"Effect of dividend decision on stock price changes: further Nigerian evidence"

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Effect of dividend decision on stock price changes: further Nigerian evidence

Abstract

The decision to pay dividend is considered strategic and believed to have a notable impact on other decisions of companies – such as financing and investment decisions. This has made virtually all organizations to strive in order to have an optimal dividend policy that maximizes the wealth of shareholders. Despite its importance, it has always been a controversial and an inconclusive topic in the literature – especially with regards to the determination of its effect on price of stock. The current study examines the effect of dividend decision on stock price changes in Nigeria. The sample consists of fifteen (15) quoted companies and cuts across nine sectors of the Nigerian economy. The period spans from 2003 to 2012. Using the panel-data approach, the empirical result of this study revealed that a linkage exists between dividend decision and the changes in the price of stock vis-à-vis earning per share, size of the companies, and the dividend per share. The dividend per share and earnings per share indicated a major positive connection with stock price. The companies' size is negatively and insignificantly related with stock price changes – i.e. the size of the companies does not actually determine the value of the stock price in the market. The study affirmed that dividend payout increases stock price performance and supports the dividend relevant hypothesis.

Keywords: dividend policy, stock price, dividend per share, panel data, Nigeria.
JEL Classification: G32, G35.

Introduction

An aspect of corporation finance that has enjoyed celebrated controversies is the issue of dividend policy. This is because it is considered strategic and believed to have a serious impact on other decisions of companies – such as financing and investment decisions. An optima dividend policy is the policy that maximizes the wealth of shareholders who are interested in dividend, and changes in the value of their shares, that is capital gains. Therefore, financial manager who carries out these decisions in a corporate organization must be acquainted with the inter-relationships that exist between these decisions.

The dividend Puzzle or the hub of dividend Policy is the enquiry: should the corporation distribute funds to its stockholders as dividend, or should the firm invest it on their behalf? (Ross, Westerfield and Jordan, 2002). A dividend is a taxable payment made by a company to its shareholders, i.e. owners, usually as distribution of profits. Broadly speaking, the financial manager has to take three important decisions: an investment decision which is related to where the given company should make investments, a financing decision concerned with the determination of how the required funds would be generated, and a dividend decision which may arise when the company makes a profit. Dividend policy is an important area of research in corporate finance. The policy involves a set of guidelines that the management of the company uses in allocating its earnings between the company and other stakeholders especially the shareholders. The decision to pay dividend is influenced by the availability of profit in the company and the ability of the company to earn additional income in the future. Brealey and Myers (2003) opined that a trade-off exists between cash disbursement to shareholders, retention in the business and issuance of new stocks.

Lintner (1956) and Gordon (1959) believed that stock holders have preference for immediate dividend over future dividend and this impacts positively on market value of companies. They were of the opinion that payment of huge amount as dividend ameliorates risk and eventually affects the price of stock. Contrary to this, Modigliani and Miller (1961) championed the dividend irrelevant hypothesis which was based on the assumptions of zero taxes, perfect market and rational behavior. They argued that firm's value is determined by the riskiness of its investment and future earnings capacity and concluded that company's value cannot be influenced by dividend decision. Meaning that dividend payout does not guarantee an increase in stock price.

The bird-in-the-hand theory of dividend policy – postulated by Gordon and Lintner – has a different view to the dividend irrelevance theory. It asserts that shareholders disliked risk and have preference for immediate dividend over capital appreciation that will only come in the future and has greater variability. Gordon (1963) and Lintner (1962) argued that shareholders' required rate of return falls with increment in dividend payout – this is as a result of the certainty of dividend as against capital gains that comes from retaining earnings. Thus, rational investors being risk-averse would value an expected dividend as less risky than a capital gains.

