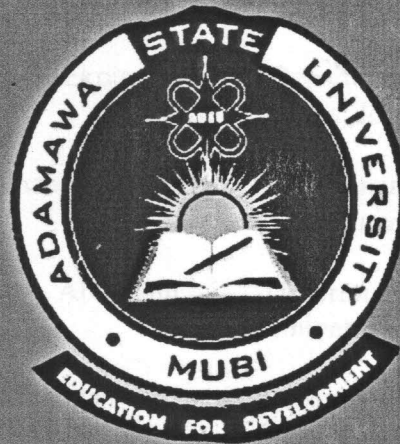


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Test of the Implication of Life Cycle Theory of Dividend among Firms Listed on the Nigerian Stock Exchange

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Abstract

One of the recent explanations on dividend payout policies is the lifecycle theory of dividend. The theory argues that the stage of a firm in its financial lifecycle is a major determinant of the firm's payout policy. However, the implications of the theory remain uncertain in the Nigerian context due to lack of empirical evidence in this regard. The main aim of this study is to examine whether the life cycle theory explains dividend payout policies of firms listed on the Nigerian Stock Exchange. To achieve this objective, firm level data were extracted from Thomson Reuter's *Worldscope Database (Datastream)*. Random effect analysis was carried out on a final sample of sixty four listed companies between 2005-2011. The findings of the study is consistent with the predictions of the life cycle theory as retained earnings to total equity(proxy for lifecycle theory) was found to be positively and significantly related to dividend payout ratio. Based on this result, the study concludes that low dividend payout by the listed firms is due to the fact that many firms are in the growth stage of their lifecycle and are still exploring growth opportunities. To prevent negative reaction of investors towards low payout ratio, the study recommends that investors should be educated that low dividend payment does not necessarily imply that the firm is not performing well.

Keywords: Dividend, Lifecycle, Retained Earnings, Total Equity

Introduction

Understanding dividend decisions is important because such decisions interacts with the financial and investment decisions of the organization. Dividend irrelevance theory of Modigliani & Miller (1958) is one of the initial attempt to offer explanation on dividend payout policy. As the perfect market assumptions of the Modigliani-Miller theorem have been proved against in the real world, empirical studies have been conducted to provide other explanations on dividend payout policies. These explanations relax the assumptions of the MM theorem and prove the relevance of dividend. Among the popular explanations are the bird-in-hand theory, signaling hypothesis, agency theory, clientele theory, and the lifecycle theory. The arguments of these theories explain why firms may be inclined towards one form of payout policy above another and why investors may have their own dividend preferences.

Despite considerable studies on dividend policy, the "dividend puzzle" as indicated by Black (1976) is unsolved. The puzzle remains unsolved despite the passage of time as recent empirical studies (Bhattacharya, 2007; Mehta, 2012) indicates. This is derived from the mixed results and inconclusive findings on explanations offered for dividend payout policies. One of the recent explanations offered for dividend payout decision of the firm is the life cycle theory which

states that the payout decision depends on the stage of a firm in its financial life cycle. The theory as advanced by DeAngelo, DeAngelo, & Stulz (2006) has been tested majorly in developed markets. There is an apparent dearth of literature on the test of this theory especially in the emerging market. However, results obtained for the developed markets may not be applicable to the emerging market due to differences in market setting.

The motivation to test whether lifecycle theory explains dividend payout decisions on the Nigerian Stock Exchange or not derives from anecdotal evidence which suggests that dividend payment is declining in the market. Proshare News (2013) reported that 43 out of the 200 listed companies did not pay dividends between year 2008 and 2012. In another report, Ekwere (2012) stated that only 75 out of 190 (39%) firms quoted on the Nigerian Stock Exchange paid dividends in year 2011. However, no empirical explanation exists for this decline in dividend payments. Thus, the increasing trend in dividend omission and dividend cuts by firms listed on the Nigerian stock exchange created an avenue for testing whether the changing dividend patterns can be attributed to the life cycle theory. Following this brief introductory part, the study proceeded to discuss the existing findings on the theory and the data and sample used in testing the theory on the Nigerian stock exchange. Conclusions were drawn and recommendations offered from the results obtained.

