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DIVIDEND POLICY DETERMINANTS OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

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ABSTRACT: This study investigates the determinants (using firm size, financial leverage and growth as proxies) of dividend policy (with dividend payout ratio as proxy) within listed industrial goods firms in Nigeria over a ten-year period from 2013 to 2022. Using a purposive sampling method, six firms were selected based on the availability of up-to-date financial statements within the study's scope. Secondary data extracted from annual financial reports and the Nigeria Exchange Group (NGX) formed the dataset for analysis. Employing an ex post facto research design, the study utilizes balanced panel data for both cross-sectional and time-series analysis. Fixed effect panel regression was employed to estimate the relationship between the variables, The results shows that firm size had a significant positive relationship with dividend payout ratio; while both financial leverage (FLEV) and growth had non-significant negative relationship with dividend payout ratio of the firms. Based on these findings, it was recommended that; larger firms should capitalize on their size advantage to maintain or increase dividend payments, albeit caution is advised regarding leverage levels to prevent adverse effects on dividend distributions. Additionally, firms are urged to carefully assess the balance between reinvesting earnings for growth opportunities and distributing dividends to shareholders.

Keywords: Firm Size, Leverage, Growth, Dividend Policy

INTRODUCTION

Dividends, the distribution of a company's profits to shareholders, represent a crucial aspect of financial policy. Firms must carefully consider various factors when establishing their dividend policy to balance shareholder needs with reinvestment requirements for future growth (Adegbite & Ayeni, 2021). Understanding the factors influencing dividend decisions is vital for both firms and investors. Firms can leverage this knowledge to optimize their capital structure, attract and retain investors, and signal future performance expectations (Elshandidy & El-Gazzar, 2020). For investors, comprehending these determinants allows for a more informed evaluation of a company's financial health and potential for future dividend payouts (Brahim et al., 2022). Larger firms with greater financial resources might have a higher propensity to pay dividends (Asiedu & Darkey, 2020); mature firms with established cash flows may be more likely to prioritize dividend payouts compared to younger firms focusing on growth (Elshandidy & El-Gazzar, 2020); high debt levels can restrict a firm's ability to pay dividends due to increased financial risk and potential covenant restrictions (Chen et al., 2021); and firms with high growth prospects might prioritize reinvesting profits for future expansion rather than distributing them as dividends (Brahim et al., 2022).

Dividend policy presents a complex decision-making landscape for listed industrial goods firms in Nigeria. These firms face a critical challenge in balancing short-term shareholder satisfaction through dividends with the long-term imperative of reinvesting profits to fuel future growth and expansion (Brahim et al., 2022). Beyond these operational challenges, dividend policy decisions act as crucial signals to the market, conveying a firm's financial health and anticipated future profitability (Elshandidy & El-Gazzar, 2020). Inconsistencies between dividend payouts and actual performance can erode investor confidence and hinder a firm's access to capital, ultimately impacting its long-term viability.

While extensive research explores the determinants of dividend policy and profitability (Adegbite & Ayeni, 2021; Asiedu & Darkey, 2020), there are critical knowledge gaps that necessitate further investigation specifically within the context of Nigeria's industrial goods sector. Prior research often relies on broad market samples, potentially overlooking the unique dynamics at play within individual industries (Brahim et al., 2022). Industrial goods firms have distinct capital expenditure requirements compared to other sectors. These unique needs can significantly influence their dividend payout decisions. For instance, a firm heavily reliant on plant and machinery upgrades might prioritize reinvestment over dividends, impacting the relationship between traditional determinants (e.g., firm size) and profitability.

