

Moderating Effect of Dividend Policy and Share Prices of Quoted Firms in Nigeria

Eze Gbalam¹, Akwarandu Uzochukwu²

¹*Department of Banking and Finance, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria*

²*Department of Banking and Finance, University of Africa, Toru-Orua, Bayelsa State, Nigeria*

Abstract: - This study empirically investigated the moderating effect of a firm size on the relationship between dividend policy and share price among consumer firms in Nigeria by employing a sample of twelve (12) consumer companies quoted on the Nigerian Stock Exchange. The data set was collated for 12 years (2007-2018) and employed the fixed effect regression technique. The results tend to annul the theory of Miller and Modigliani (1961) which suggests that dividend are irrelevant but lends credence to the 'Bird in Hand Dividend Theory' supported by Fairchild (2010). This suggests that larger firms have good chances of paying dividend which will lead to improvement in share price. This finding negates the dividend irrelevant proposition that dividend does not matter to corporate value.

I. INTRODUCTION

The idea that dividend policy is a significant attribute of corporate finance and its practical implications for many firms and stakeholders (investors, managers, lenders) is not a novel issue. It is a known approach that firms which are performing well and generating more income have different channels into which they put such generated income for better use. This can be linked to the residual theory of dividend which describes a common tendency for managers to reinvest the profit of the firm due to the clientele effect accompanied by great pressure on companies to pay dividends.

In today's world we find out that the harder we look at the dividend picture the more it seems like a puzzle, a dilemma or a mystery with pieces that just do not fit together" (Black, 1976). However, after so much research on dividend policy in corporate finance studies, three core beliefs became very evident. To the right of this argument, there are some researchers who believe that the value of the firm will significantly increase when dividend payout ratio is increased (known as conservative group). While to the left of this argument, is a radical group who believes that the value of the firm will significantly reduce due to the increase in the dividend payout ratio. And, in between these sides, are some theorist who believed that the payout policy makes no significant difference and are also known as Miller and Modigliani (MM) 1961. The irrelevance of the dividend decision in the world without taxes, transaction cost or other market fault have been hypothetically supported in a seminar paper illustrated by Miller & Modigliani, 1961. Since the breakthrough theory on dividends policies by Modigliani and Miller (1958), there has been an argument in literature as to whether dividends really matter in affecting share prices.

Despite numerous studies on dividend policy mostly from developed countries like USA, Arnott and Asness (2003) UK, Farsio., Geary, and Moser (2014); Australia, Nissim and Ziv (2017) Japan, Stulz, (2015) Germany and their likes a universal agreement have not been reached as to the relevance of dividend policy and whether it affects share price.

Also in the light of this subject, only a handful of related studies have been carried out in Nigeria which include: Sulaiman and Migiro (2015), Nuhu (2016) Maimako (2014) Ajayi and Seyingbo (2015) employed only one form of dividend policy and focus more on the financial sector of the economy whose firm attributes are significantly different. However, in this study we employed some variants of dividend policy in testing their relationship with share price. Such ratios include: dividend yield, dividend increase and dividend coverage.

II. LITERATURE REVIEW

Yang and Wu (2014) focused on ex-dividend dates and reveal that investors who buy stock 11 days before the ex-dividend date and sell ten days after the ex-dividend date obtain an average of 2.13% abnormal returns net of transaction costs. This view is consistent with a study by Yang and Wu (2004) that provides empirical evidence saying that ex-dividend trading brings abnormal returns of 2.07% while an increase in cash dividend has abnormal returns of 1.96%. However, cash dividend decrease does not have a negative impact as some studies suggest, in the same study, 0.48% abnormal returns were recorded after a decrease in the amount of cash dividends. Gitman and Zutter, (2012) noted that dividend policy significantly affects firm's ability to raise funds and consequently its share price. Several studies affirm that dividend policy that is well managed has an impact on firm's share price and shareholders' wealth (Inyiama., Okwo and Inyiama, 2015).

