Influence of Capital Structure on Financial Performance of Manufacturing Companies in Ethiopia

A Thesis submitted to Addis Ababa University College of Business and Economics Department of Accounting and Finance in Partial Fulfillment of the Requirements for the Degree of Master of Science in Accounting and Finance.

By: Tsegereda Tefera W/Michael
GSE/1170/16

Advisor: Abebe Yitayew (PhD)

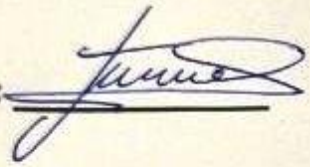
February 9, 2026
Addis Ababa

Statement of Declaration

I, **Tsegereda Tefera**, hereby declare that the thesis entitled "Influence of Capital Structure on Financial Performance of Selected Manufacturing Companies in Ethiopia" is my original work, prepared under the guidance and supervision of my research advisor. This thesis has not been submitted previously to any other university or institution for any degree or qualification. All sources of information, data, and literature used in the preparation of this thesis have been properly acknowledged.

Declared By:

Name: **Tsegereda Tefera**

Signature: 

Date: 09/02/2026

Statement of Certification

This is to certify that **Tsegereda Tefera** has carried out her research work on the topic entitled **"Influence of Capital Structure on Financial Performance of Selected Manufacturing Companies in Ethiopia"**. This work, to the best of my knowledge, is original in nature and is suitable and accepted for submission for the award of MSc in Accounting and Finance.

Advisor: **Abebe Yitayew (PhD)**

Signature: 

Date: Feb. 11th, 2026

APPROVAL SHEET
ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

This is to certify that the thesis prepared by **Tsegereda Tefera**, entitled **"Influence of Capital Structure on Financial Performance of Selected Manufacturing Companies in Ethiopia"** and submitted in partial fulfilment of the requirements for the degree of Master of Science in Accounting and Finance compiles with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approved by Board of Examiners:

Abebe Yitayew (PhD) **Signature** _____ **Date** Feb. 11th, 2026
Advisor

Abebaw kassie (PhD) **Signature** _____ **Date** 11-02-2026
Internal Examiner

Lemessa Bayissa(PhD) **Signature** _____ **Date** 10/02/2026
External Examiner

Acknowledgements

First and for most, I would like to give my glory and praise to the Almighty God for granting me the wisdom, knowledge, and strength to complete this research paper.

I am deeply indebted to my research advisor, Dr. Abebe Yitayew, for his unreserved guidance, invaluable comments, support and encouragement throughout my research journey. His expertise, patience, and constructive feedback have been instrumental in shaping this research and helping me to overcome numerous challenges.

I extend my sincere appreciation to Addis Ababa University Faculty of Business and Economics, for providing me with a conducive environment to conduct my research. The institution's resources, including library facilities and research assistance, have been helpful in facilitating my research paper.

My Special thanks also go to all staff members and management of Ministry of Revenue Large tax payers branch office, Finance Director of Moha Soft Drink Industry S.C Head Office, Finance Manager and General Manager of Fam Spring Water Factory, for their cooperation and willingness to provide the necessary data and information for this research paper.

Finally, I am grateful to my family, friends, Bosses and work colleagues for their support and encouragement throughout my research journey. Their love, care, and understanding have been a source of inspiration and motivation for me to complete this thesis.

Table of contents

List of contents ***Pages***

List of Tables

List of Figure

Lists of Acronyms

CRSP *- Center for Research in Security Price*

DR *- Debt Ratio*

GDP *- Gross Domestic Product*

ICR *- Interest Coverage Ratio*

LTDTE *- Long term Debt to Equity ratio*

LTO *- Large Tax Payers Office*

NPM *- Net Profit Margin*

OECD *- Organization for Economic Co-operation and Development*

OLS *- Ordinary Least Square*

ROA- *Return on Asset*

ROE *- Return on Equity*

ROCE *- Return on Capital Employed*

SG *- Sales Growth*

STDTE *- Short term Debt to Equity ratio*

SZ *- Firm Size*

TDTA *– Total Debt to Total Asset ratio*

TN *- Tangibility*

UK *- United Kingdom*

USA *- United State of America*

Abstract

This study focuses on how capital structure affect the financial performance of manufacturing firms in Ethiopia. The study applied explanatory research design with quantitative approach. It examines how various capital structure variable such as, total debt-to-total assets ratio (TDTA), long-term debt-to-equity ratio (LTDTE), and short-term debt-to-equity ratio (STDTE) impact key performance indicators such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). The study also considers firm size (SZ) as a control variable. It uses secondary panel data from the annual audited financial statements of 10 (Ten) manufacturing companies in Ethiopia over the period of five years from 2020 to 2024 G.C. and non-probability purposive sampling method were used to select the samples. Most of the data were collected from Ministry of Revenue Large Taxpayers Office. The study used multiple regression models to test the effect of capital structure on financial performance by applying Ordinary least square (OLS) regression and using SPSS software Version 23 for data analysis. The findings disclose that, total debt to total assets (TDTA) and long-term debt to equity (LTDTE), shows a statistically significant negative effect on return on assets (ROA) and net profit margin (NPM). Conversely, short-term debt to equity (STDTE) shows a positive but statistically insignificant impact on ROA and NPM. Firm size (SZ) demonstrates a statistically significant negative effect on ROA but an insignificant negative effect on NPM. Regarding return on equity (ROE), variables such as LTDTE, STDTE, and SZ have an insignificant negative impact, while TDTA shows a statistically significant positive effect. Therefore, the findings show that optimizing capital structure requires more understanding of how different types of debt influence various aspects of financial performance, emphasizing the importance of strategic decision-making in financing choices. Based on these insights, the study recommended that financial managers within the manufacturing sector carefully manage their debt levels, aiming to reduce excessive leverage to enhance profitability.

Key word: - *Capital structure, Financial Performance, Manufacturing companies, ROA, ROE, NPM, TDTA, TDTE, STDTE, Firm Size.*

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Capital structure means the mix or combination of different sources of funding that a company uses to run its business. These sources include equity shares, preference shares, debentures, long-term loans, retained earnings, and other long-term funds. When starting a business, the main goal is to make a profit, which requires the owner to invest some money in the business. The business uses these funds to cover daily expenses and plan for big future projects.

Funds for the business come from various sources. Some come from the owners or shareholders, while others come from outside investors or lenders. These funds are called financial capital. The capital can also be classified based on how long it is needed for example, long-term, medium-term, or short-term capital. Long-term capital includes funds raised by issuing shares, debentures, venture capital, retained earnings, etc. Medium and short-term capital sources include loans, leasing, bank overdrafts, trade credit, and factoring. All these sources together form the financial structure of a company. The part of this structure made up of long-term funds is called the capital structure.

A company can choose different mixes of funding. It might use only equity (no debt), only debt (no equity), or a combination of both. Equity financing is less risky because it doesn't require regular payments, but it can dilute ownership and reduce earnings per share. Debt, on the other hand, is cheaper but creates obligations and higher risks. Generally, companies decide on a capital structure based on their goals. Sometimes, managers may issue bonds and use the money to buy back shares or pay off some debt, which affects the debt-to-equity ratio. The main goal is to maximize the company’s value by minimizing its cost of capital. An optimal capital structure is one that reduces costs and increases profitability. Therefore, management must decide on the best mix of debt and equity to increase the firm's value.

The idea of capital structure decisions started in 1958 when professors Franco Modigliani and Merton Miller published their famous theory. They argued that in perfect markets, the way a

company finances itself (with debt or equity) does not affect its value because the value depends only on future earnings and cash flows. Later, in 1963, they revised their theory, noting that interest on debt is tax-deductible, so having more debt can increase a company's value. Many other theories have been developed to better understand how capital structure affects a company's value.

(Jensen and Meckling, in 1976), proposed the Agency Cost Model, which suggests there is an ideal capital structure that helps a company be more profitable. Finding this balance involves considering taxes, bankruptcy costs, and agency costs (conflicts between managers and shareholders). Another theory, the Pecking Order Theory by (Myers and Majluf in 1984), says there is no single best capital structure. Instead, companies prefer certain types of funding over others based on factors like information asymmetry where managers know more than investors and their hierarchy of financing options.

Many researchers have studied how a company's capital structure affects its profitability. The results show that there is a connection between the two. A company's financial performance indicates how strong its financial position is, and analyzing financial data helps identify its strengths and weaknesses. Financial analysis uses ratio numbers that compare different financial items to evaluate how well a company is doing. These ratios help assess the company's capital structure and overall financial health.

To maximize shareholder wealth, managers and stakeholders constantly monitor various factors that impact profits. These factors can be positive or negative. For this research, the factors include the total debt-to-total asset ratio (TD/TA), long-term debt to equity ratio (LTDTE), short-term debt to equity ratio (STDTE), return on asset (ROA), return to equity (ROE) and net profit margin (NPM). Managing these factors helps the company improve its profitability and financial stability. The current study was driven to find out more about the impact of capital structure on financial performance of manufacturing companies in Ethiopia because there are also conflicting results from empirical studies.

1.2. Statement of the problem

The influence of capital structure on financial performance is a critical area of inquiry for manufacturing companies, as these firms often face unique financing requirements and economic challenges. Capital structure, defined as the mix of debt and equity financing, can significantly impact a company's operational efficiency, cost of capital, and overall profitability. In the manufacturing sector, which typically involves substantial capital investments and long production cycles, the choice of capital structure may lead to varying levels of financial risk and operational flexibility.

Most studies on capital structure and performance have been conducted in developed or emerging markets with relatively mature financial systems (Dessi & Donald, 2003; Margaritis & Psillaki, 2010). These contexts benefit from well-established capital markets where firms can raise funds through equity or debt issuance with ease. There is a scarcity of empirical evidence on how these limited financing avenues affect financial performance, creating a significant research gap.

Despite the existing body of literature on capital structure, there is a lack of consensus regarding its influence on financial performance, particularly within the manufacturing industry. (Margaritis and Psillaki (2010) showed that the total debt ratio is positively and significantly related to the financial performance of Indian companies. Although they found that a higher total debt ratio improves a company's financial results, but they were not able to separate the total debt into short-term and long-term debt to see how long-term debt specifically affects a company's financial performance. This distinction is crucial because the impact of short-term versus long-term debt on performance may differ significantly, influenced by factors such as interest rates, repayment terms, and economic stability.

(Morri and Beretta 2008) explained that both theoretical and practical studies on capital structure have looked into these issues, but there is no completely proven or widely accepted theory yet.
The discussion about what factors influence financial performance and company value is still ongoing. Some studies suggest that higher leverage can enhance returns on equity during favorable market conditions but may also increase vulnerability to economic downturns. Conversely, an overly conservative capital structure may limit growth potential and potential returns. Although many studies have been done in this area, most of them are in countries where

the money and capital markets are more developed or emerging. In these countries, companies can easily change their capital structure by raising new funds through issuing new shares or debt securities. However, in countries like Ethiopia, where the capital market is less developed, businesses find it difficult to raise new capital. They mainly rely on limited loans from banks or financial institutions, which makes it hard for managers to manage their capital structure.

Many studies have looked at how a company's capital structure (how it finances itself) affects its financial performance, but there are still important gaps in what we know, both in Ethiopia and around the world. In Ethiopia, some research, like that by (Tadesse and Tsegaye, 2018), has looked at how capital structure relates to profits in manufacturing firms, but there is not enough detailed research on how bigger economic factors influence how companies decide to finance themselves in different sectors such as farming, services, or small businesses.

International studies, like those by (Titman and Wessels, 1988) and (Frank and Goyal, 2009), show mixed results about whether debt or equity improves a company's performance, which shows that more local or sector-specific research is needed, especially in developing countries where financial systems are still growing. We also don't know enough about how laws and regulations affect these financial choices and how changes in rules could change things. Most studies focus only on traditional ways companies get money, like loans or selling shares, but don't pay much attention to alternative sources like microfinance, aid, or digital financial tools, which are becoming more important for small businesses in Ethiopia.

Many studies look at data from one point in time, so they don't show how capital structure affect performance, especially during economic ups and downs. There's also little research on whether capital structure actually causes changes in performance or if performance influences financing choices, which needs more investigation. Additionally, there's not enough comparison between different sectors or company sizes within Ethiopia. This study seeks to fill the gap in understanding the effect of capital structure on the financial performance and systematically explore how different capital structure choices influence the financial performance of manufacturing companies in Ethiopia, aiming to identify optimal financing strategies that balance risk and return. Key performance indicators such as profitability, return on assets, return

on equity and net profit margin will be analyzed to ascertain the nature and extent of this relationship, thereby providing valuable insights for stakeholders in the manufacturing sector.

1.3. Objective of the Study

1.3.1. General Objective of the study

The general objective of this study is to examine the influence of capital structure on financial performance of manufacturing companies in Ethiopia.

1.3.2. Specific Objective of the study

Specific objectives of this study are:

- To examine the influence of capital structure variables like (total debt-to-total asset ratio (TD/TA), long-term and short-term debt to equity ratio (LTDTE & STDTE) on financial performance metrics such as, (return on asset (ROA), return on equity (ROE) and net profit margin (NPM) of manufacturing companies in Ethiopia.

- To examine the influence of firm size on financial performance metrics such as, (return on asset (ROA), return on equity (ROE) and net profit margin (NPM) of manufacturing companies in Ethiopia.

1.4. Research Hypothesis

In examining the influence of capital structure on the financial performance of manufacturing companies in Ethiopia, the following hypothesis framework has been established.

- **H 1:** Total Debt to Total Asset Ratio (TD/TA) has a negative and significant influence on the Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM) of manufacturing companies.

- **H 2:** Long-Term Debt to Equity Ratio (LTDTE) has a negative and significant influence on the Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM) of manufacturing companies.

- **H 3:** Short-Term Debt to Equity Ratio (STDTE) has a positive and significant influence on the Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM) of manufacturing companies.

- **H 4:** Firm Size (SZ) has a negative and significant influence on the Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM) of manufacturing companies.

1.5. Significance of the Study

This study provides valuable insights about the influence of capital structure on financial performance of manufacturing sector by clarifying how different financing decisions impact profitability and prepares stakeholders and finance managers with knowledge essential for informed decision-making and assist companies' managements in determining the optimal capital structure by considering the effects of various levels of debt.

This study also beneficial to the students of finance in terms of empirical evidence, as well as to those who wish to carry out further research on the impact of capital structure on financial performance of manufacturing firms in Ethiopia.

1.6. Scope of the Study

The study focused on evaluating the influence of capital structure on the financial performance of manufacturing companies in Ethiopia. It uses only secondary panel data from annual audited financial statements of 10 (Ten) selected manufacturing companies in Ethiopia for the period of five years from 2020 to 2024 G.C. All sampled companies are categorized under large taxpayer. These companies were selected because of their large market share, their significant economic contribution for our country and data availability.

The study employed three dependent variables, return on assets (ROA), return on equity (ROE) and net profit margin (NPM) and three independent variables: total debt to total asset ratio (TD/TA), long-term debt to equity ratio (LTDTE), Short term debt to equity ratio (STDTE) and firm size (S) as a control variable.

1.7. Limitations of the study

This study fully depends on secondary data, specifically the annual audited financial statements of selected manufacturing companies in Ethiopia and limited to evaluating the financial performance of these companies only for the period of five years starting from 2020-2024 G.C. Primary data was not considered in this research, making the quality of the study entirely dependent on the accuracy, reliability, and quality of the secondary data sources.

The main limitation of this research is that unwillingness of manufacturing firms to provide their annual audited financial statements due to fear of their competitors and tax concerns. So, it was very challenging to get the data easily. Hence, most of the data were collected from Ministry of Revenue Large Tax Payers Branch Office.

1.8. Organization of the Study

This paper is organized into five chapters. The first chapter introduces the study, covering the problem statement, research questions, objectives, hypotheses, significance, limitations, and scope. The second chapter offers an in-depth review of relevant and important literature related to the topic. Chapter three details the research methodology, including research design, population of the study and sample size, data sources and type, data analysis techniques, econometrics model variable explanation, and conceptual framework. Chapter four presents the findings and discusses of their implications, while the final chapter summarizes the study and provides recommendations.

CHAPTER TWO

LITRATURE REVIEW

This chapter presents the theoretical and empirical literature review regarding capital structure and financial performance relationship. In section 2.1, Introduction of capital structure. In section 2.2, reviews of the theoretical background behind capital structure. In section 2.3, reviews of the components of capital structure. In section 2.4, reviews about capital structure and performance. In section 2.5. reviews of empirical studies and finally, the research gap is presented in section 2.6.

2.1. Introduction

Following the research conducted on the topic of the study, few studies specifically address this subject, with most research focusing on the determinants of capital structure. According to (Baker and Martin (2011), capital structure is defined as the sources of financing a firm uses to fund its assets, operations, and future growth. These sources primarily include debt and equity. Equity refers to the capital invested in the firm by owners or shareholders, including retained earnings generated by the company. Debt, on the other hand, is the amount borrowed under specific conditions, which must be repaid by a set date, often with interest paid to lenders. Debt can take various forms, such as short-term or long-term loans, bonds, and obligations. Firms aim to identify an optimal capital structure that maximizes their value. The highest value is achieved when the structure maximizes shareholder wealth.

Capital structure is also referred to in the literature as a type of indicator for measuring the source, the composition and the proportion of a firm's debt and equity capital. As such, the design of the capital structure relates to numerous business and governance areas like the operating environment, shareholders' rights as well as obligations, decision-making bodies and governance structure changes as well as to a firm's future development (Luo & Jiang, 2022). Given these many areas to which the capital structure themes apply, it is evident that major topics in the academic literature on corporate finance address capital structure research themes, for example; regarding questions on the determinants or factors that are influencing the capital structure of firms (Frank & Goyal, 2009).

The extensive research on capital structure in academic financial research has resulted in different approaches towards this topic. Consequently, distinctive schools of thought or views on the topic must be mentioned in this context. These include, for example, the notion of the relevance or irrelevance of the capital structure on performance (Ogebe et al., 2013). Generally, the variety of different approaches to capital structure theories available in the academic literature can be distinguished into a traditional approach and a modern view, which are characterized as follows:

The traditional approach, focuses on the operational activity of the firm. Financing is considered only as a necessary means in the process of the production of goods. It is assumed that the real economic process as well as the business process and its requirements are the main causes that determine capital needs and therefore financing procedure, hereby determining the capital structure. (Ogebe et al., 2013; Renzetti, 2001).

The modern view, on the other hand, takes into account the specific set of conditions that arise in the context of the persons that are associated with the companies and their particular interests and incentives as well. These include, for example, the owners of the firm and the firm's management, who pursue the maximization of the company value or their own interests and consciously make the financing decisions. Here, issues of asymmetric information and the agency problems are present (e.g. Akerlof, 1970; Jensen & Meckling, 1976; Ross, 1977). In strong relation to these approaches, investment and financing decisions or capital structure decisions are related to the aim of meeting the demands of stakeholders outside of the firm as well (Simerly & Li, 2000). Furthermore, approaches to explain the capital structure of firms can be classified into two different schools of thought. These include the neoclassical theories of corporate finance as well as the neo-institutionalist financing theory. Capital structure theories provide approaches to the extent to which and under what premises a stock market listing or the company's ownership structure can influence financing decisions. According to the assumptions of neoclassical financing theories, these two factors should not affect the capital structure. From the perspective of neo-institutionalist theories, capital structure decisions in private and listed companies as well as in family and non-family companies may differ, for example, due to information asymmetries or principal agent conflicts between shareholders and managers (Jensen & Meckling, 1976; Ross, 1977).

2.2. Theoretical Literature Review

2.2.1. Modigliani and Miller Theory

According to Modigliani and Miller's Proposition I (1958), in an ideal world without imperfections, it does not matter whether a company is financed through debt or equity; the firm's value remains unchanged regardless of its capital structure. However, when considering taxes as the only imperfection, this proposition changes. In such a scenario, a firm should leverage as much as possible because interest payments are tax-deductible, reducing tax liabilities and increasing cash flows, which in turn raises the company's value. This is explained by Proposition II, which states that increased debt levels lead to higher firm value due to the tax shield benefits.

Proposition II, also indicates that higher leverage results in a higher cost of equity. During downturns, profits decrease, and interest payments must still be made, increasing risk for shareholders. Conversely, during profitable periods, earnings per share increase because some of the capital is financed through debt rather than equity, leading to greater returns for shareholders. Therefore, while leverage introduces additional risk to the company, the tax advantages of debt mitigate some of this risk by reducing overall tax payments. This affects the slope of the Weighted Average Cost of Capital (WACC), which reaches its minimum point when the company's value is maximized since interest expenses can be deducted for tax purposes (Hillier et al., 2011).

