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Moderating Effects of Financial Decisions on Firm Value

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Abstract

This study examines the relationship between dividend policy and financial leverage (financial decisions), as well as their interactive effect on firm value. Using 20 out of the 35 companies listed on the manufacturing industrial sector of the Nigerian Stock Exchange (NSE), with financial data between 2010 and 2018, estimation techniques such as Pooled Ordinary Least Square (OLS), Generalised Least Square (GLS), Panel-Corrected Standard Errors (PCSEs) and dynamic panel system-GMM, were used to estimate the relationship between dividend policy and financial leverage. The fixed and random effects panel regressions are used to estimate our equation for the interactive effect of dividend policy and financial leverage on the value of firms.

The results reveal a significant negative relationship between debt ratio and dividend payout. The interaction term between dividend per share and debt-to-assets ratio shows a negative relationship to firm value. A negative coefficient is also reported for the relationship between firm value and the interaction term of dividend payout and debt-to-assets ratio. We conclude that increasing debt (leverage) as a monitoring mechanism to reduce agency costs will hamper the dividend payout policy and erode firm value.

Keywords; Agency problem, dividend policy, financial leverage, firm value

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1. Introduction

The study of Modigliani and Miller in 1961 which conclude that dividend policy is irrelevant in the determination of firm value set up an enduring debate on the importance of dividend policy of a firm and how it affects the value of the firm. One major issue facing firms is that of agency problem where the owner-managers may undermine the interest of the outside shareholders of the firm. To control erring managers and satisfy the shareholders, firms usually pay dividends and favour debt financing as a means of controlling agency cost. To corroborate this view, Friend and Lang (1988) and Long and Malitz (1985) found that the decision to increase debt financing and increase dividend payout are consistent with decreasing agency costs. Other authors taking this view includes Al-Malkawi (2007), Taranto (2002) and Jensen et al. (1992). However, an effort to manage this problem of interest alignment and agency cost through dividend payment and debt financing may lead to another conflict between managers and lenders through various restrictive debt covenants. This is because the higher the dividend payment, the higher the likelihood of firms using debt financing and the greater the influence of external lenders (Rizqia and Sumiati, 2013; Al-Malkawi, 2007; Jensen and Meckling, 1976; Rozeff, 1982; Jensen, 1986). Further, Jensen and Meckling (1976) opined that any attempt to reduce manager influence or claim through this channel may lead to a most important conflict of low incentive on the part of the manager to devote substantive effort to creative activity such as searching out new profitable investments which would enhance the value of the firm.

The ongoing bring to the fore an interesting question of what has been the nature of the relationship between dividend policy and firms' financial leverage on the one hand, and whether their interactive effect on the other hand, enhance firm value? Our effort in this study is to address these questions which have seemingly received little attention in the literature.

Further, firms need to maximize their value in a highly competitive market environment. This would not only enable them have a good market standing but it will help in resolving shareholder disputes, determination of tax

obligations, accessing external sources of funding, commencing a sale process and in current and future decision making (Richard, 2019). The value of a firm which is mostly reflected in its market value per share and per time is an important indicator of the health of the firm as it determines the perception of the investors. A rising stock price of a company will suggest that the company is growing with positive future prospects and investors' optimism will rise as a consequence. It is the contrary when the company's stock prices are falling as investors will be pessimistic about the company's prospect in the market. More importantly, the job of every manager is to maximize the value of its shareholders. Hence, knowing the appropriate corporate governance measures that give maximum value for a firm's product and or the right mix of the variables which optimize their value is a sine qua non for the managers and policymakers. They must be able to analyse the value of the company, and assess the value of decision alternatives. This will enable them to make decisions that will add value to the organization and the society at large.

This study is conducted using data from the Nigerian manufacturing sector as a robust manufacturing sector is believed among academicians and policymakers to be a fundamental path to growth and development. For instance, it is a channel through which factor productivity can be increased. The sector can help in generating foreign exchange earnings, reduce unemployment and increase per capita income. However, according to Signe 2018, there remains a substantive room for growth and expansion in the manufacturing industry of African countries. Though policy directions may differ across the countries, manufacturing development will be pivotal to their ability to meet their development goals. Again, as Bill Gaw put it; manufacturing is one of the business units that use all four of the value factors (Bill, 2009). The value factor includes investments, cash flow, economic life, and capital cost. All these add up to make the sector a good target for the study as a clear policy direction will be needed by the managers to drive the sector forward and to enhance economic growth and development in the country. ICI

The rest of the paper is organized as follows. The next section briefly reviews relevant theories and previous empirical studies on the topic. Section 3 describes the methodology adopted in the study. In section 4, we analyse and discuss the empirical results, and finally, the concluding remarks are presented in the last section.

2. Literature Review

2.1 Theoretical Underpinnings

To have a good grasp of the expected relationships between the relevant variables, we endeavoured to discuss theories and hypotheses that are related to the issue of agency costs and firm value. Such theories and hypothesis as discussed in this sub-section include the debt covenant hypothesis, monitoring hypothesis, signalling hypothesis, agency theory, trade-off theory and the bird in the hand theory.

2.1.1 Debt Covenant Hypothesis

Debt covenants are restrictions that lenders (creditors, debt holders, investors) put on lending agreements to limit the actions of the borrower (the debtor). They are agreements between a company and its lenders that the company will operate within certain rules set by the lenders. The debt contracting literature is based largely on the testable implications arising from the agency theory literature as put forward by Jensen and Meckling (1976). Jensen and Meckling opine that the contracts between debtholders and owner-managers have covenants that restrict management behaviour because owner-managers have incentives to take actions that may negatively affect the debtholders' wealth. Smith and Warner (1979) and Leftwich (1983) provide a detailed description of the common restrictions contained in debt covenants to include dividend and share purchase restrictions, minimum working capital requirements, restrictions on investments in other firms, restrictions on the issuance of additional debt, etc. Specifically, restrictions on financing activities include covenants that limit future issues of debt and sale-leaseback transactions while restrictions on pay-outs directly prevent managers from paying out proceeds from the liquidation of firm assets to other stakeholders (Reisel, 2014). Tran (2019) suggests that the agency problem between shareholders and creditors can be reduced by two mechanisms of reputation-building and debt covenant. He asserts supporting evidence for both hypotheses with a positive relationship between creditor rights and dividend policy. Summarily, the debt covenant hypothesis suggests that leverage has a significant effect on dividend policy. The creditor constrains dividend payments because it has potential wealth transfer from the bondholders to stockholders. Thus, a company that has a high level of leverage tends to pay fewer / lower dividends because of dividend payment constraints.

