

DIVIDEND POLICY AND SHARE PRICE VOLATILITY: A CO-INTEGRATION ANALYSIS.

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Abstract

The study empirically investigated dividend policy and share price volatility in Nigerian capital market as reflected on share holder's wealth maximization. The data employed in the study was extracted and computed from the audited financial report of various companies as at 31st December 2015; in performing the analysis, rigorous econometric tools such as multiple OLS regression, granger causality test, Engle Granger co-integration techniques and ARCH/GARCH model were all employed with the aid of econometric statistical packages version 8. The result of the study revealed that dividend per share is highly significant and positively related to share price of the firm while earning per share is also highly significant but negative to share price volatility of firms; this result is similar to that of Walter and Gordon result. Based on this, the study concluded that dividend per share and earnings per share are the predominant variables influencing the share price volatility in the market. It is therefore recommended that finance managers should play an important role in their dividend policy in order to be consistent in dividend payment as only this will attract clientele of investors in the company.

Keywords: ARCH/GARCH, dividend per share, earnings per share, share price volatility.

Introduction

Dividend policy is defined as a deliberate action of managers to distribute portion of earnings to shareholders in proportion of their holdings in the firm called dividend; the distribution of earnings to shareholders can be in form of cash dividend, bonus or script dividend, repurchased stock etc. The expected relationship between dividend paid out ratio and retention ratio is inversely related such that increase in retention ratio will bring about reduction in payout ratio of the firm, yet the duo work together for shareholders' wealth maximization, it is practically impossible to formulate one without affecting the other.

Dividend decision is extremely important to company's valuation which practically translates to capital gain in share prices; shareholders' wealth maximization is a paramount objective of a finance manager; which serve as return on investment outlay as reflected in the value of the firm. Return consist of two components: dividends and bullish stock (capital gain), despite the inverse relationship between dividend and earnings ratio, dividend and retained earnings have similar purpose towards maximizing shareholders' interest (wealth); the unshared profit (retained earnings) are used to finance viable projects for expansion while dividend increases the bargaining power of stakeholders.

However, finance managers often strive to increase the basic fundamentals of their company; the fundamentals of companies as opined by the fundamentalist are: earnings, earnings per share, dividend yield, dividend payout ratio and dividend cover, among others. Good fundamentals of firms are reflected in share price movement in the stock market which ultimately translates to shareholders wealth maximization.

Statement of problem

Over the years, there have been conflicting goal regarding stakeholders' wealth maximization and market valuation of the firm; many scholars believed that stakeholders' interest and market value of the firm are reflected in the company's earnings per share and capital gain in share price respectively. Scholars have also argued that companies' fundamentals does not impact positively on the value of the firm; the major proponent of this argument is Modgiliani and Miller's model which postulate that earnings is the predominant factor that affect the market value of a firm.

However, conflicting interest of shareholders regarding dividend policy cannot be over-emphasized; every rational shareholder will consistently require that higher dividend be paid regardless of the investment decisions of the firm. Finance managers are in dilemma in harmonizing the both decisions (dividend and investment) since both decisions are very crucial to the worth of companies as shown in the growth of stakeholder's worth. This research work seems to breach the gap by portraying the significant effect of dividend policy on share valuation.

Significance of the study

The research work will bring about the relative significances of company's valuations and dividend decisions as reflected in share holder's wealth. Company's valuation is reflected in price movement in the capital market; the pay-out ratio is in consideration of the project financing policy of the firm. Though, fundamentals of companies such as earnings per share, dividend per share, dividend pay-out ratio and dividend cover among others; impact positively or negatively on the value of the firm as perceived by every rational investor in the stock market.

Objectives of the Study

The research objective is to cover the significant effect of dividend valuation policies on the company' performance as reflected on the share value of the firms; however, the specific objectives of the work are as follows:

1. To examine the relationship between earnings per share and share value of quoted firms.
2. To investigate the causality between Dividends per share and share value of quoted firms.
3. To determine the causality between Dividend Yield and share value of quoted firms.
4. To determine the causality between Price Earnings ratio and share value of quoted firms.
5. To examine the causality between Dividend Payout ratio and share value of quoted firms.