However, in reality, markets are imperfect due to factors such as taxes, information asymmetry, transaction costs, bankruptcy risks, agency conflicts, and other inefficiencies. These elements diminish the explanatory power of the Modigliani and Miller (M&M) theorem. Despite criticisms regarding its unrealistic assumptions and limitations in real world applications, the M&M theory remains foundational and influences many other theories developed by researchers. In the traditional perspective on capital structure, the significance of capital structure stems from differences in the costs associated with debt and equity. Specifically, debt typically incurs a lower cost than equity because, in the case of bankruptcy, debt claims take precedence over equity claims on the remaining assets of

the firm. This means debt holders are paid before equity holders, making debt a cheaper source of financing. According to this view, the weighted average cost of capital (WACC) decreases as the level of debt increases, up to a point where further debt becomes unsustainable (Brusov et al., 2022,). However, this traditional view faced criticism from Modigliani and Miller (1958), who proposed their famous irrelevance theorem. They argued that, under certain conditions, a firm's capital structure does not influence its overall value or the cost of capital, rendering the choice between debt and equity essentially irrelevant. The result is based on the following assumptions (Brusov et al., 2022), Modigliani & Miller, 1958):

1. No tax payments;
2. Existence of a perfect market with symmetric information distribution (meaning an absence of information asymmetries);
3. no transaction costs within an atomistic market structure;
4. no bankruptcy costs;
5. equal costs of borrowing for the company and for investors.

Under the assumption that, in efficient markets, a company's value is unaffected by its capital structure, Modigliani and Miller (1958) argued that the choice of financial policy specifically, the selection of financial instruments and leverage levels should be irrelevant for corporate decision-making. They also suggested that the costs of capital are unaffected by the level of debt. As a result, financing choices are independent of investment decisions in a complete and efficient market. According to this view, value creation occurs solely through real activities, such as investments that boost net income, rather than through dividend policies or other financing strategies (Tirole, 2005). The irrelevance theorem implies that listed companies do not have any inherent advantage over private firms, rendering ownership structure insignificant in financial decision-making.

Furthermore, Modigliani and Miller (1958) noted that increasing leverage could lower the company's capital costs, provided the company has access to sufficiently profitable investment opportunities that outweigh the opportunity costs of avoiding debt. The

optimal capital structure is achieved at the leverage point where the company's value is maximized. However, when considering positive bankruptcy costs, a higher debt ratio also raises the risk of bankruptcy, which in turn increases the risk premium demanded by debt holders and raises the company's overall capital costs (Wohlen berg & Plagge, 2012,).

In addition to neglecting bankruptcy costs, the original Modigliani-Miller model did not account for taxes, which is a significant omission. Later, the authors revisited their model to incorporate the effects of taxes, recognizing that tax shields resulting from debt financing could influence capital structure decisions (Modigliani & Miller, 1963). The primary motivation for including taxes was the recognition of the tax benefits associated with debt, which complicates the derivation of an optimal capital structure. As noted by (Brusov et al. (2022), the tax advantages of debt mean that an explicit optimal debt level cannot be straightforwardly determined.

Further research highlighted another limitation of leverage: increasing debt levels also raise insolvency risk, which incurs additional risk-related costs. These costs, in turn, restrict the maximum feasible debt ratio and influence capital structure choices (Altman, 1984; Kraus & Litzenberger, 1973; Scott, 1977; Stiglitz, 1969). By extending the original Modigliani-Miller framework to include both bankruptcy risks and tax effects, the trade-off theory of capital structure was developed. This theory seeks to explain the optimal capital structure as the point where the benefits of tax shields are balanced against the costs of financial distress, thus minimizing overall capital costs in the presence of taxes and bankruptcy risks (Brusov et al., 2022; Vernimmen, 2018).

2.2.2. Trade off theory

The dominant theory in capital structure suggests that the optimal level of debt is where the marginal benefit of debt financing equals its marginal cost. Companies can achieve this optimal structure by adjusting their debt and equity levels to balance the advantages of the tax shield against the risks of financial distress. However, there is no consensus among researchers on what precisely constitutes these benefits and costs. To move beyond the assumptions of the capital structure irrelevance propositions, (Myers and

Majluf ,1984) employed the tradeoff theory as a foundational framework to explain how firms determine their capital structures. (Myers ,1977) proposed that debt can be used up to a certain point to offset the costs associated with financial distress while still gaining the benefits of interest tax shields.

According to (Fama and French ,2002), the optimal capital structure can be identified by weighing the tax deductibility of interest against bankruptcy costs and agency costs. MM's earlier model assumes no bankruptcy costs, but in reality, bankruptcy can be very costly, legal and accounting expenses can be high, and companies often face difficulties maintaining relationships with clients, vendors, and employees. Bankruptcy also often forces asset liquidation at less-than-ideal prices, and the threat of bankruptcy can lead to higher interest rates and more restrictive loan terms as lenders become wary (Ehrhardt & Brigham, 2011). As debt levels increase, so does the risk of bankruptcy-related issues, which discourages excessive borrowing. The tradeoff theory explains how firms can reach an optimal capital structure by balancing the benefits of tax shields against the potential costs of financial instability.

This optimal structure is thought to be achieved when the present value of the tax shield slightly exceeds the present value of the associated bankruptcy costs. According to the tradeoff model, firms set a target debt level and gradually adjust toward it over time. The ideal capital structure results from balancing the effects of corporate and personal taxes, bankruptcy expenses, and agency costs. (Ehrhardt & Brigham, 2011) divide bankruptcy costs into two components: (1) the probability of financial distress and (2) the costs incurred if distress occurs. Firms aim to substitute debt for equity or vice versa to find the debt ratio that maximizes firm value. Overall, the tradeoff theory emphasizes balancing the various benefits and costs of debt financing.

Debt also functions as a financial discipline, reducing free cash flow and encouraging better management (Gansuwan & Nel, 2012). An essential benefit of debt is the tax shield: firms can deduct interest payments from taxable income, increasing net income and potentially incentivizing firms to take on more debt to maximize this benefit. According to (Niu ,2008), maximizing the advantages of the tax shield provided by debt

can enhance corporate profitability. Over time, many scholars have continued to build upon MM theory, though some question its applicability to today's global economy. Critics argue that the theory's suggestion that highly profitable firms should carry more debt to shield profits from taxes is not strongly supported by empirical data. (Gangeni ,2006) extended this perspective, noting that there is a limit to how much debt a company can safely take on, as higher borrowing costs reduce profitability and diminish the effectiveness of the tax shield.

The trade-off theory exists in two versions: the static trade-off theory and the dynamic trade-off theory (Brusov et al., 2022,). These are explained in more detail below:

- **Static trade-off theory:**

  This version of the trade-off theory applies to a single-period context, were a low leverage level hints at the benefits of using the tax advantages of debt financing. This leads to a lower WAAC and a generally growing capitalization of the firm. However, with increasing bankruptcy risk, the costs of financial distress are considered with increasing intensity (Brennan & Schwartz, 1978; Brusov et al., 2022; Leland, 1994).

- **Dynamic trade-off theory:**

  Here, additional factors are taken into account that have no influence on single-period decisions but are relevant in decisions concerning multiple periods for capital structure adjustments. This includes, for example, the expectations about future investment and financing opportunities as well as the transaction costs related to it (Strebulaev, 2007). Financial decisions in the dynamic trade-off theory are therefore largely based on what a firm anticipates (Brennan & Schwartz, 1984).

2.2.3. Pecking order theory

The pecking order theory was originally introduced by Donaldson in 1961, but it was later refined and expanded by Myers and Majluf in 1984. This theory explores whether companies prefer to use internal funds or seek external sources of financing when they

need additional capital. Myers and Majluf (1984) analyzed firms with existing assets and growth opportunities that require extra funding. Since investors lack perfect information about the true value of a company's current assets or new projects, they operate under the assumption of ideal market conditions. Consequently, investors cannot accurately assess the securities issued to finance new investments. Myers and Majluf assumed that managers act in the best interests of current shareholders and tend to avoid issuing undervalued shares unless the expected benefit from the growth opportunity outweighs the value transferred from existing to new shareholders. This leads to a situation where firms can issue new shares only at a discounted market price, because investors interpret the decision to issue shares negatively, perceiving it as an indication of bad news about the company's assets, which outweighs any positive signals.

According to the pecking order theory of capital structure, firms prioritize internal financing over external sources. That is, they prefer using retained earnings first, as information asymmetries are considered relevant mainly for external financing. Second, dividends are "sticky," meaning they are not easily cut to fund capital expenditures; instead, changes in cash flow requirements are reflected in external financing needs. Third, if external funding is necessary, firms tend to issue the safest securities, primarily debt, followed by hybrid securities like convertible bonds or preferred stock, and only as a last resort, issue common equity. If internally generated cash exceeds investment needs, the surplus is used to reduce debt rather than repurchasing shares. The overall debt ratio of a firm reflects its cumulative external financing requirements. The preference for internal funds and debt over equity among established firms is often attributed to the separation of ownership and control, as well as managers' desire to avoid the constraints of capital markets. For instance, (Baumol ,1965) argued that companies not relying on the stock market for capital can make decisions more confidently, without fear of market penalties.

(Myers and Majluf, 1984) offered a different perspective, suggesting that managers aiming to maximize market value will avoid external equity if they possess better information about the company than outside investors, who are rational. (Ehrhardt & Brigham, 2011) note that firms initially raise capital internally by reinvesting earnings or

selling short-term marketable securities. Once internal funds are exhausted, companies will turn to debt and possibly preferred stock; issuing common stock is typically a last resort. The hierarchy of preferred funding options generally moves from internal funds, to debt, to hybrid securities, and finally to equity, reflecting the influence of asymmetric information. Managers usually have more information about the company's true state than shareholders, and their actions can send signals about the firm's prospects. For example, (Malm and Roslund, 2013) argue that issuing debt can imply that shares are overvalued, making debt a preferred option over equity. (Olokoyo, 2012) adds that if equity is undervalued, firms may be reluctant to issue new shares because underpricing could result in existing shareholders losing wealth, as new investors might capture more than the project's net present value. Consequently, managers and investors respond based on available information, leading managers to prefer internal funding and debt over issuing undervalued equity, as this approach helps protect shareholder wealth.

2.2.4. Agency cost theory

When management and shareholders have different objectives, agency problems can arise. These conflicts tend to be more pronounced when managers have access to excessive financial resources. According to (Ehrhardt & Brigham, 2011), agency costs primarily stem from conflicts of interest between managers and owners. (Olokoyo, 2012) and (Niu, 2008) identified two main types of conflicts: first, the conflict between shareholders and managers, which occurs because managers do not hold the entire residual claim; and second, the conflict between debt holders and equity holders, which arises from the terms of the debt contract that can lead equity holders to make suboptimal investment decisions. To mitigate such issues, principals often include additional clauses in contracts or implement monitoring mechanisms, both of which increase associated costs. However, the theory suggests that selecting an optimal capital structure can help reduce agency conflicts and associated costs. In particular, a higher debt-to-equity ratio can help a firm lower agency cost and reduce conflicts because debt provides a disciplining mechanism. (Gansuwan & Önel, 2012) argue that this debt ratio also motivates managers to act more in shareholders' interests, thereby increasing the firm's value.

Furthermore, the optimal capital structure aims to minimize agency costs related to monitoring managers, who may become more risk-averse due to their compensation structures since managers are often rewarded for success and penalized for failure (Gangeni, 2006). In such cases, managers might prioritize their own interests over those of shareholders, creating a moral dilemma. One way to reduce agency costs for the firm is paying higher dividends, which forces managers to operate more transparently since they would need to source funding regularly from capital markets (Gangeni, 2006). According to (Ehrhardt & Brigham, 2011), firms can also manage excess cash flow by returning some of it to shareholders through increased dividends or share repurchases. Managers tend to act in accordance with their objectives at little or no cost. Monitoring and control costs, along with agency costs, are critical issues in the relationship between owners and external financiers (Romano et al., 2001).

Paying out cash through dividends reduces retained earnings, thereby limiting a manager's control and influence over the firm. This creates incentives for managers to invest free cash flows into new projects rather than distributing dividends to shareholders (Jensen, 1986). Jensen also argues that issuing debt can serve as a control mechanism for shareholders to diminish agency costs in the owner-manager relationship. By issuing debt instead of equity, managers commit themselves to future cash flow payments in a way that cannot be achieved solely through dividend increases. Replacing dividends with debt allows managers to use internally generated funds for investment and growth rather than for dividend payouts. Jensen's reasoning supports the pecking order theory, which emphasizes a preference for internal financing and debt over equity.

2.2.5. Signaling theory

In the context of capital structure decisions, signaling plays a crucial role as a means to address issues stemming from information asymmetries between managers and capital providers (Ross, 1977). Managers possess insider knowledge about the firm, while external investors do not have equal access to this information. Consequently, outsiders face difficulty in distinguishing between different types of companies or assessing whether a firm is 'good' or 'bad,' akin to the classic lemon problem outlined by (Akerlof,

1970). To mitigate the higher costs associated with information asymmetries, managers attempt to communicate positive signals to investors, such as demonstrating that their investment strategies enhance the company's value. For instance, adjustments in capital structure or dividend policies can be interpreted as signals indicating changes in the firm's overall valuation (Masulis, 1983; Miller & Rock, 1985).

Therefore, signaling theories are highly pertinent to capital structure research. This is also relevant when examining how credit ratings influence capital structure, using leverage-to-profitability ratios as proxy indicators for both measures. According to (Arnold, 2008), if a firm's debt levels increase while its profitability declines, it is likely to face a credit rating downgrade. Conversely, if a company's debt rises alongside increasing profitability, it suggests that management is actively pursuing profitable investment opportunities that leverage both debt and equity. Such signals are valuable to capital providers, as they help reduce information asymmetries and agency costs, potentially leading to improved credit ratings. On the other hand, if no such positive signals are observed, it supports the idea that higher levels of asymmetric information tend to elevate financing costs.

2.3. Components of Capital Structure

To raise capital for business needs, companies primarily have two types of financing as an option: equity financing and debt financing. Most companies use a combination of debt financing and equity financing, but there are some distinct advantages to both. Principal among them is that equity financing carries no repayment obligation and provides extra working capital that can be used to grow a business. Debt financing, on the other hand, does not require giving up a portion of ownership. Companies usually have a choice as to whether to seek debt financing or equity financing. The choice often depends upon which source of funding is most easily accessible for the company, its cash flow, and how important maintaining control of the company is to its principal owners.

2.3.1. Equity Financing

Equity financing means selling part of a company's ownership to raise money. For example, if the owner of Company ABC wants to grow the business, they might sell 10% of the company to an investor in exchange for funds. The investor then owns 10% of the company and gets a say in business decisions. The main benefit of equity financing is that the company doesn't have to pay back the money or pay interest, unlike loans. While the owners hope the business succeeds and the investors earn a good return, there's no obligation to make regular payments. Since there are no monthly payments needed for equity funding, the company keeps more money available to invest in growth. However, there are significant downsides. To get the funds, the firm has to give up part of its company, which means sharing profits and decision-making with new partners.

(Sibilkov, 2009) explains that equity helps a company get money without borrowing. This means the company does not have to pay back the money to shareholders at a specific time. Investors buy shares hoping to earn profits in the future, either through dividends or increased share value. If the company loses money, shareholders only lose the amount they invested; they are not responsible for additional debts, which is called limited liability. According to (Joseph, 2011), equity has certain features. Shareholders get paid after all other creditors if the company makes profits. If the company goes bankrupt, shareholders are last in line to get their money back. The company is not required to pay dividends, and the money invested by shareholders does not have to be returned within a certain period.

There are two types of equity: internal and external. **Internal equity** comes from the company's retained earnings, which are profits kept in the business instead of being paid out as dividends. The company decides how much profit to share as dividends and how much to keep for future use. **External equity** is money raised from outside sources by issuing new shares. This usually includes ordinary shares and preference shares. When internal funds are not enough for investment, a company needs to raise external equity (Graham and Harvey, 2001).

As (Narayanan, 2008) discussed, if a company raises too much money through issuing shares, it might signal to the market that it doesn't have enough cash or reserves. This can cause the company's share prices to fall. When companies finance their investments with external equity, their share prices often decline. Because of this, it's better for companies to build up reserves internally so they can fund more projects without needing to issue new shares.

2.3.2. Debt Financing

Debt financing means borrowing money and repaying it with interest, usually through a loan. Sometimes, taking on debt comes with restrictions that might limit the company's ability to pursue other opportunities outside its main business. Lenders prefer companies that have a low debt-to-equity (D/E) ratio, which can help the company borrow more in the future if needed. There are many benefits to debt financing. First, once the firm repay the loan, the lender has no control over its business. Second, the interest payment on the loan can be deducted from taxes and saving the money. Lastly, because loan payments are fixed, it's easy to predict future expenses.

Debt financing, also known as financial leverage, refers to using borrowed money to fund operations and gain additional funds to boost the return on equity. It's measured by dividing total debt by total assets or by total debt and equity combined. According to (Joseph, 2011), debt has specific features: it's governed by a contract, with clear repayment schedules for principal and interest; creditors are paid regardless of whether the company is profitable; and they have priority over shareholders when it comes to dividend payments or profits. Creditors usually require collateral based on tangible assets and often need guarantees to ensure repayment.

Companies that use more debt than equity are called highly leveraged. Among different types of debt, long-term debt is generally considered safer because the company has many years sometimes decades to repay the principal while making interest payments. (Nawaz et al., 2011) note that only certain borrowed funds, like debentures, are directly held by creditors. Companies can also get medium- or long-term loans from banks or

financial institutions. Public deposits funds received from the public, employees, or customers can also be used as a form of debt financing. When a company chooses for debt financing, it faces financial risk, making it a levered firm. As (Ehrhardt & Brigham, 2011) describe, financial risk is the extra danger that debt introduces to shareholders because of fixed obligations like interest payments, which must be paid before shareholders can benefit from profits. This risk varies across industries; some can handle higher leverage better than others. Higher financial leverage can make cash flow and net income more unpredictable, especially if operating income declines and increasing the risk of bankruptcy.

Theoretically, as debt levels grow, a company's value follows a concave (curved) pattern, meaning there's an optimal level of leverage. Too much debt can harm performance by increasing bankruptcy risk, borrowing costs, and financial distress. Research by (Zhe, Li, and Yu, 2015) shows that over-leveraged firms are more prone to sudden crashes. Being overly leveraged also has disadvantages like limited growth prospects, asset loss, difficulty taking on more debt, and trouble attracting new equity (Garcia, 2014). Excessive debt usually results in lower profitability, while too little debt can mean missing out on tax benefits. (Cheng and Tzeng, 2011) suggest that the right level of leverage can reduce agency costs, they are costs associated with conflicts between managers and shareholders since debt can act as a control mechanism. However, both under-leveraged and over-leveraged companies tend to have lower profitability due to these dynamics.

2.3.3. Cost of capital

The company's cost of capital refers to the expected return on a portfolio composed of all the firm's outstanding debt and equity securities. It serves as the appropriate discount rate for evaluating the firm's average-risk projects because it reflects the opportunity cost of investing in all of the firm's assets. When there is no debt outstanding, the corporate cost of capital is simply the expected return on the company's stock. Since a company's financial structure can influence its cost of capital, firms can impact it through various strategies (Wald, 1999). Additionally, investors providing equity are considered residual

claimants on the company's net cash flows, meaning they face higher risk compared to debt providers. Equity owners earn returns through dividends and capital gains when the company's assets increase in value, which is often reflected in rising stock prices. Conversely, debt holders receive interest payments before any dividends are paid to shareholders.

As (Bader, 2018) explains, capital is composed of two main elements: debt and equity. When a company finances its operations with debt, it borrows money from a lender for a specified period, agreeing to repay the principal along with interest. In return, the lender receives regular interest payments. On the other hand, equity financing involves shareholders purchasing shares in the company, thereby becoming owners. In exchange, they receive a portion of the company's profits. Overall, the cost of capital encompasses the various costs associated with the different sources of financing that organizations utilize.

Types of Cost of Capital

- **Cost of Equity**

  The return required by shareholders for investing in the company's equity. It reflects the risk of the company's stock and can be estimated using models like the Capital Asset Pricing Model (CAPM).

- **Cost of Debt**

  The effective interest rate a company pays on its borrowed funds, adjusted for tax benefits because interest expenses are tax-deductible.

- **Weighted Average Cost of Capital (WACC)**

  The average rate of return required by all of the company's investors, weighted by the proportion of debt and equity in the company's capital structure.