2.1.2 Monitoring Hypothesis

One form of agency costs is the cost of monitoring of managers. According to Easterbrook (1984), managers are not perfect agents of the other participants in the corporate venture as they may act in their interests. In this

manner, there may be a substantial divergence between their interests and those of the other participants. Sometimes, this divergence arises out of a difference in the risk appetite between managers and owners, with the former being more risk tolerant in the hopes of securing higher returns from high-risk projects, while the latter is more risk averse and is more inclined towards lower levels of leverage and higher capital preservation and equity returns. Hence, managers and other stakeholders usually find it advantageous to set up devices, including monitoring, bonding, and ex-post readjustments that give managers the incentive to act as better agents. The costs of monitoring, bonding, and residual losses from slippage are agency costs borne by investors. The monitoring hypothesis suggests a positive relationship between dividend policy and financial leverage (Easterbrook, 1984; Suhadak and Darmawan, 2011). This hypothesis shows that when a company is leveraged, creditors assist shareholders to monitor managers' behaviour. As such, managers are on the check and will endeavour not to do things arbitrarily based on the perceived personal gain which could affect the company. Also, shareholders could decrease the agency cost that previously appeared before monitoring by the creditors. This is because the stockholders do less monitoring activity towards the managers. In the view of Sonia, Eko, and Nila, 2017, if dividend distribution increases, the company free cash flow will decrease, and the need for external funding such as leverage to run the business increases. This explains the reason companies pay out dividends and owe money at the same time. In sum, expected, continuing dividends compel firms to raise new money to carry out their activities. They, therefore, participate in monitoring and in making debt-equity adjustments that benefit stockholders.

2.1.3 Bird in the Hand Theory

The submission of this theory is that dividend pay-out has a positive impact on the value of firms. Theoretical expositions on the influence of dividend policy on the value of a firm can be traced back to Gordon and Shapiro (1956), Lintner (1956), Gordon (1959), Lintner (1962), Walter (1963) and Fama and Babiak (1968). They argue that the division of earnings between dividends and retention will influence share values positively. Specifically, Gordon asserts that risk-averse shareholders prefer some dividends over the promise of future capital gains because dividends are regular and certain returns whereas future capital gains are less certain. This assertion is called 'Bird in the Hand' theory (Lintner, 1962) and it has been supported by a more recent research effort by Fairchild in 2010. Overall, it is argued that dividend pay-out has a positive impact on the firms' value.

2.1.4 The Trade-off Theory

Myers (1984) considers a static trade-off framework, in which the firm is viewed as setting a target debt-to-value ratio and gradually move towards it, in much the same way that a firm adjusts dividends to move towards a target pay-out ratio. A firm's optimal debt ratio is usually viewed as determined by a trade-off of the costs and benefits of borrowing, holding the firm's assets and investment plans constant. Static trade-off theory portrayed firms as balancing the value of interest tax shields against various costs of bankruptcy or financial embarrassment. The firm is supposed to substitute debt for equity, or equity for debt until the value of the firm is maximized. As noted by the recent study of Omoregie et al., (2019) and Adair and Adaskou (2015), the static trade-off theory fits in the literature triggered by Modigliani and Miller (1958) and Miller (1977) based on the assumptions that capital markets are perfect and that there are neither tax or agency costs nor transaction costs. In their later study in 1963, MM include the effect of tax in their model. Accordingly, they showed that under an imperfect market where interest expenses are tax-deductible, the so-called tax shield effect, the firm value will increase with higher financial leverage. Hence, because interest is deductible from taxable profits, firms have an incentive to use debt rather than equity. The value of a leveraged firm is higher in as much as the tax shield benefits only the business itself (Adair and Adaskou, 2015). In sum, the static trade-off theory state that a firm follows a target debt-equity ratio where the associated costs and benefits with the debt option set the target ratio. This suggests that an optimal debt ratio is set by the balance of the trade-off between the benefit and cost (default / bankruptcy risk) of debt (Jensen and Meckling, 1976).

2.1.5 Signalling Hypothesis

Capital structure can affect the signalling information of the dividend announcement. Companies may signal information to the investors by issuing debt. The effect of incremental signal through dividend initiation differs between a firm that has already signalled information with debt and firm without debt. Following the example put forward by Taranto (2002), given two firms that declare an initial dividend of 1% and that both firms have $50 million worth of equity. Given also that one firm is an all-equity firm, while the other is 50% equity and 50% debt, the firm with debt has already signalled some of its information by issuing debt. Thus, an incremental signal generated by initiating dividends may not be as great as the signal sent by the firm without debt. The signalling hypothesis was put forward by Ross (1977) when he argued that stock value may react to changes in dividend declarations. Ross (1977) and Taranto (2022) observed that firms that increase dividend payment had a

corresponding increase in share prices whereas those that reduced dividend payment had a corresponding decline in share prices. Hence dividend declarations are a way of conveying implicit signals of the company's future profits potential. However, the signal should be reliable to help the market in differentiating between several firms. Fulfilment of this condition would enable the stock market to respond favourably to the declarations of pay-out increase and unfavourably to declarations of dividend reductions (Ang, 1987, and Koch and Shenoy, 1999).

2.1.6 Agency Theory

The agency theory suggests that dividend policy is determined by agency costs arising from the divergence of ownership and control. Managers may not always adopt a dividend policy that is value-maximizing for shareholders but would choose a dividend policy that maximizes their private benefits and personal interests. Since shareholders are aware of this fact, they may develop means of controlling managers' behaviours (Jensen, 1986; Fama and Jensen, 1983; Rozeff, 1982; Jensen and Meckling, 1976). Dividend pay-outs will reduce the free cash flows available to the managers and consequently ensures that managers maximize shareholders' wealth rather than using the funds for their private benefits (DeAngelo and DeAngelo, 2006). This theory thus suggests a reason for the announcement effect of dividend as managers of firms with free cash flows may waste money on perks. By committing cash flows to pay debt or dividends, managers can signal that they are running their company efficiently. The same argument used for signals about asymmetric information applies here. A firm that has already committed cash flows to pay off debt should not react the same way to dividend initiations as a firm with no debt.

2.2 Empirical Evidence

The agency problem of managers' tendency to shirk from the interest of the outside shareholders of the firm is paramount to most firms. To reduce the cost associated with this problem, firm usually pays dividends and favours debt financing as their leverage measure. The use of dividend policy as an internal mechanism may provide an important control device in reducing agency costs. Thus, the corporate governance of firms is channelled to reduce agency costs and enhance the interests of shareholders (Sulong, and Nor, 2010). In line with the objectives of this study, we set out this empirical literature to see what has been the stance of previous studies on the relationship between the corporate governance mechanisms of dividend policy and financial leverage as well as their relation to the value of firms.

2.2.1 Dividend Policy, Financial Leverage, and Firm Value

Theoretically, for low leverage firms, the underlying relationships between financial leverage and dividend policy are direct through the signalling of asymmetric information and the reductions of agency costs (Al-Malkawi 2007; Taranto 2002 and Jensen, Solberg, and Zorn 1992). The theory also suggests that these are reasons for choosing debt in the capital structure. However, Jensen et al. 1992 give evidence of both direct and indirect relationships between debt ratios, dividend policy and ownership structure of firms. This submission is because of the degree of leverage of firms i.e. how high or low a firm is leveraged. Empirical evidence is by no means conclusive as evidence abounds for both directions of relationships which is also a motivation for this study. For instance, the results of authors such as Amahalu, Chinyere, Nweze, and Okoye, (2016); Emamalizadeh, Ahmadi, and Pouyamanesh, (2013); Asif, Rasool, and Kamal (2011) and Hashemi, and Akhlaghi, (2010) reveal a positive relationship between financial leverage and dividend policy whereas Sonia, Eko and Nila (2017); Khan, Nadeem, Islam, Salman, and Gill (2016); Rizqia and Sumiati (2013); Khan, Naz, Khan, Khan, Khan, and Mughal, (2013); Asif, Rasool, and Kamal (2011), etc. reported an inverse relationship between them.

