RESEARCH ARTICLE

JENER Journal of Empirical and Non-Empirical Research
Volume 2, Issue 8, Page 631-643 | Article No. 69
DOI: 10.4898/jener.v2i8.a69
ISSN: 7895-9216
Journal homepage: https://jenerjournal.com
Journal email: editor@jenerjournal.com

JENER Journal
JENER Journal of Empirical and Non-Empirical Research

Determinants of Capital Structures: An Empirical Review of Construction and Manufacturing Sector Firms Listed at Nairobi Security Exchange

Victor Wanje Onyando[1] & Dr. G. Yasin[2]

[1,2]School of Business and Economics, Maseno University

ARTICLE INFORMATION

Article history:
Published: August 2026

Keywords:
Capital Structure
Firm Size
Profitability
Liquidity
Tangibility
Nairobi Securities Exchange

ABSTRACT

This study explores the determinants of capital structure among manufacturing firms listed at the Nairobi Securities Exchange (NSE) over the period 2015–2024. Capital structure is considered as the mix of debt and equity used to finance a firm's operations, remains a critical financial decision that directly affects firm value and sustainability. Despite extensive global research, empirical evidence on optimal capital structure remains inconclusive and context-specific, especially in emerging markets such as Kenya. Guided by Modigliani and Miller, trade-off and pecking order theories, this study investigates the influence of firm size, profitability, liquidity, tangibility, and non-debt tax shields on capital structure, measured through the debt-equity ratio. The study employed a descriptive research design using secondary data drawn from audited financial statements of listed manufacturing firms. Data were analyzed through descriptive statistics, correlation analysis, and panel regression techniques, supported by diagnostic tests to ensure validity of results. Findings reveal that firm size has a positive and significant effect on leverage, suggesting that larger firms access debt more easily due to reduced bankruptcy risks and greater creditworthiness, in line with the trade-off theory. Profitability, on the other hand, exerts a negative and significant influence, indicating that profitable firms prefer internal financing over debt, consistent with the pecking order theory. Liquidity, tangibility, and non-debt tax shields showed no statistically significant effect on leverage. The regression model explained 13–18% of the variation in capital structure, implying that external macroeconomic and institutional factors also play a role in financing decisions. The study concludes that firm-specific factors, particularly size and profitability, are the main determinants of capital structure among Kenyan manufacturing firms. These findings provide important insights for managers seeking to optimize financing strategies, for policymakers aiming to strengthen credit markets, and for investors assessing financial health and risk exposure of NSE-listed firms.

1. Introduction

1.1 Background

Capital structure is considered as the permanent financing of the company represented primarily by long-term debt and equity and deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm, it is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings, it attempts to explain the mix of securities and financing sources used by corporations to finance real investment, (Pike & Neale, 2006; Pandey, 2011; Tahmeena & Hanif-Akhtar, 2023). Capital structure is considered as the mix of long-term debt and equity maintained by the firm, it is the mixture of debt and equity firm uses to fund its operations and growth which debt and equity assess through debt-to-equity ratio, which indicates financial leverage, (Rajan & Zingales, 1995). Bajramović (2017) argues that capital structure is important as it aim at creating an optimal financing mix that would result into maximization of the market value of the entity, finding the right debt-equity mix helps minimize overall finance costs, high debt increases obligatory interest payments and default risk, while equity reduces risk but may dilute ownership, debt interest is tax-deductible, often reducing tax obligations, (Bader E. A., 2018; Pham & Hardy, 2023). Capital Structure may be measured in different ways, Omet (2008) used the value of long term debts against total assets of the firm while Mangafiy and Martinoviy (2015) recognized capital structure in terms of leverage. Berg (2021) measured capital structure using total debt. Sant (2018) determined leverage ratio as the total book value of debts against sum of total book value of debts and total market value of equity. Pandey (2010) introduced measures as debt equity ratio, debt ratio and solvency. This study will measure capital structure using the debt to equity ratio as it's the most widely utilized measure.

The concept of capital structure can be traced to Modigliani & Miller (1958) who demonstrated that capital structure is independent of the value of the firm assuming that capital markets are perfect in terms of information and costs while in their study in Modigliani and Miller (1963) subsequently corrected their capital structure irrelevance proposition for taxes, since interest on debt is a tax-deductible expense, the firm effectively reduces its tax expenses as it employs more debt. Miller (1988) suggested that a firm's value can be affected by financing decisions if different tax regimes exist, information asymmetries between the firm's management and outside investors are present, real decisions differ across financing decisions. The arguments by Modigliani and Miller and the

assumptions therein brought about capital structure theories as the trade-off theory (Scott, 1977) which focused on tax effects that is tax advantage of additional debt or tax shield against financial distress costs; pecking order theory by Myers and Majluf (1984) and Myers (1984) emphasized the importance of information asymmetries; Agency theory introduced by Jensen and Meckling (1976); The signaling theory introduced by Ross (1977) who emphasized that inside information will signal information to the market. Life cycle theory was introduced by Berger and Udell (1998) is considered as the most popular view of the capital structure of small business The market timing theory tries to look at the market behavior of securities, (Kayo & Kimura, 2011; Bader A. E., 2018; Febrianti, Wendy, & Malini, 2024; Yahya, et al., 2024).

The construction and manufacturing sector firms leverage debt not only for tax efficiency but also due to their asset-rich nature and sufficient profitability and liquidity to support borrowing. The construction and manufacturing sector is critical in the growth of the economy with the government showing commitment by recognizing it in the wider Big-4 agenda that is health, manufacturing, housing and agriculture. In 2023, Kenya's Construction sector contributed 5.4% while manufacturing sector contributed 7.60% to the GDP, while the construction sector's contribution was approximately 7.2% of the GDP in 2022. Kenya has ambitious plans to increase the manufacturing sector's GDP contribution to 15% by 2027 and 20% by 2030 (KNBS, 2025). Besides Big-4 Agenda, vision 2030 seeks to realize industrialization largely by the manufacturing sector. However, the Capital Market Authority reports indicate that the manufacturing firms, especially the listed ones are currently facing debt financing challenges occasioned by cash flow and liquidity constraints. These firms include Mumias Sugar Company and Bamburi Cement Ltd and they have increased policy concerns. Firms are usually affected by different factors while attempting to establish optimal capital structure, determinants of capital structures are factors that influence the firm's choice of the financing strategies in meeting its financial needs, (Krishna, 2024). They are set of factors that will inform a firm's decision on choosing to either entirely employ equity or debt or a mixture of both of them conditional on how these factors behave that are mainly measured from the financial ratios of the firm that inform on the firm's financial performance, (David, 2000) (Adebiyi, et al., 2023).

1.2 Research Problem

Despite the extensive theoretical and empirical studies on capital structure, there remains no universal consensus on what constitutes an optimal mix of debt and equity. The existing findings vary across countries, industries, firm sizes, and economic conditions, making it difficult for managers to generalize conclusions. The available studies include Li and Islam (2019) in Australia who observed that industry specific factors significantly inform capital structure of the firm. In an inquiry by Berg (2021) in the United Kingdom, the identified factors include tangibility, liquidity and profitability. In the Indian banking sector, Garach (2019) identified factors include credit risk, size, growth and profitability. Within the beverage industry in Europe, Dalci et al (2019) identified liquidity and tangibility as the firm specific determinants. Ndung'u (2019) identified growth opportunities while Orangi (2017) considered dividend policy, liquidity, taxation and growth as factors determining capital structure, Kerubo (2018) considered profitability, interest tax shield and tangibility as Wahome (2018), the identified risk, size and profitability. In order to come up with optimal levels of equities and debts in the capital structures, an understanding and control of the firm specific determinants is of great essence to the finance managers of the firms (Garach, 2019). However, empirical studies provide conflicting results due to differences in methodologies, firm-specific factors, and economic environments. This lack of consensus underscores the need for further research. Therefore, this study examines the determinants of capital structure with a broader and standardized approach, in order to provide insights that are more applicable to firms across different contexts.