2.4. Capital structure and performance

The primary goal of a business organization is to maximize shareholder wealth. To achieve this, all businesses require funding, which they obtain from various sources. Despite the different

options available, the main sources of capital for most organizations are equity and debt. Companies may choose to finance their operations through owner's equity or debt, aiming to minimize risks associated with earnings. If the company does not generate profits during a fiscal period, owners and shareholders will not receive dividends. Although this situation may disappoint shareholders, they generally cannot take legal action in such cases. Alternatively, some firms may choose debt financing, where they raise capital by borrowing from external lenders. Utilizing debt increases the financial risk for the company, and it also poses risks to lenders, despite their compensation in the form of interest payments. The amount of interest paid depends on the company's financial performance. When a business has a high proportion of outside funding relative to internal funds, it is referred to as being highly geared. Apart from external sources, if the business is owned privately, it's advisable to consider personal resources first. Using personal resources has advantages over borrowing, such as being easier to arrange, more cost-effective, quicker, and less time-consuming. Over time, this approach can lead to better outcomes (Borrow, 2008).

Although firms utilize various sources of financing, their overarching goal is to increase the firm's value within the industry. Enhancing a company's value is a key indicator of its performance. However, measuring performance can be complex, especially in finance, due to its multi-dimensional nature. According to (Zeitun and Tian, 2007), firm performance is assessed using either financial or organizational metrics. Financial performance is often measured by profit maximization, return on assets, and shareholder benefits, while operational performance can be gauged through sales growth and market share expansion.

This study aims to explore the relationship between capital structure and the performance of manufacturing companies in Ethiopia. Empirical research worldwide has produced varied results regarding this relationship. From reviewing existing studies, it is evident that the link between capital structure and firm performance is inconsistent. For example, (Saeedi and Mohoodi, 2011) found that performance can be positively or negatively related to capital structure. In contrast, (Gupta et al., 2011), (Awunyo-vitor and Badu, 2011), and (Adekunle and Sunday,2010) reported an inverse relationship. Conversely, (Ebaid, 2009) concluded that capital structure choices have little to no effect on performance.

Optimum capital structure

The optimal capital structure is defined as the specific mix of debt and equity that maximizes the value of the firm. It is the point at which the firm's value is highest, achieved by minimizing the weighted average cost of capital (WACC). However, there is no single predetermined point that can be universally considered optimal for all companies. Instead, the optimal capital structure varies from one firm to another. The pattern of capital structure differs based on the company's access to different sources of finance. Common capital structure formats observed in practice include: solely equity shares; a combination of equity and preference shares; a mix of equity and debentures; and a combination of equity shares, preference shares, and debentures (Paramasivan and Subramanian, 2009).

Financial Performance

The strength of an organization's financial position is referred to as its financial performance. It is evaluated by how much better off the shareholders are at the end of a period compared to the beginning. This can be determined using ratios derived from financial statements, primarily the balance sheet and income statement, or through data on stock market prices (Berger and Patti, 2002). To assess a company's financial performance, profitability ratios are particularly important because they measure the firm's ability to generate profits, reflecting its overall efficiency and effectiveness. Consequently, a company must recognize that profitability is crucial for attracting investors (Dao, 2016). The level of net income serves as an indicator of financial success in relation to investments.

Business profitability is a key objective and a guarantee of the firm's long-term survival, making it essential for companies to analyze current and past profitability and to project future earnings (Khan and Safiudin, 2016). Additionally, revenues are generated through the efficient utilization of the company's resources. Decisions related to business growth, management control, and asset acquisition are guided by financial performance analysis. Evaluating performance also show cases a company's monetary achievements over time. Comparing similar firms within the same industry can be done based on these achievements. Financial ratios and market data are useful tools for periodically assessing shareholder value through clear financial performance analysis (Zeitun & Tian, 2007).

Measure of financial performance

The most significant measure of a company's financial performance is its ratios, with asset profitability also known as the company's earning power, total resources allocated to operations, or return on total investment (Murthy, 1978). According to (Block and Hire, 1978), "the income statement is the primary tool for measuring a firm's financial performance over a period of time." Activities such as raising additional funds, expansion efforts, and dividend or bonus payments depend heavily on this measurement. Financial performance can be assessed over both short-term and long-term horizons. Profitability reflects a company’s overall performance and serves as a valuable tool for forecasting future performance. The main goal of a business is to earn a satisfactory return on the invested funds. Profitability ratios act as indicators of a company's overall effectiveness and are frequently used to gauge earnings over a specific period based on sales, assets, capital employed, net worth, and earnings per share. These ratios also reflect the firm's potential for growth, success, and management effectiveness. As such, 'profitability' is a relative measure, typically expressed as a ratio or percentage (Rajkot, 1984).

(Indra Bastian, 2006) defines performance as a description of how well an organization achieves its goals, objectives, mission, and vision through the implementation of programs and policies. (Hery, 2018) states that measuring financial performance is a formal effort to evaluate a company's efficiency and effectiveness in generating profits and cash flow. This assessment provides insights into the company's prospects for growth and financial development based on its available resources. (Fahmi, 2018) describes financial performance as an analysis conducted to determine whether a company has been managing its financial activities properly and correctly.

From these perspectives, financial performance can be summarized as an evaluation of a company's financial health through analytical tools, which reveal both positive and negative financial conditions indicators of work performance over a defined period. This assessment is essential for ensuring resources are utilized effectively amid environmental changes. Performance appraisal enables management to fulfill obligations to investors and to meet organizational goals. Financial performance measurement helps companies improve their operations to stay competitive. This process involves analyzing, measuring, evaluating, and

suggesting improvements. Several tools are used for this purpose. (Jumingan, 2006) outlines various techniques, including:

- Comparative analysis of financial statements, which compares financial data across multiple periods to identify changes in absolute and relative terms.
- Trend analysis (positional tendency), which identifies upward or downward tendencies in financial conditions.
- Percentage analysis per component (common size), which determines the proportion of each asset or liability relative to total assets or liabilities.
- Analysis of sources and uses of working capital, which examines the flow of working capital between periods.
- Analysis of sources and uses of cash, which evaluates cash flow and reasons for changes over time.
- Financial ratio analysis, which assesses relationships between specific items on the balance sheet and income statement, both individually and collectively.
- Analysis of changes in gross profit, which examines profit levels and the reasons for fluctuations.
- Break-even analysis, which determines the sales level necessary to avoid losses.

Generally, revenues are generated through the efficient use of a company's resources. Decisions related to business growth, management control, and asset acquisition are guided by financial performance analysis. This evaluation also reflects a company’s monetary achievements over time. Comparing similar companies within the same industry can be facilitated through such analyses. Financial ratios and market data are valuable tools for periodically assessing shareholder value through clear evaluations of financial performance (Zeitun & Tian, 2007).

2.5. Review of Empirical Studies

While the theoretical findings regarding the issue are consistent, empirical studies in this area have produced varied results. These discrepancies are particularly evident when comparing research conducted in developed countries, which have well-established markets that enable companies to access capital efficiently, with studies from developing countries, where markets are either emerging or underdeveloped, limiting both capital access and the ability to restructure capital structures. Additionally, these differences are not solely attributed to the overall market conditions of each country; even within similar market environments, research has shown both positive and negative relationships between capital structure and financial performance. In this section of the literature review, the researcher aims to compare studies carried out in developed nations with those conducted in developing countries, highlighting the contrasting results found across different research efforts. The review also examines studies that analyze the influence of various levels of debt on performance, serving as a measure of capital structure. It concludes with a summary of research findings from Ethiopia related to this topic.

- **Empirical review from developed nations**

  Although numerous studies utilizing data from developed countries are available, the researcher has selected only seven of these to provide a sufficient overview for the audience. Among these seven, the first two are cross-sectional studies that analyze data from different countries, while the others focus on individual nations. One of the most notable and frequently cited studies from developed nations is by (Rajan and Zingales, 1995), titled “What do we know about Capital Structure?”

  This research examined the determinants of capital structure using data from publicly traded firms across the G-7 countries, namely the United States, Japan, Germany, France, Italy, the United Kingdom, and Canada. The goal was to determine whether factors influencing capital structure in countries outside the USA were similar to those in the US. One factor they analyzed was profitability, and their findings showed that profitability was negatively associated with capital structure in the US, Japan, Italy, and Canada. Conversely, in the UK, profitability was positively related, likely because equity financing is more prevalent there. No significant relationship was found in Germany and

France. These results suggest that the link between capital structure and profitability varies among developed nations.

Another prominent study with a similar focus was conducted by (Chen and Hammes ,2003), who used data from seven OECD countries, specifically the US, UK, Canada, Denmark, Italy, Sweden, and Germany to explore what influences firm leverage. Like Rajan and Zingales, they considered profitability as a key factor and found a negative relationship across all countries, with particularly strong correlations in Denmark and Sweden, and weaker links in the US and Germany. They concluded that higher-performing firms tend to have lower debt levels.

In addition to cross-country research, there are studies focusing on a single country. For example, an empirical analysis of Swiss companies, using panel data from 106 firms over ten years, indicated that profitability is negatively correlated with leverage (Gaud et al., 2003). Similarly, (Reimoo, 2008) examined 173 non-financial listed UK companies over ten years (1998–2007) and found the same negative relationship. (Han-suck Song's ,2009) study of 6,000 Swedish firms over nine years also arrived at the same conclusion. Collectively, these studies support the idea that the relationship between capital structure and performance aligns with the pecking order theory of capital structure.

However, despite the consistent negative correlation observed in these studies, the findings of (Frank and Goyal, 2007 and 2009) introduce some complexity. Their earlier research, titled "Capital Structure Decisions: Which Factors Are Reliably Important?" analyzed the leverage decisions of U.S. firms over more than fifty years, revealing a negative correlation between profitability and leverage. In their subsequent study, "Profits and Capital Structure," they challenged the common interpretation of trade-off theory, arguing that empirical results do not always align with theoretical expectations. Using data from the US and CRSP, they found that more profitable firms tend to issue more debt and repurchase equity, while less profitable firms tend to do the opposite that is, a positive relationship between profitability and leverage.

In summary, most research tends to support a negative relationship between profitability and leverage, consistent with the pecking order theory. Nevertheless, the findings of

Frank and Goyal suggest that the relationship is not always strictly inverse; there are instances, such as in their latter study, where a direct relationship may be observed. This indicates that the relationship between these variables may be more nuanced than a simple inverse correlation.

- **Empirical review from transitional and developing nations**

Similarly, research conducted in developing countries often shares common features with studies from developed nations, despite differences in levels of economic development. These studies generally tend to support an inverse relationship between the variables examined. For example, a cross-country study by (Booth et al., 2001) analyzed the financial structures of firms across developing countries, including India, Pakistan, Thailand, Malaysia, Zimbabwe, Brazil, and Jordan. The primary question was whether corporate leverage decisions differ significantly between developing and developed nations. Their findings indicated no substantial difference in leverage decisions overall, but they did find that profitability negatively impacted leverage decisions except in Zimbabwe. Consistently across individual countries and pooled data, the study revealed that more profitable firms tend to have lower debt levels, supporting the pecking order theory, which suggests firms prefer internal financing and avoid costly external debt due to information asymmetries.

Similarly, (Bauer, 2004), in a study of firms in the Czech Republic, found a negative correlation between leverage and performance, aligning with the pecking order hypothesis. Several other studies examining whether capital structure influences firm performance arrived at comparable conclusions. For instance, research on 100 firms listed on India's National Stock Exchange (Gupta et al., 2011), a study of 77 leading non-financial firms in Bangladesh (Chowdhury, 2010), a survey of 30 companies traded on Sri Lanka’s Colombo Stock Exchange (Pratheepkanth, 2011), and research on non-financial firms listed on Nigeria’s stock exchange (Adenkule & Sunday, 2010; Ossuji & Odita, 2012) all reported that firms’ capital structures negatively impact financial performance implying that more successful companies tend to carry lower levels of debt.

- **Empirical review from Ethiopia**

  As discussed earlier, the empirical findings regarding the relationship between capital structure and financial performance remain mixed and somewhat controversial. The situation appears similar in Ethiopia, where some studies report a negative relationship, others find a positive one, and still others observe no significant link at all. It is important to note that, to the best of my knowledge, most of these studies have primarily focused on identifying the determinants of capital structure rather than directly examining how capital structure impacts financial performance. Consequently, the current review is limited to these studies, as they are the only available sources that can offer insights into the potential relationship.

  (Melese, 2013) conducted research to examine how capital structure influences the financial performance of Ethiopia's metal and engineering sector. The study analyzed secondary data from annual financial statements spanning 2007 to 2012. Return on Equity (ROE) served as the indicator of financial performance, while the capital structure variables included total debt ratio, short-term debt ratio, and long-term debt ratio. The study also incorporated control variables such as firm size, asset tangibility, and asset turnover. Using panel data analysis, the research covered six years of data from a sample of 10 companies selected from a total of 78 firms.

  The results indicated that the capital structure variables debt ratio, short-term debt ratio, and long-term debt ratio had a positive impact on the firms' financial performance. However, the long-term debt ratio did not show a statistically significant effect. Overall, the findings supported the principles of trade-off capital structure theories. Based on these outcomes, the researcher advised companies within Ethiopia's metal and engineering industry to identify their optimal capital structure, emphasizing the importance of not only recognizing the beneficial effects of debt but also determining the appropriate level.

  (Aragie et al., 2015) examined the link between capital structure and the financial performance of commercial banks in Ethiopia. The study utilized secondary panel data obtained from the annual reports of eight selected banks over the period from 2000 to 2012. To assess financial performance, the researchers used return on assets (ROA),

return on equity (ROE), and net profit margin as dependent variables. The capital structure was measured through ratios of total debt to total assets and total debt to total equity, while firm size was included as a control variable.

The results indicated that leverage positively influenced the financial performance of Ethiopian commercial banks when performance was gauged by ROE. However, an opposing finding emerged when performance was measured by ROA and net profit margin, revealing a significant negative impact of leverage. These conflicting outcomes align with both the trade-off theory and the pecking order theory of capital structure. Based on the findings, the researchers recommended that Ethiopia's banking industry should aim to determine an optimal capital structure to enhance performance.

(Kifle, 2016) carried out an explanatory research study to examine the impact of capital structure on the financial performance of Ethiopian cement companies. The research utilized secondary data from annual reports of eight cement firms in Ethiopia, covering the period from 2010 to 2014. The capital structure was assessed using the long-term debt to equity ratio, while financial performance was evaluated through return on assets (ROA) and return on equity (ROE). Several control variables were included, such as company size, tangibility, growth opportunities, capital adequacy, liquidity, business risk, and gross domestic product (GDP).

The results from random effects multiple regression analysis indicated that there is a significant positive relationship between capital structure and financial performance when measured by the long-term debt to equity ratio and ROA. Conversely, the analysis also revealed a significant negative relationship between capital structure and financial performance when measured by the long-term debt to equity ratio and ROE.

(Tufa, F. B., 2016) aimed to explore the effect of corporate capital structure on the profitability of manufacturing firms in Ethiopia. The study employed a quantitative research approach, utilizing secondary data collected from the review of annual financial reports spanning 2010 to 2014. The population consisted of large tax-paying

manufacturing companies, from which 34 firms were selected through random sampling techniques.

The capital structure variables analyzed included interest coverage ratio (ICR), debt ratio (DR), debt-to-equity ratio (DE), long-term debt to capitalization ratio (LDCR), short-term liabilities to total liabilities (SDTL), and long-term liabilities to total liabilities (LDTL). Control variables incorporated were firm size (SZ), sales growth rate (SG), and tangibility (TN). Profitability was measured using return on capital employed (ROCE).

The findings revealed a significant positive relationship between certain capital structure variables specifically, short-term liabilities to total liabilities, long-term debt to capitalization ratio, and interest coverage ratio and profitability (ROCE). Based on these results, the study suggests that the pecking order theory more accurately reflects the current capital structure strategies of large tax-paying manufacturing firms in Ethiopia. The research also indicates that adopting an appropriate mix of capital structure can enhance profitability, with short-term debt showing a more favorable association with financial performance compared to long-term debt.

(Adamu, Y., 2018) conducted research on the relationship between capital structure and corporate performance among pharmaceutical manufacturing firms in Ethiopia. The study utilized secondary panel data, comprising both time series and cross-sectional data from the financial statements of seven selected pharmaceutical firms, spanning 2007 to 2016. Data analysis was performed using E-Views 9 econometric software.

Capital structure was measured by long-term debt to equity ratio and total debt to asset ratio, while corporate performance was assessed using return on assets (ROA). Control variables included firm age, size, liquidity, and sales growth.

The results demonstrated that leverage measured by long-term debt to equity ratio had a significant negative relationship with ROA. Conversely, leverage measured by total debt to asset ratio showed a significant positive relationship with ROA. All control variables were significantly related to ROA: there was a positive relationship between age and firm performance, a negative relationship between firm size and performance, and a

significant negative association between sales growth and financial performance among Ethiopian pharmaceutical firms.

(Halake, J., 2020) examined how leverage influences the profitability of medium-sized tax-paying food and beverage manufacturing firms in Addis Ababa. The research utilized secondary data drawn from audited financial statements of 12 medium tax-paying firms operating in Addis Ababa between 2011 and 2017.

In this study, leverage served as the independent variable to measure capital structure, while return on assets (ROA) was used to gauge profitability. Several control variables were included, such as firm growth, managerial efficiency, capital adequacy, and inflation. The collected data were analyzed and interpreted using E-Views software.

The regression results indicated a strong negative and significant relationship between leverage and profitability. Conversely, capital intensity and managerial efficiency showed positive and highly significant effects on profitability. The study also found a positive but statistically insignificant link between firm growth and profitability, and inflation was observed to have a negative yet insignificant impact on ROA.

In summary, the review of existing literature indicates that there is no universally accepted theory of capital structure. Additionally, there is no definitive optimal debt-equity ratio, as research findings on the relationship between capital structure and firm performance remain inconsistent. Due to these discrepancies, this study is exploring the relationship between capital structure and the performance of selected manufacturing companies in Ethiopia by utilizing specific variables to measure both capital structure and performance.

2.6. Research Gap

Many studies have looked at how a company's capital structure (how it finances itself) affects its financial performance, but there are still important gaps in what we know, both in Ethiopia and around the world. In Ethiopia, some research, like that by (Tadesse and Tsegaye, 2018), has looked at how capital structure relates to profits in manufacturing firms, but there is not enough

detailed research on how bigger economic factors influence how companies decide to finance themselves in different sectors such as farming, services, or small businesses.

International studies, like those by (Titman and Wessels, 1988) and (Frank and Goyal, 2009), show mixed results about whether debt or equity improves a company's performance, which shows that more local or sector-specific research is needed, especially in developing countries where financial systems are still growing. We also don't know enough about how laws and regulations affect these financial choices and how changes in rules could change things. Most studies focus only on traditional ways companies get money, like loans or selling shares, but don't pay much attention to alternative sources like microfinance, aid, or digital financial tools, which are becoming more important for small businesses in Ethiopia.

Many studies look at data from one point in time, so they don't show how the relationship between capital structure and performance changes over time, especially during economic ups and downs. There's also little research on whether capital structure actually causes changes in performance or if performance influences financing choices, which needs more investigation. Additionally, there's not enough comparison between different sectors or company sizes within Ethiopia. This study seeks to fill the gap in understanding the effect of capital structure on the financial performance of different manufacturing companies in Ethiopia.

