

Impact of Capital Structure on Financial Performance of Manufacturing Firms

(A Case Study of Selected Manufacturing Firms in Asela Town)

**A Thesis Submitted to the Department of Accounting and Finance
for the partial fulfillment of the requirements for the award of
Degree of Masters of Science (M.Sc.) in Accounting and Finance**

By: Mengistu Deyassa



Advisor: Dr.D.Guruswamy

DEPARTMENT OF ACCOUNTING AND FINANCE

SCHOOL OF BUSINESS AND ECONOMICS

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY

May, 2015

Adama, Ethiopia

Declaration

I, the undersigned, declare that the thesis work entitled “Impact of capital structure on financial performance of manufacturing firms in Asela Town ; A case study of selected manufacturing firms in Asela Town” submitted by me for the award of Degree of Master of Science in Accounting and Finance from Adama science and Technology University, is my original work and it has not been submitted or presented for the award of any other degree or other similar titles at any other university or institution.

Place: Adama, Ethiopia

Signature: _____

Date: May, 2015

Name: **Mengistu Deyassa**

Certification

This is to certify that the thesis prepared by Mengistu Deyassa, entitled “Impact of capital structure on financial performance of manufacturing firms in Asela Town. A case study of selected manufacturing firms in Asela Town.” and submitted for partial fulfillment of the requirements for the Degree of Master in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Place: Adama, Ethiopia

Advisor Name- **Dr.D.Guruswamy**

Signature: _____

Date: _____

External Examiner Name –Dr.Abebaw

Signature: _____

Date: _____

Internal Examiner: Ato Tewdros. D

Signature: _____

Date: _____

ACKNOWLEDGEMENTS

I would like to thank my Almighty God for an endless support to me in every aspect of my life. This paper came into effect because of a tireless effort of many individuals. First and for most, I would like to thank Dr. D.Guruswamy, my advisor, who worked tirelessly in assisting me to accomplish this thesis. He was always devoted his precious time for helping and guiding me. Wow, no words to express his patience, Thank you. Second, I would also like to thank all of my friends and staffs for their constructive comments and suggestions, this thesis would have been a dream without their assistance in sharing ideas throughout the paper. Then, my appreciation goes to Asella Investment bureau and Asella Revenue Authority for their support during data collection. Finally, my heartfelt thanks go to my family, their moral and financial support was an immense help throughout my work. Love you Jine and Akomenoye.

ABSTRACT

The main objective of this study was to assess the impact of capital structure on financial performance of manufacturing firms in Asela Town by using the financial statements of eight selected manufacturing firms over the past five years period from 2010 to 2014, the data source was secondary data which was collected from Asela Revenue and Customs Authority. Explanatory research design was used to examine the relationship between the variables. The dependent variable for the study was profitability which is measured by Return on Assets (ROA), and the independent variables were Debt to Equity Ratio (DER), Total Debt Ratio (TDR), Long Term Debt Ratio (LTDR), and Short Term Debt Ratio (STDR). Firm Size (FS) and Firm Growth (FG) also used as control variables. For the sake of achieving the objectives of the study, the researcher was used purposive sampling method. For data analysis purpose, descriptive statistics technique was employed to describe the relationship between the variables, Correlation analysis was used to determine the degree of association between variables, testing of assumption for Classical Linear Regression Model (CLRM) were made to estimate the accuracy of the data. Lastly, the balanced fixed effect panel regression model was used. The result of regression analysis revealed that debt to equity ratio have negative significance effect on profitability, total debt ratio have positive and significant effect on profitability, short-term debt ratio have positive significance effect on profitability, long term debt ratio have positive insignificant effect on profitability, firms size have negative insignificant effect on profitability and firms growth also have negative insignificant impact on profitability of selected manufacturing firms.

Key words: - Financial Performance, Capital Structure, Profitability, Return on Assets.

Table of contents

Contents	page
CHAPTER-ONE: INTRODUCTION	
1.1 Background of the study-----	1
1.2 Statement of the problem-----	3
1.3 Objectives of the study-----	4
1.3.1 General Objective-----	4
1.3.1 Specific Objectives-----	4
1.4 Literature Driven Hypotheses -----	4
1.5 Significance of the study-----	7
1.6 Scope of the study-----	8
1.7 Limitation of the study-----	8
1.8 Organization of the paper-----	8
1.9 Conceptual Frame Work-----	9
CHAPTER-TWO: REVIEW OF RELATED LITRATURE	
2.1 Theoretical literature-----	10
2.2 Empirical Literature-----	23
2.3 Research Gaps-----	30
CHAPTER-THREE: METHODOLOGY	
3.1 Research design-----	31
3.2 Data type and source-----	31
3.3 Sample design and Sample size-----	32
3.4 Data analysis techniques-----	32
3.5 Model specification-----	32
3.6 Description and Measurements of variables-----	33

CHAPTER-FOUR: RESULTS AND DISCUSSIONS

4.1 Analysis of descriptive statistics summary-----	35
4.2. Correlation Analysis-----	37
4.3 Testing of assumptions of CLRM-----	38
4.3.1 Test for the assumption “Errors have zero mean ($(u_t) = 0$)”-----	38
4.3.2 Test for homoscedasticity -----	38
4.3.3 Multicollinearity test -----	39
4.3.4 Tests for absence of autocorrelation assumption-----	40
4.3.5 Normality test -----	41
4.4 Selection of random effect (RE) versus fixed effect (FE) models-----	42
4.5 Results of the regression analysis-----	42
4.6 Hypotheses testing-----	45

CHAPTER-FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions-----	47
5.2 Recommendations-----	49
5.3 Appendixes-----	54

Acronyms

CLRM- Classical Linear Regression Model

FS - Firm Size

DER- Debt to Equity Ratio

DW- Durbin-Watson

FG- Firm Growth

FEM- Fixed Effect Mod

LTDR- Long-term debt ratio

OLS- Ordinary Least Square

REM- Random Effect Model

ROA- Return on Assets

STDR - Short-Term Debt Ratio

TDR - Total Debt Ratio

List of tables and Figures

Table 3.1 Variables and its measurement-----	34
Table 4.1 Descriptive statistics of the variables-----	35
Table 4.2 Correlation matrix between explanatory variables-----	37
Table 4.3 Heteroscedasticity Test: White-----	39
Table 4.4 Multicollinaerity test: -----	40
Table 4.5 Correlated Random Effects-Hausman Test-----	42
Table 4.6 Regression Results-Fixed Effect Model-----	43
Figure 4.1 Rejection and non-rejection regions for DW Test-----	40
Figure 4.2 Histogram for Normality Test-----	41

CHAPTER- ONE

INTRODUCTION

This chapter presents a general overview of the study. It starts from the background of the study and followed by statement of the problem, objectives of the study, literature driven hypothesis of the study, significance of the study, scope of the study, limitations of the study and finally, organization of the paper is appeared.

1.1 Background of the study

In overall economic development, manufacturing firms are vital especially in developing countries like Ethiopia. Because manufacturing firms are essential to insure the sustainability of economic growth. (Selam, 2007 EC). Manufacturing is defined as: “the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machines or by hand, whether it is done in a factory or in the worker’s home, and whether the products are sold at wholesale or retail. The assembly of the component parts of manufactured products is also considered as manufacturing activities. (International Standard Industrial Classification of all economic activities, 2002).

Assela is one of the towns in Oromiya regional state which is located at about 175km.far from Addis Abeba. According to Asela Investment bureau, there are 14 licensed manufacturing firms operated in the town in year 2014. All these firms are owned by private investors except one which is owned by the state or government. The numbers of manufacturing firms are increasing from time to time because of favorable investment policy. This manufacturing firm’s contribute a lot to the growth and sustainability of the country’s economy both in terms of gross domestic production and employment creation. However firms face many difficulties in appropriating their capital structure to finance their investment. (Eichholtz, 2001)

Capital structure of a firm is a mixture of debt and equity. In general firms can choose among alternative capital structures. Firms can also issue dozens of distinct securities in countless combination to maximize overall market value. (Biekpe, 2006) The debate of optimal capital structure has been the focal point of the finance literature for previous decades. According to finance theory, the capital structure do affects cost of capital and consequently financial performance. Cost of capital serve as the bench mark of firm’s capital budgeting decisions

therefore the optimal mix of debt and equity is very essential. Owner's wealth maximization concept also dictates that firms choose the optimal mix of debt and equity financing that best serve the ultimate objectives of the firm of all the aspects of capital investment decision, capital structure decision is the vital one, since the performance of a firm is directly affected by such decision. Hence proper care and attention need to be given while making the capital structure decision. With unplanned capital structure, companies may fail to economize the use of their funds. Consequently, it is being increasingly realized that a company should plan its capital structure to maximize the use of funds and to be able to adapt more easily to the changing conditions. An ultimate goal of a firm is the maximization of wealth or value of that firm. (Miller and Modigliani, 1958, 1963). The relationship between capital structure and profitability has been the subject of remarkable milestone over the past decade throughout the irrelevance theory. In the seminal article, presented by MM's (1958) irrelevance theory, they argued that capital structure is unrelated to firm's value. In the presence of corporate income tax and the cost of capital in MM's (1963) they argued that the market value of the firm is positively related to the amount of long term debt used in its capital structure.

According to (Durand, 2010)) the capital structure decision is relevant to the valuation of the firm. In other words, a change in the financial leverage will lead to a corresponding change in the overall cost of capital as well as the total value of the firm.

The relationship between capital structure and firms performance is one that received considerable attention in the finance literature. The modern industrial firm must conduct its business in a highly complex and competitive business environment. Therefore, this study was aimed to examine the impact of capital structure on financial performance of manufacturing firms in Asela town.

1.2. Statement of the problem

The main objective of most manufacturing firm is maximizing profit and satisfying the need of owners. The financial managers have a responsibility of determining the optimal mix of debt and equity that will ensure maximization of owners' wealth. However, an important question facing companies in need of new finance is whether to raise debt or equity and what proportion of debt and equity is essential for the firms. To answer such questions, the impact of capital structure on firm's profitability has been studied by different researchers in different parts of the world. But the entire researchers were not arrived on the same conclusion.

The issue of capital structure has been subject of major concern for researchers and scholars in recent years. Such concern has bought about a lot of arguments on the subject which led to numerous studies on it in the area of firms finance over the year. For example, In relation to the capital structure and profitability of firms most studies found a negative relationship between profitability and leverage. For instance (Titman, 1988) furthermore (Kester, 1986) found a significantly negative relationship between profitability and debt to asset ratio (Zingolas, 1995), (Afza and Hussain, 2011) also confirmed that a significantly negative correlation between profitability and leverage in their work. Despite the above empirical works, some other authors are different opinion. The authors examined a positive relationship between profitability and debt levels in their studies. For example Taub (1975), Abor (2005), (Gill, et. 2011), (Ahmad, Abdullah and Roslan, 2012) found a significantly positive relationship between total debt and profitability. Thus, from the above reasons based on the available empirical literature, it is very clear that the impact of capital structure and financial performance are inconclusive and requires more empirical work. Hence, the researcher aimed to see the impact of capital structure on financial performance of selected manufacturing firms in Asela town. In addition, as to the knowledge of the researcher there were no researches particularly in Asela town in this area based on available literature.

