

DETERMINANTS OF DIVIDEND PAY-OUT: EVIDENCE FROM THE NON-FINANCIAL SECTOR

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Abstract

The objective of this study is to examine the determinants of dividend pay-out for non-financial companies listed on the Nigerian Stock Exchange. We used a panel data of 21 non-financial companies over the period 2012 - 2016. The data extracted was assembled so as to apply Probit model Regression. In doing this we categorize the non-financial firms into dividend-paying and non-dividend-paying firms. The results from the Probit model estimation showed that micro-economic variables such as profitability and firm size are positively associated with dividend pay-out, whereas growth was found to be an insignificant determinant of dividend pay-out. Also, the macro-economic variables such as inflation and exchange rate have a negative insignificant relationship with dividend while money supply has a positive but insignificant influence on dividend pay-out for non-financial firms in Nigeria. This result suggests that micro-economic variables are strong determinants of dividend pay-out while macro-economic variables are not. We therefore recommend that policy makers such as the Central Bank of Nigeria and the Ministry of Finance should review the impact of micro and macroeconomic variables on the NSE market development.

Keywords: Dividend pay-out, inflation, exchange rate, money supply, profitability, firm size and growth.

Introduction

Dividend policy has remained one of the most essential financial policies from the opinion of the consumers, shareholder, regulatory bodies, companies, employees and the government. Dividend policy is the pay-out policy that adopted by the management of a company to be able to take decisions on how cash is shares amongst the shareholders over a period of time. It shows the share of a company's earnings that are paid out to investors in cash, but can also impacts on the firm's value and the wealth of shareholders (Baker, 2001).

Lintner (1956) made a great attempt in understanding the how the dividend policy works by splitting his reason into two. The first reason is that, most companies sought to ensure that their management does not make changes in their dividend rates

that could be overturned within a year. This cautiousness leads to a regular payment of dividend over time. Secondly, dividend is paid on the grounds that a company's earnings because these companies have a bendable but definite pay-out policy, which have incremental modifications is used to attain the target pay-out level. In addition, he added that there is a model of dividend policy where the current year's dividend is based on the present year earnings and the prior year dividend.

In having a better understanding of dividend policy, Miller and Modigliani (1961) assumptions stated that the market is perfect, has a perfect certainty of events and the managers of the company are perfect stewards to their investors. In light of M&M's assumptions, we can presume that dividend policy is a useful residual of the firm's requirement for funds, whether the earnings are shared amongst shareholders and reinvestments or not. An ideal policy does not available; hence the dividend policy for firms has no impact on its cost capital or its value.

Clarifying the concept of dividend pay-out has been and still is a challenging issue tackled by financial economics. Even with the extensive research done on the elements that effect dividend pay-out and the method in which these elements relate is still unravelled. Black (1976) perceived that the more analyse the dividend issue the more it seems like a dilemma, the situation has not changed.

In empirical literature one of major reasons for critically examining dividend is to find out those variables that influence dividend pay-out (Wara, 2015). It is remarkable that dividend pay-out according to Jensen & Johnson (1995) are determined by macro and micro economic variables. The micro-economic factors are investment opportunity, profitability and liquidity, whereas the macro-economic factors includes growth, stability, change in technology, and change in consumer taste, are all important determinants (Roberto, 2002). Despite the serious of this dividend issue, a few studies are available for a developing country like Nigeria. Prior studies were carried out in developed markets and countries (such as; Badu, 2013; Edet, Atairet and Anoka, 2014; Malik, Gul, Khan, and Rehman, 2013) and they considered internal factors that could affect dividend pay-out from both financial and non-financial firms.

Consequently, the research objective of this study is to build on the works of Malik et al (2013) by investigating the internal and external factors affecting dividend pay-out of non-financial companies in Nigerian. Hence, our aim is to investigate if a relationship exists among different macro and micro-economic factors and dividend payments. The remaining part of this paper is divided into five (5) sectors. Section two (2) provides a review of prior research and the development of hypotheses as well a review on relevant theories. Section three (3) shows our methodological approach and results presentation. The results are discussed in section four (4) and the conclusion and recommendations are presented in section five (5).

Literature Review and Hypotheses Development

Dividend tend to be paid by stable, mature and established firms plausibly reflecting a financial situation that distressed firms face relatively abundant problems with limited resources so that retention dominates distribution, where as stable firms are better candidates to pay dividends because they have higher profitability. Literature has shown a few empirical ideas of factors that differentiate firms that pay dividends from those that do not (De Angelo et al, 2006). Worthy of mentioning, Fama and French (2001) posits that firms with current high-profitability and low-growth rates (stable) tend to pay dividends, while low-profit/high-growth firms (distressed) tend to retain profits. However, in a bid to investigate those factors that determine the dividend paid out in distressed companies, this paper focused on macro-economic factors such as exchange rate, money supply and inflation rate. Literature reviews on each of these variables are specified below.

