

# An Empirical Analysis of Free Cash Flow and Dividend Policy in the Nigerian Oil and Gas Sector

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## ABSTRACT

The paper is to determine the impact of free cash flow on dividend policy of oil and gas companies in Nigeria. The data was collected from annual reports and accounts of the sampled companies for the period of twelve years from 2003 to 2014. Data is analyzed by means of descriptive statistics to provide summary statistics for the variables and correlation analysis is also carried out using Pearson correlation technique for the correlation between the dependent and explanatory variables. Multiple regression technique was used to analyze the data using STATA software version 12.00. The study found that free cash flow and earnings per share have positive effects on the dividend policy while a negative significant relationship is found between leverage and dividend policy of listed oil and gas companies Nigeria. Companies in which high proportion of shares are held by managers are more reluctant in paying a higher dividend. Hence, The study recommends that companies in the oil and gas sector should endeavor to improve the level of free cash and profitability while reducing the level of leverage thereby paying a higher dividend payout policy.

**Keywords:** Free cash flow, Dividend policy, Earning per share, Leverage

## 1.0 INTRODUCTION

The relationship between cash flow and dividend policy has been a subject of several controversies. Cash flows is the basis upon which management make decision on whether to pay dividend to shareholders or to retain the funds for future expansion and growth of the firms. According to Afza and Mirza (2010) cash flows from operation in the firms have impact on dividend payout in the emerging economy and further stated that a positive and significant relationship between operating cash flow on dividend payout behavior Cash exist . This means that cash flow in an organization provides information about the financial situation of company in the eye of shareholders. The cash flows have been considered by the previous researchers as variable in determining the effect to the dividend payout behavior. Fama and Jensen (1983) Urged that free cash flow helps mitigate the agency conflict between management and shareholders. This is because management action may not always be in the interest of the shareholder. Therefore, cash flow was important in determining 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 that have provided its funding. These include its equity shareholders and its lenders. Josua and Vera (2005) believe that free cash flow is the funds available to managers before discretionary capital investment decisions. It represents cash that a company is able to generate after laying out money required to maintain or expand its asset base.

Adelegan (2002) states that free cash flow measure directly the liquidity position of companies and the liquidity serves as determinant factor contributing to dividend payment since management may manipulate earnings. This is important because it allows a company to pursue opportunities that enhances shareholders value. It is therefore better to pay this cash as dividend if the firms have excess in order to avoid discretionary activities of management and to reduce the agency conflict between management and shareholders.

Previous studies concentrate on developed Economics. For Example; Angrawal & Jayaraman (1994) Al-gharaibeh, Zurigat & Al-harashsheh (2013), Lincing (2005), Issa (2012), Seyed, Samira & Mahnoosh (2013).

These studies have not been able to provide 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 difference from what is obtainable in Nigeria.

In Nigeria, a Number of studies have been conducted on the area of cash flow and dividend policy .Example; Adelegan (2003), Dandago, Faruk and Muhibudeen (2015), Miko and kamardeen .These studies has certain limitation in common, the study of Adelegan (2003) used cash flow from operations as dependent variable while Dandago ,Faruk and Muhibudeen (2015) and Miko and Kamardeen (2015) used free cash flow as control variable therefore did not provide a details analysis on the effect of free cash flow on dividend policy. However, their findings do not conclusively preclude the ability of cash flows to explain dividend changes because they define cash flow as income plus depreciation. This measure has been shown to be a proxy for profitability and not liquidity (Largay and Stickney, 1980; Charitou and Vafeas, 1998, as cited in Adelegan 2003). Hence, the objective of this study is to determine the impact of free cash flow on dividend policy in the Nigerian listed oil and gas companies.

## 2.0 LITERATURE REVIEW

Dividend payment is one of important area of financial management. This is because both management and investors takes dividend decision very important. Empirical literature on the relationship between dividend policy and free cash flow provides mixed and inconclusive results.

Free cash flow is one of the agency problems between the manager and the shareholders. Managers may want to over invest, invest despite a lack of positive NPV projects, and they may distribute retained earnings for their personal 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 suggest that if firms have excess cash, it is better to pay this cash as dividend in order to reduce managerial discretionary funds and, thus, avoid agency costs of free cash-flow.

