

Unveiling the quantitative impact of capital structure on firm value: A study of manufacturers of food, produce companies in South Africa

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ABSTRACT

This study examines the impact of capital structure on firm value within the food manufacturing sector of South Africa, addressing a critical gap in the literature on emerging markets. Using a balanced panel dataset of eight listed firms from 2007 to 2018, the research utilizes panel regression models—Common Effect (CEM), Fixed Effect (FEM), and Random Effect (REM)—with the Hausman test indicating REM as the optimal choice. Key findings demonstrate that profitability (RA), debt-to-equity ratio (DE), and firm size (FS) significantly enhance stock prices at a 1% significance level. In contrast, liquidity (CR) negatively affects stock prices (10% significance), while asset growth (AG) shows no significant impact. These results challenge traditional capital structure theories, emphasizing that South African firms strategically use debt for tax advantages despite market volatility, a stark contrast to developed economies where liquidity is typically prioritized. The study highlights the contextual significance of macroeconomic factors, such as energy shortages and regulatory policies (e.g., Black Economic Empowerment), in influencing financing decisions. By bridging the gap between classical theories and emerging market dynamics, this research provides actionable insights for policymakers to encourage sustainable capital structures, for investors to reconsider the role of liquidity in volatile environments, and for the government to develop better policies to support businesses. This research is novel; it is among the first to investigate the link between firm value and capital structure specifically for food manufacturing companies in South Africa over 12 years. It is distinctive because it frames capital structure choices within the unique industrial and economic environment of South Africa, contributing a framework for optimizing firm value in similar emerging markets.

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1. Introduction

Capital structure, which refers to the strategic mix of debt and equity financing, remains a vital decision in corporate financial management (Abor, 2005). Omet (2008) further refines this concept by defining capital structure as the ratio of long-term debt to total assets, highlighting the role of debt in a firm's financial strategy. The significance of capital structure lies in its ability to achieve an optimal financing mix, as Borgia and Yan (2013) suggest, which can maximize a firm's market value. The ideal combination of debt and equity minimizes the weighted average cost of capital and aligns with the firm's operational requirements and risk tolerance. Decisions regarding capital structure are fundamental to corporate financial management, influencing firm growth, profitability, and shareholder wealth. Capital structure has been debated in corporate finance discourse for over fifty years.

The discussion centres on identifying the best approach to balancing debt and equity to enhance firm value while managing associated risks. Foundational theories (trade-off, pecking order, and agency theory) are well-established; this research uniquely contextualizes their application within South Africa's food manufacturing sector, a dynamic emerging market

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characterized by energy shortages, input cost volatility, and dependence on global trade (Boks & Mazenda, 2023; Stats, 2013). Instead, the study aims to understand how capital structure and company quality impact firm value in the manufacturing sector of emerging nations. The study examines a sample of food producers listed on the Johannesburg Stock Exchange (JSE) to determine the relationship between firm valuation and firm quality. Several factors motivate us to research the food manufacturing industry. First, the sector's unique characteristics mean it must continually evolve based on the demands of a stable energy supply. Its primary goal is to produce food for both domestic and international markets. Consequently, retaining customers poses an ongoing challenge for these businesses, as macroeconomic cycles significantly influence the industry. Second, the food manufacturing sector, which has experienced decline for over a decade, has suffered due to the global economic recession. A 2017 survey by the South African Association for Food Science and Technology (Greenberg, 2017) indicated that restaurant occupancy rates have not improved over the past two years. Additionally, a recent study by Botha et al. (2017) found that various adverse international events and internal structural limitations have affected the South African economy over the last decade, leading to a prolonged period of heightened uncertainty and a gradual decline in potential economic growth rates. Third, the food manufacturing industry faces financial challenges due to unfavourable lending practices by South African banks. Fourth, this sector is often excluded from much of the empirical research to understand the factors that influence capital structure in the South African context. Compared to wealthier nations, significantly less research is conducted in developing countries, and the existing research in the finance sector is limited.

The significance of South Africa's industrial sector cannot be overstated. In 2018, over 2 million people were employed in the food manufacturing sector, contributing more than 3% to South Africa's GDP (Yela Aránega et al., 2022). The findings of this study are innovative in several ways. Firstly, no studies have focused solely on the food manufacturing industry to identify the factors influencing a business's value with its capital structure, firm characteristics, and quality. This study examines the effects of firm quality, traits, and leverage, such as debt-to-equity, asset growth, profitability, and firm size, along with macroeconomic variables, on firm value. Previous research has shown conflicting results regarding company leverage, mainly depending on the industry in question. Firm value has been positively correlated with firm quality and characteristics. Our results indicate that profitability (RA), debt-to-equity ratio (DE), and firm size (FS) significantly increase stock prices at a 1% significance level. In comparison, liquidity (CR) negatively affects stock prices at a 10% significance level, and asset growth (AG) demonstrates no significant impact. These findings challenge traditional capital structure theories, underscoring that South African firms strategically utilize debt for tax advantages despite market volatility, contrasting with developed economies where liquidity is generally prioritized. This study contributes to the existing literature by examining quality factors and capital structure to empirically validate capital structure theories within the context of the food manufacturing industry in South Africa. Furthermore, this research is among the first to explore the relationship between capital structure and firm value for South African food manufacturing enterprises over 12 years. Various stakeholders—including owners, investors, the government, and industry representatives—will benefit from a deeper understanding of the relationship between capital structure determinants, firm quality, and firm value in the food manufacturing sector. Management can reassess their financial performance and identify which elements influence their company's worth by analysing the relationship between firm quality and value. Additionally, it will assist owners of food manufacturing companies in making more informed capital structure decisions. It will streamline the process for investors seeking businesses to invest in and aid regulators in identifying areas where beneficial regulations for the food manufacturing sector can be established. The structure of this study is as follows: Section One presents the introduction; Section Two explains the literature review and hypothesis formulation; Section Three outlines the methodology; Section Four presents the results and their disclosure; and Section Five concludes the study.

2. Literature Review and Development of Hypotheses

This study utilizes financial theories such as the Pecking Order Theory, which posits that firms prioritize internal financing. It operates uniquely in South Africa's food sector due to systematic energy shortages. For instance, load shedding disrupts production cycles, forcing firms to divert internal funds toward backup generators or solar infrastructure, thereby reducing retained earnings available for reinvestment. This creates a paradox where firms may rely more heavily on short-term external debt (contrary to the theory's hierarchy) to maintain liquidity during operational downtime. Similarly, the Trade-off Theory must consider South Africa's Black Economic Empowerment (BEE) policies, which incentivize equity financing through ownership diversification but increase agency costs due to conflicting stakeholder interests (Musabayana & Mutambara, 2022). Regulatory pressures to meet BEE scorecards often lead firms to prefer equity over debt, altering the traditional risk-return calculus. Agency Theory, meanwhile, is complicated by agricultural subsidies that skew investment toward politically favored projects (e.g., maize production) rather than profit-maximizing ventures, exacerbating manager-shareholder conflicts in a sector already vulnerable to exchange rate volatility (e.g., imported packaging costs).