1.3 Research Objectives

The general objective of the study is to empirically review the determinants of capital structure among manufacturing firms listed at the Nairobi Securities Exchange..

1.4 Scope of the study

The study will focus on manufacturing firms listed at the Nairobi Securities Exchange, Kenya covering a period 15 years from 2010 to 2024 to allow for observation of capital structure trends in the sector. The study will rely mainly on secondary data from audited financial statements of listed manufacturing firms, NSE annual reports.

1.5 Significance of the study

This study is significant in several ways as to academic it contributes to the existing literature by providing empirical evidence on capital structure determinants within the Kenyan context, which has been underexplored compared to developed markets. Corporate Managers may benefit as it offers practical insights on financing strategies that can optimize firm value while mitigating risks associated with over-reliance on either debt or equity. Investors will benefit as it will helps them evaluate the financing choices of NSE-listed firms as an indicator of financial health and investment attractiveness. The findings may be important to regulatory bodies like the Capital Market Authority as it regulate the manufacturing firms and the endeavors to optimize their capital structure. Investors may understand the best way of pressing management to maximize their wealth. The literature on capital structure and its associated firm specific determinants may be enhanced.

1.6 Limitation of the study

While the study aims to provide robust insights, it will be subject to certain limitations such as Data Constraints since reliance on secondary data from published financial statements may lead to information gaps, especially for firms with incomplete disclosures. The findings will be specific to Kenya's capital market and may not be directly applicable to firms outside the NSE. Kenya's economy is subject to inflation, currency fluctuations, and policy changes that may distort financing patterns during the study period. Different industries within the NSE may exhibit distinct financing behaviors, which may complicate generalizations across all listed firms. Capital structure is influenced by real-time strategic decisions, which may not be fully captured through historical financial data.

2. Literature Review

2.1 Theoretical Framework

2.1.1 Modigliani and Miller Theory

Modigliani and Miller (1958) demonstrated in Modigliani and Miller Irrelevant theory that in the absence of taxes, bankruptcy costs, transaction costs and asymmetric information and the same rate of interest of borrowing by individuals and corporations, the value of a firm is independent of its financial structure. It does not matter if the firm's capital is raised by issuing or selling debt and what the firm's dividend policy is. The model is based on a framework that starts with assumptions of perfect competition in factor and product markets and no transaction costs. Capital structure is thus irrelevant to firm value, as well as tax deductibility of interest payments into their model. Modigliani and Miller, (1958) assumed perfect and frictionless capital markets to prove their irrelevance theorem in which firms financing policy should not affect the firm's value or its cost of capital. Modigliani and Miller (1963) show that borrowing will only cause the value of the firm to rise by the amount of the capitalized value of the tax subsidy and by introducing imperfect competition, bankruptcy costs, asymmetric information, and monopoly power, capital structure appears to be an influencing factor on firm value. The introduction of tax deductibility of interest payments has an implication on the choice of capital structure and profitability increases, non-debt tax shields reduce and liquidity increases. Based on these assumptions, earlier studies support this theory that capital structure significantly affects the value of a firm, (Modigliani & Miller, 1963; Bader A. E., 2018; Julie & Knight, 2022; Krishna, 2024).

2.1.2 Trade-off Theory

Kraus & Litzenberger,(1973) provided Trade-off theory which considers the trade-off between the costs of financial distress derived from debt and benefits of tax savings. Higher profitability decreases the expected costs of distress and let firms increase their tax benefits by raising leverage. Firms would prefer debt over equity until the point where the probability of financial distress starts to be important, (Scott, 1976). The static trade-off theory affirms that firms have optimal capital structures which they determine by trading off the costs against the benefits of the use of debt and equity. It is beneficial to use debt thus the advantage of a debt tax shield while considering cost of potential financial distress where the firms relies on too much debt, are more cost and benefits involved with the use of debt and equity. Dynamic trade-off theory states that firms choose their capital structure or leverage ratio by trading off the benefits and costs of debt, managers of firms are continuously optimizing leverage ratio as to maximize the value of the firm. Dynamic trade off theory recognized that it is costly to issue and repurchase debt. Firms whose leverage ratios do not coincide with their targets will only adjust their capital structure when the benefits of doing so outweigh the costs of adjustment. (Atiqur, Tanjila, & Kanon, 2023; E. M. Mukhongo, 2024)

2.1.3 Pecking Order Theory

The theory of Pecking order was developed by Myers in 1984. This theory fails to take an optimum capital structure as the starting point, but instead suggests that companies favor internal sources of funds such as retained earnings or excess liquid assets to external sources. Firms do not rush to obtain external funding, and if external funding is unavoidable, they would prefer to choose between funding sources with lower capital costs and at the same time reduce additional cost of information asymmetry (Luigi & Sorin, 2009). Furthermore, according to pecking order theory, the risk of finance from internal sources is less. Thus, the Myers and Majluf model explains that managers tend to follow a hierarchy and prefer to use internal finance first, and in the case of external debt, equity is issued when it is no longer appropriate to use additional debt. If the business does not have a strong position, it will keep its profits so as to prevent it from seeking external financing in the future (Luigi & Sorin, 2009). In line with the pecking order theory, firm age has a negative association with debt. Consequently, mature companies must build up profits over time and therefore do not require outside funding for the purpose of investing their assets; since they can use this accumulated profit to finance their investments (Bello et al., 2021).

2.2 Determinants of Capital Structure

2.2.1 Non-Debt Tax Shields

Modigliani and Miller (1963) looks at if interest payments on debt are tax deductible, firms with
positive taxable income have an incentive to issue more debt. Which gives incentive for borrowing as it take advantage of interest tax shields while item that contribute to a decrease in tax payments, are considered to be non-debt tax shields, for example the tax deduction for depreciation and investment tax credits. Trade-off Theory predicts a negative relationship between non-debt tax shields and leverage. De Angelo and Masulis (1980) argue that non-debt tax shields are substitutes for the tax benefits of debt and a firm with larger non-debt-tax shields may be expected to use less debt. Huang and Song (2006) conducted the empirical research in China found that non-debt tax shields are positively related to firm capital structure, which is consistent with the result of Bradley et al. (1984), Mutsotso (2017) documented a positive link between non debt tax shield and the capital structure of the entity. Atiqur, Tanjila, & K, (2023) considered non-debt tax shields to be generally positive but statistically insignificant before and during financial crisis, (Atiqur, Tanjila, & Kanon, 2023). On the other hand capital structure is negatively correlated with non-debt tax shield as deduced by Wald (1999) and supported by Chen (2004), Frank & Goyal (2009), Peter, Medzihorský & Hussam, (2022). Kim (1997), Devesa & Esteban (2011), Titman & Wessels (1988) found no evidence to support the relationship between non-debt tax shield and capital structure.

2.2.2 Firm Size

Larger firms are well diversified with stable cash flows with less chances of bankruptcy as compared to small firms; therefore, large firms prefer leverage and are having high level of leverage (Myers & Majluf, 1984). Trade off theory looks at larger firms as well diversified, having stable cash flows and their chances of bankruptcy being less as compared to small firms hence they are associated with high level of fixed assets, economies of scale, stable cash flow and creditworthiness, larger firms have the bargaining power over lender and can borrow at relatively lower rate (Marsh, 1982), Creditors prefer large firms as they are able to provide detailed

information to potential creditors and therefore their relationship is expected to be positive and significant this supports Ferri and Jones (1979) findings that firm size are positive and significantly related to capital structure which result is supported by Marsh (1982) who concurred that firm size is positively and significantly related with leverage as well as Myers and Majluf (1984), Riportella & Papis (2001), Abor (2008) Al-Najjar and Hussainey (2011) Shafana (2016), Chin and Zakaria (2017), Mardani, Moeljadi, Sumiati, & Indrawati, (2023); Rehan, Hadi, Hussain, & Hye (2023); Tahmeena & Hanif, (2023); Nouf, (2023)Che-Yahya, et al., (2024). other studies indicates negative relationship between firm size and leverage as in Rajan & Zingales (1995), Bevan & Danbolt (2002); Hacina, Khadra, & Dahouc, (2022); Krishna, (2024).