1.3. Objectives of the study

1. 3.1 General objective

The general objective of the study was to assess the impact of capital structure on financial performance of the manufacturing firms in Asela town.

1.3.2 Specific objectives

- To examine the relationship between Debt to Equity Ratio (DER) and profitability of firms.
- To analyze the relationship between Short Term Debt Ratio (STDR) and profitability of firms.
- To evaluate the relationship between Long Term Debt Ratio (LTDR) and profitability of firms.
- To show the relationship between Total Debt Ratio (TDR) and profitability of firms.
- To understand a relationship between Firms Size (FS) and profitability of firms.
- To determine a relationship between Firms Growth (FG) and profitability. of firms

1.4. Literature Driven Hypothesis

Dependent Variables

Dependent Variables are variables that used to measure the profitability of firms. Return on Assets (ROA), Return on Equity (ROE), Return on Capital Employed (ROCE) and Operating Profit Margin (OPM) are best known and most frequently used profitability measures (Nuru Mohammed, 2011). For this study ROA was used to measure profitability. The reason for choosing this variable is that the ROA represents the ratio of how much a firm has earned on its assets base (Melicher and Leach, 2009).

Profitability

Profitability is defined as the ability of a firm to gain profit. It is the result of all financial plans and decisions. The ratio of profit to sell, Return on Assets (ROA) and Return on Equity (ROE) are generally applied to measure profitability. (AfrasiabishaniJ.Ahmadinia H., Hesami E, 2012)

Return on Assets

Return on assets measures how well the institution uses all its assets. It is also an overall measure of profitability which reflects both the profit margin and the efficiency of the institutions. (AEMFI, 2013) Return on Assets (ROA), Return on Equity (ROE) and Operating Profit Margin (OPM) are best known and most frequently used profitability measures (Nuru Mohammed, 2011).

Independent Variables

For this study the researcher used the following variables as independent variable which is measured by debt to equity ratio, short-term debt ratio, long term debt ratio, and total debt ratio. In addition, firm's size and firm's growth was used as control variables.

Debt to Equity Ratio

It represents the leverage of a firm. Higher value of debt ratio shows that the firm has greater indebtedness and more financial leverage. Greater leverage shows that the cost of capital would be higher. Many researchers have discovered an inverse relationship between debt to equity ratio and profitability such as (Mohamad and Saad, 2010; Gill et al. 2010; Raheman and Nasr, 2007 and Raheman et al, 2010) The debt to equity ratio is a common measure used to asses a firm's leverage, or in other words it shows the extent to which it relies on debt as a source of financing. (Liselevand, 2012).

Ho: There is no significant relationship between debt to equity ratio and profitability of firms.

H1: There is significant relationship between debt to equity ratio and profitability of firms

Long term Debt/Long term liabilities to total assets ratio

Long term liabilities to total assets ratio was used as a proxy for financial leverage measurement and the long term liabilities takes in to account long term debts in relation to the total assets of firms. It represents debts that are returned back usually after five years. (JamesC.Van Horne, 2005)

Ho: There is no significant relationship between long term debt ratio and profitability of firms.

H1: There is significant relationship between long term debt ratio and profitability of firms.

Short term debt /Current liabilities to total assets ratio

Current liabilities are the short term financing instruments which a company uses and it includes bank overdraft, commercial papers, bill of exchange, and loan from commercial finance

companies and the like. All these liabilities have a maturity less than one year. Or it represents an amount paid by the firm within a short period of time. (Arnold, 2008).

Ho: There is no significant relationship between short term debt ratio and profitability of firms

H1: There is significant relationship between short term debt ratio and profitability of firms

Debt Ratio/Total debt ratio

The debt ratio measures the proportion of total assets financed by the firm's creditors. The higher the debt ratio, the greater the amount of other people's money used in an attempt to generate profits. (Gitman, 2000) The debt ratio uses the total debt concept and measures the relationship between total debts in supporting the firm's assets. That is, it tells us how much of the firm's assets are supported by other people's money. A high debt ratio is viewed as risky by investors, especially lenders. Debt management ratios are generally stated as percentages. (Lasher, 2008) Debt ratio is one part of financial ratio which is used for debt management used by different company. Hence, it is ratio that indicates what proportion of debt a company has relative to its assets. The measure gives an idea to the leverage of the company along with the potential risks the company faces in terms of its debt-load. (Fabozzi and Peterson, 2011). Debt Ratio estimates that how much portion of total assets of a firm is financed by its creditors. In contrast other studies (Abraham, 2013 and Owlabi, 2012), show a positive correlation between profitability and debt ratio. Positive relationship between debt ratio and profitability indicates that as debt ratio increases profitability increases (Liselevand, 2012).

Ho: There is no significant relationship between total debt ratio and profitability of firms.

H1: There is significant relationship between total debt ratio and profitability of firms

Control Variables

In order to have a reliable analysis of the effect of capital structure on profitability, it is common in capital structure literature to use some control variables to account for various factors that may influence profitability of firms (Nuru Mohammed, 2011). Accordingly, together with the above capital structures variables, some control variables that are specific to firms and general to the economy as a whole will be taken into account in this study. Firm Size (FS), Firm Growth (FG) were used as control variables that are specific to the firm.

Firm's size

Previous studies viewed size as a determinant of a firm's capital structure. For example Barclay and Smith (1996); Friend and Lang (1988); Barton et al. (1989), suggest that smaller firms are more likely to use equity finance, while larger firms are more likely to issue debt rather than stock. According to Myers' (1984), start-up and early stage firms are generally smaller than mature and older firms, and have a greater proportionate reliance on the personal financial resources of the firm owner. But as the firm grows and matures, retained profits are the major source of financing the activities of the business. That is as the firm survives and matures; it heavily spends on the on accumulated retained profits than from the personal financial resources of the firm owner. The capital structure of a firm is basically influenced by the nature and size of the business. Size of the firm may be measured in terms of the scale of operations. .

Ho: There is no significant relationship between firm's size and profitability.

H1: There is significant relationship between firm's size and profitability.

Firm's growth

Capital structure of a business firm tends to increase in correspondence with growth in the value of assets, sales volume. In order to sustain its growing production and sale, firms need to give attention on proportion of debt and equities. (Brounen and Eichholtz, 2001), better growing firms increase their profitability. If there is an increases in total assets it means it has high growth and it tends to more profitable according to (Nousheen Tariq Bhutta, 2013).

Ho: There is no significant relationship between firm's growth and profitability.

H1: There is significant relationship between firm's growth and profitability.

1.5. Significance of the study

The findings of this study provides a great contribution for the firms to show how the selection of capital structure affects the profitability of private as well as public manufacturing firms in Assela town because firms are not aware how capital structure affects their financial performances and increase owners return. . In addition this study can serve as a base for other researchers who want to do further research on this topic.

1.6. Scope of the Study

The study was delimited to the Asela town and to those firms engaged in the manufacturing firms' industry sector. Furthermore, this research was mainly conduct based on the secondary data collection. The other data collection methods were not being considered. The study was limited to the analysis of the financial statements for recent five years from the period of 2010 to 2014 was used for the study due to limitation on the establishment age of the manufacturing firms in Asela town.

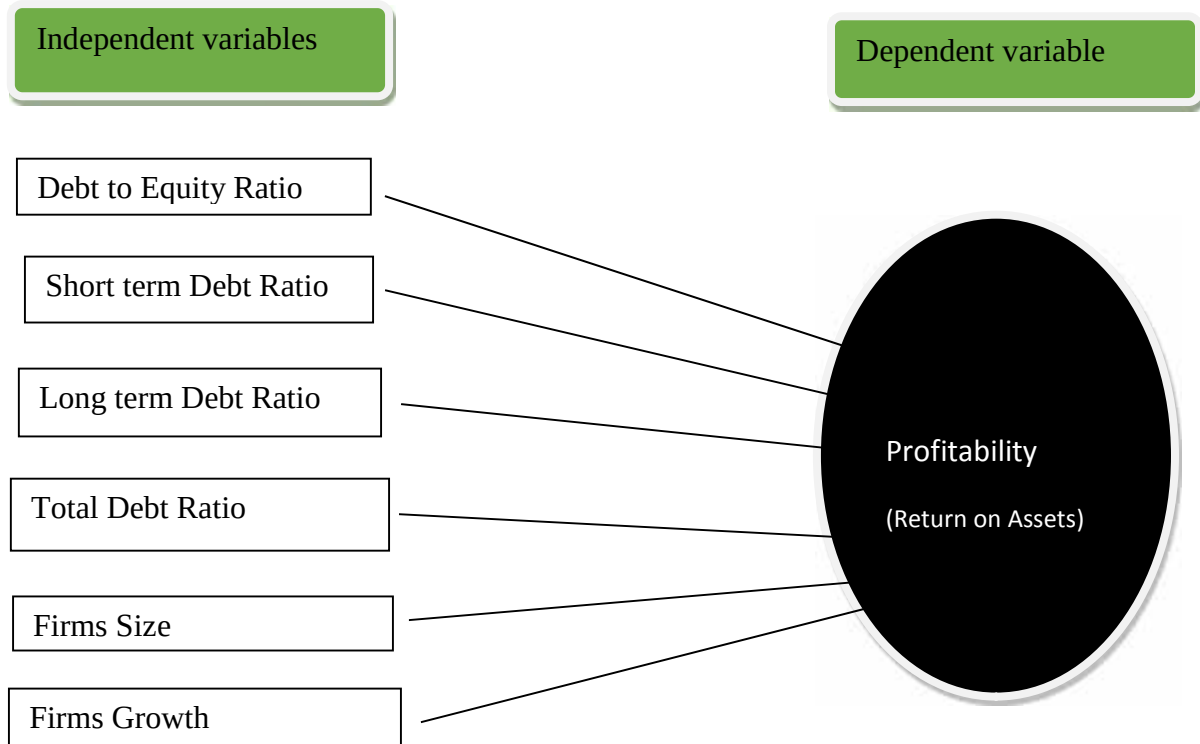
1.7. Limitation of the study

The study was only focused on selected manufacturing firms in Asela town. The findings may not generalize for all other types of businesses. The variables used for this study were Debt to Equity Ratio, Total Debt ratio, Long Term Debt ratio, Short Term debt Ratio, Firm Size and Firm Growth, other variables were do not be considered by the researcher. In addition, lack of adequate accounting disclosure and treatment and shortage of literature on the area in Ethiopian context was narrowed the output.

1.8. Organization of the paper

The structure of this thesis presented as follows. The first chapter discussed the background of the study, statement of the problem, objectives of the study, literature driven research hypothesis, significance of the study, the scope of the study and limitations of the study. Chapter two presents review of related literature including theories as well as empirical studies. The third chapter explained research methodology. The fourth chapter deals with analysis and findings of the study. Finally Chapter five presented the conclusion and recommendation of the study.

1.9. Conceptual Framework



Source: Researchers own

CHAPTER - TWO

REVIEW OF RELATED LITERATURE

This chapter presents the review of related literatures. The chapter is divided into two parts. The first part presents the theoretical review of literatures on related topic of the study. The second part discusses the empirical literatures studied by different researchers.