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The dividend policy of a company has been likened to a plethora of signaling tools as contained in the work of the antagonist of Modigliani and Miller dividend irrelevance theory. They argued that the declaration of dividend by a company can give a significant explanation of the stock price behavior of such a company. Allen and Rachim (1996) affirmed that dividend decision is still controversial despite a number of theoretical and empirical investigations that have been conducted on it. Dividend payment can take the form of stock or cash to the shareholders – but the main problem of paying dividend is the resultant effect on stock price which has generated a lot of argument both theoretically and empirically among scholars. The effect cannot be clearly ascertained in the literature. The only thing that is clear from the literature is that there are two opposing views – the dividend relevant and the irrelevant theories.

A survey of recent studies on dividend policy in Nigeria have also shown lack of consensus (Adefila, Oladipo & Adeoti, 2004; Okafor, Mgbame & Chijoke-Mgbame, 2011; Adaramola, 2012; Uwuigbe, Jafaru & Ajayi, 2012) to mention but a few. This lack of consensus calls for further investigation. Furthermore, an impetus for this study are the findings and recommendations of Adaramola (2012) – who suggested further research on this matter in Nigeria, and with more cross-sectional observations.

The specific objective of this research, therefore, is to investigate the effect of dividend decision of companies in explaining the behavior of stock price changes – from the perspective of Nigeria. The study is useful in understanding the effect of dividend decision on stock price changes – thus helping companies to improve their dividend decisions. It also contributes to the existing literature on stock price variability and dividend decision in Nigeria.

This paper is structured in five sections: survey of literature is in section one, section two discusses method of analysis, section three presents the findings, and lastly, conclusions as well as recommendations are made in final section.

1. Review of related literature

Dividend policy is one of the financial manager's functions involving the decision to pay either cash or stock dividend at the moment or delaying it to a later date with the intention to pay an enhanced value or amount. Despite the empirical research on related studies, dividend policy still enjoys celebrated controversy especially in relation to stock price. Hail, Tahoun and Wang (2014) examined variations in the dividend payments of firms while considering the manger cum investors asymmetric

information problem and during the International Financial Reporting Standard (IFRS) adoption, the study found that firms were unfavorably disposed to dividend payments but are willing to cut payments, and also showed that there is a decrease in dividend information content around the incident. Chavali and Nusratunnisa (2013) investigated share price and dividend connection of companies in the consumer sector in India. They employed the Market Model Event Study Methodology and the findings indicated that the dividend pronouncement led to positive abnormal returns (on the average) close to the pronouncement period.

Kenyoru, Kundu, and Kibiwott (2013) assessed how the stock price in Kenya is affected by dividend decision of quoted companies over the period 1999 to 2008. They used multiple regression analysis and payout ratio was inversely connected to stock price variation, that is higher payments lead to lower volatility and that price of shares were more stable when dividend yield was higher. Yasir, Zernigah, and Muhammad (2012) investigated the connection between Pakistani stock price changes and dividend policy. The study found that dividend policy impacted on stock price because payment ratio is inversely connected to price changes while dividend yield is directly associated with price changes and they concluded that the signaling hypothesis is useful in Pakistani stock market.

Lee, Isa and Lim (2012) investigated the future profitability and dividend variations of 2396 listed firms on Kuala Lumpur Exchange over 10 years (1998-2007). The study found that dividend changes are mainly connected with variations in earnings. However, there is no concrete evidence that it is connected to future earnings variation above a year. In addition, it was suggested that future earnings information content seems to explain the stability of dividend in the market. Other studies on stock volatility and dividend decision include: Allen and Rachim (1996), Jecheche (2012), and Hashemijoo and Ardekani (2012). Allen and Rachim (1996) could not find any connection between stock price and dividend yield in Australia. Hashemijoo and Ardekani (2012) reported a negative association between dividend measures and volatility in price and that stock volatility is determined mostly by size of a firm and the dividend yield. On the contrary, Jecheche (2012) reported that there was a significant effect of dividend decision on price changes and upheld the presence of signaling hypothesis in Zimbabwe.

