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DIVIDEND POLICY DECISION AND MARKET TO BOOK VALUE: FURTHER EVIDENCE FROM NIGERIA AND GHANA

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Abstract

In this study, we consider the impact of dividend policy decisions on market to book value ratio in Nigeria and Ghana. Our sample includes 27 listed companies (21 from Nigeria and 6 from Ghana), while we employ the Arellano-Bond first difference approach to dynamic panel generalized method of moment (GMM). The results obtained from regressing market to book value ratio on two measures of dividend decision: namely, dividend per share and dividend yield, show that corporate dividend policy decisions play a highly significant role in determining the firm market value. The results also show that market to book value has a low but significant persistence. Therefore, we strongly advise investors in both countries to incorporate information about firms' dividend decisions in their pricing models for good investment strategy and optimal investment decisions.

Key words: Dividend policy decisions, market to book value ratio, dynamic panel GMM.

Introduction

Dividend decision making is a top management affair. Whether a firm is to distribute its earnings to shareholders depends on articulated policy guidelines of the firm. The members of the board of directors of the company decide on what a company pays as dividend or whether to retain net income for further business in new projects. The policy stands between paying the dividend in cash or retaining net earnings. The policy puts into consideration the objective of owners' wealth and provision of adequate financing. Retained earnings is for future growth of the company, if the management discovered that a profitable project is available for investment. The realization makes dividend payment baseless and irrelevant for making growth an alternative foregone cost. It is necessary to balance between disbursement of free cash flow and business opportunities in the decision.

Dividend policy is a well-research concept, both as a determinant of another of another related concept such as profitability, investment, financing, and liquidity, and as a factor being determined. However, the link between dividend policy and firm value has continued to be an important issue both theoretically and in the empirical literature. In theory, there are mixed views, with one strand of literature (for example, Miller and Modigliani (1961)) arguing that dividend policy of a firm has no real implication on its external value, and another strand (for example, Jenson (1986), Jensen and Meckling (1976), Fama and Jensen (1983), Bhattacharya (1979) and Miller and Rock (1985)). Contending it plays a significant role in firm valuation. Also, there are mixed explanations regarding why managers announce dividends even among those who argue that dividend policy of a firm matters for its value. On the one hand, it is argued that managers pay

dividends to reduce the agency costs associated with the conflict of interest between them and firm owners, while on the other hand, dividend payments, not only a means of reducing the information gap between managers and shareholders, but also serve as a signal that the firm has great prospects in the future.

These conflicting theoretical explanations have also led to numerous empirical studies focusing on the role of dividend policy in firm value determination. Unfortunately, the main problem has been largely unresolved as there are mixed findings from previous studies. It is against this backdrop that this study is undertaken focusing on the effect of dividend policy decisions on firm value in Nigeria and Ghana using the dynamic panel GMM framework.

The remainder of this study has four main sections. The next section is the literature review. Section 3 describes the data and empirical strategy, section four contains the main empirical results and analysis, while section 5 summarizes and concludes the study.

Theoretical Issues

Dividend policy has attracted significant attention in the academic literature and has been linked to other related concepts such as capital structure, investment, liquidity, profitability and firm value. In terms of its relationship with firm value, many theoretical arguments have emerged from the literature. The seminal paper by Miller and Modigliani (1961) hit the ground running by arguing against the relevance of dividend announcements to firm value. These authors argued that under certain market conditions such as on information asymmetry and no transaction costs, shareholders would be indifferent on whether the firm pays dividend or not, hence dividend policy does not matter for share prices. Although, this irrelevance of dividend payment view was highly celebrated and viewed as a foundation to modern corporate finance, it has also been well-criticized owing to what scholars have described as unrealistic or spurious assumptions. This criticism has also led to the development of alternative explanations regarding the effect of dividend policy decisions on firm value.

Two alternative theories that have been well-cited in the literature are agency costs theory and signaling theory. Although, both theories agree that dividend policy matters for firm value, they are however, based on different assumptions. While agency theory is based on the assumption that managers pay dividend to reduce the agency costs arising from the conflict of interests between them and the firm owners, signaling theory assumes that dividends have significant information content and serve as a signal that the firm has great growth prospects.