Concept of Dividend Pay-Out

Dividends are compensatory distribution to equity shareholders for both time and investment risks undertaken (Uwuigbe et al., 2012). Pandey (2010) defines dividend as a portion of a company's net earnings which the directors recommend to be distributed to shareholders in proportion to their shareholdings in the company. It is usually expressed as a percentage of nominal value of the company's ordinary share capital or as a fixed amount per share. Dividends are usually paid out of the current year's profit and sometimes out of general reserves. They are normally paid in cash and dividend payment is known as cash dividend. Dividend payment is a major component of stock return to shareholders (Zakaria et al., 2012).

Dividend pay-out is seen as a source of cash flow and information relating to a firm's current and future performance to its shareholders. Hence, the shareholders wealth is influenced by growth in sales, improvement in profit margin, capital investment decisions and capital structure decisions (Azhagaiah & Priya, 2008). Enhancing shareholders' wealth and profit making are among the major objectives of a firm (Pandey, 2005). Dhanani (2005) and Malcolm and Wurgler (2004), posits that it is possible for a firm to develop a dividend policy that takes into consideration the different preferences of its shareholders. The need to receive dividend forms part of the primary motives why shareholders buy shares.

Dividend pay-out is the amount of cash that a company sends to its shareholders in the forms of dividends. The company can decide to send all the profits back to its shareholders or investors, or could keep a portion of it as retained earnings. Healthy dividends pay-outs thus indicate that companies are generating real earnings rather than cooking books (Barron, 2002). Zhou and Ruland (2006) revealed that high dividend

pay-out firms tend to experience strong future earning but relatively low past earnings growth despite market observers having a contradicting view. Arnoth and Asness (2003) posit that future earnings growth is associated with high rather than low dividend pay-out. A high pay-out ratio means more dividends and fewer funds for expansion and growth. A low pay-out, on the other hand, results in a higher growth (Pandy, 2012).

Murekefu (2012) says that cash dividend announcement convey valuable information which shareholders do not have about management's assessment of a firm's future profitability, thus reducing information asymmetry. Such information can be made use of by investors in assessing the firms' financial performance and making investing decision. Dividend policy under this model is therefore relevant (Al-Kuwari, 2009). Also, the works of Bierman (2001); Baker, et al (2002); Frankfurter, et al (2003) have described dividend pay-out as an appropriation of profits to shareholders after deducting tax and fixed interest obligations on debt capital. Amidu and Abor (2006) defines that the income distributed to shareholders is called dividend, while dividend pay-out ratio is the proportion of the dividend per share and earnings per share.

Determinants of Dividend Pay-Out

The capital market operates in an economic environment with both micro and macroeconomic variables (Wanjiru, 2013). The internal factors are firm specific such as profitability, liquidity, investment opportunities, stage of growth of firm etc. The concept of macroeconomic variables can be defined from three angles: first it is the study of the economy as a whole, and the variables that control the macro-economy. secondly such it can be seen as government policy meant to control and stabilize the economy over time, that is, to reduce fluctuations in the economy that can be instigated inflation (fall in value of the local currency and high levels of unemployment in the country), and lastly it can be said to be the study of monetary policy, fiscal policy, and supply-side economics (Kitati, Zablon, & Maithya, 2015). Thus are associated with aggregate indicators that influence the overall economic environment in which organizations operate and they include Gross Domestic Product (GDP) and GDP Growth rates, consumer price indices and inflation, savings and investment, monetary and fiscal policies, foreign investments, international trade and international finance (Kaimba, 2010).

The micro and macroeconomic environment considered for this study is along the line suggested by Oxelhelm and Wihlborg (1987) and Gul et al (2013) as a set of Inflation (INF), Exchange rate (EX), Money supply (MSS), Profitability (PROF), Firm size (FSIZ), and Growth (GRWTH) which are measures of economic activity.

Macro-economic determinants of dividend pay-out

Inflation

Economic survey of Kenya (2002) describes inflation as the sustained rise in money prices generally. The consumer Price Index (CPI) is the main estimator of the rate

of inflation. It is a macroeconomic indicator for general economic and social analysis and is a tool used in wage and tax negotiation and indexation. Exchange rate also known as foreign exchange rate specifies how much on a currency is worth in terms of the other. It is the value of a foreign nation's currency in terms of the home nation's currency (Kitati, 2015; Wanjiru, 2013).