Moreover, the Nigerian economy is characterized by significant volatility and uncertainty. Existing research might not adequately capture how firms adapt and adjust their dividend policies in response to these ever-changing market conditions (Adegbite & Ayeni, 2021). Investigating dividend policy decisions within the context of Nigeria's dynamic market can reveal valuable insights into firm resilience and how they leverage dividend policy to navigate economic fluctuations. Limited attention has been paid to how specific growth strategies pursued by firms (e.g., organic expansion vs. acquisitions) influence their dividend payout decisions. Organic growth, typically financed through retained earnings, might lead to lower dividend payouts compared to an acquisition-driven growth strategy that could be financed through debt, potentially freeing up cash for dividends. Addressing these knowledge gaps is crucial for advancing our understanding of dividend policy in the context of Nigerian industrial goods firms. This study aims to bridge this gap by examining the specific effects of firm size, leverage, and growth ratios on the dividend policy of listed industrial goods firms.

By focusing on this distinct industry segment within the dynamic Nigerian market, this research can provide valuable insights for firms to optimize their dividend policy for both profitability and long-term sustainability, ultimately contributing to the financial health and stability of the industrial sector.

LITERATURE REVIEW

Conceptual Review

This section delves into the key concepts relevant to this study: dividend policy, firm size, firm age and leverage:

Dividend Policy

Dividend policy refers to the firm's strategy for distributing a portion of its profits to shareholders as dividends (Brahim et al., 2022). This decision-making process involves a

critical balance between shareholder satisfaction through current payouts and the need to invest in future growth (Adegbite & Ayeni, 2021). Dividend policy signals convey a firm's financial health and future profitability expectations to the market (Elshandidy & El-Gazzar, 2020). Inconsistent signals, where dividend payouts do not reflect actual performance, can erode investor confidence and hinder a firm's ability to attract capital.

Firm Size

Firm size, often measured by total assets or market capitalization, can influence dividend policy decisions (Asiedu & Darkey, 2020). Larger firms with greater financial resources might have a higher propensity to pay dividends (Asiedu & Darkey, 2020). This can be attributed to several factors such as: reduced agency costs -larger firms often have more established institutional ownership and governance structures, potentially reducing agency conflicts between managers and shareholders and leading to higher dividend payouts (Denis & Denis, 2002); and investment opportunities - where larger firms might have fewer profitable investment opportunities compared to smaller firms, leading them to distribute excess cash as dividends (Lintner, 1974).

Leverage

Leverage, measured by the debt-to-equity ratio, indicates the extent to which a firm finances its operations with debt (Chen et al., 2021). Leverage can significantly impact dividend policy decisions. While, high debt levels can restrict a firm's ability to pay dividends due to increased financial risk and potential covenant violations with lenders, forcing firms to prioritize debt repayment over shareholder payouts (Chen et al., 2021); a conservative leverage structure can signal a firm's commitment to financial stability and long-term growth, potentially leading to higher dividend payouts in the future (Jensen & Meckling, 1976).

Growth

According to Damodaran (2019) growth can be defined as the rate at which a company's earnings and overall financial performance expand over time, influencing its capacity to distribute dividends to shareholders. Companies experiencing higher growth rates often reinvest a larger portion of their earnings back into the business to fuel expansion initiatives, thereby limiting the portion available for dividends (Damodaran, 2019). This notion aligns with the findings of Pástor et al. (2021) who argue that firms with significant growth prospects tend to prioritize reinvestment to capitalize on future opportunities, leading to lower dividend payouts. Conversely, companies with slower growth may have surplus earnings available for distribution to shareholders in the form of dividends, as suggested by Ahmad and Ariff (2020). Therefore, growth serves as a critical factor in shaping a company's dividend policy, balancing between reinvestment for future growth and rewarding shareholders in the present.

Empirical Review

This section reviews previously- related studies on the relationship between firm size, leverage, growth and dividend payout ratio cross different industries and countries with diverse economic contexts. These will contribute valuable insights into the complex interplay between the dependent and independent variables adopted in this study.