2.1 Theoretical Literature

Definition of Capital structure

Capital structure is referred to as the way in which the firm finances itself through debts, equity and securities. It is the composition of debt and equity that is required for a firm to finance its assets. The capital structure of a firm is very important since it is related to the ability of the firm to meet the needs of its stakeholders. The Board of Directors or the financial manager of a company should always endeavor to develop a capital structure that would be beneficial to the equity share holders in particular and to the other groups such as employees, customers, creditors and society in general. (Pandey, 2009)

Capital structure can be defined as a combination of the debt and the equity made available for a firm to start its operations. These blends of the financial resources are termed as capital structure. (Watson and Antony head, 2007)

Capital Structure is the mix of long term debt and equity maintained by the firm. Company's capital structure illustrates the comparison between long-term debt and equity capital used by the company. There are two types of capital debt capital and (equity capital). But in relation to capital structure, type of debt capital is taken into account only long-term debt (Gitman, 2000)

Weston and Copeland (1992) also give the definition of capital structure as: The permanent financing of long-term debt, preferred stock, and shareholders' equity. The book value of shareholders' capital consists of common stock, paid-up capital or capital.

Theories of capital structure

In order to maximize the value of the firm, attempt has been made by the firm's finance manager to employ an optimal capital structure for that particular firm. Always there is a question that: How do firms choose their capital structure? On the last few decades a number of theories have been developed to answer this puzzling question in explaining the mix of capital structure of the firm. Therefore, this section primarily focuses on reviewing the major capital structure theories;

The Modigliani & Miller (MM) Theory

According to Modigliani-Miller theorem capital structure in perfect market: Assume a perfect capital market (no transaction or bankruptcy costs; perfect information); firms and individuals can borrow at the same interest rate; no taxes; and investment decisions aren't affected by financing decisions. Modigliani and Miller made two findings under these conditions. Their first 'proposition' was that the value of a company is independent of its capital structure. Their second 'proposition' stated that the cost of equity for a leveraged firm is equal to the cost of equity for an unleveraged firm, plus an added premium for financial risk. That is, as leverage increases, while the burden of individual risks is shifted between different investor classes, total risk is conserved and hence no extra value created. Their analysis was extended to include the effect of taxes and risky debt. Under a classical tax system, the tax deductibility of interest makes debt financing valuable; that is, the cost of capital decreases as the proportion of debt in the capital structure increases. The optimal structure then would be to have virtually no equity at all. If capital structure is irrelevant in a perfect market, then imperfections which exist in the real world must be the cause of its relevance. The theories below try to address some of these imperfections, by relaxing assumptions made in the M&M model. (Kraus and Litzenberger, 1973; Miller, 1977; Kim, 1978; Myers, 1984; Myers and Majluf, 1984; Sunder and Meyers, 1999; Dang 2005),

Trade-Off Theory

According to the trade-off theory, capital structure is determined by a trade-off between the benefits of debt and the costs of debt. The benefits and costs can be obtained in a variety of ways. The "tax-bankruptcy trade-off" perspective is that firms balance the tax benefits of debt against the deadweight costs of bankruptcy. The "agency" perspective is that debt disciplines managers and mitigates agency problems of free cash flow since debt must be repaid to avoid bankruptcy (Jonson and Meckling, 1976; Jonson, 1986). Although debt

mitigates shareholder-manager conflicts, it exacerbates shareholder-debt holder conflicts (Stulz, 1990).

Product and factor market interactions suggest that in some firms, efficiency requires a firm's stakeholders to make significant firm-specific investments. Capital structures that make these firm-specific investments insecure will generate few such investments. Theory suggests that capital structure could either enhance or impede productive interactions among the stakeholders. Titman (1984) argues that firms making unique products will lose customers if they appear likely to fail. Maksimovic and Titman (1991) consider how leverage affects a firm's incentives to offer a high quality product. Jaggia and Thakor (1994) and Hart and Moore (1994) consider the importance of managerial investments in human capital. These perspectives differ from the tax bankruptcy trade-off in that the costs of debt are from disruption to normal business operations and thus do not depend on the arguably small direct costs of bankruptcy. In other words, the product and factor market interaction based trade-off theories can be viewed as trading off the advantages of debt with liquidation costs rather than bankruptcy costs.

Pecking Order Theory

While the pecking order theory has long roots in the descriptive literature, it was clearly articulated by Myers (1984). Consider three sources of funds available to firms--retained earnings, debt, and equity. Equity has serious adverse selection, debt has only minor adverse selection, and retained earnings avoid the problem. From the point of view of an outside investor, equity is strictly riskier than debt. Rational investors will thus revalue a firm's securities when it announces a security issue. For all but the lowest quality firm, the drop in valuation of equity makes equity look undervalued, conditional on issuing equity. From the perspective of those inside the firm, retained earnings are a better source of funds than outside financing. Retained earnings are thus used when possible. If retained earnings are inadequate, debt financing will be used. Equity is used only as a last resort. This is a theory of leverage in which there is no notion of an optimal leverage ratio. Although the pecking order theory is almost always framed in terms of asymmetric information, it can also be generated from tax, agency, or behavioral Considerations.

Agency Cost Theory

There is also another argument for how capital structure may be influenced by asymmetries between managers and investors. Not only do managers have different information about the prospects of the firm than shareholders do, but managers also have interests that diverge from those of shareholders. Agency costs are a good reason for firms to increase the amount of debt in their capital structure, as debt 'enables managers to bond their promise to pay out future cash flows'. According to agency cost theory, firms use more debt in their capital structure when investors seek to pressure management to use funds efficiently. Forsberg (2004) found that the debt ratio decreases as agency costs decrease because of an increasing proportion of ownership by management, and that those firms with fewer shareholders have more debt than firms with many shareholders. The link between fewer shareholders and more debt suggests that shareholders, who are able to influence capital structure in their favor, do so in a way that increases the level of debt. Agency costs are especially severe 'when the organization generates substantial free cash flow', and that the control function of debt is most important in old, declining organizations that actually need to shrink. Jensen also argued that debt is less effective in reducing agency costs in rapidly growing organizations with 'large and highly profitable investment projects but no free cash flow' (Jensen, 1986).

The firm with the lowest agency costs is, by definition, the one that is run by its owner (Ang, Cole & Lin, 2000) and therefore one would expect start-up firms that are run by the entrepreneur to have the least debt. The agency cost argument therefore also offers support for capital structure life stage theory. This time, however, the pattern of the relationship pattern is low-high-high. In terms of agency cost theory, we would expect young owner managed firms to have the least debt, and that debt levels will gradually increase as the firm develops and acquires a greater number of shareholders and more professional managers.

Capital structure of the firm

Capital structure is one of the most complex areas of financial decision making due to its interrelationship with other financial decision variables. Poor capital structure decisions can

result in a high cost of capital, thereby lowering project NPVs and making more of them unacceptable. Effective decisions can lower the cost of capital, resulting in higher NPVs and more acceptable projects, thereby increasing the value of the firm (Gitman, 2000).

Assessment of capital structure

Financial leverage results from the use of fixed-payment financing, such as debt and preferred stock, to magnify return and risk, Debt ratio which measure the firm's degree of financial leverage. A direct measure of the degree of indebtedness is the debt ratio. The higher this ratio, the greater the firm's financial leverage. Measures of the firm's ability to meet fixed payments associated with debt include the time interest earned ratio and the fixed- payment coverage ratio. These ratios provide indirect information on financial leverage. The smaller these ratios, the less able the firm is to meet payments as they come due. In general, low debt-payment ratios are associated with high degrees of financial leverage. The more risk a firm is willing to take, the greater its financial leverage. In theory, the firm should maintain financial leverage consistent with a capital structure that maximizes owners' wealth. (Denzil Watson, 2007)

Debt analysis

The debt position of a firm indicates the amount of other people's money being used in attempting to generate profits. In general, the financial analysts are most concerned with long-term debts, because these commit the firm to paying interest, and eventually the principal, over the long run. Because creditors' claims must be satisfied before earnings can be distributed to shareholders/owners, present and prospective shareholders/investors pay close attention to degree of indebtedness and ability to repay debts. Lenders are also concerned about the firm's indebtedness, because the more indebted the firm, the more likely it will be unable to satisfy the creditors' claims. Management obviously must be concerned with indebtedness. In general, the more debt a firm uses in relation to its total asset, the greater its financial leverage. Financial leverage is the magnification of risk and return introduced through the use of fixed-cost financing such as debt and preferred stock. The more fixed-cost debt, or financial leverage, a firm uses, the greater will be its risk and its expected return. (Gitman, 2000)

Measurement of Debt

There are two general types of debt measures: measures of the degree of indebtedness and measures of the ability to service debts. The degree of indebtedness measures the amount of debt relative to other significant balance sheet amounts. The ability to service debts assesses a firm's

ability to make the contractual payments required on a scheduled basis over the life of a debt. The firm's ability to pay certain fixed charges is measured using coverage ratios. Typically, higher coverage ratios are preferred, but too high a ratio may indicate unnecessarily low risk and returns. Alternatively, the lower the firm's coverage ratios, the more risky the firm is considered to be. "Riskiness" here refers to the firm's ability to pay fixed obligations. If a firm is unable to pay these obligations, it will be in default, and its creditors may seek immediate repayment. In most instances this would force a firm into bankruptcy. (Antony Head, 20007)

Long-term Solvency Measure

Long term solvency ratios are intended to address the firm's long run ability to meet its obligations or, more generally, its financial leverage. These ratios are sometimes called financial leverage ratios or just leverage ratios. There are commonly used measures and some variations. (Ross, 2001)

Debt to Equity Ratio

The debt to equity ratio generally uses just long-term debt and is stated somewhat differently than other ratios.

$$\text{Debt to equity ratio} = \frac{\text{Total Debt (Liabilities)}}{\text{Total Equity}}$$

This ratio is a measure of the mix of debt and equity within the firm's total capital. It is an important measure of risk, because a high level of debt can burden the income statement with excessive interest. This makes the firm's profitability fragile in recessionary times. Interest is known as a fixed financial charge, and must be paid regardless of whether or not revenues and profits are healthy. Hence in a business downturn, large interest charges can throw a company into a loss position quickly. The riskiness associated with debt and interest is called financial risk.

Debt Ratio

The debt ratio measures the proportion of total assets financed by the firm's creditors. The higher the debt ratio, the greater the amount of other people's money used in an attempt to generate profits. (Gitman, 2000) The debt ratio uses the total debt concept and measures the relationship between total debt and equity in supporting the firm's assets. That is, it tells us how much of the

firm's assets are supported by other people's money. A high debt ratio is viewed as risky by investors, especially lenders. Debt management ratios are generally stated as percentages. (Lasher, 2008)

This ratio is calculated as follows;

$$\text{Total Debt Ratio} = \frac{\text{Total Assets} - \text{Total Equity}}{\text{Total Assets}}$$

The choice between Debt and Equity

Modigliani and Miller (MM) have a convincing argument that a firm would not change the total value of its outstanding securities by changing the proportions of its capital structure. In other words, the value of the firm is always the same under different capital structures. In still other words, no capital structure is any better or worse than any other capital structure for the firm's stockholders. (Ross, 2001)

Capital Structure and Profitability

Capital structure is usually measured by the following ratios: ratio of debt to total asset, the equity ratio to total asset, a debt ratio to the equity and equity ratio to debt. Profitability is defined as the ability of a firm to gain profit. Profitability is the result of all financial plans and decisions. The ratio of profit to sell, return on asset (ROA) and return on equity (ROE) are generally applied to measure profitability.