2.1. Capital Structure (CS)

Capital structure is a fundamental concept in corporate finance that refers to the combination of various long-term financial instruments a firm uses to finance its operations and investments. As noted by scholars, these instruments typically include equity shares, preference shares, retained earnings, long-term loans, and debentures. Campello (2006) emphasized that studying capital structure seeks to explain corporations' financing sources to support real investments, which is crucial for

sustaining business operations and promoting growth. Schön et al. (2009) identified the relationship between long-term financing components such as equity and debt capital. Cuong & Nguyen Thi (2012) defined it as the mix of long-term debt and equity that a firm maintains. Furthermore, Ehrhardt and Brigham (2011) underscored the importance of achieving an optimal mix of these components to maximize a firm's intrinsic value. Decisions regarding capital structure are critical as they influence a firm's financial performance, cost of capital, and sustainability, necessitating careful alignment with strategic objectives and market conditions.

2.2. Pecking Order Theory

The Pecking Order Theory, proposed by Myers and Majluf (1984), establishes a hierarchy of financing preferences that operates uniquely in South Africa's food manufacturing sector due to ongoing energy shortages. For example, firms often redirect internal funds to invest in backup generators or renewable energy systems to alleviate load-shedding disruptions (Motswaledi et al., 2023), reducing the retained earnings available for growth. This situation diverges from the theory's predictions, as companies frequently rely on short-term debt to cover liquidity gaps during extended power outages. This preference hierarchy indicates a desire to minimize costs associated with external financing, which includes flotation costs and potential market price dilution from issuing new shares. Donaldson and Parr (1961) noted that avoiding flotation costs is a key motivator for prioritizing internal funds. Myers and Majluf (1984) further highlighted that preserving existing shareholder wealth is essential in this financing behavior. Issuing new equity is often regarded as less favorable because it may signal to the market that the company's stock is undervalued, leading to price declines. However, empirical studies indicate that firms do not always adhere strictly to this sequence, as market conditions, firm-specific characteristics, and external constraints can influence financing decisions. These deviations illustrate the complexity of corporate financial decision-making and the need for a more nuanced application of the theory.

2.3. Theory of Trade-off

The trade-off theory must account for South Africa's Black Economic Empowerment (BEE) Act policies established in 2003, which incentivize equity financing through ownership diversification while increasing agency costs due to conflicting stakeholder interests. Regulatory pressures to meet BEE scorecards often lead firms to prefer equity over debt, altering the traditional risk-return calculus. Initiated by Kraus and Litzenberger in 1973 and expanded by Myers and Majluf in 1984, it provides an alternative to the Modigliani-Miller Theorem (MMT) proposed in 1958 and revised in 1963. The trade-off theory recognizes the limitations of MMT's assumptions, such as the absence of taxes, transaction costs, and bankruptcy risks. While MMT posits that a firm's value is unaffected by its capital structure under idealized conditions, the trade-off theory acknowledges that firms balance the benefits and costs of debt. For instance, debt can offer tax shields due to interest deductibility, but excessive debt may lead to bankruptcy costs and financial distress (Hanlon & Heitzman, 2022). Agency theory, developed by Meckling and Jensen in 1976, complements the trade-off theory by addressing the conflicts between shareholders (principals) and managers (agents). Agency problems arise when managers prioritize self-interest over shareholder wealth, leading to suboptimal funding decisions and divergent goals. Understanding these conflicts is crucial for understanding real-world deviations from theoretical models and achieving optimal capital structures, considering tax effects, bankruptcy risks, and agency conflicts.

2.4. Agency theory

Agency theory, meanwhile, is complicated by agricultural subsidies that skew investment toward politically favored projects (e.g., maize production) rather than profit-maximizing ventures, exacerbating conflicts between managers and shareholders in a sector already vulnerable to exchange rate volatility, such as imported packaging costs. Treasury (2020) outlines the dynamics between shareholders (principals) and management (agents), focusing on how agents are entrusted with operational decisions aimed at maximizing shareholder value. However, conflicts arise when managerial ownership is minimal, often less than 5%, as managers may prioritize personal interests over shareholder objectives. This misalignment, intensified by larger institutional ownership, can dilute the impact of management ownership on profitability. Institutional investors typically wield greater control, which might restrict managerial discretion, but does not necessarily promote firm profitability. Meckling and Jensen (1976) emphasized that when managerial ownership is limited, agency conflict intensifies, leading to potential inefficiencies in decision-making. Addressing these issues requires mechanisms like performance-based incentives, increased managerial ownership, or robust governance practices to align interests and ensure management's actions correspond with shareholder objectives.

2.5. Previous Studies

The findings from South Africa's food manufacturing sector reveal distinct dynamics in the relationship between capital structure and firm value compared to studies conducted in Asia and Europe. This divergence underscores the influence of regional economic conditions, market maturity, and sector-specific factors. In South Africa, the study identified a significant positive relationship between debt-to-equity ratios (DE) and stock prices, suggesting that investors perceive higher leverage favorably, potentially due to tax shield advantages or confidence in firms' ability to generate returns from borrowed capital. Frank & Goyal (2009) demonstrated that firms prioritize profitability and internal financing according to Pecking Order

Theory, with debt as a secondary option in developed European markets. This contrasts with South Africa, where firms appear to strategically balance debt and equity, reflecting a hybrid approach that adheres to Pecking Order and Trade-Off Theories. Additionally, European studies emphasize the role of mature financial systems and regulatory frameworks in optimizing capital structures. In contrast, South Africa's emerging market is marked by energy shortages, economic volatility, and localized risk, which introduce unique pressures that complicate financing decisions. In Asian markets like China, Cheng and Tzeng (2011) observed that increased leverage negatively impacts firm value due to heightened financial distress risks and institutional constraints. Similarly, Saif-Alyousfi et al. (2020) highlighted that macroeconomic instability in emerging Asian economies often disrupts the theoretical alignment between capital structure and firm performance, as limited access to stable financing channels and volatile interest rates amplify the risks associated with debt. Meanwhile, Charumathi and Krishnan (2016) observed a positive effect in specific industries, emphasizing tax shield advantages. Another notable divergence lies in the role of asset growth (AG). While South African investors showed indifference to AG's impact on stock prices, prioritizing operational efficiency over expansion, research in Asian contexts (e.g., India and Malaysia) often links asset growth to favorable market valuations, provided it aligns with macroeconomic stability. Conversely, European studies frequently associate rapid asset growth with investor skepticism unless accompanied by clear profitability metrics, reflecting stricter scrutiny in mature markets.

