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Article

Moderating Effect of Profitability on the Relationship Between Capital Structure and Dividend Policy

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Abstract: This study examines how profitability moderates capital structure and dividend policy in selected Sub-Saharan African manufacturing enterprises. The study analyses 2012–2022 data from 131 listed firms in six countries using a quantitative and ex post facto research design. Debt-to-equity, asset structure, debt-to-asset, and return on assets are variable of interest. The debt-to-equity ratio negatively affects dividend policy, but asset structure positively affects it, according to pooled OLS and moderated regression models. Profitability considerably moderates the association between debt-to-equity and dividend policy, while debt-to-asset ratio has a positive but negligible influence. The findings emphasize the role of profitability in financial decision-making and suggest that firms should balance their capital structure and profitability to optimize dividend policies. The study fills gaps in emerging economy literature and offers managers and policymakers practical advice to improve financial performance and shareholder value in Sub-Saharan African-listed manufacturing enterprises.

Keywords: capital structure; dividend policy; profitability; moderating effect; sub-saharan africa; manufacturing firms

Introduction

Managers of firms often than not are confronted with three key financial decisions in the discharge of the responsibility to ensure the financial health of the company. These decisions include investment decisions, financing decisions, and dividend decisions. Investment decisions involve determining how to allocate funds to different projects or assets to maximize returns. Financing decisions involve determining how to raise capital to fund these investments, whether through debt or equity. Dividend decisions involve determining how much of the company's profits should be distributed to shareholders as dividends. Each decision plays a crucial role in shaping the financial strategy of the company and ultimately impacting its overall success.

Capital Structure, an integral part of financing decision, plays a crucial role in this financial triangle as it determines the mix of debt and equity a company uses to finance its operations. The right balance between debt and equity can affect the company's risk profile, cost of capital, and overall financial health. By carefully considering each aspect of financial decision-making, companies can create a solid financial strategy that supports their long-term growth and success in the market. Ultimately, the financial decisions made by a company can have a significant impact on its ability to thrive and adapt in a competitive business environment (Mihajlović et al., 2020; Riaz, 2023; Zakić et al., 2020).

Even though Modigliani & Miller (1958) had argued that a company's capital structure does not affect its overall value, many scholars believe that finding the right mix of debt and equity is crucial for a company's financial stability and growth. Companies must consider factors such as interest

rates, market conditions, and their own risk tolerance when making decisions about how to fund their operations. By carefully analyzing these factors and making strategic financial decisions, companies can position themselves for long-term success and sustainability in a constantly evolving business environment. Ultimately, a well-thought-out capital structure can be a key factor in a company's ability to remain competitive and profitable in the long run (Musyoka et al., 2022a; Rahmawati, 2020).

Profitability on its part is a desired bottom-line of a good investment decision and it became an a given that the more profitable a firm becomes the more the chances of the company attracting investors and securing funding for future growth and expansion. It is essential for companies to strike a balance between debt and equity financing, taking into consideration not only their current financial situation but also their future growth potential. By continuously evaluating and adjusting their capital structure, companies can adapt to market conditions and ensure their long-term viability in a competitive business environment. In conclusion, a well-managed capital structure is crucial for a company's overall success and ability to achieve sustained growth and profitability (Abrari et al., 2022; Putri et al., 2020; Supeno et al., 2022; Suriani et al., 2024).

To an investor, whose benefits are either capital gain, dividend payment, or both, a firm with a well-managed capital structure signals stability and potential for future growth (Musyoka et al., 2022b; Putri et al., 2020; Shahid et al., 2020). By maintaining a healthy balance between debt and equity, companies can attract investors looking for sustainable returns on their investments. This ultimately benefits both the company and its investors, creating a win-win situation for all parties involved. In essence, a well-managed capital structure is not only important for the company's success but also for the success of its investors.

Dividend policy could be seen as the residual of a firm's financing decisions and profitability. Companies that have a robust capital structure are more likely to have the ability to pay out dividends consistently, providing a steady income stream for investors. Additionally, a well-managed capital structure can help a company navigate through economic downturns and market fluctuations, further benefiting its stakeholders. Ultimately, dividend policies reflect the overall financial health and management of a company, making them an important consideration for investors seeking long-term value (Bunyamin et al., 2023; Mauris & Rizal, 2021; Sholikhah, 2023).

The relationship among capital structure, profitability, and dividend policy becomes intriguing when the interaction effect of profitability is considered. A company with a strong capital structure and consistent profitability is likely to have a more sustainable dividend policy, attracting investors looking for stability and growth. By carefully balancing these factors, companies can create a strong foundation for long-term success and shareholder value.

This study acknowledges that many studies have been done on this subject, most especially in developed economies. But when it comes to the interaction effect and the context of emerging economies, there is still much to be examined and understood. The unique challenges and opportunities present in emerging economies may require a different approach when considering the impact of capital structure and profitability on dividend policy. By exploring this topic, scholars can uncover valuable insights that may help companies in emerging economies manage their dividend policy decisions more effectively. Ultimately, understanding the interaction effect of profitability in these contexts can lead to more informed and strategic decision-making for companies seeking long-term success in dynamic markets.

Thus, this study examines capital structure, profitability, and dividend policy in six African countries to fill these gaps.

This study aims to:

I. study how the debt-to-equity ratio affects dividend policy in Sub-Saharan African-listed manufacturing enterprises.

II. examine how asset structure, a proxy for capital structure, affects dividend policy in Sub-Saharan African-listed manufacturing firms.

III. examine how the debt-to-asset ratio affects sub-Saharan African-listed manufacturing enterprises' dividend practices.

IV. examine how profitability moderates capital structure and dividend policy in Sub-Saharan African-listed manufacturing enterprises.

Literature Review

2.1. Conceptual Framework

Corporate finance relies on capital structure, the mix of debt and equity used to support operations and expansion. This financial strategy has been defined differently by different experts, deepening our comprehension. Panjaitan & Simbolon (2020a) define capital structure as a firm's debt-equity mix for asset financing. This simple concept emphasises debt and equity as capital structure components. According to Mubeen et al. (2022), capital structure is the ratio of total debt to total assets, emphasising leverage and quantifying a firm's reliance on borrowed funds. Giovanni et al. (2020) define capital structure as corporate debt and equity finance. This term emphasises firms' financing mix strategies to balance risk and reward. Pérez (2021) adds that corporate capital structure decisions generally correlate with financial theories like pecking order and trade-off theory, suggesting a strategic approach to debt and equity proportions.

The ability of a corporation to make earnings relative to its spending and other costs is called profitability in corporate finance. It's a fundamental financial indicator that shows a company's resource efficiency and profitability. Several researchers have defined and analysed profitability. Panjaitan & Simbolon (2020b) define profitability as a company's ability to create earnings above its expenses, displaying resource efficiency. Mubeen et al. (2022) note that profitability measures a company's earnings compared to its revenue, assets, or equity. Profitability is crucial to analysing a company's financial health and sustainability. Profitability, a significant financial indicator, is defined by Lindawati (2022) as the ability to generate earnings or profits relative to spending and other costs. Profitability is traditionally used to measure a company's operational efficiency and financial performance. Gao et al. (2023) also consider profitability gaps as motivators for enterprises to increase R&D, highlighting the importance of profitability in strategic decision-making.

Dividend policy is a company's strategic decision to distribute earnings to shareholders. Decide whether to distribute profits as dividends or retain them for growth and investment. It shapes a company's financial structure, affecting shareholder value, investor confidence, and performance. Companies can create a dividend policy that meets their long-term financial goals and maximizes shareholder wealth by considering profitability, cash flow, growth prospects, and shareholder preferences. Dividend policy specifies dividend payment frequency and shareholder profit distribution. It can involve cash dividends, stock dividends, bonus issues, common stock repurchases, or rights issues. Financial stability and growth need balancing dividends and investments (Bashir et al., 2022; Budianto & Bertuah, 2020; Hardianto, 2021; Rahman et al., 2022; Tamrin et al., 2017).

A good dividend policy also includes financial performance, firm size, growth potential, liquidity, leverage, and corporate governance procedures including institutional and managerial ownership. Based on financial status and growth potential, companies may pay dividends regularly, infrequently, or not at all. This approach encourages investors, boosts shareholder confidence, and indicates financial stability. Dividend policy also impacts shareholder interests and investor views of the company's financial health. When setting dividend policies, companies must examine profitability, cash flow, capital needs, and shareholder expectations (Akpada et al., 2024; Barros et al., 2020; Li, 2024; Santoso et al., 2020).

