

AN EMPIRICAL ANALYSIS OF FREE CASH FLOW ON DIVIDEND POLICY OF LISTED CONSUMER GOODS FIRMS IN NIGERIA

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Abstract

The paper determines the impact of free cash flow on the dividend policy of consumer goods companies in Nigeria. The data was collected from annual reports and accounts of the sampled companies for a period of ten years from 2009 to 2020. Data were analyzed through descriptive statistics to provide summary statistics for the variables and correlation analysis was also carried out using the Pearson correlation technique for the correlation between the dependent and explanatory variables. Multiple regression techniques were used to analyze the data using STATA software version 16.00. The study found that free cash flow and earnings per share have positive effects on the dividend policy while a negative significant relationship was found between leverage and dividend policy of listed consumer goods companies Nigeria. Companies in which a high proportion of shares are held by managers are more reluctant in paying a higher dividend. Hence, the study recommends that companies in the consumer goods sector should endeavour to improve the level of free cash and profitability while reducing the level of leverage thereby implementing a higher dividend payout policy.

Keywords: dividend policy, cash flow, consumer goods, profitability, leverage

1. Introduction

Controversies have been in existence as a subject matter in the relationship between cash flow and dividend policy. Cash flows are the basis upon which management decide on whether to pay a dividend to shareholders or to retain the funds for future expansion and growth of the firms. According to Parsian and Koloukhi (2014), cash flows from operation in the firms have an impact on dividend payout in the emerging economy and further stated that a positive and significant relationship between operating cash flow on dividend payout behaviour cash exist. This means

that cash flow in an organization provides information about the financial situation of the company in the eyes of shareholders. The cash flows have been considered by the previous researchers as a variable in determining the effect on the dividend payout behaviour. Fama and Jensen (1983) posit that free cash flow helps mitigate the agency conflict between management and shareholders. This is assumed to be an action by the management not to always be in the interest of the shareholders. Therefore, cash flow serves as an important determinant of the level of cash dividend paid by the firms.

Free cash flow is the cash flow generated by a firm's operations that is available to pay its financial obligations to those who have provided its funding; such as the firm's equity shareholders and its lenders. Bhandari and Adams (2017) believe that free cash flow is the funds available to managers before discretionary capital investment decisions. It represents the cash that is left in a company after paying out the money required to maintain or expand its asset base. Wang (2010) states that free cash flow measures directly the liquidity position of companies and liquidity serves as a determinant factor contributing to dividend payment since management may manipulate earnings. This is important because it allows a company to pursue opportunities that enhance shareholders value. Excess cash is recommended to be paid out as dividend to avoid discretionary activities of management and to reduce the agency conflict between management and shareholders. Previous studies concentrated on developed Economies, for Example; Bukit and Iskandar (2009), Bhatti and Sajid (2014), Vakilifard and Shahmoradi (2014), Khidmat and Rehman (2014), and Kadioglu and Yilmaz (2017).

These studies have not been able to provide a final answer on the effect of free cash flow on dividend policy. This is because the legal framework, institutional set up and even the operating environment in developed countries may be different from what is obtainable in Nigeria. In Nigeria, several studies have been conducted in the area of cash flow and dividend policy. Examples are Yero and Hassan (2017), Tijjani and Sani (2016) and Miko and Kamardeen (2015). These studies have certain limitations in common, the study of Yero and Hassan (2017) used cash flow from operations as a dependent variable while Tijjani and Sani (2016) and Miko and Kamardin (2015) used free cash flow as the control variable, therefore, did not provide a detailed analysis on the effect of free cash flow on dividend policy. However, their findings do not conclusively disqualify the ability of cash flows to explain dividend changes because they define cash flow as income plus depreciation. This measure is a proxy for profitability and not liquidity (Charitou and Vafeasas cited in Yero and Hassan, 2017). Hence, the objective of this study is to determine the impact of free cash flow on dividend policy in the Nigerian listed consumer goods companies.

2. Literature Review

Dividend payment is one of the important areas of financial management. This is because both management and investors take dividend decisions very seriously. The empirical literature on the relationship between dividend policy and free cash flow provides mixed and inconclusive results. Free cash flow (FCF) is one of the agency problems between the manager and the shareholders. Managers may want to overinvest, despite a lack of positive Net Present Value (NPV) projects, and they may distribute retained earnings for their benefits. Jensen (1986) suggested that firms that have a greater "free cash flow" could pay more dividends thereby reducing the agency costs of free cash flow. The Jensen (1986) free-cash-flow hypothesis suggested that if firms have excess cash, it is better to pay this cash as a dividend to reduce managerial discretionary funds and, thus, avoid agency costs of free-cash-flow.