2.6. Stock Price (SP)

The stock price denotes the present market value of a company's shares, ascertained via the price at which buyers and sellers are prepared to transact the stock at a designated time (Allen & Gale, 1992; F. Khan, 2014). Various factors affect stock prices, including industry trends, investor sentiment, overall business performance, and macroeconomic conditions (Baker & Wurgler, 2007; Tetlock, 2007). A company's financial performance is pivotal in affecting its stock price, with revenue growth, profitability, and financial stability being particularly impactful. Companies that report strong earnings, consistent revenue growth, and positive financial outcomes tend to experience higher stock prices, as investors associate these attributes with the capacity of a firm to produce sustainable returns and manage risk effectively (Athanasakou & Athanassakos, 2019; Bansal & Singh, 2020). These factors contribute to investor confidence, which, in turn, drives stock value. Positive financial performance signals to investors that the firm is well-positioned for future success, thereby increasing demand for its shares and pushing up the stock price.

2.7. Firm Value (FV)

Firm Value (FV) represents the overall value of a business, serving as a critical measure for analysts and stakeholders in evaluating a company's fiscal well-being and market position (Dada & Watson, 2013). A higher FV is typically associated with greater financial stability and long-term sustainability. One common method of evaluating firm health is through Altman's Z-Score, which indicates a company's risk of bankruptcy. A higher Z-score suggests a lower likelihood of financial distress, reflecting stronger business fundamentals and a more secure financial position (Altman, 2018). In parallel, the relationship between Firm Value (FV) and Stock Price (SP) has been widely studied, with researchers exploring how stock prices are influenced by key financial indicators such as profitability, overall performance, and financial health. Strong financial performance, driven by steady profitability and growth, is generally linked to higher stock prices, as investors associate these factors with enhanced future returns and reduced investment risk (Asiri & Hameed, 2014). These measures, such as firm value and stock price, are crucial for assessing a company's capacity to attract investors and sustain a competitive edge in the market.

2.8. Profitability Ratios

Profitability metrics are essential in evaluating a business's financial performance, as they measure its capacity to produce profits from revenue, assets, or equity (Carton & Hofer, 2006; Petersen et al., 2009). Key profitability indicators include Return on Equity (RE) and Return on Assets (RA), which offer insights into the efficacy with which a company utilizes its resources to produce revenue. This research employs Return on Assets (RA) as the principal profitability metric. RA is a financial ratio that compares a company's net income to its total assets, indicating how efficiently a firm employs its resources to produce profits. Previous research suggests that a higher RA signifies superior efficiency in asset utilization, with companies producing greater profit per asset unit, whereas a lower RA denotes less effective asset management. (Abdeljawad & Nor, 2017; Li et al., 2023). This metric is handy for assessing the operational efficiency of firms across various industries, including food manufacturing, where asset management and profit generation are critical to sustaining growth and competitive advantage.

2.9. Liquidity Ratio

Liquidity is a metric to evaluate a company's ability to fulfil its short-term liabilities, including payments to customers and suppliers. Liquidity ratios are fundamental in the food manufacturing sector, as consistent cash flow is essential for covering operational costs, including payroll, inventory purchases, and other day-to-day expenses. The Current Ratio (CR) is the primary liquidity metric for this research. The CR is a commonly utilized financial ratio that assesses a company's capacity to meet its short-term obligations using its short-term assets, including cash and receivables. (Adamu & Hamidah, 2024).

This ratio is a proxy for evaluating the firm's short-term financial health. Previous studies have similarly employed the CR to assess liquidity and its impact on firm value, with findings indicating that a moderate current ratio supports operational stability and solvency. However, an excessively high CR may signal inefficiency in asset utilization, as companies may hold excessive cash or liquid assets that could otherwise be potential growth opportunities (Aggarwal & Padhan, 2017; Cheng & Tzeng, 2011). Therefore, while a higher liquidity ratio may appear beneficial, it can also indicate missed investment opportunities, potentially hindering long-term value creation.

2.10. Debt-to-Equity Ratio (DE)

This critical financial metric measures the proportion of debt a business uses to finance its operations relative to its equity or ownership. This ratio is an important indicator of a company's financial leverage, providing insight into the risk associated with its capital structure. A high DE ratio suggests that a company relies heavily on debt to fund its activities, which can increase its vulnerability to economic fluctuations, interest rate changes, and financial distress (Borio et al., n.d.; Culp, 2002). Firms with a higher debt load face greater risks during periods of economic downturn or rising interest rates, as the cost of servicing debt becomes more burdensome. Conversely, companies with lower DE ratios tend to have a more balanced capital structure, potentially reducing financial risk and offering greater stability in volatile market conditions. Recent studies have continued to examine the implications of the DE ratio, finding that an optimal balance between debt and equity financing can enhance firm value, while excessive debt can lead to higher bankruptcy risk and a negative impact on shareholder wealth (Cheng & Tzeng, 2011; Petersen et al., 2009).

2.1.1. Asset Growth (AG)

Asset growth is a crucial financial metric that quantifies the percentage variation in a company's total assets over a certain timeframe, usually one year. It is an important indicator of a company's expansion and investment activities, reflecting its ability to increase its asset base and, by extension, its growth potential. Previous research used asset growth to evaluate a company's performance and financial strategies (Gill et al., 2010; Li et al., 2023). The increase in assets is intricately associated with capital structure (CS) and firm value (FV), as the choices regarding financing, whether through debt or equity, directly impact the company's capacity to acquire and invest in assets. In this study, asset growth is utilized as a proxy for financial ratios, serving as a stand-in to measure the effect of financial decisions on firm value. A positive asset growth rate suggests a company is expanding, potentially increasing its market value, while negative growth could indicate stagnation or financial distress. This relationship highlights the significant role of asset growth in influencing a company's financial stability and its valuation in the market (Athanasakou & Athanassakos, 2019; Garg & Gupta, 2023).

