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Do Dividends Pattern Follow Earnings Pattern? Evidence From Nigerian Financial Sector

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Abstract
The argument that the relationship between earnings and dividend have weakened stimulates the interest to revisit the relationship. The study adopts two approaches in testing this relationship. Using descriptive analysis, the study follow the approach of recent empirical studies in developed market to test whether dividend concentration exists among financial firms in the Nigerian market and whether this is driven by earnings concentration among the firms. Secondly, the study tests the relationship between earnings and dividend in a regression model to confirm whether this relationship has weakened or not. Findings based on a sample of 49 financial firms on the Nigerian Stock Exchange indicates presence of dividend concentration and show that this is as a result of earnings concentration. Findings from fixed effects regression estimates also indicate that earnings have strong predictive power in explaining dividend payout even when other determinants are accounted for. Based on the combined evidence from descriptive analysis and regression results, the study concludes that dividends are sensitive to earnings and the relationship between the two remain strong in explaining payout policies in the Nigerian financial service sector.
Keywords: dividends, earnings, concentration, financial firms

1. Introduction

In offering explanation to the recently documented decline in dividend payments pioneered by Fama and French (2001), prior evidence (De Angelo, De Angelo & Skinner, 2004; Eije & Megginsson, 2007) have shown that dividends are concentrated among few firms and such dividend concentration follow earnings concentration. However, the scant evidence available on this is limited to developed market studies. The findings indicated above can be traced back to the seminal work of Lintner (1956) which indicates that dividends are majorly determined by level of current earnings and past dividend. However based on a survey research, Brav, Graham, Harvey, and Michaely (2004) recently argued that the relationship between earnings and dividend have weakened after about 50 years of Lintner's seminal work. This stimulates the interest to revisit this issue despite considerable efforts in this area. The focus of empirical evidence on dividend concentration following earnings concentration on developed market studies necessitates investigating the issue in an emerging market setting. More so, studies on dividend policies have paid very little attention to the financial sector. This sector is usually excluded due to their different regulatory system. Hence, it is unclear whether what obtains in the non-financial sector can explain dividend payout pattern in the financial sector. Therefore, the study contributes to literature on dividend policy using the Nigerian financial sector. A study of dividend policy in the Nigerian financial sector is considered important due to certain reasons. Besides the fundamental role of financial intermediation which financial institutions play, the financial services sector have the largest contribution to total market capitalization in the market. The sector accounts for 34% of the total market capitalization as at end of 2012 (NSE Factbook, 2012). In addition, the leading financial information provider in the market, Proshare News (2012) stated that the financial service sector records the highest proportion of dividend paying firms over time in the market. Regardless of this, studies on dividend policy in the Nigerian market have paid little to this sector.

Based on the foregoing, the objective of this study is three folds: to re-examine the relationship between earnings and dividend in the Nigerian financial service sector; to investigate whether dividend concentration exists; and then to find out whether such dividend concentration are caused by earnings concentration in the sector. The study is based on a sample of 49 financial firms listed on the Nigerian Stock Exchange over 10 years (2003-2012). The study concentrates on cash dividends as it is the major means of giving back to investors in the Nigerian market. This is due to the fact that the share repurchase option was recently introduced in 2008 and the leading financial information provider in Nigeria (Proshare News, 2013) stated that companies have not embraced the option of share repurchase. Findings of the study indicates that earnings and earnings variability significantly influence dividend payout of financial firms on the Nigerian Stock Exchange but in different directions. The study also provide evidence of dividend concentration among these firms and found that dividend concentration follow earnings concentration among the financial firms.

The paper is structured as follows: section two provides a brief review of previous related literature. Section three presents data and methodology employed. Section four provides results from the regression

estimates and discussion in line with prior findings while section five concludes the paper.

2. Literature Review

This paper relates to two strands in empirical dividend payout literature. The first is on how earnings influence dividend payout while the second relates to dividend concentration and whether it is caused by earnings concentration.