Besides, Yero and Hassan (2017) studied the relationship between cash flow and dividend changes in Nigeria. A sample of 63 quoted firms throughout 2002 to 2012 using a modified Litner model was adopted in Charitou and Vafeas (1998). The results found a significant relationship between dividend changes and cash flow. The empirical results revealed further that the relationship between cash flows and dividend changes depend substantially on the level of growth, the capital structure choice, and size of each firm and economic policy changes. However, these findings do not conclusively include free cash flow. In contrast, they used operating cash flows to explain dividend changes because they believe that operating cash flow is an adequate measure of liquidity. This measure is inadequate since they did not take into account the effect of capital expenditure purchase for the period. Park and Jang (2014) argued that dividend payment depends on cash flow which reflects the corporation's ability to pay a dividend. They define FCF as the funds available to managers before discretionary capital investment decisions. This includes net income, depreciation, and the interest expense of the firm. Needed capital expenditure is subtracted from these cash flows to account for investment in positive-NPV projects.

Parsian and Koloukhi (2014) studied free cash flow, growth opportunities, and dividends of cross-listing of shares in Iran. Multiple regression techniques were adopted and covered a sample of 102 companies from 2005 to 2010. The study found that dividend payments of Tehran cross-listed companies respond more strongly to free cash flow than do the dividend payments of non-cross-listed companies. Cross-listed companies are likely to pay out more of their free cash flow than non-cross-listed companies, which can prevent managers from misusing

the resources in ways that may not maximize shareholder wealth. In the same vein, Thanatawee (2013) studied the Ownership Structure and Dividend Policy of Thailand Firms with Free Cash Flow Problem, using 784 observations of listed Thailand firms between the years 2002 to 2008. He explored the implications of the free cash flow hypothesis concerning the disciplinary role of ownership structure in dividend policy. The finding shows that positive relation exists between dividends and free cash flow and it is greater for low-growth firms than for high-growth firms. The study suggests that the free cash flow theory is relevant to an understanding of corporate dividend policy in Thailand. Therefore, conflicts of interest between shareholders and managers over the payout policy vary with the growth opportunities.

The study of Al-Dhamari and Ismail (2014) provided evidence that free cash flow leads to an increase in dividend yield and the effect is stronger for low-growth firms. The results show a positive significant relationship between dividend policy and free cash flow for low-growth firms while free cash flow was found to have a positive and insignificant impact on the dividend policy of high-growth firms. These findings support the first hypothesis that relations between free cash flow and dividend yield are positive and are more pronounced for low-growth firms.

This is consistent with the findings of Nguyen and Nguyen (2018) who studied the determinants of dividend policy of Vietnam firms. A sample of 208 listed Vietnamese firms for the period 2012 to 2016 was selected and multiple regression techniques were used. The result revealed a significant relationship between free cash flow and dividend payout of the listed firms. Jamshidi et al. (2014) studied dividend policy of all-equity firms: A direct test of free cash flow theory. Multiple regression analysis was employed. The result found that dividend and managerial shareholding are substitute mechanisms for reducing agency costs of free cash flow in all-equity firms. This result cannot be generalized in the sense that only all-equity firms were examined; hence the results could not be generalized to other sectors of the economy.

Miko and Kamardin (2015) studied the 8 largest conglomerates listed companies in bursa Malaysia. They used a period of ten years from 2001 to 2010. A panel data analysis and a multiple regression model revealed that a positive relationship exists between free cash flow and dividend payout of companies in Malaysia. The overall findings showed that free cash has a strong relationship with dividend payout. Many studies suggest that free cash flow is what determined the payout ratio. Cardoso et al. (2014) studied the ownership structure and dividend policy of Japanese firms with free cash flow problems. They found evidence in support of

the hypothesis that a positive relationship exists between dividends and free cash flow and it's greater for low-growth firms than for high-growth firms. This means that low growth firms have the potential to pay higher dividend payouts by investing a little amount in capital expenditure. In contrast, Putri and Rokhim (2016) provided contrary results that dividend changes indeed convey information about the firm's cash flows. Although the free cash flow hypothesis is to some degree supported by the evidence in firms' investment behaviour, dividend policy is not used by Indonesian firms to control the overinvestment problem. The result shows a positive relationship between free cash flow and dividend payout. The overall reviews suggest that free cash has a strong influence on the dividend payout policy.