2.1.2. Firm Size (FS)

Firm Size (FS) generally denotes metrics such as total assets, revenue, or the number of corporate locations, and it significantly influences a company's overarching strategy and market positioning. Larger companies often enjoy several advantages, including the ability to negotiate favourable terms with suppliers, greater financial resources for investment in new facilities and equipment, and a more established brand presence. These factors collectively enhance their competitive edge. In contrast, smaller businesses are generally more agile, enabling them to respond quickly to changes in market conditions and potentially outperform larger competitors in terms of innovation and flexibility (Hermuningsih, 2019; Putro & Risman, 2021). Empirical research has consistently shown a significant correlation between firm size and firm value (FV); larger organizations typically possess elevated valuations owing to their market dominance, superior access to capital, and economies of scale. (Adamu & Hamidah, 2024). In this study, firm Size is a proxy for various financial metrics, allowing for an in-depth examination of its impact on capital structure and firm value. This relationship highlights the importance of firm Size in shaping financial decisions and market perceptions, influencing capital structure strategies (Bansal & Singh, 2020; Beck et al., 2018).

2.1.3. Research Framework

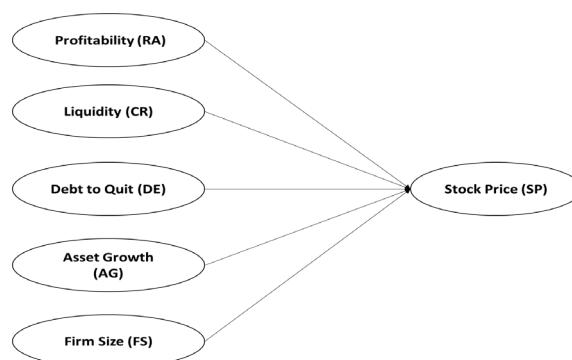


Fig. 1. The proposed study of this paper

As depicted in Fig. 1, capital structure components such as return on assets (RA), current ratio (CR), debt-to-equity ratio (DE), asset growth (AG), and firm size (FS) are hypothesized to influence firm value. About the aforementioned framework, previous research, and theories, the following hypotheses were formulated:

2.1.4. Profitability (RA) positively impacts stock price (SP)

According to financial theory, the stock price (SP) is directly influenced by Return on Assets (RA). This key profitability indicator measures how effectively a company utilizes its assets to generate profit. Higher stock prices are generally expected to align with improved profitability, as reflected by a higher RA. This relationship is based on the understanding that investors place greater value on businesses that exhibit strong profitability, thus driving up their stock prices. The core idea behind this expectation is a positive correlation between RA and stock price, which indicates that an increase in asset-generated returns correlates with an increase in stock price. This correlation highlights the influence of investor behavior, which typically favours companies with elevated profitability metrics.

Additionally, the hypothesis acknowledges the complex nature of profitability and its impact on stock prices. Efficient operations, resource utilization, and the capacity to generate affect stock price fluctuations. A favourable correlation between RA and stock prices underscores the importance of profitability as a key factor in market pricing since investors are motivated by the objective of maximizing returns on their money. (Aggarwal & Padhan, 2017; Putro & Risman, 2021).

2.1.5. Liquidity (CR) positively impacts stock price (SP)

According to financial theory, the stock price (SP) is directly influenced by Return on Assets (RA). This critical profitability metric assesses how effectively a company utilizes its assets to generate profit. It is widely expected that higher stock prices are associated with improved profitability, as indicated by a higher RA. This positive relationship stems from the understanding that investors value firms with strong profitability, which drives their stock prices. The fundamental assertion is that a positive correlation exists between RA and stock price. As the return on assets increases, the stock price should also rise, reflecting the market's assessment of the company's ability to generate returns. This correlation is rooted in investor behavior, where companies with higher profitability are favoured due to their potential to generate stable returns and provide attractive investment opportunities. The hypothesis recognizes that the influence of profitability on stock prices is complex. Essential elements, including operational efficiency, effective resource allocation, and the ability to produce consistent profits, significantly influence stock price fluctuations. A positive correlation between RA and stock prices emphasizes profitability as a crucial driver in market valuation as investors seek to maximize their returns on capital (Athanasakou & Athanassakos, 2019; Garg & Gupta, 2023). Additionally, the hypothesis considers the complexities of investor decision-making, recognizing that profitability metrics, such as ROA, are vital indicators that guide investment choices, particularly in today's dynamic and often unpredictable financial markets.

2.1.6. Asset growth has a negative effect on stock price (SP)

The hypothesis investigates the correlation between asset growth and stock prices. (SP), suggesting that market valuations are significantly influenced by the growth of a company's total assets. The underlying premise is that companies experiencing robust asset growth are likely to attract positive investor sentiment, which, in turn, drives up their stock prices. This assumption is based on the belief that strong asset growth signals a company's future potential, indicating that it is expanding its operational base and positioning itself for greater profitability and market share. The accumulation of assets is seen as a sign of a positive trajectory, where businesses that increase their assets are viewed as having greater capacity to generate revenue, innovate, and capitalize on growth opportunities. This theory is consistent with recent academic literature, particularly studies by Aggarwal and Padhan (2017), which highlight how the expansion of assets influences investor perceptions, ultimately leading to increased stock prices. As companies grow their asset base, investors view them as more capable of scaling operations and enhancing future returns, fostering greater investor confidence and higher market valuations. This connection between asset growth and stock price performance underscores the importance of asset accumulation as a strategic signal to the market.

2.1.7. Debt-to-equity (DE) positively impacts on stock price (SP)

This theory examines the correlation between stock prices (SP) and the Debt-to-Equity (DE) Ratio, providing a refined understanding of investor perception aligning with Trade-off Theory due to tax shield benefits, South African emerging market dynamics, and financial risk interconnect with high leverage to be tolerated due to growth opportunities. The core concept suggests that the DE ratio, a key measure of a company's leverage, directly impacts stock prices. The theory posits that investors typically favour companies with lower DE ratios, viewing them as having a more conservative capital structure and less exposure to financial risk. A lower DE ratio indicates that a firm is less reliant on debt, which investors perceive positively as it suggests greater financial stability and a lower likelihood of distress. In turn, it tends to drive up stock prices. The theory is well-supported by existing research, including studies by K. I. Khan et al. (2021); this underscores the critical importance of the DE ratio in determining investor perceptions and affecting market prices. The theory is grounded in robust research, thoroughly comprehending the intricate relationship between financial measures and investor decision-making. Beyond the quantitative aspect of the DE ratio, this theory highlights the strategic implications of maintaining a balanced

capital structure. It suggests that firms with lower debt levels enjoy greater financial flexibility, increased stability, and enhanced investor confidence, which can ultimately lead to higher stock valuations.

