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Empirical Test of the Dividend Policy Irrelevance Hypothesis in the Nigerian Context

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Abstract
This research was carried out to examine the relevance of dividend policy in market price determination in the Nigerian capital market. With annual data from 20 highly capitalized companies quoted on the Nigerian Stock Exchange for the period 2005-2012, we found that the level of dividends is largely influenced by the level of retained earnings in at least 70 per cent of the companies sampled. There is no significant relationship between change in dividend policy and change in market price. The retained earnings coefficient is more significant than the dividend coefficient in market price determination. Overall, the results agree with the earlier research works which argue that dividend policy is irrelevant in determining enterprise value. In a world of withholding taxes, it is capital appreciation and the reinvestment level, not necessarily dividend policy, that affects stock market behaviour in Nigeria.
Keywords: Dividend policy, hypothesis, Nigeria, enterprise value.

1. Introduction

Studies on dividend policy have presented a serious challenge to scholars and practitioners alike. The complexity of the dividend issue has left many unanswered questions regarding the impact of dividends on the value of the firm and the conditions under which that impact is felt. In a corporation, management decides through its dividend policy on the amount or proportion of earnings to pay out as dividends and the amount to be retained for the internal operations of the firm. The after-tax earnings of business organizations contribute the source from which dividends are paid.

Dividends are the distribution by a corporation from earnings and profits (past or present) to its shareholders in accordance with the declaration of the Board of Directors (Richards, 1980). Inanga (1975) defines dividend policy as the determination of the proportion and stability of firms' distributable earnings payable to equity shareholders within a given period. It is concerned with the determination of the amount of corporate earnings to be distributed in the form of dividends (Izedonmi and Eriti, 1996). It determines the distribution of cash flows generated from successful trading between dividends and corporate retention (Pike and Dobbins, 1980).

Dividend policy is considered strategic in corporate finance as well as corporate performance and growth. It affects the share price as well as cost of capital (Osaze, 1985). In Nigeria, dividend policy formulation is most prevalent in companies quoted on the Nigerian Stock Exchange. Regularly dividends are usually paid quarterly, at a fixed point in time, but a few companies declare dividends monthly, semi-annually or annually (see Pike and Dobbins, 1980). However, the payment of cash dividends depends on the liquidity or solvency of a company (Osaze, 1985). Stock dividends are usually preferred by companies because their liquidity position is unaffected. It is also important to note that prolonged stock dividends would likely prove undesirable to both the corporation and shareholders. Corporate dividend policy may be influenced by the need for expansion, financial security and control (Van Horne, 1967). In Nigeria, a withholding tax of 10 per cent is payable on dividends within the framework of the Companies and Allied Matters Act (1999).

Despite all these, our understanding of why firms may pay dividends is currently unsatisfactory. Some scholars have urged that dividend policy is irrelevant, in the sense that any two arbitrarily chosen dividend policies have an equivalent consequence in the absence of taxes and that the value of the firm is not a function of the firm's dividend policy. Rather, it is a firm's investment policy and the earning powers of the firm's assets that determine the value of the firm. At the forefront of this theory is Miller and Modigliani (1961), supported by Miller and Scholes (1978), and Black and Scholes (1974). Then, on the other hand is the theory of the relevance of dividend policy (see Bar-Yosef and Kolodny (1976), Blume (1980), Lee and Forbes (1980), and Djarraya and Lee (1980). Not surprisingly, the attendant anomaly led some writers, notably, Black (1976) to suggest that we really do not know why firms pay dividends. Black and Scholar (1974) argue that the best method for testing the effects of dividend policy on stock prices is to test the effect of dividend yield on stock returns.

The disagreement over theoretical specifications of the expected relationship seems to reflect differences in interpretation of the questions usually raised as the determinants of dividend policy. The fundamental reason for this disagreement is the absence in the literature of a complete and reasonable statement of those parts of economic theory bearing directly on dividend behaviour. This lack of definite statement was described by

Feedstein and Green (1983) as the primary puzzle in the economics of corporate finance. A number of statistical studies have tested the various theoretical propositions concerning dividend policy (see Lintner, 1956, Darling, 1957; Gordon, 1959; Friend and Puckett, 1964; Fama and Barbiak, 1968; Uzoaga and Alozienwa, 1974; and Oyejide, 1979).