Attah-Botchwey (2014) conducted a study seeking to find out the impact of dividend payment and its relationship on the share price of some listed companies on the Ghana Stock Exchange (GSE) and how it helps shareholders to make an informed decision on whether to maintain or withdraw their investment and reinvest in other companies. It was found out that as the dividend of companies increase, the share price also rises due to the pressure on the share. The findings suggest that firms with higher dividend payment have their share price going up as well, as a result of higher demand on

shares, and firms with lower dividend have their share price going down, all else being equal

Mohammed and Chaudhary (2003) evaluated the effect of dividend policy on stock price volatility in Pakistan from 1991 to 2000. Dividend yield and dividend payout ratio were the independent variable and findings reveal a positive and significant relationship between the independent variables and share price volatility of companies in Pakistan. Ordinary Least Square regression Regression was the methodology adopted for the study. The authors submit that dividend policy is a major factor management needs to focus on for stock returns.

Olatubdu (2009) evaluated price reactions to dividend announcement of firms listed on the Nigerian Stock Exchange. Variables for the study were dividend per share, dividend pay-out ratio, Price per share. Ordinary Least Square Regression was carried out to determine the relationship and the results of the findings shows that there is a positive but insignificant relationship between dividend payout and share price announcement of firms in Nigeria.

Noble (2010) investigated dividend policy on stock prices of firms in Nigeria. The study adopts the Ordinary Least Square Regression approach. Dividend Yield, and Dividend Per Share were the variables for the study. Findings reveal that there is a relationship between the variables and concludes that the firm should focus on paying dividend to shareholders to continue to enjoy investment.

III. METHODOLOGY

The study adopted the ex-post facto and analytical research design. The study is based on ex-post facto since the event has already taken place hence the data already exist and no attempt is made to manipulate the data of the selected variables of the study. It enables the researcher to obtain adequate information and identify variables and hypothetical constructs used to test theories. This method is considered appropriate because the study involves interacting with the population of interest in order to examine the moderating role of firm size on the relationship between dividend policy and stock price performance in Nigeria.

The nature of this study necessitates the use of secondary data. The annual report of the sampled companies is used in collecting the data for this study, due to its degree of reliability and widespread acceptability by organizational stakeholders (Deegan and Rankin, 1997; Haniffa and Cooke, 2005).

The population of the study consists of all twenty-one (21) consumer companies quoted on the Nigerian Stock Exchange (NSE Fact Book 2017). Each firm in the population has finished its obligation in delivering annual reports for eleven (11) consecutive years ie 2007- 2017. Companies with unavailable relevant data at the time of collection were removed. The sample size covers 12 firms contained within the group of consumer goods companies quoted on the

Nigerian stock exchange market as at 2017. Twelve (12) companies which include: 7up Nigeria Plc, Cadbury Nigeria Plc, Champion Breweries, Guinness Nigeria Plc, International Breweries Plc, Nascon Allied Plc, Nestle Nigeria Plc, Nigerian Breweries Plc, Pz Cusson, Tiger Branded Plc, UAC of Nigeria Plc, and Uniliver Nigeria Plc.

In this study, the secondary data set that were collected was analyzed using descriptive statistics, correlation matrix and regression analysis. Descriptive statistics such as measures of central tendency and measures of dispersion were used to summarize and profile the pattern in each firm. In addition, panel regression analysis using Stata Version 13 was employed to establish the nature and significance of the relationship between independent variables and dependent variable. Significance of individual explanatory variable on the dependent variable was carried out using t-test at 5% significance level. Joint significance of the regression model was performed by means of F-test

3.1 Model Specification

The study estimated the following two panel regression models to determine both the primary and moderating effects of firm size on the relationship between dividend policy and share price of quoted consumer firms in Nigeria. Equation 1 is used to estimate the main effects of capital structure while Equation 2 estimated the moderating (interaction) effects of firm size in the dividend policy. However, we concentrate and estimate equation 2.

$$FS_{it} = \beta_0 + \sum_{i=1}^3 \beta_i X_i + \mu_{it} \quad (1)$$

$$FS_{it} = \beta_0 + \sum_{i=1}^3 \beta_i X_{it} + \sum_{i=1}^3 \theta_i (X_{it} * SZ_{it}) + \mu_{it} \quad (2)$$

Where: FS_{it} is Stock Price, β_0 is the intercept term, β_i are the positive or negative coefficients of the explanatory variables, θ_i are the coefficients of the moderating variables, X_{it} is a vector of explanatory variables and μ_{it} is the error term (the time-varying disturbance term is serially uncorrelated with mean zero and constant variance).