2.7. Conceptual Framework

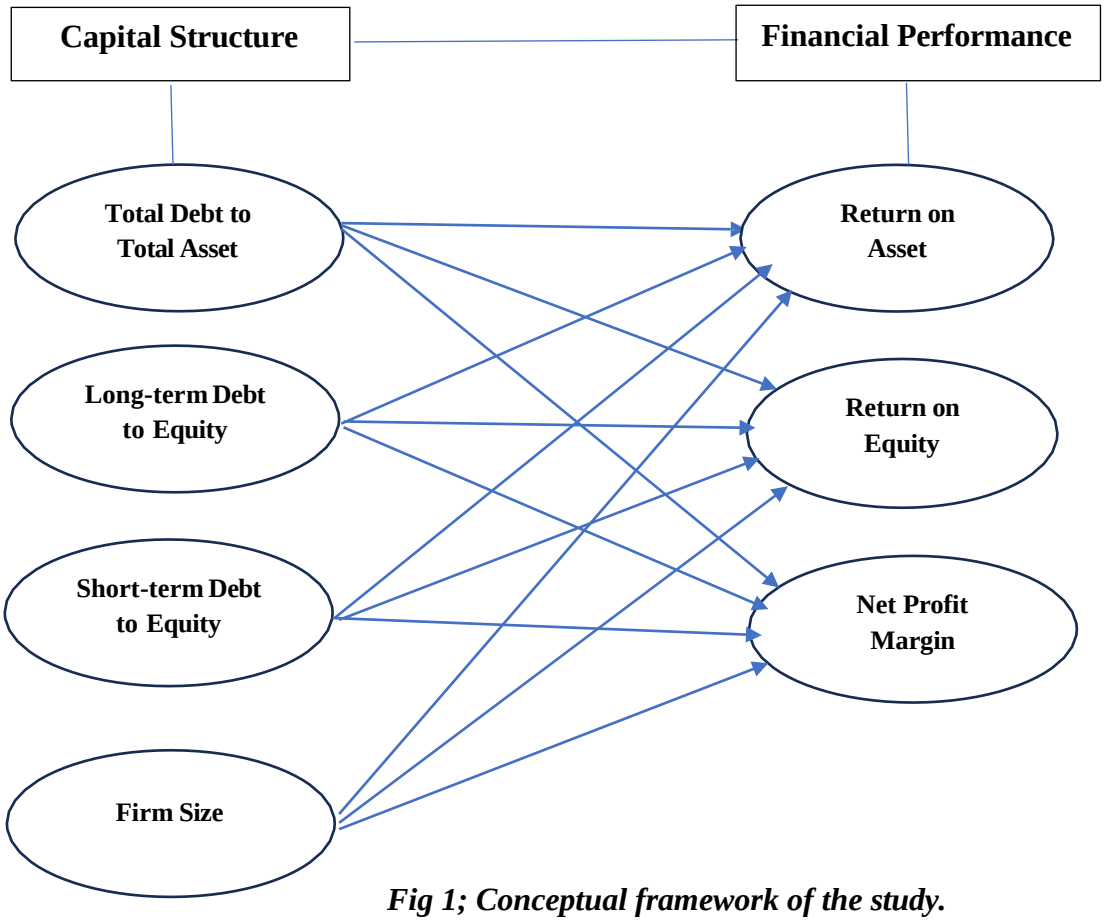


Fig 1; Conceptual framework of the study.

The above Fig.1, showed that the conceptual framework designed by the researcher to demonstrate the effect of each capital structure variables on each financial performance metrics of manufacturing companies in Ethiopia. In this diagram the independent variables are TD/TA, LTDTE and STDTE and control variable is firm size (SZ). While ROA, ROE and NPM are the dependent variables.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction

Research methodology refers to the set of techniques and procedures employed to gather and analyze information related to a particular research topic. It involves the systematic process through which researchers plan and structure their study to effectively meet their objectives using appropriate research tools. The methodology encompasses key elements such as the research design, data collection techniques, data analysis methods, and the overall framework guiding the research process. While understanding what constitutes a research methodology is helpful, it is equally important to recognize why selecting the appropriate methodology is crucial for the validity and success of the study.

3.2. Research Design and Approach

Research design refers to the overall plan or blueprint that guides how a research study is conducted. It outlines the specific procedures and strategies for collecting and analyzing data to address the research questions or hypotheses. Essentially, research design provides a structured approach to ensure that the study produces valid and reliable results, whether it involves qualitative, quantitative, or mixed methods. It helps in determining the type of data needed, the sources of data, the methods for gathering data, and the approach for interpreting the findings, ensuring that the research is systematic and focused.

The study used a panel data that employed secondary quantitative data. To achieve the objectives stated in the preceding section, considering the nature of the research problem and the research perspectives, this study applied an explanatory research design and quantitative research approach.

3.3. Population of the study and sample size

To fulfill the research objectives and analyze the relationships among the specified variables, the researcher employed panel data ordinary least squares (OLS) techniques, which integrate characteristics of both cross-sectional data and time series data. Panel data consists of multiple

observations for each sampling unit, enabling the use of various methods to estimate models that account for specific effects.

The data for this study were obtained from secondary sources, mainly from the annual audited financial reports such as balance sheets and income statements of sampled manufacturing companies in Ethiopia. The study population included 238 (two hundred thirty-eight) different manufacturing firms, such as 10 (ten) cement factories, 59 (fifty-nine) spring water and soft drink manufacturing, 20 (twenty) alcohol/liquor manufacturing, 141 (one hundred forty-one) foam and plastic factories and 8 (eight) tyre manufacturing and all are classified under the Large Taxpayers Office (LTO). From this group, a sample of 10 (Ten) large and high market share manufacturing companies was chosen based on their classification under LTO and their operations within the manufacturing sector.

Sampling refers to the process of selecting a representative subset of a population to infer characteristics about the whole, as described by (Adams et al., 2007). In this case, non-probability-purposive sampling method was used to select the sample purposively. According to (Etikan, 2016), purposive sampling is a deliberate selection method where participants are chosen based on specific qualities and data availability.

List of Sampled companies

- Derba Midroc Cement Plc
- Ethio Cement Plc
- Moha Soft Drinks Industry S.C
- Belima International Business Plc (Daily Water)
- Ok Bottling and Beverage S.C (Fikir Water)
- Kemal Bejiga and Family General Trading Plc (Fam Water)
- National Alcohol / Liquar factory
- Addis Ababa Foam and Plastic Enterprise
- Rainbow Foam and Plastic Industry
- Horizon Addis Tyre S.C

3.4. Data Sources and Type

The researcher relied on secondary data for this study. Secondary data refers to information that was originally gathered for a different purpose but was deemed valuable for the current research. The data were obtained through a review of the annual audited financial reports specifically balance sheets and income statements of sampled manufacturing companies and sourced from the Large Tax Payers Branch Office. Since these reports are audited for tax declaration purposes, they are considered reliable. To minimize the risk of data inaccuracies, the researcher focused on audited financial statements spanning five years (2020–2024) G.C, covering this period for the sampled 10 (Ten) manufacturing firms.

3.5. Data Analysis

In this study, the researcher utilized a combination of descriptive analysis, diagnostic tests and multiple regression analysis. Descriptive analysis was employed to characterize the key aspects of capital structure and financial performance among Ethiopian manufacturing companies, offering detailed insights into each relevant variable. To ensure the data met the fundamental assumptions of the classical linear regression model (CLRM), diagnostic tests including tests for linearity, normality, multicollinearity, heteroscedasticity, and autocorrelation were performed. Multiple regression analysis was conducted to explore the influence/impact of capital structure on financial performance of sampled manufacturing firms. Additionally, the ordinary least squares method was used to further analyze the relationship between these variables across the data set.

Finally, the P-value employed to assess the significance of both the constant term and the individual coefficients in each regression. The importance of each regression model was evaluated through F-tests at a 95% confidence level. The coefficient of determination, R^2, was used to measure how well the independent variables explained the variation in the dependent variable. All analyses were carried out using SPSS software version 23.

3.6. Econometrics Model

To examine the effect of capital structure on the financial performance of manufacturing companies, multiple regression analysis was utilized. Multiple regression is more than just a

single method; it encompasses a range of techniques designed to investigate the connection between one dependent variable and multiple independent variables (Brooks C., 2008). As noted by Brooks (2008), econometricians employ regression analysis to derive quantitative estimates of economic relationships that were previously understood only through theoretical models.

Regression is a statistical technique that attempts to "explain" movements in one variable, the dependent variable, as a function of movements in a set of other variables, called the independent (or explanatory) variables, through the quantification of a single equation (Brooks C., 2008). There will often exist several explanatory variables in a given situation. In a multiple regression we can find the best relationship between the response and the different explanatory variables. The general multivariate regression model with K independent variables can be written as follows (Brooks C., 2008).

$$Yi = \beta 0 + \beta 1X1i + \beta 2X2i + \ldots + \beta kXki + \varepsilon i \ (i\ 1,2,3\ldots, n)$$

Where Yi is the ith observation of the dependent variable, X1i…, Xki are the ith observation of the independent variables, β0…, βk are the regression coefficients, εi is the ith observation of the stochastic error term, and n is the number of observations.

The following models were used to identify the effect of capital structure on financial performance of sampled manufacturing companies. The study used more than one proxy of accounting measures to measure the financial performance of selected manufacturing companies and the researcher used ROA, ROE and NPM as a financial performance measure. All financial performance measure variables reflect the dependent variable. The independent variable is capital structure measured by total debt-to-total asset ratio (TD/TA), long-term debt to equity ratio (LTDTE), short-term debt to equity ratio (STDTE) and as a control variable uses Firm size (SZ).

Financial Performance = f (Capital Structure)

$$\text{Model 1 ROA} = \alpha + \beta 1\ (TD/TA) + \beta 2\ (LTDTE) + \beta 3\ (STDTE) + \beta 4 \log (SZ) + \varepsilon it$$
$$\text{Model 2 ROE} = \alpha + \beta 1\ (TD/TA) + \beta 2\ (LTDTE) + \beta 3\ (STDTE) + \beta 4 \log (SZ) + \varepsilon it$$
$$\text{Model 3 NPM} = \alpha + \beta 1\ (TD/TA) + \beta 2\ (LTDTE) + \beta 3\ (STDTE) + \beta 4 \log (SZ) + \varepsilon it$$

Where:

ROA = Return on asset

ROE = Return on equity

NPM = Net profit margin

α = Constant coefficient

β = Regression coefficients for measuring independent variables

TD/TA = Total Debt to Total Asset

LTDTE= Long term Debt to Equity

STDTE= Short term Debt to Equity

SZ= Firms size

εit = Error component showing unobserved factor

3.7. Variables explanation

3.7.1. Dependent Variables

Financial performance serves as the dependent variable in this analysis, assessed through metrics such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). Among these, ROA is selected as a proxy for measuring financial performance because it indicates the percentage of profit generated relative to a company's total assets. ROA is a crucial profitability ratio that reflects how much profit a firm earns for each dollar of assets it holds, highlighting the company's ability to generate earnings before interest and taxes. Additionally, ROA encompasses all company assets, including those financed through liabilities as well as those contributed by shareholders. It provides insight into how effectively management utilizes the company's assets to produce profit (Ghosh, 2007). Previous studies by (Zeitun and Tian, 2007), (Salteh et al. (2009), and (Agarwal and Zhao, 2007) have also employed ROA as a measure of financial performance, reinforcing its validity as a key indicator in corporate financial analysis. Return on asset calculated by the following formula:

$$ROA = \frac{\text{Net Income}}{\text{Total Asset}}$$

Another reason for selecting Return on Equity (ROE) as a proxy for financial performance is that it reflects the rate of return earned on shareholders' equity, indicating how effectively a company generates profits from the investments of its common stockholders (Donaldson, 1961). ROE serves as an indicator of a firm's efficiency in converting equity into profit. This measure has been widely adopted in prior research as a proxy for financial performance, as seen in studies conducted by (Abor, 2005), (Cheng, Liu, and Chien, 2007), (Karadeniz, Kandir, and Balcilar, 2009), and (Akinyomi, (2013). Return on equity (ROE) calculated by the following formula:

$$ROE = \frac{\text{Net Income}}{\text{Total Equity}}$$

The other dependent variable is Net Profit Margin (NPM) which is a profitability ratio that measures the percentage of profit a company retains from its total revenue after deducting all expenses, including operating costs, interest, and taxes. NPM indicates how efficiently a company manages its costs and expenses relative to its sales, reflecting overall profitability and operational efficiency. The reason of choosing net profit margin as a dependent variable is it provides a clear picture of a company's ability to convert sales into actual profit, making it a comprehensive measure of profitability and reflects how well a company controls its costs and expenses in relation to its revenue. Several studies have shown that NPM responds to managerial strategies and external factors. For example, (Ramesh et al., 2014) found that operational efficiencies significantly influence NPM in manufacturing firms, while studies like those by (Kamarudin et al., 2012) link cost management to profitability measures like NPM.

NPM calculated by the following formula:

$$NPM = \frac{\text{Net Income}}{\text{Total Revenue}} * 100$$

3.7.2. Independent variables

Capital structure is the independent variable of this research and measured by total debt-to-total asset ratio, long term debt to equity ratio and short-term debt to equity ratio.

Total Debt-to-Total Asset Ratio (TDTA) is a financial leverage ratio that compares a company's total debt to its total asset. It indicates what percentage of a company's assets are financed by debt. A lower ratio suggests more stability, as most assets are owner-funded, while a higher ratio means more reliance on creditors, increasing risk but potentially boosting growth, varying by industry.

The reasons for choosing Total Debt to Total Asset Ratio as an Independent Variable because it reflects the level of financial risk and leverages a firm employs to finance its operations and it influences profitability. Higher debt can lead to tax advantages but also increased financial risk (Modigliani & Miller, 1958). Research by Cheng, Y., Liu, Y., and Chien (2007) indicates that optimal leverage levels can enhance profitability, while excessive leverage may negatively impact financial performance. TD/TA ratio calculated by the following formula.

$$\text{TDTA} = \frac{\text{Total Debt}}{\text{Total Asset}}$$

The Long-Term Debt to Equity Ratio (LTDTE) measures the proportion of a company's capital structure financed by long-term debt relative to shareholders' equity. It indicates the degree of financial leverage associated with long-term obligations, providing insight into the firm's long-term financial stability and risk profile.

The reasons for choosing Long-Term Debt to Equity Ratio as an Independent Variable because it reflects the extent to which a company relies on long-term debt for funding, influencing its financial risk and stability. Research such as (Rajan and Zingales ,1995) indicates that firms with higher long-term debt ratios may experience different performance outcomes, and studies like those by (Hossain and Mollah, 2018) show a significant relationship between long-term leverage and firm value. LTDTE calculated by the following formula.

$$\text{LTDTE} = \frac{\text{Long term debt}}{\text{Total equity}}$$

The Short-Term Debt to Equity Ratio (STDTE) measures the proportion of a company's total equity financed by short-term debt obligations. It indicates the company's reliance on short-term borrowings to fund its assets and operations, reflecting liquidity risk and financial flexibility.

The reasons for choosing Short-Term Debt to Equity Ratio as an Independent Variable because it captures the company's short-term leverage, affecting its ability to meet immediate obligations and respond to operational needs. Studies like (Titman and Wessels, 1988) suggest that higher short-term debt ratios are associated with increased financial risk, which can influence profitability and firm value. Additionally, research by (Fama and French, 2002) indicates that firm leverage, including short-term debt, plays a significant role in firm performance. STDTE calculated by the following formula.

$$\text{STDTE} = \frac{\text{Short term debt}}{\text{Total equity}}$$

A company's size is a key factor influencing its financial performance. Larger and well-known firms typically have better access to long-term capital markets compared to smaller firms, either through bank loans or issuing stocks. Consequently, larger firms tend to secure more debt financing than smaller ones. Several researchers, including Tufa (2016), Melese (2013), Kifle (2016), Aragie et al. (2015), Seetanah et al. (2014), Çekrezi (2013), and Telila (2018), have all found a positive relationship between firm size and financial performance. Moreover, firm size can influence the availability of debt, primarily due to reduced information asymmetry; larger firms tend to have less information asymmetry, making debt financing more accessible since equity might be undervalued in the market. According to (Rao, Al-Yahyee, and Syed, 2007), bigger firms with lower information asymmetry are better positioned to access debt financing. But this study hypothesized that firm size will have negative impact on profitability.

It is calculated as logarithm of total assets to achieve the normal distribution and linearity Size of a firm.

SZ = Natural logarithm (Total assets).

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1. Introduction

In this chapter, the collected data are shown, explained, and analyzed using SPSS Software Version 23. Section 4.1 shows the basic (descriptive) statistics of Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), Total Debt to Total Assets (TD/TA), Long-term Debt to Equity Ratio (LTDTE), Short-term Debt to Equity (STDTE), and the size of the companies (SZ). Section 4.2 explains the Pearson correlation matrix. Section 4.3 explains the diagnostic tests such as Linearity test, Heteroskedasticity Test, Multicollinearity Test, Autocorrelation Test, and Normality Test. In section 4.4, the results of regression analysis are presented to check how capital structure affect the financial performance of sampled manufacturing companies in Ethiopia. Lastly, the discussion of the regression results for the dependent and independent variables in the models is given in section 4.5.

4.2. Descriptive Statistics

In this section, the researcher discusses about the basic (descriptive) statistics of both the dependent and independent variables used in the three models of this study. In the table 4.1 below, the values for the average (mean), spread (standard deviation), lowest (minimum), and highest (maximum) of Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) are shown. These are used as measures of financial performance (dependent variables). The table also includes data on Total Debt to Total Assets (TDTA), Long-term Debt to Equity (LTDTE), and Short-term Debt to Equity (STDTE), which serve as measures of capital structure (independent variables). Additionally, the company size (SZ) is used as a control variable. The data for these variables were collected from the balance sheets and income statements of 10 selected manufacturing companies in Ethiopia over a period of five years from 2020 to 2024 G.C. The total number of observations are 50, and these data have been tested and interpreted. The descriptive statistics for these observations are shown in the following table 4.1.

Table 4.1 Summary of descriptive statistics

Variables	Mean	Standard Deviation	Minimum	Maximum	No of observation
ROA	0.0806	0.08324	0.10	0.31	50
ROE	0.3194	0.91685	1.23	6.52	50
NPM	0.0894	0.08765	0.13	0.28	50
TDTA	0.5802	0.25386	0.62	1.07	50
LTDTE	0.3474	0.41129	0.58	1.66	50
STDTE	1.6404	2.92792	2.86	12.04	50
SZ	9.0342	0.49940	8.28	9.93	50

Note: *ROA refers to return on asset, ROE for return on equity, NPM for net profit margin, TDTA for total debt to total asset, LTDTE for long term debt to equity, STDTE for short term debt to equity and SZ for firm size.*

Source: Output of data analysis by SPSS version 23.

As it is presented in table 4.1 above, During the period 2020-2024 G.C, the mean value of financial performance measured by return on asset (ROA) on average is 0.0806 with standard deviation of 0.083. This indicates on average the companies in the sample generate 8.06% return from their invested asset and the standard deviation 0.083 implies the variability around the mean is approximately 8.32%, suggesting a fair amount of variation in profitability across the companies. Some firms perform significantly better or worse than the average**.** The Minimum and Maximum ROA is 0.10 and 0.31 respectively. The minimum ROA of 0.10 means that the least efficient company in your data set earned a profit of 10% relative to its total assets and the maximum ROA of 0.31 indicates that the most efficient company earned a 31% return on its assets, demonstrating a high level of efficiency in generating profit from its assets. This range shows considerable variation in how effectively different companies are using their assets to generate profit. Some are earning relatively modest returns, while others are highly efficient.

The mean value of return on equity (ROE) on average is 0.3194 with standard deviation of 0.92. This implies on average, the companies in the sample earned a return of approximately 31.94% on their shareholders' equity. This suggests that, generally, the firms are quite profitable relative to the equity invested by shareholders and the standard deviation 0.92 means there is a high level

of variability or dispersion around this average ROE. In practical terms, while the average is about 32%, individual firms' ROE can be much lower or much higher. The minimum and maximum values of Return on Equity (ROE), which are 1.23 and 6.52 respectively, provide important insights into the financial performance of the companies in the study. ROE of 1.23 indicates that the least efficient company in the sample generated a return of 1.23 units of profit for every unit of shareholders' equity invested. This suggests relatively low profitability, meaning that this company is earning only a small profit relative to its equity. Such a low ROE could be a sign of operational challenges, poor management, or a business environment that limits profitability. On the other hand, a maximum ROE of 6.52 shows that the most efficient company in the sample achieved a return of 6.52 units of profit per unit of equity. This higher ROE indicates better profitability and efficient use of shareholders' funds. It reflects a strong financial position, effective management, and potentially more successful business strategies.

The range between 1.23 and 6.52 suggests variability in the financial performance of the companies analyzed. Some firms are performing relatively poorly in terms of generating returns for shareholders, while others are achieving higher profitability. This variation could be due to differences in industry, size, management practices, or external economic conditions. It highlights the importance of analyzing individual company performance to understand what factors contribute to higher or lower ROE within the sector.

The mean value of net profit margin (NPM) is 0.0894 with standard deviation of 0.0876. It means that, on average, the companies in the sample retain about 8.94% of their revenue as net profit. In other words, roughly 9 % out of every dollar earned in revenue is converted into profit across the sample, reflecting the typical profitability level of these firms. The standard deviation of 0.0876 suggests that there is considerable variability in profit margins among the firms. This means that individual companies' NPM can deviate quite a bit from the average. Many firms might have profit margins close to 9%, but some could have much lower margins, perhaps near zero or even negative (indicating losses) and others might have higher margins, significantly exceeding 9%, possibly reaching 20% or more in some cases. The minimum and maximum values of Net Profit Margin (NPM), which are 0.13 and 0.28 respectively, provide valuable insights into the profitability and operational efficiency of the companies within the dataset. Minimum NPM 0.13 indicate that, the company with the lowest NPM retains only 13 % of profit

for every dollar of sales. This relatively low margin suggests that the company faces high costs, competitive pressures, or inefficiencies that reduce profitability. It may be operating in a highly competitive industry with thin profit margins, or it could be experiencing operational challenges, such as high overhead costs, pricing pressures, or management inefficiencies. On the other hand, the maximum NPM 0.28 explains the most profitable company retains 28 % of profit per dollar of sales, indicating better control over costs, higher pricing power, or more efficient operations. A higher NPM often signifies a strong competitive position, effective cost management, or a business model that yields higher profitability.