More recent research works have related dividend increases to shareholder value, and capital structure theories. Suwabe (2006) has conducted an in-depth analysis regarding the relationship between dividend policy and shareholder value by testing the signaling hypothesis and the free cash flow hypothesis. The results were consistent with both hypotheses, concluding that a reduction in agency costs, which results in stock price discounts, is more important for increasing shareholder value than shareholder returns themselves. The free cash flow theory posits a decline in the possibility of damage to shareholder value if cash flow is reduced through interest or dividend payments that therefore restrict the discretion of managers. The signaling theory of dividends states that when information asymmetry exists between company insiders and investors, managers can communicate (signal) to investors their expectation that profit growth will surpass the market concensus estimate by announcing a dividend increase. Franc-Dabrowska (2009) presents the results of research concerning relationships between two capital structure theories (hierarchy theory and substitution theory) and dividend payment policies in Polish Stock Companies (2001-2006). It was found that company management limits dividend according to the hierarchy theory and prefers internal sources of financing economic activities.

Although a variety of issues and questions have been raised and tested in the dividend relevance-irrelevance controversy, our present study attempted to test three null hypotheses as follows:

$H0_1$: There is no significant relationship between dividends and retained earnings.

$H0_2$: There is no significant relationship between a change in dividend policy and a change in market price.

$H0_3$: Retained earnings is not more important than dividend policy in market price determination.

The next part of this article reviews relevant literature on the dividend controversy, while the third part presents the basic research methods and model specifications. The fourth part presents and discusses the data. We conclude the paper with our major findings and contribution to the debate from the perspective of a developing economy.

2. Review of Relevant Literature

In their classic article, Miller and Modigliani (1961) (M & M) examine a wide variety of issues concerning dividend policy. They use a multiperiod valuation formula to show the irrelevance of dividend policy to shareholders in a world without taxes. In addition, M & M derive a firm valuation equation which explicitly incorporates the existence of favourable opportunities for the firm (those generating returns greater than the cost of capital) and relate this growth component to the usual definition of "growth" companies. M & M also analyze the relationship between the growth rates of price per share, earnings per share, and dividend per share in terms of the amount of external and internal financing, and they use the concept of the "informational content" of dividends to explain why a change in a firm's dividend rate is often followed by a change in the market price of a firm's stock. In addition M & M use the concept of a "clientele effect" to argue that each corporation will tend to attract to itself a group of shareholders who prefer a particular payout ratio of the firm. Finally, M & M argue that the favourable tax treatment of capital gains is undoubtedly the primary systematic imperfection in the market.

The possible impacts on share valuation and dividend payout of the favourable tax treatment of capital gains was first investigated by Farrar and Selwyn (1967) and Brennan (1970). The results of these two papers are reviewed and extended by Litzenberger and Ramaswamy (1979) (LR). The authors derive an after-tax version of the Capital Asset Pricing Model (CAPM) in which the dividend yield becomes an additional determinant of stock return. The coefficient of the dividend yield in the pricing equation contains terms related to investor wealth and utility, as well as the individual investor's margin as tax rates. Although extremely complicated, the dividend yield term is expected to have a positive coefficient. The authors show empirically that the dividend yield is indeed important for explaining the market value of a firm. More especially, LR estimate that, for every dollar increase in return in the form of dividends, the investor will require an additional 23 cents in before-tax return.

Lee (1976) reviews the results obtained by Gordon (1959) and Friend and Puckett (1964), and generalizes their cross-sectional model by using a generalized functional form (GFF) specification for a model. GFF models use the data to specify the particular equational form with which to investigate dividend-yield effects on share price. Lee shows that the choice of the particular equational form used in the statistical test will significantly affect the empirical findings. He finds that the more accurate functional form for dividend-effect tests is a nonlinear form, and that, with this form, the dividend effect on share return is not significantly different from the effect of retained earnings.

Rappaport (1981) analyzes the potential impact of inflation accounting on the earnings of a firm and on its dividend payment decision. Although constant dollar adjustments (adjusting costs by the changes in the purchasing power of the dollar) or current cost adjustments (restating changes in specific, or current-cost-of-

replacement terms rather than in general price changes) may seem to provide a more reasonable earnings figure from which to calculate dividend. Rappaport shows that both these new methods can be faulted for not reflecting changes in selling prices, in productive capacity, or in working-capital and fixed-capital investment due to changing expected sales growth. He concludes that a company's maximum affordable dividends depends on its financing policy and the projected cash-flow consequences of its planned growth in investment, rather than on previous years' accrued accounting earnings performance, whether calculated on an inflation-adjusted basis or not. He shows that maximum affordable dividend-payment ratios depend very strongly on assumptions concerning sales-growth rates and investment rates. Thus, inflation-adjusted methods of accounting must be used cautiously when determining the dividend payout of a firm.

