Firm-Level Determinants and Dividend Policy of Nigerian Non-Financial Listed Firms

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Abstract
This study aims to examine the relationship between firm-level determinants and dividend policy of firms in the Nigerian non-financial sectors. The unresolved nature of the theoretical debate and the relative neglect of dividend policies in developing capital markets motivated consideration of the potential impact that dividend policies can have on shareholders' wealth in the Nigerian non-financial firms. Hence, the ability to determine dividend policy poses a more significant challenge to corporate organisations. Therefore, this study is designed to advance alternative conceptualised approach to adequately account for the issues as well as advance effective dividend policy in Nigeria. The relevant data with the annual frequencies of these financial factors were collected from the annual audited reports and fact book of NSE of the selected 9 firms of the non-financial sectors (agriculture, conglomerates, construction, consumer goods, health care, industrial goods, natural resources, service sector and oil and gas) in Nigeria for the period of ten years from 2008 to 2017. The study employs a quantitative research approach. In addition to examining the interaction of the most concurrence variables with the dividend policy of firms, static (e.g., the Pooled Ordinary Least Squares and Fixed Effect analysis). The findings from this study provide a new framework for investors and stock market participants to improve their investment decisions after exploring which firm-level determinants are more effective in constraining dividend policy. The element of each determinant tends to vary across and between different firm-level attributes. Thus, management should be aware of these issues as they reflect the overall dividend policy decision making at different stages of the economy within Nigeria. Effective and efficient decision-making leads to cost reductions and, therefore, maximises the wealth of the shareholders.

Keywords: Dividend, Dividend per share, Firm level determinants, Shareholders, Nigeria

Introduction
Dividend theory first came into focus through the initial study of Lintner (1956), who posit three crucial issues that lead to a standard model of the dividend payout ratio. Firstly, firms have long-term target dividend payout ratios. Secondly, managers focus more on dividend changes than on absolute levels. Thirdly, dividends changes follow shifts in long-run sustainable levels of earnings rather than short-run changes in earnings. Over the years, the Lintner's model, has become the gold standard of dividend theory, and has been developed and supported by a relatively large number of studies (Ahmed and Javid, 2009; Baker and Powell, 2000; Brav, Graham, Harvey, and Michaely, 2005; Dhanani, 2005; Fama and Harvey, 1968; Garrett and Priestley, 2012; Magret, Sibanda, and Oseko, 2017). This model implies that dividend policy may vary significantly across different industries and firms (Tao, 2012).

Over the past decades, dividend policy has gained a considerable amount of attention of the researchers, academicians and other stakeholders. It has been one of the most debated issues in corporate finance since the publication of the seminal work of (Miller and Modigliani, 1961). Miller and Modigliani (1961) argued that in perfect markets, the financial managers are unable to change the firms' value by altering their dividend policy. Furthermore, in the real world, the perfect markets do not exist; the value of firms is expected to influence dividend policy. Consequently, researchers proposed different theories about the outcome of dividend policy and the factors that influence the dividend policy of the firms.

There are many proposals by researchers on the diverse theories about the factors that determine the dividend policy of the firms. Even though numerous models, explanations and theories exist, the generally applied theories include: a bird in the hand theory reported by Walter (1967) and Gordon (1963). According to this theory, the cash dividend is the forecast preference of the investors as compared to a future assurance of capital gains due to risk minimization (Al-Malkawi, Rafferty and Pillai, 2010; Michelle et al., 2012). Thus, the dividend that mitigates information asymmetry between shareholders and management by transmitting secret information about the future prospects of the firm is referred to as signalling information on dividends (Bhattacharya, 1979; Miller and Rock, 1985; Al-Kuwari, 2009; Aggarwal et al., 2012; Baker and Powell, 2012; Al-ghazali, 2014; Baker and Kapoor, 2015).

Accordingly, Pandey (2003) asserts that firm dividend may be directed towards establishing the proportion of current income that should be retained and the proportion that should be distributed among its shareholders. This has been an issue of contrivance and a subject of rigorous theoretical and empirical examination. However, the amount that shareholders are willing to pay in exchange for shares of a company is influenced by the firm’s dividend policy (Van Horne, 1998; Pandey, 2005). This implies to the payment policy; which managers pursue in deciding the size and pattern of cash distribution to shareholders over time. Thus, the main objective of management is the...
maximization of shareholder wealth, which explains into exploiting the value of the firm as measured by the value of the firm’s stock. This goal can be achieved by giving the shareholders a fair payment on their investments (Olang, Akenga and Mwangi, 2015).