In research, "moderation" occurs when a third variable—the moderator—changes the association between two variables. This moderator variable, which can alter the relationship between the independent and dependent variables, complicates the analysis. A third variable modifies the relationship between two others (Baron & Kenny, 1986; Nurchaqqi & Suryarini, 2018a; Onyebuchi, 2023; Syamsudin et al., 2021).

Return on Assets (ROA), a proxy for profitability, moderates capital structure and dividend policy in this study. ROA moderates the relationship between capital structure variables like DER,

AS, and DR and the firm's dividend policy by explaining how asset utilisation efficiency affects the strength and direction of the relationship. ROA complicates the study and illuminates how capital structure variables affect dividend policy. Firms with greater ROA may have a stronger positive association between capital structure and dividend distributions than those with lower ROA.

A control variable in research and experimentation is held constant or changed to isolate the independent variable's effects on the dependent variable. Control variables make sure that altering the independent variable is what causes changes in the dependent variable (Newey & Stouli, 2021; Stouli & Newey, 2018). Research requires control variables to reduce extraneous effects and assure internal validity. Researchers can better examine the independent-dependent connection and make meaningful results by controlling for particular variables. This makes it easier to credit study results to the independent variable (Céspedes et al., 2021; Wang et al., 2021; Weber, 2022).

Control variables in this study are firm size and institutional ownership. These variables are included to account for and maintain their effects on dividend policy. Larger organizations have more resources and different financial strategies, which might affect dividend policy, hence firm size is limited. Institutions may pressure corporations to pay dividends, which might change dividend policy, therefore institutional ownership is controlled.

2.2. Empirical Review

Global research supports and contradicts the African experience. Renaldo et al. (2023) observed that capital structure and stockholders considerably affect dividend policies, while Nurchaqqi & Suryarini (2018b) found that leverage positively affects dividend policy under direct effect. Sreenu (2018) observed that leveraged enterprises keep more earnings to cover their debt, limiting dividend distribution. This supports agency theory and pecking order theory by showing that increasing leverage disciplines managers by restricting free cash flow and limiting self-serving behaviour.

Malaysian public listed companies' dividend policy decisions were examined by Anuar et al. (2023) utilising data from 83 firms between 2013 and 2017. Their pecking order theory predicted a negative relationship between leverage and dividend policy, but it was inconsequential. C. Arko et al. (2014) found a substantial negative association between leverage and dividend decisions in South Africa and Kenya, and a positive relationship in Ghana.

Nnadi et al. (2013) found that financial leverage negatively and significantly affects dividend policy among African stock exchange-listed enterprises, implying that firms with greater debt ratios pay fewer dividends.

Biwott (2021) identified a strong correlation between leverage and dividend distribution in Nairobi Securities Exchange-listed non-financial enterprises. This contradicts the pecking order idea by suggesting that leveraged corporations pay larger dividends. Capital structure negatively affects dividend payout, according to Irungu (2021). Higher leverage cuts payouts. However, its exclusive emphasis on non-financial enterprises and restricted data up to 2019 limit the study. Profitability boosts dividend payouts, but leverage does not, according to Desoky & Mousa (2019). Ishaku (2020) discovered that debt-to-equity and debt-to-asset ratios significantly lower dividend payment ratios. Total liability negatively and insignificantly affects dividend payout ratio, but debt-to-asset ratio positively and significantly affects it, according to Yahaya (2023). This study supports the pecking order theory and signalling hypothesis, although its tiny sample size limits it. Overall, these studies shed light on sector-specific dividend payouts and policy.

Ahmad et al. (2018) examined dividend policy for European Euronext 100 and Euronext stock exchange non-financial enterprises. Leverage is indirectly connected to greater dividends, suggesting that firms with more leverage may have steady dividend policies that meet investor expectations of financial stability. This confirms the signalling hypothesis and agency theory that leverage limits managerial behaviour and lowers agency costs. However, the study's focus on developed countries may limit its applicability to emerging markets with differing legal and economic conditions.

The debt-to-equity ratio (DER) has conflicting effects on dividend policy. It has a beneficial impact on dividend policy in Indonesia but a negative one in India. A negative association exists

between leverage and dividend decisions in Sub-Saharan Africa. Higher debt reduces dividend likelihood in Europe, supporting agency theory and signalling hypothesis.

H₀₁: There is no significant relationship between the debt-to-equity ratio, a measure of capital structure, and dividend policy in Sub-Saharan African-listed manufacturing firms.

Magribi et al. (2023) examined how asset structure, dividend policy, and sales growth affect Indonesia Stock Exchange (IDX) automobile stock prices. Due to collateral value and financial risk reduction, organisations with a higher proportion of tangible assets have better stock prices, according to the study. Dividend policy has no effect on stock prices, suggesting investors prioritise other considerations.

From 2017 to 2019, manufacturing companies registered on the Indonesia Stock Exchange (IDX) have a favourable association between profitability and asset structure on their capital structure (Novita Ardelia et al., 2021). High fixed asset-to-total asset ratio companies were more efficient and obtained more loans, sustaining dividend payments. Capital structure was negatively affected by ROA, but not significantly. Due to their greater borrowing capability and financial stability, corporations with larger fixed assets pay reliable dividends. Careful capital budgeting, good asset liability management, and complete intangible asset utilisation are Liu and Jia (2023) asset structure optimisation methodologies. Nyamasege et al. (2014) found that fixed assets considerably affect a firm's worth, giving higher market values.

A 2011–2020 case study of PT Aneka Tambang Tbk by Akbar and Nurita (2023) examined how current ratio and asset structure affected debt to equity ratio (DER). The current ratio and asset structure did not affect the DER, contrary to prior studies that indicated a correlation between asset structure and capital structure. Long-term asset fluctuations demonstrate the necessity for persistent and smart asset management to support steady financial outcomes.

Empirical evidence from multiple studies underscores the significant role of asset structure in shaping a firm's capital structure and its subsequent impact on dividend policy. Firms with a higher ratio of fixed assets tend to have better access to debt financing and can maintain stable dividend payouts. This relationship highlights the importance of strategic asset management in achieving financial stability and enhancing firm value. Asset structure is a justifiable and essential variable for measuring capital structure, as it provides insights into a firm's ability to leverage its assets to secure financing and support sustainable dividend policies.

H₀₂: Asset structure, as a proxy for capital structure, does not significantly affect dividend policy in Sub-Saharan African-listed manufacturing firms.

The Debt-to-Assets Ratio (DAR) and Dividend Policy are generally negative across various studies. Akhmadi et al. (2020) and Benyadi et al. (2022) found that higher DAR leads to lower dividend payouts in Indonesian manufacturing firms, aligning with the pecking order theory. Mauris & Rizal (2021) and Imronudin et al. (2020) reinforced this negative relationship in non-financial and property sectors. Pattiruhu and Paais (2020) explored the impact of DAR on dividend policy within the real estate and property sectors and found that DAR positively affects the DPO.

The relationship between the Debt-to-Asset Ratio (DAR) and dividend policy is generally negative across various studies, indicating the complexity and variability of DAR's impact on dividend policy across regions and sectors.

H₀₃: The debt-to-asset ratio, a measure of capital structure, does not significantly affect dividend policy in Sub-Saharan African-listed manufacturing firms.

Profitability is an important factor that affects the results and dynamics of numerous financial interactions. Multiple studies have emphasised its function in regulating various financial transactions, underscoring its significance in the field of corporate finance.

The research conducted by Ijaz (2024) investigates the correlation between corporate governance, intellectual capital, and profitability by employing agency theory and the resource-based view theory. The research highlights that the level of profitability influences the relationship between corporate governance and intellectual capital efficiency. This discovery highlights the importance of

profitability in guaranteeing the long-term viability and steadiness of firms by improving the efficiency of corporate governance and intellectual capital management.

The study conducted by Nowicki (2024) demonstrates that profitability has a substantial impact on the correlation between the employment coefficient and financial liquidity, as well as between the inflation rate and liquidity. The study demonstrates that these linkages exhibit a positive correlation in organisations with high profitability, while displaying a negative correlation in firms with poor profitability. This underscores the crucial influence of profitability in defining these financial dynamics.

According to Paramita (2023), profitability has the power to reduce the impact of effective corporate governance on the value of a company. This suggests that the financial performance of a company has a substantial impact on the connection between governance practices and the value of the company. It emphasises the importance for companies to maintain high profitability in order to maximise the beneficial impacts of good governance.