Black (1976) discusses the inconsistencies between the theories concerning the desirability of dividends and the actual practice of corporations and investors. Theories such as that developed by M & M use restrictive assumptions (such as an assumption of taxes, or no differential tax treatment between dividends and capital gains) to show analytically that dividend policy does not matter. However, almost all successful firms pay dividends, and dividend policy is a major concern of financial managers. Black (1976) goes on to examine the theoretically derived effects of taxes (within this framework, firms will pay little or nothing out as dividends) and the information effect of dividends (unexpected increases in dividends may signal better future earnings performance by the firm). He next considers the differing dividend preferences of shareholders versus bondholders (bondholders should prefer lower dividends, since a dividend payout means fewer assets will remain in the event of bankruptcy). However, Black continues, shareholders may also prefer lower dividends if they result in lower cost of raising investment funds.

Irrational beliefs may play part in the investor insistence on dividends. Also, the portfolio implications of holding high-versus low-dividend stocks are simply unknown. Black concludes that we are presently unable to show that dividends matter, but we are not willing to assert that dividends definitely do not matter.

Besides the papers reviewed here, Bar-Yosef and Kolodny (1976), Blume (1980), Lee and Forbes (1980), and Djarraya and Lee (1980) have used different methods to show empirically that dividend policy matters. In addition, Miller and Scholes (1978), and Ehrber (1979) have theoretically and empirically re-examined the yield-related tax effect of dividends.

The works of Hobeika (1980) treat the validity of several earlier studies. Using annual data on 214 firms from 1957 to 1976, Hobeika tested the predictive powers of 13 models (7 price models and 6 dividend models). Regression coefficients were estimated using data from the first 18 years and were in turn used to predict the prices and the dividends for the years 1975 and 1976. The 13 models represent a summary of all serious attempts in the dividend theory. The equations and their definitions are presented in Appendix A.

The regression results showed equation 2 to be the best predictor of the price equations, confirming the results of Friend and Puckett (1964), and equation 7 to be the best predictor in the rate-of-return subset of the price equations. The superior dividend model was represented by Equation 8, which was advanced by Lintner (1956). Hobeika attempted to estimate the dividend and price equations simultaneously, using two-stage least squares. The regression results showed that the simultaneous-equation models did not show superior predictive powers over single-equation models. Similar conclusions were reached when Equation 7 was estimated simultaneously with Equation 8.

The works of Lintner (1956) reported a number of dividend policies, which were the outcome of his interviews with corporate managers. First, firms are primarily concerned with the stability of dividends, followed by earnings which were treated as the most important determinant of any change in dividends. Second, all the financial decisions are taken in pursuance of dividend policy. The results obtained by Fama and Barbiak (1968) explored that Lintner's model was performing satisfactorily but asserted that the model presented by Lintner could be improved further by introducing another variable; the earnings retained from the operations of last year, but without constant term, when they thought, would enhance its effectiveness.

Patsouratis (1989) examined the empirical data of the Greek corporate dividend policies and behaviour by applying the covariance which was based on the research work of Brittain (1964) covering 25 firms during the period 1974 to 1983. Joannos and Filippas (1997) evaluated the dividend payment practices of 34 business firms registered with the Athens Stock Exchange for the period 1972 to 1988 and found that the dividend policy of the Greek companies reflected the Lintner's model. The dividend payment practice from current year profits constitutes the most related and important variable which causes the change in the dividend while dividend payment practices and policies of the companies are also influenced by the previous dividend paying period.

The works of Vasiliou and Eriotis (2003) tested the Lintner's model and concluded that the original model could be improved in two ways; by treating the change in the dividend between time t and time t-1, as dependent variables and independent variables, the change in the earnings of the firm between time t and t-1 and the change in dividend between time t-1 and t-2. Vasiliou and Eriotis are of the view that Greek companies adopt discrete dividend practice, i.e. payment of dividend, depending upon the long-run target of dividend payment (represented by the dividend variable with a lag) which is adjusted according to the net earnings of the firm. De

Angelo *et al* (2004) observed significant correlation between the dividend payment decision and the ratio of earned capital to total controlling capital, size of the firm, profitability of the company, growth rate, leverage, cash in hand and previous dividend payment history.