In prior studies, Nyamute (1998) studied the relationship between share prices and macroeconomic variables in Kenya for a period of six years (1992-1997). The study showed that money supply, interest rates, inflation rates and exchange rates have an impact on the performance of the stock price (index). Also, Basse and Reddemann (2011) examine the relationship between dividends, corporate earnings, real growth and inflation in the US and confirms that dividend smoothing seem to be a relevant phenomenon. Further, inflation has a positive effect on dividends and the nominal increase in earnings due to inflation has the same effect on dividend pay-out. Other studies that argued that macroeconomic variables have a positive impact on the dividend policy/share price of a firm include: Basse & Reddeman (2011), Ioannnis & Kontonikas (2008), Kaimbi (2010), Kessel (1956), Kiptoo (2010), Laopodis (2005), Ochieng' & Adhiambo (2012), Siele (2009), Wahid et al (2011), and Wei (2007).

On the contrary, Mohiuddin et al (2008) carried out an empirical study of the relationship between macroeconomic variables and stock prices and the results revealed that no significant relationship exists between the stock price and any of the macro economic factors. Hussainey, Mgbame and Mgbame (2011) examine the relationship between dividend policy and share price changes in the UK stock market. The results showed a positive relationship between dividend yield and stock price changes, and a negative relation between dividend pay-out ratio and stock price changes. In addition, it is shown that a firm's growth rate, debt level, size and earnings explain stock price changes. Other studies in tandem with this finding include: Aj-Rjoub (2003), Madsen (2004), Spyrou (2001), and Wambui (2013).

H_0 : Inflation rate is not significantly associated with dividend pay-out

H_1 : Inflation rate is significantly associated with dividend pay-out

Money Supply

Whether monetary policy can be effective by impacting on the real variables is an age old question in the macroeconomics literature (Chakravarty & Mitra, 2010). The most important variable that mediates the effects of changes in the money supply is the velocity of money. Monetarists believe that the direction of causation is from money to prices (Kitati et al., 2015). The growth of the money supply as a result of the velocity of circulation is not always predictable; indeed it can suddenly change as a result of changes to people's behaviour in their handling of money (Kitati et al., 2015).

In literature several studies (Basse and Reddeman, 2011; Kaimbi, 2010; Nyamute, 1998; Ochieng and Adhiambo, 2012; Pearce and Roley, 1985) posit that monetary policy significantly affects stock price. They argued that macroeconomic variables could have an impact on the dividends policy of a firm.

In Mohiuddin et al (2008) study, they tried to explain the power of various macro factors such as inflation rate, exchange rate, interest rate, money supply and production index on the variability of the stock price in Bangladesh and the results were that no significant relationship exist between the stock price and any of the macro economic factors. Kiptoo (2010) carried out an empirical investigation on selected macroeconomic variables and stock for a period of ten year (1978-2008). The study revealed that interest rates, money supply and gross domestic product were insignificant. In agreement with these studies Laopodis (2005) and Daferighe and Aje (2009) showed no consistent dynamic relationship between monetary policy and stock prices while Geyser and Lowics (2001) revealed a mixed result.

H_0 : Money supply is not significantly associated with dividend pay-out

H_1 : Money supply is significantly associated with dividend pay-out

Exchange Rate

The stock market and the foreign exchange rate market are very important financial markets in an economy. The short-run as well as the long-run feedback relations between the two financial markets has generated great academic interest (Kitati et al., 2015). The financial markets in an economy facilitate the flow of equity funds, payment of dividend and foreign exchange.

Sifunjo (1999) studied the relationship between exchange rates and stock prices and provided evidence that there exist a significant relationship between exchange rates to stock prices. Hence the movement of exchange rates exerts significant influence on stock price determination in Kenya. However, his study cannot be relied upon to give conclusive results because he considered only one variable, but offered suggestion that more macroeconomic variables can be tested to determine their relationship on stock prices but the dividend irrelevance theory indicates otherwise (Modogiliani & Miller, 1961). The findings Also, Basse and Reddeman (2011), Kaimbi (2010), Mertzanis (2009), Nyamute (1998), Ochieng' and Adhiambo (2012), Sifunjo and Mwasaru (2012) found in their studies that exchange rate has an impact on the performance of the stock price (index) and dividends policy of a firm, but Nyamute (1998) posits that exchange rate is more positive and more significant than all other macroeconomic variables.

Mohiuddin et al (2008) study disagreed with other studies and posits that there is no significant relationship between the stock price and exchange rate. Charles, Simon, and Agyapong (2008) looked into the relationship between foreign exchange rate and stock markets to determine whether the movement in exchange rates have an effect on the stock prices. They established that there is negative relationship between exchange

rate volatility and stock market returns on the long run and a positive relationship in the short run.