Firms raise equity capital in order to invest in assets that will produce future cash flows, flows to which the shareholders have a claim. Whether those cash flows are paid to shareholders as dividends or retained as a source of capital for further investment is a decision of potentially great importance to both shareholders and the firm, and one that has been subjected to much scrutiny by equity analysts and economists. Thus far, at least, controversy still surrounds the issue of how important dividend policy is to both investors and their firms and whether it has significant implications for the market value of firms. In industrialized countries, the theoretical importance of dividend policy has resulted in a considerable effort put into identifying the effects dividend have on firms in those countries (Tao, 2012). No such effort has been made in less developed countries.

Aggregate data provide a useful and interesting perspective on international differences in dividend policy and their relationship with other variables, but they also cover many of the firm and industry characteristics that may dominate dividend decisions. Some industries are subject to significant volatility in the market prices of their products. Other industries may be growing significantly faster or slower than the economy, which has an impact on both their need for capital and the future earnings flows that they can be expected to generate. These same factors could also exert a strong influence on the dividend policies of the firms within an industry. Having established that there are significant differences in dividend behaviour, one wonders if there are industry differences as well. However, aggregate and firm-level data provide useful characteristics of dividend policy (Arko et al., 2014; Trang, 2012), but they fail to fully explain why such differences exist and how dividend policy is formulated at the firm level. This is based on the legal constraints, taxes and accounting systems as factors important in determining dividend behaviour. Many governments have adopted legal restrictions on the payment of dividends to protect the interest of minority shareholders and creditors (Aivazian and Booth, 2001). Governments have in some cases taken an additional step to protect shareholders and encourage interest in equity investments by dictating a minimum level of dividends that publicly-listed companies must adhere to (Esqueda, 2016; Liljebloem and Maury, 2016).

Based on the above evidence, the approaches, methods, period, and the analysed firm-level variables, it can be seen that prior studies provide little information on how Nigerian firms determines the appropriate dividend policy determinants. In order to overcome the issue of inadequacy of information, this study has applied more relevant theoretical and empirical approaches and methods with a more extended period and a wide range of variables to examine the possible determining factor of dividend policy of Nigerian listed companies. Accordingly, this study is one of the few studies that comprehensively examine the relationship between firms’ level determinants and dividend policy in Nigerian non-financial listed firms.

**Firm-Level Determinants and Dividend Policy**

A large portion of the literature mainly recognises the importance of firm-level factors which influences dividend policy practices across firms (Al-Kuwari, 2009; Al-Malkawi, 2007; Arif and Akbar, 2013; Gill, Biger, and Tibrewala, 2010; Jabbouri, 2016; Labhane and Mahakud, 2016; Trang, 2012). These studies found differences on a few aspects, namely dividend payout ratio, the stability of dividends, legal, contractual and internal constraints and restrictions, owner's considerations, capital market considerations, inflation, capital structure, political affiliation, institutional settings and corporate governance. These differences, directly and indirectly, influence the dividend policy of firms. Therefore, the empirical findings cannot be generalised in determining the corporate dividend policy behaviour across nations. However, in the context of developing countries, quite a few studies highlight the prominence of firm-level factors in firms’

Dividend per share (DPS) is the amount of the dividend that shareholders will receive for each share they own in a company. It is determined by dividing the annual dividend by the total number of shares outstanding, or it is also being determined by multiplying EPS and DPR. If a company follows a consistent payout ratio (i.e. The company is known to pay a consistent percentage of its earnings as dividends), a rough estimate of the dividend paid per share can be calculated through the income statement. However, many studies use DPS as a variable in determining the impact of dividend policy (Abiahu and Amahalu, 2017; Ahmed and Mutaza, 2015; Al-Kuwari, 2009; Amidu, 2007; Booth and Zhou, 2015; Chen, Tang, and Hu, 2014; Fama and Harvey, 1968; Guo, 2016; Ibrahim and Saidu, 2015; Jory, Ngo, and Sakaki, 2017; Kennedy, 2015; Mehta, 2012; Miko and Kamardin, 2015; Nurdin and Kasim, 2017; Tahere and Batool, 2015; Tahir and Mushtaq, 2016; Walkup, 2016; Zakaria et al., 2012). Based on the empirical literature review, this study incorporates the four prominent firm-level factors, which affect the dividend policy of firms. Both empirical and theoretical reviews inspire the selection of the variables and definitions in this work (see Table 1). The most commonly used and significant firm-level determinants in the previous studies are firm size, firm leverage, firm performance and shareholders’ wealth. Based on these assertions, the following hypothesis has been formulated:

**H1:** There is no significant relationship between firm-level determinants and dividend per share of listed non-financial firms in Nigeria.