2.2.3 Profitability

Myers and Majluf (1984) demonstrated that firms have a pecking order in funding their activities and they prefer internal finance to external finance its also noted that a firm finance its capital with accumulated equity first, then debt, and as a last resort, newly issued equity. Brealey et al. (2020) denoted that net profit results from a series of strategies and actions are a widely employed factor considered a determinant of capital structure. Capital structure theories propose that the association between profitability and capital structure is a point of both theoretical and empirical contention (Saif-Alyousfi et al., 2020). The trade-off theory predicts a positive correlation between profitability and the debt-equity ratio, they have a robust financial standing, enabling them to comfortably handle higher levels of debt and efficiently manage timely repayment, unlike less profitable firms (Ali et al., 2022). This hypothesis implies a positive relationship between profitability and capital structure, emphasizing the potential for profitable firms to strategically leverage their capital structure to enhance their financial position as deduced by Taub (1975), Roden & Lewellen (1995), Fama & French, (2002), Chen (2004) this is supported by studies conducted by Chakraborty, (2010), Yang et al., 2010), Zhang (2010), Kumar et al. (2017), Faizal et al. (2019), Ali et al. (2022), Ahmeti et al. (2023) and Tahmeena (2023) which found a significant positive relationship between the two variables, indicating that profitable companies are more likely to choose debt as their preferred financing option. The pecking order theory posits that profitable firms accumulate more retained earnings, leading to lower leverage ratios, while unprofitable firms exhibit higher leverage ratios, consequently it predicts a negative relationship between profitability and leverage, suggesting that profitable companies prefer internal capital for financing (Moradi & Paulet, 2019) which is further substantiated by several past studies, including those by Abdulkarim (2023), Yahya et al. (2019), Setiawan & Yumeng (2021), and Sutomo et al. (2020), which found a significant negative impact of a firm's performance on its capital structure and supported by Karadeniz et al. (2009), Mansoon & Anwar (2012), Rehan, Hadi, Hussain, & Hye (2023), Pham & Hardy, (2023), Krishna, (2024) and Febrianti, Wendy, & Malini, (2024)

2.2.4 Tangibility

Tangibility is considered as the ratio of fixed assets to total assets and play important role in leverage level of firms and have some degree of debt capacity (Arilyn, 2020), these assets form part of the capital structure of a firm (Rumana et al., 2021). Firm with large amount of fixed assets can borrow at relatively lower rate of interest by providing the security of these assets, they have incentive of getting debt at lower interest rate, firm with higher percentage of fixed asset is expected to borrow more as compared to a firm whose cost of borrowing is higher because of having less fixed assets, (Muhamad et al., 2023). Studies have indicated a positive relationship between asset tangibility and capital structure as presented by Serrasqueiro & Nunes (2012), Pacheco & Tavares (2017) and Botta (2019), Orkaido, (2021), Ibrahim & Ariba, (2021). Soekarno et al. (2021), Czerwonka & Jaworski (2022), and Stamenković et al. (2022) while on the other hand there exist a negative relationship in consideration of results of Subiakto et al. (2021), Haron et al. (2021), Atiqur, Tanjila, & Kanon, (2023),Tahmeena & Hanif-Akhtar (2023), Pham & Hardy (2023), and Pyoko, (2024). Hence, firms with high tangibility are inclined to rely more on internal financing or equity issuance rather than debt, with fixed assets playing a diminished role as collateral.

2.2.5 Liquidity

Firms with more cash are consider be in a strongly liquidity position and as such, creditors usually prefer these highly liquid firms as being safe hence can easily access funds (Berg, 2021). This will lower the costs incurred to access debts by these highly liquid firms since there probability of insolvency is relatively low. In light of the pecking order theory, entities will give strong preference to internal as opposed to external funds so as to lower agency costs and information asymmetry. Jensen (1986) argues that cash-rich enterprises should take on additional debt to prevent managers from squandering free cash flows. Trade off theory asserts that the more liquid firm would use external financing due to their ability of paying back liabilities and to get benefit of tax shields, resulting in positive relationship between liquidity and leverage (Krishna, 2024; Bader E. A., 2018; Adebiyi, et al., 2023). While Frąckowiak et al. (2005) established a positive relationship between liquidity and capital structure, Mazur (2007) showed an inverse relationship. Empirical evidence supports the notion that liquidity is inversely connected with debt ratios, Alom, (2013) and Sheikh and Wang, (2011). It's also considered by other researchers that liquidity have a significant negative impact on capital structure (Pham & Hardy, 2023) this supports the results from Mazur, (2007), Ahmad et. al., (2011), Hacini, Khadra, & Dahouc, (2022) and Tahmeena & Hanif-Akhtar, (2023);

2.3 Empirical Study

Moradi & Paulet (2019) studied the determinants of capital structure before and after Euro Crisis with Tax shield, profitability, growth, leverage and equity as variables of concern and using multiple regressions to analyzing 559 enterprises for a period of 15 years between 1999–2015. The findings revealed that profitability and growth negatively linked to leverage. Mardani et al (2022) examine the determinants of capital structure based on the views of the trade-off theory and the pecking order theory among Indonesia examining 618 observations and differentiating for companies using debt below and above 50% and applying multiple regression to find out the determinants of capital structure in manufacturing companies in Indonesia from 2011 to 2017. The results of the study prove that there are differences in the determinants of capital structure when viewed from the trade-off and pecking

order theories with debt tax shield and growth showing insignificant result which indicates that more mature sample firms tend to use lower debt on the other hand, the larger the company's size, the more profitable it has a certainty of profit and is more liquid; it tends to use a lower proportion of debt in its capital structure, more in line with the pecking order theory. These findings show conflicting results and ignoring the sector specific effect.

Ali et al. (2022) investigated the multinational firms of UK and USA in energy sector for period of (2011-2019) to examine the influence of effective tax rate and the firm-specific variables on the capital structure. While using tangibility, profitability, non-debt tax shield and liquidity in study they revealed that tangibility has significantly and negatively impacted the short-term debt ratio. Moreover, the profitability has positively influenced the total debt and long term debt ratios. Rahman, Hossain, & Sen (2023) assessed firm-specific factors in UK firms over 1990–2019, while also analyzing the subprime crisis. They used panel data with fixed and random effects and concluded that profitability reduced leverage, tangibility increased leverage, and the financial crisis forced firms to rely more on internal funds. A limitation was the lack of sector-level analysis.

Toshinori, Todd and Schonlau (2022) while exploring determinants of capital structure assessed 55 dominants determinants of corporate while examining 160 articles that report leverage regressions in three top finance journals between 2000 and 2016 and document the methodology used in each article. The findings revealed a robust and economically important determinants of debt ratios are relatively few in number and each determinant relates to one of five market imperfections that is taxes, distress costs, information asymmetry, agency costs, or supply frictions therefore evidence as a whole regarding the explanatory power of different capital structure theories, there is greater support for pecking order theory and supply-related theories, with less support for traditional tradeoff theory and agency theory.

Raja et al, (2023) while exploring the determinants of capital structure for Malaysian firms listed in various sectors level with fixed assets current assets, return on equity, size, earning per share and total assets using multiple regression analysis and auto regression distributed lag model, panel data static models, dynamic model via the generalized method of moments found out an indication that the entire market is primarily controlled by the studied determinant total assets, which is significant in both construction and property sectors, the significant role of tangibility and the existence of speed of adjustment across sectors imply that the dynamic capital structure is the most prominent among all, followed by the dynamic trade-off theory.

Negara et al. (2023) in Indonesia tested business risk, profitability, tangibility, size, liquidity, and growth among 95 manufacturing companies. They found that profitability and liquidity negatively affected capital structure, whereas tangibility and growth had positive effects. Firm size and risk were insignificant. The gap is that the study only focused on manufacturing firms.