Brav *et al* (2004) have shown that managers of US companies dislike cutting dividends but prefer to maintain dividends at the existing levels. Signaling theory hypothesizes that dividend increase can be seen as a signal by management that is confident earnings will exceed the market concensus. As management places priority on maintaining the level of dividends, a dividend increase is a signal not of near-term earnings growth, but rather of the level of earnings sustainable over the long-term. If this theory is correct, then it should be possible to observe actual improvements in corporate earnings after dividend increase. The free cash theory of Jansen (1986) is another explanation of why dividend increases may increase enterprise value. Corporate management is expected to act as an agent for shareholders, and to conduct business in such a way that maximizes shareholder value.

Some research works have recently examined the impact of market value of companies' cash holdings based on agency cost. Presumably the greater the degree to which corporate governance has been established, the lower the agency costs and the higher the market value of cash holdings. Dittmar and Mahrt-Smith (2007) examined the relationship in the U.S. market based on the corporate governance index, shareholding ratios and other data for institutional investors and public pension funds, and the market value of cash holdings. Pinkowitz *et al* (2007) examined the relationship between the degree of corporate governance in 35 countries and the market value of cash holdings in these countries. In both cases, research concluded that the degree to which corporate governance has been established has an impact on the value of cash holdings.

One factor other than agency costs that has an impact on the market value of cash holdings is the real option value of financial slack. That is because possessing financial slack has a greater value for companies with many – but uncertain-growth opportunities, but which have difficulty raising funds (see Suwabe, 2006). Pinkowitz and Williamson (2002) showed that in the U.S. market the existence of growth options, the degree of uncertainty in investment opportunities, and good access to capital markets, all have an important impact on the market value of cash holdings.

Decisions concerning the most optimal choice of financing choices and dividend policy are some of the most difficult financial decisions. In this context, two theories of capital structure are related to corporate dividend policy (the hierarchy theory and the substitution theory). The hierarchy theory (Pecking order theory) assumes that entrepreneurs define priority sources of capital and not the optimal relationship between liabilities and equity capital. Entrepreneurs prefer to finance their activities with internal sources, such as net profit less dividend, depreciation allowances and revenue from sale of short-term securities and other redundant assets. In cases when it is necessary to finance activities with debt capital, debt securities are issued first, followed by new shares (Quan, 2002; Mazur, 2007; McManus *et al*, 2006).

The asymmetry of information, essential in theory of hierarchy, causes managers to make decisions about issuing shares only when the traded stock is overvalued (its high value is not justified by the situation of the enterprise and its investment needs) (Jensen and Meckling, 1976). A drop in stock prices is also caused by an unexpected, sudden reduction of dividend payments, which is interpreted by investors as a worsening of the financial situation of the enterprise and a decrease of their profit. Conversely, when dividend payments are increased, the price of stock goes up even when this is not justified by the enterprise's current situation and growth potential. If an enterprise pays dividends, it deceases the degree of financing of equity capital from internal sources, and as a consequence may require external financing sources (see Pike and Neale, 2006).

The substitution (trade-off) theory assumes that entrepreneurs look for such a debt capital to equity ratio that will allow them to achieve maximum enterprise value. The theory pays special attention to the occurrence of costs of financial difficulties and the fact that an increase of debt in the financial structure increases the risk of loosing financial liquidity and of bankruptcy. Choosing the most favourable dividend policy, therefore, is dependent upon the choice of that capital structure that maintains a reasonable level of financial liquidity, while maximizing enterprise value (see Ross *et al*, 2006; Erasmus and Scheepers, 2008).

Nitta (2006) analyzes dividend policy from the perspective of interactive game between corporate managers and shareholders, looking at the basic issue of how dividend policy might affect shareholder value. Dividend policy can provide shareholder insight on management views on earning trends and current share prices, as well as its stance on financial slack. Asghar *et al* (2011) have shown the positive and significant association between price volatility and dividend yield, but after including the control variables dividend payment and dividend yield have insignificant and positive association with price volatility and insignificant association with earning volatility. Naser *et al* (2013) show the bird-in-hand theory and the relevant value theory managers consider to explain dividend policy. External factors related to the economic conditions together with the state of the capital market and lending conditions are all important factors in formulating dividend policy by companies listed on the AburDhabi Securities Exchange. The extensive review of dividend policies and the empirical evidence in Husan-Aldin, *et al* (2010) still conclude that the reason why companies pay dividends, or adopt a particular

dividend policy is still a puzzle.