The range from 13% to 28% demonstrates variability in how well companies are managing their expenses relative to their revenues. Companies with higher NPMs are generally better at converting sales into profit, which can be a sign of operational excellence or a competitive advantage.

The mean value of total debt to total asset (TDTA) is 0.5802 with standard deviation of 0.2538. This indicates on average, about 58% of the sampled manufacturing companies' assets are financed through debt. This ratio measures the leverage of a firm how much of its assets are funded by debt versus equity. The standard deviation of 0.2538 also implies that the high variability (around 25%) suggests some firms have very low debt levels, while others are heavily leveraged and it indicates diversity in capital structure strategies among the firms, with some relying heavily on debt and others maintaining more conservative leverage.

The minimum and maximum value of total debt to total asset (TDTA) is 0.62 and 1.07respectively. The minimum value of TDTA is 0.62, which indicates that about 62% of total assets of sampled manufacturing companies are financed through debt. This suggests that these companies rely significantly on borrowed money to fund their assets, but they are not at the extreme end of high leverage. Having 62% debt means they are somewhat leveraged but still maintain a balance between debt and other sources of financing, which could include equity or internal funds.

The maximum value of TDTA is 1.07, meaning that in the most highly leveraged companies, total debt slightly exceeds total assets by about 7%. This situation can occur if a company has

borrowed more than the value of its assets, possibly through additional borrowing or accounting practices like negative equity. When debt exceeds assets, it indicates very high leverage, which can be risky because such companies might face difficulties in meeting debt obligations if their assets decline in value or if they experience financial challenges.

The range from 0.62 to 1.07 shows a substantial difference in how companies finance their assets with debt. Some are moderately leveraged, relying on a significant portion of debt, while others are highly leveraged, with debt levels exceeding their assets. This variation reflects different financial strategies and risk profiles among the companies.

The mean value of long-term debt to equity (LTDTE) is 0.3474 with standard deviation of 0.41129. The mean value of LTDTE 0.3474 implies, on average about 34.74% of the total equity (owners' capital) of the sampled manufacturing companies is financed by long-term debt. The standard deviation of 0.41129 indicates, how much the LTDTE values change from the average. Because this number is quite large compared to the mean, it means there is a big difference between sampled companies. Some companies have much less long-term debt compared to their equity, while others have much more, possibly relying heavily on borrowed money.

The minimum and maximum value of long-term debt to equity (LTDTE) is 0.58 and 1.66 respectively. The minimum value of LTDTE 0.58 indicates that some of the sampled manufacturing companies have 58 % long-term debt of its equity. This suggests a moderate level of borrowing that the companies use some borrowed money to finance its operations, but it still relies mostly on its own resources (equity). This level of debt is generally considered manageable and indicates a balanced approach to financing.

The maximum value of LTDTE 1.66 implies that the most of sampled manufacturing companies have 166 % long-term debt of its equity. In other words, the company owes more long-term debt than its own equity. This is a high level of leverage, meaning the company relies heavily on borrowed money. Such a high debt-to-equity ratio can be risky because the company has a large debt burden relative to its ownership capital, which could lead to financial difficulties if earnings decline or if interest rates rise.

The range between 0.58 and 1.66 shows that different companies in the sample have very different financial strategies. Some prefer to keep debt levels moderate, while others take on much more debt relative to their equity. The high end (1.66) indicates a more aggressive borrowing approach, which might lead to higher returns if investments perform well but also increases financial risk.

The mean value of short-term debt to equity (STDTE) is 1.6404 with standard deviation of 2.928. The mean value of STDTE 1.6404 indicates, on average the sampled companies have 164.04% of short-term debt compared to their equity. This number explains the typical company's short-term debt is about 1.64 times its equity.

The standard deviation 2.928 also shows how much the short-term debt ratios vary from the average across all sampled companies. A high standard deviation means there is a big difference between companies, some might have much less short-term debt than the average, while others have much more.

The minimum and maximum value of short-term debt to equity (STDTE) is 2.86 and 12.04 respectively. Minimum STDTE 2.86 this means that, the sampled companies with the lowest short-term debt relative to its equity still have about 2.86 times more short-term debt than its own equity. Although this is the smallest ratio in the group, it still indicates significant short-term borrowing. The companies rely on short-term debt that is almost three times its own equity, which suggests a high level of reliance on borrowed funds for its immediate financial needs.
Maximum STDTE 12.04 this indicates, the sampled companies with the highest ratio have over 12 times more short-term debt than its equity. This is an extremely high level of short-term borrowing. Such a high ratio shows that the company is heavily dependent on short-term debt to finance its activities.

The mean value of firm size (SZ) is 9.0342 with standard deviation of 0.49940. The mean of firm size 9.0342, which means that on average, the companies in the sample have a size measured around this value. This value is likely in a logarithmic scale, so a mean of 9.0342 suggests that most companies are of moderate to large size not very small, but not the biggest possible either.
The standard deviation 0.49940, shows how much the sizes of the sampled companies differ from the average. A smaller standard deviation means the sizes of most companies are close to

the average size, while a larger one would indicate more variation. Since 0.49940 is relatively small compared to the mean, it suggests that most companies are of similar size, with only some being slightly bigger or smaller. The minimum and maximum value of firm size (SZ) is 8.28 and 9.93 respectively. These values are a logarithmic scale (log base 10) used to measure firm size, as the log of total assets. Logarithmic scale helps handle the wide range of company sizes and makes the data more manageable and interpretable. The minimum value (8.28) means a log scale of 8.28 Birr corresponds to a firm size (SZ) of approximately $10^{8.28}$

Calculating this:

Actual size = $(10^{8.28} \approx 1.91 \text{ X } 10^{8})$ Birr

So, the smallest firm in the sample has an approximate asset worth of 191 million Birr. The maximum value (9.93) means a log scale of 9.93 Birr corresponds to a firm size (SZ) of approximately $10^{9.93}$

Calculating this:

Actual size = $(10^{9.93} \approx 8.51 \text{ X } 10^{9})$ Birr

So, the largest firm in the sample has an approximate asset worth of 8.5 billion Birr. The firm sizes range from roughly 191 million Birr to 8.5 billion Birr. This indicates a significant variation in firm sizes within the sample, from medium-sized companies to very large corporations. Because these are logarithmic values, a difference of 1 in the log scale corresponds to a tenfold difference in actual assets. For example, the difference between the smallest and largest firm sizes is about (9.93 - 8.28 = 1.65 in log units, meaning the largest firm has assets roughly $10^{1.65}$ approximately 44.7 times larger than the smallest.

4.3. Correlation Analysis

In the previous part the descriptive statistics, shows the average values, how much the values vary, and the minimum and maximum values of the dependent, independent, and control variables for sampled manufacturing firms during the sample period. In this section, correlation analysis is done to see how the dependent variable is related to the independent variables, as well as how the independent variables are related to each other. According to Gujarati (2004),

correlation analysis is used to describe how strong the relationship is or how closely two variables are linearly related. Next, in the Pearson correlation coefficient matrix section, the analysis of the relationships between capital structure and performance measurement variables is discussed.

Pearson correlation coefficient matrix

The correlation analysis table shows the possible relationship between the variables used in the study. The values of the correlation coefficient always range from -1 to +1. A correlation coefficient of +1 means the two variables are perfectly related in a positive linear way; while a coefficient of -1 means they are perfectly related in a negative linear way. A correlation coefficient of 0 means there is no linear relationship between the two variables.

The following correlation matrix is used to examine the direction and strength of the relationship between the dependent and independent variables. In this study, the performance measurement variables are considered as dependent variables. There are three dependent variables: ROA, ROE, and NPM, and three independent variables: TDTA, LTDTE, and STDTE. The size of the manufacturing companies is used as a control variable in this study.

Table 4.2 Pearson correlation coefficient matrix

	ROA	**ROE**	**NPM**	**TDTA**	**LTDTE**	**STDTE**	**SZ**
ROA	1.000	-0.004	0.955	-0.595	-0.465	-0.224	-0.343
ROE	-0.004	1.000	0.005	0.247	-0.199	-0.069	-0.096
NPM	0.955	0.005	1.000	-0.506	-0.456	-0.158	-0.228
TDTA	-0.595	0.247	-0.506	1.000	0.296	0.451	0.264
LTDTE	-0.465	-0.199	-0.456	0.296	1.000	0.271	0.123
STDTE	-0.224	-0.069	-0.158	0.451	0.271	1.000	0.434
SZ	-0.343	-0.096	-0.228	0.264	0.123	0.434	1.000

Note: *ROA refers to return on asset, ROE for return on equity, NPM for net profit margin, TDTA for total debt to total asset, LTDTE for long term debt to equity, STDTE for short term debt to equity and SZ for firm size.*

Source: Output of data analysis by SPSS version 23.

The analysis in Table 4.2 indicates that ROA and NPM has negative correlation with TDTA (-0.595), (-0.506), LTDTE (-0.465), (-0.456) and STDTE (-0.224), (-0.158) respectively. This indicates that firms with greater long-term debt and short-term debt relative to equity tend to have lower ROA and profitability, possibly indicating that high long-term debt levels may negatively impact asset returns and profitability. But firms with greater short-term debt may have moderate negative impact on asset return and profitability. There is also moderate negative correlation between firm size (-0.343), (-0.228) with ROA and NPM, which implies that larger firms might have slightly lower ROA and profitability.

The correlation between ROE and TDTA is 0.247 this indicating weak positive correlation. But the correlation between LTDTE, STDTE and SZ is -0.199, -0.069 and -0.096 respectively. This implies there is weak negative correlation between ROE and these independent variables, i.e. the firm's debt level and its size might not have valuable impact on their ROE.

4.4. Diagnostic test (Tests for basic classical linear regression model assumptions (CLRM))

To make sure the regression results are accurate and reliable, the main rules of the Classical Linear Regression Model (CLRM) were tested. These tests helped find and fix any problems in the model, which improves the quality of the research. The tests checked for issues like errors having a zero mean, straight-line relationship (linearity), uneven spread of errors (heteroskedasticity), high correlation between independent variables (multicollinearity), errors being linked over time (autocorrelation), and normal distribution. These checks were done to ensure the data followed the basic rules of the CLRM. The results of these tests are shown in the next section.

4.4.1 Assumption one: The errors have zero mean ($\varepsilon = 0$)

Classical linear regression models assume that the error terms have an average value of zero. As noted by Brooks (2008), this assumption holds true if a constant term is added to the regression equation. In the model specification section, the researcher included a constant (α), which helps to ensure that the errors are centered around zero. This constant term is important because it accounts for the base level of the dependent variable when all other variables are zero, preventing bias in the estimates. Additionally, including a constant term improve the overall fit

of the model and ensures that the residuals do not systematically deviate from zero, which is essential for the accuracy and validity of the regression results. Properly specifying the model with a constant term is a fundamental step to meet one of the key assumptions of the classical linear regression framework.

4.4.2. Assumption Two: Linearity Test

Linearity is usually checked by creating a graph of observed versus predicted values or a graph of residuals versus predicted values (Christopher & Rim, 2014). Residual plots are a common and effective way to identify whether the linearity assumption is met. In this study, the residuals were examined using such plots, and since the points are evenly spread around a diagonal line in the normal P-P plot shown below, it indicates that the linearity assumption is satisfied.

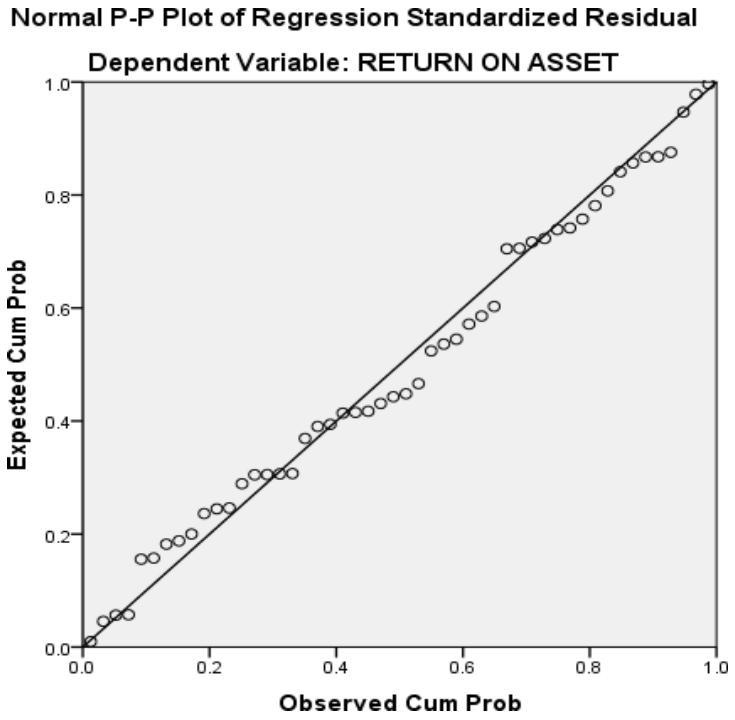


Figure 2. Linearity test
Source: SPSS version 23 output.

This plot is a Normal P-P (Probability-Probability) plot of the standardized residuals from the regression model, with the dependent variable being Return on Asset (ROA). The purpose of this

plot is to assess whether the residuals follow a normal distribution, which is an important assumption in linear regression for valid hypothesis testing and confidence intervals. The points closely follow the diagonal reference line, indicating that the residuals are approximately normally distributed. This suggests that the assumption of normality of errors and linearity, crucial for reliable statistical inference, is reasonably satisfied.

4.4.3. Assumption Three: Test for Heteroskedasticity

The assumption of homoscedasticity states that the variance of the unobserved error term ($\varepsilon_{i,t}$), when conditioned on the explanatory variables, remains constant. Homoscedasticity is violated when the variance of these errors varies across different segments of the population, which are defined by different values of the explanatory variables. In this analysis, maintaining homoscedasticity meaning a constant error variance is preferred (Wooldridge, 1999). Essentially, this assumption suggests that the spread or dispersion of the errors should be uniform throughout the entire model. Homoscedasticity indicates a consistent variance of the error term, while heteroskedasticity refers to cases where this variance changes or fluctuates. Fig 3 shows the test for heteroskedasticity.

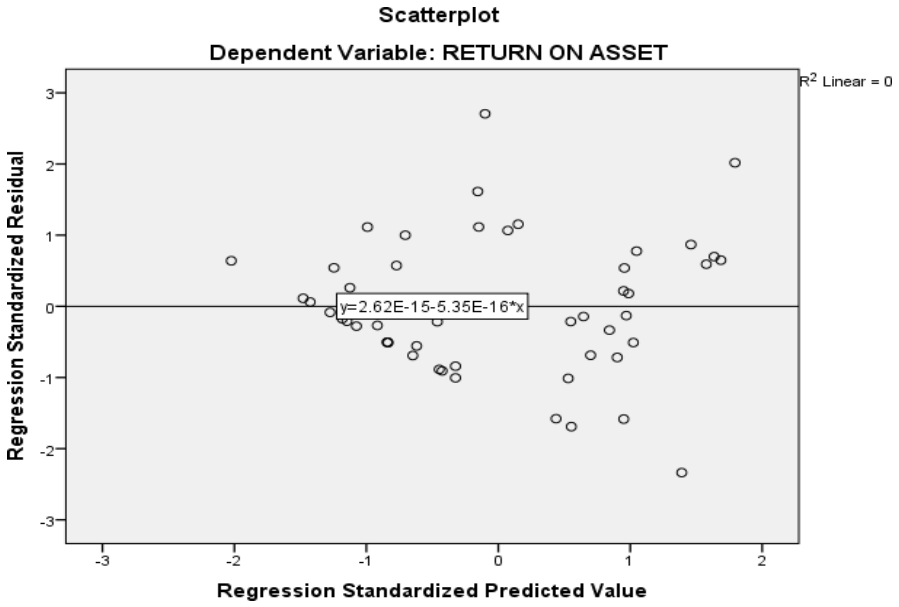


Figure 3. Heteroskedasticity test

Source: SPSS version 23 output

This scatter plot displays the standardized residuals against the standardized predicted values for the dependent variable. The residuals appear to be randomly dispersed around the horizontal axis at zero, with no evident pattern or systematic structure. This randomness suggests that the assumption of linearity and homoscedasticity (constant variance of residuals) are likely met. Additionally, the residuals are spread fairly evenly across the range of predicted values, indicating that the model's errors are not correlated with the predicted values. However, the plot supports the appropriateness of the linear regression model for this data, as there is no clear evidence of non-linearity or heteroscedasticity.

4.4.4. Assumption Four: Test for multicollinearity

Multicollinearity occurs when the independent variables are highly correlated with each other, resulting in a regression model that may fit the data well but fails to show that any of the independent variables have a significant effect on the dependent variable (Gujarati, 2004). The relevant assumption is that the explanatory variables should not be strongly correlated with one another, whether over time or across different sections. When variables are correlated, it breaches the Classical Linear Regression Model (CLRM) assumption and signals the presence of multicollinearity. To identify multicollinearity, methods such as Pearson correlation matrix can be used.

Table 4.3. Multicollinearity Test

Pearson correlation coefficient matrix

Variables	TDTA	LTDTE	STDTE	SZ
TDTA	1.000	0.296	0.451	0.264
LTDTE	0.296	1.000	0.271	0.123
STDTE	0.451	0.271	1.000	0.434
SZ	0.264	0.123	0.434	1.000

Note: *TDTA for total debt to total asset, LTDTE for long term debt to equity, STDTE for short term debt to equity and SZ for firm size.*

Source: Output of data analysis by SPSS version 23.

The correlation matrix in Table 4.3 shows the Pearson correlation coefficients among the variables: TDTA, LTDTE, STDTE, and SZ. Since none of the correlation coefficients exceed 0.8 or 0.9, which are common thresholds indicating high correlation, based on this matrix, multicollinearity does not appear to be a major concern in this analysis. The variables can likely be included in the regression model without significant issues related to multicollinearity.

4.4.5. Assumption Five: Test for Autocorrelation

The assumption of no autocorrelation among the disturbances posits that, for any two different values of the independent variable, Xi and Xj (where i ≠ j), the correlation between their respective errors, ui and uj, is zero (Brooks, 2008). Essentially, Brooks (2008) states that the errors should be uncorrelated with each other, meaning there should be no systematic pattern in the residuals. If patterns do appear in the residuals, they indicate autocorrelation, which can be either positive or negative. When autocorrelation exists, the ordinary least squares (OLS) estimate of the coefficients remain unbiased; however, they become inefficient because the standard errors are affected. Additionally, positive autocorrelation can lead to an inflated R-squared value. In this study, the Durbin-Watson (DW) statistic is employed to assess the presence of autocorrelation in the residuals.

Table 4.4. Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.711[a]	.505	.461	.06112	.505	11.473	4	45	.000	1.958
2	.422[a]	.178	.105	.86742	.178	2.436	4	45	.061	2.045
3	.630[a]	.397	.343	.07104	.397	7.398	4	45	.000	1.895

a. Predictors: (Constant), TDTA, LTDTE, STDTE AND SZ

b. Dependent Variable: ROA, ROE, AND NPM

Source: SPSS version 23 output.

The Durbin-Watson (DW) statistic is used to test for autocorrelation in the residuals of a regression analysis. DW value around 2 suggests no autocorrelation. Values substantially below 2 indicate positive autocorrelation, while values above 2 suggest negative autocorrelation. All three models have DW values close to 2 (1.958, 2.045, 1.895), indicating little to no evidence of autocorrelation in the residuals.

4.4.6. Assumption Six: Test for Normality

According to Brooks (2008), if the residuals are normally distributed, the histogram should display a bell-shaped, symmetric curve characteristic of a normal distribution. Additionally, the results of the normality test should not be statistically significant, meaning the p-value should be greater than 0.05. This indicates that there is insufficient evidence to reject the null hypothesis that the residuals follow a normal distribution at the 5% significance level. To assess normality, the researcher examined the residuals using a histogram, which helps visually identify deviations from normality such as skewness or kurtosis. It is important to confirm normality because many inferential statistics and hypothesis tests rely on this assumption to produce valid results.

