy', *The Bell Journal of Economics*, Vol. 10, No. 1, pp. 259–70.
- Brickley, J. A., J. L. Coles and G. Jarrell (1997), 'Leadership Structure: Separating the CEO and Chairman of the Board', *Journal of Corporate Finance*, Vol. 3, No. 3, pp. 189–220.
- Dalton, D., C. Daily, T. Certo and R. Roengpitya (2003), 'Meta-Analyses of Financial Performance and Equity: Fusion or Confusion? *Academy of Management Journal*, Vol. 46, pp. 13–26.
- Donaldson, L. and J. H. Davis (1991), 'Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns', *Australian Journal of Management*, Vol. 16, No. 1, pp. 50–65.
- Dzingai, I. and M. B. Fakoya (2017), 'Effect of Corporate Governance Structure on the Financial Performance of Johannesburg Stock Exchange (JSE)-Listed Mining Firms', *Journal of Sustainability*, Vol. 9, No. 867, pp. 1–15.
- Fuzi, S. F. S., S. A. A. Halim and M. K. Julizaerma (2016), 'Board Independence and Firm Performance', *Procedia Economics and Finance*, Vol. 37, pp. 460–65.
- Gul, F. A. and S. Leung (2004), 'Board Leadership, Outside Directors' Expertise and Voluntary Corporate Disclosures', *Journal of Accounting and public Policy*, Vol. 23, pp. 351–79.
- Hill, C. W. L. and T. M. Jones (1992), 'Stakeholder-Agency Theory', *Journal of Management Studies*, Vol. 29, No. 2, pp. 131–54.
- Hussein, S. K. and R. Venkatram (2013), 'Corporate Governance and Firm's Value: An Empirical Analysis of Agri-input Firms in India', *IRACST – International Journal of Commerce, Business and Management (IJCBM)*, Vol. 2, No. 6, pp. 353–61.
- Jensen, M. C. and W. H. Meckling (1976), 'Theory of the Firm: Managerial Behaviour, Agency Costs, and Ownership Structure', *Journal of Financial Economics*, Vol. 3, pp. 305–50.
- Kennedy, P. (2008), *A Guide to Econometrics* 6th edn. Blackwell Publishing, Oxford, UK.
- Krechovska, M. and P. T. Prochazkova (2014), 'Sustainability and its Integration into Corporate Governance Focusing on Corporate Governance Management and Reporting', *Procedia Engineering*, Vol. 69, pp. 1144–51.
- Kyereboah-Coleman, A. (2007), 'Corporate Governance and Shareholder Value Maximization: An African Perspective', *African Development Review*, Vol. 19, No. 2, pp. 350–67.
- Lintner, J. (1956), 'Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes', *The American Economic Review*, Vol. 46, No. 2, pp. 97–113.
- Mayer, F. (1997), 'Corporate Governance, Competition, and Performance', in S. Deakin and A. Hughes (eds.), *Enterprise and Community: New Directions in Corporate Governance*, Blackwell Publishers, Oxford, UK.
- Miller, M. H. and F. Modigliani (1961), 'Dividend Policy, Growth and the Valuation of Shares', *The Journal of Business*, Vol. 34, pp. 411–33.
- Nicholson, G. J. and G. C. Kiel (2007), 'Can Directors Impact Performance? A Case-Based Test of Three Theories of Corporate Governance', *Corporate Governance: An International Review*, Vol. 15, pp. 585–608.
- Ofori-Sasu, D., J. Y. Abor and A. K. Osei (2017), 'Dividend Policy and Shareholders' Value: Evidence from Listed Companies in Ghana', *African Development Review*, Vol. 29, No. 2, pp. 293–304.

- Pfeffer, J. and G. Salancik (1978), *The External Control of Organizations: A Resource-Dependence Perspective*, Harper and Row, New York.
- Ranti, U. O. (2013), 'Determinants of Dividend Policy: A Study of Selected Listed Firms in Nigeria', *Change and Leadership*, Vol. No. 17, pp. 107–19.
- Ross, S., R. Westerfield, J. Jaffe and B. Jordan (2008), *Modern Financial Management* 8th edn. McGraw Hill, New York.
- Sarwar, M. S. (2013), 'Effect of Dividend Policy on Share Holder's Wealth: A Study of Sugar Industry in Pakistan', *Global Journal of Management and Business Research Finance*, Vol. 13, No. 7, pp. 47–54.