The works of Murekefu and Ouma (2012) sought to establish the relationship between a dividend payout and firm performance among listed firms in the Nairobi Securities Exchange. The results indicated that dividend payout was a major factor affecting firm performance, hence dividend policy is relevant. Mehta (2012) attempted to determine empirically the important factors which affect the dividend payout decisions of UAE firms. The study provides evidence that profitability and size are the most important considerations of dividend payout decisions by UAE firms. Arshad *et al* (2013) studied the association between dividend payout policy and ownership structure of Karachi Stock Exchange firms over the period 2007-2011. The results did not consistently support the positive association between ownership structure and dividend payout policy and dividend decision. Ramadan (2013) investigates the influence of dividend policy on the share price volatility for Jordanian industrial firms. The experimental results showed that the two components of dividend policy studied, dividend yield and dividend payout, have a significantly inverse correlation with share price volatility.

Khan (2012) has studied a sample of 29 chemical and pharmaceutical companies listed on the Karachi Stock Exchange for the period 2001-2010 and found that stock dividend, earnings per share and profit after tax have a significantly positive relationship with stock prices. Ozuomba *et al* (2013) found that the dividend policy of public limited companies influences the wealth of shareholders in Nigeria. Similarly, Adediran and Alade (2013) found a significantly positive relationship between dividend policy and profitability in Nigeria, Illaboya and Aggreh (2013) examined the relationship between dividend policy and share price volatility in 26 sampled firms listed on the Nigerian Stock Exchange (NSE) for the period 2004 to 2011. The finding indicates that dividend yield exerts a positive and significant influence on share price volatility while dividend payout exerts a negative and insignificant influence on share price volatility. Bougatef (2014) investigates the impact of dividend payments on common stock prices using a panel data of listed firms in Tunis Stock Exchange for a period of 2000 to 2008. The empirical evidence reveals that Tunisian investors reward firms paying cash dividends.

3. Data Sources and Model Specification

Using the annual data of 20 most capitalized companies quoted on the Nigerian Stock Exchange from 2005-2012, we tested the predictive powers of some of the models proposed by Hobeika (1980). The profiles of the 20 companies used in the study are shown in Appendix B. In line with our null hypotheses 1-3, regression coefficients were estimated using data from 2005 to 2012 and these were used in turn to test the statistical relationships between prices and dividends. In order to test the null hypothesis 1 ($H0_1$), we estimated equation (1) in our study as follows:

$$Pit = a + bDit + cRit \quad (1)$$

where Pit = price of stock i at time t
Dit = dividend of stock i at time t
Rit = retained earnings of firm i at time t
a,b and c = regression parameters

If both b and c are significant and if c is greater than b, then retained earnings are more important to investors than dividends. Tests conducted by Hobeika (1980) confirm this (c > b).

The following regression equations were used to test the null hypothesis 2,

$$\Delta MP = a + b\ \Delta D \quad (2)$$

where ΔMP = change in market price
ΔD = change in dividends

Our null hypothesis will be accepted if the computed t-value falls within ±3.182 at the 5% level of significance. The F-ratio must also fall within the region of ±10.13 in order to accept the null hypothesis as true, otherwise it will be rejected.

In order to test the null hypothesis 3, the following multiple regression equation was tested,

$$MP = a + b\ DAM + c\ REAM \quad (3)$$

where MP = market price
DAM = dividend average measure
REAM = retained earnings average measure.

The procedure in the preceding paragraph will also be followed in accepting or rejecting the null hypothesis 3 ($H0_3$).

4. Empirical Results

The relationship between dividends and retained earnings is summarized in Table 1. The simple regression results indicate a strong positive correlation between dividends and retained earnings in the companies investigated. Our F-ratios for 12 out of the 20 selected companies have values that fall outside the accepted region. Apparently, the F-ratios of 60% of the companies confirm a significant relationship between dividends and retained earnings. The coefficient of determination (r^2) confirms that the level of dividends is largely

influenced or determined by the level of retained earnings in at least 70% of the companies sampled. What is not clear, however, is whether or not the level of retained earnings is similarly influenced by the company's dividend policy. From this evidence, it is difficult to accept the first null hypothesis ($H0_1$) which states that there is no significant relationship between dividends and retained earnings.