Adefila et al. (2004) findings showed that there was no evidence connecting share price and dividend decision in Nigeria after studying fifteen (15) quoted companies. They argued further that share price fixing is solely determined and regulated by

the Security and Exchange Commission (SEC). Adaramola (2012) investigated the information content of dividend payments in Nigerian employing panel model and Granger Causality test, the findings indicated that stock price variation is not directly caused by dividend payments. Contrary to this, the Granger causality test revealed that dividend payments and price of stock granger cause each other i.e. a bi-directional causal link exists between the prices of stock and payments of dividend. These results are contradictory and confusing because the two methods employed by him reported different results for the same set of data.

Uwuigbe, Jafaru and Ajayi (2012) examined the nexus between financial performance and dividend policy of some Nigerian quoted companies, as well as the nexus among ownership, size and the dividend payments. The regression-analysis method was used, the study found that companies' performance and dividend disbursement are directly and significantly related. It further revealed that dividend payments by company are largely influenced by company's size and the structure of ownership. The result of Uwuigbe et al. (2012) seems to have invalidated Adaramola (2012) and Adefila et al. (2004). Dasilas and Leventis (2011) evaluated the reaction of market to pronouncement of dividend payment by cash in Athens, Greece. It was discovered that variation in dividend pronouncement led to major reaction in the market despite the neutralized information and tax environment. The study upheld the proposition that dividend has ability to convey information in the market.

Bozos, Nikopoulos and Ramgandhi (2011) investigated how capable is dividend in passing information using London listed companies' data, the study found a direct and strong abnormal share price return in period close to dividend announcement, and also found that dividend can convey more information during economic adversity than earnings and less in periods of growth and stability. Other studies that upheld the information content and signaling effect of dividend payments using various approaches and conducted in different locations includes: Lee (2010a), Charitou, Lambertides and Theodoulou (2010), and Lee (2010b).

Uddin and Osman (2008) examined the declaration effect of dividend on value of shareholders from 2001 to 2005 in Saudi Arabia. The study revealed that 2.20 percent value is lost by the shareholders after the declaration. However, this loss was ameliorated by the payment of cash dividend to them. The study concluded that pronouncing increment in dividend may not convey any useful information to the shareholders.

The above review of literature shows that empirical studies on dividend policy – as it relates to stock price changes and other variables – are still few and inconclusive in Nigeria. The results from other developing and developed-market economies seem not to follow a single pattern, and this points to the fact that more to be done in this area, and it calls for further similar studies.

2. Methodology

This study examines the changes in stock price as a result of companies' dividend decision in Nigeria and hypothesized that the decision does not have effect on stock price changes – as postulated by Franco Modigliani and Merton Miller in their Dividend Irrelevance Theory.

2.1. Data and sample. Fifteen (15) companies quoted on the Nigerian Stock Exchange (NSE) market were randomly chosen on the basis that they met the criteria used, this includes: payment of dividend to shareholders during the period under review, their stocks are traded during the period, and that they held a significant part of the market share in their respective sectors. The sample cuts across nine industrial sectors in Nigeria. Time series and cross-sectional data on stock price (*SP*), earnings per share (*EPS*), dividend per share (*DPS*), and size (*SIZE*) for each company were used in the econometric model: hence forming a panel-data regression model. The period of the study spans from 2003 to 2012. Annual time-series data for all 15 companies were collected from the NSE Fact Book and Annual Financial Statements and Accounts of each company. At the end, one hundred and fifty (150) time series observation were used. This is above what most recent studies in Nigeria used.

2.2. Model specification. In specifying our model, we followed theoretical and empirical specification of previous researchers. The model is in line with Jecheche (2012), Hashemijoo and Ardekani (2012), and Adaramola (2012). The stock price (*SP*) is made a function of other explanatory variables which are: dividend per share (*DPS*), earning per share (*EPS*), and firm's size (size). The model is presented below;

$$SP = f(EPS, DPS, SIZE).$$

The model is therefore represented in a linear equation form as:

$$SP = \beta_0 + \beta_1 EPS + \beta_2 DPS + \beta_3 SIZE + \mu,$$

where β_0, β_1, β_2, β_3 are regression parameters; μ is stochastic/error term.