**Firm Size**

Firm size widely discussed as one of the factors that affect a company's dividend policy in various countries. The size of the firm remains one of the most important factors affecting its dividend policy despite the contradicting findings of the nature of this impact. Many studies examined this relationship (Ahmad and Wardani, 2014; Aydin and Cavdar, 2015; Denis and Osobo, 2008; Kajola et al., 2015), but no consensus was accomplished. For instance, several studies established a relationship between the amount of cash dividends distributed and the size of the firm (Baker et al., 2018; Raaballe and Hedensted, 2008). Accordingly, a study on the impact of firms’ size on dividend behaviour, proves that dividend payout of the small, medium, and large size firms and overall corporate firms across industries in India are dependent on the level of debt in the capital structure. Jensen and Meckling (1976) argue that managers have greater control over larger firms where ownership is more dispersed, and shareholders have a low incentive and ability to monitor. Hence, the level of agency problems and information asymmetry intensifies. As an alternative solution, a high dividend payout ratio would help these firms send costly positive signals about the prospects of the firm, the good faith of management, and the low level of agency conflicts (Lloyd et al., 1985). Meanwhile, firm size can be measured by taking the natural logarithm for the assets of the company and the natural logarithm of the book value of total sales. Hypothetically it is presented as:

**H2:** Firm size has a significant influence on dividend policy.

**Leverage**

According to transaction cost theory, the firms having a higher proportion of debt finance in total capital will have a higher level of commitment to pay the fixed interest charges, and this will reduce the dividend payment to common equity shareholders (Al-Malkawi, 2007). Therefore, companies having high financial leverage pay fewer dividends (Labhane & Mahakud, 2016). Debt always involves high risk as it must be paid off (Tahere & Batool, 2015). However, it allows companies to manage return on equity for shareholders. High financial leverage is associated with risk, so highly leveraged companies pay lower dividends to protect creditors and maintain internal cash flow to fulfill their responsibility. That is, highly leveraged firms pay lower dividends, to reduce their transaction costs (Rozeff, 1982; Jensen, 1986; Crutchley and Hansen, 1989; Gugler and Yurtoglu, 2003). This
suggested that non-dividend paying firms have high leverage in comparison to dividend-paying firms (Tahere & Batool, 2015). A company’s leverage has been analysed in the literature as an important factor for dividend policy decisions. Rozell (1982) argues that high leverage increases the transaction costs and the risk of the firm. Firms with a high leverage ratio have high fixed payments for using external financing. Therefore, the higher the leverage ratio, the lower the chance for the dividend. Consequently, leverage is negatively related to dividends. This result is supported by the agency cost theory of dividend policy (Jensen & Meckling, 1976; Kazimierska-Jóźwiak, 2015). The debt-to-total assets and debt-equity ratios may measure leverage ratios. The ratio of debt to total assets, generally called debt ratio, measures the percentage of funds provided by creditors. Debt includes all current liabilities and long-term debt. Hypothetically it will be presented as:

**H3:** Leverage has a significant influence on dividend policy

**Firm Performance**

Firm performance is a relevant construct in strategic management research and frequently used as a variable. The concept of firm performance needs to be distinguished from the broader construct of organisational effectiveness (Priya and Nimalathasan, 2013). Every year the company will produce the audited report to their investors. Through the report, the company's performance can be evaluated based on financial analysis. By evaluating the performance assessment, it would determine the firm current financial position. Usually, the firm's performance will be evaluated by referring to the statement of profit and loss and statement of financial position at the end of the financial period. A study by Uwuigbe et al. (2012), on dividend policy and firm performance, revealed that there is a significant relationship between the performance of firms and the dividend payouts of the sampled firms in Nigeria. However, although investors agree on key determinants of dividend policy of firms, the effect of firms’ value on dividend policy is largely challenged. Thus, relating to the relationship between firm’s performance and dividend payout policy, many academic scholars have examined the effect of firm performance on dividend policy (Amidu, 2007; M’rabet & Boujijat, 2016; Murekufu, 2012; Uwuigbe et al., 2012; Velnampy et al., 2014). An increase in the financial well-being of a firm tends to affect the dividend payout level of firms positively. Three different variables measure firm performance: return on asset (net profit divided by total assets); return on equity (net profit by shareholders' equity); market-to-book value (market value of equity by book value of equity). Hypothetically it is presented as:

**H4:** Firm performance has a significant relationship with dividend policy.

**Shareholders Wealth**

Shareholders’ wealth is the present value of the expected return that shareholders will get from the company that they have invested. Shareholders can benefit from their investments where the stock price appreciates or an increase in dividends. This result is supported by the agency cost theory of dividend policy (Jensen & Meckling, 1976; Kazimierska-Jóźwiak, 2015). The debt-to-total assets and debt-equity ratios may measure leverage ratios. The ratio of debt to total assets, generally called debt ratio, measures the percentage of funds provided by creditors. Debt includes all current liabilities and long-term debt. Hypothetically it will be presented as:

**H5:** Shareholders wealth has a significant relationship with dividend policy.

Based on the foregoing hypotheses, the research framework depicted in Figure 1 was tested.

![Figure 1. Research Framework](image)

**Research Methodology**

In this study, the research methodology is grounded in the prominent concepts mostly employed to overcome the problem of the study in a scientific and organised way. This paper employs a quantitative research approach based on the above discussion and the review of the literature. The quantitative research approach supports the interpretation of data in numbers with concrete reasons. It is learned that numerical fact and figures are more pronounced and easily interpreted. Numerical data can be described, explained and concluded in a logical sequence. The study adopted ex-post facto research designs. Documentary data were to be obtained from the annual reports and accounts of the firms and the Nigerian Stock Exchange Fact Book. The population of this study comprises all non-financial firms quoted on the Nigerian Stock Exchange (NSE) as at 31st December 2017. The companies that are selected for the study are sixty-two (62). Thus, research accuracy reveals that the narrowness, succinctness and objectivity strengthened the research design and statistical analysis. According to different researchers; Bryman (2006) and Sweetman et al. (2010), selecting quantitative methods explain the research problems more precisely and accurately by using quantitative data. The study used Statia 14 for the analysis.

The firm-level variables data were obtained mainly from the publications of financial statement analysis of companies. The publications of NSE provide useful and authenticated financial information related to the important segments and accounts of the financial statements of Nigerian firms. All these data sources depend upon the individual firm’s yearly audited financial statements (e.g. balance sheets, cash flow statements and income statements). This study consists of 10 years of data starting from 2008 to 2017. The precision and validity of the variables formulation are liable to the autonomous audited accounting reports that observe the principles of their national regulatory bodies (Delcoure, 2007). This research uses panel data techniques because of the data type, which is a mixture of time series (which reflect the period of the study, i.e. 2008-2017) and cross-section (which reflects non-financial firms). The variables of the study are shown in Table 1:

<table>
<thead>
<tr>
<th>Firm-Level Attributes</th>
<th>Dividend Per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Size</td>
<td></td>
</tr>
<tr>
<td>Firm Leverage</td>
<td></td>
</tr>
<tr>
<td>Firm Performance</td>
<td></td>
</tr>
<tr>
<td>Shareholders Wealth</td>
<td></td>
</tr>
</tbody>
</table>

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Table 1: Study Variables

<table>
<thead>
<tr>
<th>S/N</th>
<th>Variables</th>
<th>Formulation</th>
<th>Past Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Firm size (FS)</td>
<td>FS is taking as the natural logarithm for the assets of the company or the natural logarithm of the book value of total sales</td>
<td>Anuji &amp; Oduh, (2008), Kajolu, Desu, &amp; Aghanike (2015), Al-Najjar &amp; Kilimci-Arslan (2016), Lam, Sami, &amp; Zhou (2012)</td>
</tr>
<tr>
<td>4</td>
<td>Firm performance (FP)</td>
<td>FP is measured by net profit divided by total assets, net profit divided by shareholders equity</td>
<td>Amido (2007), Bouajt, (2016), Murekefu (2012), Uwuigbe et al. (2012), Velmamp, Nithamuthan, &amp; Kalaarashi (2014)</td>
</tr>
</tbody>
</table>

Model Specification and Estimation

This research incorporates the econometric techniques employing the panel data that include the attributes of both cross-sectional and time-series data. According to the studies of Frees (2004) and Baltagi (2005), panel data estimations distinguish the models from cross-section and time-series estimations because it employs the double subscript nature of the variables. Furthermore, this study employs descriptive statistics to describe and summarize the behaviour of firm-level variables. This statistical tool investigates the number of observations, their minimum value, maximum value, mean value and standard deviations based on an overall sample of Nigerian non-financial listed firms.