Empirical Literature

Adesola and Okwong (2009) assessed the factors determining dividend policy and the extent to which dividend decision affects stock prices in Nigeria. While the study covers the period from 1996 to 2006, the data used were obtained from 27 quoted firms across 15 sectors including the financial sector. Using the conventional OLS method, their empirical evidence suggests that dividend variables respond to both previous dividend and current earnings but are insensitive to both growth prospect and firm size. Also, movement in stock prices can be explained by both current dividend and current earnings.

Okafor and Chijioke-Mgbame (2011) used the multiple regression analysis to examine the extent to which share price volatility depends on dividend policy in Nigeria. While their empirical models included two measures of dividend policy: dividend yield and

payout ratio, as the main explanatory factors, asset growth, firm size and earnings variability all were included as the control variables. Their sample, which spans from 1998 to 2005, includes both 4 banks, and 2 companies each from brewing, oil and gas, and food and beverages industries. They found that dividend yield consistently showed a negative impact on share price volatility, the impact of dividend payout is mixed, being positive in some periods and negative in other periods, all at a low-level significance.

Uwuigbe, Jafaru and Ajayi (2012) estimated an empirical model that links dividend policy to financial performance using the traditional multiple regression technique. The estimated model also included firm-specific factors such as ownership structure and firm size as control variables. Based on yearly panel data obtained from 50 selected firms from 2006 to 2010, they found that dividend policy and financial are positively related with high-level significance. They also found that both ownership structure and firm size play a highly significant role in determining the dividend policy of Nigerian firms.

Using the three stages least square (3SLS) approach, Fumey and Doku (2013) examine whether factors such as leverage, investment, liquidity, size, risk, tax, profitability, growth and asset structure can explain changes in dividend payout ratio in Ghana. Based on a sample of 33 quoted firms from 2004 to 2009, they found some evidence indicating that dividend payments across Ghanaian companies follow pecking order theory, hence they can be used to influence firm market value.

Oyinlola and Ajeigbe (2014) examined, using regression and Granger causality models, the impact of dividend policy changes on the market value of listed firms in Nigeria from 2009 to 2013. The sample comprises 110 year-date observations on 22 listed companies across different sectors. They found that dividend payout and retained earnings both exert a positive and highly significant effect on shareholders' wealth.

In Ghana, Ofori-Sasu, Abor and Osei (2017) used the pooled OLS regression model to examine the extent to which dividend policy affects firms' shareholders' wealth. The study focuses on listed firms covering from 2009 to 2015 with data collected from the firms' financial reports at yearly frequency. They found that dividend policy, which is determined by factors such as profitability, firm age, tangibility, tax, economic condition and interest rate, has a significant effect on firm value. However, while firm value responds positively to changes in dividend per share, it is impacted negatively by changes in dividend yield.

The study by Michael (2019) took a different approach by focusing on economic value added and it is affected by a firm's dividend policy in Nigeria. Dividend policy variables examined are payout ratio, dividend per share, dividend yield and retention ratio. The results from the fixed effects model, which outperforms its competitors: random effect and pooled regression, based on Likelihood ratio and Hausman panel specification tests, show that all dividend decision variables, except payout ratio, exert a highly significant effect on economic value added. However, the effect of dividend yield is negative.

Husain and Sunardi (2020) examined empirically the effects of profitability and dividend ratios on firm value in Indonesia using path analysis and Sobel tests. While firm value is measured by market to book value ratio, return on assets and dividend pay-out ratio are used as the explanatory variables. Their sample includes 11 listed firms in the automotive and component industry from 2014 to 2018. They found evidence suggesting that both profitability and dividend payment have no significant effects on firm value. Dividend policy also does not mediate the relationship between firm value and profitability.