Literature Review

Theoretical Consideration

The life cycle theory of the firm propounded by Mueller (1972) has been applied to payout and advanced by Fama & French (2001); De Angelo et al. (2006), and Grullon, Michaely, & Swaminathan (2002). The life cycle theory of dividend explains that the corporate payout policy of firms varies over the different stages of the financial life cycle of the firm (De Angelo et al., 2006; Fama & French, 2001; Grullon et al., 2002). The theory extends

explanation on Jensen's (1986) free cash flow hypothesis. Based on the life cycle theory, availability of free cash for onward disbursement to shareholder's as dividends depend on the stage of a firm in its financial life cycle. The intuition behind the theory is explained by Grullon et al. (2002). The authors contends that when a company move from the growth stage to the mature stage, then there is a decrease in the rate of reinvestment by the company. The decrease in re-investment rate will lead the company to holding more excess cash which can be paid out as dividends. The authors refer to this transition as "maturity hypothesis". Firms in the maturity stage have more profits to meet their fewer investment opportunities, therefore they tend to have more free cash flow than firms in their growth stage with more investment opportunities and are likely to omit dividend to finance these opportunities. Therefore firms in their mature stage are likely to pay more dividends than the growth firms.

Dividend payers are mature firms characterized with more profitability, larger size and fewer investment opportunities (De Angelo et al., 2006; Fama & French, 2001; Grullon et al., 2002). De Angelo et al. (2006) also argued that the stage of firm in its financial life cycle determines the optimal dividend policy. Therefore, payment of dividend is an indication that a firm has reached sustainable profitability (Coulton & Ruddock, 2011). Apart from the characteristics of the firm advanced by Fama & French (2001) that is used to identify the stage of a firm in its life cycle, De Angelo et al. (2006) also suggested that the life cycle theory can be tested by relating dividend payment of the firm to its mix of earned and contributed capital using retained earnings as a proportion of total equity (RE/TE) and retained earnings as a proportion of total assets (RE/TA). This ratio explains the extent to which a firm relies on internally generated funds or external capital. The authors explained that when equity is earned rather than

contributed (high RE/TE or high RE/TA), then firms tend to pay dividends. Conversely, when most equity is contributed rather than earned, the probability of paying dividends is zero.

Empirical Review

By adopting the measures of De Angelo et al. (2006), subsequent empirical studies concludes that a firm's stage in its life cycle is a key determinant of dividend payout. The only part of shareholder's equity that affect dividend is retained earnings indicating that the earned capital not the contributed is the main determinant of dividend (El-Ansary & Gomaa, 2012).

This proxy for testing the life cycle theory suggested by De Angelo et al. (2006) was reinforced by Khani & Dehghani (2011) stating that RE/TA indicates whether the firm possess the ability to generate its financial needs internally or depend on external sources to do so. They noted that the source of funds impacts on the dividend decisions. Khani & Dehghani (2011) found that firms with high RE/TA are considered as mature firms because they have more retained earnings and better ability to distribute dividends. Conversely, firms with low RE/TA are considered as young firms and are likely to omit dividends.

Other studies have also shown the significance of lifecycle theory in explaining firm's decision to initiate or omit dividends. Mature firms are better candidates to pay while firms in their growth stage are likely to omit dividends (Shin & Kwon, 2010; El-Ansary & Gomaa, 2012; Thanatawee, 2011; Khani & Dehghani, 2011; Coulton & Ruddock, 2011). At the early stage of the life cycle, companies are faced with competition and have to spend more money on research and development to win more market share, advertisement campaigns and product innovations, therefore, they do not have much to distribute as dividends, rather they focus on expansion of the firm (Afza & Mirza, 2011).