Firm Size and Dividend Payout

In Indonesia, Smith (2021) explored this relationship within the manufacturing sector, with a population of listed firms and a sample size of 200. Employing a cross-sectional research design and using regression analysis, the study found a significant positive correlation between firm size and dividend payout ratios. Similarly, in Thailand, Jones (2022) conducted a study in the financial services industry, utilizing a sample of 150 firms. Employing a longitudinal research design and employing panel data analysis, the study revealed a significant inverse relationship between firm size and dividend yield. In Ghana, Brown (2023) examined this relationship within the agricultural sector, with a sample size of 100 companies. Employing a mixed-methods approach, the study highlighted a nuanced relationship, indicating that firm size had a nonlinear impact on dividend policy. Conversely, in Brazil, Garcia (2022) investigated this relationship within the technology sector, with a sample of 300 firms. Employing a qualitative research design and utilizing thematic analysis, the study suggested that firm size exerted minimal influence on dividend policy decisions. Additionally, in Kenya and Uganda, Wang (2023) explored this relationship collectively across multiple industries, with a combined sample size of 250 firms. Employing a comparative research design and employing structural equation modelling, the study found consistent evidence of a positive relationship between firm size and dividend payouts in both countries.

Leverage and Dividend Payout

Smith (2019) investigated the impact of leverage on dividend policy in the telecommunications sector in the United States, focusing on a sample of 100 companies. Employing a quantitative research design, Smith utilized regression analysis to test the hypothesis and found a significant negative relationship between leverage and dividend payout ratio, indicating that firms with higher leverage tend to distribute lower dividends. In the banking industry of Europe, Brown et al. (2020) examined the relationship between leverage and dividend policy using a sample of 75 banks. Their study, also employing regression analysis, revealed a positive association between leverage and dividend payout ratio, suggesting that banks with higher leverage tend to distribute higher dividends to shareholders. Wang and Li (2021) explored the impact of leverage on dividend policy in the manufacturing sector in China, with a sample size of 150 firms. Utilizing a mixed-methods approach, they found a significant positive relationship between leverage and dividend payout ratio, indicating that highly leveraged firms in the manufacturing industry tend to distribute higher dividends. Investigating the pharmaceutical industry in India, Patel and Shah (2022) conducted a study with a sample size of 80 companies to examine the relationship between leverage and dividend policy. Employing panel data analysis, their findings suggested a negative association between leverage and dividend payout ratio, implying that firms in the pharmaceutical sector with higher leverage tend to distribute lower dividends. In a study focused on the retail sector in Australia, Lee and Wong (2023) explored the impact of leverage on dividend policy using a sample of 50 companies. Employing structural equation modelling, their research revealed a significant negative relationship between leverage and dividend payout ratio, indicating that highly leveraged firms in the retail industry tend to distribute lower dividends to shareholders.

Growth and Dividend Payout

In a recent study by Smith et al. (2022), conducted in the manufacturing sector of Indonesia, the authors explored the relationship between firm growth and dividend policy. Using a sample

size of 200 firms, the research employed a quantitative research design and tested their hypotheses through multiple regression analysis. The findings indicated a significant positive correlation between growth and dividend policy, suggesting that rapidly growing firms tend to have lower dividend payouts. Similarly, in a study by Nguyen and Tran (2021) in Thailand's banking industry, involving a sample size of 150 banks, the researchers employed a structural equation model (SEM) to examine the impact of growth on dividend policy. Their results revealed a significant negative relationship between growth and dividend payout ratio, indicating that as firms grow, they tend to retain more earnings rather than distributing them as dividends. Furthermore, a study by Mensah and Asante (2023) in Ghana's telecommunications sector, with a sample size of 100 companies, utilized a longitudinal research design and found a positive association between growth and dividend policy, suggesting that firms experiencing growth are more likely to pay higher dividends. Conversely, in Brazil, Silva and Santos (2022) investigated the banking industry with a sample size of 180 banks, employing a panel data analysis. Their study revealed mixed results, with some banks showing a positive relationship between growth and dividend policy while others exhibited a negative correlation. Lastly, in a study by Wangari and Mwema (2023) in Kenya's agricultural sector, with a sample size of 120 firms, the authors employed a qualitative research design and found that firms experiencing rapid growth tended to adopt a more conservative dividend policy, preferring to reinvest earnings to fuel further expansion.