Research Questions

The following research questions will be prominent in the course of the research work.

1. To what extent is the relationship between earnings per share and the value of quoted firms?
2. To what extent is the relationship between dividends per share and the value of quoted firms be empirically ascertained?
3. To what extent is the nature of relationship between Dividend Yield and the share value of quoted firms?
4. To what extent can the relationship between Price Earnings ratio and share value of quoted firm be determine?
5. To what extent is the relationship between Dividend Payout ratio and share value of quoted firms.

Statement of Hypotheses

H₀₁: Significant relationship does not exist between earnings-per share and market price of a firm.

H₀₂: Significant relationship does not exist between dividend per share and share value of a firm.

H₀₃: Significant relationship does not exist between dividend Yield and share value of quoted firms.

H₀₄: There is no significant relationship between price earnings ratio and share value of quoted firms.

H₀₅: Significant relationship does not exist between Dividend payout ratio and share value of quoted firms.

Theoretical Review

There are several theories relating to dividend policies and the value of the firm, such theories among others include: professor walter's Model (Relevant theory), Gordon's Model, Bird in Hand theory, debt-equity substitution theory, MM theory (Irrelevant theory).

Walter's Model

Relevant theory argued that dividend policy is significant to the share price of a firm. The relevant theory shows clearly the significant relationship between the firm's internal rate of return (r) and its cost of capital (k) in computing the dividend yield as reflected in shareholders' wealth maximization.

Mathematical formula of Walter's theory to compute the current price per share is as follows:

$$P_0 = \frac{D_1 + (r)(E - D_1)}{K_e}$$

Where,

P_0 = share value per share

D_1 = Dividend per share

r = internal rate of return on the firm's investment

K_e = Cost of equity

E = Earnings per share

Gordon's Model

The theory also known as relevant theory believes that consistent dividend's payment affect the value of the firm; the theory highlight the significant between dividend pay-out ratio, internal rate of return, cost of fund and the current value of the share price.

Mathematical formula of the model

$$P_0 = \frac{E(1 - R_t)}{K_f - g}$$

Where,

P_0 = Market price per share

E = Earnings per share

R_t = Retention ratio (1-payout ratio)

r = Rate of return

k_f = Cost of fund

g = Growth rate (g)

M&M Theory

Modigliani and Miller (M&M), postulates the irrelevancy of dividend in determining the share value of a firm as it does not impact on the shareholder's wealth. They argued that the worth of a firm is reflected by total earnings born out of the investment decisions of the firm.

Mathematical formula of M&M theory

$$r = \frac{D_1 + (P_1 + P_0)}{P_0}$$

Where,

D_1 = Current Dividend per share

P_1 = Market price per share

P_0 = Current market price per share

Conceptual Framework

Functions of finance managers is to strike balance between dividend payout ratio and retained earnings; this is very difficult because of the conflicting interest of shareholders – heterogeneous expectation- some shareholders prefer consistent payment of dividend whereas others will prefer capital gains arising from increased share prices (Aivazian et al, 2002)

Finance manager will choose the type of dividend payment methods to adopt when making decisions regarding cash dividends or through stock repurchased. Various factors may be taken into consideration; where shareholders must pay tax on dividends, firms may elect to retain earnings or to perform a stock repurchased in both cases increasing the value of shares outstanding,(Kothari, 2011).

Scholars have believed that dividend is relevant to the value of firms, the school of thought on this propositions are Myron J. Gordon and James E. Walter against the back drop of Modigliani and Miller (irrelevant theory). Different econometric tools are now formulated to assist firms analyze and come out with the best dividend policy. There has not been a compromise between the school of thought on the significant nexus between dividend and share price of firms.

There are various forms of dividend payments; cash dividends seen as the payment of divided in cash usually via funds transfer or dividend warrant; such dividends are in form of return on investment and are usually taxable to the recipient in the year they are paid (Sullivan, 2003), script dividends are those paid out in the form of bonus stock of the issuing corporation, there are usually issued in pro-rata basis, (D'Souza, 1999).