Profitability has a crucial role in influencing outcomes and interactions in many financial connections, acting as a substantial moderating factor across different contexts. Its function is vital in guaranteeing the efficiency of corporate governance, the stability of financial liquidity, and the improvement of business value, among other financial factors. Gaining an understanding of how profitability affects financial decision-making and strategy creation in corporate finance can offer significant insights.

H₀₄: Profitability does not significantly moderate the relationship between capital structure and dividend policy in Sub-Saharan African-listed manufacturing firms.

2.3. Theoretical framework

This analysis is based on Modigliani and Miller's 1958 capital structure and dividend irrelevance theory. They believed that in a frictionless market, a firm's value is unaffected by its capital structure or financing decisions. They also claimed that a firm's dividend policy is unimportant to its valuation because investors can produce dividends by selling shares. In 1963, they included taxes to their theory, making capital structure considerations relevant. They struggle to apply their theories due to information asymmetry, transaction costs, and agency issues. This study uses profitability as a moderating variable to explore how capital structure decisions affect dividend policy in sub-Saharan African manufacturing enterprises.

The dividend signalling concept implies that corporations use dividend payments to reveal secret information to investors, which can greatly alter their value. Managers and shareholders can learn about the firm's future performance and management's expectations from this signalling mechanism. In Sub-Saharan Africa, a growing market with distinct difficulties and characteristics, the dividend signalling hypothesis can help explain company financial behaviour.

Lintner (1956)'s Bird in Hand Theory states that investors value dividends over capital gains. According to this hypothesis, investors value dividends more than uncertain gains, like a bird in hand. Dividends transmit good information about a firm's financial health and stability to investors, making them vital to this hypothesis.

Agency theory arises from ownership-management split, causing the agency dilemma. Agency theory advocates injecting debt capital into the capital structure to limit free cash flow and force management to improve operational efficiency, satisfy debt commitments, and avoid bankruptcy. Dividends align managers and shareholders, regulate the relationship between capital structure and business value, and affect agency costs, according to studies.

This study uses agency theory to understand Sub-Saharan African manufacturing enterprises' strategic financial decisions. This research seeks to understand how leverage and dividend policies can promote corporate governance and company value in Sub-Saharan African markets by reducing agency concerns.

This study fills a gap in the literature on capital structure and dividend policy in sub-Saharan African manufacturing enterprises. The literature evaluation shows no current studies on profitability as a moderating component. The study uses Modigliani and Miller's arguments,

Dividend Signalling Hypothesis, Bird in Hand Theory, and Agency Theory as a solid theoretical framework. It emphasises business size, institutional ownership, and profitability as moderators of the capital structure-dividend policy link. The study highlights literature gaps and the need for current research to comprehend changing financial dynamics.

Methodology

Pooled data analysis is used in this quantitative longitudinal and ex post facto investigation. A single dataset of cross-sectional data from many time periods allows for thorough examination of factors across firms and time. The ex post facto aspect observes variables retroactively, while the longitudinal component tracks changes and trends over time. Pooled data approach increases sample size, allows simultaneous analysis of inter-firm and intra-firm differences, provides a flexible modelling framework, and efficiently addresses multicollinearity and endogeneity.

3.1. Sample and Population

This research evaluates 48 Sub-Saharan African (SSA) countries' economic, social, and political features. All SSA exchange-listed manufacturers are interesting. For varied continents and sectors, stratified random sampling will be used. The survey included six countries—two West, two East, and two South. These SSA nations were chosen for market capitalization and manufacturing. A variety of countries and sectors are studied to comprehend continental manufacturing businesses. This sampling strategy gives a more accurate population image and aids data analysis. The selected countries will illuminate SSA manufacturing companies' difficulties and possibilities, expanding the field's expertise. Ghana, Nigeria, Kenya, Mauritius, South Africa, Zimbabwe.

3.2. Data Acquisition

Secondary sources were used to obtain financial performance and policy data for manufacturing enterprises in Nigeria, Ghana, Kenya, Mauritius, South Africa, and Zimbabwe from 2012 to 2022. Data was collected from public databases and financial records from the Nigerian Exchange Group (NGX), Ghana Stock Exchange (GSE), Nairobi Securities Exchange (NSE), Stock Exchange of Mauritius (SEM), Johannesburg Stock Exchange (JSE), and Zimbabwe Stock Exchange. Financial data came from Bloomberg, Reuters, and African Financials.

3.3. Analytical Methods

The study employed pooled Ordinary Least Squares (OLS) regression and moderated regression analysis as the primary techniques for data analysis.

3.5.1. Multiple Regression models

Multiple regression models will be used to test hypotheses. This examines the direct effect of the capital structure proxies on dividend policy, which is proxied by DPS.

Model 1: Independent Variables with Country Effects

$$\text{lgDPS}_i = \beta_0 + \beta_1\text{lgDAR}_i + \beta_2\text{lgDER}_i + \beta_3\text{AS}_i + \sum_{j=1}^{J-1} \gamma_j\text{Country}_j + \epsilon_i \dots\dots\dots(1)$$

Model 1 examines the impact of various capital structure proxies and country-specific effects on the log-transformed Dividend Per Share (lgDPS_usd) for Sub-Saharan African-listed manufacturing firms. The dependent variable, lgDPS_usd, represents the primary outcome of interest, which is the log-transformed Dividend Per Share for each firm i.

The independent variables in this model include the log-transformed Debt-to-Asset Ratio (lgDAR), the log-transformed Debt-to-Equity Ratio (lgDER), and the Asset Structure (AS).

Country effects are incorporated into the model through a series of dummy variables representing each country, with Nigeria typically serving as the reference category. The term + $\sum_{j=1}^{J-1} \gamma_j\text{Country}_j$ captures the sum of these dummy variables, where **Country**_j is a binary indicator variable that equals 1 if the firm is located in country j and 0 otherwise. The coefficients γ_j measure

the average difference in the dependent variable (lgDPS_usd) for firms in each country relative to the reference country.

The intercept term, β_0 , represents the expected value of lgDPS_usd when all independent variables are zero and for the reference country. The coefficients β_1 , β_2 , and β_3 correspond to the independent variables lgDAR, lgDER, and AS, respectively. These coefficients indicate the expected change in lgDPS_usd for a one-unit change in each independent variable, holding all other variables constant.

The error term, ϵ_i , captures the variation in the dependent variable that is not explained by the independent variables and country effects. It accounts for unobserved factors and random noise that might influence the dividend policies of the firms.

Model 2: Independent Variables, Control Variables with Country Effects

Model 2 extends the analysis from Model 1 by incorporating two additional control variables: log-transformed Firm Size (lgfsize_usd) and Institutional Ownership (Instown).

Model 2: Independent Variables with Country Effects

$$\text{lgDPS}_i = \beta_0 + \beta_1 \text{lgDAR}_i + \beta_2 \text{lgDER}_i + \beta_3 \text{AS}_i + \beta_4 \text{lgfsize_usd}_i + \beta_5 \text{Instown}_i + \sum_{j=1}^{J-1} \gamma_j \text{Country}_j + \epsilon_i \quad (2)$$

Log-transformed Firm Size (lgfsize_usd): This control variable measures the size of the firm, using a logarithmic transformation of its total assets. Larger firms often have more resources, different investment opportunities, and potentially different dividend policies compared to smaller firms. Including lgfsize_usd controls for these size-related differences, providing a clearer understanding of how firm size impacts dividend policies. The coefficient β_4 indicates the expected change in lgDPS_usd for a one-unit change in lgfsize_usd, holding other variables constant.

Institutional Ownership (Instown): This control variable captures the percentage of a firm's shares owned by institutional investors. Institutional investors can significantly influence corporate governance and financial decisions, including dividend policies. By including Instown in the model, we control for the impact of institutional ownership on dividend policies. The coefficient β_5 indicates the expected change in lgDPS_usd for a one-unit change in Instown, holding other variables constant.

By adding these control variables, Model 2 aims to isolate the effects of the primary independent variables (lgDAR, lgDER, and AS) while accounting for the potential influence of firm size and institutional ownership. The inclusion of these control variables helps to provide a more accurate and robust estimation of the determinants of dividend policies among Sub-Saharan African-listed manufacturing firms. The country effects, represented by $\sum_{j=1}^{J-1} \gamma_j \text{Country}_j$, remain the same as in Model 1, accounting for country-specific influences on dividend policies.

