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Information Content of Dividend: Evidence from Nigeria

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Abstract

This paper seeks to investigate whether dividend payments possess significant information content capable of causing changes in stock prices in Nigerian stock exchange. Applying the panel model of the Generalized Least Square (GLS) regression which allows for the influence of individual firm's industrial characteristics, this study has helped in contributing to the basket of knowledge needed globally especially from a developing country like Nigeria. The findings indicate that changes in dividend payment merely create occasions for changes in stock prices. There is no sufficient evidence to suggest that stock price changes are caused by dividend payments. However, the study reveals that records of dividend payments Granger cause stock prices and causation runs from dividend payment to stock prices.

Keywords: Causality; Stock Prices; Dividend Payments; Information Content; Stock Market

1. Introduction

Despite years of theoretical and empirical research, dividend policy remains a source of controversy especially with this aspect of dividend policy: the linkage between dividend policy and stock price risk (Allen and Rachim, 1996). The debate is ongoing and is a growing controversy in the field of finance. The question is the relevance of dividend policy. The essential element of the dividend relevance theory is the fundamental teaching

that investors find current dividends less risky than future returns and will invest more, boosting stock prices. Gordon (1959) and Lintner (1956) believe stockholders prefer current dividends and that this causes a positive relationship between dividends and market value. To them, paying large dividends reduces risk and thus influences stock price (Gordon, 1959) and is a proxy for the future earnings (Baskin, 1989).

On the other hand, Modigliani and Miller (1958) demonstrated that, under the assumptions of perfect capital markets, rational behaviour and zero taxes, the value of a firm is independent of the firm's financial decision. In a later paper, however, Miller and Modigliani (1961) expanded their work and suggested that dividends may convey information about future earnings if the management of a firm follows a policy of dividend stabilisation and use a change in the dividend payout rate to signal a change in their views about the firm's future profitability. Since then, dividend policy has been a puzzle in corporate finance for several decades. Among numerous research subjects about dividend policy, the most popular one is the relationship between the dividend level and the share price of a firm. Given this, the major objective of this paper is to empirically test the dividend signaling effect on stock prices in the Nigerian economy.

The rest of the paper is designed as follows: Section 2 reviews the various dividend theories. Section 3 reviews the empirical works of previous writers. Section 4 states the data and the sources and the model used for data analysis while section 5 discusses and interprets the results of the data analysis. Lastly, section 6 is the conclusion.

2. Theoretical Framework

i. Dividend Irrelevancy Theory

Dividend irrelevancy theory asserts that a firm's dividend policy has no effect on its market value or its cost of capital. The theory of dividend irrelevancy was perhaps most elegantly argued by its chief proponents, Modigliani and Miller (usually referred to as M&M) in their seminar paper in 1961. They argued that dividend policy is a "passive residual" which is determined by a firm's need for investment funds. 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. In the M&M view the dividend decision is one over which managers need not agonize, trying to find the optimal dividend policy, because an optimal dividend policy does not exist.

ii. The Bird-In-The-Hand Theory

The essence of the bird-in-the-hand theory of dividend policy (advanced by John Litner in 1962 and Myron Gordon in 1963) is that shareholders are risk-averse and prefer to receive dividend payments rather than future capital gains. Shareholders consider dividend payments to be more certain than future capital gains – thus a “bird in the hand is worth more than two in the bush”. Gordon contended that the payment of current dividends “resolves investor uncertainty”. Investors have a preference for a certain level of income now rather than the prospect of a higher, but less certain, income at some time in the future. The key implication, as argued by Litner and Gordon, is that because of the less risky nature dividends, shareholders and investors will discount the firm’s dividend stream at a lower rate of return, “ r ”, thus increasing the value of the firm’s shares.

According to the constant growth dividend valuation (or Gordon’s growth) model, the value of an ordinary share, SV_0 is given by: $SV_0 = D_1/(r-g)$; where the constant dividend growth rate is denoted by g , r is the investor’s required rate of return, and D_1 , represents the next dividend payments. Thus the lower r is in relation to the value of the dividend payment D_1 , the greater the share’s value. In the investor’s view, according to Linter and Gordon, r , the return from the dividend, is less risky than the future growth rate g .