Specifically, the study of Amahalu et al. (2016) assessed the effect of financial leverage on dividend policy on conglomerates listed on the Nigerian Stock Exchange (NSE) from 2010 to 31st December 2015. Using Pearson's correlation coefficient and multiple regression analysis, their results revealed that financial leverage (proxied by short term debt, long term debt and total debt) has a statistically significant effect on dividend policy. They also find that financial leverage has a positive and statistically significant effect on dividend per share as well as on dividend yield. Testing two hypotheses, Hashemi and Akhlaghi (2010) studied the effect of financial leverage, dividend policy, and profitability on the future value of a firm. The first hypothesis is on the effect of financial leverage, dividend policy, and profitability on firm value while the second hypothesis tests the effect of those variables on the future value of the firm. The results of their panel regression analysis indicate that there is a positive relationship between financial leverage, dividend policy, and profitability. These authors also reported a positive relationship between the variables and future value of a firm. In some cases, the findings of Emamalizadeh et al. (2013) and Asif, (2011) are closely related. Both studies find a positive and significant relationship between dividend yield and dividend per share. With the debt ratio, however, their results differ.

While Emamalizadeh et al. find a positive relationship between debt ratio and dividend per share, Asif et al. using the random effect panel regression reported a negative relationship between the variables.

The study of Rizqia and Sumiati (2013) is focused on the effect of managerial ownership, financial leverage, profitability, firm size, and investment opportunity on dividend policy. Their results showed that managerial ownership and investment opportunity influence dividend policy, while financial leverage, profitability, and firm size does not affect dividend policy. Particularly, financial leverage has a negative insignificant relationship with dividend policy. Khan, Nadeem, Islam, Salman, and Gill (2016) also find that there is a negative relationship between return on assets and dividend pay-out ratio and leverage. Their study investigates the corporate dividend policies of companies listed in the Pakistan stock exchange. Using the Ordinary Least Square (OLS) regression approach, their findings show that there is a positive relationship between return on assets, dividend policy, and growth in sales. Similarly, Khan et al., (2013) examine the impact of leverage and profitability on the dividend payout policy of the Chemical and Pharmaceutical industries in Pakistan. 34 listed firms were taken from the two industries covering the period 2003 - 2010. Using the panel ordinary least square method, the results of these authors reveal that the profitability of any firm positively affects dividend pay-outs while leverage has no significant effect on firm dividend pay-outs.

In relation to the value of firm, studies of Sualehkhattak and Mazher (2017), Rizqia and Sumiati (2013), Cheng and Tzeng (2011), Sulong and Nor (2010), Hashemi and Akhlaghi, (2010) etc. provide evidence of a direct relationship between financial leverage and firm value on the one hand, and between dividend policy and firm value on the other hand. Taking a cue from the study of Rizqia and Sumiati (2013), they find that managerial ownership, financial leverage, profitability, firm size, investment opportunity, and dividend policy affect firm value. Particularly, their results reveal that both financial leverage and dividend policy have a positive effect on firm value through the monitoring hypothesis of the agency theory. Similarly, Sulong and Nor (2010) examine the effects of governance mechanisms of dividends, types of ownership structure, and board governance on firm value. Utilizing a panel data of 403 firms listed on the Bursa Malaysia, they find that leverage and dividend policy positively and significantly affect the firms' value which is also a manifestation of reduced agency costs through monitoring activities. Using ordinary least square (OLS) regression analysis on 148 non-financial companies, Sualehkhattak and Mazher (2017) find a significant positive relationship between leverage and firm value, and between ownership concentration and firm value. The study of Hashemi and Akhlaghi, (2010) also find a positive relationship between financial leverage, dividend policy and profitability, and firm value. Moreover, their findings indicate that by increasing ratios of financial leverage, dividend policies and probability the probability of increasing the companies' future value also increases.

In summary, the studies above, including that of Cheng and Tzeng (2011), show that the values of the leveraged firm are greater than that of an unleveraged firm. However, we find evidence of a negative correlation between the variables in the study of Rayan (2008) who reported that an increase in financial leverage is negatively correlated with firm value. In the same vein, Sualehkhattak and Mazher (2017) reported an insignificant negative relationship between dividend payout and firm value.

2.2.2 Moderating Effects of Financial Decisions on Firm Value

Many empirical articles have tested whether the choice of financial decisions such as dividends, leverage, and ownership structure affect the value of a firm and reduce agency problems. Majorly, most of the tests were accomplished by examining one financial decision at a time. As suggested by Agrawal and Knoeber (1996) however, the use of one mechanism may depend upon the use of others for the fact that alternatives exist. In this sub-section, we examine the findings of previous studies on the interdependence of financial decisions.

Agrawal and Knoeber (1996) examined the use of seven mechanisms to control agency problems and they find that regressions of firm performance on single mechanisms may be misleading and provide evidence of interdependence in the use of control mechanisms. Similarly, the findings of Crutchley, et al., (1999) demonstrate the minimization of agency costs through the simultaneous determination of financial decisions. These authors investigate the simultaneity of four financial variables that are hypothesized to control agency costs by building a model to show that leverage, dividends, insider ownership, and institutional ownership are determined simultaneously. Specifically, they find that institutional ownership was determined simultaneously with leverage, dividends, and insider ownership, but the coefficients of their results do not support agency hypotheses.

In the effort of Jensen et al., (1992) three managerial financial decisions of leverage, dividends, and insider ownership are tested in a simultaneous system using a 3SLS approach to allows for the interdependence of firm decisions. They find that leverage and dividends appear to be chosen simultaneously to decrease agency costs.

Also, in response to positive abnormal return from dividend initiation based on the signalling hypothesis and reduction of agency costs, Taranto (2002) examine the interaction between capital structure and dividend initiation. The author finds that the effect of initiating dividends is dampened when there is debt in the capital structure. This indicates that the abnormal return is not always increasing the dividend, particularly for highly levered companies. However, the capital structure does matter for sound financial decisions of firms. The low leveraged firms will signal a positive announcement effect than a high leveraged firm.

More recent empirical evidence on the moderating roles of financial decisions can be found in the studies of Sonia et al. (2017), Sualehkhattak and Mazher (2017), Sulong and Nor (2010) and Cheng and Tzeng (2011). The findings of Sulong and Nor (2010) show the importance of moderating role played by board governance variables with types of ownership structure to influence firm value. Their results also reveal that dividend and types of ownership structure significantly interact with board size to affect firm value. Similarly, Sualehkhattak and Mazher (2017) moderate growth opportunities with leverage, dividend policy, and ownership concentration and examine whether the firm value is affected. From their results, none of the three interaction terms were found to be significant in explaining the firm value. Considering the interaction effect of contextual variables and leverage, Cheng and Tzeng (2011) find that leverage is significant and positively related to the value of a firm. Lastly, Sonia et al. (2017) examine the effect of leverage, dividend policy, and financial performance reciprocally for the listed companies in Indonesia Stock Exchange (IDX). Using GSCA (Generalized Structured Component Analysis), their results show that leverage has an insignificant effect on dividend policy reciprocally. However, it has a significant effect on financial performance reciprocally.