2.1.8. Firm size (FS) positively impacts stock price (SP)

This theory examines the correlation between stock prices (SP) and firm size (FS), articulating a narrative that integrates market value, stability, and investor risk perceptions. The fundamental assertion is that investors perceive larger companies as more stable and less hazardous, which could lead to higher stock prices for such companies. The assumption behind this is that larger firms often signal a more established market presence, financial robustness, and durability, qualities that investors value when making investment decisions. This perception of stability and reduced risk is typically reflected in the firm's stock price, as investors are likelier to trust businesses perceived as dependable and resilient. Supporting this theory, research by Tetlock (2007) and Others has demonstrated that firm Size positively impacts stock prices, with larger companies often commanding a premium in the market due to their established market positions and ability to weather economic fluctuations. Empirical studies highlight how investors favour larger companies for their perceived stability and lower risk, a driving factor in their decision-making process (Frank & Goyal, 2009; Yin & Liao, 2020). This body of literature aligns with the notion that firm Size can indicate financial soundness and operational stability.

Moreover, the theory invites further exploration into the strategic advantages of larger companies, including better access to capital, economies of scale, stronger brand recognition, and increased investor trust. These factors contribute to financial performance and broader investor sentiment, affecting market valuations.

3. Research Method

3.1. Study Design

The quantitative methodology adopted in this study is well-suited for examining the relationship between capital structure and firm value, offering statistically robust insights that support data-driven decision-making. The selected variables provide a comprehensive framework for analyzing these dynamics. Return on Assets (RA), a measure of profitability relative to total assets, reflects a firm's operational efficiency and financial health, making it a critical determinant of investor attractiveness (Aggarwal & Padhan, 2017). The current Ratio (CR), representing liquidity, evaluates a firm's ability to meet short-term obligations with its current assets. Liquidity is a vital component of financial stability, as it directly influences solvency and firm valuation, with research emphasizing its strong link to capital structure and firm value (Adamu & Hamidah, 2024). Similarly, Asset Growth (AG) is used as a proxy for expansion and long-term value creation, influencing investor perceptions by signaling profitability and sustainability potential (Bansal & Singh, 2020).

Additionally, Firm Size (FS), often measured by total assets or revenue, indicates the scale of operations and market stability. Larger firms are typically viewed as less risky and more stable, attracting positive investor sentiment and commanding higher stock prices (Putro & Risman, 2021). Lastly, Stock Price (SP) is a proxy for firm value, capturing market perceptions of a company's performance and prospects. SP is widely recognized as a comprehensive measure of firm valuation, as it reflects the combined impact of profitability, liquidity, and growth on shareholder wealth (Saif-Alyousfi et al., 2020). These variables collectively provide a robust foundation for investigating how capital structure influences firm value.

Table 1
Definition of Variables

| Variables | Measures | Source |
|---------------------------|---|-----------------|
| Return on Asset (X1) | $ROA = (\text{Net Profit} / \text{Total Asset}) \times 100$ | Osiris Database |
| Current Ratio (X2) | $CR = \text{Current Asset} / \text{Current Liabilities}$ | Osiris Database |
| Debt to Equity Ratio (X3) | $DE = \text{Total Debt} / \text{Total Capital}$ | Osiris Database |
| Asset Growth (X4) | $AG = (\text{Total Asset} - \text{Total (t-1)}) / (\text{Total Asset (t-1)})$ | Osiris Database |
| Firm Size (X5) | FS (Total Assets) or Number of outstanding shares \times stock price | Osiris Database |
| Stock Price (Y) | (SP)= The stock price from 2007 to 2018 will be transformed into an annual average price for this data. | Osiris Database |

As shown in Table 1, the return on assets (RA) represents profitability, the current ratio (CR) measures liquidity, and the debt-to-equity ratio (DE) assesses financial leverage. These indicators serve as explanatory variables in the regression analysis.

3.2. Method of Data Collection

This study employs panel data analysis, a methodology that integrates cross-sectional and time-series data, offering several advantages for understanding the relationship between capital structure and firm value. By accounting for unobserved firm-specific factors, panel data effectively controls for heterogeneity, ensuring that individual differences do not bias the results.

Additionally, its incorporation of time-series elements allows for dynamic analysis of financial metrics, providing deeper insights into variable relationships over time (Hsiao, 2022). Moreover, panel data analysis enhances statistical power and efficiency by leveraging temporal and cross-sectional variations (Baltagi et al., 2005). This study utilizes three analytical models. The Fixed Effect Model (FEM) eliminates bias caused by unobserved heterogeneity by addressing time-invariant firm-specific characteristics, making it ideal for analyzing variables such as RA, CR, AG, and FS on SP (Garg & Gupta, 2023).

The Random Effect Model (REM) accounts for variability among firms and periods, facilitating greater generalizations regarding the relationship between capital structure and firm value. (Wooldridge, 2010). Additionally, the choice of Common Effect Model (CEM), FEM, and REM reflects the heterogeneity of South Africa's food sector. CEM captures industry-wide trends, such as the uniform impact of rising energy tariffs on leverage ratios (Stats SA, 2023). FEM controls for time invariant regional disparities, such as differential load shedding schedules between Gauteng (industrial hub) and the Eastern Cape rural agri-processing, while REM accounts for sporadic subsidies affecting firms unevenly.

3.3. Population Sample

This study examines publicly listed companies (8 firms *12 years =96 observations) within the South African Manufacturing Food Produce Industry, as recorded in the OSIRIS database from 2007 to 2018, using a purposive sampling method to ensure the inclusion of firms meeting specific criteria. The selected firms must operate within the specified industry during this period, remain continuously listed on the stock exchange to maintain data consistency, and publish annual financial reports in the OSIRIS database. These criteria ensure that only reliable and sector-relevant data are analyzed, capturing capital structure dynamics and firm value over 12 years. By focusing on companies with complete and verifiable financial information, the study minimizes data gaps and enhances the robustness of its findings. This comprehensive approach enables an in-depth analysis of industry-specific financial trends. It provides credible insights into the relationship between capital structure and firm value in South Africa's food production manufacturing sector.

The selection criteria and sample characteristics are summarized in Table 2.

Table 2
Sampling Process

| Procedure | Population |
|---|------------|
| From 2007 to 2018, candidly exchange guests in the fare manufacturers area were situated in "Osiris." | 11 |
| A food manufacturing firm with insufficient information | 3 |
| The number of qualifying enterprises | 8 |
| Twelve (12) years total sample period (2007–2018) | 96 |

The standard deviation of the debt-to-equity ratio (DE) indicates significant differences in financial leverage across firms. South Africa's food manufacturing sector leverages innovation, localized strategies, and sustainable practices to meet diverse consumer needs and achieve competitive differentiation, driving economic growth and job creation. Investments in technology and efficient distribution enhance accessibility and global competitiveness (Boks & Mazenda, 2023; Mkhize-Simelane et al., 2024), while sustainability efforts address environmental and social challenges, showcasing resilience and adaptability (Cho et al., 2023).