Generally, the studies outlined present valuable insights into the relationships between firm size, leverage, growth, and dividend policy across various industries and countries. However, a general critique of these studies reveals several limitations. Firstly, the methodologies employed vary widely, including cross-sectional, longitudinal, mixed-methods, and qualitative approaches, which may introduce inconsistencies and make direct comparisons challenging. Additionally, sample sizes differ significantly, potentially affecting the robustness and generalizability of the findings. Furthermore, the studies often focus on specific industries or countries, limiting their applicability to broader contexts.

Theoretical Framework

The Trade-Off Theory

This study is premised on the postulations of the trade-off theory, developed by Miller and Modigliani in 1958. The theorists suggest that firms seek an optimal capital structure where the benefits and costs of debt are balanced to maximize value. In the context of manufacturing firms, the theory highlights the interplay between firm size, financial leverage, growth, and dividend policy. Larger firms may have easier access to capital markets but may adopt a more conservative approach to leverage to mitigate financial risks. Higher financial leverage can lead to lower dividend payouts as firms prioritize debt obligations, though it may also facilitate growth through debt-funded investments. Growth-oriented firms may retain earnings for reinvestment rather than distributing dividends, with leverage decisions influenced by growth prospects.

METHODOLOGY

This study utilizes ex post facto research design to investigate the effect of dividend policy determinants on dividend policy of selected listed industrial goods firms in Nigeria from 2014 to 2023 (10-year period). Six (6) firms (Berger Paints Plc., Beta Glass Plc., Cutix Plc., Lafarge,

Dangote Cement Plc., Portland Paints) were purposively selected for the study, out of twelve (12) listed industrial goods firms in Nigeria. The firms were selected because they are the only firms that have up to date financial statements that are within the scope of this study. Secondary data were extracted from the annual financial reports of the studied firms and the Nigeria Exchange Group (NGX), to form the dataset of the adopted variables of the study. The balanced panel data structure enables both cross-sectional and time-series analysis. Data integrity is ensured through thorough checks and correction of errors. Ordinary Least Square (OLS) regression was employed to estimate the following specified model:

$$DIV_{it} = \beta_0 + \beta_1 FSZ_{it} + \beta_2 FLEV_{it} + \beta_3 GRT_{it} + \mu$$

Where: DIV = Dividend Payout ratio

t = Time 1, 2, 3 ---------- 10 years (2014-2023)

i = Firm 1, 2, 3 ---------- 6 firms

μ = Error term

$\beta_{0,}$ = Intercept

FSZ_{it} = Firm size by firm $_i$ at period $_t$

$FLEV_{it}$ = Financial leverage by firm $_i$ at period $_t$

GRT_{it} = Sales growth by firm $_i$ at period $_t$

$\beta_{1,} \beta_2$, & β_3 = Coefficient of independent variables

One major setback of OLS is that it rarely takes into consideration the characteristics of heterogeneity and uniqueness of data sets. For this reason, the Hausman test has been conducted to determine the use of either the fixed effect or the random effect model. In this manner, dividend policy is the dependent variable in the model while, the independent variables, which the study assumed to have projected influence on dividend policy included in this study, are firm size, leverage, and growth. In other words, dividend policy is regressed on leverage, firm size and growth. We hypothesized, based on the prior illustrated arguments, that all the independent variables (firm size, leverage, and growth) might have negative effect on dividend policy of these firms.

In contrast to previously reviewed studies, utilizing a fixed effect regression model offers several advantages. By accounting for unobserved heterogeneity at the firm level, such as managerial preferences or industry-specific factors, this approach enhances the internal validity of the analysis. Moreover, employing panel data allows for both cross-sectional and time-series analysis, offering a comprehensive understanding of the dynamics influencing dividend policy over time. At the end of the analysis, the fixed effect regression model was employed to test

the study's hypotheses. Therefore, the fixed effect regression model stands out as superior in providing a more rigorous and comprehensive analysis of the determinants of dividend policy compared to the disparate methodologies utilized in the reviewed studies.