3. Methodology

3.1 Population, Sample and Data Source

In order to achieve the objective of this research, secondary data from manufacturing companies listed on the Nigeria Stock Exchange (NSE) were used. As of January 1, 2019, thirty-five manufacturing companies in the categories of industrial and consumer goods were listed on NSE. Twenty companies were selected from the companies on the basis of data availability. The data were sourced from the annual financial statements issued by the companies from the period 2010 to 2018.

3.2 Variable, Definition and Measurement

The variables for this study include measures of dividend policy, financial leverage, and firm value/growth. Leverage is mostly being modelled using debt to asset ratio, debt to equity ratio, long term debt, and time interest earned. The measures of dividend policy include dividend payout ratio, dividend per share, cash dividend coverage ratio, etc. There are a number of acceptable measures for capturing the value of a firm or business. These measures fall under either the category of profitability ratios or market ratios. The adoption of either category for analysis may have an implication on the consequent result (Richard, 2019). This section briefly discusses the variables as well as the a priori expectation (See Table I for summary).

3.2.1 Dividend Policy

There are two alternatives for managers about what to do with company net income. The first one relates to the distribution to the shareholders in the form of dividends, and the second has to do with the reinvestment of the income to the company as retained earnings. Dividend policy is the policy a company uses to structure its dividend payout to shareholders as decided by the directors. For the purpose of this study, we employ the dividend payout ratio and dividend per share to capture the dividend policy of the companies.

Dividend payout ratio is the percentage of earnings paid to shareholders in dividends. It is an indication of how much money a company is returning to shareholders versus how much it is keeping in hand to reinvest in growth, pay off debt, or add to cash reserves. Dividend per share is the sum of declared dividends issued by a company for every ordinary share outstanding. It is a form of profit distribution to the stockholder which indicates that a growing dividend per share is a sign that the company has growing profit and the company growth can be sustained (James, 2019; Sonia et al. 2017). Studies such as Sonia et al., 2017; Yegon et al. (2014), Rizqia and Sumiati (2013), Emamalizadeh et al. (2013), Khan et al. (2013), Asif et al. (2011), Al-Najjar (2009), etc. have used either or both as the measure(s) of dividend policy. In relation to firm value, our expectation is a bi-directional one because it depends on how a firm finance its investments and projects. With more debt financing, we expect a negative relationship with firm value while a positive relationship is expected for a firm that finances with more equity.

3.2.2 Financial Leverage

Leverage is an investment strategy of using borrowed money. It is the use of financial instruments or borrowed capital to increase the return of an investment (Adam, 2019). For the purpose of this study, we made use of debt to asset ratio and debt to equity ratio as the measures of financial leverage. Rizqia and Sumiati (2013) and Asif et al. (2011) have also made use of these variables. They portray how a firm/company is being financed. Specifically, the debt-to-equity ratio is a measure of the degree to which a company is financing its operations through debt versus wholly-owned funds. A higher debt to equity ratio means that a company is more aggressive in financing its growth with debt (Will and Adam, 2019, Sonia et al., 2017). The debt to assets ratio is a financial ratio that measures the extent of a company's leverage. It can be interpreted as the proportion of a company's assets that are financed by debt. A ratio above 1 means a firm has more debt than assets i.e. a considerable portion of the debt is funded by assets. A higher ratio also indicates that a company may be putting itself at greater financial risk (Will and Adam, 2019). In sum, a high-debt firm, all things being equal, is weaker financially than one using more equity because it is more susceptible to interest rate increases, and it has less financial flexibility. That is its ability to attract more debt financing should future need arises, and at a favourable cost, is increasingly limited with higher levels of financial leverage, because of its high perceived risk of default. Hence, depending on the capital structure of firms, our expectation between financial leverage ratios and dividend policy is bidirectional. A negative relationship between financial leverage and firm value is also predicted as investors generally prefer firms with lower debt.

3.2.3 Firm Value

A Firm's Value (FV), also known as Enterprise Value (EV) is an economic concept that reflects the worth of a business. It is the value that a business is worth at a particular date (Sanjay, 2018). To capture this, we use free cash flow per share and price to book value. Free cash flow per share signals a company's ability to pay the debt, pay dividends, buy back stock and facilitate the growth of the business. It can be used to give a preliminary prediction concerning future share prices (Will, 2019). For example, according to Will, when a firm's share price is low and free cash flow is on the rise, the odds are good that earnings and share value will soon be on the rise because a high cash flow per share value means that earnings per share should potentially be high as well. Price to book value is used to compare a firm's market to book value by dividing the price per share by book value per share (BVPS). A lower price to book value could mean the stock is undervalued and it could also mean something is fundamentally wrong with the company. In sum, it is a reflection of the value that market participants attach to a company's equity relative to its book value of equity (Adam, 2019).

3.2.4 Control Variables

Given that the exclusion of some certain variables could lead to a bias causal link between our variables, we include a few control variables in our first model. These variables include three measures of profitability, ownership structure, and firm size. The measures of profitability return on assets, gross margin and free cash flow. Return on assets measures how efficient a business is using its assets to generate profit i.e. how an asset generates revenue efficiently. It is generally stated in percentage terms and the higher the percentage, the better the firm's performance. In the same vein, gross margin is usually stated as a percentage and it is the difference between a company's sales or products and/or services and how much it costs the company to provide those products and/or services. The higher the gross margin, the more profitable the company. Unlike the return on assets and gross margin, free cash flow is a measure of profitability that excludes the non-cash expenses of the income statement. It represents the cash a company generates free of all operating obligations and encumbrances. That is after cash outflows to support operations and maintain its capital assets. Free cash flows are cash generated by the business net of taxes and available for distribution to capital providers. All other things being equal, a positive relationship is expected between profitability measures and dividend policy of firms. In addition, the size of the firms and ownership structure has also been included in the previous studies as important determinants of dividend policy (Sualehkhattak and Mazher, 2017). Ownership structure shows the control of a corporation; in the hands of a small number of individuals, management, Government, family-control, foreign stakeholders, etc. The size of the market is used as a proxy for market access. According to Aivazian and Booth (2003), firms with better access to the capital market may have the capability to pay higher dividends. Thus, it is expected that a positive relationship will exist between firm size and dividend policy.

Table 1: Variable, symbol, and Measurement

Variable	Symbol	Measurement/Definition
Dividend Policy		
Dividend payout ratio	DPR	Dividends paid to shareholders relative to net income
Dividend per share	DPS	Sum of dividends over a period (usually a quarter or year) minus special, one-time dividends in the period divided by Ordinary shares outstanding for the period
Financial Leverage		
Debt to asset ratio	D/A	The ratio of total debt to total assets
Debt to equity ratio	D/E	The ratio of total liabilities to total shareholders' equity
Firm Value		
Free cash flow per share	FCF/Shr	Free cash flow divided by shares outstanding
Price to Book Value	P/Bv	Market price per share divided by book value per share
Control		
Firm Size	FZE	The logarithm of total assets
Ownership Structure	OS	It is measured by the percentage of insider ownership
Return on assets	ROA	Net income + after-tax interest expense divided by average total assets
Gross Margin	GM	Gross profit divided by sales
Free cash flow	FCF	Free cash flow represents the cash a company generates after cash outflows to support operations and maintain its capital assets.