3.4. Data Analysis Technique

The study employs Stata and complementary statistical methods to analyze the dataset effectively. Before conducting regression analysis, an exploratory data analysis was undertaken. As described by Kaur et al. (2024), this explanatory approach utilizes descriptive statistics such as mean, median, and standard deviation to identify patterns or trends in the variables under study. According to (Singh & Baga, 2019), this method is crucial for understanding variability within the dataset. When applied to capital structure (CS) and firm value (FV), significant variability was observed, further emphasizing the need for robust statistical tools. The research uses regression analysis to explore the relationship between the dependent variable (firm value, represented by stock price, SP) and multiple independent variables, including Return on Assets (RA), Current Ratio (CR), Debt-to-Equity Ratio (DE), Asset Growth (AG), and Firm Size (FS). This methodology aligns with prior studies, such as those by Aggarwal & Pradhan (2017) and Gill et al. (2010), which established strong correlations between firm value and financial metrics like growth, liquidity, and profitability. The regression model for panel data is formulated as follows:

$$SP_{it} = \beta_0 + \beta_1 RA_{it} + \beta_2 CR_{it} + \beta_3 DE_{it} + \beta_4 AG_{it} + \beta_5 FS_{it} + \varepsilon_{it}$$

where:

SP = Stock Price (dependent variable)

AG = Asset Growth

RA = Return on Assets
 CR = Current Ratio
 DE = Debt-to-Equity Ratio

FS = Firm Size
 i = Company identity (1, 2, ..., n)
 t = Time (year)

The Hausman test ascertains the ideal panel data model, which aids in selecting between FEM and REM. After model selection, regression analysis employs statistical measures, like the T-test and F-test, to evaluate the importance of the variables.

1. The T-test assesses the distinct influence of each explanatory variable on the dependent variable at a 5% significance threshold. ($\alpha=0.05$). If the computed T-statistic is less than or equal to the critical value (T-table), the null hypothesis (H0) is not rejected, indicating no significant effect. Conversely, if the T-statistic exceeds the critical value, the null hypothesis (H0) is rejected, suggesting a significant effect.
2. The F-test evaluates the aggregate impact of all independent variables on the dependent variable. If the calculated F-statistic is less than or equal to the critical value from the F-table, the null hypothesis (H0) is accepted, indicating the absence of a collective impact. Should the F-statistic surpass the crucial value, H0 is dismissed, affirming a large collective impact of the independent variables on the dependent variable.

4. Result and Discussion

Descriptive statistics are employed to illustrate the characteristics of the variables under investigation. The results of the descriptive statistics are shown below.

Table 3
 Descriptive Statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|----------|-----|----------|-----------|----------|-----------|
| SP | 96 | 5.151 | 24.663 | .282 | 243.856 |
| RA | 96 | 11.363 | 10.808 | -26.58 | 48.92 |
| CR | 96 | 1.352 | .356 | .67 | 2.37 |
| DE | 96 | 4.433 | 30.533 | .37 | 300.387 |
| AG | 96 | 135 | .44 | -879 | 3.361 |
| FS | 96 | 90225223 | 4.635e+08 | 25170.06 | 4.557e+09 |

Source: Author's computation using Stata 14.

Table 3 shows that firm size (FS) exhibits the highest variability, with a wide range from small firms to large corporations. The debt-to-equity ratio (DE) standard deviation indicates significant differences in financial leverage across firms. The descriptive statistics offer a detailed summary of essential variables in the study, including Stock Price (SP), Return on Assets (RA), Current Ratio (CR), Debt-to-Equity Ratio (DE), Asset Growth (AG), and Firm Size (FS). The stock prices (SP) have a mean of 5.151 and considerable variability, indicated by a standard deviation of 24.663, implying a substantial spread among enterprises. With a mean of 11.363, RA shows moderate variability, with values ranging from -26.58 to 48.92, indicating that some firms face financial distress. CR, with a mean of 1.352 and a standard deviation of 0.356, reflects moderate liquidity levels.

Table 4
 The regression results

| VARIABLES | CEM SP | FEM SP | REM SP |
|----------------|---------------------------|---------------------------|---------------------------|
| RA | 0.0973*** (0.0122) | 0.0556*** (0.00931) | 0.0591*** (0.00945) |
| CR | 0.0293 (0.358) | -0.577** (0.254) | -0.509* (0.260) |
| DE | 0.675*** (0.0356) | 0.559*** (0.0455) | 0.580*** (0.0424) |
| AG | -0.309 (0.278) | -0.248 (0.165) | -0.250 (0.171) |
| FS | 9.01e-09*** (2.33e-09) | 1.67e-08*** (3.00e-09) | 1.53e-08*** (2.79e-09) |
| Constant | 0.240 (0.493) | 1.347*** (0.354) | 1.248*** (0.466) |
| Observations | 96 | 96 | 96 |
| R-squared | 0.998 | 0.999 | 0.997 |
| Number of C_ID | 8 | 8 | 8 |