Return on Assets

Return on assets measures how well the institution uses all its assets. It is also an overall measure of profitability which reflects both the profit margin and the efficiency of the institutions. (AEMFI, 2013). Calculated as Net Profit after tax/ Total Assets.

Determinants of capital structure

Following from these theoretical standpoints, previous empirical studies have identified firm level characteristics that have an effect on the capital structure of business enterprises. Among these characteristics are age of the firm, size of the firm, asset structure, intangible activity, and ownership structure.

Age of the firm

Age of the business enterprise is a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an ongoing business and so will increase its capacity to take on more debt; hence age is positively related to debt. Before granting a loan, banks tend to evaluate the creditworthiness of entrepreneurs as these are generally believed to pin high hopes on very risky projects promising high profitability rates. In particular, when it comes to highly indebted companies, they are essentially gambling their creditors' money. If the investment is profitable, shareholders will collect a significant share of the earnings, but if the project fails, then the creditors have to bear the consequences (Myers, 1977). To overcome problems associated with the evaluation of creditworthiness, Diamond (1989) suggests the use of firm reputation. He takes reputation to mean the good name a firm has built up over the years; the name is recognized by the market, which has observed the firm's ability to meet its obligations in a timely manner. Directors concerned with a firm's reputation tend to act more prudently and avoid riskier projects in favor of safer projects, even when the latter have not been approved by shareholders, thus reducing debt agency costs (by reducing the "temptation" to gamble at creditors' cost).

It is important to note the extension of firm risk to the personal area of the businessperson (given the unlimited liability of entrepreneurs) to be a way of managing the agency costs resulting from cases of more opportunistic behavior. Given the fragmentation of information, and the high costs of control and evaluation, the firm's and the entrepreneur's reputations become a valuable asset in the management of relations between the principal (investor) and the agent (businessperson) (Landström, 1993).

Petersen and Rajan (1994) found that older firms should have higher debt ratios since they should be higher quality firms. Hall et al. (2004) agreed that age is positively related to long-term debt but negatively related to short-term debt. Esperança et al. (2003), however, found that age is negatively related to both long-term and short-term debt. Green, Murinde and

Suppakitjarak (2002) also found that age has a negative influence on the probability of incurring debt in the initial capital equation, and no impact in the additional capital equation.

Firm size

Size has been viewed as a determinant of a firm's capital structure. Larger firms are more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios (Castanias, 1983; Titman and Wessels, 1988; Wald, 1999). Smaller firms, on the other hand, may find it relatively more costly to resolve information asymmetries with lenders, thus, may present lower debt ratios (Castanias, 1983). Lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency costs associated with debt. Therefore, larger firms will have higher debts. Another explanation for smaller firms having lower debt ratios is if the relative bankruptcy costs are an inverse function of firm size (Titman and Wessels, 1988). It is generally believed that there are economies of scale in bankruptcy costs: larger firms face lower unit costs of bankruptcy than smaller firms, as shown in Prasad et al. (2001). Castanias (1983) also states that if the fixed portion of default costs tends to be large, then marginal default cost per dollar of debt may be lower and increase more slowly for larger firms. Facts about larger firms may be taken as evidence that these firms are less risky (Kim and Sorensen, 1986). Cosh and Hughes (1994) add that if operational risk is inversely related to firm size, this should rather predispose smaller firms to use relatively less debt.

Empirical evidence on the relationship between size and capital structure supports a positive relationship (e.g. Barclay and Smith, 1996; Friend and Lang, 1988; Barton et al., 1989; MackieMason, 1990; Kim et al., 1998; Al-Sakran, 2001, Hovakimian et al., 2004). Their results suggest that smaller firms are more likely to use equity finance, while larger firms are more likely to issue debt rather than stock. According to Titman and Wessels (1988), small firms seem to use more short-term finance than their larger counterparts because smaller firms have higher transaction costs when they issue long-term debt or equity. They further add that such behavior may cause a "small firm risk effect", by borrowing more short term. These types of firms will be more sensitive to temporary economic downturns than larger, longer-gearred firms.

Asset structure (Intangibility)

The asset structure of a firm plays a significant role in determining its capital structure. The degree to which the firm's assets are tangible should result in the firm having greater liquidation value (Titman and Wessels, 1988; Harris and Raviv, 1991). Assert that firms that invest heavily in tangible assets also have higher financial leverage since they borrow at lower interest rates if their debt is secured with such assets. It is believed that debt may be more readily used if there are durable assets to serve as collateral (Wedig et al., 1988). By pledging the firm's assets as collateral, the costs associated with adverse selection and moral hazards are reduced. This will result in firms with assets that have greater liquidation value having relatively easier access to finance at lower cost, consequently leading to higher debt or outside financing in their capital structure.

In the case of small firms, the concession of collateral reduces the under-investment problem in the firms by increasing the probability of obtaining credit – functioning also as a management instrument in conflicts between entrepreneur and financiers, since the degree of the entrepreneurs' involvement in sharing business risk, by granting personal collateral, is clearly evident. It is further suggested that bank financing will depend upon whether the lending can be secured by tangible assets (Storey 1994; Berger and Udell 1998).

Empirical evidence suggests a positive relationship consistent with theoretical argument between asset structure and leverage for the firms. (Wedig et al., 1988; Friend and Lang, 1988; Mackie-Mason, 1990; Rajan and Zingales, 1995; Shyam-Sunder and Myers, 1999; Hovakimian et al., 2004). Kim and Sorensen (1986), however, found a significant and negative coefficient between depreciation expense as a percentage of total assets and financial leverage. Other studies specifically suggest a positive relationship between asset structure and long-term debt, and a negative relationship between asset structure and short-term debt (see Van der Wijst and Thurik, 1993; Chittenden et al., 1996; Jordan et al., 1998; Michaelas et al., 1999; Cassar and

Holmes, 2003; Hall et al., 2004). Esperança et al. (2003) found positive relationships between asset structure and both long-term and short-term debt. Marsh (1982) also maintains that firms with few fixed assets are more likely to issue equity. In a similar work, Mackie-Mason (1990) concluded that a high fraction of plant and equipment (tangible assets) in the asset base makes the debt choice more likely.

Booth et al. (2001) suggest that the relationship between tangible fixed assets and debt financing is related to the maturity structure of the debt. In such a situation, the level of tangible fixed assets may help firms to obtain more long-term debt, but the agency problems may become more severe with the more tangible fixed assets, because the information revealed about future profit is less in these firms. If this is the case, then it is likely to find a negative relationship between tangible fixed assets and debt ratio.

Ownership structure

Managerial insiders (officers and directors) have a somewhat different perspective since several of them have large parts of their personal wealth invested with in the firm (Amihud and Lev, 1981; Friend and Hasbrouck, 1988). The personal wealth managerial insiders have invested in their employer is composed largely of their employer's common stock and the firm-specific human capital they have accumulated whereas working for his or her employer. Since these things tend to represent a large proportion of an insider's total wealth, the bankruptcy of the employer would have a serious impact on their personal wealth. As a result, Friend and Hasbrouck (1988) argue, managerial insiders ought to be a lot of sensitive to the bankruptcy risk that debt financing induces and more inclined to minimize this risk by using less than the shareholder wealth maximizing amount of loan in the business enterprises' capital structure. Further, the more wealth a managerial insider has invested in the employer, the greater the incentive they have to minimize the use of debt financing. Noe and Rebello (1996) argue that the locus of control within a business enterprise is a crucial determinant of choice of finance.

When corporate decisions are dictated by the manager, equity issues will be favored over debt because of the managers' inclination to protect their undiversified human capital and to avoid the performance pressure associated with debt commitments (see Berger et al., 1997). However, if the locus of control rests with substantial shareholders that are not represented on the management board, especially of quoted firms, the company may take on more debt to limit the scope for managerial discretion. Previous empirical studies suggest that managerial ownership should be negatively related to debt use.

Growth opportunities

According to trade-off theory, business enterprises holding future growth opportunities, which are a form of intangible assets, tend to borrow less than business enterprises holding more tangible assets because growth opportunities cannot be collateralized. This finding suggests a negative relationship between leverage and growth opportunities. Agency theory also predicts a negative relationship because firms with greater growth opportunities have more flexibility to invest sub optimally, thus, expropriate wealth from debt holders to shareholders. So as to restrain these agency conflicts, business enterprises with high growth opportunities ought to borrow less. Several empirical studies have confirmed this relationship, i.e. Deesomsak et al. (2004), Zou and Xiao (2006) and Eriotis et al. (2007). Wald (1999) has shown that the USA is the solely country where high growth is related to lower debt/equity ratio. This finding confirms the predictions of Myers's (1977) model that ongoing growth opportunities imply a conflict between debt and equity interests. This conflict additionally causes the business enterprises to refrain from undertaking net positive value investments. For business enterprises with growth opportunities, the use of debt is limited as in the case of bankruptcy, the value of growth opportunities will be close to zero (i.e., the intangible value is likely to be lost if financial distress takes place). Myers (1984) points out business enterprises holding valuable growth opportunities or intangible asset tend to borrow less than business enterprises holding tangible assets. The risk of resource diversion and under-valuation is quite high for business enterprises with high intangible value (Myer, 1977). More generally, debt holders face higher costs of monitoring shareholders in high growth firms than they do in lower growth firms. Because the assets of high growth firms are largely intangible, debt holders have more difficulty observing how

stockholders use assets in high growth firms. As a result, the cost of debt financing is higher in business enterprises with more growth opportunities. Thus, a firm's debt level is expected to vary inversely with its growth opportunities.

2.2 Empirical Literature

In order to find the impact of capital structure on the profitability of a firm, a lot of research has been undertaken so far by various researchers all over the world. The review of some of the major studies has been undertaken so as to develop a clear understanding about the relationship between capital structure and profitability. The review of such major studies is as follows

Jude Leon (2013) conducted a study on the relationship between capital structure and the financial performance of listed manufacturing firms in Sri Lanka from 2008 to 2012. Financial performance was measured in terms of accounting profitability by Return on Equity (ROE) and Return on Assets (ROA). 30 listed manufacturing firms were selected as sample. The data were analyzed and hypotheses were tested through correlation and regression analysis by using SPSS. The findings revealed that, there was a significant negative relationship between leverage and return on equity. And there was no significance relationship between leverage and return on assets. The future research work based on this study is also suggested as identifying the optimum capital structure that leads to higher performance in Sri Lanka.

Patrick, Ogebe and Alewi (2013) studied on the impact of capital structure on manufacturing firm performance in Nigeria from 2000 to 2010. Study considered the impact of some key macroeconomic variables (gross domestic product and inflation) on firm performance. The traditional theory of capital structure was employed to determine the significance of leverage and macroeconomic variables on firm's performance. The study makes a comparative analysis of the selected firms which are classified into highly and lowly geared firms setting a leverage threshold of above ten percent as being highly geared. A static panel analysis was used to achieve the objectives of the study. Using fixed effect regression estimation model, a relationship was established between performance (proxy by return on investment) and leverage of the firms over a period of ten years. The results provide strong evidence in support of the traditional theory of capital structure which asserts that leverage is a significant determinant of firms' performance. A significant negative relationship is established between leverage and performance.