Nouf A (2023) investigated important determinants of capital structure in non-financial Saudi Arabian firms listed in Saudi Stock Exchange from 2010-2021, and found positive relationship between firm size, asset tangibility, and market- to book with firm leverage, while negative relationship between profitability and sales growth which seems to support trade-off theory picking order theory

Lussuamo and Serrasqueiro (2021) looked at determining factors that explain the capital structure decisions of small and medium-sized enterprises in the province of Cabinda, Angola, using a sample of 73 SMEs for the period between 2011 and 2016, and employing panel data models (pooled OLS, fixed and random effects). The result indicates that tangibility, age, liquidity, and non-debt tax shields influenced capital structure, consistent with pecking-order theory. They suggested that these firms follow the principles of pecking-order theory in capital structure decisions. The research contributes to increase studies in Corporate Finance, particularly concerning the determinants of the capital structure of SMEs located in a developing country. The study filled a gap in developing-country literature but was limited to a single province.

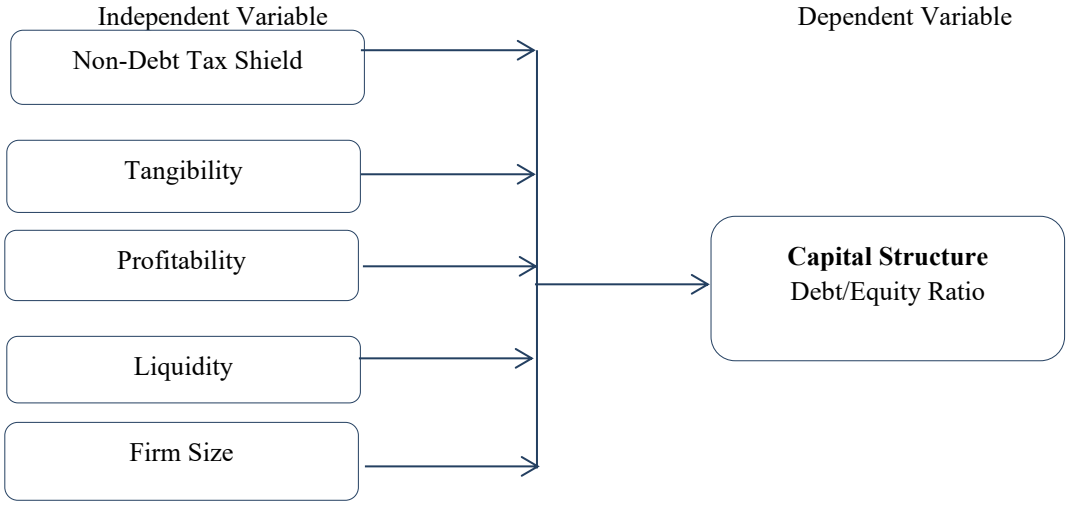
Hacinia et al. (2022) examined 20 SMEs in Algeria from 2010–2018. They reported that profitability, liquidity, and asset structure negatively impacted leverage, while firm size had a positive influence. Ishaq, Khadra, Khadra (2022) identified the determinants of the capital structure of SMEs in Algeria during the period 2010-2018, using variable as financial leverage, assets structure, profitability, liquidity and size with panel data and multiple regression analysis. The results show that profitability, liquidity, and assets structure are negatively related to financial leverage, while size does not affect the financial leverage..

Mitiku (2024) studied insurance companies from 2012–2022. The results showed that firm age, size, and liquidity positively affected leverage, while business risk and exchange rate had negative effects. Kebede, T.N. (2024) presented a study with the main aim of investigating firm-specific and country-level determinants of the capital structure of Ethiopian commercial banks. The study adopted an explanatory research design with a quantitative research approach. A panel dataset was obtained from 14 commercial banks, which range from 2010 to 2022. Among the independent variables tested, ROA, liquidity, effective tax rate, risk, and inflation have an insignificant effect on the capital structure of the selected commercial banks. The study will have implications for managers of commercial banks, legislators, regulators, and other interested parties that can use the study's conclusions to help them make well-informed capital decisions and implement the necessary measures to enhance the financial performance of Ethiopian banks with an optimal ratio of debt to equity. However, these two studies relied on secondary data alone which created a gap, as qualitative insights were missing.

Ndung'u (2019) examined investment firms listed on the NSE and concluded that tangibility, leverage, and liquidity were not key determinants of firm value. This contradicted earlier findings and highlighted the need for further research. Mohamud (2019) assessed capital structure in three major Kenyan microfinance banks and found that risk and profitability shaped their capital structure. The study was limited due to its small sample. Mukhongo and Banafa (2024) studied mining companies on the NSE and found profitability, asset structure, company size, and commodity prices to be significant determinants of capital structure. However, the research was industry-specific.

2.4 Conceptual Framework

Figure 2.1 Conceptual framework



Sources: Authors 2025

Figure 2.1 presents the conceptual framework of this study. The framework posits that capital structure, proxied by the debt-equity ratio, is influenced by several firm-level determinants. These include firm size, liquidity, non-debt tax shield, profitability, and tangibility. The framework is consistent with capital structure theories, where the trade-off theory emphasizes tangibility, firm size, and non-debt tax shields as key determinants, while the pecking order theory highlights profitability and liquidity.

3. Methodology

3.1 Research Design

Research design aimed at determining and describing the current status of the variable under investigation (Mugenda & Mugenda, 2003). Kothari, (2004) explains that descriptive research, involve surveying facts, through enquiries and contributing to adding the body of knowledge for the topic under investigation. This study adopted a descriptive research design, which is suitable for examining relationships among variables in a natural setting as it enables the analysis of existing data without manipulating the study environment, making it appropriate for understanding financing patterns among listed firms. In this case, the design allows an assessment of how firm-specific characteristics such as size, profitability, liquidity, tangibility, and non-debt tax shields influence capital structure.

3.2 Target Population

Mugenda and Mugenda, (2003), states that study population need to have some similar characteristic, which can help in the generalization of the study findings, to what is intended by the study. The target population consisted of firms listed under the construction and manufacturing categories at the Nairobi Securities Exchange (NSE). These sectors were selected because of their strategic contribution to Kenya's industrialization agenda and their heavy reliance on capital-intensive investments. Firms that lacked consistent financial data during the study period were excluded to ensure reliability and comparability of results as in appendix I.

3.3 Data Collection

Secondary data was obtained from published annual financial statements, NSE reports, and Capital Markets Authority (CMA) filings covering the period 2015–2024. This period was selected to capture a decade of financing trends, including the impact of both stable and volatile macroeconomic conditions. The data collected included measures of debt, equity, total assets, current assets, current liabilities, and depreciation, which were then used to compute financial ratios representing the independent and dependent variables as in appendix II.

3.4 Data Analysis

The study employed both descriptive and inferential statistical techniques. Descriptive statistics were used to summarize firm characteristics and capital structure patterns. Correlation analysis was applied to examine preliminary relationships among variables. Panel regression analysis was then used to test the effect of firm-specific determinants on capital structure, given the longitudinal nature of the data. Diagnostic tests were conducted to ensure the robustness of results which include; unit root tests to confirm the stationarity of panel data, Normality tests to assess the distribution of variables, Heteroskedasticity tests to check for variance inconsistencies, Autocorrelation tests to identify potential serial correlation in residuals and Variance Inflation Factor (VIF) tests to detect multicollinearity among independent variables.