Pooled Ordinary Least Squares (OLS) Analysis

One of the techniques in this study is pooled ordinary least squares. Generally, it is employed for the estimations of the regression models. This technique curtails the errors among the observed points and estimated points on the line (Carter, William, & Guay, 2010). The following equation captures the pooled OLS:

\[ DV_{it} = \alpha + \beta_1 FS_{it} + \beta_2 LEV_{it} + \beta_3 FP_{it} + \beta_4 SW_{it} + \beta_5 FS_{it} + \epsilon_{it} \]

Fixed Effect Analysis

A fixed and random effect model can be abridged for regression analysis that depends upon the assumptions made about \( \alpha_{it} \). Based on the research objectives, this study employs the fixed effect model to include the unobserved firm-specific and individual time-invariant effects in the analysis (Bartolucci et al., 2015; Bell & Jones, 2015). The following equation gives it:

\[ DV_{it} = \alpha + \beta_1 FS_{it} + \beta_2 LEV_{it} + \beta_3 FP_{it} + \beta_4 SW_{it} + \mu_i + \epsilon_{it} \]

Results and Discussion

This section describes the statistical findings in order to fulfill the objectives of this study. The first section depicted the result of the data analysis and showed the relationship between firm-level determinants (firm size, leverage, firm performance, shareholders wealth) and dividend share of the non-financial listed firms in Nigeria. The quantitative data analysis used in the study intricate the logical sequences of methods, i.e. descriptive statistics, variance inflation factor, heteroscedasticity test, serial correlation, pooled ordinary least square regression, fixed-effects model, random effect model. This section presents the evidence whether the results supported the hypotheses or not, and whether the results are significant or not. The analysis attempted to see whether the results obtained from panel data were different or not (from the literature).

Descriptive Statistics

Descriptive statistics analysis was employed to obtain an overview of the nature of the dataset for all dependent and independent variables. The descriptive statistics are shown in Table 2, which depicts the mean, minimum, maximum, and standard deviation of all the variables which have been taken under study. The mean value of dividend per share (DPS) is 0.905, ranging from 0 to 34, with a standard deviation of 2.841. Firm size of a firm (FS) varies from 4.94 to 9.21 with a mean value of 7.156 and standard deviation of 0.767, respectively. The mean value of Debt Equity ratio (DER) is 0.308, ranging from 0 to 34 with a standard deviation of 0.767, respectively. The mean value of Credit Ratio (CR) is 0.308, ranging from 0 to 34 with a standard deviation of 0.767, respectively. The mean value of Debt to Total Asset (DTAR) varies from 66.91 to 175.51, with a mean value of 21.981 and standard deviation of 23.721, respectively.

Table 2: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variab</th>
<th>OBS</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPS</td>
<td>620</td>
<td>0.906</td>
<td>2.841</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>FS</td>
<td>620</td>
<td>7.159</td>
<td>0.767</td>
<td>4</td>
<td>9.21</td>
</tr>
<tr>
<td>DER</td>
<td>615</td>
<td>0.308</td>
<td>1190.23</td>
<td>21043.66</td>
<td>2780.0</td>
</tr>
<tr>
<td>DTAR</td>
<td>620</td>
<td>21.98</td>
<td>23.721</td>
<td>66.91</td>
<td>175.51</td>
</tr>
<tr>
<td>ROE</td>
<td>609</td>
<td>7.530</td>
<td>52.44</td>
<td>387.56</td>
<td>43.582</td>
</tr>
<tr>
<td>ROA</td>
<td>620</td>
<td>1.386</td>
<td>387.56</td>
<td>156</td>
<td></td>
</tr>
<tr>
<td>FL</td>
<td>620</td>
<td>0.231</td>
<td>0.1985</td>
<td>0.79</td>
<td></td>
</tr>
</tbody>
</table>

The mean value of Return on Asset (ROA) is 8.808, ranging from -74.06 to 185.04 with a standard deviation of 14.599. Return on Equity (ROE) varies from -387.56 to 156, with a mean value of 7.530 and standard deviation of 52.443, respectively. The mean value of Earnings per share (EPS) varies from -20.228 to 43.582, with a mean value of 1.866 and standard deviation of 4.917. Tobin’s Q varies from -0.1895 to 1.755 with a mean value of 0.231.
and standard deviation of 0.233, respectively. Firms’ liquidity (FL) varies from 0.02 to 7.79, with a mean value 1.315 and standard deviation of 0.835, respectively.