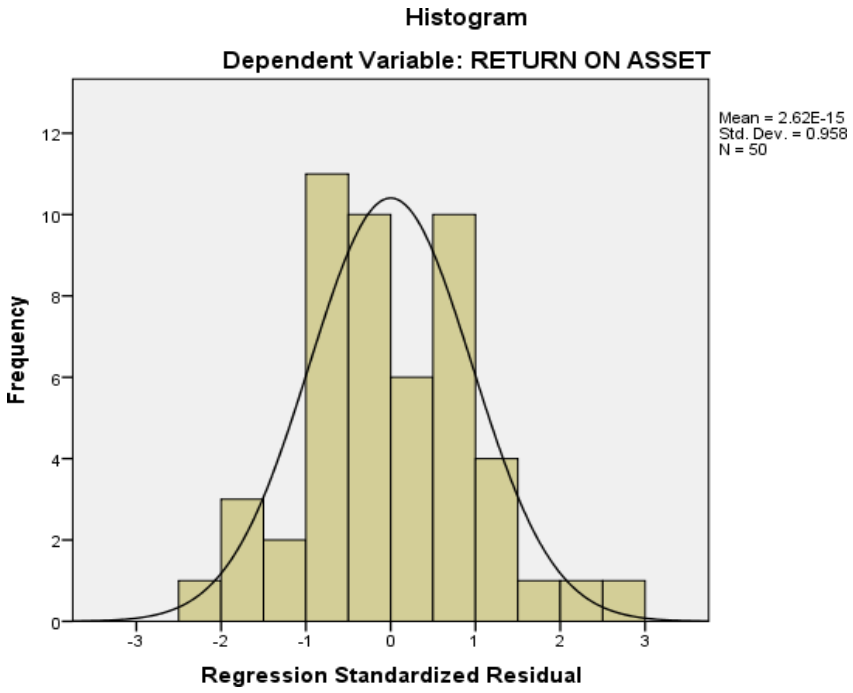


Figure 4. Normality test
Source: SPSS version 23 output

This histogram and normal curve together imply that the residuals are approximately normally distributed, supporting the soundness of the regression analysis assumptions and indicating that the model's inferences are likely reliable.

4.5. Regression Analysis

In this section, the researcher presents the results of an Ordinary Least Squares (OLS) regression conducted to analyze the effect of capital structure on the financial performance of manufacturing companies in Ethiopia. Multiple regression models were developed to assess the impact of each explanatory variable on the dependent variable. The regression analysis was performed, and the coefficients of the variables were estimated using OLS methods available in SPSS Version 23. As outlined in the methodology section, the model employed in this study to investigate the influence of capital structure on the financial performance of manufacturing firms in Ethiopia is:

Financial Performance = f (Capital Structure)

Model 1 ROA = $\alpha + \beta 1$ (TD/TA) + $\beta 2$ (LTDTE) + $\beta 3$ (STDTE) + $\beta 4$ log (SZ) + εit
Model 2 ROE = $\alpha + \beta 1$ (TD/TA) + $\beta 2$ (LTDTE) + $\beta 3$ (STDTE) + $\beta 4$ log (SZ) + εit
Model 3 NPM = $\alpha + \beta 1$ (TD/TA) + $\beta 2$ (LTDTE) + $\beta 3$ (STDTE) + $\beta 4$ log (SZ) + εit
Where:
ROA = Return on asset
ROE = Return on equity
NPM = Net profit margin
α = Constant coefficient
β = Regression coefficients for measuring independent variables
TD/TA = Total Debt to Total
LTDTE= Long term Debt to Equity
STDTE= Short term Debt to Equity
SZ= Firms size
εit = Error component showing unobserved factor
In this study, the financial performance of the sampled manufacturing companies is evaluated using three different metrics: return on assets (ROA), return on equity (ROE), and net profit

margin, each analyzed through separate models. The results of the regression analysis are presented in individual tables for each model.

Table 4.5, shown below, presents the findings of the regression analysis conducted to examine the impact of capital structure on the financial performance of the sampled manufacturing companies, as measured by ROA. This table displays the regression outcomes for the dependent variable (ROA) and the independent variables (TDTA, LTDTE, and STDTE). Additionally, it shows the effect of the control variable, firm size (SZ), on ROA.

Table 4.5. ***Coefficients (a)***

Model		Unstandardized Coefficients		Standa-rdized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Toler ance	VIF
1	**(Constant)**	.580	.173		3.345	.002	.231	.929		
	TDTA	-.172	.039	-.525	-4.362	.000	-.252	-.093	.759	1.318
	LTDTE	-.067	.023	-.332	-2.980	.005	-.112	-.022	.889	1.125
	STDTE	.006	.004	.214	1.675	.101	-.001	.013	.673	1.485
	SZ	-.043	.019	-.256	-2.194	.033	-.082	-.004	.805	1.242
R2		**0.505**								
No. obs		**50**								

a. Dependent Variable: ROA

Source: SPSS version 23 output.

According to Table 4.5 above, total debt to assets (TDTA), long-term debt to equity (LTDTE), and firm size (SZ) all have a statistically significant negative impact on the financial performance of the sampled manufacturing companies, as measured by return on assets (ROA). In addition, short-term debt to equity (STDTE) has a positive effect on ROA, but this effect is not statistically significant.

Regarding the individual coefficients for the constant term and the independent variables, the constant term has a value of 0.580 with a p-value of 0.002. This suggests that, when all the independent variables are zero, the average expected ROA of the sampled manufacturing companies is 0.580. Therefore, the researcher rejects the probability that ROA would be zero, when all the independent variables are zero, at a 1% significance level or 99% confidence level.

The coefficient for TDTA is -0.172 with a p-value of 0.000. This indicates that, holding other factors constant, for each 1-unit increase in TDTA, ROA decreased by 0.172 units, and this finding is statistically significant at 1% significance level. LTDTE has a coefficient of -0.067 with a p-value of 0.005, meaning that, keeping other factors constant, a 1-unit rise in LTDTE causes a 0.067 units decrease in ROA, which is also significant at 1% significance level. STDTE has a coefficient of 0.006 with a p-value of 0.101. This shows that, when other factors are held constant, a 1-unit increase in STDTE would raise ROA by 0.006 units, but this effect is not statistically significant at 5% significance level. Lastly, firm size (SZ) has a coefficient of -0.043 with a p-value of 0.033. This suggests that, keeping other factors constant, a 1% increase in firm size would decrease ROA by 4.3%, and this result is statistically significant at 5% significance level.

Additionally, Table 4.5 shows that the R-squared value is 0.505, meaning that about 51% of the variation in ROA is explained by the variables included in the model. Therefore, the main result of the regression analysis suggests that the capital structure of the sampled manufacturing companies almost has a negative effect on their financial performance measured by ROA, except for STDTE.

Table 4.6 below shows the second set of regression results, which was done to analyze how the capital structure, measured by the ratios of TDTA, LTDTE, and STDTE, affects the financial performance of the sampled manufacturing companies, as measured by ROE. The table also shows the effect of firm size (SZ) on the financial performance measured by ROE.

Table 4.6. ***Coefficients (a)***

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
2	(Constant)	1.627	2.461		.661	.512	-3.330	6.584		
	TDTA	1.512	.560	.419	2.697	.010	.383	2.640	.759	1.318
	LTDTE	-.607	.320	-.273	-1.901	.064	-1.251	.036	.889	1.125
	STDTE	-.042	.052	-.134	-.812	.421	-.146	.062	.673	1.485
	SZ	-.211	.276	-.115	-.763	.450	-.768	.346	.805	1.242
	R2	0.178								
	No. obs	50								

a. Dependent Variable: ROE

Source: SPSS version 23 output.

Table 4.6 above, long-term debt to equity (LTDTE), short-term debt to equity (STDTE), and firm size (SZ) have a statistically insignificant negative effect on the financial performance of the sampled manufacturing companies measured by return on equity (ROE). However, total debt to assets (TDTA) has a statistically significant positive effect on ROE.

The individual coefficients for the constant term and the independent variables, the constant term has a coefficient of 1.627 with a p-value of 0.512. This means that, when all the independent variables are zero, the average expected ROE of the sampled manufacturing companies is 1.627. Therefore, the researcher fails to reject the possibility that ROE would be zero when all the variables are zero, at a 5% significance level or 99% confidence level.

The coefficient for TDTA is 1.512 with a p-value of 0.010. This shows that, holding other factors constant, a 1-unit increase in TDTA results in a 1.512 unit increase in ROE, and this effect is statistically significant at 5% significance level. LTDTE has a coefficient of -0.607 with a p-value of 0.064. This suggests that, keeping other factors constant, a 1-unit increase in LTDTE decreases ROE by 0.607 units, but this result is not statistically significant at 5% significance level. STDTE has a coefficient of -0.042 with a p-value of 0.421, meaning that, holding other

factors constant, a 1-unit increase in STDTE reduces ROE by 0.042 units, but this effect is also not statistically significant at 5% significance level. Lastly, firm size (SZ) has a coefficient of -0.211 with a p-value of 0.450, indicating that, when other factors are held constant, a 1% increase in firm size reduces ROE by 21.1%, but this result is not statistically significant at 5% significance level.

In addition, Table 4.6 shows that the R-squared value is 0.178, meaning that about 18% of the variation in ROE is explained by the variables in the model. Therefore, except from TDTA, the general result of the regression analysis suggests that the capital structure of the sampled manufacturing companies has a negative but statistically insignificant effect on their financial performance as measured by ROE.

Table 4.7 below presents the third set of regression results, which was conducted to examine how the capital structure, indicated by the ratios of TDTA, LTDTE, and STDTE, influences the financial performance of the sampled manufacturing companies, as measured by NPM. The table also displays the impact of firm size (SZ) on the financial performance measured by NPM.

Table 4.7. Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
3	(Constant)	.445	.202		2.206	.033	.039	.851		
	TDTA	-.157	.046	-.454	-3.417	.001	-.249	-.064	.759	1.318
	LTDTE	-.077	.026	-.361	-2.936	.005	-.130	-.024	.889	1.125
	STDTE	.006	.004	.213	1.508	.138	-.002	.015	.673	1.485
	SZ	-.027	.023	-.156	-1.213	.232	-.073	.018	.805	1.242
R2		0.397								
No. obs		50								

a. Dependent Variable: NPM

Source: SPSS version 23 output.

As Table 4.7 shows, total debt to assets (TDTA) and long-term debt to equity (LTDTE), have a statistically significant negative impact on the financial performance of the sampled manufacturing companies measured by net profit margin (NPM). Firm size (SZ) has statistically insignificant negative impact on financial performance measured by NPM. In addition, short-term debt to equity (STDTE) has a positive effect on NPM, but this effect is not statistically significant.

Regarding the individual coefficients for the constant term and the independent variables, the constant term has a value of 0.445 with a p-value of 0.033. This suggests that, when all the independent variables are zero, the average expected NPM of the sampled manufacturing companies is 0.445. Therefore, the researcher rejects the probability that NPM would be zero when all the independent variables are zero, at a 5% significance level or 95% confidence level.

The coefficient for TDTA is -0.157 with a p-value of 0.001. This indicates that, holding other factors constant, for each 1-unit increase in TDTA, NPM decreased by 0.157 units, and this finding is statistically significant at 1% significance level. LTDTE has a coefficient of -0.077 with a p-value of 0.005, meaning that, keeping other factors constant, a 1-unit rise in LTDTE causes a 0.077 units decrease in NPM, which is also significant at 5% significance level. STDTE has a coefficient of 0.006 with a p-value of 0.138. This shows that, when other factors are held constant, a 1-unit increase in STDTE ratio would raise NPM by 0.006 units, but this effect is not statistically significant at 5% significance level. Lastly, firm size (SZ) has a coefficient of -0.027 with a p-value of 0.232. This suggests that, keeping other factors constant, a 1% increase in firm size would decrease NPM by 2.7%, but this result is statistically insignificant at 5% significance level.

Additionally, Table 4.7 shows that the R-squared value is 0.397, meaning that about 40% of the variation in NPM is explained by the variables included in the model. Therefore, the main result of the regression analysis suggests that the capital structure of the sampled manufacturing companies almost has a negative effect on their financial performance measured by NPM, except for STDTE.

4.6. Discussions on Regression Results

This section discusses the results of the regression models and compares them with other studies related to this topic. Based on the data in Table 4.5,4.6 and 4.7, the impacts of capital structure on the financial performance of sampled manufacturing companies in Ethiopia are explained. The results from the tests shows that the capital structure of the sampled manufacturing companies in Ethiopia has had mixed effects on financial performance. The main findings and their importance are explained in the following sub-sections.

4.6.1. Capital Structure on Return on Asset (ROA)

The regression analysis indicates that total debt to assets (TDTA), long-term debt to equity (LTDTE), and firm size (SZ) have a statistically significant negative impact on ROA. Short-term debt to equity (STDTE), however, shows a positive but statistically insignificant effect. The negative result supports the Trade-Off Theory (Kraus & Litzenberger, 1973), which suggests that increased debt levels heighten financial distress costs, outweighing tax shields, thereby reducing profitability.

The negative impact of leverage (TDTA and LTDTE) on ROA aligns with findings by Teshome (2017), who observed that higher leverage diminishes firm profitability due to increased financial risk, especially in Ethiopian manufacturing firms. Similarly, Bekele (2018) reported a negative relationship between leverage and profitability metrics such as ROA, attributing this to the high debt burden limiting firms' operational flexibility.

International studies such as Modigliani and Miller (1958) initially posited that, in perfect markets, leverage does not affect firm value; however, real-world deviations suggest otherwise. Empirical evidence from Jensen (1986) and Titman & Wessels (1988) supports the negative impact of excessive debt on profitability because of agency costs and financial distress. For instance, Rajan and Zingales (1995) found that high leverage is associated with reduced profitability in US manufacturing firms.

Conversely, some studies, like Harris and Raviv (1991), argue that optimal leverage can enhance profitability through tax shields and debt discipline, implying that debt might positively

influence ROA under certain conditions. The current findings do not support this, indicating that in the Ethiopian context, excessive leverage likely hampers profitability rather than enhances it. Generally, the analysis shows that higher levels of total debt and long-term debt compared to assets and equity tend to decrease profitability. This supports the idea that too much leverage can be harmful. The insignificant effect of short-term debt suggests it might be less risky or more flexible. The relatively the R-squared value of about 51% shows that these variables explain a large part of the variation in ROA, but other factors also affect performance. Managers and policymakers should be careful about increasing leverage too much, especially long-term debt. Finding a good balance of debt that maximizes benefits and minimizes risks is important for improving company performance.

4.6.2. Capital Structure on Return on Equity (ROE)

The regression analysis indicates that TDTA exhibits a significant positive impact on ROE, while LTDTE, STDTE, and firm size have negative but statistically insignificant effects. The positive impact of TDTA on ROE supports the Pecking Order Theory (Myers & Majluf, 1984), which suggests firms prefer internal financing but resort to debt when necessary, and that debt can positively influence shareholder returns when efficiently utilized.

The positive impact of TDTA on ROE aligns with Abate (2015), who reported that higher total debt ratios could leverage firm performance, especially where debt is used effectively to generate higher returns on equity. Studies such as Myers (1984) indicate that moderate leverage can enhance ROE through financial leverage effect. Frank and Goyal (2003) also observed that firms with optimal debt levels tend to have higher ROE due to increased financial leverage. However, the insignificance of LTDTE and STDTE align with the findings by Petersen and Rajan (1994), who argued that long-term and short-term debt might have limited impact on profitability if not managed properly. Additionally, Jensen (1986) warned that excessive debt could lead to agency costs, which might negate potential benefits. The low R-squared value of about 18% also indicates that many other factors influence ROE that are not captured in this model.

The regression results suggest that, apart from TDTA, the impact of capital structure on ROE is mostly negative but not statistically significant. This means that, in this sample, companies capital structure, their debt and equity do not strongly determine their profitability, although

there are some indications that higher debt might help or harm performance depending on the type.

Therefore, while debt appears to have some positive effects in this analysis, the overall weak significance suggests that companies should be careful. They need to balance their debt levels carefully, considering the potential benefits and risks highlighted by these theories, to improve their profitability.

4.6.3. Capital Structure on Net Profit Margin (NPM)

The regression analysis indicates that both TDTA and LTDTE have a significant negative effect on NPM, while STDTE and firm size are statistically insignificant. These results support the Trade-Off Theory, indicating that beyond a certain point, debt increases the likelihood of financial distress, thereby reducing profit margins. It also aligns with the Signaling Theory, were high leverage signals risk and poor financial health, negatively affecting profit margins. The results also fit with the agency cost theory, as higher debt might lead to conflicts of interest or risky behavior that reduce profitability.

The negative result supports Yilma (2019), who found that high leverage reduces profit margins in Ethiopian manufacturing firms, mainly due to increased interest expenses and financial distress. Empirical evidence from Titman & Wessels (1988) and Rajan & Zingales (1995) suggests that high leverage adversely impacts profit margins due to the burden of debt servicing and increased risk, leading to lower net margins.

Some studies, like Hovakimian et al. (2001), indicate that leverage can sometimes be positively associated with profitability if debt is used as a tool for investment in profitable projects. The current findings, however, do not support such a positive association in the Ethiopian context.

The regression explains about 40% of the variation in NPM, which means these variables are fairly good at predicting profit margins, but other factors also influence profitability that are not included here. From these results, the main message is that increasing debt, especially total and long-term debt, tends to decrease profit margins in these companies.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

The previous chapter provided a detailed presentation of the research findings and engaged in an in-depth discussion of these results, supported by relevant empirical literature. This chapter serves as a comprehensive summary of the entire study, bringing together the key points and main conclusions. It begins with the conclusion section, which offers a concise overview of the thesis, including a summary of the research objectives, methodology, and primary findings. Following this, the chapter includes a section dedicated to recommendations, offering practical suggestions based on the study's outcomes.

5.1. Conclusions

The question of how a company's capital structure influences its financial performance has been a topic of discussion for a long time. In fact, a company's ability to perform well financially and generate profits is crucial to its overall operations. Good financial performance can also contribute to the broader economic growth of a country. Recently, there has been a growing interest in researching company profitability. However, the impact of capital structure on the financial performance of different manufacturing firms is not yet fully understood, especially in the context of our country and within the existing financial literature. Some studies have explored various factors that determine profitability in manufacturing businesses, such as company-specific factors, industry conditions, and macroeconomic factors, which are considered major reasons for differences in profitability. Others have focused on identifying the determinants of capital structure in Ethiopian manufacturing companies. Still, the question of how a company's capital structure affects its financial performance has not been sufficiently addressed in Ethiopia's manufacturing sector. There are only a few studies on this topic in developing countries in general, and in Ethiopia in particular.

Therefore, the main goal of this research was to examine how capital structure influences the financial performance of selected manufacturing companies in Ethiopia, using measures such as return on assets (ROA), return on equity (ROE), and net profit margin (NPM). To achieve this, the study used independent variables like total debt to total assets (TDTA), long-term debt to

equity (LTDTE), and short-term debt to equity (STDTE), along with firm size (SZ) as a control variable. The research adopted an explanatory research design and a quantitative approach, utilizing panel data. The sampling method was purposive non-probability sampling, selecting manufacturing companies based on specific criteria set by the researcher. The data used in this study were secondary data collected from financial statements of ten manufacturing companies over a period of five years (2020–2024 G.C). The data analysis was performed using Ordinary Least Squares (OLS) estimation, with the help of SPSS Version 23 software for statistical analysis.

High levels of debt, particularly when compared to assets (total debt to assets) and long-term debt relative to equity, generally have a negative effect on a company's financial performance, as indicated by key indicators like Return on Assets (ROA) and Net Profit Margin (NPM). Excessive borrowing appears to increase financial burdens and create conflicts within the company, which can lead to decreased profitability and overall financial stability. Conversely, short-term debt and firm size do not seem to have significant impacts on performance, suggesting that these factors might be less critical in influencing financial outcomes in this context.

This study focused on understanding how the financing strategies of sampled manufacturing companies in Ethiopia influence their financial results. The main findings suggest that over-leveraging, especially through long-term debt, tends to diminish profits and overall performance. Companies with higher levels of debt, particularly long-term debt, often experience lower returns on assets, equity, and profit margins. Meanwhile, short-term debt does not show a consistent or significant effect on performance, and larger firms tend to have lower profits, possibly due to management challenges or operational inefficiencies.