In addition, Adelegan (2003) studied the relationship between cash flow and dividend changes in Nigeria. A sample of 63 quoted firms over a period of 1984-1997 using a modified Litner model as adopted in Charitou and Vafeas (1998). The results found significant relationship between dividend changes and cash flow. The empirical results reveal 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 included free cash flow. In Contrast, they use operating cash flows to explain dividend changes because they believe that operating cash flow is an adequate measure of liquidity. This measure has been shown to be inadequate since they did not take in to account the effect of capital expenditure purchase for the period.

Sindhu (2014) argued that dividend payment depends on cash flow which reflects the corporation’s ability to pay 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.

Cheng, Cullina and Zhang (2014) studied free cash flow, growth opportunities, and dividends of cross-listing of shares in China. A multiple regression technique was adopted and covered a sample of 1105 companies over 2003 – 2011. The study found that dividend payments of Chinese 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, Lincing (2005) studied Ownership Structure and Dividend Policy of Japanese Firms with Free Cash Flow Problem, using 986 observations of listed Japanese firms between the years 1992 to 2000 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’s greater for low-growth firms than for the high-growth firms. The study suggests that free cash flow theory is relevant to an understanding of corporate dividend policy in Japan. Therefore, Conflicts of interest between shareholders and managers over the payout policy vary with the growth opportunities.

The study of Saez and Gutierrez (2015) provided evidence that free cash flow leads to an increase in dividend yield and the effect is stronger for low-growth firms. The results shows 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 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 finding of Issa (2012) who studied the determinants of dividend policy of Malaysian firms. A sample of 284 listed firms in Kuala Lumpur stock exchange and multiple regression technique was used. The result revealed a significance relationship between free cash flow and dividend payout of the listed firms. Angrawal and Jayaraman (1994) 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 mechanism for reducing agency cost 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.

Mukhtar (2014) studied 100 largest listed companies in Bursa Malaysia. A panel data analysis and 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 flow has a strong relationship to dividend payout. Many studies suggest that free cash flow is what actually determines the payout ratio. Stouraitis and Wu (2004) studied ownership structure and dividend policy of Japanese firms with free cash flow problems. They found evidence in support of the hypothesis that a positive relation 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, Kato, Loewenstein and Tay (2002) 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 behavior, dividend policy is not used by Japanese 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 flow has a strong influence on the dividend payout policy.

### 3.0 Research methodology

For the purpose of this study, descriptive research design was used. The population of the study covers all the eleven (11) oil and gas companies listed on the floor of the Nigerian stock exchange as at 31<sup>st</sup> December 2014. These are Afroil Plc., Beca petroleum product plc, Con Oil Plc. (formerly National Oil Plc.), Eternal Oil and Gas Plc, Forte oil plc, Japaul oil and maritime services plc, Mobil Oil (Nigeria) Plc, MRS Oil Nigeria Plc, Oando Plc (formerly Unipetrol Nigeria Plc.), Seplat petroleum Development company, Total Nigeria Plc. For any company to be included in the working population, it must have been listed on the NSE on or before 31<sup>st</sup> December, 2014. Secondly, it must have been quoted without being delisted between 2003-2014. The criteria was established with a view 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 oil and gas companies reduced to seven. Afroil was excluded from the sample since it has been delisted by the SEC in 2008 while Japaul oil and maritime services plc, Beca petroleum, and Seplat petroleum Development Company were quoted in 2005, 2009 and 2014 respectively and thus excluded from the sample list. In view of the above criteria and the fact that the population is small, the whole working population was taken as a sample.

### 3.1 Variables of the Study and their Measurement

There are two sets of variables covered by this research. These are the dependent and the explanatory variables. The dependent variable is dividend per share, the explanatory variables are divided into two: Independent variable which is Free cash flow of the listed oil and gas 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 below.