On the "a prior", it is expected that β_1, β_2, $\beta_3 > 0$. This implies that stock price will increase when there is an increment in *EPS*, *DPS*, and *SIZE*.

2.3. Estimation technique, variables, samples and data source. Panel-data regression analysis is employed as the estimation technique. The use of the panel econometric technique incorporates the observation of Lee (2010a), who stated that the use of the Ordinary Least Square (OLS) to examine the nexus between present dividend payments and expected earnings of companies results in a spurious outcome especially when dividend time-series data and earnings are non-stationary. This explains the choice of panel data in this study – which overcomes this shortcoming and takes into account the heterogeneity among the companies in the sample. Finally, panel data gives more information about variables and it is more efficient than other methods (Gujarati & Sangeetha, 2007).

3. Findings and interpretations

This section presents the empirical results and discussion of findings on the investigated relationship of the selected companies drawn into the panel and chosen from different industrial sectors of the Nigerian economy.

3.1. Presentation of results. The results of the panel regression analysis conducted on the data, are presented below.

3.1.1. Constant effect model. The pooled regression analysis or Ordinary Least Square (OLS) results of the model, is given in Table 1 (below).

Table 1. Constant effect model estimates

Variable	Coefficient	p-value
C	-433.9774	0.1782
EPS	1.230638	0.1666
DPS	9.417790	0.0000*
SIZE	-4.23E-07	0.6348

Source: Author's analysis.
Notes: R^2 = 0.382708, N = 150, *F-statistic* = 30.17232. (*) denotes significance at 5% significance level.

An examination of the results in Table 1 shows that the constant parameter is negatively or inversely related to stock price. The coefficient of the constant parameter is -433.9774. This implies that if all the explanatory variables are held constant, stock price (*SP*) – which is the explained variable – will reduce by -433.9774 units. The coefficient of *EPS* has a direct relationship with stock price, with a value of 1.230638 units. The implication of the above result is that if earning per share (EPS) increases by a unit, stock price increases by 1.230638 units. The coefficient of *DPS* exhibits a direct relationship with *SP*, with a value of 9.417790 units. This implies that

if dividend per share increases by a unit, stock price increases by 9.417790 units. In addition, the coefficient of *SIZE* exhibits an inverse relationship with stock price, with a value of -4.23E-07 units. This indicates that an increase in size reduces stock price by 4.23E-07 units. The multiple determination coefficient R^2 has a low value of 0.382708 and implying that 38% in stock price (*SP*) changes is traceable to *EPS*, *DPS*, and *SIZE*. This result did not show clearly the connection amongst the stock price, *EPS*, *DPS* and *SIZE* of the sampled companies.

3.1.2. Fixed effect model (FEM) – cross-sectional specific. This method accounts for the peculiar nature of each company in the sample. It is presumed that companies' slope coefficient is fixed and the intercept is allowed to vary for each company. The result of the fixed effect model is presented in Table 2 (below).

Table 2. Fixed effect (cross-sectional specific) estimates

Variable	Coefficient	p-value
EPS	1.224539	0.0150*
DPS	2.699166	0.0004*
SIZE	-1.38E-07	0.8306

Source: Author's analysis.
Notes: R^2 = 0.89140, N = 150, *Prob* (*F*) = 0.000000. (*) denotes significance at 5% significance level.

Table 2 (above), shows that *EPS* and *DPS* coefficient is positively related to *SP* and this is extremely noticeable, while size of the companies exhibits an insignificant negative relationship with *SP*. A unit increase in *EPS* and *DPS* leads to 1.224539 and 2.699166 units increase in *SP* respectively, while a unit increase in *SIZE* causes *SP* to decline by 1.38E-07 units. The R^2, has a high value of 0.891405 approximately 0.89 and shows that 89% of changes in stock price (*SP*) is brought about by *EPS*, *DPS*, and *SIZE*. The 11% balance is accounted for by the error term.