Following the above general model specification, we apply and specify our specific model as:

Stock Price Moderated Model Specification

$$fs_{it} = \beta_0 + \beta_1 dcov_{it} + \beta_2 dyild_{it} * fs_{size} + \beta_3 dincre_{it} * fs_{size} + \beta_4 dpayout_{it} * fs_{size} + \mu_{it} \dots \dots \dots 3$$

Where:

fs = stock price

$dcov$ = dividend coverage

$dyild$ = dividend yield

$dincre$ = dividend increase

$dpayout$ = dividend payout

fs_{size} = firm size

IV. EMPIRICAL RESULT

The study analyses the moderating effect of firm size on the relationship between dividend policy and share price employing data samples from consumer quoted companies on the Nigerian Stock Exchange for the periods of 2007 – 2017. In finding the possible firm’s specific characteristics and exogenous factors that would influence share price, some statistical analysis such as: Descriptive Statistics, Pairwise Correlation Matrix, and Panel Fixed and Random Effect Regression analysis where conducted. The results obtained from these analyses are presented as follows.

4.1 Descriptive Statistics

Table 1 Summary Statistics Table

```

.tabstat fs dpayout dyild dcov dincre logofttotalasset, statistics(
mean median max min sd var cv count )
    
```

stats	fs	dpayout	dyild	dcov	dincre	logoft-t
mean	97.7354	47.02782	2.674435	17.06016	.3533871	7.623226
p50	29.2	42.62	2.12	1.32	0	7.7
max	1200	282.27	15.01	1577.29	1.67	8.57
min	-7.23	-278.04	-.82	-68.12	-.67	5.51
sd	197.182	61.86243	2.824092	145.7761	.5162244	.5282715
variance	38880.73	3826.961	7.975495	21250.66	.2664876	.2790708
cv	2.017508	1.315443	1.055958	8.544824	1.46079	.0692976
N	124	124	124	124	124	124

Authors Computation

The summary statistics above shows that not all the companies in the sample paid dividend to its shareholder during the period of analysis and the average dividend payout is N47.02 during the period of analysis. This can be said to be fair and commendable for the Nigerian Stock Exchange market. Dividend yield ratio has a mean of 2.67 with a standard deviation of 2.82, indicating a consistent dividend distribution from the company and has been shown to be less

risky. However, the highest payout for the period of analysis is 282.27 and was paid by Nestle Plc. This is indicative of a good business outlook for the period under analysis. Dividend yield which is a financial ratio that shows how much a company pays out in dividend every year in relation to its share price had an average value of N2.67kobo during the period of analysis. The statistics table shows that on the average the companies in the sample increased its cash dividend payout by 35kobo during the under review.

4.2 Correlation Analysis

Pair-wise correlation was used to examine the level of collinearity present in the explanatory variables used in the study. Ordinarily, severe multicollinearity would be exhibited between the primary and their corresponding moderated variables; e.g. between dividend payout (dpayout) variable and size moderated dividend payout variable (dpayout*fs). This undesirable phenomenon makes it very difficult to distinguish the unique contributions of individual predictors on the variance of the dependent variable. High correlations among predictors also make the standard errors of the estimated coefficients large hence compromising inferential estimation. To deal with this multicollinearity problem between primary and moderated variables, the study adopted variable centering approach. The procedure involves transforming the variable by subtracting the sample mean prior to computing the product terms (Fairchild & MacKinnon, 2009). As shown by pair-wise correlation results displayed in the table below, variable centering technique helped to mitigate severe multicollinearity problem between the primary variables and moderated variables. Table 2 shows the correlation coefficient matrix of both the primary and moderated variables.