**Table 1: Operational Definitions of Variables**

<b>Independent variables</b>	<b>Definitions</b>
<b>Free Cash flow</b>	This is defined as cash flow per unit of asset. Crutchley and Hansen (1989) define FCF as the funds available to managers before discretionary capital investment decisions. FCF is calculated as a subtraction of company's capital expenditures from its cash flow from operations.
<b>Leverage</b>	This is defined as the proportion of interest bearing capital to total assets (Bako 2015).
<b>Earnings per share</b>	This is considered as profit after tax to the total Number of shares issued.

### 3.3.1 Models 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 Adelegan (2013) with some modification.

$$DPS = f(FCF, EPS, LEV) \text{-----} (1)$$

$$DPS_{it} = \alpha_0 + \beta_{1it}(FCF) + \beta_{2it}(EPS)_{it} + \beta_{3it}(LEV)_{it} + \epsilon_{it} \text{-----} (2)$$

(All the variables have been explained in Table)

Where:

DPS: Dividend per share

EPS: Earning per share

LEV: Financial Leverage

$\beta_0$  = Parameters to be estimated

$\epsilon$  = An error term assumed to satisfy the standard OLS assumption.

$\beta_1, \beta_2, \beta_3$  = partial derivatives or the gradient of the independence variable.

### 4.0 Results Discussion

This section presents the descriptive statistic, correlation and regression results on the impact of free cash flow on dividend policy of listed oil and gas companies in Nigeria.

Table 4.1: Descriptive Statistics of the Variables

Variables	Obs	Mean	Std. Dev.	Min	Max
DPS	84	0.035	0.358	0	0.129
FCF	84	0.509	1.413	-5.584	9.532
EPS	84	0.481	0.055	-0.200	0.177
Lev	84	0.233	0.216	0.000	0.977

Source: Generated by the Author from Annual Reports of the sampled Companies (2003-2014), using STATA Output.

Table 4.1, shows the mean score of 3.5% for dividend per share. This means that on average oil and gas companies pay dividend per share of 0.035 kobo to their shareholders, which signify that oil and gas companies on average pay about 4k as dividend on each share. This is further confirmed by the minimum value of 0.00% and maximum value score of 12.9% among the companies. This means that the highest dividend paid by the oil and gas companies during the period was 12.9 kobo which represents 12.9% of the total profit earned by the oil and gas companies. This is less than 18% found by Huda and Abdullah (2013) and 9% suggested by Dandago, Faruk and muhibudeen (2015).

Furthermore, free cash flow shows a total mean score of 51% with a standard deviation of 1.413% which signifies that free cash flow among the listed companies varies significantly, this means that on average, listed oil and gas generated free cash per asset is 51% and it varies from one company to another and from year to year. The minimum negative values of N-5.584 signifies lost of cash flow experienced by some listed oil and gas companies and maximum

N 9.5 signifies the highest free cash flow per asset generated by the listed oil and gas companies during the period. The 51% is lower than the average mean score of 92% found in Adelegan (2002) and higher than 44% recorded in Stouraitis and Wu (2004).

Table 4.1 also shows that earnings per share has a mean score of 48%, indicating that the average earnings by the sampled companies is 48% with a total loss of 20% and maximum earnings per share of about 18%. The standard deviation of 0.055% indicates no significant variation in earnings of listed oil and gas companies.

And finally, a mean score of 23% indicating that on average leverage account for 23% of total asset meaning for every N1 of earnings, leverage alone account for about 23%. This is also confirmed by the minimum score of

0.000 and a maximum score of 1.07 % . The standard deviation of 0.217 indicates a little significant dispersion among the listed oil and gas companies concerning the leverage.

**Table 4.2: Correlation Matrix of the Dependent and Explanatory Variables**

C	DPS	FCF	EPS	LEV	VIF
DPS	1.000				
FCF	0.148	1.000			1.14
EPS	0.710	0.137	1.000		1.13
LEV	-0.396	0.101	-0.307	1.000	1.04

Source: Generated by the Author from Annual Reports of the sampled Companies (2003-2014), using STATA Output.

Table 4.2 shows the correlation coefficients on the relationship between the dependent (Dividend Per Share) and explanatory variables (Free cash flow, earnings per share and leverage). 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 correlation coefficient indicates the strength, with larger values indicating stronger relationships.