Model 3: Independent Variables, Control Variables, Moderating Variable with Country Effects

Model 3 builds on Model 2 by incorporating an additional moderating variable: the log-transformed Return on Assets (lgROA).

$$\text{lgDPS}_i = \beta_0 + \beta_1 \text{lgDAR}_i + \beta_2 \text{lgDER}_i + \beta_3 \text{AS}_i + \beta_4 \text{ROA}_i + \beta_5 \text{lgfsize_usd}_i + \beta_6 \text{Instown}_i + \sum_{j=1}^{J-1} \gamma_j \text{Country}_j + \epsilon_i \quad (3)$$

Log-transformed Return on Assets (lgROA): This moderating variable measures the profitability of the firm, using a logarithmic transformation of the Return on Assets. The Return on Assets ratio indicates how efficiently a firm uses its assets to generate profit. By including lgROA, Model 3 examines how profitability influences dividend policies. The coefficient β_4 indicates the expected change in lgDPS_usd for a one-unit change in lgROA, holding other variables constant. Including lgROA helps to understand the role of profitability in shaping the firm's dividend decisions.

The inclusion of lgROA in Model 3 provides additional insights into the relationship between profitability and dividend policies, complementing the analysis of capital structure variables from the previous models. The control variables (lgfsize_usd and Instown) and country effects $\sum_{j=1}^{J-1} \gamma_j \text{Country}_j + \epsilon_i$ remain the same as in Model 2, continuing to account for the impact of firm size, institutional ownership, and country-specific factors on dividend policies.

By incorporating the moderating variable lgROA, Model 3 aims to provide a further understanding of the determinants of dividend policies among Sub-Saharan African-listed

manufacturing firms. This model allows us to assess the combined effects of financial leverage (capital structure), profitability, firm size, institutional ownership, and country-specific factors on dividend policies, leading to a more robust analysis.

Model 4: Independent Variables, Control Variables, Moderating Variable, Moderating effects and Country Effects

Model 4 builds on the previous models by introducing moderating effects into the analysis. This model includes the independent variables, a moderating variable (ROA), control variables, interaction terms (moderating effects), and country-specific effects.

$$\text{lgDPS}_i = \beta_0 + \beta_1\text{lgDAR}_i + \beta_2\text{lgDER}_i + \beta_3\text{AS}_i + \beta_4\text{ROA}_i + \beta_5\text{lgfsize_usd}_i + \beta_6\text{Instown}_i + \beta_7\text{lgDAR_lgROA}_i + \beta_8\text{lgDER_lgROA}_i + \beta_9\text{lgAS_lgROA}_i + \sum_{j=1}^{J-1} \gamma_j\text{Country}_j + \epsilon_i \dots\dots\dots(4)$$

Moderating Variable (lgROA_i): The log-transformed Return on Assets (lgROA) measures the profitability of the firm. It helps to understand how profitability influences dividend policies. The coefficient β₄ indicates the expected change in lgDPS_usd for a one-unit change in lgROA, holding other variables constant.

Interaction Terms (Moderating Effects):

lgDAR_lgROA: The interaction between the Debt-to-Asset Ratio and Return on Assets. This term captures how the effect of lgDAR on lgDPS_usd changes with varying levels of lgROA. The coefficient β₇ indicates the change in the impact of lgDAR on lgDPS_usd for a one-unit change in lgROA.

lgDER_lgROA: The interaction between the Debt-to-Equity Ratio and Return on Assets. This term captures how the effect of lgDER on lgDPS_usd changes with varying levels of lgROA. The coefficient β₈ indicates the change in the impact of lgDER on lgDPS_usd for a one-unit change in lgROA.

AS_lgROA: The interaction between Asset Structure and Return on Assets. This term captures how the effect of AS on lgDPS_usd changes with varying levels of lgROA. The coefficient β₉ indicates the change in the impact of AS on lgDPS_usd for a one-unit change in lgROA.

Model 4 aims to provide a distinct understanding of the determinants of dividend policies among Sub-Saharan African-listed manufacturing firms by examining the combined effects of financial capital structure variables, profitability, firm size, institutional ownership, and country-specific factors. The inclusion of interaction terms allows for the assessment of how profitability moderates the relationship between these variables and dividend policies, providing a more comprehensive analysis.

3.4. Construct Validity Table

Table 1. Construct Validity Table.

Variable Type	Variable Name	Measurement	Source
Dependent	Dividend Policy	DPS is one of the variables are widely used for measurement of dividend policy, (Emeka & Ogochukwu, 2021; Udoka et al., 2022)	Annual Reports of sample firms via various
Independent	Debt to Equity (DER)	$Debt\ to\ Equity = \left(\frac{TotalDebt}{TotalEquity}\right)$ (Nurhikmawaty et al., 2020)	Exchanges and financial

Independent	Asset Structure (AS)	$\text{Asset Structure} = \frac{(\text{Total Noncurrent Assets})}{\text{Total Assets}}$ as defined by (Brealey, 2020)	databases - Bloomberg, Reuters, and African Financials.
Independent	Debt-to-Asset Ratio (DAR)	$\text{Debt to Asset} = \left(\frac{\text{Total Debt}}{\text{Total Asset}}\right)$ as defined by (Arhinful & Radmehr, 2023)	
Moderating	Return on Assts (ROA)	$\text{ROA} = \left(\frac{\text{Net Income}}{\text{Total Assets}}\right)$ as defined and used by (Nurfitria et al., 2023).	
Control	Firm Size (fsize)	Natural Logarithm of Revenue = $\ln(\text{Revenue})$ is as used by (Kehinde Adewale et al., 2019) as a measure of firm size.	
Control	Institutional Ownership (InstOwn)	5% Percentage of total outstanding shares held by institutional owners, (Jara-Bertin et al., 2012; Pucheta-Martínez & Chiva-Ortells, 2020)	
Fixed Effect	Country	Dummy variables for each country (e.g., Nigeria, Kenya, Mauritius, South Africa, Zimbabwe, Ghana, Others) with Nigeria as the omitted baseline category in the model.	Specific to study design

3.5. Diagnostic Procedures

The study focuses on the reliability and robustness of regression analysis in African-listed manufacturing firms. Diagnostic tests were conducted to ensure the accuracy and reliability of the results. The Multicollinearity Test was used to identify independent variable multicollinearity, which could impair the results. Heteroscedasticity was also assessed using the Breusch-Pagan and Koenker

tests. Statistically robust standard errors were used to correct heteroscedasticity, enhancing the robustness of the analysis. The Normality Test for Residuals was used to examine residuals for normality, which is crucial for valid hypothesis testing and confidence intervals. The Jarque-Bera test was used to determine regression normality, and if non-normal, variable modification, robust regression, model re-specification, and outlier detection and treatment were investigated. The study emphasizes the importance of residual normality in regression analysis.

Research Results and Discussions

4.1. Descriptive statistics

Descriptive statistics, Table 2, provide an overview of the central tendency, dispersion, and distribution of the dataset's variables. Key financial variables of Sub-Saharan African-listed manufacturing firms include log-transformed Dividend Per Share (lgDPS_usd), log-transformed Debt-to-Asset Ratio (lgDAR), log-transformed Debt-to-Equity Ratio (lgDER), Asset Structure (AS), log-transformed Return on Assets (lgROA), log-transformed Firm Size (lgfsize_usd), and Institutional Ownership (Instown).

Table 2. Descriptive Statistics.					
Variable	Observations	Mean	Std. Dev.	Min	Max
lgDPS_usd	1,588	0.0412	0.1111	0	1.4811
lgDAR	1,588	0.4262	0.2169	0.0231	6.3251
lgDER	1,588	0.8706	0.6272	0.0343	6.6800
AS	1,588	0.3874	0.2141	0.0002	0.9578
lgROA	1,588	0.0315	0.1682	-3.4633	3.2049
lgfsize_usd	1,588	0.6047	0.7164	0.0198	2.8354
Instown	1,588	0.4596	0.2993	0	0.9600

4.2. Correlation Matrix

The correlation matrix examines key financial variables of Sub-Saharan African-listed manufacturing firms, revealing several noteworthy relationships among the variables.

The correlation matrix, as in Table 3, reveals several noteworthy relationships among the variables, such as a weak negative correlation with lgDAR, suggesting that firms with higher debt relative to assets tend to have slightly lower dividend payouts. Similarly, the correlation with lgDER is weakly negative, indicating that higher debt relative to equity is associated with slightly lower dividends. In contrast, the correlation with AS is minimal, indicating no significant relationship between asset structure and dividend payouts.