3.3 Conceptual Framework

We adopt a modified version of the conceptual framework of Ajibolade and Sankay, (2013), Soewarno et al. (2017) and Sualehkhattak and Mazher (2017) to specify our model relating the variables as:

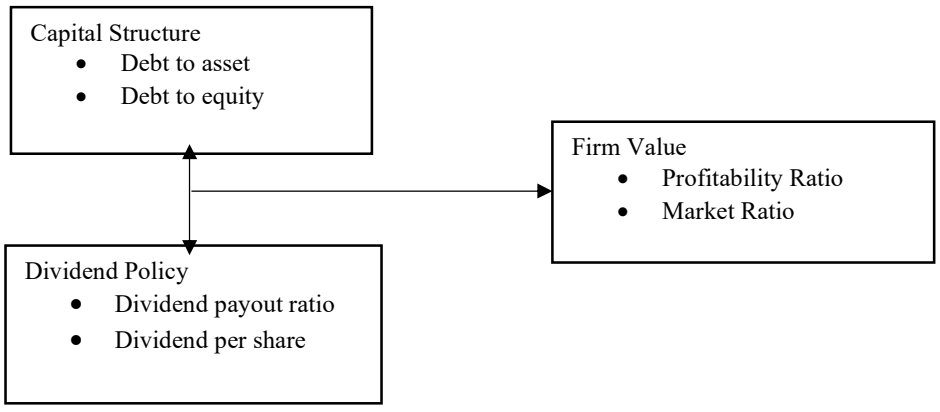

Fig. 2: Conceptual Framework

3.4 Model Specification

Following the conceptual framework and the nature of our data which are collected for multiple periods for the same firm, we specify a simple panel data regression model as

$$(DPR)_{it} = \varphi + \gamma_1 (D/A)_{it} + \gamma_2 \left(\frac{D}{E}\right)_{it} + \sigma_1 (ROA) + \sigma_2 (GM) + \sigma_3 (FCF)_{it} - \delta_1 (OS)_{it} + \delta_2 (FZE)_{it} + (\varepsilon)_{it} \quad 1$$

Where; DPR is the dividend payout ratio, φ represents the constant term. $\gamma, \sigma, and\ \delta$ measure the relative impact of each individual variable on DPR. ε is the error term. I represent the companies and t indicate time periods. For consistency, we use dividend per share, DPS, as an alternative measure of dividend policy. Thus, with DPS as our dependent variable, we have;

$$(DPS)_{it} - \varphi + \gamma_1(D/A)_{it} + \gamma_2\left(\frac{D}{E}\right)_{it} + \sigma_1(ROA) + \sigma_2(GM) + \sigma_3(FCF)_{it} - \delta_1(OS)_{it} + \delta_2(FZE)_{it} + (\varepsilon)_{it} \qquad 1^1$$

Since OLS is applied to data with homoscedastic errors, the Gauss-Markov theorem applies and therefore a GLS model with the properties of best linear unbiased estimates for the coefficients (usually referred to as β) is applied. Generalized least squares (GLS) is a technique for estimating the unknown parameters in a linear regression model when there is a certain degree of correlation between the residuals in a regression model. In this case, ordinary least squares can be statistically inefficient, or even give misleading inferences. The GLS model forces the conditional mean of Y given X to be a linear function of X and assumes the conditional variance of the error term given X is a known non-singular covariance matrix Ω. It can be written as

$Y_{i,t} = X_{i,t}\beta + \varepsilon_{i,t}, \quad i = 1, \ldots, N; t = 1, \ldots, T \quad E[\varepsilon/X] = 0, \quad \mathrm{Cov}[\varepsilon/X] = \Omega \quad 3$

Here $\beta \in \mathbb{R}^k$ is a vector of unknown constants (regression coefficients) that is estimated from the data. The vector of observations on the dependent variable is Y. Suppose b is a coefficient estimate for β, the residual estimate vector for b will be $Y - Xb$. The Generalised Least Squares (GLS) method estimates β by minimizing the squared Mahalanobis length of the residual vector as

$$\hat{\beta} = argmin\ (Y - Xb)^T\Omega^{-1}(Y - Xb) \qquad 3^1$$

An objective is a quadratic form in b, the estimator has the formula:

$$\hat{\beta} = (X^T\Omega^{-1}X)^{-1}X^T\Omega^{-1}Y \qquad 3^{11}$$

If the errors in equation 3 meet one or more of the panel error assumptions, then OLS estimates of β will be consistent but inefficient; the degree of inefficiency depends on the data and the exact form of the error process (Beck and Katz, 1995). The OLS standard errors will also be inaccurate, but they can be corrected so that they provide accurate estimates of the variability of the OLS estimates of β. This correction takes into account the contemporaneous correlation of the errors (and perforce heteroscedasticity). The correction for the contemporaneous correlation of the errors is only possible because we have repeated information on the contemporaneous correlation of the errors. The correct formula for the sampling variability of the OLS estimates is given by the square roots of the diagonal terms of:

$$Cov\hat{\beta} = (X^1X)^{-1}\{X^1\Omega X\}(X^1X)^{-1} \qquad 4$$

If the errors obey the spherical assumption, equation 4 simplifies to the usual OLS formula, where the OLS standard errors are the square roots of the diagonal terms of $\sigma^2(X^1X)^{-1}$, where σ^2 is the usual OLS estimator of the common error variance, σ^2. Equation 4 can be used to provide accurate, panel-corrected standard errors (PCSEs). For the possible case of the endogeneity problem between variables, we employ the dynamic panel System-GMM estimator developed by Arellano and Bover (1995) and Blundell and Bond (1998). GMM estimates with a level-equation and a difference equation and it produces an unbiased and consistent estimate after controlling for endogeneity. Thus, equation 1 is express as;

$$DPR_{it} - DPR_{it-1} = \varphi_t + \rho DPR_{it-1} + \gamma_1\left(\frac{D}{A}\right)_{it} + \gamma_2\left(\frac{D}{E}\right)_{it} + \delta_1(ROA)_{it} + \delta_2(GM)_{it} + \delta_3(FCF)_{it} - \sigma_1(OS)_{it} + \sigma_2(FZE)_{it} + \tau^i X_{it} + \mu_i + v_{it} \qquad 5$$

Where μ_i represents unobserved time-invariant company-specific effects and v_{it} denotes disturbance term; the increase in dividend payout is represented by $(DPR)_{it} - (DPR)_{it-1}$; and to account for change common to all, φ_t indicates the period-specific intercept. To eliminate the company-specific effect term, the first differences of equation 5 is taken so that company-specific effects are controlled for. Hence, the model is stated as:

$$\Delta DPR_{it} = \Delta\varphi_t + (\rho + 1)\Delta DPR_{it-1} + \gamma_1\Delta\left(\frac{D}{A}\right)_{it} + \gamma_2\Delta\left(\frac{D}{E}\right)_{it} + \delta_1\Delta ROA_{it} + \delta_2\Delta GM_{it} + \delta_1\Delta FCF_{it} - \sigma_1\Delta(OS) + \sigma_2\Delta(FZE) + \tau^i\Delta X_{it} + \Delta v_{it} \qquad 6$$

Where Δ *denote change*. Other parameters remain defined as above. The same process is undertaken for DPS.