To conclude, the empirical review suggests that there are mixed empirical findings regarding the effect of dividend policy on firm value. Also, several indicators have been used to measure firm value in relation to dividend policy effects. These include Tobin Q,

market value per share, market to book value and price-earnings ratio. However, none of the reviewed studies in Nigeria and Ghana measured firm value in terms of market to book value ratio. Therefore, there is good reason to reexamine the effects of dividend policy on firm value using market o book value as a measure. Also, none of the previous reviewed studies considered the impact of dividend policy using a dynamic panel GMM framework, which controls both heterogeneity and endogeneity problems often associated with panel data analysis. Hence, it is a significant contribution to the literature using this framework, which has been widely used in other countries, to investigate dividend-value relationship in the context of Nigeria and Ghana.

Methodology

Data and Sample

Our sample comprises 21 quoted non-financial firms in Nigeria and 6 listed firms in Ghana observed yearly from 2008 to 2017. Hence, there are altogether 210 year-date observations in our dataset. Table 1 presents the individual companies and their respective countries of operation. The dependent variable is market to book value ratio (MBV) which is used as proxy for firm market value. Our main regressors are dividend per share (DPS) and dividend yield (DY), both used as measures of dividend policy. All data were collected from the annual reports and financial statements of the individual companies as well as stock market reports from both countries. We use EViews 9 for data analysis. Figures 1 – 6 show the graphical description of our data.

Table 1: Selected Companies in Nigeria and Ghana

S/N	COUNTRY	COMPANY
1	NIGERIA	A.G. LEVENTIS PLC
2	NIGERIA	ACADEMY
3	NIGERIA	ALUMIN. EXTRU INDPLC
4	NIGERIA	BOC GASES PLC
5	NIGERIA	CHAMPIONS
6	NIGERIA	DANGOTE CEMENT
7	NIGERIA	GUINESS
8	NIGERIA	JULIUS BERGER
9	NIGERIA	LAFARGE
10	NIGERIA	LIVESTOCK FEEDS PLC
11	NIGERIA	MAY & BAKER PLC
12	NIGERIA	MORISON
13	NIGERIA	NIGERIAN BREWERIES
14	NIGERIA	NCR PLC
15	NIGERIA	NESTLE
16	NIGERIA	OANDO
17	NIGERIA	OKOMU OIL PLC
18	NIGERIA	TOTAL
19	NIGERIA	TRIPPLE GEE & CO. PLC
20	NIGERIA	UNIVERSITY PRESS
21	NIGERIA	UPDC
22	GHANA	AFRICAN CHAMPION INDUSTRIES
23	GHANA	COCOA PROCESSING COMPANY
24	GHANA	GHANA OIL COMPANY
25	GHANA	GUINNESS
26	GHANA	PZ
27	GHANA	UNILEVER