Amara and Aziz (2014) conducted a research on the relationship of capital structure and its effect on company's performance. Sample included 33 listed companies from food sector of Pakistan. Debt ratios including debt to equity, short term debt to total assets and long term debt to total assets have been used as explanatory variables while return on assets and earnings per share have been used as proxy of performance. Assumption of multicollinearity, heteroskedasticity, contemporaneous correlation and auto correlation have been tested and based upon the results PCSE along with Prais-Winsten regression has been used. Results of regression analysis revealed negative relation of capital structure ratios with performance while among these, only debt to equity ratio has significant effect on company's performance. Negative relation of capital structure ratios lead to the conclusion that food sector is not properly utilizing debt in its capital structure and financial analysis need to find an optimal mix of debt and equity for maximization of company's profits.

Azhagaiah and Gavoury (2011) stated that firms can use either debt or equity capital to finance their assets. The best choice is a mix of debt and equity. The present study mainly analyses how far the capital structure affects the Profitability of corporate firms in India. The study tries to establish the hypothesized relationship as to how far the capital structure affects the business revenue of firms and what the interrelationship is between capital structure and Profitability. This study is carried out after categorizing the selected firms into three categories based on two attributes, viz. business revenue and asset size. First, firms are grouped into low, medium and high based on business revenue. Second, firms are classified into small, medium and large based on asset size to establish the hypothesized relationship that capital structure has significant impact on Profitability of Information Technology firms in India. For the study, a sample of 102 Information Technology firms was chosen by the Multi-Stage Sampling Technique. The data for a period of 8 years ranging from 1999–2000 to 2006–2007 have been collected and considered for analysis. Regression Analysis (to analyze the unique impact of capital structure on Profitability), in addition to descriptive statistics such as Mean, Standard Deviation, and Ratios has been used. The study proves that there has been a strong one-to-one relationship between capital structure variables and Profitability variables, Return on Assets (ROA) and Return on Capital Employed (ROCE) and the capital structure has significant influence on Profitability, and increase in use of debt fund in capital structure tends to minimize the net profit of the firms.

Nour (2012) studied the impact of capital structure on firm performance. The study used five performance measures (including return on equity – ROE, return on assets - ROA, earning per share - EPS, market value of equity to the book value of equity - MBVR and Tobin's Q) as dependent variables and four capital structure measures (including short term debt to total assets - SDTA, long term debt to total assets – LDTA and total debt to total assets - TDTA, and total debt to total equity - TDTE) as independent variable. The study was performed using panel data procedure for a sample of 28 listed companies the Palestinian Stock Exchange (PSE) over the period of 2006 - 2010. The results showed that firm's capital structure had a positive impact on the firm's performance measures, in both the accounting and market's measures, and statistically significant with TDTA except MBVR was significant with TDTA and with SDTA. Finally, the study findings suggest equations to determine the impact of the various debts on the firm performance.

Rehman, Fatima and Ahmad (2012) showed the impact of capital structure (i.e. short-term, long-term and total debts) on the profitability of companies of Pakistan, while controlling the size of the company. A total of 17 companies (initially 7 and then another 10) were selected randomly for the study. Regression analysis was conducted on six different regression models. The results show that there is a significant and positive impact of short term debts on the profitability of the firm; however long-term debt has no impact on the profitability. It is shown that short-term debts are useful for companies having small sales and vice versa. This study has potential for replication in other industries like cement, petroleum and pharmaceutical.

Arabahmadi and Arabahmadi (2013) examined whether there is a relation between profitability and capital structure. The typical capital structure theory exposition has become known since that time as a tradeoff theory. Trade off theory provides an exposition of the benefits of prudent debt use and the dangers of excessive debt use. According to the static trade-off theory of capital structure, firms balance the benefits of interest tax shields against the costs of financial distress. Using data from 252 non-financial companies. The findings revealed that, there is a positive association between the return on equity (ROE) and short-term debt. The finding suggests increasing short-term debts with low interest rate will lead to increase in profitability. Furthermore, the results have been shown a negative association between ROE and long-term

debt. So, when firms increase long-term debts, this results to decrease in profitability. Finally, the results also indicate there is a positive relationship between ROE and total debt.

Addae, Baasi and Hughes (2013) revealed the relationship between capital structure and profitability of listed firms in Ghana during the five year period from 2005 to 2009. Literature review on the relationship between the firms' profitability and capital structure showed that there is either a positive, negative or neutral relationship between profitability and capital structure. It also showed there is no conclusive evidence of what should be the optimal capital. Regression analysis was used to investigate the relationship between capital structure and profitability. Also, average profitability and debt ratios were used to determine whether Ghanaian listed firms depended on debt or not. Similar to Abor (2005) study, the results revealed that, there is a statistically significant positive relationship between profitability and short term debt and a significantly negative relationship between profitability and long term debt. However, the results revealed a statistically negative relationship between profitability and total debt contrary to Abor (2005) study. The results also revealed that, Ghanaian listed firms relied more on short term debt than long term debt. The average short term debt to total capital ratio was 52% and long-term debt to total capital ratio was 11%.

Chisti, Ali and Sangmi (2013) conducted a research on the impact of capital structure on the profitability of a firm. This study is focused on automobile industry and ten companies are taken as sample. The reference period of the study is five years and is completely based on secondary data which has been collected through various sources. In order to achieve the objectives of the study, the researchers have employed the analysis of various ratios. The findings of the study have put forth that capital structure do have statistically significant impact on the profitability of firms.

Ferati and Ejupi (2012) examined the influence of the capital structure of Macedonian manufacturing companies regarding the factor profitability. The necessary data, which are used in this work are the financial reports provided by the 150 respective firms collected in the past ten years. The Ordinary Least Squares (OLS) method was employed in the estimation of a function relating the return on the equity (ROE) with the indexes of long and short-run debts, and

also with the total of owner's equity. The results indicate that the return rates present a positive correlation with short-term debt and equity, and an inverse correlation with long-term debt.

Yegon, Cheruiyot, Sang and Cheruiyot (2014) empirically investigate the relationship between capital structure and the firm's profitability of in Kenya, by using panel data extracted from the financial statements of the companies listed on the Nairobi from year 2004-2012. The rationale behind the industry specific analysis is the fact that exogenous variables appear to force institutions in the same industry in similar fashion, thus leading to the existence of an industry specific capital structure. It is found that a significant positive relationship exists between the short term debt and profitability and statistically significant negative relationship between long term debt and profitability. The results are partially consistent with the previous studies as the negative relationship between long term debt and the firm performance tends to sport the dominant pecking order theory. The association of short term debt and the financial performance in contrast attests the static trade-off theory. Total debt as a whole has no association with the firm's performance because of the inherited different characteristics of short term debt and long term debt.

Nicholas Apergis and John Sorros (2010) investigated the impact of long-term debt on the value of the firm for international listed manufacturing firms. The testing period is based on quarterly data from 1999 to 2009, while 346 internationally listed manufacturing firms are employed. The methodologies are those of panel co-integration and panel causality. The empirical findings show that long-term leverage obligations have a negative and statistically significant impact on the value of the firm. The impact, however, is differentiated with respect to the size of the firm as well as with the type of long-term investment the long-term debt is spent. The implications are crucial, since managers may manipulate such leverage funds in such a manner that they do not satisfy the long-run fixed capital investment objectives of the firm.

Harjanti and Tandelilin (2007) studied the all manufacturing companies listed in Jakarta Stock Exchange from 2000 to 2004 indicated that profitability which was proxy by ROE, basic earning power (BEP), and gross profit ratio had negative significance to leverage. The findings revealed that, there is a positive association between the return on equity (ROE) and short-term debt. The finding suggests increasing short-term debts with low interest rate will lead to increase in

profitability. Furthermore, the results have been shown a negative association between ROE and long-term debt. So, when firms increase long-term debts, this results to decrease in profitability. Finally, the results also indicate there is a positive relationship between ROE and total debt.

Gill, et al., (2011) examined the effect of capital structure on profitability of the American service and manufacturing firms. The Empirical results of the study show a positive relationship between short-term debt to total assets and profitability and between total debt to total assets and profitability in the service industry. The findings also show a positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and between total debt to total assets and profitability in the manufacturing industry. The findings also show a positive relationship between short term debt to total assets and profitability, long term debt to total assets and profitability, and between total debt to total assets and profitability in manufacturing industry.

Abor (2005) investigated the relationship between capital structure and profitability, and found that Short-term and Total Debt was positively related with firm's ROE, whereas Long-term Debt is negatively related with firm's ROE. Then in 2007, Abor's research on small and medium-sized enterprises in Ghana and South Africa again indicated that long-term and total debt level is negatively related with performance. Similarly, Arbabiyan and Safari (2009) investigated the effects of capital structure on profitability by using 100 Iranian listed firms from 2001 to 2007 and found that Short term debts and Total debts are positively related to profitability proxy by ROE which indicate a negative relation between Long term debts and ROE.

Zeitun and Tian (2007) revealed the relationship between capital structure and performance of 167 Jordan manufacturing firms during 1989 - 2003, found that capital structure have a significant and negative impact on the firm's performance measures in both the accounting and market measures, debt level is negatively related with performance. It means higher debts causes lower profits. In a similar study on manufacturing firms in sub-Saharan Africa, Coleman (2007) found that high leverage is positively related with performance proxy by ROA and ROE.

Valeriu and Nimalathasan (2010) examined the capital structure and its impact on profitability: a study of listed manufacturing companies in Sri Lanka. The result shows that debt to equity ratio is positively and strongly associated to all profitability ratios (gross profit ratio; operating profit ratio; and net profit ratio) except return on capital employed and return on investment (ROI).

Nima, Mohammad, Saeed, and Zeinab (2012) examined the relationship between capital structure and firm performance of Tehran Stock Exchange Companies is investigated between the years 2006 to 2011. The study uses three performance measures (including Gross Profit Margin, Return on Assets and Tobin's Q) as dependent variable and three capital structures (including long term debt short term debt and total debt ratios) as independent variable. The study reported a significant relationship between dependent and independent variable, except long term debts with gross profit margin.

(Krivogorsky et.al (2009) conducted a research on the effect of capital structure on financial performance of firms and found a negative association between debt to equity and performance hence confirming prior research findings that companies with high debt to equity ratios are usually perceived as being risky investments and possibly affecting wealth transfer from debt holders to shareholders. In addition,,Pirashanthini.S and Nimaalathasan.B (2013), studied the relationship between capital structure and firm value using the relationship between capital structure and firm value using three accounting based measure value ; Earning per share, price earnings ratio, market value per share and based on the sample of fourteen manufacturing companies listed in Sirilanka covering the period 2008 to 2012. The result revealed that firm value which is measured by debt to equity is significantly associated with firm value, the study also provided evidence that indicate firm value is positively or even negatively released to capital structure.

(Ebaid, 2009) investigated capital structure choice decision, in general terms, has weak-to-no influence on the financial performance of listed firms from 1997 to 2005 in Egypt as one of emerging or transition economies. By using three accounting-based measurements of financial performance which are return on assets (ROA), return on equity (ROE), and Gross Margin, the empirical tests come with the result that capital structure (particularly Short term debts and Total debts) have a negative impact on an organization's performance which is measured by ROA.