### Serial Correlation

Table 3 shows that there is a serial correlation in the model, which indicates that we reject the null hypothesis since the p-value is less than 0.05, and it is concluded that the data does have the first-order autocorrelation.

<table>
<thead>
<tr>
<th>Table 3: Serial Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wooldridge test for autocorrelation in panel data</td>
</tr>
<tr>
<td>Ho: no first-order autocorrelation</td>
</tr>
<tr>
<td>F(1, 61) = 164.534</td>
</tr>
<tr>
<td>Prob &gt; F = 0.0000</td>
</tr>
</tbody>
</table>

### Variance Inflation Factor (VIF) and Tolerance Test

Table 4 presents the findings relevant to VIF and tolerance value for the overall sample of non-financial firms listed on NSE. The condition of VIF and tolerance test is that, if the value of VIF is more than 10 and the value of tolerance is less than 0.10 for any variable, it means the variable has some problem, which further needs to be addressed. The result of this test shows that the variance inflation factor (VIF) value was less than 10, and the tolerance value of variables was more than 0.10. Thus, this indicates that there is no evidence for the multicollinearity problem between predictor variables.

<table>
<thead>
<tr>
<th>Table 4: VIF and Tolerance Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>FS</td>
</tr>
<tr>
<td>DER</td>
</tr>
<tr>
<td>DTAR</td>
</tr>
<tr>
<td>ROE</td>
</tr>
<tr>
<td>ROA</td>
</tr>
<tr>
<td>EPS</td>
</tr>
<tr>
<td>TOBINQ</td>
</tr>
<tr>
<td>MEAN VIF</td>
</tr>
</tbody>
</table>

FS=Firm Size, DER=Debt Ratio, DTAR=Depend Total Asset Ratio, ROA=Return of Asset, ROE=Return of Equity, EPS=Earnings per Share, TOBINQ’ Q, IOWN=Institutional Ownership, MOWN=Managerial Ownership, FL=Firm Liquidity

### Heteroscedasticity Test

In order to determine the homoscedasticity of the residual variance, Breusch-Pagan or Cook-Weisberg test (Breusch-Pagan, 1979) was applied. The condition for homoscedasticity test is that the models having a p-value less than 0.05 have heteroscedasticity problem. According to the result shown in Table 5, there is heteroscedasticity issue in the model, since the p-value is significant. Therefore, the model should be regressed using the least square estimator with robust standard regression.

<table>
<thead>
<tr>
<th>Table 5: Heteroscedasticity Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Pagan or Cook-Weisberg Test</td>
</tr>
<tr>
<td>Ho: The variance of the residual is constant</td>
</tr>
<tr>
<td>Reject Ho if the p-value is significant</td>
</tr>
</tbody>
</table>

### Regression Analysis Overall Sample

This section presents regression analyses that estimate the influence of firm-level determinants on dividend policy. All assumptions of ordinary least square (OLS) regression were adequately fulfilled except that the models have heteroscedasticity issue in the variance of dependent variables. Therefore, all models are regressed using the least square estimator with robust standard errors to overcome the heteroscedasticity problem. Along with OLS regression, this study employed a fixed or random effect model analysis to examine the differences among results further. Before defining the empirical results in this study, it is essential to select the appropriate model for this study. To achieve this purpose, the study applied the Hausman test. Hausman test criteria are based on the significance or insignificance of chi-square statistics. The chi-square statistics values of all the models are significant at 5% level, indicates that fixed-effect analysis is appropriate for all the models as per the results of the Hausman test.

### Results of Dividend Policy with Firm-Level Determinants

The study used the following regression model in order to test the relationship between firm-level determinants and dividend policy.

\[
DVit = a + b1FSit + b2LEVit + b3FPtr + b4SWit + b5Lit + eit
\]