See table 3.1 for the measurement of variables.

Table 3.1: Variables Measurement

S/N	Variables	Type	Proxy	Measurement	Sources
1	Dividend Policy	Dependent			
		DIV	Dividend Payout Ratio	Total Dividends / Net Income	Copeland et al. (2004)
2	Dividend Policy Determinants	Independent			
		FSZ	Firm Size	The natural logarithm of a firm's total assets	Odundo & Orwaru, (2018)
		LEV	Financial Leverage	Debt to equity ratio = Total Debt /Total to Equity ratio	Kenn-Ndubuisi & Nweke (2019)
		GRT	Growth	Liquid asset/ Total Asset	Abubakar et al. (2018)

Source: Researcher's Compilation (2024)

RESULTS AND DISCUSSIONS

Descriptive Statistics

Table 4.1: Descriptive Statistics for DIV, FSZ, LEV, and GRT

	DIV	FSZ	FLEV	GRT
Mean	.3418	22.642	.4347	.4669
Median	.3330	22.209	.3861	.0909
Maximum	.9703	25.291	.9487	8.395
Minimum	0	14.64	.0412	.9960
Std. Dev.	.2973	1.7913	.1856	1.841
N	60	60	60	60

Source: Researcher's Computation (2024)

The descriptive statistics presented in table 4.1 above offer valuable insights into the characteristics of dividend payout ratio (DIV), firm size (FSZ), and growth (GRT) within the dataset with 60 observations. Beginning with DIV, the mean dividend payout ratio is approximately 0.3418, indicating that, on average, companies distribute about 34.18% of their earnings as dividends. However, the median dividend payout ratio is slightly lower at 0.3330, suggesting some skewness towards higher dividend payout ratios. The maximum observed ratio is notably high at 0.9703, implying that some companies distribute nearly all of their earnings as dividends, possibly indicating a conservative financial strategy. Conversely, the

minimum ratio is 0, indicating companies that do not distribute dividends at all, perhaps prioritizing reinvestment for growth. The standard deviation of 0.2973 suggests moderate variability in dividend payout ratios among companies in the dataset.

Moving to FSZ, the mean firm size is 22.642, indicating that, on average, firms in the dataset have a size of approximately 22.642 units. However, the median firm size is slightly lower at 22.209, suggesting a slight skew towards smaller firms. The presence of a maximum firm size of 25.291 indicates relatively large firms in the dataset, while the minimum of 14.64 suggests representation of smaller firms as well. With a standard deviation of 1.7913, there is moderate variability in firm sizes within the dataset.

For leverage (FLEV), the mean of 0.4347 and median of 0.3861 indicate that the firms, on average, maintain a leverage ratio of around 43.47%, with a relatively symmetric distribution. The maximum leverage of 0.9487 highlights firms with high debt levels, while the minimum of 0.0412 underscores those with minimal debt. The standard deviation of 0.1856 shows variability in leverage values, indicating dispersion from the mean.

Considering GRT, the mean growth rate is 0.4669, indicating that, on average, companies are experiencing growth. However, the median growth rate is considerably lower at 0.0909, suggesting a skew towards lower growth rates. The presence of a maximum growth rate of 8.395 indicates some companies are experiencing very high growth rates, while the minimum of 0.9960 suggests stability or no growth in some cases. The relatively high standard deviation of 1.841 indicates a notable variability in growth rates within the dataset.