3.4.1 Model Specification

$$Y = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + e_{it}$$

Where: Y - Capital Structure

X_1 Non Debt Tax Shield
X_2 Firm Size
X_3 Profitability
X_4 Tangibility
X_5 Liquidity

3.4.2 Operationalization of Variables

Table 3.1 Operationalization of Variables

Variables, Labels, Proxies, Measurements and Sources					
S. no.	Variables	Label	Proxies	Measurement	Source
1	Capital Structure	Y	debt-equity ratio	Measured by Total Debt divided by Total Equity Total Debt . Total Equity	Alves et al. (2015), Faizal et al. (2019), Younas & Kassim (2020), Haque & Shaiq (2023)
2	Non-Debt Tax Shields	X_1	Depreciation to Total Assets	Measured by Depreciation divided by Total Assets Depreciation Total Assets	Chen (2004), Frank & Goyal (2009), Devesa & Esteban (2011), Peter, Medzihorský & Hussam, (2022), Atiqur, Tanjila, & Kanon, (2023)
3	Firm Size	X_2	Natural log of total asset.	Measured as natural log of total asset.	Rajan et. al. (1999), Alipour et al., (2015), Lourenço & Oliveira, 2017, Ruhmiyati & Rizkianto (2022)
4	Profitability	X_3	Return on Assets	Measured by earnings before interest and taxes divided by total assets EBIT Total Assets	Rahim et al. (2020), Peter, Medzihorský & Hussam, (2022), Atiqur, Tanjila, & Kanon, (2023), Alabdulkarim (2023)
5	Tangibility	X_4	Net fixed assets to Total assets	Measured by Fixed Assets divided by Total Assets Fixed Assets Total Assets	Hossin & Mia (2020), Baker & Martin (2011), Clarisa & Nila (2022)
6	Liquidity	X_5	Current Ratio	Measured as Current Assets divided by Current Liabilities Current Assets Current Liabilities	Elliot (2005), Alipour et. al. (2015), Saif-Alyousfi et. al. (2020), Haque & Shaiq (2023)

3.4.3 Diagnostic Tests

- Stationarity Test

To ensure the validity of panel data regression, it is necessary to examine the stationarity properties of the variables. The Im, Pesaran, and Shin (IPS) panel unit root test was applied under the null hypothesis that each series contains a unit root. Panel Cointegration Tests

- Normality Test

The data to be used for regression analysis should be normally distributed. To this assumption, normality test is usually conducted. In this study, Shapiro-Wilk was used to test for normality. When the $p>0.05$, the deduction drawn is presence of normality in the data.

- Heteroskedasticity test

This is a situation when there is constancy in the error term of the regression model over time. This should not be the case as it is the violation of regression analysis assumption. BreuschPagan test was used to test for Heteroskedasticity with 0.05 being the threshold. Thus, $p<0.05$ signify presence of Heteroskedasticity.

- Autocorrelation Test

This test is used to ascertain the presence of serial correlation in the data. Such serial correlation can either be positive or negative. Durbin Watson Statistic was computed to test for autocorrelation with the figure approximately 2 signify absence of serial correlation in the data.

- Multicollinearity Test

Multicollinearity is any circumstance when at least one of the independent variable is related with each other (Andren, 2007). This should not be the case as it will have violated the regression analysis assumption. Variance of Inflation Factors (VIF) was computed to determine multicollinearity in the data. Muia (2017) share that VIF values above 10 signify presence of multicollinearity in the data.

4. Data Analysis and Discussion

4.1 Descriptive Statistics

Table 4.1 summarizes the descriptive statistics of the study.

Descriptive Statistics						
	Debt-Equity Ratio	Firm Size	Liquidity	Non Debt Tax Shield	Profitability	Tangibility
Mean	0.992299	7.021857	1.875344	0.046916	0.152473	0.586130
Median	0.196450	6.954850	1.615300	0.042500	0.111800	0.544800
Maximum	9.392600	7.957600	9.428000	0.105000	1.048200	1.561900
Minimum	-1.394498	6.160200	0.127800	0.009300	-0.381100	0.220100
Std. Dev.	1.675664	0.579468	1.596800	0.023807	0.230547	0.273171
Skewness	2.817440	0.099829	2.182425	0.385085	1.041355	0.720288
Kurtosis	12.99201	1.626024	8.786124	2.181899	6.057190	3.262687

Jarque-Bera	548.3006	8.031977	218.8798	5.260218	57.01704	8.934438
Probability	0.000000	0.018025	0.000000	0.072071	0.000000	0.011479
Observations	100	100	100	100	100	100

Source: Author Computation (2025)

Table 4.1 presents the descriptive statistics of the key variables based on 100 firm-year observations. The Debt–Equity Ratio has a mean value of 0.99 and a median of 0.20, indicating that while most firms maintain relatively low leverage, a few highly leveraged firms drive up the average. The ratio ranges widely from –1.39 (reflecting negative equity) to 9.39, with a standard deviation of 1.68. The distribution is heavily right-skewed (skewness = 2.82) and leptokurtic (kurtosis = 12.99), and the Jarque–Bera test confirms non-normality ($p < 0.01$). This suggests the presence of extreme outliers in leverage decisions across the sample. Firm Size shows a mean of 7.02, closely aligned with the median of 6.95, and exhibits low dispersion having a standard deviation = 0.58. Values range from 6.16 to 7.96, with the distribution being nearly symmetric (skewness = 0.10) but slightly platykurtic (kurtosis = 1.63). Although the Jarque–Bera statistic rejects normality at the 5% level ($p = 0.018$), the departure is mild, suggesting firm size is relatively stable across the sample. Liquidity indicates a mean value of 1.88 compared to a median of 1.62, showing that most firms hold moderate liquidity but a few firms report extremely high levels (maximum = 9.43). The variable is highly dispersed (standard deviation = 1.60) and strongly right-skewed (skewness = 2.18) with fat tails (kurtosis = 8.79). The Jarque–Bera test ($p = 0.0000$) confirms non-normality, highlighting significant outliers among firms with unusually high liquidity positions. The NDTS has a mean of 0.047 and a median of 0.043, with relatively low dispersion (standard deviation = 0.024). The range is narrow (0.0093 to 0.105), and the distribution is fairly symmetric (skewness = 0.39) and slightly platykurtic (kurtosis = 2.18). The Jarque–Bera probability ($p = 0.072$) suggests that NDTS is approximately normally distributed, making it one of the more well-behaved variables in the dataset. Profitability has a mean of 0.15 and a median of 0.11, with a wide spread (–0.38 to 1.05). The high standard deviation (0.23) reflects substantial variation among firms, from loss-making to highly profitable ones. The distribution is moderately right-skewed (skewness = 1.04) and leptokurtic (kurtosis = 6.06), indicating the presence of extreme values. The Jarque–Bera statistic ($p = 0.0000$) rejects normality. Lastly, Tangibility records a mean of 0.59 and a median of 0.54, with moderate variation (standard deviation = 0.27). The values range between 0.22 and 1.56. The distribution is mildly right-skewed (skewness = 0.72) and close to normal in kurtosis (3.26), though the Jarque–Bera statistic ($p = 0.011$) rejects strict normality. Tangibility is therefore relatively stable, with only mild deviations from normality. This results indicates that, while variables such as NDTS and Firm Size are relatively well-behaved and close to normal, Debt–Equity Ratio, Liquidity, and Profitability display strong non-normality driven by skewness, outliers, and heavy tails. These distributional characteristics suggest that appropriate transformations or robust estimation methods may be necessary in subsequent regression analyses to ensure reliable inference.

4.2 Diagnostic Tests

4.2.1 Stationarity Test

Table 4.2 summarizes the unit root test of the study.

Null Hypothesis: Unit root (individual unit root process) Method: IPS W-stat at 1st difference and individual intercept			
Series	Statistic	Prob.**	Stationary Decision
Ln_debt Equity Ratio	-1.63772	0.0507	Stationary at 1%
Firm Size	-3.70361	0.0001	Stationary at 1%
Liquidity	-3.84514	0.0001	Stationary at 1%
Non-Debt Tax Shield	-4.1680	0.0001	Stationary at 1%
Profitability	-4.31812	0.0000	Stationary at 1%
Tangibility	-5.39559	0.0000	Stationary at 1%
** Probabilities are computed assuming asympotic normality			

Source: Author Computation (2025)

Table 4.2 presents the results of the IPS W-statistics at the first difference with individual intercepts. The results indicate that Firm Size, Liquidity, NDTS, Profitability, and Tangibility are all stationary at the 1% significance level, as their probabilities are less than 0.01. The Debt-Equity Ratio also becomes stationary at the first difference, with a probability value of 0.0507, which is significant at the 10% level. These findings imply that all variables are integrated of order one, I(1). In other words, while the series were non-stationary in levels, they attained stationarity after first differencing.