Overall, these results emphasize that taking on too much debt can be risky and potentially harm a company's financial health. Therefore, companies should aim to find a balanced approach in their use of debt leveraging enough to benefit from advantages like tax shields, but not so much that it increases the risk of financial distress and operational difficulties. Managing debt levels carefully is especially important for manufacturing firms in Ethiopia, where financial systems are still developing, and access to diverse funding sources may be limited. Effective debt management

can help these companies improve performance, reduce financial risks, and support sustainable growth.

These findings are consistent with established capital structure theories, particularly the trade-off theory and agency cost theory. Both theories warn against over-reliance on debt, as it can enhance risks and lead to conflicts between stakeholders. The results underscore the importance for Ethiopian manufacturing firms to exercise prudence in their financing decisions, ensuring that the potential benefits of debt such as tax advantages and increased financial leverage are balanced against the potential costs, including financial distress, reduced flexibility, and management conflicts. In the broader context, this study highlights the need for strategic financial planning and sound capital structure management to foster stability and growth in emerging economies like Ethiopia.

In conclusion, the specific objectives and research hypotheses outlined at the outset of the study have been effectively addressed, as evidenced by the findings demonstrating a significant impact of various factors, particularly capital structure variables, on the financial performance of the sampled manufacturing companies in Ethiopia. These results not only validate the initial research assumptions but also contribute to a deeper understanding of the complex relationship between financial strategies and corporate performance in emerging markets. The study underscores the importance for manufacturing firms to carefully manage their financial decisions, especially regarding debt levels, to enhance profitability and long-term sustainability. Furthermore, the insights gained from this research can inform policymakers, financial managers, and stakeholders by highlighting the critical role of prudent financial management in fostering the growth and competitiveness of manufacturing industries within Ethiopia and similar developing economies. Ultimately, the study's findings emphasize the need for continuous research and strategic adjustments to optimize financial performance in dynamic and resource-constrained environments.

5.2. Recommendations

Based on the major findings and conclusions reached, the following recommendations are proposed for improving the financial performance of manufacturing companies in Ethiopia.

- **Optimal Capital Structure Management**

  Manufacturing companies should aim to maintain a balanced debt-to-assets and long-term debt to equity ratios, avoiding excessive leverage that can improve bankruptcy risk and erode profitability. companies are encouraged to establish internal debt limits aligned with industry best practices and sector-specific risk tolerances.

- **Prioritize Internal Financing and Equity Optimization**

  Managers should focus on reinvesting profits, retained earnings, and exploring equity financing options to fund expansion, thereby reducing reliance on debt and mitigating financial distress risks.

- **Strategic Use of Short-term Debt**

  Since short-term debt showed an insignificant effect on performance, firms should utilize it carefully, primarily for working capital needs, and ensure effective management to prevent liquidity risks.

- **Enhance Financial Planning and Risk Assessment**

  Manufacturing companies should conduct regular financial analysis to determine their optimal leverage levels, considering sectoral, macroeconomic, and firm-specific factors. Implementation of risk management frameworks will help in balancing debt benefits against potential costs.

- **Policy and Sectoral Support**

  Policymakers should develop guidelines and provide financial literacy programs tailored for manufacturing companies, emphasizing prudent leverage and sustainable financing strategies. Facilitating access to diverse and affordable financing sources can also support optimal capital structure decisions.

- **Further Research and Sector Diversification**

  Future studies should incorporate larger, more diverse samples, consider additional variables (such as operating efficiency, management quality), and explore sector-specific financing needs to refine optimal capital structure models in Ethiopia.

References

- Abor, J. (2005). *The effect of capital structure on profitability: an empirical analysis of listed in Ghanna. Journal of Risk Finance, 6, 47-438.*

- Adamu, Y. (2018). *Capital Structure & Corporate Performance: A Panel Data Analysis of Pharmaceutical Manufacturing Firms in Ethiopia Thesis submitted to Addis Ababa University College of Business and Economics MBA Program Presented in Partial Fulfillment of the Requirements for the Degree of Masters of Business Administration.*

- Adekunle, A.O. and Sunday, O.K. (2010). *Capital Structure and Firm Performance: Evidence from Nigeria. European Journal of Economics, Finance and Administrative Sciences, 25, pp. 70-82.*

- Agarawal,R. and Zhao,X. (2007). *The leverage-value relationship puzzle: an industry effects resolution. Journal of Economics and Business, 39, 286-297.*

- Akerlof, G. A. (1970). *The Market for "Lemons": Quality Uncertainty and the Market Mechanism. The Quarterly Journal of Economics, 84(3), 488–500. https://doi.org/10.2307/1879431*

- Akinyomi, O. J. (2013). *Effect of capital structure on firms' performance: Evidence from Nigerian Manufacturing Company. International Journal of Innovative Research and Studies., 2(9), ISSN 2319-9725.*

- Altman, E. I. (1984). *A Further Empirical Investigation of the Bankruptcy Cost Question. The Journal of Finance, 39(4), 1067–1089. https://doi.org/10.2307/2327613*

- Aragie, M., Beyene, A., & Shiferaw, N. (2015). *Does capital structure matter on performance of banks? Study conducted on Commercial Banks in Ethiopia.International Journal of Scientific and Research Publications, 643.*

- Arnold, G. (2008). *Corporate Financial Management (4th ed.). Prentice-Hall.*

- Awunyo-Vitor, D. and Badu, J. (2012). *Capital Structure and Performance of Listed Banks in Ghana. Global Journal of Human Social Science, 12(5), pp.56-62*

- Bader Eid Aljemaan (2018); *capital structure, definition, determinant, theory and link with performance literature review.*

- Baumal, William J. (1965). *The stock market and economic Efficiency. Newyork; Fordham university press.*

- Baker, H. K., & Martin, G. S. (2011). *Capital structure and corporate financing decisions: Theory, Evidence, and Practice. Journal of financial econometrics, 15, 186206.*

- Baker, M., & Wurgler, J. (2002). *Market Timing and Capital Structure. The Journal of Finance, 57(1), 1–32. https://doi.org/10.1111/1540-6261.00414*

- Barrow, C. (2008). *Practical Financial Management. 7th ed. Kogan Page Limited: United Kingdom.*

- Bauer, P. (2004). *Determinants of capital structure: empirical evidence from the Czech Republic. Czech Journal of Economics and Finance (Finance a uver), 54(1-2), 2-21.*

- Berger, Allen, and Patti, Emilia Bonaccorsi di (2002); *Capital Structure and Firm Performance: A new approach to testing agency theory and an application to the Banking Industry. Retrieved from www.federalreserve. Gov /pubs/ feds/2002 /200254 /200254pap.pdf.*

- Block and Hire (1978), *Fundamental of Financial management: Richard D. Irwid Inc. Homewood Illinois P-24.*

- Booth, L., (2001). *Capital structure in developing countries. Journal of Finance, 55(1), 87-130.*

- Brennan, M. J., & Schwartz, E. S. (1978). *Corporate Income Taxes, Valuation, and the Problem of Optimal Capital Structure. The Journal of Business, 51(1), 103–114.*

- Brennan, M. J., & Schwartz, E. S. (1984). *Optimal Financial Policy and Firm Valuation. The Journal of Finance, 39(3), 593–607. https://doi.org/10.2307/2327917*

- Brigham, E.F. and Ehrhardt, M.C. (2011), *Financial Management: Theory and Practice, (13thed). Mason: South-Western Cengage Learning.*

- Brooks, C. (2008). *Introductory Econometrics for finance (2nd ed.). New York: Cambridge University Press.*

- Brusov, P., Filatova, T., & Orekhova, N. (2022). *Optimal Capital Structure of the Company: Its Absence in Modigliani–Miller Theory with Risky Debt Capital. In P. Brusov, T. Filatova,*

& N. Orekhova (Eds.), Generalized Modigliani–Miller Theory: Applications in Corporate Finance, Investments, Taxation and Ratings (pp. 57–63). Springer International Publishing. *https://doi.org/10.1007/978-3-030-93893-2_4*

- Cheng, Ming –chang and Zuwei-ching Tzeng (2011), *the effects of leverage on firm value and how the firm financial quality influence on this effect world journal of management 3.2(2011); 30-53.*

- Cheng, Y.; Liu, Y.; Chien. (2007). *Capital structure and firm value in China Panel Thershold Regression Analysis. African Journal of Business Management, 4(12), 2500-2507.*

- Dao, p. (2016), *Performance evaluation based on financial ratios case; Finnair and Scandinavian. Thesis.*

- Dessi R. and Donald R. (2003). *Debt, Incentives and performance: Evidence from UK Panel Data Economic Jornal. Royal Economic Society, 113(490), 903-91.*

- Donaldson, G. (1961). *Corporate debt capacity: A study of corporate debt policy and the determination of corporate debt capacity. Division of Research, Harvard School of Business Administration*

- Ebaid, E.I. (2009). *The impact of capital structure choice on firm performance: empirical evidence from Egypt. The Journal of Risk Finance, 10 (5), pp. 477-487.*

- Etikan, I., Musa, S. A. & Alkasssim, R.S. (2016). *Comparison of convenience sampling and purposive sampling. American journal of theoretical and applied statistics, 5(1), 1-4.*

- Fama, E. F., & French, K. R. (2002). *Testing trade-off and pecking order predictions about dividends and debt. Review of Financial Studies, 15(1), 1–33.*

- Frank, M.Z., & Goyal, V.K. (2009). *Capital structure decisions: which factors are reliably important? Financial management, 38(1), 1-37.*

- Gangeni, C. (2006), *the Relationship between Capital Structure and the Financial Performance of the Firm. Master Thesis: University of Pretoria, South Africa.*

- Gansuwan, P. and Onel, Y.C. (2012), *The Influence of Capital Structure on Firm Performance: A quantitative study of Swedish listed firms. Master's thesis, Umea School of Business and Economics.*

- Ghosh, S. (2007). *Leverage, managerial monitoring and firm valuation: A Simultaneous Equation Approach. Research in Economics, 61, 84-98.*

- Graham, J. R., & Harvey, C. R. (2001). *The theory and practice of corporate finance: Evidence from the field. Journal of Financial Economics, 60(2), 187–243. https://doi.org/10.1016/S0304-405X(01)00044-7*

- Gupta, P., Srivastava, A. and Sharma, D. (2011). *Capital Structure and Financial Performance: Evidence from India.*

- Halake, J. (2020). *A Thesis submitted to the department of accounting and finance in partial fulfillment for requirement of Degree of Masters Science in Accounting and Finance Advisor Abebe Yitayal (PhD) May, 2020.*

- Harry. 2018. *Analysis of Financial Statements: Integrated and Comprehensive Edition. Third Printing. PT. Gramedia: Jakarta.*

- Hillier, D. J., Clacher, I., Ross, S., Westerfield, R., Jaffe, J., & Jordan, B. (2011). *Fundamentals of corporate finance: NY: McGraw-Hill.: European edition.*

- Isak and Unal, 2007. *Profitability of manufacturing firms listed on the Istanbul stock exchange. An empirical analysis (2005-2013).*

- Jumingan. 2006. *Analysis of Financial Statements. Jakarta: PT. Script Earth*

- Jensen, M. and Meckling, W., (1976). *Theory of the firm: managerial behavior, agency cost and ownership structure. Journal of Financial Economics, 3, 305-360.*

- Jensen, M. (1986). *Agency cost of free cash flow, corporate finance, and takeovers. Corporate Finance, and Takeovers. American Economic Review, 76(2), 323-329.*

- Joseph, T., (2011). *An introduction to the cost of capital (2nd ed.) Duke University.*

- Karadeniz, E., Kandir, S. Y., and Balcilar, M., (2009). *Determinants of capital structure: evidence from Turkish lodging companies. International Journal of Contemporary Hospitality Management, 21(5), 594-609.*

- Kifle, A. (2016). *Capital Structure and Financial Performance: Evidence from Ethiopian cements Companies. Department of Accounting and Finance/Addis Ababa University. Presented*

- Kraus, A., & Litzenberger, R. H. (1973). *A State-Preference Model of Optimal Financial Leverage. The Journal of Finance, 28(4), 911–922. https://doi.org/10.2307/2978343*

- Leland H.E, (1994). *Corporate debt value, bond covenants and optimal capital structure. The Journal of Finance, Vol 49, No 4.*

- Luo, Y., & Jiang, C. (2022). *The Impact of Corporate Capital Structure on Financial Performance Based on Convolutional Neural Network. Computational Intelligence and Neuroscience, 2022, e5895560. https://doi.org/10.1155/2022/5895560*

- Malm, S. & Roslund, E. (2013), *the Bond-to-Total Debt Ratio and its Impact on Firms' Performance. Master Thesis, Umea University, Sweden*

- Margaritis, D. and Psillaki, M. (2010). *Capital structure, equity ownership and firm performance of Indian. Journal of Banking and Finance, 34, 621-632.*

- Masulis, R. W. (1983*). The Impact of Capital Structure Change on Firm Value: Some Estimates. The Journal of Finance, 38(1), 107–126. https://doi.org/10.1111/j.15406261.1983.tb03629.x*

- Melese, A. (2013). *The effect of capital structure on financial Performance: Ethiopia 's Metal and Engineering Industry Department of Accounting and Finance/Addis Ababa University. Presented in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Accounting and Finance.*

- Miller, M. H., & Rock, K. (1985). *Dividend Policy under Asymmetric Information. The Journal of Finance, 40(4), 1031–1051. https://doi.org/10.2307/2328393*

- Modgliani, F.,and Miller, M. (1958). *The cost of capital, corporation finance and the theory of investment. The American Economic Review, 48(3), 261-97.*

- Modiglian, F. and Miller, M. (1963). *Corporate incom tax and the cost of capital: a correction. The American Economic Review, 53, 443-53.*

- Morri G and Beretta C, (2008). *The Capital structure determinants of REITs, Journal of European real estate research 1(1):6-57 https://doi.org/10.1108/17539260810891488*

- Murthy V. S. (1978): *Management Finance: Vakils Feller and Simons Ltd., Bombay.*

- Myers, S. C. (1977). *"Determinants of Corporate Borrowing." Journal of Financia1 Economics. November, 52, pp.147-75.*

- Myers, S. and Majluf, N. (1984*). corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 13.*
- Narayanan,M.P.(2008), *debt versus equity under asymmetric information the journal of finance of financial and qualitative analysis, 23(1); 39-51.*

- Nawaz, et al. (2011)," *Relationship between Capital Structure and Firms Performance: A Case of Textile Sector in Pakistan". Global Business and Management Research: An International Journal, Vol. 3 No. 3 & 4, Pp.270-275.*

- Niu, X. (2008),*" Theoretical and Practical Review of Capital Structure and its determinants". International Journal of Business and Management, Vol. 3, No. 3, Pp.133/139.*

- Ogebe, P., Ogebe, J., & Alewi, K. (2013, March 27). *The Impact of Capital Structure on Firms' Performance in Nigeria. [MPRA Paper]*. *https://mpra.ub.unimuenchen.de/46173/*

- Olokoyo, F.M. (2012), *Capital Structure and Corporate Performance of Nigerian Quoted Firms: a Panel Data Approach. Doctoral Thesis: Covenant University, Nigeria.*

- Paramasivan, C. and Subramanian, T. (2009). *Financial Management.1st ed. new age international publisher: New Delhi.*

- Pratheepkanth, P. (2011). *capital structure and financial performance: evidence from selected business companies in Colombo stock exchange srilanka. Journal of Arts, Science & Commerce, 2(2), pp. 171-183.*

- Rajan, R.G., & Zingales, L. (1995). *What do we know about capital structure? Some evidence from international data. The journal of Finance, 50(5), 1421-1460.*

- Rajkot (1984), *Industrial sickness and some key areas of management‖, A thesis submitted for the degree of Ph. D. in comm. Sau. Uni. P-*

- *Rao, N., V., Al-Yahyee, K. and Syed, L. (2007). Capital structure and financial performance: evidence from Oman. Indian Journal of Economics and Business, 1-26.*

- Reimoo, Z. (2008). *Determinants of capital structure: evidence from UK panel data. Journal of finance, 11(3), 1-110.*

- Renzetti, M. (2001). *Corporate Finance: Financial Control. In N. J. Smelser & P. B. Baltes (Eds.), International Encyclopedia of the Social & Behavioral Sciences (pp. 2792– 2797). Pergamon. https://doi.org/10.1016/B0-08-043076-7/04268-6*

- Romano C.A, Tanewski G.A & Smyrnios K.X, (2001). *Capital structure decision making; A model for family business venturing. Vol,16, P 285-310*

- Ross, S. (1977). *The determination of financial structure: The Incentive Signaling Approach. Bell Journal of Economics, 8, 23-40*

- Saeedi, A. and Mohmoodi, I. (2011). *Capital Structure and Firm Performance: Evidence from Iranian Companies. International Research Journal of Finance and Economics, 70, pp.20-29*

- Salteh, H. M., Ghanavati, E., Khanqah, V. T., & Khosroshahi, M. A. (2009). *Capital structure & firm performance; Evidence from Tehran Stock Exchange. Journal of finance, 3(2), 181-185.*

- Seetanah et al. (2014),*"Capital Structure and Firm Performance: Evidence from an Emerging Economy". The Business & Management Review, Vol. 4, No. 4, Pp.185- 196.*

- Scott, J. H. (1977). *Bankruptcy, Secured Debt, and Optimal Capital Structure. The Journal of Finance, 32(1), 1–19. https://doi.org/10.2307/2326898*

- Sibilkov, V. (2009). *Asset liquidity and capital structure. Journal of finance and qualitative analysis, 44(5): 1173-1196.*

- Simerly, R. L., & Li, M. (2000). *Environmental dynamism, capital structure and performance: A theoretical integration and an empirical test. Strategic Management Journal, 21(1), 31–49. https://doi.org/10.1002/(SICI)10970266(200001)21:1<31: AID-SMJ76>3.0.CO;2-T*

- Stiglitz, J. E. (1969). *A Re-Examination of the Modigliani-Miller Theorem. The American Economic Review, 59(5), 784–793.*

- Strebulaev, I. A. (2007). *Do Tests of Capital Structure Theory Mean What They Say? The Journal of Finance, 62(4), 1747–1787. https://doi.org/10.1111/j.15406261.2007.01256.x*

- Telila,M. (2018). *The effect of Capital Structure on financial performance of Construction Companies in Addis Ababa, Ethiopia A Thesis submitted to Department of Accounting and*

Finance in partial fulfillment of the requirements for the Degree of Master of Science in accounting and finance.