H_0 : Exchange rate is not significantly associated with dividend pay-out

H_1 : Exchange rate is significantly associated with dividend pay-out

Micro-economic determinants of dividend pay-out

Profitability

According to Fama and French (2001), profitability is an essential influential factor of dividend policy. Profitability which is measured as return on assets (ROA), return on equity (ROE), return on investment (ROI), return on capital employed (ROCE) return on total asset (ROTA) etc. These measures are traditional accounting based measures that show a firm's profitability (Griffin & Mahon, 1997). In this study, return on asset is the selected measure for profitability of the firm and it is defined as Net Income divided by Total Assets.

Literature shows that the relation between return on asset and the dividend pay-out is found to be positive, in case of the Canadian companies (Baker et al., 2007). Jacob and Johannes (2008) in their study on dividend policy in Denmark found that the dividend payers in Denmark are affected by positive earnings, high return on equity, large size and high retained payment in the last year but no relationship is found between market to book ratio, leverage ownership structures and dividend decision. Also Malik et al (2013) posits that profitability has a positive effect on dividend policy. Also, Zaman (2013) reveals that profitability appears to be a better determinant of bank dividend policy.

On the contrary, Chakole (2016) investigate internal determinant factors of dividend payout in private commercial banks in Ethiopia and showed that profitability has a negative and statistically significant relationship with dividend payout of private commercial banks in Ethiopia.

H_0 : Profitability is not significantly associated with dividend pay-out

H_1 : Profitability is significantly associated with dividend pay-out

Firm Size

Koh and Venkataraman (1991) showed that firm size is an important factor that determines a firm's resource. They further showed that large firms have more organizational resources to achieve their goals. Firm size can be used as a measure for the possibility of non-payment of funds and the unpredictability of a firm's asset. It is assumed that larger firms are more difficult to liquidate because the instability of a firm can lead to non-payment dividend. Hence, firm size indicates the ability to create funds internally (Ongore, K'Obonyo, Ogutu, & Bosire, 2015).

Bradley, Capozza, and Sequin (1998) conducted a study on a sample of 75 firms. The data from year 1985-1992 was tested. The results proved that the firms with high expected cash flow risk have lower pay-out ratio. Scott and Martin (1975) and Malik et al (2013) posit that the firm size is one of the explanatory variables that affect the firms' debt and dividend policies. Even Chekole (2016) agrees that the size of a firm is statistically significant and positively related to the dividend pay-out. The firm size has also been accounted for as firms' total sales.

H_0 : Firm size is not significantly associated with dividend pay-out

H_1 : Firm size is significantly associated with dividend pay-out

Growth

Chen & Dhiensiri (2009) found that in Newzeland firms that practice recent development in revenues has a tendency to disburse lower dividends. According to the signalling theory, it is easier for advanced growth firms to pay-out dividends to the shareholders. This signals shareholders that the firms having high growth opportunities. In this study we also used percentage change in sales annually as proxy for the growth. Also Chekole (2016) in his study investigated the internal determinant factors of dividend payout in private commercial banks in Ethiopia. This results revealed that growth is positively significant to dividiend pay-out. However, Malik et al (2013) in his study on factors influencing corporate dividend pay-out decisions revealed that a firms sales growth is an insignificant variable for dividend pay-out with negative relationship.

H_0 : Firm sales growth is not significantly associated with dividend pay-out

H_1 : Firm sales growth is significantly associated with dividend pay-out

Theoretical framework

Several theoretical and empirical researches have been provided to look into the dividend dilemma. However, this study is anchored on the following theories:

Dividend Irrelevance Theory

Modigliani and Miller (1961) dividend-irrelevance theory says that investors can affect their return on a stock regardless of the stock's dividend. Investor could then buy more stock with the dividend that is over the investor's expectations. As such, the dividend is irrelevant to investors, meaning investors care little about a company's dividend policy since they can simulate their own. Their theory was built on a range of key assumptions, similar to those on which they based their theory of capital structure irrelevancy. Modigliani and Miller (1961) argue that the value of the firm in a perfect capital market depends only on the income produced by its assets not on how this income is split between dividends and the retained earnings. According to M&M's irrelevancy theory, it therefore does not matter how a firm divides its earnings between dividend payments to shareholders and internal retentions. Dividend irrelevancy theory

asserts that a firm's dividend policy has no effect on its market value or its cost of capital.

Bird in Hand Theory

The bird-in-the-hand theory posits that dividends are relevant (Gordon, 1959). This theory was taken from an old saying that a bird in the hand is worth two in the bush. The bird in hand is the dividend while the bush refers to the capital gains. As a firm increases its pay-out ratio, investors are concerned about the continuous dispersal of a company's future capital gains since the retained earnings that the company reinvests into the business will be less. This is because investors prefer dividends more than capital gains when making decisions related to stocks. Hence, the essence of this theory of dividend policy is that shareholders are risk-averse and prefer to be paid dividend than future capital gains. This is why shareholders consider dividend pay-out to be more certain than future capital gains thus a bird in the hand is worth more than two in the bush.