The second objective of this study is examining the interactive effect of dividend policy and financial leverage on the value of a firm. For this purpose, we specify a simple panel model for random and fixed effect as

$$(FCF/Shr)_{it} = \varphi + \gamma_1(DPR)_{it} + \gamma_2(DPS)_{it} + \sigma_1(D/A) + \sigma_2(D/E) + \delta_1(DPR * D/A)_{it} + \delta_2(DPR * D/E)_{it} + \delta_3(DPS * D/A)_{it} + \delta_4(DPS * D/E)_{it} + (\varepsilon)_{it} \quad 7$$

Where, FCF/Shr is the free cash flow per share and it represents the value the firms' created over the study period; D/A and D/E are two measures of debt; and (DPR*D/A, DPR*D/E, DPS*D/A and DPS*D/E) are the combination of these ratios. Other parameters remain as define from the above.

3.5 Estimation Techniques

Different estimation techniques such as pooled OLS, Generalised Least Square (GLS), Panel-Corrected Standard Errors (PCSEs) and dynamic panel system-GMM were used to estimate the relationship between dividend policy and financial leverage. The fixed and random effects panel regressions are used to estimate our equation for the interactive effect of dividend policy and financial leverage on the value of firms.

4. Empirical Results

4.1 Summary Statistics

Table 2 shows the mean, standard deviation values as well as their respective minimum and maximum value of the variables. The mean value of the dividend payout ratio is 48.5 which indicates that the payout ratio is high because most of the companies prefer to pay a dividend to boost investors' confidence. The value implies that about 50% of the companies' profit goes for dividend payment. However, regarding dividend per share, the average value reveals a relatively low dividend policy which is a more realistic value for the companies in Nigeria as only a few organizations pay huge dividends. The overall standard deviation statistics for P/Bv, FCF/Shr, OS, ROA, FCF and FZE are relatively low with variation (across individual companies) more than the within variation (overtime) for P/Bv, OS, and FZE. The within variation is more than the between variation for FCF/Shr and ROA. The standard deviation value suggests less fluctuation in the value of these variables for the manufacturing companies in Nigeria over the study period (2005-2018). The average value of D/A and D/E is greater than 1 showing that the Nigeria manufacturing companies are using more debt than their assets and equity trading i.e. they are highly levered. Generally, the average value for the variables falls between the minimum and maximum (overall) value depicting normality in the distribution.

Table 2: Summary Statistic

Variable	Mean(overall)	Standard Deviation			Min.	Max.
		Overall	Between	Within		
Dividend Payout Ratio (DPR)	48.584	36.042	24.188	27.336	0	189.00
Dividend Per Share (DPS)	2.1922	4.6834	4.1273	2.3488	0	27.5
Debt to Asset Ratio (D/A)	13.142	13.602	12.384	6.5065	0	50.663
Debt to Equity Ratio (D/E)	14.541	15.366	12.402	9.7869	0	51.459
Price to Book Value (P/Bv)	2.4770	1.9807	1.5831	1.2358	-0.711	9.1824
Free Cash Flow per share (FCF/Shr)	2.2428	9.9505	6.8667	7.1186	-18.38	77.120
Ownership Structure (OS)	4.2	2.9339	3.0017	0	0	10
Firm Size (FZE)	24.307	1.9395	1.9366	0.4232	19.980	28.158
Return on Assets (ROA)	9.1110	9.4317	6.6581	6.8412	-41.60	30.360
Free Cash Flow (FCF)	2.51e+	3.40e+	2.23e+	2.54e+	-5.29e	7.74e+
Gross Margin (GM)	31.870	12.794	12.300	4.9640	-21.45	66.214

4.2 Correlation matrix

The correlation matrix shows the expected relationship between the variables. It shows that the correlation between variables is either of low degree, moderate or high degree. Theoretically, the low and moderate correlation suggests an absence of multicollinearity. As suggested by Bryman and Cramer (1997), Pearson's correlation coefficient 'r' between each pair of variables should not exceed 0.80 otherwise variables may be suspected of exhibiting multicollinearity. Multicollinearity is regarded as a problem because it means that

regression coefficients may be unstable. Table 3 present the pairwise correlation coefficients for the variables. The results indicate that, except for debt ratios (D/A and D/E), all other variables are positively correlated to dividend payout ratio (DPR) while only ownership structure shows a negative relationship with dividend per share. However, it is only debt to equity ratio that is not significant at 5% level. This result is plausible theoretically as debt accumulation will eventually hamper the value of the firm and affect its dividend policy. Pointing to their importance in the model, most of the correlation's coefficients are significant except for debt ratios.

Table 3: Pairwise Correlation Coefficients

Variable	DPR	DPS	D/A	D/E	OS	FZE	ROA	FCF/Shr	GM
DPR	1.0000								
DPS	0.3352*	1.0000							
D/A	-0.1611*	0.2195*	1.0000						
D/E	-0.0734	0.1753*	0.6675*	1.0000					
OS	0.1790*	-0.0600	0.1181	0.1771*	1.0000				
FZE	0.1797*	0.3389*	0.3153*	0.2641*	0.4527*	1.0000			
ROA	0.2806*	0.4153*	-0.1278	-0.0549	0.0452	0.1774*	1.0000		
FCF/Shr	0.2123*	0.3112*	-0.0271	0.0228	0.2118*	0.3338*	0.8501*	1.0000	
GM	0.2975*	0.3776*	0.0665	0.0228	-0.0821	0.1575*	0.5798*	0.4494*	1.0000

4.3 Effect of Financial Leverage on Dividend Policy

Our first objective is achieved using the Pooled Ordinary Least Square (OLS), Generalised Least Square (GLS) and the Panel Corrected Standard Errors (PCSEs) estimates. The results obtained from the estimations are reported in Table 4. As indicated from our models, dividend payout ratio (DPR) and dividend per share (DPS) are the dependent variables capturing the dividend policy of companies. Diagnostically, the F-statistic for all the models is statistically significant at a 1 percent level implying that our regression results have explanatory power and policy inferences can be made base on them. In the same vein, the value of the coefficient of determination (R^2) for the pooled OLS and the ward statistics for GLS and PCSEs shows that 19.5%, 35.1% and 53.3% of the variation in the DPR is explained by the independent variables respectively. These show that other variables may be important in estimating the relationship between financial leverage and dividend policy of firms.

Concerning individual explanatory variables, the t-test shows that the debt to assets ratio is statistically significant for all the models with a negative relationship with DPR and a positive relationship to DPS. This suggests that the choice of measurement may be necessary for dividend policy analysis. A negative sign means that there is a negative relationship between debt to assets ratio and DPR while the positive sign shows that DPS and debt to assets ratio relate positively. The inverse relationship between DPR and debt to assets ratio portrays that for every increase in debt accumulation, there will be a corresponding decrease in dividend pay-out. This result is consistent with theoretical expectations. For instance, there is a restriction on dividend payment according to the debt covenant hypothesis which makes a company that has a high level of leverage to pay less. Also, the signalling hypothesis and agency theory posits that high debt firms pay lower in dividends. Our result is similar to the ones found by Sonia et al., (2017); Khan et al., (2016); Rizqia and Sumiati (2013); Khan et al. (2013); Asif et al., (2011), etc. However, theoretical submission through the monitoring hypothesis is positive which in line with our results taking dividend per share as the predictor of dividend policy. This positive result suggests that dividend policy is a good monitoring tool for agency costs reduction. Authors such as Amahalu et al., (2016); Emamalizadeh et al., (2013); Hashemi and Akhlaghi, (2010); Abor and Bokpin, (2010), etc. have also found evidence to support a positive association between financial leverage and dividend policy. The signs of the coefficients were preserved for debt-to-equity ratio in all the regressions but none of them are statistically significant. Generally, the direction and magnitude of the relationship between the variables are maintained in all three techniques with no substantive changes.