Empirical Review

(Baskin, 1989) examine the relationship between share price and dividend yield of firms; five different explanatory variables were used against the dependent variable – share price. However, the result of the analysis indicates significant relationship between changes in share price and yield of quoted companies.

(Nazir et al., 2010) the period for the study ranges from 2003 to 2008, 73 quoted firms in Karachi stock exchange (KSE) was used for the study. The method used was fixed effect and random effect models on panel data; the result shows that stock movement has significant and inverse relationship with yield and pay-out.

(Suleman et al., 2011) examine the relationship between dividend policy and stock movement in Pakistan. The variables were extracted from Karachi Stock Exchange (KSE) on the relevant sectors for the period of 2005 - 2009. Ordinary least regression analysis was used for

the study, Contrary to (Baskin, 1989)'s results, the analysis performed, show that market value has positive, direct and significant relationship with dividend yield of quoted firms.

(Hussainey et al., 2011) examined the correlation between share price movement and dividend policy in UK. One hundred and three English quoted companies were used for the study and the time of the study ranges between 1998 - 2007. The analysis done was similar to that of (Baskin, 1989). Ordinary least square regression analysis was used to determine the relationship between market value with growth yield and payout ratio. It also included more three explanatory variables in their model. The result found an inverse but significant relationship between stock price movement and dividend payout ratio. Also, another empirical result shows an inverse but significant relationship existed between share price movement and dividend yield. The result findings show that dividend payout ratio remain the most important criteria of the share price movement.

Goetzmann–Jorion (1995) determined the impact of dividend yield to predicting wider view of stock price movement in United State of America. The study employed walt hypotheses testing using panel data; The results revealed that dividend yields only convey little impact in influencing returns on investment in either country.

Rees (1997) analyzed UK stock market using a sample size of 8,287 firms per years during the years 1987–1995; he used co-integration techniques in his study. The result revealed that dividend paid has strong capability of predicting stock price movement in UK.

Torkko (1974) examined the validity of Gordon's model using Finland as a case study. The sample was twenty three firms from the years 1963 to 1971; the study employed multiple regression techniques and the result of the study was in contrast to the applicability of Gordon's model.

Also Suvas (1994) examined the applicability of Gordon's new model, using Finland as the case study; he employed 28 Finnish companies listed on the Helsinki Stock Exchange and the period cover was 1975–1986 using error correction estimate; the result revealed significant and positive causality between the dividend yield and returns on investment.

Bar–Yosef–Kolodny (1976) studied dividend policy using the consumer behaviours, the study employed multiple regression techniques and the result revealed strong preference for dividend payment.

Yli-Olli (1979) and Suvas (1994) tested the models of Modigliani–Miller in Finland using various econometric tools in his analysis such as co-integration and error correction techniques; the result shows no positive causality between dividend policy and share price of quoted firm.

However, from the stance of academic literature, the test of dividend policy on the value of company has stimulated much interest among researchers in different times; there are considerable evidences for and against the significant of dividend policy on share price volatility of quoted companies especially in developed countries. Though, not much tests has been carried out in the Nigeria context using panel data of company's fundamentals such as DPS, EPS, DPR, PER, DY to determine the validity of dividend policy on share price volatility of firms. Therefore, more sophisticated econometric tools such as multivariate

normality test, Granger causality, langrage multiplier serial correlation test, multiple regression analysis will be employed to test for or against the significant of dividend policy on share price volatility of quoted companies in the Nigeria stock market. These may help in providing further empirical evidence to the controversies surrounding dividend policy.

Methodology

Various methods were used to determine the relationship between share price, earnings, rate of return and dividend policy of the firm; prominent among the methods used are: unit root test, Johansson co-integration test, ordinary least square, granger causality test, impulse response and variance decomposition.

However, sample size of 50 quoted firms in the Nigeria stock exchange (NSE) was selected from various sectors in the economy to test the validity of claim in the hypothesis. Data was extracted from audited annual financial reports of companies and necessary computations were done.

Model specification

The model shall be specified in three different forms; starting from the functional form to the econometric form.