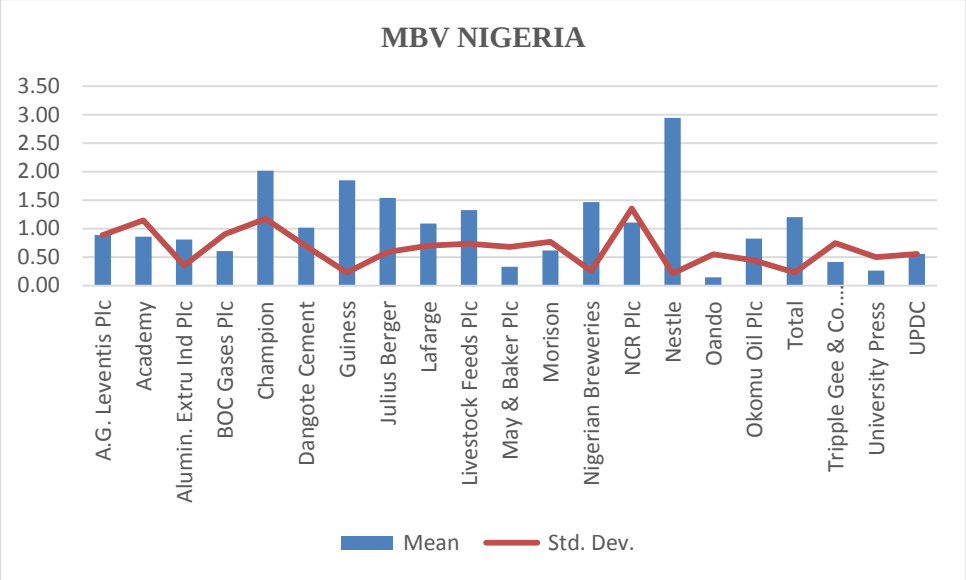

Figure 1: Mean and Std Deviation for MBV for Nigerian Firms

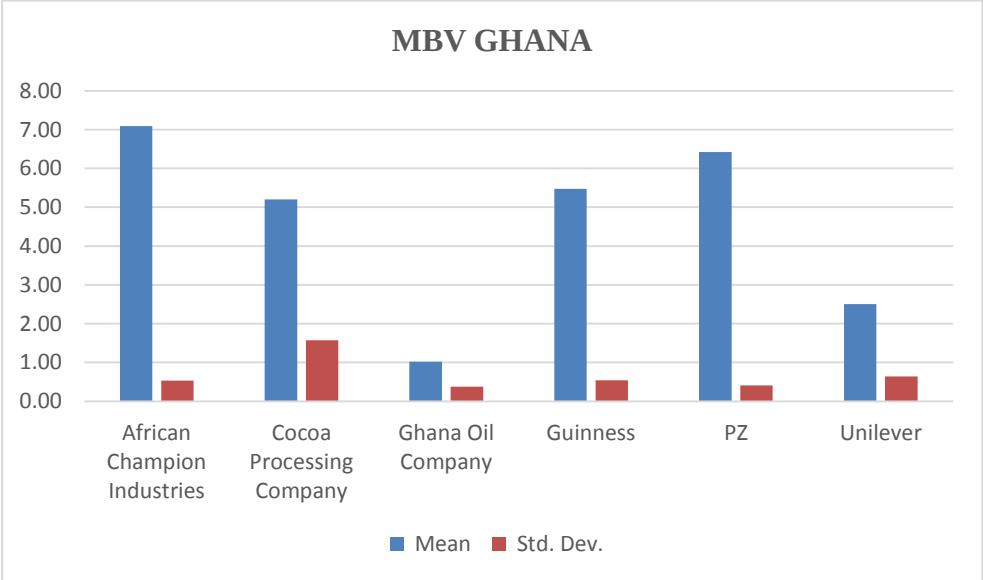

Figure 2: Mean and Std Dev. for MBV for Ghanaian Firms

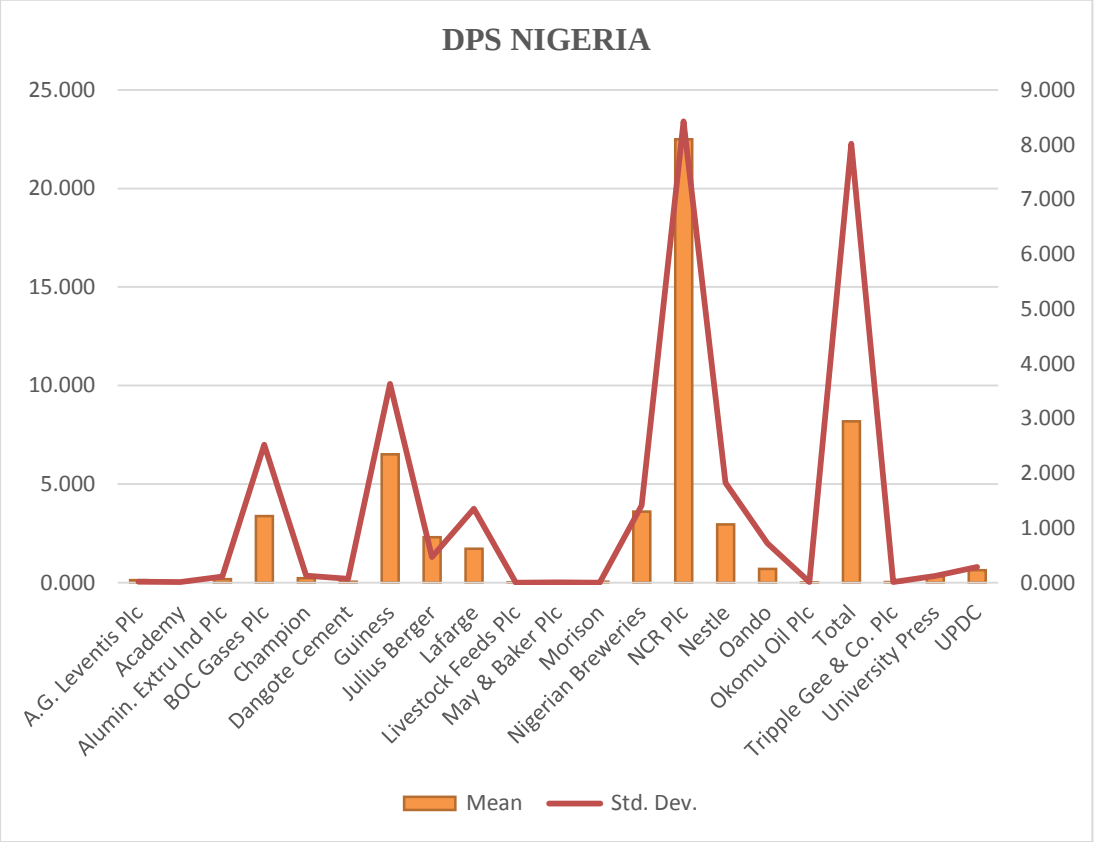

Figure 3: Mean and Standard Deviation for DPS for Nigerian Companies

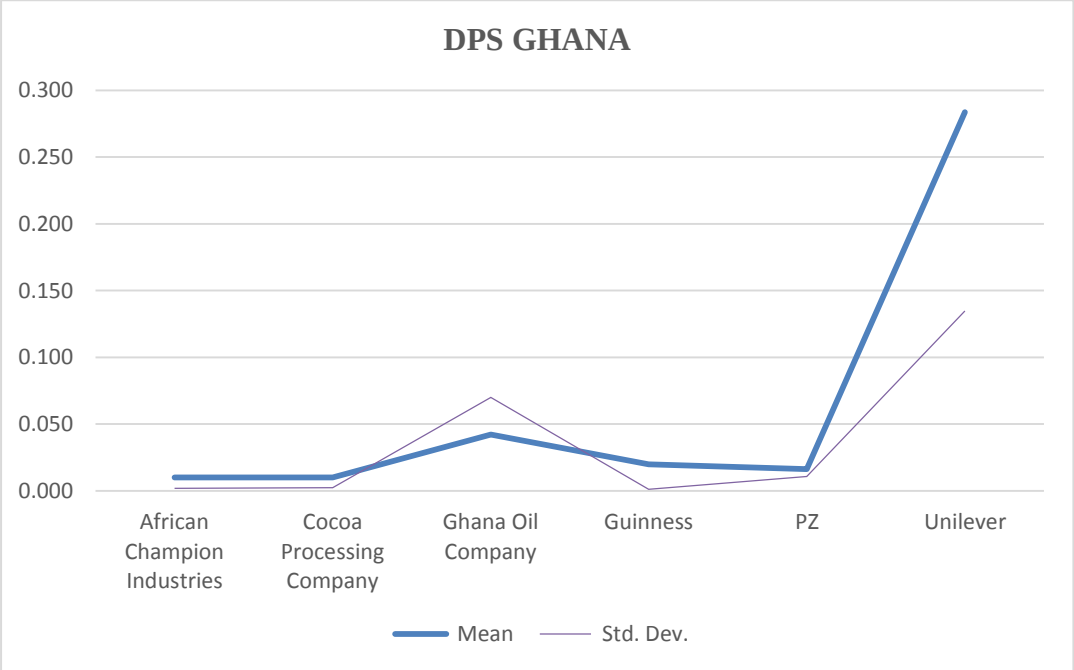

Figure 4: Mean and Standard Deviation for DPS for Ghanaian Companies

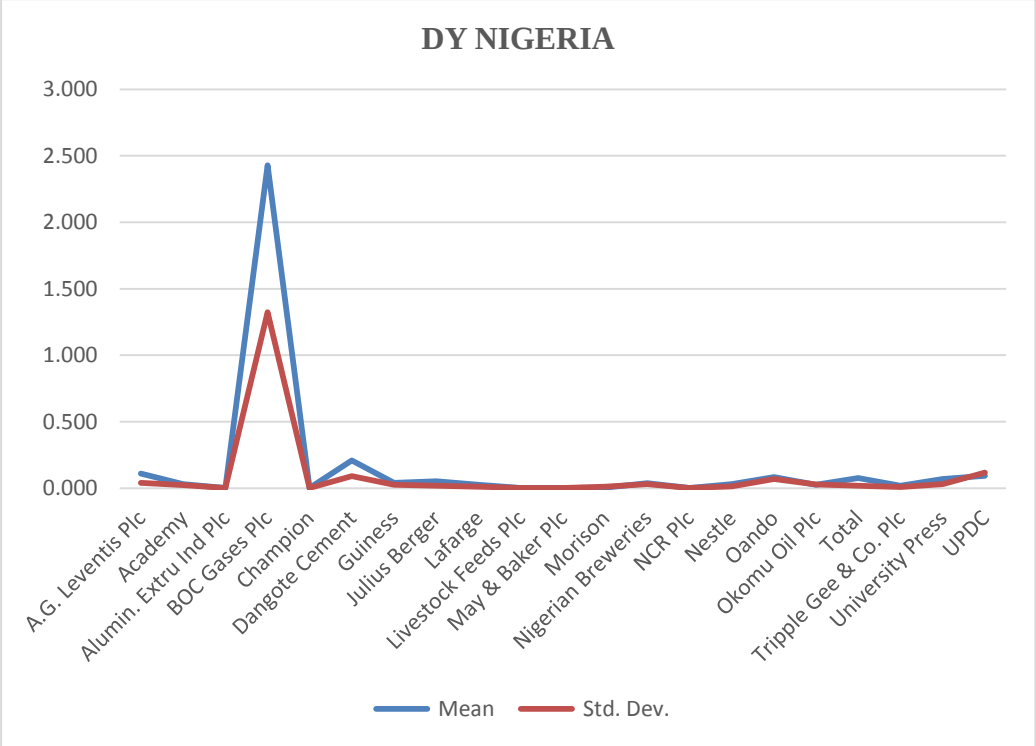

Figure 5: Mean and Standard Deviation for DY for Nigerian Companies

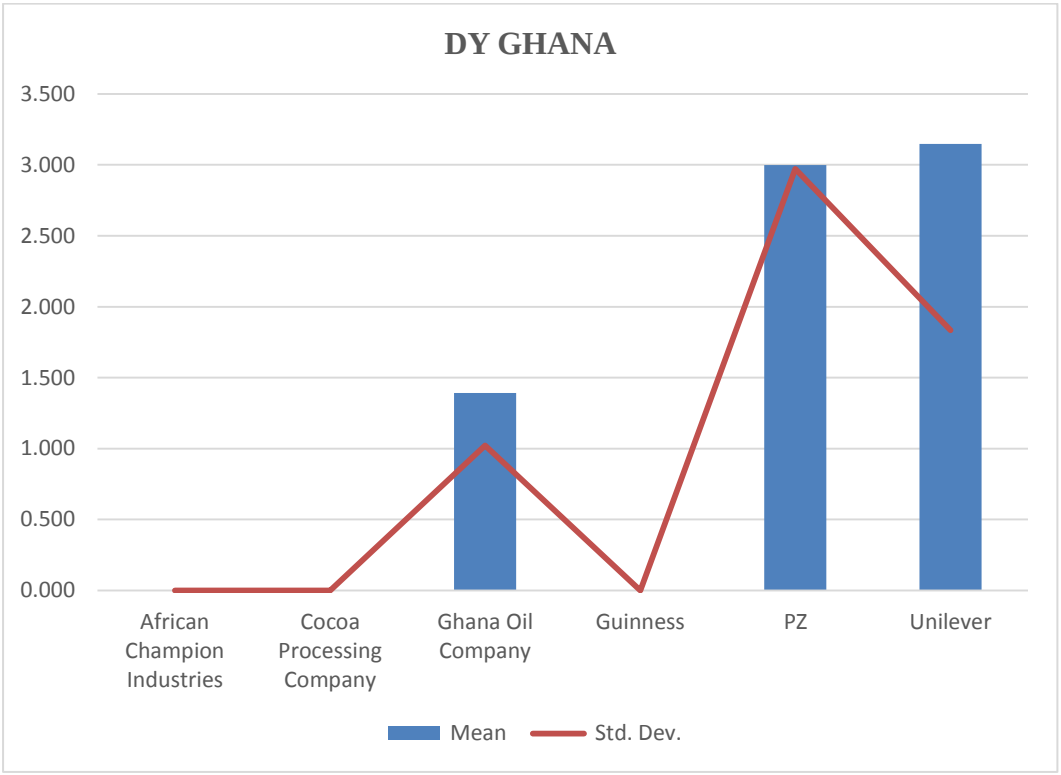

Figure 6: Mean and Standard Deviation for DY for Ghanaian Companies

Empirical Model

To examine the causal impact of dividend policy on market to book value ratio, we employ the dynamic panel GMM based on the Arellano and Bond's (1991) first difference approach. This framework, which is also based on instrumental variables, is employed because of its power to control both heterogeneity bias, arising from the differences across