2.1 Relationship Between Dividend and Earnings

The seminal work of Lintner (1956) laid the foundation for empirical research on dividend payout policies. Considerable empirical efforts have been made afterwards to investigate determinants of dividend payout policies. Lintner (1956) asserts that the major factor which led the managers interviewed to change their current dividend level was current net earnings. Thus, the major determinant of a firm's dividend decision is earnings. Lintner's (1956) findings revealed further that any shortfall in earnings is usually reflected in the dividends paid to shareholders. In the same vein, De Angelo and De Angelo (1990) contends that earnings problems is the most frequent firm-specific reason which managers gave for dividend reductions. Their results indicates that firms that experience earnings deterioration in the previous year usually omit dividends rather than cut dividends in the current year. Recent empirical studies (Ameer, 2007; Chemmanur, He, Hu & Liu, 2010; Jasim & Hameeda, 2011; John & Muthusamy, 2010) have provided further evidence of significant positive relationship between earnings and dividend payout.

Apart from current earnings, the stability of future earnings have also been reported to have significant influence on payout policies (Lintner, 1956; Brav et al., 2004). Their evidence based on survey research indicates that what influences a firm's decision to initiate or increase dividend level is assurance of stable future earnings. Similarly, other empirical studies have shown that firms can make inferences about stability of their future earnings from current variability in earnings. Thus, Pruitt and Gitman (1991) reported that yearly earnings variability affect firm's dividend policy. In a more recent study, Amidu and Abor (2006) documents that firms that witness volatility in earnings usually have difficulty in meeting up with dividend payment, thus they usually pay less or no dividend. On the other hand, firms with stable earnings can make better prediction of what future earnings will be and as such they are more likely to distribute higher percentage of earnings as dividend. Based on the evidence provided above, the study predict that firms with higher earnings pay more dividends while firms with higher earnings volatility pay lower dividends.

2.2 Prior Evidence of Dividend Concentration

De Angelo et al. (2004) found that dividend is concentrated among the top 100 payers as they account for 81.8% of dividend paid in the US. Thus, the authors concluded that majority of the firms do not contribute to the dividend supply. De Angelo et al. (2004) documents further that the increasing rate of dividend concentration reflects increasing earnings concentration. Other developed market studies (Ap Gwilym, Seaton, & Thomas, 2004; Ferris, Sen, & Yui, 2006) have shown that dividend concentration is not confined to the US market. In line with the findings of De Angelo et al. (2004), Ferris et al. (2006) reported that fewer firms are paying more dividends. However, the authors argued that this is not occurring in every part of the world. Their findings provided evidence in support of dividend concentration for the UK market but found no evidence to show that it applies to the Japanese market. Ferris et al. (2006) also contends that dividend concentration is more severe in the UK than in the US market as 88.3% of dividends were from the top 100 dividend payers in the UK. Kirkulak and Kurt (2010) also reported the existence of dividend concentration for the Turkish market.

3. Data and Methodology

The study is based on a sample of 49 financial firms over the period of 2003-2012. The final sample consists of an unbalanced panel data set of 386 firm-year observations after getting rid of observations with outliers and missing values. Relevant firm level data was extracted from the annual accounts of the firms. Both descriptive analysis and regression analysis are employed in order to achieve the objectives of the study.

3.1 Regression Model

Going by the findings of Lintner (1956), firm's dividend payout is modeled as a function of current earnings and previous year dividend. The study also incorporated earnings variability to test how perceived stability of future earnings can also influence current dividend payout. Additional firm level variables are also included as control variables. The model estimated is as specified below:

$$div_{it} = \beta_1 + \beta_2 earn_{2it} + \beta_3 pastdiv_{3it} + \beta_4 earnvar_{4it} + \beta_5 control\ var_{5it} + \mu_{it}$$

where *div* is dividend scaled by total assets, *earn* is defined as earnings before interest and tax, *earnvar* is defined as variance of two year's annual earnings, and *pastdiv* is defined as dividend payment in the previous year. The model specified above is estimated using both fixed effect and random effect estimates. Hausman test

is then conducted to ascertain which of the tests is preferred. Table 1 below shows the descriptive statistics and definition of variables in the regression model.

Table 1. Variable definition and descriptive statistics

Variables	Definition	Obs	Mean	Std,Dev	Min	Max
Dividend/Total Assets	Dividend paid scaled by total assets	386	0.060	0.104	0	3.511
Earnings	Earnings before interest and tax	386	0.147	0.486	-1.796	4.71
Past Dividend	Previous year dividend per share	386	0.550	3.79	0	14.50
Earnings Volatility	Variance of two year's annual earnings	386	0.692	1.483	0	3.56
Size	Natural log of total assets	386	15.786	2.493	14.794	25.630
Profitability	Net income divided by total assets	386	0.102	0.821	-1.790	4.27
Growth Opportunity	Market to book ratio (MPS/BVS)	386	1.920	1.462	-4.379	5.938