Table 2 Pairwise Correlation Matrix

```

.pwcorr fs dpayout modpay dyild modyild dcov modcov dincre modincre logofttotalasset
    
```

	fs	dpayout	modpay	dyild	modyild	dcov	modcov
fs	1.0000						
dpayout	0.4147	1.0000					
modpay	0.4364	0.9977	1.0000				
dyild	0.0431	0.4534	0.4394	1.0000			
modyild	0.0625	0.4742	0.4640	0.9961	1.0000		
dcov	-0.0401	-0.0813	-0.0814	-0.1022	-0.1045	1.0000	
modcov	-0.0402	-0.0819	-0.0820	-0.1030	-0.1053	1.0000	1.0000
dincre	0.0683	0.3585	0.3515	0.2859	0.2863	-0.0695	-0.0699
modincre	0.0792	0.3632	0.3583	0.2733	0.2765	-0.0694	-0.0698
logofttotal~t	0.3325	0.3501	0.3825	0.1451	0.1962	-0.0474	-0.0468

	dincre	modincre	logoft~t
dincre	1.0000		
modincre	0.9983	1.0000	
logofttotal~t	0.1717	0.1923	1.0000

Authors computation

From the table above, the pairwise correlation coefficients between all independent variables are less than 0.8 implying that the variables did not exhibit severe multicollinearity as recommended by (Gujarati, 2003). The perfect positive correlation coefficient between dividend payout and modified dividend payout variables (0.9977); dividend yield and modified dividend yield (0.9961) variable and dividend increase and modified dividend increase (0.9983) indicated severe multicollinearity problem. To deal with this problem, the study dropped each of the highly collinear variables while running the panel regression analysis as recommended by Gujarati, (2003).

4.3 Panel Unit Root Test

Panel unit root test was applied on all variables used in the analysis in order to determine whether or not the panel data was stationary. This involved solving for the value of ρ in the general equation

$$Y_{it} = \alpha + \rho Y_{it-1} + \mu_{it}$$

Where: $t = 1 \dots 11$ years and $i = 12$ firms

If $\rho = 1$, it implies that the observation Y_{it} was dependent on its lag value Y_{it-1} and hence the data is non-stationary. The converse would be true if $\rho < 1$. The necessity of this procedure was to avoid a situation where the obtained regression results are spurious; hence jeopardizing testing of hypothesis (Granger & Newbold, 1974). The study applied Fisher-type test because it has more advantages than other panel unit root tests. The Fisher-type unit root test requires specification of Dickey-Fuller to test whether a variable has unit root

Table 3 Fisher-type Unit Root Test Results

Variable	Statistics	P-value
Dividend Coverage	14.7788	0.0000
Dividend Yield	3.7954	0.0001
Dividend Increase	46.439	0.0039
Dividend Payout	3.2389	0.0006
Firm Size	3.3108	0.0005
Stock Price	1.9379	0.0263

H₀: All Panels Contain Unit Roots; Significance level: 5%

Based on the results displayed in Table above, the study rejected the null hypothesis that the panel data contained unit roots at 5% significance level. Effectively, the study concluded that all the variables used by the study did not have unit root therefore were used at levels instead of their first difference.

4.4 Panel Model Regression Results

In order to establish which panel effects (between fixed or random) provides a better estimation results for the study, Hausman test was carried out for the specified panel regression model. The test was conducted against the null hypothesis that random effect model was the preferred model. The Hausman test result provides a chi-square value of 66.92 and a corresponding p-value of 0.0000. The result indicates that the chi-square statistic is significant at 5% level. Hence, the study rejects the null hypothesis that random effects model is appropriate and estimated the panel regression model for fixed effects as recommended by Torres-Reyna, (2007).

Table 4 Stock Price Moderated Fixed Effect Model Result

fs	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
modpay	.0791008	.024799	3.19	0.002	.0299448 .1282568
modityld	-1.461739	.642257	-2.28	0.025	-2.734804 -.1886745
dcov	-.0088094	.0647337	-0.14	0.892	-.1371228 .119504
modincre	-6.711232	2.58703	-2.59	0.011	-11.83917 -1.583289
_cons	117.1446	17.13951	6.83	0.000	83.17116 151.1181