Table 4.2: Correlation Matrix

	DIV	FSZ	LEV	GRT
DIV	1.000			
FSZ	-0.2069	1.0000		
LEV	0.1298	-0.0750	1.000	
GRT	-0.0903	0.2847	-0.0289	1.000

Source: Researchers' Computation (2024)

From table 4.2, the correlation coefficients between dividend payments (DIV) and firm size (FSZ), leverage (LEV), and growth rates (GRT) are -0.2069, 0.1298, and -0.0903, respectively, indicating weak associations. These suggest a slight tendency for larger firms to pay lower dividends, firms with higher leverage to pay higher dividends, and firms with higher growth rates to pay lower dividends, although the correlations are not strong. Additionally, there is a very weak negative correlation (-0.0750) between firm size and leverage, a weak positive correlation (0.2847) between firm size and growth rates, and a very weak negative correlation (-0.0289) between leverage and growth rates. Overall, the correlations in the matrix are weak, emphasizing that these variables are not strongly correlated. It is crucial to recognize that correlation does not imply causation, and other factors may influence the relationships between these variables.

Table 4.3: Multicollinearity Test

	VIF	1/VIF
FSZ	1.07	0.8779
LEV	1.09	0.5931
GRT	1.06	0.8792

Source: Researchers' Computation (2024)

The data in table 4.3 presents the multicollinearity test for the data. The Variance Inflation Factor (VIF) values provide insights into the multicollinearity within the model. With VIFs of 1.07 for firm size, 1.09 for leverage, and 1.06 for growth, all below the acceptable threshold of 5, there is no significant multicollinearity observed among firm size, leverage, and growth. This suggests that these independent variables do not excessively inflate the variance of the coefficient estimates due to collinearity. Consequently, each variable contributes unique information to the model without duplicating what others offer. This finding bolsters the reliability of the coefficient estimates for firm size, leverage, and growth, indicating a robust model for analysis.

Table 4.4: **Model Summary**

Model	R-Square	Adjusted R-Square	Std. Error of Estimate
1	.8401	.4354	.34333

Source: Researchers' Computation (2024)

- Dependent Variable: DIV
- Predictors (Constant): FSZ, LEV, GRT

The statistics provided in table 4.4 above offer valuable insights into the performance of the regression model. The R-Square value of 0.8401 indicates that approximately 84.01% of the variance in the dependent variable can be accounted for by the independent variable(s), signalling a robust relationship between them. However, the adjusted R-Square of 0.4354, lower than the R-Square, suggests that when considering the number of predictors in the model, approximately 43.54% of the variance in the dependent variable is explained. This adjustment acknowledges the potential inclusion of unnecessary predictors, which might inflate the apparent explanatory power. Moreover, the standard error of estimate, at 0.34333, reflects the average deviation of observed values from the regression line. A lower standard error implies greater predictive accuracy, indicating that, on average, predicted values are approximately 0.34333 units away from actual values. In summary, while the R-Square highlights a strong relationship between variables, the adjusted R-Square and standard error of estimate provide nuanced perspectives on the model's performance, particularly in the context of predictor inclusion and prediction accuracy.

Table 4.5: Hausman Test

Variable	(b) fixedh	(B) randomh	(b-B) t-Differences	Prob.
DIV	.3517	.0430	-.0079	0.000
FSZ	.0480	.0457	.00220	0.000
FLEV	-.4991	.0431	-.0930	0.000
GRT	-.0029	-.001	-.0012	0.204

Source: Researchers' Computation (2024)

Table 4.5 presents the Hausman test to determine the right model. The Hausman test is a statistical test used to determine whether the coefficients estimated by the fixed effects model are significantly different from those estimated by the random effects model. The null hypothesis for the Hausman test is that the preferred model is the random effects model, while the alternative hypothesis is that the fixed effects model is preferred. Interpreting the results of the Hausman test; the coefficient difference between the fixed effects (b) and random effects (B) models is -0.0079, with a t-value of 0.000. This suggests that the coefficients estimated by the fixed effects model significantly differ from those estimated by the random effects model for dividends. The coefficient difference between the fixed effects (b) and random effects (B) models is 0.00220, with a t-value of 0.000. This indicates a significant difference in the coefficients estimated by the fixed and random effects models for firm size. The coefficient difference between the fixed effects (b) and random effects (B) models is -0.0930, with a t-value of 0.000. This implies a significant difference in the coefficients estimated by the fixed and random effects models for leverage. The coefficient difference between the fixed effects (b) and random effects (B) models is -0.0012, with a t-value of 0.204. In this case, the p-value is greater than the typical significance level of 0.05, indicating that the difference in coefficients for growth between the fixed and random effects models is not statistically significant.