The correlation results presented in Table 4.2 indicate that free cash flow and earnings per share are positively correlated with dividend per share, this is based on the coefficient value of 0.148, and 0.710 respectively. This is contrary to the finding of Issa (2012) who mentioned that free cash flow strongly affect the dividend policy but consistent with (Angrawal 1994, Kauki and Guizani 2009, Berzins, Boren & stacescu 2014, Al- gharaibeh, Zurigat & al-harahsheh, 2013). Likewise, negative weak relationship exists between leverage with correlation coefficient value of -0.396. This supported the findings of musa (2014), Sayed samira and Mahnoosh (2013) whose studies document a negative relationship between dividend policy and financial leverage. Also, the VIF value of 1.04, 1.13 and 1.14 signifies that the result is free from multicollinearity problem and hence, the findings of the study can be relied upon.

**Table 4.1 Regression Result**

Variable	OLS				RANDOM				FIXED			
	Coefficient	Std error	T	p>/z/	Coefficient	Std error	T	p>/z/	Coefficient	Std error	T	p>/z/
Constant	0.0221	0.0052	4.22	0.000	0.0279	0.0063	4.43	0.000	0.03027	0.0041	7.35	0.000
FCF	0.0021	0.0019	1.07	0.289	0.0003	0.0017	0.16	0.873	-0.0005	0.0015	-0.34	0.733
EPS	0.4112	0.0521	7.89	0.000	0.2485	0.0537	4.63	0.000	0.1406	0.0545	2.58	0.012
LEV	-0.0346	0.0132	-2.62	0.011	-0.0224	0.0126	-1.79	0.074	-0.0085	0.0122	-0.70	0.489
R Square	0.5457											
Ajd. R Square	0.5287											
F- Value	32.03											
P- Value	0.000											
R Squared:												
Within					0.0818				0.0852			
Between					0.8683				0.8649			
Overall					0.5411				0.5244			
F-Value					12.0				12.17			
P-Value					0.0000				0.0000			

Source: Generated by the Author from Annual Reports of the sampled Companies (2003-2014), using STATA Output.

Table 4.3 presents the OLS regression result of the dependent variable (DPS) and the explanatory variables of the study (free cash flow, profitability and leverage). The R-square shows the explanatory power of the model while 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 4.3 revealed the cumulative  $R^2$  0.5457 which is the multiple coefficient 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 55% of total variation in DPS of listed Nigerian oil and gas companies is influenced by free cash flow, profitability and leverage of sample companies. Similarly, the p-value is 0.0000 and the result of the F- statistics value of 32.03 and fixed effect p-value of 0.0000 and F-test value 12.17 (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 substantial value of the Dividend payment is accounted for by the explanatory variables.

The regression results as shown in table 4.3 indicated that free cash flow in both OLS and FE have positive relationship though not statistically significant at 5% level of significance; 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 Lincing of (2004), Sindhu (2014), Cheng, Cullinan & Zhang (2014), Sayed, Samira and Mahnoosh (2014) who found evidence that free cash flow led to an increase in dividend payout and the effect is stronger for low-growth firms. However, both leverage and ownership concentration has significant negative impact on dividend policy.

The earnings per share on the other hand have positive and significant impact at 5% level of significance on dividend policy of listed oil and gas companies. This implies that once earning increase, the dividend policy also increase. The negative significant impact of leverage on dividend policy implies that an increase on leverage of listed oil and gas companies may lead to decrease on the dividend pay- out of these companies.

## 5.0 Conclusion and Recommendations

The findings of the study show that free cash flow has positive insignificant impact of dividend policy of listed while Leverage has negative and significant impact on dividend policy. The earnings per share as a measure of profitability strongly influence the dividend pay -out ratio.

It's concluded that dividend payment can be enhance and influence by the level of free cash, earnings per share and amount of leverage of listed oil and gas companies. However, free cash flow alone cannot mitigate the conflict between the shareholders and management.

The study recommends that companies in the oil and gas sector should endeavor to improve the level of free cash and profitability while reducing the level of leverage thereby paying a higher dividend payout policy.

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