3. Research Methodology

For this study, a descriptive research design was used. The population of the study covers all the twenty-one (21) consumer goods companies listed on the floor of the Nigerian stock exchange (NSE) as at 31st December 2020. These are Cadbury Plc, Champions Brewery Plc, Dangote Flour Mills Plc, Dangote Sugar Refinery Plc, DN Tyre & Rubber Plc, Flour Mills of Nigeria Plc, Golden Guinea Brewery Plc, Guinness Nigeria Plc, Honeywell Flour Mills Plc, International Brewery Plc, McNichols Plc, Multi-Trex Integrated Plc, Northern Nigeria Flour Mills Plc, Nascon Allied Industries Plc, Nestle Nigeria Plc, Nigerian Brewery Plc, Nigerian Enamelware Plc, PZ Nigeria Plc, Unilever Nigeria Plc, Union Dicon Salt Plc and Vitafoam Nigeria Plc. For any company to be included in the working population, it must have been listed on the NSE on or before 31st December 2020. Secondly, it must have been quoted without being delisted between 2009- 2020. The criteria were established to ensure that only companies with the complete data and the variables needed for the period are selected for the study. Upon the adoption of this technique, the number of consumer goods companies was reduced to fifteen. However, DN Tyre & Rubber Plc, Golden Guinea Brewery Plc, Honeywell Flour Mills Plc, McNichols Plc, Multi-Trex Integrated Plc, Union Dicon Salt Plc were all listed as at the time stated but excluded from the population due to lack of data within the period of study. The rest of the fifteen firms serve as the sample for the study.

Variables of the study and their measurements

There are two sets of variables covered by this research. These are the dependent and the explanatory variables.

The dependent variable is the dividend per share, the explanatory variables are divided into two: Independent and control variables. The Independent variable is the free cash flow of the listed consumer goods companies (FCF) while the control variables included leverage (Lev) and earnings per share (EPS). The measurement of the dependent and explanatory variables is explained in Table 1.

Table 1. Operational definitions of the variables.

| Dependent Variable | Measurement |
|------------------------------|---|
| Dividend Per Share (DPS) | The ratio of ordinary dividend to the total number of ordinary shares issued |
| Independent Variables | |
| Free Cash Flow | This is defined as cash flow per unit of asset. Crutchley and Jensen (1989) define FCF as the funds available to managers before discretionary capital investment decisions. FCF is calculated as subtraction of the company's capital expenditures from its cash flow from operations. |
| Leverage (LEV) | This is defined as the proportion of interest-bearing capital to total assets (Bako 2015). |
| Earnings Per Share (EPS) | This is measured as the profit after tax to the total number of shares issued (Bako, 2015) |

Model specification

Multiple regressions using panel data methodology has been designed, this method was found suitable and thus employed in the analysis of the data.

The regression model was adopted from the work of Bako (2015) with some modifications.

$$DPS = f(FCF, EPS, LEV) \dots\dots\dots(1)$$

$$DPS_{it} = \alpha_0 + \beta_1 FCF_{it} + \beta_2 EPS_{it} + \beta_3 LEV_{it} + \epsilon_{it} \dots\dots\dots(2)$$

Where: DPS: Dividend per share of firm *i* at time *t*; FCF: Free Cash Flow of firm *i* at time *t*; LEV: Financial Leverage of firm *i* at time *t*; EPS: Earning per share of firm

at time t ; α_0 = Constant; ϵ_{it} = An error term assumed to satisfy the standard OLS assumption, and β_1 - β_3 = Parameters to be estimated coefficients of the explanatory variables.

Data analysis

Hejase and Hejase (2013, p. 80) contends that “when conducting descriptive research, the researcher is to have a full view of the problem under study, and full knowledge of the problem's rules and procedures so as the tasks to solve is unambiguous”. All responses are entered into the STATA version 16 program. The study is performed using exploratory and descriptive statistics; data tables including frequency and percentage distributions are used. Moreover, multiple regression analysis is performed.