However, M&M argued against this and referred to it as the bird-in-the-hand fallacy. In their irrelevancy model, M&M assume that the required rate of return or cost of capital, r , is independent of dividend policy. They maintain that a firm’s risk (which influences the investor’s required rate of return, r) is a function of its investment and financing decisions, not its dividend policy. M&M contend that investors are indifferent between dividends and capital gains – that is, they are indifferent between r and g is the dividend valuation model. The reason for this indifference, according to M&M, is that shareholders simply reinvest their dividends in share of the same or similar risk companies.

iii. Dividend Signaling Theory

In practice, change in a firm’s dividend policy can be observed to have an effect on its share price – an increase in dividend producing an increasing in share price and a reduction in dividends producing a decrease in share price. This pattern led many observers to conclude, contrary to M&M’s model, that shareholders do indeed prefer dividends to future capital gains. The change in dividend payment is to be interpreted as a signal to shareholders and investors about the future earnings prospects of the firm. Generally a rise in dividend payment is viewed as a positive signal, conveying positive information about a firm’s future earning 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.

iv. Dividend as a Residual

This school of thought regards dividends as a residual payment. It is believed that the dividend pay-out is a function of its financing decision. The investment opportunities should be financed by retained earnings. Thus internal accrual forms the first line of financing growth and investment. If any surplus balance is left after meeting the financing needs, such amount may be distributed to the shareholders in the form of dividends. Thus, dividend policy is in the nature of passive residual. In case the firm has no investment opportunities during a particular time period, the dividend pay-out should be 100%. A firm may smooth out the fluctuations in the payment of dividends over a period of time. The firm can establish dividend payments at a level at which the cumulative distribution over a period of time corresponds to cumulative residual funds over the same period. This policy smoothens out the fluctuations of dividend pay-out due to fluctuations in investment opportunities.

3. Literature Review

The usefulness and the justification of the dividend policy constitute one of the most debated topics of the financial theory. According to Black (1976), “the harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don’t fit together”. This is because empirical investigations into the relevance of dividend policy have severally yielded mixed results. While the works of Healy and Palepu, 1988; Kao and Wu, 1994; Brooks, Charlton, and Hendershott, 1998 reveal a significant impact of dividend, the studies by others reveal little or no evidence (DeAngelo, DeAngelo, and Skinner, 1996; Benartzi, Michaely, and Thaler, 1997). Most empirical studies have typically employed simple Ordinary Least Squares (OLS) techniques to perform their analyses. This can be undesirable as the use of OLS regression techniques to test the relationship between current dividend policy and future earnings leads to spurious results if the time series of payout and earnings are non-stationary like many other economic time series (Lee, 2010) – a reason for the use of a panel model in this work.

Asquith and Mullins (1983) find that the initiation of dividends has a significant positive impact on the firm’s stock price. They interpret their evidence as consistent with the signalling hypothesis in that managers use dividends to communicate private information to investors, and investors react favourably. Richardson, Sefcik and Thompson (1986) report similar evidence.

Bhattacharya (1979) and Miller and Rock (1985) develop a two-period model. Both of their models conclude that it is unwise for bad-prospect firms to commit high level dividends, and only good-prospect firms can commit high level dividends without hurting long-term operations. Asymmetric information and signaling hypotheses contain an important implication - that is, unanticipated dividend changes should be accompanied by stock price changes in the same direction.

A good number of the findings of stock price reactions to dividend change as highlighted above do support the signaling hypothesis - namely, that unanticipated dividend changes

provide information about shifts in management's assessment of a firm's future operational prospects, and unanticipated dividend changes are accompanied by stock price changes in the same direction. Since the investors do not know the current and future levels of earnings, higher-than-anticipated earnings signaled by high dividends would lead to a positive stock price increase.

In view of the foregoing, the purpose of this paper is not only to investigate the link between dividend payment and stock price, but also to determine whether dividend payments contain information capable of bringing about significant changes in stock prices in Nigeria. Adaptation of the panel model and Granger Causality Test developed by Granger, 1969 was employed for data analysis.