Apart from that, capital structure (including short-term debt, long-term debt and total debt) have no significant impact on an organization's performance which is measured by ROE and Gross margin

Research Gap

Empirical studies indicated that there were several studies made on the impact of capital structure on profitability of firms. But the studies did not arrived on the same conclusion and the researcher intended to saw these controversies between the studies in his area (manufacturing firms in Asela Town). In addition to the above, as per the knowledge of the researcher and based on the literature review available, there was no in depth studies done on the topic, this initiate the researcher to focus on this issue.

CHAPTER-THREE

METHODOLOGY

This section presents the methodology part of the research. It includes the research design, data type, data source, sample design, data analysis technique, model specification, description and measurement of variables and conceptual model that were used by the researcher.

3.1 Research design

It is crucial that the data collected and the method used in research work affect its outcome. In order to achieve the objective of the research, the researcher was used explanatory type of research design. An explanatory type of research design is used for researches that study “a situation or a problem in order to explain the relationships between variables.” (Saunders, Lewis and Thornhill, 2007), since this study was to examine the impact of capital structure on financial performance of manufacturing firms in Asella town by evaluating the relationship among different variables by using company’s financial statements reported to Revenue and Custom Authority of Asela town and mainly focused on balance sheet and income statement for five years (2010 to 2014).

3.2 Data Type and Source

The data used for this study was quantative type. Since quantative types of data provides measurable and concrete evidence which is expressed in numbers comparing with that of qualitative type of data, thus the researcher was used quantative type of data from secondary sources. Therefore, financial statements like balance sheet and income statement submitted by manufacturing firms to Asela Revenue and Custom Authority was used as a source of secondary data.

3.3 Sample design and Sample size

According to the report from Investment Bureau of Asela town, there are 14 licensed and registered manufacturing firms in Asela town. Of which there was only one state owned firm. For the purpose of this study the researcher was used eight manufacturing firms which was seven private and one governmental manufacturing firm and employed purposive sampling techniques. This is because as per information gathered from the Arsi Zone Investment Bureau most manufacturing firms are established in recent years. Hence firms who are established in recent years and whose five years data were not available were excluded.

3.4 Data Analysis Techniques

The study was used descriptive statistics and regression analysis to analyze data. Descriptive analysis was used to describe relevant aspects of observable facts and provide information about variables. The researcher was used mean, median, standard deviation, minimum and maximum value to describe the relationship of the variables. Correlation analysis was used to examine the degree of linear association between variables. In addition, the researcher was used balanced fixed effect panel regression model for tests of CLRM (classical linear regression model) and used Eview6 software for analysis purpose.

3.5 Model Specification

The general forms of the model will be: $ROA_{it} = \beta_0 + \sum \beta_i X_{it} + \epsilon$ Where:

ROA_{it} : Return on Assets of firm i at time t ; $i = 1, 2, \dots, 8$ firms.

β_0 : The intercept of equation

β_i : Coefficients of X_{it} variables

X_{it} : The different independent variables for capital structure of firm i at time t

t : Time = 1, 2, ..., 5 years.

ϵ : The error term

When the above general least square model is converted in to specify variables, it is rewritten as

$$ROA_{it} = \beta_0 + \beta_1(TDR_{it}) + \beta_2(DER_{it}) + \beta_3(STDR_{it}) + \beta_4(LTDR_{it}) + \beta_5(FS_{it}) + \beta_6(FG_{it}) + \varepsilon$$

Where:

ROA - Return on Assets

TDR - Total Debt ratio

DER - Debt Equity ratio

STDR - Short-term debt ratio

LTDR -Long-term debt ratio

FS - Firms size

FG -Firms growth

ε - Error term

3.6 Description and Measurement of Variables

This study used profitability which is measured by Return On Assets as dependent variable, debt to equity ratio, short term debt ratio, long term debt ratio and total debt ratio as independent variables and also used firms size and firms growth as control variables. The description for each variable is explained below:

- *Return on Assets:* - which is a measure of Profitability of the firm is used as dependent variable in the study. It is obtained by dividing net profit after tax to total assets.
- *Total debt ratio:* - was used as proxy for financial leverage measurement and the total debt ratio takes into account all debts of all maturities to all creditors. It calculated the total assets minus total equity divided by to total assets, or by dividing the sum of short term liabilities and long term liabilities to total assets.
- *Debt equity ratio:* -was used as proxy for financial leverage measurement, and represents the ratio of debt to equity ratio. It is calculated by dividing total debt to total equity.
- *Long term Debt ratio:* -Long-term debt to total assets: Liabilities those are repaid by firms usually after five years. It is calculated by dividing long term liabilities to total assets.

- *Short-term debt ratio* (current liabilities) to total assets: The portion of debt that is payable within a short period of time, usually within one year.
- *Firms' size*: - which was used as control variable measured by natural logarithm of sales.
- *Firms' Growth*: - Growth of a firm is measured by the percentage change in total assets.

$$\text{Percentage Change in Total Assets} = \frac{\text{TotalAsset}_t - \text{TotalAsset}_{(t-1)}}{\text{TotalAsset}_{(t-1)}}$$

Table 3.1 Variables and its measurements

Variables	Measurements
Return on Assets (ROA)	Net Profit after tax/ Total Assets
Debt to Equity Ratio (DER)	Debt/Equity
Long Term Debt Ratio (LTDR)	Long Term Liabilities/Total Assets
Short Term Debt Ratio (STDR)	Total Current Liabilities/Total Assets
Total Debt Ratio (TDR)	Total debt/Total Assets
Firm Size (FS)	Natural logarithm of sales
Firm growth (FG)	Percentage change in total assets

CHAPTER-FOUR

RESULTS AND DISCUSSIONS

This part of the paper presents results and discussions. It structured as follows: First, analysis of the descriptive statistics of the variables. Second, the results of correlation analysis. Third, tests for the assumption of Classical Linear Regression Model assumptions. Fourth, selection of random or fixed effect models and at last the result of the regression analysis and tests of hypothesis was presented.

4.1 Analysis of Descriptive statistics summary

The descriptive statistics of dependent and independent variables for selected manufacturing firms in Asella Town for the years 2010-2014 was presented on the following table to measure mean, median, maximum values, minimum values and standard deviation of different variables used in the research paper.

Table 4.1 Descriptive Statistics of the Variables

	ROA	DER	TDR	LTDR	STDR	FS	FG
Mean	0.011585	0.028265	0.024590	0.007076	0.018015	0.331514	0.029396
Median	0.002958	0.024858	0.018469	0.000000	0.015058	0.000000	0.015481
Maximum	0.063928	0.074113	0.069696	0.059881	0.061806	3.999815	0.160869
Minimum	0.000290	0.000499	0.000150	0.000000	0.000150	0.000000	-0.096767
Std. Dev.	0.016569	0.018545	0.018811	0.017196	0.013806	1.031751	0.042351
Observations	40	40	40	40	40	40	40

Source: Outputs of Eviews 6

The mean value of return on assets is 1.1585 percent. This indicates that the average value that the selected manufacturing firms earn on average with regards to its assets and the standard deviation is 1.6569 percent, it shows how much it deviates from the mean to both sides. The maximum value for the return on assets is 6.3928 percent and the minimum value for return on assets is 0.0290 percent. It indicates that the maximum and minimum returns that the selected firms earn.

Firms total debt ratio shows a mean of 2.459 percent. this indicate that the average total debt ratio of the selected manufacturing firms during the period and the standard deviation is 1.88 percent, it shows how much it is deviated from the mean to both side. The minimum and maximum the creditor's money being used by firms is 0.0150 percent and 6.9696 percent respectively.

Firm's debt to equity ratio shows a mean of 2.8265percent total debt against to owner's equity. It shows the average debt to equity ratio of the selected manufacturing firms during the period and the standard deviation of 1.8545 percent, it shows how much it is deviated from the mean to both side. The minimum debt to equity ratio of firms is 0.0499 percent and maximum debt to owner's equity is 7.4113percent.

The mean value of short term debt to total assets is 1.8015 percent. This indicate that the average short term debt to total assets of selected manufacturing firms during the period and a standard deviation is 1.3806 percent. It shows how much it is deviated from the mean to both side. The minimum and maximum of the short term debt is 0.015 percent and 6.1806 percent respectively.

The mean value of long term debt to total assets is 0.7076 percent. This indicates that the average long term debt to total assets of selected manufacturing firms during the period and a standard deviation of 1.7196 percent. It shows how much it is deviated from the mean to both sides. The minimum and maximum of the long term debt is 0.0 percent and 5.9881 percent respectively.

In addition, to check the firms' growth and its impact on financial performance of firms, Firms growth and Firm size is used as another independent variable and the results of descriptive statistics show that the average firm growth for the selected manufacturing firms in Asella Town is 2.9396 percent with a standard deviation of 4.2351 percent. It shows how much it is deviated from the mean to both sides. The maximum and minimum value for firms' growth indicates 16.0869 and -9.6767 respectively.

The mean value of firm size is 33.1514 percent, it shows that the average long term liabilities that the selected manufacturing firms were taken, with a standard deviation of 103.1751 percent.it shows how much it is deviated from the mean both side.

4.2. Correlation Analysis

According to (Brooks, 2008), the degree of linear association between variables is correlation. Values of the correlation coefficient are always ranged between positive one (+1) and negative one (-1). A correlation coefficient of +1 indicates that the existence of a perfect association between the two variables; while a correlation coefficient of -1 indicates perfect negative association. A correlation coefficient of zero, on the other hand, indicates that there is no relationship or association between two variables.

Table 4.2. Correlation matrix between explanatory Variables

Correlation	ROA	TDR	DER	LTDR	STDR	FS	FG
ROA	1.000000						
TDR	0.325752	1.000000					
DER	0.167144	0.923925	1.000000				
LTDR	0.457295	0.681001	0.654001	1.000000			
STDR	-0.050716	0.554178	0.488864	-0.205873	1.000000		
FS	-0.159075	0.367278	0.486523	0.457213	-0.077329	1.000000	
FG	0.028982	-0.080512	-0.118770	0.029857	-0.113129	-0.172734	1.000000

Source: Outputs of Eviews 6

Correlation between Dependent Variable and independent variables

As it can be seen from the result of the correlation matrix in Table 4.2, Return on assets was negatively correlated with short-term debt and firm's size. The result of correlation analysis showed a negative coefficient of 0.050716 and 0.159075. It indicates that as the short-term debt and size of the firm increases, the profitability of the firm would be decreases.

On the other hand, the correlation matrix also showed that profitability (ROA) is positively correlated with the other independent variables total debt ratio (TDR) shows positive 0.325752, Debt equity ratio (DER) shows positive 0.167144 and long term debt (LTDR) shows positive 0.457295. This indicates that as the above mentioned variables increases, the profitability of firms also increases and vice versa.

Correlation between independent variables

As it can be seen from the result of the correlation matrix in Table 4.2, total debt ratio is negatively correlated with firm growth (-0.080512) and positively correlated with other independent variables, debt to equity ratio is negatively correlated with firm growth and positively correlated with the other independent variables, long term debt ratio is negatively correlated with short term debt (-0.205873) and positively correlated with others independent variables, short term debt is negatively correlated with firm size (-0.077329) and firm growth (-0.113129) and positively correlated with other independent variables and firm size is negatively correlated with firm growth (-0.172734).

4.3 Testing of Assumptions of CLRM

To check the correct estimation using regression model, analysis of data requires certain assumptions to be fulfilled. Under this subsection, the study presented five different results for the tests of CLRM (Classical Linear Regression Model) such as tests for the assumption that errors have zero mean, tests for homoscedasticity, tests for multicollinearity, tests for the absence of autocorrelation and tests of normality assumption.