Functional form of the model;

The functional form explains direct functions of the dependent variable on the explanatory variables:

$$Mvs = f (Eps,Dps,Dpr,Dy,Per) \dots\dots\dots eq (1)$$

Therefore, the model is recasted into the mathematical form;

The **Mathematical Model** measures the exact relationships between the dependent and independent variables; a constant factor is added to the explanatory variable;

$$Mvs = \alpha_0 + \alpha_1 Eps + \alpha_2 Dps + \alpha_3 Dpr + \alpha_4 Dy + \alpha_5 Per \dots\dots\dots eq (2)$$

Where, $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ are the parameters to be estimated; α_0 represent intercept in the model while $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ are the slope or coefficients to be estimated.

The **Econometric Model** measure inexact relationship between the variables in the model; a stochastic error disturbance term is introduce into the model to account for other variables that are not included in the model that might affect the performance of the dependent variables.

$$PPS = \alpha_0 + \alpha_1 Eps + \alpha_2 Dps + \alpha_3 Dpr + \alpha_4 Dy + \alpha_5 Per + \delta \dots\dots\dots eq (3)$$

Where,

Eps: Earnings/share of the firm

Dps: Dividend/share of the firm

Dpr: Dividend pay-out ratio

Dy: Dividend yield

Per: Price- earnings – ratio

PPS: Price per share

δ is the stochastic error disturbance term introduced into the model.

Apriori Expectation

It is expected that share price of the firm be negative and significant to earnings per share, positive and significant to dividend per share, negative and insignificant to dividend pay-out ratio and dividend yield while price-earnings ratio to be positive and insignificant to share price.

Variables description

Variables descriptions deal with the explanatory note attached to each variable in the model such as;

Earnings per Share: Earnings per share is calculated as the total earnings of the company divided by the outstanding investors share; symbolically,

$$\frac{\text{Total Earnings – preference dividend}}{\text{Total Investors' shareholdings}}$$

Dividend per Share: dividend per share is similar to earnings per share in calculation except with a difference in numerator; it is calculated as the total earnings paid out as dividend divided by the investors' shareholding outstanding in the company. Symbolically

$$\frac{\text{Total dividend paid to shareholders}}{\text{Total investors' shareholdings}}$$

Dividend Yield: Dividend yield comprises of the total dividend paid and how the stock market perceived the firm during the time of valuation. Therefore, dividend yield is calculated as the dividend per share divided by the stock market price of the company, here the current stock market price is used. Symbolically,

$$\frac{\text{Dividend per Share}}{\text{Share price}}$$

Dividend Payout Ratio: dividend payout ratio is used by the company to compare with the retention ratio; it is calculated as dividend per share divided by earnings/share. Symbolically,

$$\frac{\text{Dividend per share}}{\text{Earnings per share}}$$

Price- Earnings-Ratio: the price –earning –ratio is used by the investors to know the earning power of the firm, it is calculated as market price of the company divided by its total earnings; symbolically,

$$\frac{\text{Market Price}}{\text{Earnings per share}}$$

DATA PRESENTATION AND ANALYSIS OF RESULT

The data below was extracted and calculated from the audited financial reports of various firms as at 31st December 2015; the table shows the various fundamentals of companies proposed to have significant influence on the share value of quoted firms in the capital market. The prices per share represent the firm’s closing price as at the same date.