Regarding the profitability ratios of ROA, GM, and FCF which are among our control variables in the estimation, we find that profitability relates positively with both DPR and DPS taking a cue from ROA and GM in all the models. FCF only gives a positive relationship with DPS. The positive results suggest that a percentage increase in profitability will lead to a corresponding increase the dividend payment. The coefficients of ROA are statistically significant at a 1% level to DPS but none of them is significant to DPR in all the models. Conversely, the coefficients of GM to DPR are significant but are insignificant to DPS in all the estimations. For the free cash flow, the positive relationship with DPS is significant at various levels for the models. The positive and significant relationship between the profitability ratios and dividend policy is consistent with the theoretical

expectation. Profit is an indication of efficient performance and the use of such profit may portend a good signal to the investors through dividend payment. While the study of Rizqia et. al. (2013) found the relationship between profitability and dividend policy to be insignificant, empirical evidences such as Timothy and Ochuodho (2013), Abor and Bokpin (2010), Amidu and Abor (2006), Jensen et al. (1992) etc. corroborate our finding of positive and significant relationship between the variables.

Other control variable includes ownership structure and firm size. While the sign of the coefficients of FZE is positive and significant all through, the sign of OS to DPR is positive but insignificant. Our finding of the coefficients of firm size is in tandem with our a priori expectation. Firms that have better access to the market tend to pay higher in dividends (Aivazian and Booth 2003). Yusuf and Ismail (2016), Abor and Bokpin (2010), Aivazian and Booth (2003) also find a positive relationship between firm size and dividend policy. The coefficients of ownership structure as measured by insider ownership are negative and significant at 1% and 5% levels to DPS. This indicates that when ownership is concentrated in the hands of few insider-ownership, it may affect dividend pay-out negatively.

Table 4: Pooled OLS, GLS and Panel Corrected Estimations

Techniques of analysis / *Variables*	*Pooled OLS*		*GLS Regression*		*Panel corrected*	
	$(i)DPR$	$(ii)DPS$	$(i)DPR$	$(ii)DPS$	$(i)DPR$	$(ii)DPS$
Debt Ratio (D/A)	-0.559**	0.065**	-0.559**	0.065**	-0.559***	0.065*
	[2.14]	[2.06]	[2.19]	[2.12]	[3.22]	[1.75]
Debt to Equity Ratio (D/E)	-0.128	0.005	-0.128	0.005	-0.128	0.005
	[0.55]	[0.18]	[0.57]	[0.18]	[0.60]	[0.25]
Ownership Structure (OS)	1.525	-0.411***	1.525	-0.411***	1.525	-0.411**
	[1.44]	[3.27]	[1.48]	[3.36]	[1.02]	[2.32]
Firm Size (FZE)	3.237*	0.714***	3.237*	0.714***	3.237**	0.714***
	[1.80]	[3.33]	[1.85]	[3.42]	[2.40]	[4.29]
Return on Assets (ROA)	0.304	0.169***	0.304	0.169***	0.304	0.169***
	[0.87]	[4.01]	[0.90]	[4.11]	[0.73]	[3.57]
Gross Margin (GM)	0.823***	0.013	0.823***	0.013	0.823***	0.013
	[2.90]	[0.40]	[2.98]	[0.67]	[2.70]	[0.49]
Free Cash Flow (FCF)	-9.08e-1	2.01e-1*	-9.08e-1	2.01e-1**	-9.08e-11	2.01e-***
	[1.02]	[1.86]	[1.04]	[1.91]	[0.99]	[2.64]
Constant	-55.357	-16.49***	-55.357	-16.49***	-55.357*	-16.49***
	[1.34]	[3.33]	[1.38]	[3.42]	[1.91]	[4.77]
R^2	0.1957	0.3513				
Prob > F; Prob > Chi2	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Wald Statistic			35.16	61.28	53.31	148.70
Log-Likelihood			783.194	450.749		
Observations	160	162	160	162	166	162
No. of Company			20	20	20	20

Note: Figures in parenthesis are /t-values/. (***), (**) and (*) indicates significance at 1%, 5% and 10% respectively

4.4 Effect of Financial Leverage on Dividend Policy- System Dynamic Panel Analysis

Here, the results of Arreleno-Bond tests with the null hypothesis that there is no second-order autocorrelation validate our models as AR (2) is not significant. In the same vein, the Sargan test of overidentifying restrictions checks the validity of the instruments i.e. if all the instruments as a group are exogenous. The results show that our instruments are reliable as the required and acceptable p-values were obtained. Also, the rule of thumb is satisfied regarding the number of instruments, as the number of instruments is less than the number of groups. Depicting the dynamic nature of each model, the lag of dividend pay-out ratio and dividend per share, in Table 4, are positive and statistically significant at 10% and 1% levels respectively. This indicates that dividend-out ratio and dividend per share are positively influenced by their values in the prior period. The results of the system GMM agree with the findings from the pooled OLS, GLS and PCSEs estimations to a very large extent. The sign and the level of significance of debt to asset ratio and gross margin are preserved. Besides, the relationship between DPS and the explanatory variables is maintained except for the debt-to-equity ratio which shows a negative relationship for both DPR and DPS. We also observe a change in the sign of ROA, FZE, and OS as the result reveal a negative relationship with DPR under the GMM estimation. Overall, the results are robust in all the estimations even in line with system GMM which considers possible endogeneity problems.

Table 5: System dynamic panel data Estimations

Technique of analysis	*System GMM*	
Variables	*(i)DPR*	*(ii)DPS*
Dividend Payout Ratio (*DPR*) lag	0.182*	-
	[1.85]	-
Dividend per share (*DPS*) lag	-	0.087***
	-	[5.57]
Debt ratio (*D/A*)	-0.994**	0.076***
	[2.39]	[6.27]
Debt to equity ratio (*D/E*)	-0.001	-0.003
	[0.01]	[0.68]
Ownership Structure (*OS*)	-4.266	-3.371***
	[0.74]	[18.00]
Firm Size (*FZE*)	-0.806	2.559***
	[0.24]	[5.66]
Return on assets (*ROA*)	-0.695	0.135***
	[1.33]	[9.91]
Gross margin (*GM*)	1.954*	0.0205
	[1.79]	[0.32]
Free cash flow(*FCF*)	-1.31e-10**	5.64e-12*
	[2.52]	[1.93]
Constant	39.478	-46.756***
	[0.49]	[3.70]
A-Bond AR (1) test p-value	-2.5846***	-1.0374**
	[0.0097]	[0.0299]
A-Bond AR (2) test p-value	0.2245	0.9721
	[0.8224]	[0.3310]
Sargan test	14.6560	9.5406
	[0.9976]	[0.9998]
No. of instruments	18	18
Observations	144	147
No. of Company	20	20

Note: Figures in parenthesis are /t-values/. (***), (**) and (*) indicates significance at 1%, 5% and 10% respectively

4.5 Moderating Effect of Financial Leverage and Dividend Policy on Firm Value

A keen interest of this study is to examine the moderating (interaction) effect of dividend policy variables with financial leverage ratios on firm value. Using pooled OLS, random and fixed regression analyses, the results of the analysis are provided in Table 6. Two measures of valuation, free cash flow per share and price to book value, are used as the dependent variables. Our independent variables include two measures each for dividend policy and financial leverage as well as the interaction terms between them. As displayed in the table, the estimated coefficients for the interaction term between dividend payout ratio and debt to asset ratio (DPR*DA) and between dividend per share and debt to asset ratio (DPS*DA) are significant though with different sign and direction of relationship with firm value.