4.2.2 Autocorrelation Test

Durbin Watson statistics was computed to determine autocorrelation and Table 4.3 gives a summary of the findings.

Table 4.3: Autocorrelation Test

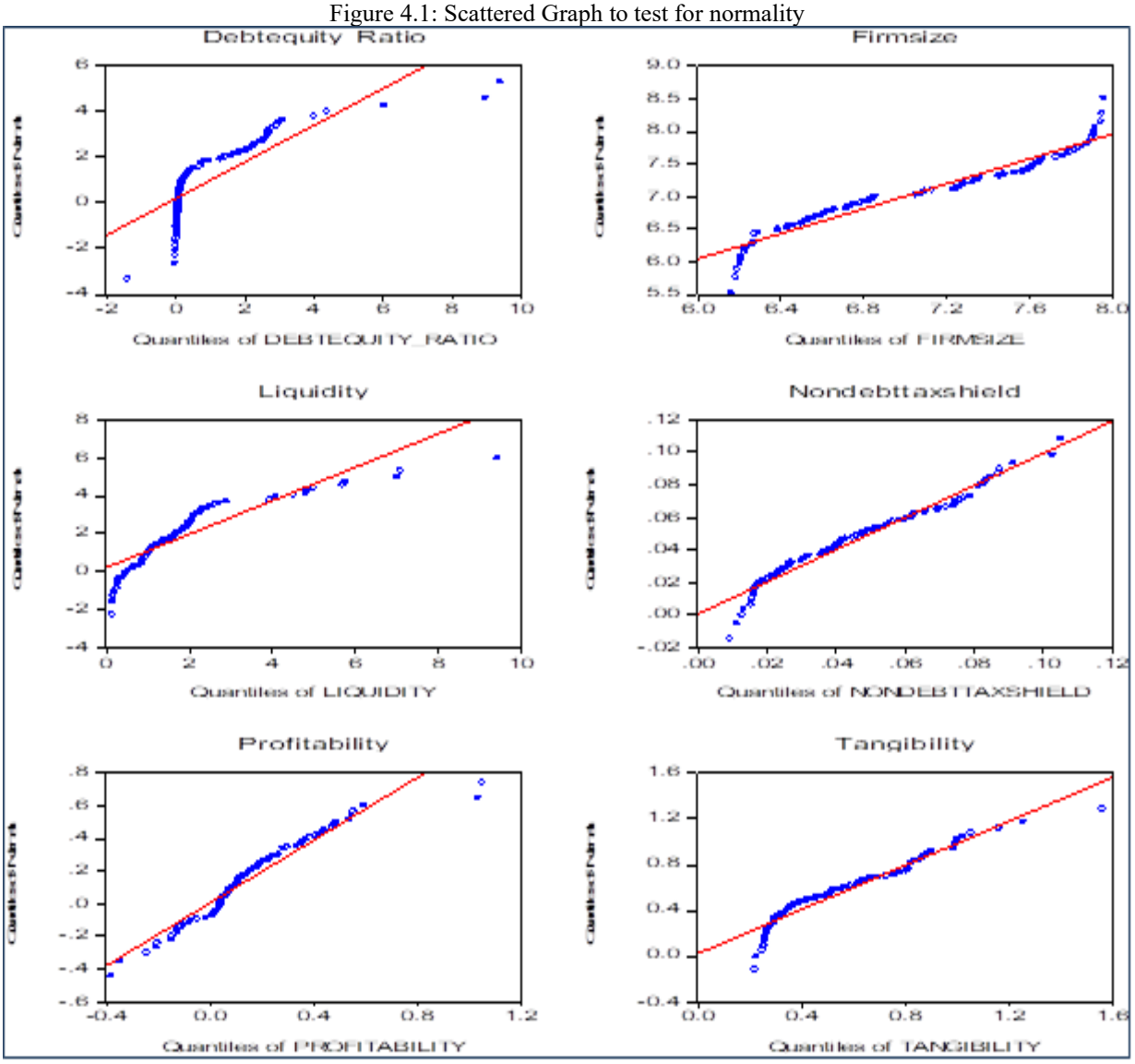
Model	1
Durbin-Watson stat	0.8076

Source: Author Computation (2025)

Durbin-Watson test returned a result of 0.8076 suggesting potential positive autocorrelation in residuals hence model diagnostic issue which can be corrected using Generalized Least Squares, though the assumption was not violated.

4.2.3 Normality Test

Figure 4.1: Scattered Graph to test for normality



Source: Author Computation (2025)

The result from quantile-quantiles (Q-Q) plots showed that Firm Size, Profitability, and Non-Debt Tax Shield followed approximately normal distributions while Debt-Equity Ratio, Liquidity, and Tangibility deviated from normality, with skewness and outliers. Thus, transformations as logarithmic may be applied to improve normality, particularly for leverage and liquidity

4.2.4 Heteroskedasticity Test

Table 4.4: gives the Breusch-Pagan LM Test results.

Breusch-Pagan LM			
Test	Statistic	d.f.	Prob.
Debt Equity Ratio	80.99988	45	0.0008
Firm Size	138.4097		$1.942x10^{-11}$
Liquidity	96.35483		$1.3368x10^{-5}$
Non-Debt Tax Shield	66.96838		0.0184
Profitability	72.50891		0.0058
Tangibility	78.05504		0.0016

Source: Author Computation (2025)

With All variables having a p-values < 0.05 means the null hypothesis of homoscedasticity is rejected for all explanatory variables. The panel regression model suffers from heteroscedasticity. The variance of residuals is not constant across observations.

4.2.5 Multicollinearity Test

We can determine the multicollinearity by using Variance Inflation Factor (VIF) with the formula:

$$VIF_i = \frac{1}{1-R_i^2}$$

Where R_i^2 is the R^2 from regressing variable iii on all other independent variables.

Table 4.5: Multicollinearity Test

	Collinearity Statistics	
	VIF	Tolerance
Non-Debt Tax Shield	2.834	0.02834
Firm Size	1.299	0.01299
Profitability	1.154	0.01154
Tangibility	2.618	0.02618
Liquidity	1.461	0.01461

Source: Author Computation (2025)

All VIFs are below 5, which means no severe multicollinearity, The highest VIFs are for Non-Debt Tax Shield (2.83) and Tangibility (2.62), which makes sense given their strong correlation (0.7651 in your correlation matrix). This indicates mild-to-moderate collinearity, but it is not at a problematic level (still < 5).

4.3 Correlation Matrix

Table 4.6 gives the correlation results.

Correlation	Debt Equity Ratio	Firm Size	Liquidity	Non-Debt Tax Shield	Profitability	Tangibility
Debt Equity Ratio	1.0000					
Firm Size	0.3029	1.0000				
Liquidity	-0.2155	-0.2330	1.0000			
Non-Debt Tax Shield	0.0543	-0.1677	-0.3736	1.0000		
Profitability	-0.2061	0.1695	0.2021	0.0477	1.0000	
Tangibility	0.1347	0.0295	-0.4040	0.7651	0.0179	1.0000

Source: Author Computation (2025)

Firm Size with r= 0.3029 has a moderately positive relationship with large firms tend to have slightly higher leverage and are more likely to use debt financing, Non-Debt Tax Shield with r= 0.0543 has a very weak, almost no relationship. Tangibility with r=0.1347 has a weak positive relationship, implying that firms with more tangible assets may borrow slightly more, as assets serve as collateral. Profitability with r= -0.2061 and Liquidity with r= -0.2155 have negatively weak relationship, this indicates that more profitable firms tend to use less debt which is consistent with pecking order theory while more liquid firms rely less on debt. These findings support the study of Moradi and Paulet (2019), Kerubo (2018), Garach (2019) and Mangafiý and Martinoviý (2015) who noted an inverse link between profitability and Capital structure. However, the finding contradicts Mohamud (2019), Ndung'u (2019) who point out existence of positive relationship.