The results in Table 2 help us to accept or reject the second null hypothesis ($H0_2$) which postulates that there is no relationship between a change in dividend policy and a change in market price. The correlation coefficients do not, however, show a strong association between change in dividend policy and a change in market price. Weak correlation coefficients are noticed in (15) out of twenty (20) of the companies, that is 75% of the companies. The coefficients of determination (r^2 and adjusted r^2) confirm that change in market price and change in dividends are largely independent variables in dividend policy determination. For all the companies, the F-ratios are within the critical region of ±0.13, implying that there is no significant relationship between change in market price and change in dividends.

Our data in Tables 3 and 4 provide answers to the question of significance of dividend policy vis-à-vis retained earnings criterion in market price determination. From Table 3, we observe that the dividend coefficients (dDit) are more significant than the retained earnings coefficients (cREit) in 12 out of 20 companies or 60% of the companies sampled. In thirteen out of the twenty companies or 65% of the companies, the computed F-ratios fall outside the critical region of ±10.13 at the 5% level of significance. The aggregate results presented in Table 4 show that the retained earnings coefficient (bREAM) is more significant than the dividend coefficient (bDAM) in market price determination. The computed F-ratio of 14.53 falls outside the critical region of $Fo.o5 = \pm 10.13$, implying that our third null hypothesis ($H0_3$) that retained earnings is not more important than dividend policy in market price determination cannot be accepted. The company by company analysis confirms this finding in 60% of the companies sampled.

Table 1

Relationship between Dividends and Retained Earnings:Regression Results

Company	C	SE	r^2	Adj. r^2	F-ratio	Corr. Coeff.
Nigerian Breweries Plc	-11.8	29.2	1.0	1.0	311.3	1.00
Guinness Nigeria Plc	-20.3	52.6	0.9	0.9	40.5	0.96
First Bank of Nigeria Plc	-117.4	7.1	1.0	1.0	1553.3	1.00
Zenith Bank Plc	-36.0	49.5	0.9	0.9	31.6	0.96
Union Bank Nigeria Plc	21.5	33.4	0.7	0.6	7.8	0.85
Nestle Nigeria Plc	96.9	29.6	0.9	0.9	56.1	0.97
Nigerian Bottling Company Plc	-176.5	29.9	0.8	0.8	13.7	0.91
Guaranty Trust Bank Plc	37.7	123.3	0.6	0.5	5.0	0.79
Oando Plc	27.4	50.8	0.8	0.7	9.5	0.87
Total Nigeria Plc	221.0	62.0	0.6	0.5	5.3	0.80
Calbury Nigeria Pc	-156.1	27.1	1.0	1.0	995.4	1.00
Conoil Plc	11.0	23.6	1.0	1.0	77.4	0.98
Unilever Nigeria Plc	-42.0	31.7	0.9	0.8	18.6	0.93
Standard Trust Bank Plc	-38.7	15.8	0.3	0.1	1.3	-0.55
Mobil Oil Nigeria Plc	6.3	93.2	0.2	-0.03	0.8	0.47
Texaco (Nigeria) Plc	38.6	45.8	0.8	0.7	10.14	0.88
Oceanic Bank International Nigeria Plc	80.6	21.6	0.6	0.4	4.1	-0.76
African Petroleum Plc	-1.2	34.8	0.9	0.8	18.9	0.93
Intercontinental Bank Plc	11.6	13.5	0.9	0.9	29.0	0.95
United Bank for Africa Plc	-1.8	18.5	0.5	0.4	3.5	0.73

$t_{0.05} = 3.182$; $F_{0.05} = 10.13$

***Source**: Computed from company data (2005-2010)*

Table 2
Relationship between Change in Dividends and Change in Market Price: Regression Results