4. Methodology

i. Data and Sample

This study draws data upon a sample of top three (3) firms listed on the Nigerian Stock Exchange (NSE) from 1977 to 2009. Two variables were of significant importance to study. These are dividend per share (DPS_t) and share prices (SP_t). The inclusion of the lagged values of DPS_t as DPS_{t-1} leads to the use of three variables through out the process. As a result of the inability to obtain quarterly data of DPS_t , the work makes use of the annual figures.

ii. Model Specification and Estimation

As noted by Lee, 2010, most empirical studies have typically employed simple Ordinary Least Squares (OLS) techniques to perform their analyses. To overcome the limitations of OLS, the Generalized Least Square (GLS) of the panel model which takes care of the industrial characteristics and the Granger causality tests were used for the analysis. Two particular analyses were performed to investigate the existence of informational content in dividend policy about stock price changes. First is the use of a panel model to establish whether a significant link exists between share prices and dividend payment. Next is the test for causality in the bi-variate model by applying the Granger-causality test. Granger (1969) defined a variable as being causal for another variable if inclusion of the lagged values of the former helps to improve the forecasts of the latter. If the dividend payment contains information content about future earnings as hypothesised by the dividend signalling theory being the reason for changes in stock prices, then the lagged dividend values should granger-cause the firms stock prices.

The explicit form of the model that can be estimated as:

$$\gamma_{it} = \alpha_{it} + \chi_{it}' \beta_i + \theta_{it} \dots \dots \dots (1)$$

Where γ_{it} is the dependent variable (SP_t) and χ_{it} and β_i are C- vectors of non-constant regressors (DPS_t, DPS_{t-1}) and parameters for $i = 1, 2$ and 3 cross sectional units.

Cross-section weighted regression is appropriate to take care of residuals that are cross-section heteroskedastic and contemporaneously correlated. This is derived as follows:

$$\Omega = E(\epsilon\epsilon') = E \begin{pmatrix} \sigma_1^2 I \Gamma_1 & \dots & 0 & \dots & 0 \\ 0 & \sigma_2^2 I \Gamma_2 & \dots & \dots & 0 \\ 0 & \dots & 0 & \dots & \sigma_3^2 I \Gamma_3 \end{pmatrix} \dots \dots \dots (2)$$

Thus, the model also employed the Granger causality test to ascertain whether dividend payments have significant information content about changes in stock prices. The test procedure as described by Granger (1969) is illustrated as:

$$SP_t = \sum_{j=1}^K A_j DPS_{t-1} + \sum_{j=1}^K B_j SP_{t-1} + \dots \dots \dots (3)$$

$$DPS_t = \sum_{j=1}^K C_j DPS_{t-1} + \sum_{j=1}^K D_j SP_{t-1} + U_{2t} \dots \dots \dots (4)$$

5. Results and Findings

The result of the GLS regression is shown in table 1. The result indicates that for all the three sampled firms, the current dividend payment is not statistically significant at 5% level of significance. Stock price of the only financial institution in the sample exhibited a negative relationship with dividend payment. This seems to be as a result of the nature of financial institutions generally. Financial institutions must ensure a healthy liquidity position and invest all investible funds so as to make adequate profit. It appears from the result that the residual theory of dividend explains the reason for the direction of influence exhibited by the financial institution. However the result shows that the lagged values of dividend for all the three firms are statistically significant at 5% significant level. The

major implication of this is the information the past record of dividend is capable of sending to prospective investors. My findings seem to be consistent with the assertion of previous writers that when a firm stabilizes its dividends, investors are likely to view a change in the dividend rate as a change in management's view of the firm's future earnings prospects. The change in dividend merely creates the occasion for the price change, but not its cause. The stock price change is solely a reflection of reassessment by investors of the firm's future earnings and growth opportunities (Iyiegbuniwe, 1999).