Contrary to the findings which provides support for the life cycle theory, Ishikawa

(2011) argued that growing firms in Japanese pay dividends more than mature firms and that the market appreciate dividend payment or increases more from growing firms than from mature firms. Therefore, the study provides no support for the life cycle theory.

In explaining the non payment of dividends, life cycle theory indicates that a change in the dividend policy of a firm is seen as a significant change in the life cycle of the firm. Thus, dividend omission is a significant change in the life cycle of a firm (Bulan & Subramanian, 2008). When a non-payer of dividend who omits to improve its financial situation recovers, it is expected that such a firm will resume payment of dividends but this may not hold true when such firm enters into a new growth phase. Although the financial condition of the firm has improved, but it ploughs back for investment rather than paying out dividends. Fama & French (2001) found that decline in the number dividend payers is due to increase in the number of firms with the attribute of young fast growing firms: lower profitability; higher growth opportunities; smaller size. De Angelo et al. (2006) also reported that a possible explanation for the decline in the number of non-payers is the rise in the number of firms with less earned equity as it was observed that the non-dividend payers during the period observed were young firms that rely more on equity (or contributed capital) for early growth while those that were paying are mature firms that rely on self financing. A significant relation exists between dividend omissions and RE/TE as it was found that the fraction of publicly traded industrial firms that paid dividends falls near to zero when RE/TE is low. Decline in the payouts and in the number of dividend payers have been matched with an increase in the number of small firms with more growth opportunities by different empirical studies (Julio & Ikenberry, 2004; Denis & Osobov, 2008; Chayadi & Salas, 2012; Benito & Young, 2003), thus a larger percentage of

generated funds were channeled into these investments. Based on the review, the study assumes a life cycle explanation for the dividend payout policies of listed firms in Nigeria. Thus, it hypothesized that RE/TE (Proxy for life cycle) has significant positive impact on dividend payout policies of firms listed on the Nigeria Stock Exchange (NSE).

Methodology

The study is conducted on a sample of 64 financial firms (across different sectors) listed on the Nigerian stock exchange. In line with the approach of related studies, financial firms have been excluded due to their unique regulatory structure. Specifically, the sample covers listed firms in Nigeria that have firm level data on data stream from Reuters Worldscope Database that have been continuously listed on the Nigerian stock exchange between 2005 and 2011. Data was sourced majorly from DataStream (Worldscope database). The final sample after deletion of missing values and outliers consists of 367 firm-year observations. Panel regression was employed in testing the hypothesis as data was collected for different firms across different time period. In order to take care of individual heterogeneity of firms, the study employed two common panel data approaches which include fixed effect and random effect regression. In order to ensure that the more efficient model which

also gives consistent result is chosen, Hausman test was employed in choosing between fixed effect and random effect estimates.

The general panel regression model below was formulated to test whether the life cycle theory explains dividend payout policies of firms listed on the NSE. The study rely on prior literature to select variables to be used as proxy for the theories being tested.

$$DPR_{it} = \alpha_0 + \beta_1 RE_{it} + \beta_2 SIZE_{it} + \beta_3 SIZE_{it} + \beta_4 INV_{it} + e_{it} \quad (1)$$

The dependent variable is the dividend payout policy which is represented by dividend payout ratio (DPR). Chai (2010) noted that Dividend payout ratio is the most commonly used measure of dividend policy. The main explanatory variable is life cycle explanation proxied by RE/TE. RE/TE stands for the proportion of retained earnings to total equity (De Angelo et al., 2006). Fama & French (2001) described the characteristics of a dividend payer to include: more profitability, larger size and lower investment opportunities. Therefore, profitability, size and investment opportunities have been incorporated into the model as control variables. Profitability is defined as return on assets. Size is defined as log of total assets and investment opportunity is defined as the market to book ratio (INV).