Tax Preference Theory

Taxes are important considerations for investors this is because capital gains are taxed at a lower rate than dividends. The theory states that the reason why investors prefer low dividend payout to high payout: long term capital gains are less taxed as compared to dividend and that taxes on capital gains are not paid unless the stock is sold. According to Miller and Modigliani (1961) and Gordon and Shapiro (1956) in most countries, taxes on dividends are higher than those on capital gains hence investors prefer capital gains to dividends. Capital gains are not paid until an investment is actually sold hence investors can control when capital gains are realized but they can't control dividend payments which the company has control.

Signaling Theory

Dividends are information signals about the performance of a company which investors use to make decisions. According to Gordon and Shapiro (1956), the smoothing hypothesis of dividends by management which predicts that dividends are maintained at a constant and any increase are carried out rather cautiously by the firm to avoid significant dividend cuts when the corporate earnings falls. Ross (1976) states that not all investors are the same they regard dividend changes as a signal of management earnings forecasting. It has been observed that the price of a firm's stock generally rises when its dividend is increased and the price will fall when the dividend is cut. Thus, firms are expected to raise dividends when the future earnings are expected to rise. This is because managers have better information on of the firm's performance than the investors. Therefore dividends act as a signal to investors on the current and future performance of the firm.

Generally a rise in dividend payment is viewed as a positive signal, conveying positive information about a firm's future earnings prospects resulting in an increase in share price. Conversely a reduction in dividend payment is viewed as negative signal about future earnings prospects, resulting in a decrease in share price.

Methodology

This is a correlation study. It involves collecting data in order to determine to what degree a relationship exists between two or more quantifiable variables. This design permits a researcher to analyze inter-relationship among a large number of variables in a single study. Furthermore, a correlation study also allows a researcher to analyze how several variables either singly or in combination might affect a particular phenomenon being studied.

All listed non-financial companies at the NSE compose the population of this study. The current population of all the listed companies as at December 31, 2016, stood at 119. The period of interest begins 1st January, 2012 to 31st December, 2016. This period is chosen due to the availability of data as at the time the research was conducted. The estimation technique used is the Regression analysis using the Binary Logistic regression technique. We choose the Binary Logistic regression because it is unbiased, efficient and consistent. Binary Logistic regression is a technique used in making predictions when the dependent variable is a dichotomous variable, and the independent variables are continuous or discrete.

The study randomly selects a sample size of 21 firms from all listed non-financial companies at the NSE as at 31st December 2016. This study makes use of secondary data obtained from the financial statements and annual reports of the companies published online on the Nigerian Stock Exchange library, while the economic data are sourced from the 2016 CBN statistical bulletin.

This study empirically examines the micro and macro- economic factors that lead to the decision to pay (or not pay) dividends and the econometric model used for this purpose was adopted from the work of Long (1997), Al-Kuwari (2010), and Malik et al (2013) with some modifications. The suitable model with such dependent variables is to use Binary Probit model (Long, 1997). The general specification of the model is as follows:

$$D_i = \beta X_i + \varepsilon_i$$

Where D_i is latent variable measuring firm's willingness to pay (or not pay) dividends; X_i is a $(k \times 1)$ vector of observed explanatory variables; β is a $(k \times 1)$ vector of unknown parameters to be estimated; and ε_i is the random error term that has a normal distribution with a mean of 0 and a constant variance. The latent variable D_i is linked to the observed binary variable D^*_i by the following measurement equation:

$$y^*_i = 1 - \text{if } -D_i > \varphi$$

$$0 - \text{if } -D_i \leq \phi$$

Where ϕ is the threshold? The probability that the outcome is 1 can be expressed as: $\text{Pr}(D_{it} = 1/X) = \phi(X\beta')$.

However, the model utilized in this study is specified below:

$$DPS_{it} = f(INF_{it}, EXR_{it}, MSS_{it}, PROF_{it}, FSIZE_{it}, GRTH_{it}) \dots\dots\dots(1)$$

$$DPS_{it} = \beta_0 + \beta_1 INF_{it} + \beta_2 EXR_{it} + \beta_3 MSS_{it} + \beta_4 PROF_{it} + \beta_5 FSIZE_{it} + \beta_6 GRTH_{it} + \mu_{it} \dots\dots\dots(2)$$

Where: DPS = Dividend per Share; INF = Inflation rate; EXR = Exchange rate; MSS = Money supply; PROF= Profitability; FSIZE= Firm size; GRTH= Growth; β_0 = Constant; β_1 to β_6 = Parameter Estimates; μ_t = Stochastic error term.