4.3.1 Test for the assumption “Errors have zero mean ($E(u_t) = 0$)”

If a constant term is included in the regression equation, this assumption will never be violated (Brooks, 2008). Accordingly, a constant term is included in the regression result of study and this shows that the assumption is not violated.

4.3.2 Test for homoscedasticity (Constant variance of errors) ($\text{Var}(u_t) = \sigma^2$)

The assumption of the CLRM (Classical Linear Regression Model) states that the variance of the errors is constant or equal is known as homoscedasticity (i.e. it is assumed that $\text{var}(u_i) = \sigma^2$). If the variance of the errors is not constant, this would be known as heteroscedasticity (Gujarati, 2004). This study used white test to identify heteroscedasticity across the range of explanatory variables if any.

The result in table 4.3 shows, the F-, χ^2 , and scaled explained SS versions of the test statistic give the same conclusion that reveals the absence of heteroscedasticity as the p-values in all of the cases were above 0.05. This is a clear indicator that there is no evidence for the presence of heteroscedasticity. Hence, the model passes to the other tests.

Table 4.3 Heteroscedasticity test: White Test**Heteroskedasticity Test: White Test**

F-statistic	0.801319	Prob. F(22,17)	0.6915
Obs*R-squared	20.36329	Prob. Chi-Square(22)	0.5603
Scaled explained SS	27.92338	Prob. Chi-Square(22)	0.1782

Source: Outputs of Eviews 6

4.3.3 Multicollinearity test

Multicollinearity shows the existence of a perfect, or exact, linear relationship among some or all explanatory variables of a regression model. If the explanatory variables were correlated to one another, adding or removing a variable from a regression equation would cause the values of the coefficients on the other variables to change. If an independent variable is an exact linear combination of the other independent variables, then it says the model suffers from perfect collinearity, and it cannot be estimated by OLS (Brooks, 2008). When there is multicollinearity, the amount of information about the effect of explanatory variables on dependent variables decreases. (Kamfeso, 2013), However, there is no clear and single convention about how much correlation causes multicollinearity (Iacobucci, 2005). For example, (Hair, 2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem.

In order to verify whether there is multicollinearity problem among the independent variables, Pearson correlation for the variables was calculated as shown on the table 4.4 below. The results in the correlation matrix show that the highest correlation of 0.903925 which is between total debt to equity ratio and total debt ratio. For the purpose of this study, there is no correlation above the aforementioned levels. Hence, it is possible to conclude that there is no multicollinearity problem among the independent variables so that the results can be successfully estimated.

Table 4.4 Multicollinearity Test

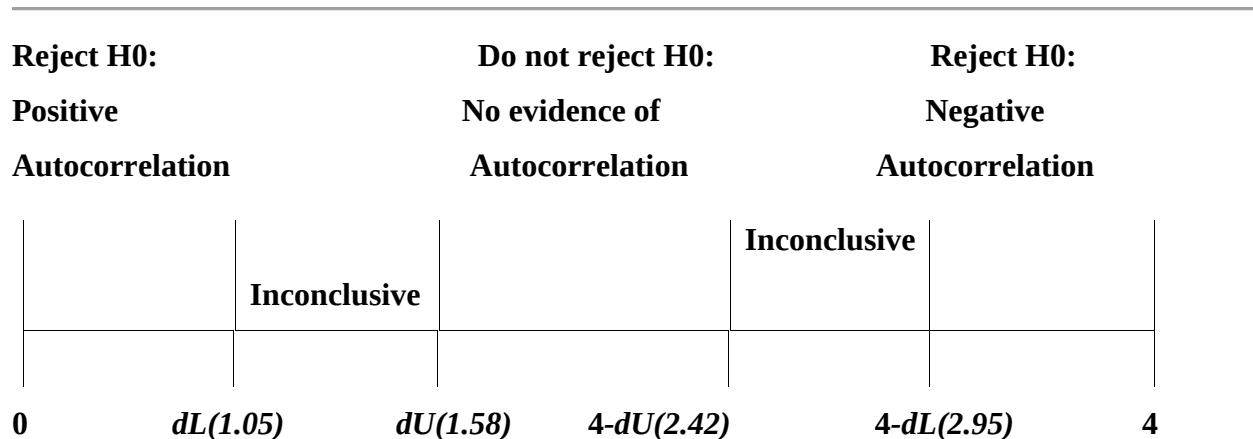
Correlation	DER	TDR	LTDR	STDR	FS	FG
DER	1.000000					
TDR	0.903925	1.000000				
LTDR	0.654001	0.681001	1.000000			
STDR	0.488864	0.554178	-0.205873	1.000000		
FS	0.486523	0.367278	0.457213	-0.077329	1.000000	
FG	-0.118770	-0.080512	0.029857	-0.113129	-0.172734	1.000000

Source: Outputs of Eviews 6

4.3.4 Test for absence of autocorrelation assumption

Durbin –Watson test is used to prove the absence of autocorrelation. According to (Brooks, 2008), DW has 2 critical values: an upper critical value and a lower critical value, and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. In this test, the null hypothesis is rejected and the existence of positive autocorrelation presumed if DW is less than the lower critical value; the null hypothesis is rejected and an existence of negative autocorrelation is presumed , if DW is greater than 4 minus the lower critical value; the null hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper critical value and 4 minus the upper limits; the null hypothesis is neither rejected nor not rejected if DW is between the lower and upper limits, and between 4 minus the upper and 4 minus the lower limit.

Figure 4.1 Rejection and Non-Rejection Regions for DW Test



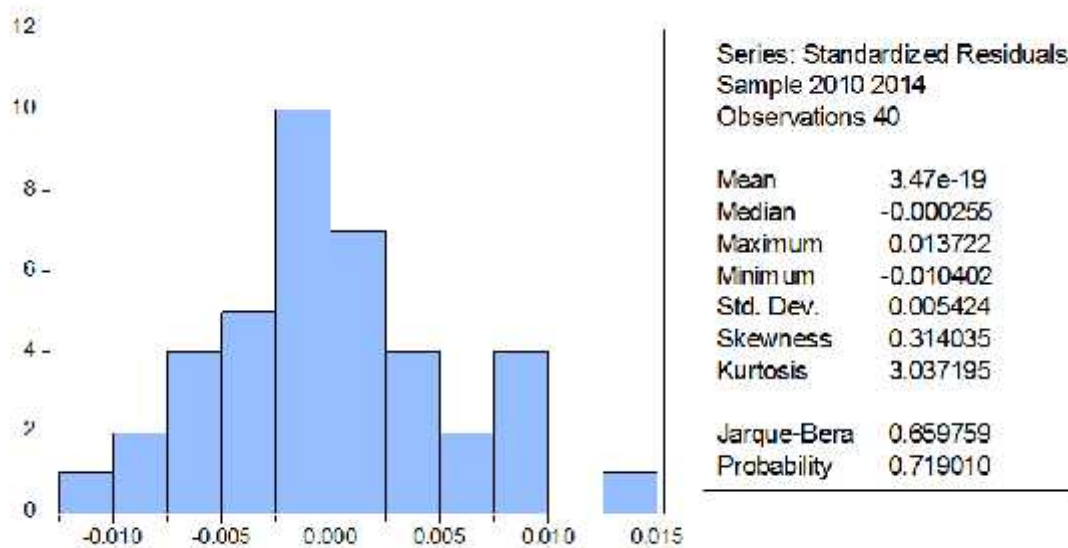
The DW test statistic value in the regression result was 2.357093 which is closer to 2. There are a total of 40 observations and 6 repressors (excluding the intercept) in the regression.

According to DW stat table, the relevant critical values for the test were $dL = 1.05$, $dU = 1.58$, so $4 - dU = 2.42$ and $4 - dL = 2.95$. This indicates that test statistic is between the upper critical value and 4 minus the upper limits implying that the null hypothesis should not be rejected and no significant residual autocorrelation is presumed.

4.3.1 Normality test

Before using OLS (Ordinary Least Square) regression analysis, normality test was carried out for all independent variables. Normality assumption of the regression model was tested with the Jarque- Bera measure. As the result depicted on figure 4.2 shows, histogram is bell shaped implying that the distribution is normal. The Jarque-Bera statistic is 0.659759 with a p-value of 0.719010. Since the p-value is greater than 0.05, shows the presence of normal distribution. In addition, the histogram also signifies that skewness is nearer to zero (0.314035) and kurtosis is closer to 3 (3.037195) implying that the data fulfills normality assumption.

Figure 4.2 Histogram of normality test



4.4 Selection of Random effect (RE) versus Fixed effect (FE) Models

The main objective of this section was to select the best model for the study based on the results obtained from hausman test. There are different ways of selecting the best model. According to (Gujarati, 2003), if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model/FEM and random effect model/REM. On the other hand, (Brooks, 2008) argued that REM is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a FEM is more plausible when the entities in the sample effectively constitute the entire population/sample frame. Since the sample for this study was not selected randomly, Hausman test was employed to check preferable model and the result is presented as follows.

Table 4.5 Correlated Random Effects - Hausman Test

Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	20.941375	6	0.0019

Source: Outputs of Eviews 6

As it is shown on the table 4.5, the p-value for the test is 0.0019 (which is less than 0.05). Therefore, since the p-value of the test is less than 0.05, the null hypothesis of the Hausman test that the random effect method is the preferred regression method was rejected. By having this evidence, the researcher preferred the fixed effect model to examine the relationship between return on assets and selected explanatory variables.

4.5 Results of the regression analysis

The main objective of this section was to examine the association between the dependent variable and explanatory variables. Accordingly, the result obtained by the fixed effect model that explains regression results between the dependent variable (return on assets) and explanatory variables is analyzed. The regression result on table 4.6 shows that dependent variable (return on assets) is 89.2834 percent explained by its independent variables (i.e. $R^2=0.892834$), which is very large. From this result, it can be concluded that the regression

model used for the study has highly explained the overall model signifying the study was not lost very important variables that affect the study's output.

The regression F-statistic (16.66260) and the p-value of zero attached to the test statistic reveal that the null hypothesis that all of the coefficients are jointly zero should be rejected.

Model:-

$$ROA_{it} = \beta_0 + \beta_1 (DER) + \beta_2 (TDR) + \beta_3 (LTDR) + \beta_4 (STDR) + \beta_5 (FS) + \beta_6 (FG) + \varepsilon$$

$$ROA = 0.016145 - 1.6409461918DER + 1.16299521004TDR + 0.505647594291LTDR + 0.591059696865STDR - 0.000286105742131FS - 0.0308785839522FG + \varepsilon$$

TABLE 4.6: Regression result- Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.016145	0.002896	5.575053	0.0000
DER	-1.640946	0.254589	-6.445464	0.0000*
TDR	1.162995	0.364433	3.191246	0.0037*
LTDR	0.505648	0.315545	1.602456	0.1211
STDR	0.591060	0.351853	1.679851	0.1005**
FS	-0.000286	0.001613	-0.177369	0.8606
FG	-0.030879	0.028446	-1.085505	0.2877
R-squared	0.892834	Mean dependent var		0.011585
Adjusted R-squared	0.839251	S.D. dependent var		0.016569
S.E. of regression	0.006643	Durbin-Watson stat		2.357093
Sum squared resid	0.001147			
F-statistic	16.66260			
Prob(F-statistic)	0.000000			

*, ** indicates significance at 1% and 10% level respectively.