Company	C	SE	r^2	Adj. r^2	F-ratio	Corr. Coeff.
Nigerian Breweries Plc	150.4	31.8	0.1	-0.2	0.2	-0.26
Guinness Nigeria Plc	116.6	14.7	0.0	-0.3	0.0	0.10
First Bank of Nigeria Plc	76.1	10.7	0.4	0.2	1.9	0.63
Zenith Bank Plc	122.7	55.5	0.0	-.03	0.0	0.03
Union Bank Nigeria Plc	127.4	29.7	0.0	-0.3	0.0	0.06
Nestle Nigeria Plc	136.6	38.0	0.0	-0.3	0.0	-0.05
Nigerian Bottling Company Plc	57.9	23.4	0.1	-0.2	0.4	0.35
Guaranty Trust Bank Plc	90.0	108.0	0.1	-0.2	0.3	0.30
Oando Plc	170.0	49.0	0.1	-0.2	0.3	-0.29
Total Nigeria Plc	45.0	61.7	0.4	-0.2	2.3	0.66
Calbury Nigeria Pc	152.2	33.2	0.9	-0.1	0.7	-0.43
Conoil Plc	109.2	71.3	0.7	0.6	5.9	0.81
Unilever Nigeria Plc	33.1	102.1	0.04	-0.3	0.1	0.19
Standard Trust Bank Plc	131.7	56.9	0.0	-0.3	0.0	0.04
Mobil Oil Nigeria Plc	2.6	93.9	0.2	-0.1	0.5	0.39
Texaco (Nigeria) Plc	145.9	30.5	0.1	-0.2	0.4	-0.34
Oceanic Bank International Nigeria Plc	148.2	40.7	0.2	-0.1	0.6	0.39
African Petroleum Plc	151.8	151.8	0.0	0.3	0.1	-0.21
Intercontinental Bank Plc	113.2	13.9	0.0	-0.3	0.0	0.05
United Bank for Africa Plc	76.8	4.9	0.4	0.2	2.11	0.64

$t_{0.05} = 3.182$; $F_{0.05} = 10.13$

Source: *Computed from company data (2005 - 2010)*

Table 3
Market price, Dividends and Retained Earnings: Company by Company Multiple Regression Analysis

Company	a	bDit	cREit	F- Statistics
Nigerian Breweries Plc	380.78	-3.69	4.88	95.26
	(10.62	(-4.17)	(5.43)	
Guinness Nigeria Plc	423.64	-0.74	-0.74	27.82
	(9.46)	-(1.1)	-(1.1)	
First Bank of Nigeria Plc	-95.47	22.80	-2.27	16.54
	(-0.14)	(0.63)	(-0.38)	
Zenith Bank Plc	148.22	4.46	-1.61	15.00
	(2.82)	(3.68)	(-2.32)	
Union Bank Nigeria Plc	116.75	-0.36	2.81	13.97
	(1.39)	(-0.38)	(3.10)	
Nestle Nigeria Plc	429.69	-5.56	3.45	33.09
	(3.84)	(-1.67)	(3.42)	
Nigerian Bottling Company Plc	246.16	-1.35	1.50	3.32
	(0.65)	(0.26)	(0.85)	
Guaranty Trust Bank Plc	42.80	2.63	-0.23	12.25
	(42.21)	(4.22)	(-1.75)	
Oando Plc	274.45	-3.27	4.52	13.87
	(3.92)	(-2.04)	(4.15)	
Total Nigeria Plc	326.22	1.94	-1.08	5.53
	(2.31)	(3.11)	(-1.79)	
Calbury Nigeria Pc	-229.46	25.45	-3.27	4.87
	(-1.13)	(2.67)	(-2.59)	
Conoil Plc	-9.64	9.64	-0.19	7.78
	(-0.10)	(0.82)	(-0.06)	
Unilever Nigeria Plc	48.63	2.97	0.53	2.31
	(0.34)	(0.51)	(0.30)	
Standard Trust Bank Plc	-315.96	4.20	13.45	65.22
	(-2.70)	(11.35)	(7.24)	
Mobil Oil Nigeria Plc	157.00	14.30	-0.42	0.34
	(1.82)	(0.23)	(-0.80)	
Texaco (Nigeria) Plc	199.43	-0.35	4.10	50.46
	(4.81)	(-1.60)	(6.14)	
Oceanic Bank International Nigeria Plc	-280.06	1.15	9.10	42.64
	(-2.76)	(9.20)	(7.49)	
African Petroleum Plc	89.34	11.94	-2.80	19.81
	(2.10)	(5.26)	(-3.61)	
Intercontinental Bank Plc	299.75	10.46	1.80	4.57
	(6.56)	(0.17)	(0.76)	
United Bank for Africa Plc	243.37	2.82	-0.11	12.50
	(9.84)	(3.55)	(-0.20)	

$t_{0.05} = 3.182$; $F_{0.05} = 10.13$, Note the results in parenthesis are t-values.