Table1: Operationalization of Variables

| S/N | Variable | | Measurement | Apriori sign | Used by |
|-----|--------------------|--------|---|--------------|--|
| 1 | Dividend per Share | DPS | If a firm paid dividends in a specific year, the dependent variable is 1, otherwise, it is 0. | | Al-Kuwari (2010), Long (1997), Malik et al (2013), |
| 2. | Inflation rate | INF | Prevailing inflation rate or Consumer Price Index (CPI) for the period under review | - | Bassey, Elizabeth and Asinya, (2014); Ochieng and Kinyua, (2013); Mirbagherijam, M. (2014) |
| 3. | Exchange rate | EXR | Nigeria's foreign exchange rate (FX) for the period under review | + | Ochieng and Kinyua, (2013) |
| 4. | Money supply | MSS | Nigeria's real money supply for the period under review | - | Ochieng and Kinyua, (2013) |
| 5 | Profitability | PROF | Net Income divided by Total Assets | + | Fama and French (2001), Malik et al (2013) |
| 6 | Firm size | FISIZE | Firms' total sales | + | Malik et al (2013), Bradley et al (1998) |
| 7 | Growth | GRTH | Market to book-value | + | Lanis and Richardson (2012) |

Source:
Researcher's compilation (2017)

Descriptive Statistics
The descriptive statistics

tics provided some insights into the nature of the selected firms that were used in this study. This can be seen in Table 1 below,

Table 2: Descriptive statistics

| | DPS | INF | EXR | MSS | PROF | FSIZ | GRWTH |
|--------------|-----------|----------|----------|-----------|-----------|----------|-----------|
| Mean | 0.780952 | 10.65000 | 194.1040 | 17251.41 | 4.986476 | 9.060095 | 2.073333 |
| Median | 1.000000 | 9.550000 | 157.2700 | 17679.29 | 6.150000 | 7.160000 | 1.020000 |
| Maximum | 1.000000 | 15.70000 | 304.5000 | 20620.80 | 78.54000 | 56.77000 | 23.83000 |
| Minimum | 0.000000 | 8.000000 | 156.0300 | 13895.39 | -393.9700 | 6.010000 | -0.590000 |
| Std. Dev. | 0.415585 | 2.932215 | 57.60521 | 2456.872 | 43.05551 | 8.210375 | 3.833426 |
| Skewness | -1.358567 | 0.746012 | 1.258761 | -0.056383 | -7.657631 | 4.505947 | 4.297438 |
| Kurtosis | 2.845705 | 2.078794 | 2.860925 | 1.579527 | 71.83100 | 22.43965 | 22.53466 |
| | | | | | | | |
| Jarque-Bera | 32.40400 | 13.45205 | 27.81299 | 8.883256 | 21753.65 | 2008.625 | 1992.702 |
| Probability | 0.000000 | 0.001199 | 0.000001 | 0.011777 | 0.000000 | 0.000000 | 0.000000 |
| | | | | | | | |
| Sum | 82.00000 | 1118.250 | 20380.92 | 1811398. | 523.5800 | 951.3100 | 217.7000 |
| Sum Sq. Dev. | 17.96190 | 894.1800 | 345109.4 | 6.28E+08 | 192792.8 | 7010.667 | 1528.296 |
| | | | | | | | |
| Observations | 105 | 105 | 105 | 105 | 105 | 105 | 105 |

Source: Researchers computation (2017)

The descriptive statistics of the variables used in the analysis presented in Table 2 examines the determinants of dividend pay-out for non-financial companies in Nigeria. The average response scores for the dependent variable DPS is 0.78 (78k) which suggests that for the period under review, non-financial companies paid a dividend of less than ₦1 per share on the average to its shareholders. The mean values for the dependent variables are INF (10.65), EXR (194.10), MSS (17251.41), PROF (4.99), FSIZ (9.06), GRWTH (2.07) respectively. The Jarque-Bera (JB) test values of all the variables shows that the data has variability and high dispersion since their p-values are significant at 1%.