Companies	PPS	DPS	EPS	DY	PER	DPR
7up	119.5	1.600	5.2	0.01	22.9	0.3
Access	5.5	0.25	1.8	0.04	3.0	0.13
Ashakacem	19.95	0.45	2.0	0.02	9.9	2.2
Afriprud	2.65	0.35	0.7	0.13	3.7	0.5
Berger	6.89	0.75	0.5	0.1	13.7	1.5
Betaglass	38.66	0.4	3.9	0.01	9.9	0.1
CadBury	13.9	1.5	0.8	0.1	17.3	1.8
Cap	37	1.5	3.4	0.04	10.8	0.4
ConOil	23.96	1.0	1.2	0.04	19.9	0.8
Dangcem	179	6.0	10.6	0.03	16.8	0.5
DangSugar	6.8	0.4	0.9	0.05	7.5	0.4
First Bank	3.3	1.0	0.4	0.3	8.2	2.5
FlourMill	19.95	2.1	5.4	0.1	0.3	0.3
Forte Oil	166.82	2.5	3.4	0.01	49.0	0.7
GloxoSmith	18	0.75	1.5	0.04	12	0.5
GT Bank	24	1.5	3.3	0.06	7.2	0.4
Guinness	95	3.2	5.1	0.03	18.6	0.6
Mobil	169.67	7.2	15.8	0.04	10.7	0.4
MRS	38.57	0.88	2.9	0.02	13.3	0.3
Nascon	8.06	0.5	0.7	0.06	11.5	0.7
NB	130.3	3.6	4.7	0.02	27.7	0.7
Nestle	820	17.5	29.9	0.02	27.4	0.5
Oando	5.7	0.3	0.8	0.05	7.1	0.3
OkomuOil	35	0.1	2.7	0.002	12.9	0.03
PaintCom	0.99	0.10	0.3	0.1	3.3	0.3
PZ	19.55	0.61	1.1	0.03	17.7	0.5

Roads	6.6	0.6	5.4	0.09	1.2	0.1
Seplat	242	18	73.1	0.07	3.3	0.2
Scoa	3.96	7.5	0.2	1.8	19.8	37.5
Stanbic	13.28	0.15	3.2	0.01	4.1	0.04
Total	236	9.0	13	0.03	18.1	0.6
Uacn	20	1.75	5.5	0.08	3.6	0.3
Uac-Pro	3.72	0.5	2.0	0.13	1.8	0.25
Uba	4.45	0.1	1.4	0.02	3.1	0.07
Unilever	35	0.1	0.6	0.002	58.3	0.1
Wapco	51.5	3.6	7.6	0.06	6.7	0.4
Zenith	16	1.75	3.1	0.1	5.16	0.5
VitaFoam	2.94	0.3	0.2	0.1	14.7	1.5
Upl	4.58	0.12	0.1	0.02	45.8	1.2
Transcorp	1.2	0.1	0.03	0.08	40	3.3
Transcohot	5.29	1.15	0.4	0.2	13.2	2.8
Presco	38.85	1.00	2.3	0.02	16.8	0.4
Nahco	4	0.2	0.3	0.05	13.3	0.6
Int'l Brew	18.05	0.35	0.8	0.01	22.5	0.4
Fidson	1.86	0.15	0.4	0.08	4.65	0.3
Custodyins	3.8	0.6	0.6	0.1	6.3	1
Caverton	1.46	0.1	0.2	0.06	7.3	0.5
Continsur	1.01	0.12	0.2	0.1	5.05	0.6
Eterna	2.69	0.25	0.9	0.09	2.9	0.2
JBerger	48.39	1.8	2.7	0.03	17.9	0.6

Source: Audited accounts of firms & Authors' computation

DATA ANALYSIS & DISCUSSION OF RESULT

Various econometric tools will be used to analyze the above data.

Short Run Analysis

Here we employ the multiple regression techniques to showcase the short run relationship between the variables in the model; the result is shown in table 2 below:

Dependent Variable: PPS
 Method: Least Squares
 Date: 08/22/16 Time: 13:50
 Sample: 1 50
 Included observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12.22776	16.02658	-0.762967	0.4496
DPS	52.92102	3.958100	13.37031	0.0000
EPS	-9.119339	1.328360	-6.865110	0.0000
DY	-36.18892	181.7319	-0.199134	0.8431
PER	1.013691	0.834731	1.214392	0.2311
DPR	-9.073931	9.226133	-0.983503	0.3307
R-squared	0.896665	Mean dependent var		54.97700
Adjusted R-squared	0.884923	S.D. dependent var		126.4471
S.E. of regression	42.89469	Akaike info criterion		10.46754
Sum squared resid	80957.99	Schwarz criterion		10.69698
Log likelihood	-255.6885	Hannan-Quinn criter.		10.55491
F-statistic	76.36020	Durbin-Watson stat		2.142379
Prob(F-statistic)	0.000000			

The result revealed that 88% of variations witness in prices of various firms are caused by changes in the independent variables; the Durbin-Watson statistic of 2.14 revealed that the variables in the model are free from serial correlation which makes it conform to the classical linear assumption while the probability of the F-statistic shows that the independent variables is significant in exerting pressure on the dependent variable.