Source: *Computed results based on company data*

Table 4
Determinants of Market Price: Multiple Regression Results For 20 Most Capitalized Companies (Aggregate)

Variables	Coefficient	Std. Error	T-Statistic	Prob
C	213.0188 (45.30)	45.29858	4.702549	0.0424
DAM	0.367433 (0.27)	1.351223	0.271927	0.8112
REAM	1.190399 (1.05)	1.053897	1.129521	0.3759
R-Squared	0.9356			
Adjusted R-Square	0.871222	S.D. dep. Var.		153.3409
		F-Statistic		14.53057
Durbin-Watson Stat.	1.786985	Prob. (F-Statistic)		0.064389

$t_{0.05} = 3.182;$ $F_{0.05} = 10.13$
DAM - *Dividend Average Measure*
REAM - *Retained Earnings Average Measure*
***Source**: Computed Results*

5. Concluding Remarks

Our results in the foregoing empirical analysis can be summarized as follows. First, we observe a significant relationship between dividends and retained earnings. Our regressand shows that the level of dividend is largely influenced by the level of retained earnings. Second, the empirical results also show that there is no significant relationship between a change in market price and a change in dividend policy. Third, the retained earnings coefficient (bREAM) is more significant than the dividend coefficient (bDAM) in market price determination. The F-ratio falls outside the acceptance region, hence the null hypothesis that retained earnings is not more important than dividend policy in market price determination is rejected. Overall, our empirical results agree with the earlier works of Miller and Modigliani (1961), Miller and Scholes (1978), and Black and Scholes (1974) and the more recent works of Suwabe (2006) and Franc-Dabrowska (2009) that dividend policy is irrelevant. The finding that retained earning is more important than dividend policy in market price determination agrees with the earlier works of Hobeika (1980).

With the deregulation of the Nigerian capital market, which started in 1986, most Nigerian investors are now more speculative in stock investment. Hence, capital appreciation and the re-investment level are more important than dividend policy in determining market behaviour. The level of reinvestment, determined by the level of retained earnings, prompts investors to demand more of a company's stock.

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Appendix A

Hobeika's Dividend Models

The 13 models represent a summary of all serious attempts in the dividend theory. The equations are as follows:

(1)	Pit	=	a + bDit + cRit
(2)	Pit	=	a + bDit + cRit = d(e/p)I, t-1
(3)	Pit	=	a + bDit + cRit + d Piti
(4)	Pit	=	a + bDit + bDit + c Rit
(5)	rit	=	a + b(Dit/Pit) + c(Rit/Pit)
(6)	rit	=	a + b (Di, t-1/Pi, t-1) + c (Ri, t-1/Pi, t-1)
(7)	rit	=	a + b (Dit/Pi, t-1) + c (Ri, t-1/Pi, t-1)
(8)	Dit	=	a + f Di, t-1 + geit
(9)	Dit	=	a + fdi, t-1 + geit + hei, t-1
(10)	Dit	=	a + fDi, t-1 + geit + hei, t-1
(11)	Dit	=	a + fDi, t-1 + geit
(12)	Dit	=	a + f Di, t-1 + geit + hpi, t-1
(13)	Dit	=	a + fDi, t-1 + geit + h (e/p)I, t-1

Where Pit	=	price of stock i and time t
Dit	=	dividend of stock i at time t
(e/p) I, t-1	=	inverse of price / earnings ratio of stock i lagged by one period
Rit	=	retained earnings of firm i at time t
Ai, t	=	per share depreciation of firm i at time t
a, b, c, d, h	=	regression parameters.

Appendix B
Profiles of 20 Top Quoted Nigerian Companies Used in the Study

S/No	Company	Date of Quotation
1	Nigerian Breweries Plc	September, 1973
2	Guinness Nigeria Plc	November, 1965
3	First Bank of Nigeria Plc	March, 1971
4	Zenith Bank Plc	October, 2004
5	Union Bank Nigeria Plc	1970
6	Nestle Nigeria Plc	April, 1979
7	Nigerian Bottling Company Plc	November 1973
8	Guaranty Trust Bank Plc	September, 1996
9	Oando Plc	February, 1992
10	Total Nigeria Plc	April, 1979
11	Calbury Nigeria Pc	January, 1965
12	Conoil Plc	1989
13	Unilever Nigeria Plc	September, 1973
14	Standard Trust Bank Plc	March, 2004
15	Mobil Oil Nigeria Plc	April, 1979
16	Texaco (Nigeria) Plc	December, 1978
17	Oceanic Bank International Nigeria Plc	June, 2004
18	African Petroleum Plc	1978
19	Intercontinental Bank Plc	January, 2003
20	United Bank for Africa Plc	1971

Source: *Nigerian Stock Exchange Factbook,*