3.1.3. Random effect model. This random effect is also known to as the Error Components Model (ECM). This model assumes that the constant term (β_{1i}) is a random variable and not fixed. In this model, each company intercept is specified thus:

$$\beta_{1i} = \beta_1 + \varepsilon_i.$$

Table 3. Random effect (time period) estimates

Variable	Coefficient	p-value
C	292.0906	0.6217
EPS	1.375766	0.0087*
DPS	3.205291	0.0001*
SIZE	-2.25E-07	0.7345

Source: Author's analysis.
Notes: R^2 = 0.864592. (*) denotes significance at 5% level.

The result of the ECM estimation of the stock price model of the companies is presented in Table 3 (above). The result reveals that the coefficient of *EPS* and *DPS* is statistically significant at the 5% level of significance, and this can be seen from their respective *p*-values. *SIZE* is not statistically significant on *SP*. The result of the random effect model conforms to that of the fixed effect model. *EPS* and *DPS* affect the companies' stock price positively and significantly, while *SIZE* depicts a negative and insignificant relationship on their stock price. A unit increase in *EPS* and *DPS* causes *SP* to rise by 1.375766 and 3.205291 units respectively, while an increase in *SIZE* causes *SP* to fall by -2.25E-07 units. The R^2 is relatively high with a value of 0.864592, which implies that approximately 87% of total variation in *SP* is explained by *EPS*, *DPS*, and *SIZE*, while the remaining 13% is explained by factors not specified in the model. A comparison of the R^2 of the fixed and random effect models show that the fixed effect R^2 outperformed the random effect model because it has a higher R^2.

Juxtaposing all three models, it can be inferred that *DPS* is highly significant in all models and produces a greater positive effect on stock price changes compared to *EPS*. This implies that *DPS* is a major determinant of stock price changes. This concurs with the postulation of Gordon (1959) that dividend increases the value of a firm. *SIZE* is not significant and produces an adverse effect on stock price. Given the empirical findings, it can be said that dividend policy affects stock price positively and significantly in Nigeria.

Conclusion and recommendations

This study has empirically investigated the influence of dividend decision on stock price changes in Nigeria. A pooled analysis (panel-data analysis) of fifteen (15) companies was taken for the period 2003 to 2012. The results revealed that the dividend per share (*DPS*) and the earnings per share (*EPS*) are significantly indispensable to contributing to the stock price changes of the sampled companies in this study. Furthermore, stock price operations have significantly impacted on the performance of these companies, given the effect of the random effect model which concurs with the fixed effect model when considering the parameter estimates in the models. However, *SIZE* is negatively and insignificantly connected to the companies' stock price changes. This relationship is present in all the three panel models considered in this study. This suggests that increase in size of the company does not mean an increase in stock price. It means that there are other factors that provide explanations of the behavior of stock price besides the variables considered in this study. Dividend per share provides the highest and most significant explanations on the companies' stock price changes – given the statistical significant of the *p*-value in each of the panel regression models. Although earning per share posits a positive relationship to the dependent variable share price (*SP*), the value of the coefficient is not significant statistically in the constant effect model; however, in the fixed and random effect models, its statistical significance is high.

It is concluded that the dividend policy has a notable effect on changes in stock price and that the payment of dividend increases stock price. This study supports the dividend relevant hypothesis pioneered by Gordon (1959; 1963) and Lintner (1962) and it also corroborates the finding of Hashemijoo and Ardekani (2012), Chavali and Nusratunnisa (2013), Lee (2010a), and Uwuigbe et al. (2012) study using Nigerian data. The findings lead to the recommendation that the companies should take into consideration all the factors that affect stock price – in order to ensure the best policy which satisfies the various stakeholders. In addition, companies should increase their dividend payout, so as to increase the price of its stocks.