However, considering the individual coefficient in the relative statistic, the overall constant is insignificant and inverse to share price reactions or changes in the market; dividend per share is highly significant and positive to share price changes in the market, earnings per share is also highly significant with an inverse relationship to prices while dividend yield, price – earnings ratio and dividend pay- out ratio are all insignificant with a positive and inverse relationship to share prices in the market.

Co-integration Analysis

We employed Engle Granger co-integration techniques to determine the long run equilibrium relationship in the model; the result is shown in table 3 below:

Date: 08/22/16 Time: 14:07
 Series: PPS DPS EPS DY DPR PER
 Sample: 1 50
 Included observations: 50
 Null hypothesis: Series are not cointegrated
 Cointegrating equation deterministics: C
 Automatic lags specification based on Schwarz criterion (maxlag=10)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
PPS	-7.982776	0.0000	-54.21405	0.0000
DPS	-7.722687	0.0001	-52.40208	0.0001
EPS	-7.032086	0.0004	-48.14905	0.0006
DY	-6.508818	0.0017	-46.13962	0.0013
DPR	-6.385832	0.0023	-45.12895	0.0018
PER	-6.062565	0.0052	-42.44010	0.0044

*MacKinnon (1996) p-values.

Intermediate Results:

	PPS	DPS	EPS	DY	DPR	PER
Rho – 1	-1.106409	-1.069430	-0.982634	-0.941625	-0.920999	-0.866125
Rho S.E.	0.138600	0.138479	0.139736	0.144669	0.144225	0.142864
Residual variance	1552.411	0.444169	9.828257	0.001156	0.436986	52.06571
Long-run residual variance	1552.411	0.444169	9.828257	0.001156	0.436986	52.06571
Number of lags	0	0	0	0	0	0
Number of observations	49	49	49	49	49	49
Number of stochastic trends**	6	6	6	6	6	6

**Number of stochastic trends in asymptotic distribution

The result of the above analysis revealed that the series in our model have long run equilibrium relationship thereby rejecting the null hypotheses “series are not co-integrated”. However, the long run residual variance in the result above revealed that the variables are all positive to their respective prices while the number of stochastic (6) shows stronger force of the exogenous variables on the endogenous variable.

Cause – Effect relationship

We used Granger causality approach to determine the cause- effect influence on each variable in the model; the result is shown below in table 4

Pairwise Granger Causality Tests

Date: 08/22/16 Time: 14:21

Sample: 1 50

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DPS does not Granger Cause PPS	48	0.15677	0.8554
PPS does not Granger Cause DPS		0.44405	0.6443
EPS does not Granger Cause PPS	48	0.14378	0.8665
PPS does not Granger Cause EPS		0.04314	0.9578
DY does not Granger Cause PPS	48	0.98169	0.3829
PPS does not Granger Cause DY		0.95704	0.3921
DPR does not Granger Cause PPS	48	0.99271	0.3789
PPS does not Granger Cause DPR		0.99775	0.3771
PER does not Granger Cause PPS	48	0.12990	0.8785
PPS does not Granger Cause PER		0.61806	0.5437
EPS does not Granger Cause DPS	48	1.05949	0.3555
DPS does not Granger Cause EPS		0.02443	0.9759
DY does not Granger Cause DPS	48	1.81339	0.1754
DPS does not Granger Cause DY		11.4726	0.0001
DPR does not Granger Cause DPS	48	2.00773	0.1467
DPS does not Granger Cause DPR		11.9116	8.E-05
PER does not Granger Cause DPS	48	0.16137	0.8515
DPS does not Granger Cause PER		0.36528	0.6961
DY does not Granger Cause EPS	48	0.24399	0.7846
EPS does not Granger Cause DY		64.5432	1.E-13
DPR does not Granger Cause EPS	48	0.21815	0.8049
EPS does not Granger Cause DPR		69.1285	4.E-14
PER does not Granger Cause EPS	48	0.21253	0.8094
EPS does not Granger Cause PER		0.61754	0.5440
DPR does not Granger Cause DY	48	0.53086	0.5919
DY does not Granger Cause DPR		0.61264	0.5466
PER does not Granger Cause DY	48	0.55620	0.5775
DY does not Granger Cause PER		0.94236	0.3976
PER does not Granger Cause DPR	48	0.50037	0.6098
DPR does not Granger Cause PER		0.82957	0.4431

The result revealed that dividend per share, earnings per share and others does not granger cause influence on the share price volatility in the market; this could be as a result of efficient market hypothesis. Prices in the market already reflect available information about the companies under consideration.