4 Empirical Results

4.1 Empirical Evidence on Dividend Concentration and Earnings Concentration

In order to investigate whether dividend concentration reported in developed market exists among financial firms in the Nigerian market, the study followed an approach similar to that of De Angelo et al. (2004) by computing total payouts from the largest ten dividend payers and expressing it as a fraction of the total dividend payout in the sector. However, unlike De Angelo et al(2004) that computed the concentration ratio for just the initial year and the last year, this study computes the ratio for each year to show the variations within the years. Table 2 below shows the proportion of dividend payout by the top largest ten dividend payers in the financial sector over the study period. The annual figures in local currency (Nigerian Naira) have been expressed in USD million for better understanding.

Table 2. Proportion of dividend payout by the largest ten dividend payers

Year	Total Dividend by Top Ten (USD' Million)	Total Dividend for year (USD' Million)	Proportion of Top Ten Payout to Total (%)
2003	41.24	80.08	51.50
2004	42.98	84.60	50.80
2005	55.73	104.65	53.25
2006	61.51	116.97	52.59
2007	73.68	142.31	51.77
2008	137.50	256.76	53.55
2009	80.95	174.58	46.37
2010	152.29	275.21	55.34
2011	122.50	216.90	56.48
2012	82.20	138.85	59.20

Table 2 shows that dividend payment in the financial sector is concentrated amongst the largest ten dividend payers over the ten years observed. This concentration ratio fluctuated over the years. Above all, the table indicates that the largest ten accounted for 51.5% of the total payout in year 2003 and this increased to 59.2% in 2012.

Based on the evidence provided above that dividend concentration exists among financial firms, the study investigates whether the dividend concentration amongst the largest ten dividend payers is as a result of earnings concentration among them. To achieve this, the proportion of earnings generated by the top ten dividend payers to the earnings generated by all dividend payers for each year is obtained and shown in table 3.

Table 3. Proportion of earnings of largest ten dividend payers to all payers earnings

Year	Total Earnings of Top Ten Dividend Payers(USD' Million)	Total Earnings of All Payers(USD' Million)	Proportion of Earnings by Top Ten Payers to All Payers Earnings (%)
2003	89.35	186.27	47.97
2004	102.34	203.77	50.22
2005	101.63	198.14	51.29
2006	141.13	216.13	65.30
2007	175.71	427.60	41.09
2008	235.69	605.61	38.92
2009	203.29	442.79	45.91
2010	419.63	796.39	52.69
2011	374.51	624.26	60.00
2012	360.67	565.64	63.76

Table 3 depicts a high earnings concentration ratio among the largest ten dividend payers over the years. In year 2003, the largest ten dividend payers generated 47.97% of the earnings of all payers and this increased to 63.76% in 2012.

4.2 Dividend Patterns and Earnings Pattern

Concentration of earnings among the largest dividend payers indicated above suggests a link between dividend and earnings. Thus, this study goes further to compare the trend of dividend payment and earnings of all sampled firms over the period of study. The annual figures are presented in table 4 while the figure 1 gives a pictorial representation dividend and earnings figures.

Table 4. Aggregate dividends and earnings over sample period

Year	Total Dividends (USD' Million)	Total Earnings (Payers) USD' Million	Total Earnings (All Firms) USD' Million
2003	80.08	186.27	247.37
2004	84.60	203.77	297.47
2005	104.65	198.14	274.81
2006	116.97	216.13	301.86
2007	142.31	427.60	516.43
2008	256.76	605.61	708.02
2009	174.58	442.79	511.90
2010	275.21	796.39	940.25
2011	216.90	624.26	787.21
2012	138.85	565.64	650.91