Correlation Analysis

Table 3: Correlation Coefficients of the Tested Variables

| Probability | DPS | INF | EXR | MSS | PROF | FSIZ | GRWTH |
|-------------|---------------------|--------------------|-------------------|----------|------|------|-------|
| DPS | 1.000000 ----- | | | | | | |
| INF | -0.182668 0.0622 | 1.000000 ----- | | | | | |
| EXR | -0.132186 0.1789 | 0.839501 0.0000 | 1.000000 ----- | | | | |
| MSS | -0.023923 | 0.422607 | 0.808765 | 1.000000 | | | |

| | | | | | | | |
|-------|----------|----------|-----------|-----------|-----------|-----------|----------|
| | 0.8086 | 0.0000 | 0.0000 | ----- | | | |
| | | - | | | | | |
| PROF | 0.250675 | 0.083329 | -0.124106 | -0.157932 | 1.000000 | | |
| | 0.0099 | 0.3980 | 0.2072 | 0.1076 | ----- | | |
| | | - | | | | | |
| FSIZ | 0.131016 | 0.004160 | -0.018785 | -0.016213 | -0.038166 | 1.000000 | |
| | 0.1828 | 0.9664 | 0.8492 | 0.8696 | 0.6991 | ----- | |
| GRWTH | 0.139462 | 0.009530 | -0.008515 | 0.003143 | 0.105606 | -0.066428 | 1.000000 |
| | 0.1559 | 0.9231 | 0.9313 | 0.9746 | 0.2836 | 0.5008 | ----- |

Source: Researchers computation (2017)

Results in table 3 show that most of the explanatory variables are having coefficient with weak magnitude. Relationship among dependent variable and independent variable is weak, except PROF. Dividend payout has strong relationship with coefficient 0.251 with PROF which is strong among all variable. PROF positively correlated with a probability of 0.009, while INF is negatively correlated (-0.183) with a probability of 0.062. PROF is positively related at 1% ($p < 0.01$) with DPS. Therefore it is revealed that the correlation coefficients were low (all < 0.500) multi-collinearity does not seem to pose a serious problem in our study.

Results from a Binary Regression Model

For estimation through Probit model the company which paid dividend during the sample period of 2012 to 2016 is treated as dividend paying company, otherwise non-paying company as shown in table below

Table 4: Numbers of Dividend and Non Dividend Paying Companies

| Dividend behaviour | 2012 | 2013 | 2014 | 2015 | 2016 |
|---------------------|------|------|------|------|------|
| Dividend payers | 15 | 15 | 16 | 17 | 14 |
| Non-dividend payers | 6 | 6 | 5 | 4 | 7 |
| Total companies | 21 | 21 | 21 | 21 | 21 |

Source: Researcher’s compilation (2017)

The table below shows the shows the Binary probit regression results.

Table 5: Probit Regression Results

| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
|----------|-------------|------------|-------------|-------|

| | | | | |
|-----------------------|-----------|-----------------------|-----------|---------|
| INF | -0.024411 | 0.161809 | -0.150861 | 0.8801 |
| EXR | -0.009210 | 0.012998 | -0.708608 | 0.4786 |
| MSS | 0.000218 | 0.000190 | 1.148994 | 0.2506 |
| PROF | 0.012046 | 0.006684 | 1.802129 | 0.0715* |
| FSIZ | 0.442041 | 0.242090 | 1.825938 | 0.0679* |
| GRWTH | 0.231412 | 0.168703 | 1.371719 | 0.1702 |
| C | -4.437913 | 2.961250 | -1.498662 | 0.1340 |
| McFadden R-squared | 0.206518 | Mean dependent var | 0.780952 | |
| S.D. dependent var | 0.415585 | S.E. of regression | 0.385060 | |
| Akaike info criterion | 0.967600 | Sum squared resid | 14.53057 | |
| Schwarz criterion | 1.144530 | Log likelihood | -43.79899 | |
| Hannan-Quinn criter. | 1.039296 | Deviance | 87.59798 | |
| Restr. Deviance | 110.3970 | Restr. log likelihood | -55.19849 | |
| LR statistic | 22.79900 | Avg. log likelihood | -0.417133 | |
| Prob(LR statistic) | 0.000867 | | | |
| Obs with Dep=0 | 23 | Total obs | 105 | |
| Obs with Dep=1 | 82 | | | |

Source: Researcher's Computation (2017)

*Statistical significance at 10% level,

**Statistical significance at 5% level,

***Statistical significant at 1% level.

Table 5 above presents the results of the probit regression with dividend paying behavior as the dependent variable and micro and macro-economic factors as independent variable. The significance of the model was tested from F-statistics which showed probability of 0.00. Dependent variable in the study shows the firm's willingness to pay dividend as a latent variable, it would be more interesting to interpret the partial change in the probability that a firm has paid a dividend or not. This is known as the marginal effect.

The McFadden's (R^2) with a value of 0.21 indicates that the micro-economic variable (PROF, FSIZ, GRWTH) and macro-economic variables (INF, EXR, MSS) can explain only about 21% of the total systematic variation of dividend pay-out in Nigerian non-

financial companies. This implies that about 79% of the total systematic variation in the dependent variable has been left unaccounted for by the model hence captured by the stochastic error term. This implies that other micro and macro-economic factors not included in the model accounts for dividend pay-out in non-financial companies in Nigeria. On the basis of the overall statistical significance of the model, it was observed that the LR ratio statistics value of 22.80 is significant at 5% level of significance.