Tables 2 to 4 present the results of the causality tests to establish the existence of information content in dividend and the direction of the causality. In all, between dividend payment and stock prices, the tests fail to reject the null hypotheses. This implies that dividend payment does not cause significant changes in stock prices in Nigeria stock market. However, between the lagged values of dividend payment and stock prices, the tests reject the null hypotheses. This suggests that past records of dividend payment cause stock prices to change. The causation runs from dividend payment to stock prices.

Table 1: GLS Regression Result

Dependent Variable: SPT?
Method: GLS (Cross Section Weights)
Sample: 1978 2009
Included observations: 32
Number of cross-sections used: 3
Total panel (balanced) observations: 96
One-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
_FM1--DPST_FM1	7.340429	3.837372	1.912879	0.0591
_FM2--DPST_FM2	-2.118885	5.627930	-0.376495	0.7075
_FM3--DPST_FM3	6.448480	5.022617	1.283889	0.2026
_FM1--LAGDPST_FM1*	13.95288	4.401895	3.169744	0.0021
_FM2--LAGDPST_FM2*	20.27920	5.715662	3.548005	0.0006
_FM3--LAGDPST_FM3*	15.50918	4.989760	3.108202	0.0025
Fixed Effects				
_FM1—C	50.79997			
_FM2—C	114.2944			
_FM3—C	113.4412			
Weighted Statistics				
R-squared	0.820989	Mean dependent var	2070.327	
Adjusted R-squared	0.804529	S.D. dependent var	2538.270	
S.E. of regression	1122.223	Sum squared resid	1.10E+08	
Log likelihood	-792.1101	F-statistic	49.87562	
Durbin-Watson stat	1.240427	Prob(F-statistic)	0.000000	

Unweighted Statistics

R-squared	0.865197	Mean dependent var	1951.260
Adjusted R-squared	0.852802	S.D. dependent var	2925.015
S.E. of regression	1122.223	Sum squared resid	1.10E+08
Durbin-Watson stat	1.099771		

* significant at 5%.

Table 2: Granger Causality Tests

FM1

Pairwise Granger Causality Tests

Sample: 1977 2009

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
SPT does not Granger Cause DPST	31	6.60338	0.00480
DPST does not Granger Cause SPT		2.64099	0.09033
LAGDPST does not Granger Cause SPT	30	6.51481	0.00528
SPT does not Granger Cause LAGDPST		0.46233	0.05547

Table 3: Granger Causality Tests

FM2

Pairwise Granger Causality Tests

Sample: 1977 2009

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
SPT does not Granger Cause DPST	31	23.1432	1.7E-06
DPST does not Granger Cause SPT		0.11726	0.88982
LAGDPST does not Granger Cause SPT	30	22.0917	3.0E-06
SPT does not Granger Cause LAGDPST		0.61353	0.54939

Table 4: Granger Causality Tests

FM3

Pairwise Granger Causality Tests

Sample: 1977 2009

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
SPT does not Granger Cause DPST	31	6.97533	0.00376
DPST does not Granger Cause SPT		0.12483	0.88317
LAGDPST does not Granger Cause SPT	30	4.46907	0.02191
SPT does not Granger Cause LAGDPST		1.35894	0.27526

6. Conclusion

Summary of the above results is:

- i. Contrary to the views of some previous writers that significant coefficient would result when one runs regression of stock price against dividend, with a pane model allowing the influence of cross sectional weights, my findings show that dividend payment is insignificant.
- ii. The inclusion of the lagged values of dividend helps to improve the forecasts of stock prices in Nigeria. This supports the observation of sticky dividends by Lintner (1956), and satisfies the assertion by Kalay (1980) of managerial reluctance to cut dividends as a necessary condition to the existence of information content in dividend policy.
- iii. The findings suggest that dividends have significant information content about stock prices in Nigeria.

Analyses from this study have therefore established that changes in dividend policy provide statistically significant information content which can be used to make predictions about future stock prices. The prerequisite of managerial reluctance to cut dividends to the dividend signalling theory is also satisfied by these empirical findings. My findings support the dividend signalling theory or the informational content of dividends hypothesis. Nevertheless, given the controversial nature of this topic, results from this work do not automatically mean an end to dividend puzzle. Further research work is encouraged in this area in Nigeria especially with quarterly data and more cross section observations.

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