4. Results and Discussion

The descriptive statistics, correlation and regression results on the impact of free cash flow on the dividend policy of listed consumer goods companies in Nigeria are presented here. Table 2 shows the mean score of 19.35% for dividend per share. This means that on average consumer goods companies pay a dividend per share of N19.35K to their shareholders, which signify that consumer goods companies on average pay about N193.5k as dividend on each share. This is further confirmed by the minimum value of 0.00% and the maximum value score of 300% among the companies. This means that the highest dividend paid by the consumer goods companies during the period was N300 which represents 300% of the total profit earned by the consumer goods companies. This is less than 18% found by Oktaryani and AbdulMannan (2018) and 9% found by Dandago et al. (2015). Furthermore, free cash flow shows a total mean score of 6% with a standard deviation of 22% which signifies that free cash flow among the listed companies varies significantly, this means that on average, listed consumer goods generated free cash per asset is 6% and it varies from one company to another and from year to year.

The minimum negative values of N-1.52 signify a loss of cash flow experienced by some listed consumer goods companies and a maximum of N1.31 signifies the highest free cash flow per asset generated by the listed consumer goods companies during the period. The 6% is lower than the average mean score of 92% found in Adelegan (2003) and higher than 4% recorded in Stouraitis and Wu (2004).

Table 2. Descriptive statistics of the variables.

| Variable | Obs | Mean | Std. Dev. | Min. | Max. |
|----------|-----|-----------|-----------|---------|----------|
| Dps | 180 | 19.35199 | 65.78881 | 0 | 300 |
| Fcf | 180 | 0.0570612 | 0.2227654 | -1.5199 | 1.3118 |
| Lev | 180 | 0.1852358 | 0.2839388 | 0 | 2.1139 |
| Eps | 180 | 41.138 | 152.177 | -1.3387 | 852.6203 |

Source: Generated by the authors from Annual Reports of the sampled firms (2009-2020), using STATA.

Table 2 also shows that earnings per share have a mean score of 41.14%, indicating that the average earnings by the sampled companies are N41 with a total loss of 1.34% and maximum earnings per share of about N85. The standard deviation of N15 indicates no significant variation in earnings of listed consumer goods companies. And finally, a mean score of 19% indicating that on average leverage account for 19% of total asset meaning for every N1 of earnings, an element of debt alone accounts for about 19%. This is also confirmed by a minimum score of 0.000 and a maximum score of 2.11%. The standard deviation of 0.284 indicates a little significant dispersion among the listed consumer goods companies concerning the leverage.

Table 3 shows the correlation coefficients on the relationship between the dependent (dividend per share) and explanatory variables (free cash flow, leverage and earnings per share). The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative), the absolute value of the

Table 3. Correlation matrix of the dependent and explanatory variables

| Variable | Dps | Fcf | Lev | Eps | VIF |
|----------|---------|---------|--------|--------|------|
| Dps | 1.0000 | | | | |
| Fcf | -0.0165 | 1.0000 | | | 1.08 |
| Lev | 0.2638 | -0.2685 | 1.0000 | | 1.17 |
| Eps | 0.9458 | -0.0232 | 0.2714 | 1.0000 | 1.08 |

Source: Generated by the authors from Annual Reports of the sampled firms (2009-2020), using STATA.

Correlation coefficient indicates the strength, with larger values indicating stronger relationships.

The correlation results presented in Table 3 indicate that leverage and earnings per share are positively correlated with dividend per share, this is based on the

coefficient value of 0.264 and 0.946, respectively. This is contrary to the finding of Issa (2012) who mentioned that free cash flow strongly affects the dividend policy but is consistent with Agrawal and Jayaraman (1994), Berzins et al. (2014), Al-Gharaibeh et al. (2013). Likewise, a negative weak relationship exists between free cash flow with a correlation coefficient value of -0.-0.0165. This supported the findings of Musa (2014) and Mosavi et al. (2013) whose studies document a negative relationship between dividend policy and financial leverage. Also, the VIF value of 1.08, 1.17 and 1.08 signifies that the result is free from the multicollinearity problem and hence, the findings of the study can be relied upon.

The correlation results presented in Table 3 indicate that free cash flow is negatively correlated with dividend per share, this is based on the coefficient value of -0.0165. On the other hand, leverage and earnings are positively correlated with dividend per share, this is based on the coefficient value of 0.263 and 0.945 respectively. Also, the VIF value of 1.08, 1.17 and 1.08 signifies that the result is a free form multicollinearity problem and hence, the findings of the study can be relied upon.