$r^2 = 0.1379$; $r^2 \text{ adj.} = 0.0916$; $F\text{-statistic} = 0.0028$

Table 5 Stock Price Moderated Random Effect Model Result

fs	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
modpay	.0916147	.0254941	3.59	0.000	.0416472 .1415822
modityld	-1.361135	.6481789	-2.10	0.036	-2.631542 -.0907277
dcov	-.0083051	.0670776	-0.12	0.901	-.1397747 .1231645
modincre	-6.371752	2.675477	-2.38	0.017	-11.61559 -1.127914
_cons	105.4467	39.0826	2.70	0.007	28.84618 182.0472

$r^2 = 0.1349$; $r^2 \text{ adj.} = 0.1310$; $F\text{-statistic} = 0.0014$

The tables above present the two panel data estimation techniques results. The results revealed differences in the magnitude of the coefficients, signs together with significant and insignificant variables. The estimation of the fixed effect panel regression was based on the assumption of no correlation between the error term and explanatory variables, while that of the random effect, considers that the error term and explanatory variables are correlated.

The adjusted R Squared of the panel regression model is 0.09 indicating that 9% of the changes in share price have been explained by the changes in its examined explanatory variables. The F-statistics (4.32) and its p-value (0.028) show that dividend policy panel fixed effect regression model is generally significant and well specified. This implies that the model pass the overall statistical significance test at the 1% level. In addition to the above, the specific finding from each explanatory variable from the fixed effect panel regression model is provided as followings:

The fixed panel effect model presented above show that *Firm size has a significant moderating effect on the relationship between dividend payout and share price of quoted companies in Nigeria.* (Coef.0.079 $P > /t/$ 0.002) suggesting that larger firms have good chances of paying dividend which will lead to 0.002 increase in share price. However, this effect is statistically significant at 5% level.

The fixed effect regression of firm size moderated dividend yield reveals a significant negative effect of the moderated variable on the dependent variable of share price. (Coef.-1.4617 $P > /t/$ 0.002) suggesting that as the firm grows in asset size the growth tends to suppress dividend yield which then affects the value of its share price negatively. A significant drop in its share price reaches 1.46 units for the sampled companies during the period of investigation in Nigeria. Thus larger firms may not be able to maintain positive dividend yield for a long period of time. The statistical significance is tested at 5 percent level.

The result from the analysis above reveals that firm size moderated dividend coverage variable showed a negative but insignificant relationship with the dependent variable of share price. (Coef.-0.008 $P > /t/$ 0.892) suggesting that the effect of dividend coverage on share price is not significantly distorted by the size of the company. This significance is tested at 5 percent level, revealing that firm size has no significant moderating effect on dividend coverage as it relates to its share price.

In this model the variable of dividend increase showed a negative significant effect on the dependent variable of share price. (Coef.-6.711 $P > /t/$ 0.011) suggesting that on the average increasing dividend among larger firm lead to a significant fall in share price of the sampled companies under investigation. On the average, the fall reaches N6.71 during the period under investigation. This outcome is tested at 5 percent level of statistical significance.

V. CONCLUSION

This study focused on the moderating effect of firm size in the relationship between dividend policy and share price of quoted consumer firms in Nigeria. The study adopted fixed effect regression model to examine the impact of various firm size moderated dividend policy components on share price. Findings revealed that firm size moderated dividend yield, and dividend increase showed significant negative relationship with share price. This finding suggest that specific characteristics of large firms mitigate this relationship hence an increase in the magnitudes of these factors have not yielded improvements on share price of consumer firms in Nigeria during the period of analysis.

However, the positive moderating effect of firm size on the relationship between dividend payout and share price is an indication that dividend payout by large firms improves share price and company management will seek to please its shareholders by paying more dividend rather than improving their capital gain or plough back most of its earnings as retained earnings. Quite encouraging, this policy as adopted by consumer firms in Nigeria has remained significant in improving the value of the firm as reflected through its stock price. This study thus invalidate the assertion by Black (1976) and dividend irrelevance theory of Miller and Modigliani (1961) who posit that the harder we look at the dividend picture; the more it seems like a puzzle, with pieces that just don't fit together. Hence, the findings of this study thus agree with most of the dividend relevant proponents that views dividend policy as irrelevant to share price.

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