Modeling share price volatility

We employ auto regressive and generalize auto regressive conditional heteroscedasticity (ARCH/GARCH) to determine the influence of our independent variables on share price volatility in the capital market.

Dependent Variable: PPS

Method: ML ARCH - Normal distribution (BFGS / Marquardt steps)

Date: 08/22/16 Time: 14:29

Sample: 1 50

Included observations: 50

Failure to improve likelihood (non-zero gradients) after 43 iterations

Coefficient covariance computed using outer product of gradients

Presample variance: backcast (parameter = 0.7)

GARCH = C(7) + C(8)*RESID(-1)^2 + C(9)*GARCH(-1)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-7.477580	19.72596	-0.379073	0.7046
DPS	52.86124	2.548182	20.74468	0.0000
EPS	-9.172222	1.261503	-7.270870	0.0000
DPR	-10.60169	13.42209	-0.789869	0.4296
DY	4.712116	257.3703	0.018309	0.9854
PER	1.008546	1.014148	0.994476	0.3200

Variance Equation				
C	668.0179	1022.882	0.653074	0.5137
RESID(-1)^2	-0.063380	0.098600	-0.642795	0.5204
GARCH(-1)	0.577948	0.650849	0.887991	0.3745

R-squared	0.893520	Mean dependent var	54.97700
Adjusted R-squared	0.881420	S.D. dependent var	126.4471
S.E. of regression	43.54267	Akaike info criterion	10.43750
Sum squared resid	83422.43	Schwarz criterion	10.78166
Log likelihood	-251.9375	Hannan-Quinn criter.	10.56856
Durbin-Watson stat	2.087064		

The result from the variance equation revealed that the coefficient of the squared lagged residual which is insignificant and inverse portray less pressures of the independent variables

on the price per share of various firms; this could be as a result of efficient market hypothesis operating in the Nigeria capital market.

However, the GARCH(-1) coefficient which is relatively very minute, indicates that the variables are free from heteroscedasticity which conform to the classical linear assumption.

Conclusion and Recommendation

Dividend policy and share price volatility has always stimulated much interest among researchers, though so many authors believed that dividend policy does not impact positively on share price volatility in the market while others still believed that dividend policy plays significant role in determining the movement of prices in the market.

However, the result of short run analysis revealed that dividend per share and earnings per share are highly significant with a positive and inverse relationship to share price respectively; this is as a result of low activities of stock in the Nigeria capital market due to the low state of the economy; investors are only attracted to stock that pays higher and consistent dividend rather than company that declare huge earnings without considerable dividend to shareholders as return on their investment.

Also, the result of Engle Granger co-integration revealed that the variables have long run positive equilibrium relationship as against the null hypothesis; this is expected as the various fundamentals of companies in one way or the other influences the price movement in the market. Granger causality test shows that the variables in the model does not granger cause the prices in the market.

The ARCH/GARCH model revealed that our variables are homoscedastic and very minute to exert influence on the dependent variables. The state of the economy has affected the market in such a way that price volatility though very low is actually not affected by any variables.

Recommendation

Based on the above findings, the following recommendation will be appropriate;

- Managers of companies should concentrate more on the dividend policy of the firm.
- Managers of companies should as a matter of urgency, try to boost the firm's earnings potentials.
- Investment decision is also appropriate to boost the company's earnings per share.
- Financing decision may not be appropriate now as it will not boost the dividend per share and earnings per share of the company.
- Retain earnings can also be injected into the business to boost the earnings per share as dividend can only be pay out of earnings of the firm.

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