- Titman, S. and Wessels, R. (1988), *The Determinants of Capital Structure Choice. Journal of Finance, 43, pp. 1-19.*
- Tirole, J. (2005). *The Theory of Corporate Finance. Princeton University Press.* *https://www.beck-shop.de/tirole-theory-of-corporate-finance/product/339052*

- Tufa, F. B. (2016). *Corporate Capital Structure and Its Impact on Profitability: Evidence from Manufacturing Firms in Ethiopia (Doctoral dissertation, Addis Ababa University).*

- Vernimmen, P. (2018). *Corporate Finance (5. Auflage). Wiley.*

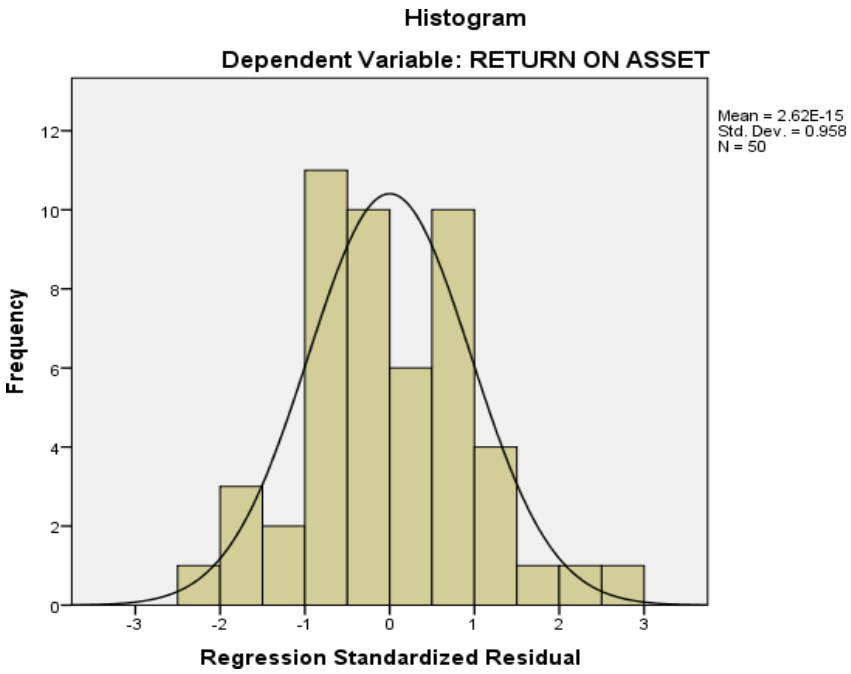
- Wald, J. K. (1999). *How firm characteristics affect capital structure: an international comparison. Journal of Financial Research, 22(2), 161.*

- Wohlenberg, H., & Plagge, J.-C. (2012). *Capital Markets 2.0 – New Requirements for the Financial Manager? In U. Hommel, M. Fabich, E. Schellenberg, & L. Firnkorn (Eds.), The Strategic CFO: Creating Value in a Dynamic Market Environment (pp. 109–126). Springer.* *https://doi.org/10.1007/978-3-642-04349-9_7*

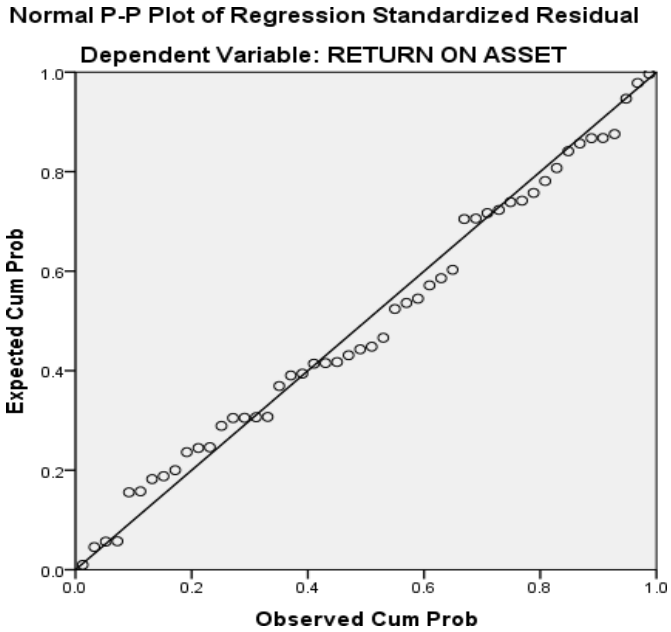
- Zeitun, R., Tian, G. (2007). *Capital structure and corporate performance: evidence from Jordan. Australasian Accounting Business and Finance Journal, 1, 40-53.*

APPENDIXES

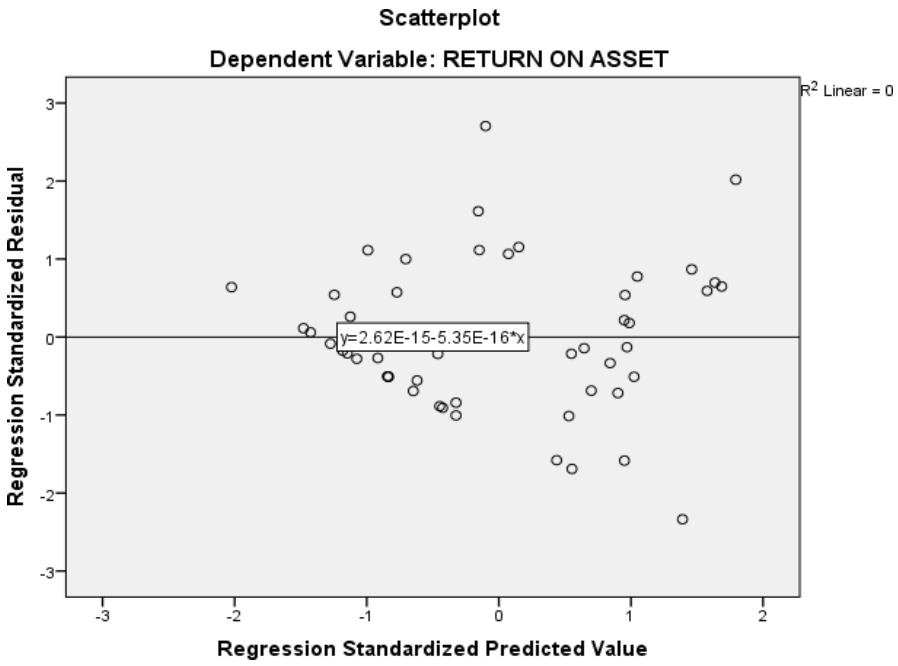
Appendix I - Histogram chart for ROA



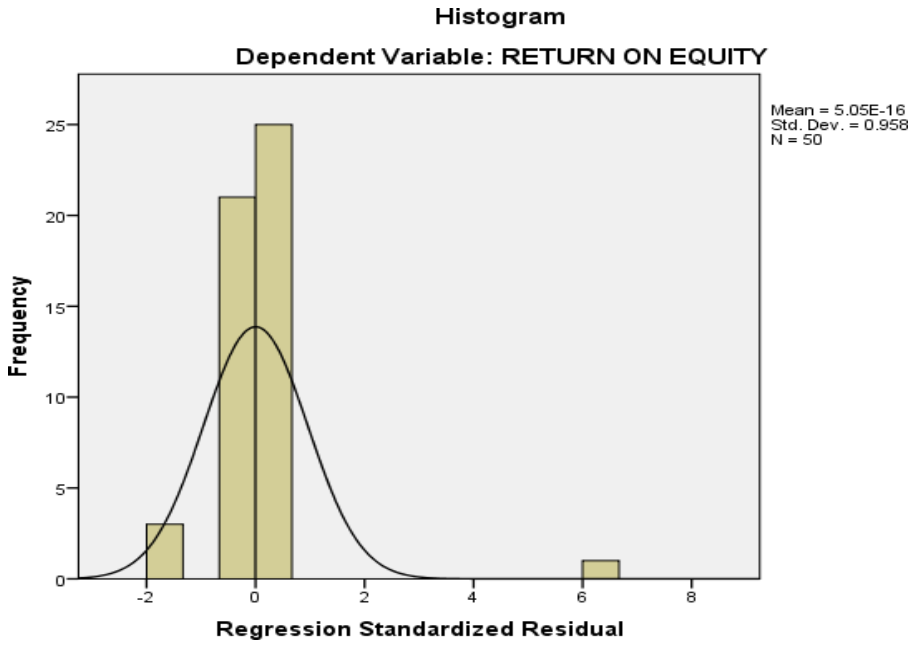
Appendix II Normal P-P Plot for ROA



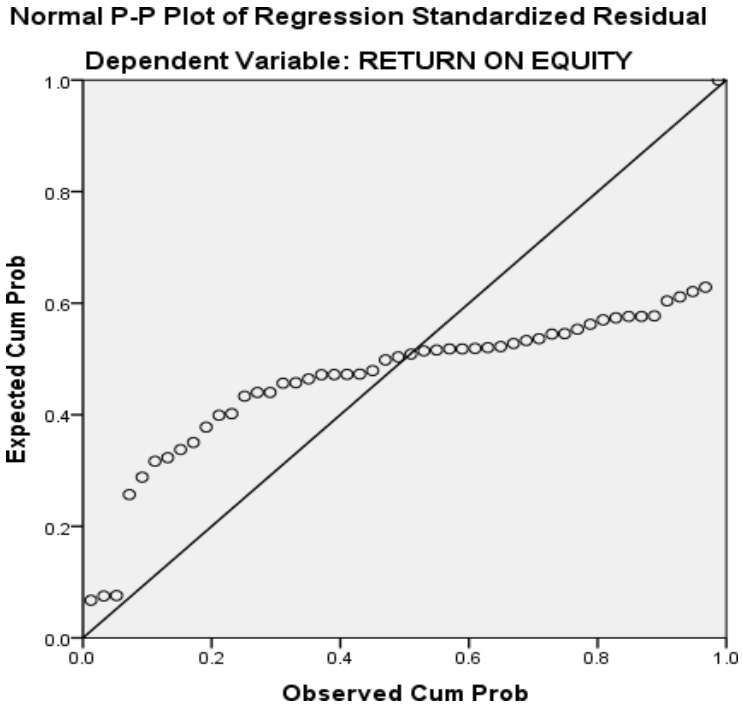
Appendix III - Scatter Plot for ROA



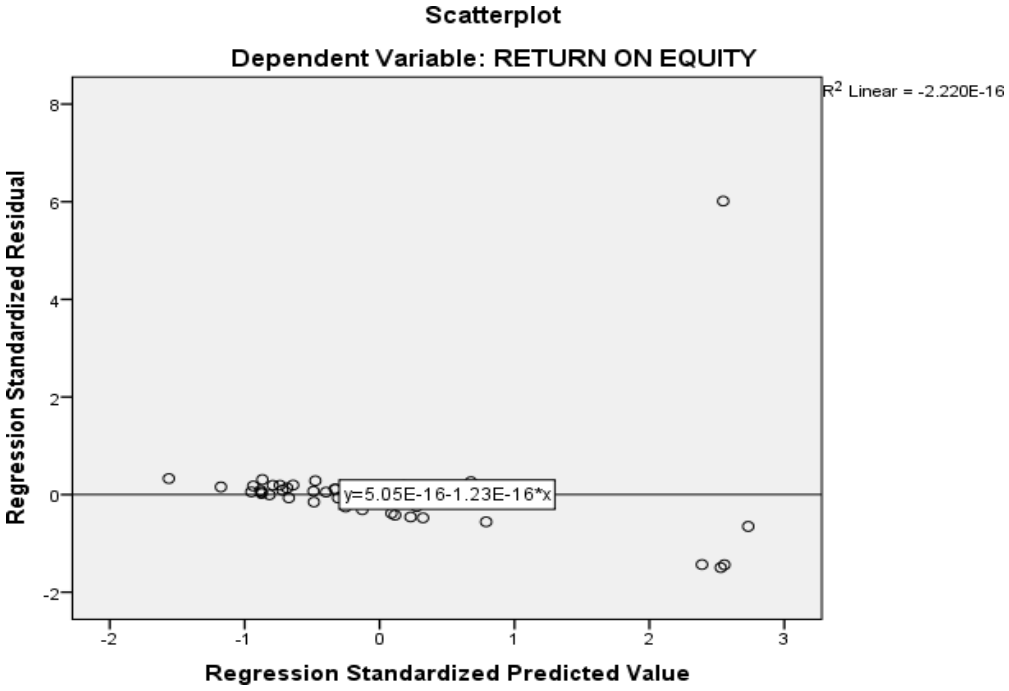
Appendix IV- Histogram chart for ROE



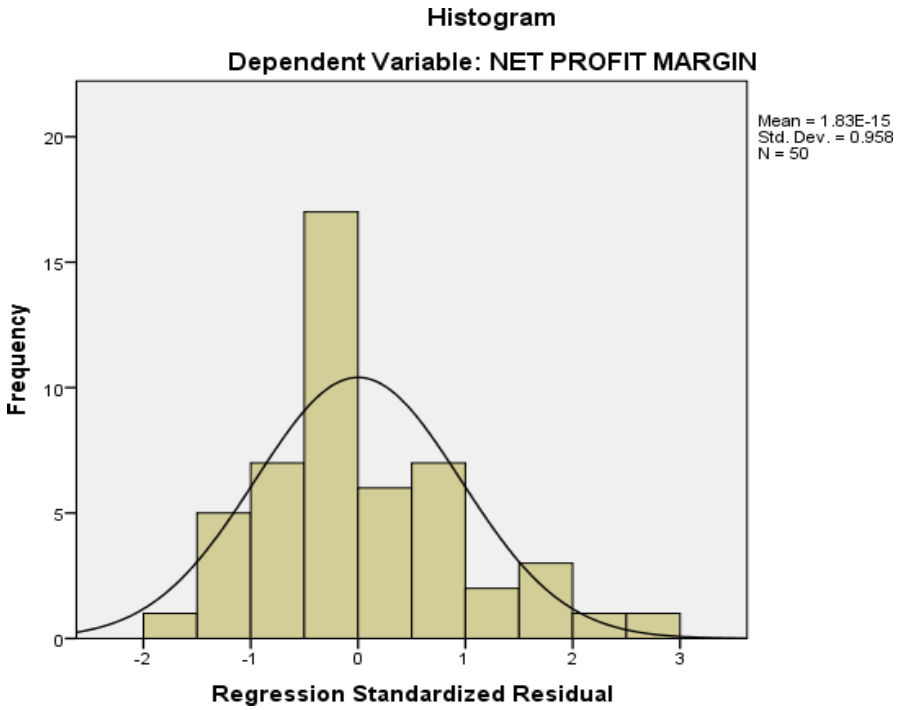
Appendix V- Normal P-P Plot for ROE



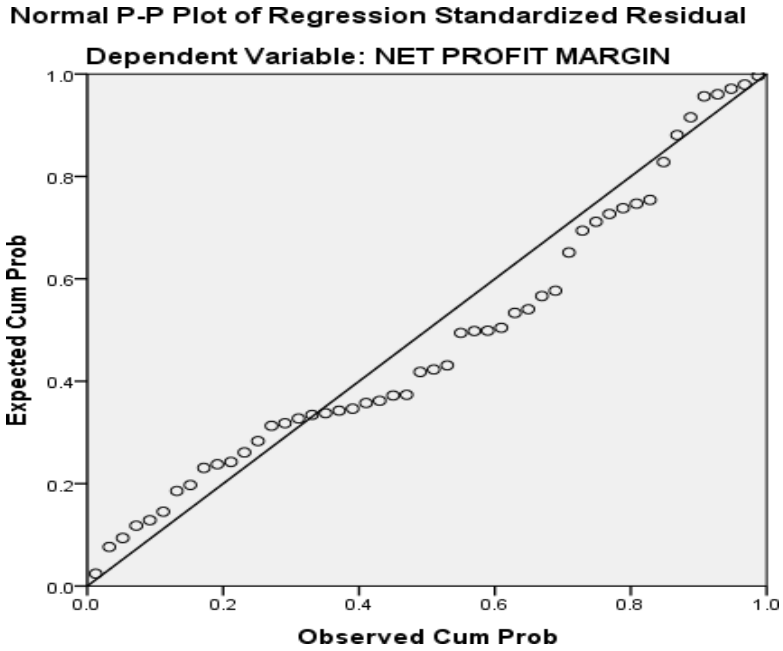
Appendix VI- Scatter Plot for ROE



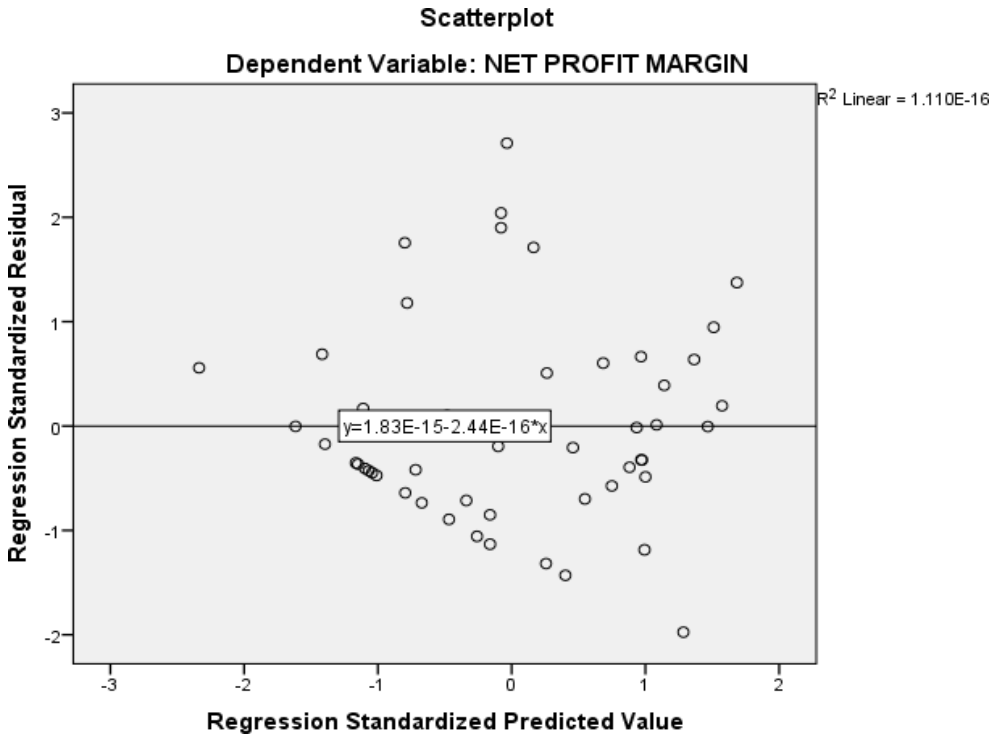
Appendix VII- Histogram chart for NPM



Appendix VIII- Normal P-P Plot for NPM



Appendix IX- Scatter Plot for NPM



Appendix X- Raw Data

S.No	Dependent Variables			Independent Variables			Control Variable
	ROA	ROE	NPM	TDTA	LTDTE	STDTE	SZ
1	0.09	0.55	0.17	0.84	0.42	4.90	9.71
2	(0.07)	(1.00)	(0.16)	0.93	1.06	11.54	9.68
3	0.01	0.18	0.02	0.93	0.77	12.04	9.71
4	0.01	0.14	0.02	0.92	0.46	11.51	9.75
5	0.04	0.35	0.07	0.90	0.08	8.84	9.83
6	(0.05)	(0.16)	(0.10)	0.70	1.66	0.72	9.16
7	0.04	0.11	0.06	0.64	1.11	0.66	9.18
8	(0.04)	(0.14)	(0.09)	0.68	1.20	0.97	9.17

9	0.10	0.24	0.13	0.58	0.76	0.64	9.22
10	0.16	0.34	0.14	0.52	0.12	0.97	9.33
11	0.01	0.02	0.02	0.44	0.35	0.42	9.87
12	(0.01)	(0.01)	(0.01)	0.44	0.35	0.42	9.87
13	(0.05)	(0.10)	(0.10)	0.49	0.34	0.60	9.85
14	(0.04)	(0.08)	(0.05)	0.56	0.36	0.92	9.89
15	(0.11)	(0.32)	(0.25)	0.67	0.81	1.20	9.93
16	(0.04)	6.52	(0.06)	1.01	(135.31)	(50.69)	8.77
17	(0.06)	0.81	(0.07)	1.07	(8.64)	(6.40)	8.86
18	(0.00)	0.06	(0.00)	1.05	(12.14)	(0.73)	9.04
19	0.00	(0.01)	0.00	1.05	(10.57)	(8.68)	9.09
20	0.03	(1.38)	0.04	1.02	(38.55)	(3.18)	9.13
21	0.07	0.21	0.04	0.68	1.11	0.99	8.41
22	0.07	0.21	0.07	0.65	0.70	1.17	8.51
23	(0.26)	(0.99)	(0.64)	0.73	1.08	1.69	8.45
24	(0.13)	(0.42)	(0.14)	0.70	0.77	1.52	8.49
25	(0.10)	(0.40)	(0.09)	0.75	0.99	2.02	8.56
26	0.02	0.03	0.02	0.39	0.00	0.64	8.28
27	0.01	0.02	0.01	0.52	0.43	0.65	8.40
28	0.01	0.01	0.01	0.52	0.33	0.74	8.41
29	0.10	0.21	0.10	0.52	0.24	0.83	8.57
30	0.05	0.14	0.07	0.60	0.01	1.49	8.73
31	0.24	0.81	0.28	0.70	0.17	2.21	9.05
32	0.14	0.49	0.22	0.71	0.18	2.28	9.07
33	0.17	0.63	0.23	0.72	0.17	2.45	9.08

34	0.08	0.13	0.09	0.39	0.09	0.54	9.08
35	0.15	0.34	0.22	0.56	0.15	1.11	9.25
36	0.22	0.29	0.24	0.25	0.07	0.26	8.34
37	0.31	0.38	0.28	0.20	0.03	0.22	8.38
38	0.22	0.32	0.21	0.31	0.04	0.41	8.41
39	0.21	0.29	0.17	0.28	0.04	0.34	8.36
40	0.22	0.29	0.19	0.24	0.04	0.28	8.36
41	0.11	0.17	0.12	0.36	0.12	0.43	8.69
42	0.15	0.24	0.14	0.39	0.07	0.57	8.77
43	0.17	0.27	0.19	0.36	0.06	0.51	8.89
44	0.11	0.19	0.11	0.38	0.05	0.57	8.99
45	0.13	0.19	0.11	0.31	0.08	0.37	9.02
46	0.11	0.17	0.17	0.33	0.20	0.30	9.19
47	0.04	0.05	0.06	0.25	0.14	0.20	9.17
48	0.09	0.12	0.12	0.28	0.09	0.30	9.21
49	0.15	0.20	0.15	0.26	0.03	0.33	9.27
50	0.19	0.25	0.18	0.23	0.04	0.25	9.28