Table 3. Correlation Matrix.

	lgDPS_usd	lgDAR	lgDER	AS	lgROA	lgfsize_usd	Instown
lgDPS_usd	1.0000						
lgDAR	-0.0553	1.0000					
lgDER	-0.0941	0.5244	1.0000				
AS	-0.0004	0.0530	0.0536	1.0000			
lgROA	0.1294	-0.2388	-0.2159	-0.0644	1.0000		
lgfsize_usd	0.1036	-0.0420	-0.0281	-0.0142	-0.0181	1.0000	
Instown	-0.0704	-0.0848	-0.0551	0.1451	0.0349	0.1546	1.0000

For lgDAR, there is a moderate positive correlation with lgDER, suggesting that firms with higher debt-to-asset ratios tend to also have higher debt-to-equity ratios. The correlation with AS is weakly positive, suggesting a slight relationship between the debt-to-asset ratio and the firm's asset structure. Additionally, there is a moderate negative correlation with lgROA, indicating that more leveraged firms tend to be less profitable. The correlation with lgfsize_usd is very weakly negative, and there is a weak negative correlation with Instown, suggesting that firms with higher institutional ownership may pay slightly lower dividends.

4.3. Results and Discussion

Table 4. Multiple and Moderated OLS Regression Results.

Variable	Model 1 Coef. (SE)	Model 2 Coef. (SE)	Model 3 Coef. (SE)	Model 4 Coef. (SE)
lgDAR	0.006 (0.012)	0.001 (0.011)	0.013 (0.015)	0.014 (0.027)
lgDER	-0.012** (0.003)	-0.013** (0.003)	-0.010** (0.003)	-0.009** (0.005)
AS	0.047** (0.012)	0.046** (0.012)	0.049** (0.012)	0.048** (0.012)
Ghana	0.006 (0.005)	-0.038** (0.009)	-0.036** (0.009)	-0.029** (0.009)
Kenya	0.038** (0.007)	0.034** (0.007)	0.032** (0.007)	0.029** (0.006)
Mauritius	0.051** (0.004)	0.039** (0.005)	0.042** (0.005)	0.043** (0.005)
South Africa	0.086** (0.009)	0.058** (0.008)	0.059** (0.008)	0.061** (0.008)

Zimbabwe	0.014** (0.005)	-0.049** (0.012)	-0.049** (0.012)	-0.048** (0.013)
lgfsize_usd	-	0.036** (0.007)	0.036** (0.007)	0.034** (0.007)
Instown	-	-0.016* (0.008)	-0.017* (0.008)	-0.015 (0.008)
lgROA	-	-	0.084** (0.033)	0.127 (0.095)
lgDAR_lgROA	-	-	-	-0.077 (0.102)
lgDER_lgROA	-	-	-	-0.070** (0.018)
AS_lgROA	-	-	-	0.303** (0.093)
Intercept	-0.007 (0.007)	0.003 (0.007)	-0.009 (0.008)	-0.014 (0.009)
R-squared	0.2197	0.2355	0.2505	0.2618
F-Statistics	34.04	30.40	28.47	23.89
Prob > F	0.000	0.000	0.000	0.000
AIC	-2621.93	-2646.02	-2671.14	-2685.89
BIC	-2573.60	-2586.94	-2606.70	-2605.34
Number of observations	1588	1588	1588	1588
*** p<.01, ** p<.05				

The findings from all four models consistently demonstrate a strong negative correlation between the debt-to-equity ratio (lgDER) and dividend policy (lgDPS). In Model 1, the regression coefficient for lgDER is -0.012, which is statistically significant at the 5% level. This implies that an increase in the debt-to-equity ratio is associated with a decrease in dividend distributions. The negative connection is consistent in Models 2, 3, and 4, with coefficients of -0.013, -0.010, and -0.009, respectively, all statistically significant at the 5% level. The results contradict the null hypothesis (H01) and demonstrate a substantial negative correlation between the debt-to-equity ratio and dividend policy. This implies that firms with higher levels of debt are more likely to decrease the amount of money they distribute to shareholders as dividends. This could be done to save cash for repaying their debts and to minimise the risks associated with financial difficulties.

Across all four models, there is a consistent and significant positive correlation between the asset structure (AS) and dividend policy. In Model 1, the coefficient for AS is 0.047, which is statistically significant at the 5% level. This suggests that companies with a larger proportion of tangible assets are more likely to distribute bigger dividends. The positive link is consistent in Models 2, 3, and 4, with coefficients of 0.046, 0.049, and 0.048, respectively. All the coefficients are statistically significant at the 5% level. The results of the study contradict the null hypothesis (H02) and indicate that the asset structure has a major impact on dividend policy. Companies that possess significant tangible assets are more likely to have easier access to borrowing money and face less financial risk, which allows them to sustain or even raise the amount of money they distribute as dividends.

The findings from the analysis of the debt-to-asset ratio (lgDAR) across all models suggest that it does not exert a substantial influence on dividend policy. The coefficient for the variable lgDAR in Model 1 is 0.006, indicating that there is no statistical significance. The absence of statistical significance persists in Models 2, 3, and 4, where the coefficients are 0.001, 0.013, and 0.014, respectively. None of these coefficients reach a level of significance. The data provide evidence in

favour of the null hypothesis (H03), indicating that the debt-to-asset ratio has no substantial impact on the dividend policy of manufacturing firms listed in Sub-Saharan Africa. This suggests that although companies may utilise debt to fund their assets, the percentage of assets funded by debt does not have a significant impact on their dividend distributions.

By incorporating profitability (lgROA) as a moderating variable in Models 3 and 4, we gain valuable insights into its impact on the connection between capital structure and dividend policy. The coefficient for the natural logarithm of return on assets (lgROA) in Model 3 is 0.084, which is statistically significant at the 5% level. This suggests that there is a positive relationship between profitability and dividend payouts, meaning that higher profitability is related with higher dividend per share. Model 4 drill down into the moderating effects by incorporating interaction terms. The coefficient of the interaction term (lgDER_lgROA) between the debt-to-equity ratio and profitability is -0.070. This coefficient is statistically significant at the 5% level, indicating that profitability mitigates the negative effect of the debt-to-equity ratio on dividend distributions. The coefficient for the interaction term between asset structure and profitability (AS_lgROA) is 0.303, which is statistically significant at the 5% level. This suggests that profitability strengthens the favourable impact of asset structure on dividend distributions. Nevertheless, the interaction effect of the debt-to-asset ratio and profitability (lgDAR_lgROA) lacks statistical significance. The result of this study rejects the null hypothesis (H04) and show that profitability has a considerable moderating effect on the relationship between capital structure and dividend policy. Profitability plays a vital role in the financial decision-making of manufacturing firms in Sub-Saharan Africa. It can help offset the negative impact of high debt and enhance the advantages of a robust asset structure when it comes to dividend payouts.

4.4. Post Estimation Diagnostic Tests

Table 5 shows the Post-estimation diagnostic tests that were performed on the regression models to verify the accuracy and consistency of the findings. The R-squared values and F-statistics were essential for evaluating the explanatory capability and overall relevance of the models. The R-squared values varied from 0.2197 in Model 1 to 0.2618 in Model 4, suggesting that the models account for 21.97% to 26.18% of the variability in dividend policy (DPS). The F-statistics exhibited a high level of significance in all models, indicating that the independent variables collectively account for a substantial proportion of the variance in DPS.

Table 5. Post Estimation Diagnostic Tests.

Test	Model 1	Model 2	Model 3	Model 4
R-squared	0.2197	0.2355	0.2505	0.2618
F-statistics (p-value)	34.04 (0.000)	30.40 (0.000)	28.47 (0.000)	23.89 (0.000)
Mean VIF	1.29	1.89	1.82	3.52
Breusch-Pagan Test (p-value)	<0.0000	<0.0000	<0.0000	<0.0000
White's Test (p-value)	<0.0000	<0.0000	<0.0000	<0.0000
Shapiro-Wilk Test (p-value)	<0.0000	<0.0000	<0.0000	<0.0000

AIC	-2621.932	-2646.016	-2671.14	-2685.891
BIC	-2573.6	-2586.944	-2606.698	-2605.338
Wald Test (p-value)	<0.0000	<0.0000	<0.0000	<0.0000

The Variance Inflation Factor (VIF) was computed for all independent variables in each model. The average VIF values for Models 1 to 4 are comfortably below 10, suggesting that multicollinearity is not a serious issue in these models. The presence of heteroscedasticity was evaluated using the Breusch-Pagan/Cook-Weisberg test and White's test, both of which consistently rejected the null hypothesis of homoscedasticity in all models. The Shapiro-Wilk test was used to assess the normality of the residuals, while the Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC) were employed to compare the models' goodness of fit.