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

At the same time, DE shows a high standard deviation of 30.533, indicating significant variability and potential outliers in the data. AG, with a mean of 0.135 and a standard deviation of 0.44, reveals a broad range of asset growth, from negative growth to substantial expansion, highlighting varying financial conditions among firms. FS, with a mean of 90,225,223 and a large standard deviation of 4.635e+08, indicates significant differences in firm size from small to large firms. The variable variability suggests that a one-size-fits-all approach may not be suitable for analyzing the relationship between capital structure and firm value. These findings indicate that regression analysis and further inferential testing are necessary to explore the relationships between capital structure and firm value while addressing outliers and ensuring the appropriate data transformations for modeling. The insights gained from these descriptive statistics set the stage for a more nuanced exploration of how capital structure and other financial metrics influence firm performance, aligning with empirical research and theoretical frameworks in corporate finance (Aggarwal & Padhan, 2017; Putro & Risman, 2021). The regression results for the CEM, FEM, and REM are summarized in Table 4. The regression analysis conducted in this study employed three distinct models—CEM, FEM, and REM—to examine the relationship between various financial metrics and stock prices (SP) of South African food manufacturing firms. The findings highlight key relationships, such as the significant and consistent positive impact of profitability (measured by Return on Assets, RA) on stock prices across all models, supporting the assertion that investors highly value firms with strong profitability. This aligns with prior studies that emphasize the importance of profitability in determining firm value (Aggarwal & Padhan, 2017; Kaur et al., 2024). The debt-to-equity ratio (DE) also consistently showed a positive effect on stock prices, reflecting investor confidence in leveraged firms, potentially due to the perceived tax advantages of debt financing or the belief that firms can generate returns from borrowed capital (Frank & Goyal, 2009; Harris & Raviv, 1991). Liquidity, measured by the current ratio (CR), produced mixed results. While the POLS model showed no significant effect, both the FEM and REM revealed a negative relationship between liquidity and stock prices, suggesting that investors might perceive higher liquidity as a sign of inefficiency or a lack of profitable investment opportunities (Cheng & Tzeng, 2011; Merton, 1987). It suggests a more nuanced view of liquidity, where excessive liquidity could be interpreted as an indicator of underutilized resources, which may not align with investors' growth expectations. Asset growth (AG) consistently showed no significant effect on stock prices, indicating that investors in the food manufacturing sector may not prioritize asset expansion as a key driver of firm value. This result is consistent with findings from prior studies that suggest a stronger focus on operational efficiency and profitability than on the accumulation of assets (Garg & Gupta, 2023). Firm Size (FS), while showing a positive and statistically significant relationship with stock prices across all models, had a small practical effect, as evidenced by its very small coefficient. This finding supports the argument that larger firms are generally perceived as more stable, but the marginal impact of Size on stock prices indicates that factors such as profitability and leverage may play more significant roles in determining market valuation (Hsiao, 2022; Putro & Risman, 2021). The high R-squared values (close to 1) across all models suggest that the variables included in the study are strong predictors of stock price movements, providing a robust foundation for understanding the factors influencing firm value in the South African food manufacturing sector. These results contextualize the theoretical perspectives on capital structure, such as the Trade-Off Theory and Pecking Order Theory, which argue that financial structure decisions, including profitability, leverage, and liquidity management, directly impact firm value (Myers, 1977; Myers & Majluf, 1984)

Table 5
Hausman (1978) specification test between RE and FE

| | Coef. |
|-----------------------|-------|
| Chi-square test value | 7.72 |
| P-value | .102 |

The Hausman test was conducted to determine the most appropriate estimation model, as shown in Table 5. The committee's approach to model selection includes the Hausman test, which compares the REM and FEM. This test is essential in determining which model is more appropriate based on the underlying assumptions about the individual-specific effects in the data. Specifically, the Hausman test evaluates whether the regressors correlated with the individual-specific effects, which would indicate a need for the FEM. If the test results in a p-value less than 0.05, the null hypothesis of no correlation between individual effects and regressors is rejected, suggesting that the FEM is the better choice. Conversely, suppose the p-value is greater than 0.05. In that case, the null hypothesis is not rejected, implying that the REM is more appropriate because it assumes that the individual-specific effects are uncorrelated with the regressors.

In this study, the Hausman test yielded a p-value of 0.102, which is higher than the standard significance level of 0.05, meaning there is insufficient evidence to reject the null hypothesis. It suggests that the individual-specific effects are not significantly correlated with the regressors, thus supporting the use of the REM over the FEM. The Hausman test favoured REM, but residual biases from unobserved heterogeneity, such as divergent managerial responses to the 2021 looting crises in KwaZulu-Natal, were acknowledged. Sensitivity analysis using clustered standard errors was conducted to mitigate bias from omitted variables like informal sector competition. The empirical findings align with the REM's theoretical framework, commonly used when the individual-specific effects are assumed to be randomly distributed and uncorrelated with the explanatory variables. This model allows for greater generalization across time and individuals, especially when the focus is on estimating the average effects of the variables across the entire sample (Baltagi et al., 2005). Moreover, the choice of the REM is supported by the absence of endogeneity concerns in this study, where the explanatory variables do not exhibit

systematic correlation with the unobserved heterogeneity (Wooldridge, 2010). It is important to note that the selection between FEM and REM is contingent on the nature of the data and the research questions. Fixed-effect models are often preferred when there are concerns about unobserved heterogeneity that correlates with the regressors. In contrast, REM is more efficient when such correlations are absent (Hsiao, 2007). Additionally, increasing the sample size tends to affect the Hausman test results, as larger samples often lead to more precise estimates, potentially shifting the preference towards the FEM due to better statistical power (Arellano & Bond, 1991).

4.2. Discussion

The study offers critical insights into the relationship between capital structure and firm value, focusing on key financial indicators, including profitability (RA), liquidity (CR), debt-to-equity ratio (DE), asset growth (AG), and firm Size (FS). The findings underscore profitability's significant role in determining market value, with a positive correlation between higher return on assets (RA) and stock price (SP). It supports existing theories and empirical studies (Hermuningsih, 2019; Ojo & Albertus, 2021; Susilowati & Wahyuningdyah, 2020), reinforcing that more profitable companies are rewarded with higher market valuations. This result aligns with investor behavior theories, which suggest that investors view profitability as a sign of company strength and future growth potential. However, the study also presents an interesting and somewhat unexpected finding regarding liquidity, as measured by the current ratio (CR).

Although liquidity is generally perceived as a positive indicator, the study reveals a negative and significant relationship between CR and stock price contextualized by deeper mechanisms like agent costs (Jensen, 1986) or sector-specific liquidity traps like cash hoarding in volatile markets. For instance, South Africa's food manufacturers facing input cost fluctuations may prioritize liquidity, which investors misinterpret as stagnation. Firms with excessive liquidity may face pressure to reinvest in growth or distribute dividends, aligning with (Cheng & Tzeng, 2011) in both the FEM and REM, suggesting that investors might interpret higher liquidity as a sign of inefficiency or a lack of lucrative investment opportunities. This insight challenges conventional wisdom, which typically associates higher liquidity with financial stability, and resonates with findings by Chance and Hemler (2001), emphasizing the nuance of firm valuation. In terms of leverage, the study finds a significant positive relationship between the debt-to-equity ratio (DE) and firm value, suggesting that the market may view higher leverage favorably. It contrasts with traditional theories that emphasize the negative impacts of high leverage on firm value, highlighting that investors may perceive debt as a tool for maximizing returns. The results align with the Pecking Order Theory (Bandanuji & Khoiruddin, 2020), which posits that firms prioritize internal financing and only resort to external debt when necessary. It also challenges the conventional belief that debt is detrimental to firm valuation.