The Z-statistics is an alternative test which used to test the significance of individual probit regression coefficients for each independent variable. The probit regression result shows that PROF and FSIZ with a calculated Z-value of 1.80 and 1.83 are statistically significant at 10% level of significance. Similarly, inflation, exchange rate, money supply and growth tend not to be a significant factor but are lower as compared to non-dividend paying firms.

From the results of this study, with regards to the coefficients, the probability values and the marginal effects of these variables, it is therefore possible to identify factors that determine whether or not to pay dividends to shareholders of non-financial firms listed on the Nigerian Stock Exchange.

Discussion of results

Inflation has been found to have a negative and no significant relationship with dividend pay-out. This shows that inflation is not a determining factor of dividend pay-out for non-financial companies in Nigeria. This finding is consistent with the works of Al-Rjoub (2003), Madsen (2004), Mohiuddin et al (2008), Spyrou (2001), and Wambui (2013).

Exchnage rate also has a negative and insignificant relationship with dividend pay-out. This shows that exchange rate is not a determining factor of dividend pay-out for non-financial companies in Nigeria. This finding is consistent with the works of Charles et al (2008) and Mohiuddin et al (2008).

Money supply has a positive but not significantly associated with dividend pay-out. This shows that money supply is not a determining factor of dividend pay-out for non-financial companies in Nigeria. This finding is consistent with the works of Daferighe & Aje (2009) and Laopodis (2005).

Profitability has been found to be positive and significant relationship with dividend pay-out. This shows that profitability variable significantly affects the dividend payout for non-financial firms in Nigeria and also even dividend firms with low profitability are likely to pay dividend as it sends positive signal to the market. This is consistent with the works of Fama and French (2001), Baker et al (2007), Malik (2013) and Zaman (2013) and contradicts the works of Chekole (2016).

The relationship between firm size and dividend payout was found to be significantly positive, which suggest that firm size is a significant factor to differentiate between dividend and non-dividend paying firms in Nigeria. Also firm size being significant shows that the probability of dividend paying firms is greater with high co-

efficient value. This study is consistent with the works of Chekole (2016), Ongore et al (2015), Koh and Venktaraman (1991) and contrary to the works of Bradley et al (1998).

Lastly, growth is an insignificant variable for determining dividend payout. Its results showed a negative relationship and the probability for growth firms to pay dividend is low. This contradicts the works of Chekole (2016) who found a positive relationship with dividend pay-out.

Conclusion and Recommendation

The dividend paid by firms at appropriate time gives a positive impression on character of firm. Corporate dividend paying companies in Nigeria are not as much as other emerging economies. In the last five years, the numbers of dividend paying non-financial firms has reduced. Hence, the objective of this study was to establish the effect of the dividend pay-out of non-financial companies listed on the Nigerian Stock Exchange.

Accordingly, the study analysed 5years several of macro and micro-economic variables in the listed companies on NSE and made several conclusions. To analyze our data we made use of the probit model (Long, 2007; Al-Kuwari 2010; Malik et al., 2013) to evaluate the probability of dividend paying and non-dividend paying non-financial firms. The findings revealed that micro-economic variables such as profitability and size of the firm have positively affected the probability of paying dividend, so we rejected the null hypothesis. For the macro-economic variables such as inflation, exchange rate and money supply there was a negative and no significant influence on the probability of dividend payment by firms. Hence we accepted the null hypothesis. The results obtained are consistent to the previous studies done on dividend determinants and probability for dividend payers and non-prayers. Thus, we can say that micro-economic factors affect the decision of paying dividend and macro-economic factors are not strong determinants of dividend pay-out.

We therefore recommend that policy makers such as the Central Bank of Nigeria and the Ministry of Finance should review the impact of micro and macroeconomic variables on the NSE market development. This is important since the Nigeria economy is growing and matters to do with financial projections and management are of key in economic growth and development and especially in the attainment of future goals. It is also important that surveys are conducted to establish if investors make investment decisions based on dividends pay-out. This is more so after the study established no significant effect of macroeconomic variables amongst the various non-financial companies. Finally, the study recommends the establishment of the extent to which the Central Bank of Nigeria could be key in the determination of the dividend pay-outs since it controls and monitors interest rates, money supply, exchange rates while influencing the inflation rate to favour investors.

This study also recommends that for further study, research can be done to establish if the NSE market segmentation has any influence on the dividends pay-out with regards

to dividend pay-outs. Also, other firm specific variables such as: capital adequacy, business risk, ownership characteristics and other macro-economic variables such as: bank regulations, tax, and market power can be used to conduct research.

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