4.4 Regression Results

Table 4.7 gives the correlation results.

Regression Analysis				
Dependent Variable: DEBT-EQUITY RATIO				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Firm Size	1.0073	0.3080	3.2700	0.0015
Liquidity	-0.0315	0.1185	-0.2661	0.7907
Non-Debt Tax Shield	4.1652	11.0731	0.3762	0.7076
Profitability	-1.9130	0.7296	-2.6220	0.0102
Tangibility	0.4397	0.9275	0.4740	0.6366
C	-6.1831	2.3484	-2.6329	0.0099
R-squared	0.1791	Mean dependent var		0.9923
Adjusted R-squared	0.1355	S.D. dependent var		1.6757
S.E. of regression	1.5581	Akaike info criterion		3.7829
Sum squared resid	228.1874	Schwarz criterion		3.9392
Log likelihood	-183.1437	Hannan-Quinn criter.		3.8461
F-statistic	4.1021	Durbin-Watson stat		0.8076
Prob(F-statistic)	0.0021			

Source: Author Computation (2025)

R^2 of 0.1791 and Adjusted R^2 of 0.1355 indicate that the model explains about 13.5–18% of the variation in capital structure and other factors (not included) play a larger role. F-statistic of 4.1021 with p=0.0021 indicates that the model is overall statistically significant.

4.5 Interpretation of the Findings

The Descriptive Statistics indicates on average, listed manufacturing firms had a debt-equity ratio of 0.99, firm size of 7.02, liquidity of 1.88, profitability of 0.15, tangibility of 0.59, and non-debt tax shield of 0.05. Large variations were observed in leverage (SD = 1.68) and liquidity (SD = 1.60), indicating differing capital structure practices across firms. Diagnostic Tests on Stationarity shows that some variables (debt-equity ratio, non-debt tax shield, profitability) were weakly stationary while others (firm size, liquidity, tangibility) were not. Autocorrelation produced a Durbin-Watson statistic of 0.8076, indicating positive autocorrelation in residuals,

Normality test provided that Firm size, profitability, and Non-Debt Tax Shield were approximately normal while leverage, liquidity, and tangibility showed skewness and outliers. The Heteroscedasticity using Breusch-Pagan LM test confirmed heteroscedasticity across all variables ($p < 0.05$) and Multicollinearity indicated that all VIFs < 5; mild correlation between Non-Debt Tax Shield and tangibility, but not problematic.

Correlation Analysis showed that Firm Size ($r = 0.3029$) had a positive correlation with leverage as larger firms rely more on debt, Tangibility ($r = 0.1347$) was weak positive correlation as asset collateral slightly supports borrowing, Non-Debt Tax Shield ($r = 0.0543$) produced a negligible relationship. Profitability ($r = -0.2061$) showed a weak negative correlation as profitable firms prefer internal financing and lastly Liquidity ($r = -0.2155$) had a weak negative correlation as liquid firms rely less on debt. Regression Results indicated that Firm Size ($\beta = 1.0073$, $p < 0.01$) is positive and significant as large firms are more leveraged, supporting Trade-Off Theory, Profitability ($\beta = -1.9130$, $p < 0.05$) showed a negative and significant relationship as profitable firms use less debt, supporting Pecking Order Theory and Liquidity ($\beta = -0.0315$, $p = 0.79$), Non-Debt Tax Shield ($\beta = 4.1652$, $p = 0.71$), and Tangibility ($\beta = 0.4397$, $p = 0.64$): Not statistically significant.

In conclusion the key determinants are considered to be Firm size and profitability as they are the most significant factors influencing capital structure among listed manufacturing firms others factors remain no-determinants these are liquidity, tangibility, and Non-Debt Tax Shield as they do not show any meaningful impact on capital structure decisions. The findings provide partial support for capital structure theories as the trade-off theory (firm size effect) and pecking order theory (profitability effect), however, the relatively low explanatory power suggests that other external or macroeconomic factors may also play a critical role.

5. Summary Conclusions and Recommendations

5.1 Introduction

This chapter presents a summary of the study, conclusions drawn from the findings, recommendations for practice and policy, as well as the study's limitations and suggestions for future research. The purpose of the study was to examine the determinants of capital structure among listed manufacturing firms in Kenya for the period 2015–2024.

5.2 Summary of the Study

The study investigated the effect of firm size, liquidity, non-debt tax shield, profitability, and tangibility on the capital structure of listed manufacturing firms in Kenya, using the debt-equity ratio as the dependent variable. Considering Descriptive Statistics, the results showed that, on average, listed manufacturing firms maintained a debt-equity ratio of 0.99, with profitability averaging 15%, liquidity 1.88, tangibility 59%, and non-debt tax shield 0.047. The standard deviations indicated considerable variation across firms, particularly in leverage and liquidity. Diagnostic results indicated that some variables were non-stationary, with evidence of heteroscedasticity and positive autocorrelation (Durbin-Watson = 0.8076). However, multicollinearity was not severe as all VIFs were below 5. Normality tests suggested that firm size, profitability, and non-debt tax shield followed near-normal distributions, while leverage, liquidity, and tangibility showed deviations. Correlation analysis revealed that firm size was positively correlated with leverage, while profitability and liquidity were negatively correlated. Tangibility and non-debt tax shield had weak positive and negligible correlations, respectively. These findings partially aligned with capital structure theories and prior studies. Regression results confirmed that firm size (positive and significant) and profitability (negative and significant) are the key determinants of leverage. Liquidity, tangibility, and non-debt tax shields had insignificant effects. The model explained about 13–18% of variation in capital structure (Adjusted $R^2 = 0.1355$).

5.3 Conclusion

From these findings, we can conclude that, first firm size matters as larger firms are more capable of leveraging debt markets, aligning with the trade-off theory that associates firm stability with greater borrowing capacity. Secondly profitability discourages debt as profitable firms tend to rely on retained earnings rather than debt, supporting the pecking order theory and lastly, other determinants are less relevant: Liquidity, tangibility, and non-debt tax shields do not appear to play a decisive role in explaining leverage patterns among Kenyan listed firms. Overall, the results suggest that capital structure in Kenya is shaped primarily by firm-specific factors (size and profitability), but that broader institutional and economic dynamics may limit the explanatory power of firm-level models.

5.4 Recommendations

For firm managers, larger firms should leverage their stronger market positions to access favorable debt terms but avoid excessive borrowing that could increase financial distress risks. Profitable firms should strategically balance internal financing with moderate debt to optimize tax benefits without overexposure. For policymakers and regulators capital markets authority and government should enhance credit access for smaller firms through regulatory reforms, guarantee schemes, or tax incentives. Strengthening Kenya's corporate bond market could also diversify financing options beyond bank debt. For investors when assessing NSE-listed manufacturing and construction firms, investors should focus on size and profitability as key indicators of financial stability and debt management capacity.

5.5 Limitations of the Study

The study focused only on listed commercial and manufacturing firms, limiting generalization to other sectors and the analysis concentrated on firm-level internal factors, excluding external macroeconomic and regulatory variables. Diagnostic tests revealed heteroscedasticity, autocorrelation, and non-normality, which may have affected estimation precision despite corrections.

5.6 Suggestions for Further Studies

Future studies should extend the analysis to other sectors such as banking, services, and agriculture for broader applicability, incorporate macroeconomic variables (e.g., inflation, interest rates, GDP growth) to capture external influences on capital structure, apply advanced econometric approaches such as dynamic panel models or the Generalized Method of Moments (GMM) to address

issues of autocorrelation and heteroscedasticity. Explore the role of corporate governance variables such as board composition, ownership structure, and managerial incentives in shaping financing choices. Conduct cross-country comparisons to evaluate whether Kenya's findings align with or diverge from other emerging economies.