firms and countries, and endogeneity bias arising from the possibility that the causal link from dividend policy to market to book value can be reversed.

We specify the Arellano and Bond's (1991) first difference dynamic Panel GMM model linking *MBV* to three dividend decisions proxies; *DPS* and *DY* as follows:

$$\Delta MBV_{it} = \psi_1 \Delta MBV_{it-1} + \psi_2 \Delta DPS_{it} + \psi_3 \Delta DY_{it} + \Delta\omega_{it} \quad (1)$$

Where

Δ = first difference operator, MBV_{it-1} = lagged market value per share, and ω_{it} = error term. If $\psi_1 \neq 0$, then technical analysts' assumption holds for our sampled firms, and market value per share can be predicted based on its historical trend. Further, ψ_2 and ψ_3 are the individual coefficients for *DPS* and *DY*, hence if the restriction, $\psi_2 = \psi_3 = 0$ holds, then dividend decision has no impact on market value per share, MM hypothesis would be confirmed. Otherwise, the view that dividend policy is a significant determinant of firm value would be upheld.

Data Analysis and Discussion

Data Analysis

For our empirical model, market value to book value ratio is specified to depend on lagged market value per share and two dividend decision variables: namely dividend per share and dividend yield. Table 2 presents the dynamic panel GMM results for this model using the Arellano-Bond first difference estimation approach. The endogeneity bias is controlled by incorporating 4 lags of the dependent variable from period 2 to 5 as well as two lags of each of the explanatory variables as instrumental variables in the GMM model.

Table 2: Dynamic Panel GMM Results

Variable	Coefficient	p-value
MBV(-1) (ψ_1)	4.05E-12	0.0018
DPS (ψ_2)	-1.0000	0.0000
$DY(\psi_3)$	1.0000	0.0000
$Wald\ (\psi_2 = \psi_3 = 0)$	6.54E+23	0.0000
Instrument rank	12	
J-statistic	1.3379	0.9981
AR(1)	-1.7843	0.0744
AR(2)	-0.0572	0.9543

First the diagnostic tests in Table 2 confirm that our GMM model has no specification issues. We can see that although, the instrument rank of 12 is much greater than the number of coefficients in the model, the J-statistic has a probability of 0.9981, indicating the Sargan test is not significant. Thus, the null hypothesis of over identifying restrictions is not rejected, implying that the estimated GMM model is correctly specified. Further, the first order Arellano-Bond statistic (AR(-1) = -1.7843, p-value = 0.0744) is weakly significant, it has the expected negative sign, whereas the second order statistic (AR(-2) = -0.0572, p-value = 0.9543) is not statistically significant as expected. Therefore, we conclude that the model residuals have no serial correlation in levels, which further validates our GMM results.