In contrast, the study uncovers a negative, though not significant, relationship between asset growth (AG) and firm value. It does not always translate into, which may reflect investor concerns about the risks of expanding assets too quickly. This result reflects the sector's capital intensive nature, where asset expansion may not immediately translate to market value due to long payback period or investor focus on short term profitability resonates with (Haryono et al. (2016), who argued that asset growth could sometimes be viewed skeptically by investors, especially if it signals overextension or inefficient use of resources. The study's conclusion that asset growth has a negligible negative impact on stock prices adds to the growing body of literature questioning the direct link between asset expansion and firm value. The study also finds that firm size (FS) has a small but positive influence on firm value, aligning with the hypothesis that larger firms are typically perceived as more stable and less risky by investors. However, the small magnitude of this relationship suggests that Size alone may not be a decisive factor in determining firm value, as suggested by previous studies by Zuhroh (2019). This finding emphasizes the complexity of the relationship between firm size and market value, suggesting that other factors, such as competitive positioning and market efficiency, may play more significant roles in shaping investor perceptions.

5. Conclusion, Implications, and Limitations

5.1. Conclusions

The primary objective of this study was to examine the influence of capital structure on firm value within the South African food produce manufacturing sector by analyzing key financial ratios and stock price movements. The empirical findings reveal that capital structure, particularly the debt-to-equity ratio, is critical in shaping firm value. Companies that maintain a balanced approach to leveraging debt and equity tend to exhibit higher market valuations, suggesting that optimal capital structuring is essential for maximizing shareholder value. This result aligns with the foundational theories of capital structure, such as the *Trade-off Theory*, which asserts that firms seek to balance the costs and benefits of debt and equity financing to optimize their capital structure and minimize the overall cost of capital (Modigliani & Miller, 1958; Myers, 2001). The study also supports the *Pecking Order Theory*, which emphasizes the preference for internal financing and only resorting to debt when external equity is not viable (Myers & Majluf, 1984).

Further analysis indicates that financial ratios, including return on equity (RE), return on assets (RA), and debt-to-equity ratio (DE), serve as strong predictors of stock price movements, highlighting their significance as indicators of firm

performance and stability. The positive relationship between these financial ratios and stock price underscores the importance of profitability and efficient resource utilization in driving market valuation. This finding supports existing empirical evidence, which suggests that higher profitability and efficient asset utilization lead to enhanced investor confidence, thus raising a firm's market value (Bhagat & Bolton, 2008; Harris & Raviv, 1991). The results of this study contribute to the growing body of literature on capital structure by providing empirical evidence from the South African context, a region characterized by unique economic conditions and emerging market dynamics. This regional perspective is vital for understanding how capital structure decisions are influenced by factors specific to emerging markets, such as limited access to capital markets, higher levels of financial risk, and market volatility. The findings contrast with studies from more developed economies where capital markets are more mature and capital structures are often optimized through greater access to both equity and debt financing options (Fama & French, 2002; Frank & Goyal, 2009). This study's conclusions thus offer valuable insights for financial managers in emerging markets, particularly within the manufacturing sector, where balancing debt and equity financing can be challenging due to economic instability and limited access to credit.

5.2. Implications

The practical implications of this study's findings for financial managers, investors, and policymakers are significant and multifaceted, particularly within South Africa's dynamic economic environment. The study highlights the importance of strategic capital structure management for financial managers. Managers should aim for an appropriate balance between debt and equity financing to optimize firm value. The study's findings indicate that an over-leveraged capital structure may expose a company to heightened financial risk, including insolvency. At the same time, under-leveraging can prevent firms from taking full advantage of growth opportunities and achieving higher returns. Thus, financial managers must carefully evaluate the trade-offs between debt and equity, considering the company's current market position, economic conditions, and the cost of capital in South Africa (Harris & Raviv, 1991). For investors, the research emphasizes the need to closely scrutinize financial ratios—such as return on assets (RA), debt-to-equity ratio (DE), and firm Size (FS)—as part of the decision-making process. By understanding how capital structure impacts firm value, investors can better assess companies' financial health and growth potential, allowing them to align their investment decisions with their risk tolerance and financial objectives. In particular, investors should focus on firms with an optimal balance of debt and equity, as these companies are more likely to generate sustained growth and offer superior returns. The study proves that companies with well-managed capital structures are more likely to offer robust financial performance, making them attractive investment opportunities (Modigliani & Miller, 1958; Myers & Majluf, 1984). For policymakers, the research suggests that regulatory frameworks should be designed to foster sound capital structuring practices within firms, particularly in emerging markets like South Africa. Policymakers should focus on creating an environment that supports the efficient use of debt and equity capital while encouraging transparency and access to financial information. Transparent financial reporting ensures stakeholders, including investors, can make informed decisions. Additionally, regulations promoting balanced capital structures could help mitigate the risks associated with over-leveraging, ultimately contributing to the economy's long-term financial stability and growth. Policymakers should tailor interventions to sectoral realities: Implement agricultural debt tax shielding, increase state-backed loan guarantees for SMEs, match BEE financing incentives with ESG standards, and promote financial reporting clarity to mitigate energy borrowing.

5.3. Theoretical, Methodological, and Practical Contribution

Despite the valuable insights provided, it is essential to acknowledge the limitations of this study. First, the study's focus on the South African food production sector may limit the generalizability of its findings to other industries or geographical areas. With its specific dynamics and regulatory frameworks, the South African food industry may not represent broader trends across other sectors or regions. To know the external validity of the findings, future research could expand the scope to include a more diverse range of industries and regions, allowing for comparative analysis across different sectors and economic environments. It would provide a more comprehensive understanding of how capital structure influences firm value in varied contexts.

Secondly, the study primarily relies on historical stock prices and financial data, which, while robust for empirical analysis, may not fully capture the dynamic nature of financial markets. By its nature, historical data reflects past trends but may not account for unforeseen events or fluctuations, such as political instability, economic recessions, or global financial crises, which can significantly affect firm value. Including real-time data or integrating macroeconomic factors could offer a more nuanced view of how external shocks or changes in the broader economic landscape impact the relationship between capital structure and firm value.

Moreover, the study focuses solely on quantitative analysis, which provides a clear and measurable understanding of the variables under consideration. However, it overlooks qualitative factors such as management expertise, corporate governance, and market sentiment, which can play crucial roles in shaping firm value. Future research could adopt a mixed-methods approach, combining qualitative and quantitative data to offer a more holistic perspective. Interviews with key stakeholders, surveys on managerial practices, and analysis of corporate governance structures could complement the

financial data, providing a more comprehensive view of the factors influencing firm value. Future work will incorporate real-time macroeconomic shocks, e.g., COVID-19, energy crisis, and other African markets.

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