The Wald test was employed to assess the collective significance of the coefficients in each model. The outcomes revealed an F-statistic of 3605.61 and a p-value of 0.0000, so affirming the joint importance and rejecting the null hypothesis that all constraints are zero.

5. Conclusion and Recommendations

5.1. Conclusion

The study examines how profitability affects the connection between capital structure and dividend policy in industrial companies listed in Sub-Saharan Africa. The research aims to investigate the impact of the Debt-to-Equity Ratio (DER) and asset structure (AS) on dividend policies. It also seeks to analyse the influence of the Debt-to-Asset Ratio (DAR) on dividend policies. Additionally, the research aims to evaluate the role of profitability in moderating the relationship between capital structure and dividend policy.

The findings indicate that DER has a negative impact on dividend policy, whereas AS has a beneficial impact on it. The impact of the DAR is favourable, but it is not statistically significant. This implies that the DAR alone may not have a large influence on the dividend policy of industrial firms listed in Sub-Saharan Africa. The impact of profitability on the link between debt-to-equity ratio (DER) and asset size (AS) with dividends per share (DPS) is strong, highlighting its crucial role in financial decision-making.

The study presents concrete evidence that Distributed Energy Resources (DER) have a detrimental impact on dividend policy, whereas Asset Size (AS) has a beneficial impact on it. The impact of the DAR is positive, but it is not statistically significant. Additionally, profitability has a significant role in moderating the link between DER and AS with DPS, highlighting its importance in making financial decisions. These findings have practical consequences for professionals and decision-makers in Sub-Saharan Africa.

5.2. Recommendations

The study proposes various suggestions to enhance the capital structure and dividend policies of industrial enterprises listed in Sub-Saharan Africa. The Debt-to-Equity Ratio (DER) has a substantial influence on Dividend Policy (DPS), so companies should strive to optimise their capital structure in order to maintain a balance between debt obligations and dividend payments. Financial advisers and corporate finance departments should create debt management strategies that focus on reducing high levels of leverage while yet preserving financial flexibility. Regulatory organisations should establish criteria to guarantee that companies maintain leverage levels that promote stable dividend programs.

Companies that possess significant tangible assets should convey the consistency and predictability of their cash flows to shareholders in order to bolster shareholder trust. Clear and open communication regarding investments in assets and their beneficial effect on dividends is crucial, and regulatory bodies should provide structures to facilitate this alignment.

The Debt-to-Asset Ratio (DAR) shows a positive correlation with DPS, although the impact is not statistically significant. However, it is advisable for enterprises to closely monitor and manage this ratio to mitigate any hazards that may arise from excessive leverage. To ensure financial stability and match leverage with long-term dividend plans, it is advisable to implement integrated financial management systems and conduct regular assessments by both internal and external auditors.

The relationship between capital structure and dividend policy is heavily influenced by profitability, as measured by Return on Assets (ROA). Companies should perform comprehensive profitability studies and establish profit allocation frameworks that effectively balance investments, debt settlement, and dividend distributions. Engaging in collaboration with local regulatory organisations and industry groups helps streamline the exchange of optimal methods around the region.

5.3. Study Limitations

The study on manufacturing enterprises listed in Sub-Saharan Africa has limitations, such as its exclusive emphasis on particular industries and the distinct financial attributes of each sector. The economic, regulatory, and market conditions in Sub-Saharan Africa may further impact the relevance of the findings on a worldwide scale. The application of quantitative techniques to evaluate capital structure, profitability, and dividend policy may not comprehensively encompass the intricacies of company financial decision-making. Qualitative methodologies, such as conducting case studies or engaging in interviews with business managers, have the potential to yield a more profound comprehension. The conclusions are derived from past data, and the dynamic economic and regulatory landscape may impact their applicability in the future.

5.4. Suggestions for Further Study

This study emphasises the necessity for additional investigation into the influence of corporate governance frameworks on dividend policy and capital structure decisions in Sub-Saharan Africa (SSA). It proposes including variables such as board membership, ownership structure, and CEO salaries to gain a more thorough insight. Furthermore, it emphasises the significance of macroeconomic variables such as inflation, interest rates, and currency rate volatility in comprehending the correlation between capital structure and dividend policy. The study proposes broadening the focus beyond manufacturing to encompass more industries and integrating qualitative research techniques such as interviews and case studies to offer a more comprehensive understanding of the decision-making processes of corporate managers.

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References

- Abrari, A. M., Pratikto, H., & Siswanto, E. (2022). The Influence of Corporate Social Responsibility, Intellectual Capital, and Capital Structure on Firm Value With Profitability as Intervening Variable (Study of Raw Material and Manufacturing Producing Sector Companies Listed on the Indonesia Stock Exchange). *International Journal of Economics and Management Research*, 1(3), 38–54. <https://doi.org/10.55606/ijemr.v1i3.41>

- Aca, A. I., Abba, I., Muktar, J., Habib, &, & Cna, A. (2020). Capital Structure and Dividend Policy of Listed Conglomerate Companies in Nigeria: A Panel Data Analysis. In *International Journal of Research and Scientific Innovation (IJRSI)* | Vol. VII. www.rsisinternational.org
- Ahmad, N. G., Barros, V., & Sarmento, J. M. (2018). The determinants of dividend policy in Euronext 100. *Corporate Ownership and Control*, 15(4). <https://doi.org/10.22495/cocv15i4art1>
- Akbar, A., & Nurita, E. (2023). The Effect of Current Ratio (CR) and Assets Structure on Debt To Equity Ratio (DER) in PT Aneka Tambang Tbk from 2011 to 2020. *Indonesian Financial Review*, 2(2), 74–84. <https://doi.org/10.55538/ifr.v2i2.17>
- Akhmadi, A., Mahmudi, B., Muksin, M., Suhendra, I., & Fitriana, R. (2020). Firm Size as a Moderation Factor: Testing the Relationship of Capital Structure With Dividend Policy. *Afebi Management and Business Review*, 5(2), 41. <https://doi.org/10.47312/ambr.v5i2.313>
- Akpada, O. S., Farouk, M. A., & Dang, D. Y. (2024). How Do Profitability and Institutional Ownership Drive Value through Dividend Policy? Evidence from Nigeria. *Accounting and Finance Research*, 13(2), 129. <https://doi.org/10.5430/afr.v13n2p129>
- Anuar, A. Z. W., Jasni, N. S., & Azero, M. A. (2023). Determinants of Dividend Policy: Evidence From Malaysian Public Listed Companies. *International Journal of Academic Research in Business and Social Sciences*, 13(4). <https://doi.org/10.6007/ijarbss/v13-i4/16602>
- Arhinful, R., & Radmehr, M. (2023). The effect of financial leverage on financial performance: evidence from non-financial institutions listed on the Tokyo stock market. *Journal of Capital Markets Studies*, 7(1), 53–71. <https://doi.org/10.1108/JCMS-10-2022-0038>
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Barros, V., Verga Matos, P., & Miranda Sarmento, J. (2020). What firm’s characteristics drive the dividend policy? A mixed-method study on the Euronext stock exchange. *Journal of Business Research*, 115, 365–377. <https://doi.org/10.1016/j.jbusres.2019.11.042>
- Bashir, Z., Rafique, Z. Z., & Toor, K. N. (2022). How Do Dynamic Financing Decisions Explain the Behavior of Dividend Payout Policies? *Financial Internet Quarterly*, 18(1), 1–15. <https://doi.org/10.2478/fiqf-2022-0001>
- Benyadi, F. C., Hajanirina, A., & Reyes, M. A. (2022). Dividend Policy of the Jakarta Stock Exchange Listed Manufacturing Company and the Underlying Factors. *Jaaf (Journal of Applied Accounting and Finance)*, 6(1), 61. <https://doi.org/10.33021/jaaf.v6i1.3615>
- Biwott, S. K. (2021). Antecedents of Dividend Payout Among Listed Non-Financial Companies listed in Nairobi Securities Exchanges, Kenya. *Account and Financial Management Journal*, 06(09). <https://doi.org/10.47191/afmj/v6i9.02>
- Brealey, R. A., M. S. C., & A. F. (2020). *Principles of corporate finance*. (13th ed.). McGraw Hill.
- Budianto, E. T., & Bertuah, E. (2020). Return on Equity as the Leading Indicator of Dividend Payout Ratio of Jakarta Islamic Index Stocks Listed on the Indonesia Stock Exchange. *Dinasti International Journal of Management Science*, 1(3), 319–330. <https://doi.org/10.31933/dijms.v1i3.96>
- Bunyamin, B., None, N., Ratna Sari, Y., Wiyarni, W., None, N., & None, N. (2023). Moderating Effect of Liquidity on Profitability and Investment Opportunity Set Toward Dividend Policy. *International Journal of Social Science and Human Research*, 6(12). <https://doi.org/10.47191/ijsshr/v6-i12-18>
- C. Arko, A., Abor, J., K.D. Adjasi, C., & Amidu, M. (2014). What influence dividend decisions of firms in Sub-Saharan African? *Journal of Accounting in Emerging Economies*, 4(1). <https://doi.org/10.1108/jaee-12-2011-0053>
- Céspedes, C., Rubio, A., Viñas, F., Cerrato, S. M., Lara-Ordóñez, E., & Ríos, J. (2021). Relationship Between Self-Concept, Self-Efficacy, and Subjective Well-Being of Native and Migrant Adolescents. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.620782>
- Desoky, A. M., & Mousa, G. A. (2019). An empirical investigation of determinants of firm dividend payouts in Egypt: an agency perspective. *International Journal of Managerial and Financial Accounting*, 11(1), 20. <https://doi.org/10.1504/IJMFA.2019.10019094>
- Emeka Leonard, O., & Ogochukwu, N. O. (2021). Impact of Dividend Policy on Share Price of Listed Ict Firms in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 11(9). <https://doi.org/10.6007/IJARBSS/v11-i9/8937>
- Gao, R., Lu, J., Hu, H. W., & Martin, G. (2023). A Tale of Two Distractions: How Institutional Forces Influence <sc>R&D</sc>-based Problemistic Search in Transition Economies. *Journal of Product Innovation Management*, 40(5), 657–678. <https://doi.org/10.1111/jpim.12657>
- Giovanni, A., Utami, D. W., & Widiyaningrum, E. (2020). Size, Growth, Profitability and Capital Structure. *Jurnal Riset Ekonomi Manajemen (Rekomen)*, 4(1), 81–90. <https://doi.org/10.31002/rn.v4i1.3142>
- Hardianto, M. B. S. (2021). The Effect of Financial, Institutional and Managerial Ownership Factors on Dividend Policy of Manufacturing Companies in Consumer Goods Sector Listed on the Indonesia Stock Exchange in Period 2016-2019. *Journal of Business Management Review*, 2(8), 517–530. <https://doi.org/10.47153/jbmr28.1892021>