The interaction between dividend per share and debt to assets ratio (DPS*DA) shows negative coefficients all through with a level of significance between 1% and 5%. This means that there is an inverse relationship between firm value and this interaction term. With pooled OLS and random effect estimations, the interaction term between DPR*DA is also negative and significant (to free cash flow per share) suggesting that the moderating role between dividend policy and debt ratio on firm value is negative with minimal impact. None of the coefficients of the interaction term between dividend payout ratio and debt to equity ratio (DPR*DE) is significant whereas those of dividend per share and debt to equity ratio (DPS*DE) to price to book value is positive and significant with pooled and fixed effect estimations.

The indirect effect of dividend policy through debt ratio on the value of firm hinges on the agency theory proposition of monitoring and bonding mechanism proposed by Jensen and Meckling in 1976. They opined that a firm's efforts to minimize agency problems can be done with a bonding mechanism of increasing debt amount

and increasing dividends. With the negative coefficients of DPR*DA and DPS*DA, our results imply that the impact of rising debt to pay dividends will hamper the value of the firm and the effect of monitoring activities to reduce agency is redundant. A possible explanation for this is the signalling effect of a highly leveraged firm. A high leveraged firm has already signalled to the investors about its financial stance and will attract fewer investors compare to the low leveraged firm. Our finding is consistent with that of Taranto (2002) and Crutchley et al. (1999) who also reported that the effect of initiating dividends is dampened when there is debt in the capital structure. However, there is evidence of a positive relationship between firm value (price to book value) and the coefficients of the interaction term of dividend per share and debt to equity ratio (DPS*DE) which gives an affirmation to the monitoring hypothesis of the agency theory. Chen et al. (2011) and Jensen et al. (1992) also find that leverage and dividends appear to be chosen simultaneously to decrease agency costs.

Table 6: Interaction Effect of Dividend Policy and Financial Leverage on Firm Value

Techniques of analysis	*Pooled OLS*		*Random Effect*		*Fixed Effect*	
Variables	*(i) FCF/Shr*	*(ii)P/Bv*	*(i) FCF/Shr*	*(ii)P/Bv*	*(i) FCF/Shr*	*(ii)P/Bv*
Dividend Payout Ratio (*DPR*)	0.003	0.009	0.003	0.004	0.013	0.001
	[0.01]	[1.49]	[0.01]	[0.82]	[0.53]	[0.27]
Dividend Per Share (*DPS*)	2.258***	0.180*	2.258***	0.128*	0.551	0.140*
	[5.06]	[1.76]	[5.06]	[1.78]	[1.39]	[1.79]
Debt to Asset Ratio (*D/A*)	0.228*	-0.015	0.228*	-0.003	-1.064	0.013
	[1.86]	[0.55]	[1.86]	[0.13]	[0.53]	[0.49]
Debt to Equity Ratio (*D/E*)	-0.028	0.003	-0.028	0.000	0.016	-0.004
	[0.33]	[0.20]	[0.33]	[0.01]	[0.22]	[0.24]
(*DPR * D/A*)	-0.007**	0.009	-0.007**	0.009	-0.004	0.008
	[2.28]	[1.38]	[2.28]	[1.53]	[1.65]	[1.61]
(*DPR * D/E*)	0.006	-0.003	0.006	-0.000	0.001	-0.003
	[0.41]	[0.83]	[0.41]	[1.10]	[0.15]	[1.17]
(*DPS * D/A*)	-0.05***	-0.016***	-0.05***	-0.009**	-0.095***	-0.007**
	[2.81]	[3.91]	[2.81]	[2.43]	[5.56]	[2.05]
(*DPS * D/E*)	0.023	0.009**	0.023	0.003	0.048***	0.002
	[1.06]	[1.93]	[1.06]	[0.93]	[2.88]	[0.63]
Constant	0.815	1.705***	0.815	1.936***	5.312***	9.923***
	[0.46]	[4.52]	[0.46]	[4.72]	[2.93]	[4.99]
R^2	0.403	0.182	0.403	0.142	0.500	0.122
Prob > F; Prob > Chi2	0.000***	0.000***	0.000***	0.014**	0.000***	0.042**
Observations	160	171	160	171	160	171
No. of Company			20	20	20	20

Note: Figures in parenthesis are /t-values/. (***), (**) and (*) indicates significance at 1%, 5% and 10% respectively

5. Concluding Remarks

The agency problem, wherein managers are usually not perfect agents of outside shareholders and thus sometimes pursue their interest at the expense of that of shareholders, continues to be a vexing problem in management theory and practice as well as corporate governance. To reduce the cost associated with this problem and as a monitoring tool for managers, the firm usually pays dividends and favours debt financing as their leverage measure. Thus, the corporate governance of firms is geared towards reducing agency costs and enhancing the interests of shareholders. Our effort in this paper focused on the relationship between dividend policy and firms' financial leverage. The study examined the interactive or mediating effect between the variables on the value of the firm, given the fact that it has received considerably little attention in the literature. The study made use of the listed manufacturing companies on the Nigerian Stock Exchange (NSE). We built the empirical models based on the pooled OLS, generalized least square, panel corrected standard errors, system dynamic panel model as well as the random and fixed effect panel models.

Specifically, with a highly significant F-statistic, the effect of financial leverage on dividend policy was found to be negative, indicating that a policy to increase debt will negatively influence dividend pay-out. The inverse relationship between dividend payout ratio and debt ratio suggests that for every increase in debt (leverage), there will be a corresponding decrease in dividend pay-out. The result is consistent with the theoretical expectation of the debt covenant hypothesis and the signalling hypothesis. With respect to our control variables, profitability ratios and firm size reveal a significant positive relationship with dividend policy. Also, the results showed that the interaction term between dividend per share and debt-to-assets ratio negatively influence firm

value in all the models while a negative relationship was observed between firm value and the interaction term of dividend pay-out ratio and debt-to-assets ratio. We conclude that increasing debt as a monitoring mechanism in a bid to reduce agency cost will hamper dividend policy and firm value. Hence, we recommend that optimal use of equity and assets rather than debts will benefit the shareholders, the firm and relevant stakeholders, especially in the long run. Also, policies anchored on the right mix of leverage and dividend policy will enhance firm value.

6. References

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