Turning to the main results, ψ_1, which captures the effect of lagged market to book value ratio, is estimated at 4.05E-12 with a p-value of 0.0018, indicating that previous market to book value ratio has a positive and highly statistically significant impact on

current market to book value ratio. Thus, in the context of the relationship between dividend policy and firm value, future market to book value ratio can be predicted based on its previous value. However, the relatively small size of this coefficient suggests that the effect of one lagged period market to book value ratio on current market to book value ratio may be insignificant economically.

Besides, we can see that ψ_2 and ψ_3 are estimated at -1.0000 and 1.0000 respectively, indicating that market to book value ratio is negatively related to dividend per share but positively related to dividend yield. Both ψ_2 (p-value = 0.0000) and ψ_3 (p-value = 0.0000) are associated with zero probabilities, indicating that the effects of both dividend per share and dividend yield are highly statistically significant. Market to book value ratio would decrease by exactly 1% following a 1% increase in dividend per share while it would increase by exactly 1% following a 1% increase in dividend yield. The large size of these coefficients indicates the effects both dividend decision variables are also significant in economic sense. The Wald statistic also has a zero probability (p-value = 0.0000), indicating that the joint effect of dividend per share and dividend yield is highly statistically significant.

Discussion

The main purpose of this study is to examine the impact of dividend decision of a firm on its market to book value ratio. Theoretically, there are mixed views regarding the effect of dividend decision on firm value. While the irrelevance theory of Modigliani and Miller (1961) argues that dividend decision of a firm has no significant effect on its market value, while both agency and signaling theories suggest that dividend announcements contain information that are significantly priced in the stock market. Thus, *apriori*, we have mixed expectations.

Contrary to Modigliani and Miller's (1961) irrelevance theory, our results show that dividend decision has a highly significant effect on market to book value ratio of quoted firms in Nigeria and Ghana. This is evident in Table 2, which shows that the Wald statistic, which tests the joint significance of ψ_2 and ψ_3 in market to book value ratio model, is associated with a zero probability, indicating that the joint effect of dividend per share and dividend yield on market to book value ratio is highly statistically significant. This evidence, which also supports both agency and information content theories but contradicts the irrelevance theory of Miller and Modigliani (1961). Our finding is also consistent with the several empirical studies including Adesola and Okwong (2009) and Oyinlola and Ajeigbe (2014) suggesting that dividend payment can significantly affect firm market value.

Further, in terms of the individual effect of each dividend decision variable, the results also show that both dividends per share and dividend yield also have a highly significant effect on market to book value ratio. However, while the coefficient size is equal for both dividends per share and dividend yield, the direction of their impacts differs but in reverse direction compared to our initial findings relating to market value per share. The coefficients of -1.000 and 1.000 indicate that market value relative to book value would reduce by exactly 1% following a 1% increase in dividend per share but would also increase by exactly 1% following a 1% increase in dividend yield. The size of these coefficients also suggests that their impacts are also significant in economic sense. Further, while the negative effect of dividend per share in the market to book value ratio agrees with Fama and French (1998), the positive effect of dividend yield is consistent with Morovvati Siboni and Pourali (2015). One plausible explanation of these findings is that investors in both Nigeria and Ghana are affected by clientele effect when it comes to the relationship between dividend policy and firm market value.

Conclusion

For listed firms in Nigeria and Ghana, dividend decision is important and is governed by the signaling or agency theory. Therefore, investors in both countries are strongly advised to discount dividend announcement in their valuation and risk pricing models for good investment valuation and sound investment decisions.

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