Table 4. Regression Results

| Variable | Coef. | Std. Err. | t | Prob> t | Coef. | Std. Err. | z | Prob> t | Coef. | Std. Err. | t | Prob> t |
|------------------|---------|-----------|-------|---------|---------|-----------|---------|---------|---------|-----------|-------|---------|
| Constant | 2.01067 | 2.14606 | 0.94 | 0.350 | 2.01067 | 2.1460 | 0.94 | 0.349 | 14.7489 | 1.8033 | 8.18 | 0.000 |
| Fcf | 2.3888 | 7.8558 | 0.30 | 0.761 | 2.3888 | 7.8558 | 0.30 | 0.761 | -1.3961 | 5.6154 | -0.25 | 0.804 |
| Lev | 2.3200 | 6.4018 | 0.36 | 0.718 | 2.3200 | 6.4018 | 0.36 | 0.717 | -7.1690 | 5.2662 | -1.36 | 0.176 |
| Eps | 0.4077 | 0.0115 | 35.43 | 0.000 | 0.4077 | 0.0115 | 35.43 | 0.000 | 0.1461 | 0.0205 | 7.10 | 0.000 |
| R-squared | | | | 0.8946 | | | | | | | | |
| Adj. R – squared | | | | 0.8926 | | | | | | | | |
| F value | | | | 455.49 | | | | | | | | |
| P – value | | | | 0.0000 | | | | | | | | |
| R-squared | | | | | | | | | | | | |
| Within | | | | | | | 0.2498 | | | | | 0.2614 |
| Between | | | | | | | 0.9990 | | | | | 0.9954 |
| Overall | | | | | | | 0.8946 | | | | | 0.8863 |
| F value | | | | | | | 1366.48 | | | | | 17.34 |
| P – value | | | | | | | 0.0000 | | | | | 0.0000 |

Source: Generated by the Authors from Annual Report of the sampled firms (2009-2020), using STATA

Table 4 presents the OLS regression result of the dependent variable (DPS) and the explanatory variables of the study (free cash flow, leverage and earnings per share). The R-square shows the explanatory power of the model while the p-value is for the overall significance of the model. Coefficients of each variable with their standard error in bracket are also presented.

The OLS regression results displayed in Table 3 revealed the cumulative R² 0.8949 which is the multiple coefficients of determination, gives the proportion or percentage of the total variation in the dependent variable explained by the explanatory variables jointly. Hence, it signifies that 89% of the total variation in DPS of listed Nigerian consumer goods companies is influenced by free cash flow, leverage and earnings per share of the sampled companies. Similarly, the p-value is 0.0000 and the result of the F- statistics value of 455.49 and fixed effect p-value of 0.0000 and F-test value 17.34 (FE) implies that the model is fit and significant at 5%.

Therefore, this model is fit and the explanatory variables are properly selected, combined and used as the substantial value of the dividend payment is accounted for by the explanatory variables.

The regression results as shown in Table 4 indicated that free cash flow has a positive relationship in OLS and negative in FE though not statistically significant at a 5% level of significance in both models. This means that the free cash flow alone cannot completely mitigate the conflicts between management and shareholders concerning the dividend policy. This is consistent with the findings of Wang (2010), Issa (2012) and Jamshidi et al. (2014) who found evidence that free cash flow led to an increase in dividend payout and the effect is stronger for low-growth firms. In addition, leverage has the same relationship with both OLS and FE as found with free cash flow. The negative significant impact of leverage on dividend policy in FE implies that an increase in leverage of listed consumer goods companies may lead to a decrease in the dividend payout of these companies.

The earnings per share, on the other hand, have a positive and significant impact at a 5% level of significance on the dividend policy of listed consumer goods firms. This implies that once earnings increase, the dividend policy also increases.

5. Conclusions and Recommendations

The findings of the study show that free cash flow has a positive insignificant impact on dividend policy of listed while leverage has a negative and significant impact on dividend policy. The earnings per share as a measure of profitability

strongly influence the dividend payout ratio. It is concluded that dividend payment can be enhanced and influenced by the level of free cash, earnings per share and amount of leverage of listed consumer goods companies. However, free cash flow alone cannot mitigate the conflict between the shareholders and management. The study recommends that companies in the consumer goods sector should endeavour to improve the level of free cash and profitability while reducing the level of leverage thereby paying a higher dividend payout policy. The study recorded some limitations which include the inability to use adequate explanatory variables that can show the significance of free cash flow on the dividend policy of listed consumer goods firms in Nigeria. However, the study set to suggest frontiers for further research through including additional independent variables to impact dividend policy such as managerial share ownership and ownership concentration since the two variables play a significant role in deciding policies on dividend issuance. Also, control variables such as return on assets, firm size and firm age should be included to picture out the actual policy on dividend issuance in the consumer goods firms of Nigeria.

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