Table 1: Expected Sign for Explanatory Variables. Dependent Variable= DPR

Variable	Expected Sign
RE/TE (Retained Earnings to Total Equity)	+
Profitability (ROE)	+
Size (Log of Total Assets)	+
Investment Opportunity (Market to Book Ratio)	-

Source: Researcher's Design

Results and Discussion

Descriptive Statistics

Table 2 presents the descriptive statistics of the variables in the regression model. Some of the notable points revealed by figures in the table are briefly discussed. As shown in the table, the mean value of

dividend payout ratio indicates low dividend payout among sampled firms. The negative value for dividend payout also indicates that some of the sampled firms pay dividends despite recording negative earnings. On average, 40% of the

capital is earned capital while the remaining is contributed as revealed by the mean value of retained earnings to total equity. This implies that sampled firms rely more on contributed capital.

Profitability which ranges from a negative minimum value of -1.304 to 2.437 which is the maximum value indicates that sampled firms differ so much in terms of performance.

Table 2: Descriptive Statistics of Variables

Variables	Obs	Mean	Std. Dev.	Min	Max
Dividend Payout Ratio	367	0.110	1.586	-4.781	5.479
Retained Earnings to Total Equity(RETE)	367	0.406	1.050	-2.031	2.530
Size (SIZE)	367	4.750	0.258	8.443	14.591
Profitability (ROA)	367	0.086	0.931	-1.304	2.437
Growth Opportunity (INV)	367	3.451	0.56	-2.134	2.464

Source: Generated by the Researchers using STATA 11.

The model specified in the previous subsection was estimated with panel data analysis methods: fixed effects and random effects regression. In order to

choose between the two, Hausman test was conducted and the results shows $\text{prob} > \chi^2 = 0.8294$. This suggests that random effect model is statistically better. The random effects results is presented in table 3 below:

Table 3: Random Effects Regression

DPR	B	Std. Error	z-value	p > z
RE/TE	0.2706457	0.787192	3.44	0.001*
Size	1.78e-08	3.36e-08	0.53	0.596
Inv	-0.13238	0.0075195	-1.76	0.038*

n = 367

R² = 0.0865

*significant at 5% level

Source: Generated by the Researchers using STATA 11.

Consistent with the life cycle theory, it can be seen from table 3 that RE/TE (proxy for cycle) is positively and significantly related to dividend payout. This result is consistent with the findings of earlier studies which include: Shin and Kwon (2010); Thanatawee (2011); Khani & Dehghani (2011); Coulton & Ruddock (2011); El-Ansary & Gomaa (2012). The positive relationship obtained implies that as the firm advances in its life cycle stage, dividend payment increases. This implies that dividend payment is influenced by the stage of the firm in its life cycle. However,

the result contradicts that of Ishikawa (2011) who found no evidence to show that life cycle theory explains dividend payout policies.

Among the control variables, profitability was dropped out during the analysis due to collinearity problem. The co-efficient of size is positively related to dividend payout and investment opportunities is negatively related to dividend as expected. However, result shows that size is insignificant in explaining dividend payout. This is consistent with the earlier findings of Moradi, Salehi & Honarmand (2010) where it was also documented that

a company's size has no relationship with its dividend policy. On the other hand, investment opportunities is significant suggesting that the more the investment opportunities, the less the dividend payout.

Conclusion and Recommendation

The study was conducted to test whether the life cycle theory explains dividend payout policies of firms listed on the Nigerian stock exchange. Consistent with the life cycle theory, a positive and significant relationship was found between the proxy for life cycle and dividend payout ratio. The findings also provide evidence that investment opportunities have significant impact on the payout ratio. The study therefore concludes that decline in dividend payments by the listed firms is due to the fact that many of the firms are still in the growth stage of their life cycle. Hence, they are exploring growth opportunities rather than paying out dividends. The combined evidence obtained from the descriptive statistics which shows that sampled firms rely more on contributed capital (which is an indication of non-attainment of maturity) and regression results which shows that retained earnings to total equity is significant in explaining dividend payout leads to that conclusion. Based on the finding and the conclusion drawn from it, the study recommends that investors should be educated that low dividend payment does not necessarily imply that the firm is not performing well. This is necessary to prevent negative reaction of investors towards low payout ratio.

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