Overall, based on the Hausman test results, we would likely prefer the fixed effects model for DIV, FSZ, and FLEV, as the coefficients estimated by this model significantly differ from those estimated by the random effects model. However, for GRT, there is no significant difference between the coefficients estimated by the two models, suggesting that either the fixed effects or random effects model could be appropriate.

Table 4.6: Fixed-Effect Regression Analysis

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	-.0013	.0070	0.-19	0.853
FSZ	.0480	.0030	15.77	0.000
FLEV	-.0499	.0609	-0.82	0.417
GRT	-.0029	.0059	-0.49	0.629

Source: Researcher's Computation (2024)

The fixed-effect regression output is presented in table 4.6 above. The fixed effect regression results revealed insights into the relationship between the dependent variable (dividend payout ratio) and the independent variables (firm size, leverage and growth) while controlling for individual-specific effects. The coefficient for the constant term (C) was found to be -0.0013 (SE = 0.0070, t = -0.19, p = 0.853), suggesting that the constant term was not statistically significant, indicating that the intercept may not significantly differ from zero. Additionally,

the coefficient for firm size (FSZ) was 0.0480 (SE = 0.0030, t = 15.77, p = 0.000), indicating a highly statistically significant positive relationship between firm size and dividend payout ratio. The finding is in line with that of Wang (2023), Jones (2022), and Smith (2023), but different from that of Wang and Li (2021) and Brown et al. (2020).

However, the coefficient for leverage (FLEV) was -0.0499 (SE = 0.0609, t = -0.82, p = 0.417), revealing no statistically significant relationship between leverage and dividend payout ratio of the firms. The result is consistent with that of Wang and Li (2021) and that of Brown et al. (2020), but inconsistent with Lee and Wong (2023), Patel and Shah (2022), and Smith (2019). Similarly, the coefficient for growth (GRT) was -0.0029 (SE = 0.0059, t = -0.49, p = 0.629), indicating no significant relationship between growth and dividend payout ratio of the studied firms. The finding is similar to that of Nguyen and Tran (2021), but not similar to that of Wangari and Mwema (2023), Mensah and Asante (2023), and Smith et al. (2022).

The findings of this study regarding the extent to which firm size, leverage, and growth determine the dividend policy of listed industrial goods firms in Nigeria carry significant implications for both theory and practice.

Firstly, the highly statistically significant positive relationship between firm size and dividend payout ratio suggests that larger firms in the industrial goods sector of Nigeria may tend to adopt more generous dividend policies. This aligns with the expectations of the trade-off theory, indicating that larger firms may have easier access to capital markets and could use dividends to signal stability and attract investors. Consequently, investors seeking stable returns might find larger industrial firms in Nigeria more appealing due to their consistent dividend payouts.

Secondly, the non-significant relationship between leverage and dividend payout ratio challenges the predictions of the trade-off theory, which posits that higher leverage might lead to lower dividend payouts as firms prioritize debt obligations. This finding implies that, contrary to the theory, the financial leverage of industrial goods firms in Nigeria does not significantly influence their dividend policy decisions. Investors and financial analysts should consider this when evaluating the dividend policies of these firms, as leverage levels may not directly indicate their dividend-paying behaviour.

Thirdly, the lack of a significant relationship between growth and dividend payout ratio suggests that growth prospects may not significantly influence dividend policy decisions of listed industrial goods firms in Nigeria. This finding deviates from the trade-off theory's expectation that growth-oriented firms may retain earnings for reinvestment rather than distributing dividends. Therefore, investors interested in dividend income may not need to prioritize growth prospects when assessing dividend-paying industrial goods firms in Nigeria. Instead, they may focus on other factors such as firm size and financial stability.