- Ijaz, M., Zarrar, A., & Naz, F. (2024). Intellectual capital efficiency: the missing piece to your corporate governance and profitability puzzle. *International Journal of Law and Management*, 66(3), 393-415. <https://doi.org/10.1108/ijlma-09-2023-0205>
- Imronudin, I., Melawati, S., & Irawati, Z. (2020). *Assessing The Influence of Asset Turnover on Dividend Policy in Property Sector: The Case of Indonesia*. <https://doi.org/10.4108/eai.5-8-2020.2301194>
- Irungu, D. K. (2021). *The Relationship between Capital Structure and Dividend Payout among Non-Financial Firms Listed at the Nairobi Securities Exchange*. Jomo Kenyatta University of Agriculture and Technology.
- Jara-Bertin, M., López-Iturriaga, F. J., & López-de-Foronda, Ó. (2012). Does the influence of institutional investors depend on the institutional framework? An international analysis. *Applied Economics*, 44(3), 265–278. <https://doi.org/10.1080/00036846.2010.502112>
- Kehinde Adewale, A., Muhammad, M. I., & (Nigeria), B. Y. H. (2019). Effect of Firm Attributes on Financial Reporting Quality: Evidence from Listed Consumer Goods Companies in Nigeria. *Indian Journal of Commerce & Management Studies*, X(1), 54. <https://doi.org/10.18843/ijcms/v10i1/06>
- Li, C. (2024). Economic Policy Uncertainty and Cash Dividend Policy: Evidence From China. *Humanities and Social Sciences Communications*, 11(1). <https://doi.org/10.1057/s41599-024-03055-9>
- Lindawati, L. (2022). The Role of Information and Communication Technology for Economic Sustainability Through Social Entrepreneurship Practices in Indonesia: A Preliminary Study. *Jurnal Ilmu Sosial Dan Ilmu Politik*, 26(2), 213. <https://doi.org/10.22146/jsp.71796>
- Lintner, J. (1956). Distribution of incomes of corporations among dividends, retained earnings, and taxes. *The American Economic Review*, 46(2), 97–113.
- Liu, B., & Jia, Y. (2023). Asset Structure and Company Performance. *International Journal of Social Sciences and Economic Management*, 4(3). <https://doi.org/10.38007/IJSSEM.2023.040305>
- Magribi, R. M., Hernita, N., & Kusumadewi, R. N. (2023). Asset Structure, Dividend Policy, and Sales Growth Influence on Stock Prices. *International Journal of Professional Business Review*, 8(7), e02254. <https://doi.org/10.26668/businessreview/2023.v8i7.2254>
- Mauris, F. I., & Rizal, N. A. (2021). The Effect of Collaterallizable Assets, Growth in Net Assets, Liquidity, Leverage and Profitability on Dividend Policy (Case Studies on Non-Financial Services Sector Companies Listed on the Indonesia Stock Exchange for the 2016-2019 Period). *Budapest International Research and Critics Institute (Birci-Journal) Humanities and Social Sciences*, 4(1), 937–950. <https://doi.org/10.33258/birci.v4i1.1695>
- Mihajlović, M. B., Tadin, D. B., & Gordić, B. M. (2020). The Role of Financial Management in the Company. *Tehnika*, 75(4), 498–503. <https://doi.org/10.5937/tehnika2004498m>
- Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, 48(3), 261–297. <http://www.jstor.org/stable/1809766>
- Modigliani, F., & Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review*, 53(3), 433–443. <http://www.jstor.org/stable/1809167>
- Mubeen, R., Han, D., Abbas, J., Raza, S., & Bodian, W. (2022). Examining the Relationship Between Product Market Competition and Chinese Firms Performance: The Mediating Impact of Capital Structure and Moderating Influence of Firm Size. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.709678>
- Musyoka, M., Margret, A., & Ouma, D. (2022a). Financial Decisions and Profitability of Large-Scale Retail Supermarkets in Kenya: Application of Dividend Decisions. *International Journal of Economics Business and Management Research*, 06(09), 265–273. <https://doi.org/10.51505/ijebmr.2022.6919>
- Musyoka, M., Margret, A., & Ouma, D. (2022b). Financial Decisions and Profitability of Large-Scale Retail Supermarkets in Kenya: Application of Dividend Decisions. *International Journal of Economics Business and Management Research*, 06(09), 265–273. <https://doi.org/10.51505/ijebmr.2022.6919>
- Newey, W., & Stouli, S. (2021). Control variables, discrete instruments, and identification of structural functions. *Journal of Econometrics*, 222(1), 73–88. <https://doi.org/10.1016/j.jeconom.2020.07.027>
- Nnadi, M., Wogboroma, N., & Kabel, B. (2013). Determinants of dividend policy: Evidence from listed firms in the African stock exchanges. *Panoeconomicus*, 60(6). <https://doi.org/10.2298/PAN1306725N>
- Novita Ardelia, I., Fakhmi, I., Iskandar, K., & Kumala Wulandari, H. (2021). *Profitability Effect and n Asset Structure to Structure Capital in Manufacturing Companies in Indonesia stock exchange* (Vol. 1, Issue 1). www.idx.co.id
- Nowicki, J., Ratajczak, P., & Szutowski, D. (2024). Impact of macroeconomic factors on financial liquidity of companies: a moderation analysis. *Sustainability*, 16(11), 4483. <https://doi.org/10.3390/su16114483>
- Nurchaqiqi, R., & Suryarini, T. (2018a). The effect of leverage and liquidity on cash dividend policy with profitability as moderator moderating. *Accounting Analysis Journal*, 7(1), 10–16.
- Nurchaqiqi, R., & Suryarini, T. (2018b). The effect of leverage and liquidity on cash dividend policy with profitability as moderator moderating. *Accounting Analysis Journal*, 7(1), 10–16.
- Nurfitri, N., Putri, A. A., Lestari, H. S., & Leon, F. M. (2023). The Effect of Credit Risk Management on Financial Performance in Indonesian Banking. *International Journal of Social Science and Human Research*, 06(02). <https://doi.org/10.47191/ijsshr/v6-i2-03>