**Table 6: Robust Regression Result of Dividend Per Share with Firm-Level Determinants**

<table>
<thead>
<tr>
<th>D V</th>
<th>IV</th>
<th>Coeff. Pooled OLS</th>
<th>p-value</th>
<th>Coeff. FE</th>
<th>p-value</th>
<th>Coeff. RE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS</td>
<td>0.7079</td>
<td>0.0000**</td>
<td>0.1212</td>
<td>0.019</td>
<td>0.7229</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>DER</td>
<td>4.14</td>
<td>0.979</td>
<td>0.00002</td>
<td>0.776</td>
<td>0.0001</td>
<td>0.777</td>
<td></td>
</tr>
<tr>
<td>DTAR</td>
<td>-0.0162</td>
<td>0.055*</td>
<td>-0.0074</td>
<td>0.549</td>
<td>0.0086</td>
<td>0.472</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>-0.0008</td>
<td>0.205</td>
<td>-0.0102</td>
<td>0.174</td>
<td>-0.0013</td>
<td>0.135</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>-0.0018</td>
<td>0.195</td>
<td>-0.0003</td>
<td>0.989</td>
<td>-0.00003</td>
<td>0.994</td>
<td></td>
</tr>
<tr>
<td>EPS</td>
<td>-0.0436</td>
<td>0.003*</td>
<td>-0.0010</td>
<td>0.744</td>
<td>0.0012</td>
<td>0.967</td>
<td></td>
</tr>
<tr>
<td>TOBINQ</td>
<td>1.8137</td>
<td>0.040*</td>
<td>1.0023</td>
<td>0.405</td>
<td>1.0662</td>
<td>0.360</td>
<td></td>
</tr>
<tr>
<td>FL</td>
<td>0.1552</td>
<td>0.068*</td>
<td>-0.0081</td>
<td>0.572</td>
<td>0.0452</td>
<td>0.745</td>
<td></td>
</tr>
<tr>
<td>R-square</td>
<td>0.0044</td>
<td>0.0234</td>
<td>0.0254</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>5.61</td>
<td>0.9</td>
<td>0.162</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistics</td>
<td>Prob(F)</td>
<td>0.0000</td>
<td>0.0096</td>
<td>0.0422</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The p-values shown in parentheses i.e. ***, **, and * denotes significance at 1%, 5% and 10% levels, respectively. DV = Dependent Variable, Independent Variable.

### Results of Dividend Per Share with Firm-Level Determinants

\[
DPStoa = b1FStoa + b2LEVtoa + b3FPtroa + b4SWtoa + b5Litoa + eita
\]

Where DPS represent dividend per share of the firm in period t, firm size (FS), leverage (LEV), firm’s performance (FP), shareholders wealth (SW), firm liquidity (FL), disturbance term eita.

The equation above shows association between dividend per share and all the independent variables and the control variable by using the regression model. Table 6 shows the findings of regression results of pooled OLS, fixed effects and random effects.

According to results in Table 6, the F statistics was significant under Pooled OLS (F=5.61, p-value < 0.0000), FE (F=1.89, p-value < 0.0596) and RE (F=16.02, p-value<0.0422) indicating that firm-level determinants could be considered to be influencing dividend per share under each of the method. The R square value under Pooled OLS is 0.0344, which indicates that the variables in the model explained only 3.44% of the variation in dividend per share. Also, the R square value under FE is 0.0234, indicating that the variables in the model explained 2.34% of the variation in the dividend per share. Although, R-square value under RE 0.0254 which indicates that the variables in the model explained only 2.54% of the variation in dividend per share.

Table 6 presents the coefficient values of all the variables whereby, firm size (coefficient = 0.7079, p-value = 0.000), Tobin q (coefficients = 1.8137, p-value = 0.040) and firm liquidity (coefficients = 0.1552, p-value = 0.068) are positively related to dividend per share under pooled OLS. On the other hand, debt to total assets ratio (coefficients = -0.0163, p-value = 0.055) and earnings per share (coefficients = -0.0036, p-value = 0.003) are negatively related to dividend per share based on Pooled OLS computation. Meanwhile, only firm size (coefficient = 0.8121, p-value 0.019) is positively related to dividend per share based on FE. Furthermore, RE reveal that firm size (coefficient = 0.7229, p-value = 0.006) is positively related to dividend per share.
Conclusion

As a conclusion, the variables of firm size, Tobin q, and firm liquidity are positively significant, showing that an increase in firm size, Tobin q and firm liquidity will cause an increase in dividend per share. In contrast, debt to total asset and earnings per share are negatively significant to dividend per share. This shows that a decrease in DTAR and EPS will lead to an increase in dividend per share based on Pooled OLS. On the FE assumption, only firm size is positively significant, and an increase in firm size will lead to an increase in dividend per share. Meanwhile, under RE, only firm size is positively significant, and an increase in firm size will lead to an increase in dividend per share.