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Appendix

Table 1A. Constant effect model result

Dependent variable: SP			
Method: pooled least squares			
Sample: 2003 2012			
Included observations: 10			
Number of cross-sections used: 15			
Total panel (balanced) observations: 150			
Variable	Coefficient	Std. error	*t*-statistic	Prob.
C	-433.9774	320.7796	-1.352883	0.1782
EPS	1.230638	0.885337	1.390022	0.1666
DPS	9.417790	1.403694	6.709289	0.0000
SIZE	-4.23E-07	8.89E-07	-0.475910	0.6348
R-squared	0.382708	Mean dependent var		993.6537
Adjusted *R*-squared	0.370024	S.D. dependent var		3840.965
S.E. of regression	3048.613	Sum squared resid		1.36E+09
F-statistic	30.17232	Durbin-Watson stat		0.530679
Prob (*F*-statistic)	0.000000			

Table 2A. Fixed effect model result

Variable	Coefficient	Std. error	t-statistic	Prob.
Dependent variable: SP				
Method: Pooled least squares				
Sample: 2003 2012				
Included observations: 10				
Number of cross-sections used: 15				
Total panel (balanced) observations: 150				
EPS	1.224539	0.496954	2.464090	0.0150
DPS	2.699166	0.740892	3.643129	0.0004
SIZE	-1.38E-07	6.45E-07	-0.214338	0.8306
Fixed effects				
FIRSTBANK--C	-483.2226			
GTBANK--C	-273.9699			
ACCESS--C	-82.41956			
ZENITH--C	-412.7450			
GUINNESS_--C	11878.91			
CHELLARAM--C	-53.69989			
AGLEVENTIS--C	-60.89171			
UNILEVER--C	-180.9514			
JULIUS--C	-203.4547			
SEVENUP--C	-639.8725			
NESTTLE--C	-1933.038			
VITAFOAM_--C	-121.0923			
PRESCO--C	-224.7177			
OANDO--C	-1145.442			
GLAXOSMITH--C	-331.8889			
R-squared	0.891405	Mean dependent var		993.6537
Adjusted R-squared	0.877420	S.D. dependent var		3840.965
S.E. of regression	1344.778	Sum squared resid		2.39E+08
F-statistic	541.7647	Durbin-Watson stat		1.250316
Prob (F-statistic)	0.000000			

Table 3A. Random effect model result

Variable	Coefficient	Std. error	t-statistic	Prob.
Dependent variable: SP				
Method: GLS (variance components)				
Sample: 2003 2012				
Included observations: 10				
Number of cross-sections used: 15				
Total panel (balanced) observations: 150				
C	292.0906	590.6012	0.494565	0.6217
EPS	1.375766	0.517343	2.659294	0.0087
DPS	3.205291	0.775621	4.132548	0.0001
SIZE	-2.25E-07	6.61E-07	-0.339753	0.7345
Random effects				
FIRSTBANK--C	-819.3594			
GTBANK--C	-535.5770			
ACCESS--C	-341.8308			
ZENITH--C	-733.8296			
GUINNESS_--C	10717.03			
CHELLARAM--C	-339.9141			
AGLEVENTIS--C	-347.9212			
UNILEVER--C	-483.2715			
JULIUS--C	-507.0124			
SEVENUP--C	-993.2357			
NESTTLE--C	-2456.004			

Table 3A (cont.). Random effect model result

Variable	Coefficient	Std. error	t-statistic	Prob.
Random effects				
VITAFOAM_--C	-414.5799			
PRESCO--C	-530.5975			
OANDO--C	-1566.082			
GLAXOSMITH--C	-647.8183			
GLS transformed regression				
R-squared	0.864592	Mean dependent var		993.6537
Adjusted *R*-squared	0.861810	S.D. dependent var		3840.965
S.E. of regression	1427.838	Sum squared resid		2.98E+08
Durbin-Watson stat	1.067284			
Unweighted statistics including random effects				
R-squared	0.889743	Mean dependent var		993.6537
Adjusted *R*-squared	0.887477	S.D. dependent var		3840.965
S.E. of regression	1288.430	Sum squared resid		2.42E+08
Durbin-Watson stat	1.310738			