- Nurhikmawaty, D., Isnurhadi, I., Widiyanti, M., & Yuliani, Y. (2020). The Effect of Debt to Equity Ratio and Return on Equity on Stock Return With Dividend Policy as Intervening Variables in Subsectors Property and Real Estate on Indonesia Stock Exchange. *International Journal of Multicultural and Multireligious Understanding*, 7(7), 255. <https://doi.org/10.18415/ijmmu.v7i7.1850>
- Nyamasege, D., Bichang'a Okibo, W., Nyang'au, A. S., Sang'ania, P. O., Omosa, H., & Momanyi, C. (2014). Effect of Asset Structure on Value of A Firm: A Case of Companies Listed in Nairobi Securities Exchange. In *Research Journal of Finance and Accounting www.iiste.org ISSN* (Vol. 5, Issue 9). www.iiste.org
- Onyebuchi, O. M. (2023). Firm Size As A Moderator To Capital Structure And Financial Performance Of Listed Consumers Goods Manufacturing Companies In Nigeria. *BW Academic Journal*, 10.
- Panjaitan, R., & Simbolon, I. P. (2020a). Financing and Herd Behaviour in Financial Crises: Investment Decision. *International Journal of Economics and Business Administration*, VIII(Issue 4), 1089–1096. <https://doi.org/10.35808/ijeba/652>
- Panjaitan, R., & Simbolon, I. P. (2020b). Financing and Herd Behaviour in Financial Crises: Investment Decision. *International Journal of Economics and Business Administration*, VIII(Issue 4), 1089–1096. <https://doi.org/10.35808/ijeba/652>
- Paramita, V. S. and Ali, A. (2023). Can profitability moderate the impact of green investment, corporate social responsibility, and good corporate governance on company value on the sri-kehati index?. *International Journal of Finance Research*, 4(4), 320–338. <https://doi.org/10.47747/ijfr.v4i4.1604>
- Pattiruhu, J. R., & Paais, M. (2020). Effect of Liquidity, Profitability, Leverage, and Firm Size on Dividend Policy. *Journal of Asian Finance Economics and Business*, 7(10), 35–42. <https://doi.org/10.13106/jafeb.2020.vol7.no10.035>
- Pucheta-Martínez, M. C., & Chiva-Ortells, C. (2020). Institutional shareholding as a corporate governance mechanism that drives Chief Executive Officer pay. *BRQ Business Research Quarterly*, 23(3), 217–233. <https://doi.org/10.1177/2340944420941462>
- Putri, D. R., Achsan, N. A., & Bandon, B. (2020). Analysis Causality of Capital Structure and Profitability of Banking Sector Listed in Indonesian Stocks Exchange: Buku 1, Buku 2, Buku 3, and Buku 4 of 2014-2018 Period. *Russian Journal of Agricultural and Socio-Economic Sciences*, 97(1), 167–173. <https://doi.org/10.18551/rjoas.2020-01.21>
- Rahman, O. A., Hasanuddin, H., & Abdullah, J. (2022). Analisis Faktor-Faktor Yang Mempengaruhi Kebijakan Dividen. *Gorontalo Accounting Journal*, 5(2), 120. <https://doi.org/10.32662/gaj.v5i2.1949>
- Rahmawati, C. H. T. (2020). The Profitability, Firm's Size, Dividend Payout Ratio and Firm's Value: Capital Structure Intervention. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, 9(3), 218. <https://doi.org/10.26418/jebik.v9i3.39765>
- Renaldo, N., Musa, S., & Wahid, N. (2023). Capital structure, profitability, and block holder ownership on dividend policy using free cash flow as moderation variable. *Journal of Applied Business and Technology*, 4(2), 168–180.
- Riaz, K. (2023). Cash Flows, Earnings, and Dividend Payout Nexus in Pakistan: A Case Study of KSE-100 Index. *Audit and Accounting Review*, 3(1). <https://doi.org/10.32350/aar.31.05>
- Santoso, P. W., Aprilia, O., & Tambunan, M. E. (2020). The intervening effect of the dividend policy on financial performance and firm value in large Indonesian firms. *International Journal of Financial Research*, 11(4), 408–420.
- Shahid, S., Ghazanfar Inam, S., & Ghaffar, A. (2020). Better Dividend Policy Effects Share Price Volatility: An Empirical Study On Automobile Sector of Pakistan. *Jinnah Business and Economics Research Journal*, 92–106. <https://doi.org/10.55750/jberj.0205>
- Sholikhah, S. M. (2023). The Influence of Dividend Policy and Profitability With Firm Size as a Moderating Variable. *Economica*, 13(1), 25–34. <https://doi.org/10.22202/economica.2023.v13.i1.6588>
- Sreenu, N. (2018). A Study on Financial Constraints of Capital Structure Theories and Dividend Policy: Evidence from Indian Capital Market. *Al-Barkat Journal of Finance & Management*, 10(1), 66–81.
- Stouli, S., & Newey, W. K. (2018). *Control variables, discrete instruments, and identification of structural functions*. <https://doi.org/10.1920/wp.cem.2018.5518>
- Supeno, N. A., Ali, H., & Priyati, R. Y. (2022). Effect of Profitability and Liquidity on Capital Structure and Value of Plantation Companies in Indonesia. *Dinasti International Journal of Economics Finance & Accounting*, 2(6), 621–636. <https://doi.org/10.38035/dijefa.v2i6.1123>
- Suriani, S., Nur, I., Moridu, I., Bakri, A. A., & Tasrim, T. (2024). The Role of Sales Growth and Profitability in Determining Capital Structure. *Invest Jurnal Inovasi Bisnis Dan Akuntansi*, 5(1), 43–50. <https://doi.org/10.55583/invest.v5i1.824>
- Syamsudin, S., Setiadi, I., Santoso, D., & Setiany, E. (2021). Capitals structure and investment decisions on firm value with profitability as a moderator. *Riset Akuntansi Dan Keuangan Indonesia*, 5(3), 287–295.
- Tamrin, M., Rahman Mus, H., Arfah, A., & Sudirman. (2017). Effect of profitability and dividend policy on corporate governance and firm value: Evidence from the Indonesian manufacturing Sectors. *IOSR Journal of Business and Management*, 19(10). <https://doi.org/10.9790/487X-1910086674>

- Temitope, A. A., & Kysburn, A. M. (2020). Firm Characteristics and Dividend Policy of Quoted Manufacturing Firms in Sub-Sahara Africa. *Asian Journal of Economics, Business and Accounting*, 50–57. <https://doi.org/10.9734/ajeba/2020/v14i330196>
- Udoka, C. O., John, J. I., & Orok, A. B. (2022). Dividend Policy and the Performance of Firms Listed on the Nigerian Stock Exchange. *Law and Economy*, 1(3). <https://doi.org/10.56397/LE.2022.10.01>
- Wang, L., Ge, S., & Yang, P. (2021). The Moderating Effect of Holding Shareholders on Corporate Performance in Institute Spin-Offs From the Perspective of Institutional Logics. *Asian Economic and Financial Review*, 11(11), 908–922. <https://doi.org/10.18488/journal.aefr.2021.1111.908.922>
- Weber, M. (2022). Coherent Causal Control: A New Distinction Within Causation. *European Journal for Philosophy of Science*, 12(4). <https://doi.org/10.1007/s13194-022-00499-1>
- Yahaya, A. (2023). Capital Structure And Dividend Policy Of Listed Manufacturing Firms In Nigeria. *Nigerian Journal Of Management Sciences Vol*, 24(2a).
- Zakić, N., Popović, J., & Miškić, M. (2020). The Linkages Between Investments in Innovation and Business Performance in Serbia. *Management Journal of Sustainable Business and Management Solutions in Emerging Economies*, 25(3), 1. <https://doi.org/10.7595/management.fon.2019.0017>

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