References

[1] Adebiyi, I, M., Eniola, J, O., Oluwagbade, I, O., et al. (2023). Determinants of Capital Structure Decision of Micro, Small and Medium Scale Entreprises (MSMES) in Selected South Western States, Nigeria. *European Journal of Accounting, Auditing and Finance Research, 11*(11), 96-120.

[2] Atiqur, R., Tanjila, H., & Kanon, K. (2023). Revisiting the Puzzle of Capital Structure Determinants: An Empirical study based on UK firms. *Arab Gulf Journal of Scientific Research, 1*(1).

[3] Bader, A. E. (2018). Capital Structure: Definitions, Determinants, Theories and Link with Perfomance Literature Review. *European Journal of Accounting, Auditing and Finance Research, 6*(2), 49-72.

[4] Bader, E. A. (2018). Capital Structure: Definitions, Determinants, Theories and Link with Perfomance Literature Review. *European Journal of Accounting, Auditing and Finance Research, 6*(2), 49-72.

[5] Brealey, R. A., Myers, S. C., Marcus, A. J., Maynes, E. M., & Mitra, D. (2009). *Fundamental of Corporate Finance* (4 ed.). Canada: McGrawHill Ryerson.

[6] Czerwonka, L., & Jaworski, J. (2021). Capital structure determinants of small and medium-sized enterprises: evidence from Centraland Eastern Europe. *Journal of Small Business and Enterprise Development, 28*(1), 277-297.

[7] David, J. E. (2000). *Corporate Strategy and Financial Analysis: Manegerial, Accounting and Stock Market Perspective.* London: Pitman Publishers.

[8] E. M. Mukhongo, A. A. (2024). Determinants of Capital Structure in the Cement Mining Industry on the Nairobi Securities Exchange. *African Journal of Commercial Studies, 5*(2), 61-67.

[9] Febrianti, S., Wendy, G., & Malini, H. (2024). *Asian Journal of Economics, Business and Accounting, 24*(6), 407 - 421.

[10] Gathogo, G., & Ragui, D. M. (2014). Capital Structure of Kenyan Firms: What determines it? *Research Journal of Finance and Economics, 5*(5), 118-125.

[11] Hacini, I., Khadra, M., & Dahouc, K. (2022). Determinants of the Capital Structure of Small and Medium Enterprises: Empirical Evidence in the Public Works and Hydraulics Sector from Algeria. *Small Business International Review, 6*(1), 1-12.

[12] Heckenbergerova, J., & Honkova, I. (2023). Capital Structure Analysis–Theories and Determinants Validation Based on Evidence from the Czech Republic. *E&M Economics and Management,, 26*(1), 145-164.

[13] Julie, D., & Knight, R. (2022). *Principles of Finance.* Texas: Rice Univeristy.

[14] Kayo, E., & Kimura, H. (2011). Hierarchical Determinant of Capital Structure. *Journal of Banking and Finance*, 358-371.

[15] Khan, M. Y., & Jain, P. K. (2009). *Financial Management: Text, Problems and Cases.* New Delhi: Tata McGrawHill.

[16] Kothari, C. K. (2004). *Research Methodology: Methods and Techniques* (2 ed.). New Delhi: New Age International Publishers.

[17] Kraus, A., & Litzenberger, R. (1973). A state-preference model ofoptimal financial leverage. *Journal of Finance, 28*(4), 911-922.

[18] Krishna, V. (2024). A Study on Factors Affecting the Capital Structure of Tata Power. *International Journal of Research Publication and Reviews, 5*(3), 286-289.

[19] Lim, T. C. (2012). Determinants of Capital Structure Empirical Evidence from Financial Service Listed Firms in China. *International Journal of Economics and Finance, 4*(3), 191-203.

[20] Lussuamo, J., & Serrasqueiro, Z. (2021). What are the determining factors in the capital structure decisions of small and medium-sized firms in Cabinda, Angola. *Scientific Electronic Library Online, 32*(87), 476-491.

[21] Mardani, R. M., Moeljadi, M., Sumiati, S., & Indrawati, N. K. (2023). The Determinants Of Capital Structure: Evidence from Indonesia. *International Journal of Professional Business Review, 8* (5), 01-30 .

[22] Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. . *The American Economic Review, 53(3), 433-443.*

[23] Mugenda, O. M., & Mugenda, A. G. (2008). *Research Methods: Quantitative and Qualitative Approaches.* Nairobi: African Center for Technology Studies Press.

[24] Myers, S., & Majluf, N. (1984). Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have., 13, pp. 187-221. *Journal of Financial Economics, 13*, 187 - 221.

[25] Negara, K., Hasnawati, S., & Hendrawaty, E. (2023). Determinants Of Capital Structure In Manufacturing Companies In Emerging Stock Market. *Journal of Economics, Finance and Management Studies, 6*(11), 5459-5467.

[26] Noor, A., & Shahadan, F. (2013). The Determinants of Capital Structure of SMEs in Malaysia: Evidence from Enterprise 50 SMEs. *Asia Social Science, 9*(6), 64-73.

[27] Nouf, A. (2023). Determinants of Capital Structure Evidence from Saudi Arabia. *Journal of Economics, Management and Trade, 29*(7), 104-110.

[28] Nyamboga T. O., O. B. (2014). Determinants of Corporate Financial Distress: Case of NonFinancial Firms Listed at Nairobi Security Exchange. *Research Journal of Finance and Accounting, 5-12*, 193-207.

[29] Pandey, I. M. (2011). *Financial Management.* New Delhi: Vika Publishing House.

[30] Peter, K., Medzihorský, J., & Hussam, M. (2022). Capital Structure and Its Determinants—A Comparison of European Top-Rated CSR and Other Companies. *Journal of Risk and Financial Management, 15*(325).

[31] Pham, L. H., & Hardy, M. (2023). Determinant of SMEs Capital Structure in the Visegrad Group. *Journal of Economics Research, 36*(1,).

[32] Pike, R., & Neale, B. (2006). *Corporate Finance and Investment: Decision and Strategies.* England: Prentice Hall Europe.

[33] Pyoko, M. O. (2024). Effect of Firm Age and Asset Tangibility on Total Debt of Firms Listed at the Nairobi Securities Exchange, Kenya. *International Journal of Management and Commerce Innovation, 11*(2), 379-384.
[34] Rajan, R., & Zingales, L. (1995). What Do We Know About Capital Structure? Some Evidence from International Data. *Journal of Finance, 50*(5), 1421- 1460.
[35] Rehan, R., Hadi, A. R., Hussain, H. I., & Hye, Q. M. (2023). Capital structure determinants across sectors: Comparison ofobserved evidences from the use of time series and panel data estimators. *Heliyon Cell Press-Science Direct*.
[36] Ross, S. (1977). Determinant of Financial Structure: The Incentive - Signaling Approach. *Bell Journal of Economics, 8(1)*, 23-40.
[37] Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research methods for business students,* (7 ed.). Harlow: Pearson Education Limited.
[38] Scholes, M., Myron, J, G., Benston, Smith, C., & W. (1976). A Transactions Cost Approach to the Theory of Fiancial Intermediation. *The Journal of Finance, 31*, 215-231.
[39] Scott, J. H. (1976). A theory of optimal capital structure. *The Bell Journal of Economics, 7*(1).
[40] Tahmeena, B., & Hanif-Akhtar, M. (2023). Determinants of Capital Structure: Evidence from Securities Companies. *Bulletin of Business and Economics, 13*(1), 22-28.
[41] Titman, S., & Wessels, R. (1988). The Determinants of Capital Structure Choice,. *Journal of Finance, 43*, 1–19.
[42] Wachowiz, V. H. (2005). *Fundamentals of Financial Management* (12 ed.). UK: Pearson Education Ltd.
[43] Yahya, N., Kassim, N. M., Rasit, N. A., Abidin, N. Z., Shahrel, E. N., Zulkefli, N. W., et al. (2024). Determinants of Capital Structure from Malaysian Shariah-Compliant Food and Beverages Firms. *Information Management and Business Review, 16*(1), 76-93.