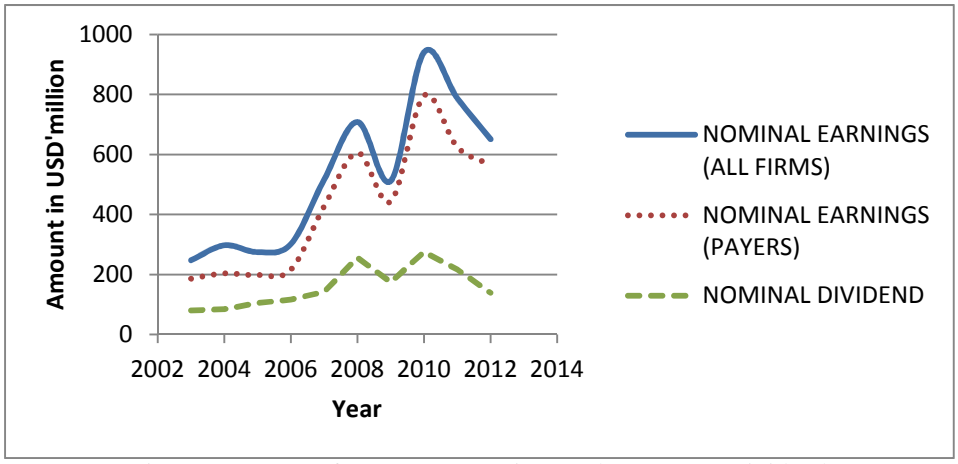

Figure 1: Pattern of Aggregate Earnings and Aggregate Dividend

The plots in figure 1 indicates that dividend payment follow earnings patterns. The figure reveals that earnings of all payers follow aggregate earnings of all the firms. In the same vein, aggregate dividends paid follow the earnings pattern of all dividend payers as well as the earnings pattern of all firms as shown above. Aggregate earnings increased by 163% over the sample period while aggregate dividends increased by 73% over the same period. This suggests that growth in dividend is not as high as growth in earnings.

4.3 Panel Regression Results

Based on the significance of the Hausman test conducted, fixed effects estimates is preferred to the random effect estimates for this study. Thus, the co-efficients of the fixed effect estimates in table 5 below indicates how each explanatory variable influence dividend payout.

Table 5. Fixed effect regression for determinants of dividend payout

	Model 1	Model 2
Earnings	0.28***	0.29***
	(5.05)	(5.04)
Past Dividend	0.07***	0.02**
	(5.46)	(3.57)
Earnings Variability		-0.05**
		(-1.89)
Size		0.02***
		(2.83)
Investment Opportunity		-0.01
		(-0.39)
Leverage		0.06
		(1.59)
Observations	386	386
R^2	12%	53%

In line with the position of Lintner(1956) that earnings and past dividend are the most important determinants of dividend, Model 1 estimates the effect of earnings and past dividend on the dividend payout. In model 2, earnings variability is included as it is considered to be a good indicator of the stability of future earnings and three other firm characteristics are included in the model as control variables. Model 1 results shows that both earnings and past dividend are significant with positive coefficient. This suggests strong support for the traditional determinants of dividend specified by Lintner(1956). Model 2 results indicates that results on earnings and past dividend is robust to the inclusion of additional variables as these two variables remain significant. Therefore, the higher the earnings and past dividend, the higher the amount of dividend paid in the current year. Similarly, the significant and negative coefficient of earnings variability indicates that higher earnings variability leads to lower dividend payment. This also suggests that firms predict instability of future earnings from high earnings variability and hence lower dividend payments to preserve financial flexibility. Among the control variables included, only size tested significant with positive coefficient. This indicates that larger firms distribute more dividends. Leverage and investment opportunities were found to be insignificant in explaining dividend payout.

Therefore, findings indicate strong support for the traditional determinants of dividend given by Lintner (1956) in shaping payout policies of financial firms on the Nigerian Stock Exchange. Contrarily, the study provides evidence against the position of Brav et al. (2004) that the relationship between earnings and dividend have weakened.

5. Conclusion

The study revisits the relationship between earnings and dividend payout on a sample of 49 financial firms listed on the Nigerian Stock Exchange (NSE) between 2003 to 2012. The study also examined whether concentration of dividend exists in the financial service sector and whether this can be explained by concentration of earnings. Our findings indicate that earnings play an important role in explaining dividend payout of sampled firms. The study concludes that only few firms account for the dividend supply in the financial service sector as evidence indicates existence of dividend concentration among the largest ten payers in the sector. Further analyses indicate that this is as a result of concentration of earnings among the same group. Findings from the regression results provide further support earnings as a strong determinant of dividend payout. Based on the combined evidence from descriptive analysis and regression estimates, the study concludes that dividends are sensitive to earnings. Thus, dividend pattern follow earnings pattern. The results also provide evidence in support of dividend smoothing hypothesis. The results have practical implications particularly for existing and potential investors in shaping their portfolios. An investor who desires high dividend paying stocks can make inferences from the earnings record of the firm. Comparison of financial firms which are regulated and non financial firms will be an interesting area to explore in further research.

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