This study presents a structured investigation into the determinants of dividend policy among listed industrial goods firms in Nigeria, but several limitations warrant consideration. Firstly, the study's small sample size, comprising only six purposively selected firms out of twelve, may compromise the generalizability of findings to the broader population. Moreover, reliance on the availability of up-to-date financial statements introduces potential data selection bias, which could skew results if the selected firms differ systematically from others. While efforts

are made to ensure data integrity, variations in the reliability of secondary data sources like annual reports and the Nigeria Exchange Group may impact the robustness of the analysis.

Additionally, measurement issues surrounding variables such as firm size, financial leverage, and growth pose challenges, as the choice of proxies and calculations may influence results and interpretation. Assumptions of homogeneity within the fixed effect regression model may not fully account for changing dynamics within firms over time, potentially compromising the validity of conclusions drawn. Furthermore, the specified OLS regression model assumes linear relationships between variables, overlooking possible non-linear or alternative functional forms, which could introduce misspecification bias. Despite utilizing the Hausman test to select between fixed and random effects models, limitations persist, particularly regarding the assumption of no correlation between individual effects and independent variables.

Ultimately, while the study offers insights into dividend policy determinants among industrial goods firms in Nigeria over a ten-year period, its findings may lack broader applicability. The focus on a specific industry and region restricts generalizability, cautioning against overreliance on these results outside the study context.

Conclusion and Recommendations

Based on the findings of the fixed effect regression model, it can be concluded that firm size emerges as a crucial predictor of the dependent variable in this study. These results underscore the importance of considering firm size when analysing the factors influencing the dependent variable. Based on the findings of the study on determinants of dividend policy of listed industrial goods firms in Nigeria, the following recommendations can be made for each variable:

1. Given the significant positive influence of firm size on dividend policy, larger industrial goods firms in Nigeria should continue to leverage their size advantage to maintain or potentially increase dividend payments. This may enhance investor confidence and attract more investment to these firms.
2. Despite the lack of statistically significant relationship observed between leverage and dividend policy, firms should carefully manage their leverage levels to avoid potential adverse effects on dividend payments. Excessive debt can strain financial resources, limiting the ability to pay dividends.
3. While growth did not exhibit a statistically insignificant relationship with dividend policy in this study, firms should carefully evaluate the trade-offs between reinvesting earnings for growth opportunities and distributing dividends to shareholders.

Future research in this area could focus on addressing the limitations identified in this study to further enhance our understanding of dividend policy determinants among industrial goods firms in Nigeria. Firstly, expanding the sample size beyond the six purposively selected firms to include a more representative sample of listed industrial goods firms would improve the generalizability of findings to the broader population. Additionally, employing random sampling techniques to select firms could mitigate potential data selection bias and enhance the external validity of the study.

Efforts to ensure data integrity should continue, with future research exploring alternative sources or methodologies to verify the reliability of secondary data from annual reports and the

Nigeria Exchange Group. Moreover, addressing measurement issues by refining the proxies and calculations used for variables such as firm size, financial leverage, and growth would enhance the accuracy and robustness of the analysis.

Future studies could also explore alternative modelling approaches that go beyond the assumptions of the specified OLS regression model. Considering non-linear or alternative functional forms of relationships between variables could provide more nuanced insights into dividend policy determinants. Additionally, employing advanced econometric techniques that account for potential endogeneity or omitted variable bias would strengthen the validity of conclusions drawn from the analysis.

Furthermore, future research could extend beyond the industrial goods sector and Nigeria's specific context to investigate dividend policy determinants across different industries and regions. By broadening the scope of the study, researchers can gain a more comprehensive understanding of the factors influencing dividend policies in diverse settings, thereby enhancing the generalizability and applicability of findings.

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