Firm size mainly maintained a positive relationship with dividend per share. The statistical outcome is in line with agency theory, which argues that managers have greater control over larger firms where ownership is more dispersed, and shareholders have a low incentive and ability to monitor (Jensen and Meckling 1976). This is also supported by the Nigerian studies that show larger companies no longer have much expansion investment need and therefore have higher tendency to pay a higher amount as a dividend (Okoro, Ezeabasili, and Alaje kwu, 2018; Patrick, Theophilus, and Mirian, 2017; Uwuigbe, 2013). Likewise, the debt-equity ratio maintained a positive relationship with dividend per share. This is in contrast with transaction cost theory, which states that the firms having a higher proportion of debt finance in total capital will have a higher level of commitment to pay the fixed interest charges, and this will reduce the dividend payment to common equity shareholders (Al-Malkawi, 2007).

Therefore, companies having high financial leverage pay fewer dividends (Labhane and Mahakud, 2016). Similarly, the results of debt to total asset ratio maintained a negative relationship with dividend policy. This is in support of the transaction cost theory. A company’s leverage has been analysed in the literature as an important factor for dividend policy decisions. Rozeff (1982) argues that high leverage increases the transaction costs and the risk of the firm. Firms with a high leverage ratio have high fixed payments for using external financing. Therefore, the higher the leverage ratio, the lower the chance for a dividend. Consequently, leverage is negatively related to dividends. That is, highly leveraged firms pay lower dividends, to reduce their transaction costs (Rozeff, 1982; Jensen, 1986; Crutchley and Hansen, 1989; Gugler and Yurtoglu, 2003).

Likewise, the relationship between return on assets and dividend per share is found to be positively significant. This shows that an increase in the financial well-being of a firm tends to affect the dividend payout level of the firm positively. Thus, relating to the relationship between firm’s performance and dividend per share, many academic scholars have examined the effect of firm performance on dividend policy (Amidu, 2007; M’rabet and Boujijat, 2016; Murekefi, 2012; Uwuigbe et al., 2012; Velnampy et al., 2014). Moreover, the positive association between return on equity and dividend policy is observed, that when the firms’ profit increases or their return on equity increases, it enhances the decision to pay a dividend. The positive relationship is consistent with the studies of M’rabet and Boujijat, 2016; Murekefi, 2012) and Yee, (2017), and this is also in support of signalling theory.

However, earnings per share found to have a significant negative relationship, which is in contrast with signalling theory which states that the information content of dividends or signalling theory, which states that, companies despite the distortion of investment decisions on capital gains, may declare dividends to signal their prospects. The study is also in contrast with the findings of Akit et al., 2015; Ansar et al., 2015; Azhagaiah and Sabari, 2008; Chenchene and Mensah, 2014; Emeni and Ogbulu, 2015; Iqbal et al., 2014; Kumaresan, 2014; Matthew et al., 2014; Ojeme et al., 2015; Oladipupo and Okafor, 2005; Onwumere et al., 2012, which revealed positive relationship of earnings per share to dividend policy. Meanwhile, the relationship between Tobin’s q and dividend per share reveal a significantly positive association. This indicates that Tobin q as a proxy of shareholders wealth is largely influenced by growth in sales, improvement in profit margin, capital investment decisions and capital structure decision (Azhagaiah and Sabari, 2008).

As a control variable, firm liquidity maintained a positive relationship with dividend per share. It implies that the payment of dividend means an outflow of cash for a company. Thus, it is expected that the dividend decision of the firm is affected by the liquidity position of the firm. The higher the liquid company can pay higher dividend due to the excess amount of cash, meaning that the more liquid the firm is, the more possible that it will pay dividends to the shareholders. High dividend assures investors and shareholders that a firm can cope with uncertain situations.

In addition to the theory development contributions, this study provides some valuable insights for the corporate sector, mainly in Nigeria. First, the study provides a proper guideline for the management to consider the appropriate determinants of dividend policy in their dividend policy decision making. The chronology of importance of determinants varies across sectors and is highly sensitive to the current economic conditions. Similarly, the element of each determinant tends to vary across and between different firm-level attributes. Thus, management should be aware of these issues as they reflect overall dividend policy decisions. Furthermore, as the authors have determined, the determinants of dividend policy are different stages of the economy within Nigeria. Effective and efficient decision-making leads to cost reductions and, therefore, maximises the wealth of the shareholders.

References