Source: Outputs of Eviews 6

The regression result shows that there is positive relationship between total debt ratio and profitability. The impact is significant at 1%, and implies that the increase or decrease in the total debt ratio significantly affects profitability of the firm in the same direction. The finding is consistent with previous researcher who found positive relationship between total debt ratio and

profitability (Arabahmadi, 2013, Gill, 2011, Arbabiyan, 2009, Nour, 2012,). However, the study's finding is inconsistency with the findings of (Addae, 2013, Ferati, 2012, and Ebaid, 2009Abor, 2005) who found negative relationship between total debt and profitability.

The coefficient of debt to equity ratio in the regression result shows negative. This indicates negative relationship between debt to equity ratio and profitability, and the impact is significant at 1%, it implies that the increase or decrease in the debt to equity ratio will affect profitability of the firm in opposite direction. This means as the increasing of debt to equity ratio, it will reduce profitability of the firms and vice versa. The finding is consistent with previous researcher (Amara and Aziz, 2014) However, the study's finding is inconsistency with the finding of (Valeriu and Nimalathasan, 2010,) who found negative relationship between debt to equity ratio and profitability.

The regression result also shows that there is positive relationship between short term debt ratio and profitability. The relationship is significant at 10%, and implies that the increase or decrease in the short term debt significantly affects profitability of the firm in the same direction. The positive relationship between the short term debt and profitability indicates that the more profitable firms hold more short term debts. Similarly, the finding is consistent with previous researcher who found positive relationship between short-term debt and profitability. (Rehman, 2012, Addae, 2013, Gill, 2011, Arbabiyan, 2009, and Nima, 2012, Abor, 2005, Holmes, 2003). However, the study's finding is inconsistency with the finding of (Nicholas Apergis and John Sorros, 201, Ebiad, 2009) who found negative relationship between short term debt and profitability.

The regression result also shows that there is positive relationship between long term debt ratio and profitability. It indicates aslong term debt ratio increases profitability also increases and vice versa. But the relationship is insignificant. Similarly, the finding is consistent with previous researcher who found positive relationship between long-term debt ratio and profitability. (Gill, 2011, Ebiad, 2009,) However, the study's finding is inconsistency with the finding of (Abor, 2005) who found negative significance impact between long term debt and profitability.

The regression result also shows that there is a negative relationship between firm's size and profitability, and the relationship is insignificant. Similarly, the finding is consistent with

previous researcher who found negative insignificant impact between firm's size and profitability. However, the study's finding is inconsistency with the finding of (Nicholas Apergis and John Sorros, 2010) who found negative significance impact between firm's size and profitability.

The regression result also shows that there is a negative relationship between firm growth and profitability, and the relationship is insignificant. Similarly, the finding is consistent with previous researcher who found negative insignificant impact between firm's growth and profitability. (Gill, 2011, Ebiad, 2009,) However, the study's finding is inconsistency with the findings of (Rehman, Fatima and Ahmed, 2012) who found negative significance impact between firm growth and profitability.

4.6 Hypotheses testing

This section provides analysis for the results obtained from the regression result and compares it with the stated hypotheses. Based on the above regression result the researcher tested the hypotheses as follows.

Hypothesis 1:

Ho: There is no significant relationship between debt to equity ratio and profitability of firms.

H1: There is significant relationship between debt to equity ratio and profitability of firms

The coefficient of debt to equity ratio is -1.640946 at p-value of 0 it indicates that there is negative relationship between debt equity ratio and profitability at 1% significant level. Therefore, the null hypothesis is rejected. This indicates that when debt to equity ratio increases profitability will decreases.

Hypothesis 2:

Ho: There is no significant relationship between long term debt ratio and profitability of firms.

H1: There is significant relationship between long term debt ratio and profitability of firms.

The coefficient of long term debt is 0.505648 at p-value of 0.1211 it indicates that there is insignificant positive relationship between total debt ratio and profitability at all level. Therefore, the null hypothesis cannot be rejected. This indicates that when the long term debt increases or decreases profitability will increases or decreases. However, the long term debt ratio was week and insignificant at all levels. Since the p-value is 12.11 percent

Hypothesis 3:

Ho: There is no significant relationship between short term debt ratio and profitability of firms.

H1: There is significant relationship between short term debt ratio and profitability of firms.

The coefficient of short term debt ratio is 0.591060 at p-value of 0.1005. It indicates that there is significant positive relationship between short term debt ratio and profitability at 10 % significant level. Therefore, the null hypothesis is rejected. This indicates that as the ratio of short term debt increases the profitability of the firms also increases and vice versa. This also shows that as there is a relationship between short term debt ratio and profitability of firms.

Hypothesis 4:

Ho: There is no significant relationship between total debt ratio and profitability of firms.

H1: There is significant relationship between total debt ratio and profitability of firms.

The coefficient of total debt is 1.162995 at p-value of 0.0037 it indicates that there is positive relationship between total debt and profitability at 1 % significant level. This indicates that when total debt increases or decreases profitability will increase or decrease. Therefore, the null hypothesis is rejected. This also shows that as there is significant relationship between total debt ratio and profitability of firms.

Hypothesis 5:

Ho: There is no significant relationship between firm's size and profitability.

H1: There is significant relationship between firm's size and profitability.

The coefficient of firm size is -0.000286 at p-value of 0.8606 it indicates that there is a negative relationship between firm size and profitability. This indicates that the null hypothesis cannot be rejected. However, firm size was weak and insignificant at all levels. Since the p-value is 86.06 percent.

Hypothesis 6:

Ho: There is no significant relationship between firm's growth and profitability.

H1: There is significant relationship between firm's growth and profitability.

The coefficient of firm growth is -0.030879 at p-value of 0.2877 it indicates that there is negative relationship between firm growth and profitability. This indicates the null hypothesis cannot be rejected. However, firm growth was weak and insignificant at all levels. Since the p-value is 27.77 percent.

CHAPTER- FIVE

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this chapter is to present the summary of conclusions and recommendations in relation to impact of capital structure on financial performance of selected manufacturing firms in Asela town. The chapter is divided in to two sub sections: section 5.1 presents conclusions and section 5.2 provides recommendations based on the results of the study.

5.1 Conclusions

This study was conducted on eight selected manufacturing firms in Asela town aimed to assess the impact of capital structure on financial performance of manufacturing firms. The data used in the study was obtained from financial statements of selected manufacturing firms for the period 2010-2014. The researcher was used Return on Assets as dependent variables, debt to equity ratio, total debt ratio, long term debt ratio, short term debt ratio, firms size and firms growth as independent variables. The data type and source used for this study was quantative type and secondary sources respectively.

Data was analyzed by descriptive statistics and balanced fixed effect panel regression model. First, descriptive statistics was used, the values for average, maximum, minimum, median and standard deviation was calculated by using EvIEWS 6 software program to evaluate how much the values of variables fluctuate with its maximum and minimum, how the variables are likely to deviate from the average. The results of descriptive statistics indicated that maximum percentages of total debt used in attempt to generate profit showed 6.9696 while the minimum 0.15 percent. However, the average showed 2.459 with a standard deviation 1.88 percent. The maximum and minimum debt to equity showed 7.4113 and 0.0499 percent respectively. However, the average debt to equity proportion is showed 2.8265 percent with a standard deviation of 1.8545 in both sides. The maximum and minimum value of the firm size showed 3.999 and 0 respectively. However, the average of the firm's size showed 0.331514 with a standard deviation 1.0317 in both sides. The average of short term debt showed 1.8015 with a standard deviation 1.3806. The maximum and minimum long term obligation showed 5.9881 and 0 ratios respectively. However, the average long term debt showed 0.7076 percent with a standard deviation 1.7196. The maximum percentages of firm's growth showed 16.0869 percent while the minimum -9.6767 percent. However, the average firm's growth showed 2.9396 with a standard deviation 4.235 percent. Second, correlation analysis was made, according to (Brooks,

2008) the values of correlation coefficient are always ranged between positive one and negative one. The results of the study showed that return on assets negatively correlated with short-term debt ratio (-0.050716) and firms size (-0.159075) these indicate that as the short-term debt increases the return on assets will be decrease and as the size of the firm increases the profitability of the firm will decline. On the other hand the other independent variables, total debt ratio, debt to equity ratio, long term ratio and firm's growth were correlated positively. Third, fixed effect regression model was used to examine the relationship between dependent variable and independent variables. Before running regression, CLRM (Classical Linear Regression Model) assumptions such as test for assumption errors have zero mean, test for homoscedasticity, test for multicollinearity, test for absence of autocorrelation assumption and normality test were tested and all the tests fulfilled the assumption. Fourthly, In order to choose best regression model, hausman test was applied and accordingly fixed effect regression model was selected and finally regression was made and the hypothesis were tested.

Results of regression analysis revealed that total debt ratio showed a coefficient of 1.1629951, debt to equity ratio showed a coefficient of -1.640946, short-term debt showed a coefficient of 0.591060, and have either positive or negative significant impact on profitability of firms. In this regard, total debt and short-term debt of the firm have positive and significant impact whereas debt to equity was negatively and significantly related with profitability. The level of significance for the variables of total debt ratio and debt to equity ratio was at 1% whereas short-term debt was significant at 10%. The negative relationship between debt to equity ratio and profitability indicated that less profitable firms a higher level of debt can burden the income statement with excessive interest. On the other hand, firm's size showed a coefficient of -0.000286 and firm's growth showed a coefficient of -0.030879 and have negative and insignificant relationship while long-term debt ratio showed a coefficient of 0.505648 have positive insignificant relationship with profitability, and also hypothesis were tested on the bases of the result.

In general the overall result showed that the capital structured measured by financial leverages plays a great role in value creation and significantly affects profitability of manufacturing firms in Asela town. Hence proper care and attention need to be given while making the capital structure decision to arrive on appropriate mix of capital structure since it has an impact on financial performance of firms.

5.2 Recommendations

Based on the results of the conclusion, the researcher provided the following possible recommendations:

The result of the analysis shows that both total debt ratio and short term ratio have positive and significant relationship with profitability. This indicates that as the total debt and short term debt increases, the profitability will also increases. Thus, it is better for the firms to increase short term debt than long term debt since long term debt is relatively insignificant compared with short term loan. In addition, in short term borrowing, the cost of debt is low, accessibility of earning for debt is high and it is also simple for management to adjust short term borrowings than that of long term borrowings.

As it can be clearly seen from the analysis, firms' growth in relation to firms' asset shows negative relationship with profitability. This indicates that as a firm's asset increases, the profitability of firm's decreases. Thus from this, the researcher recommended that firms are expected to effectively utilize their assets rather than providing an attention only on increasing the value of their assets. Hence most manufacturing firms' thinks that as the value of assets increases, the profit of the firm also increases but this may not be always true.

The study also showed that, firms' size have a negative relationship with profitability. It means that as a firm's size increases, the profitability of firm's decreases, from this it is possible to understand that increment of the size or sales is not a guarantee for increment of profit. Therefore the management of the firms should focus not only on increasing the firm size but also they have to look for other options that maximize their profit.

References

- Addae, B. a. (2013). The Effects of Capital Structure on Profitability of listed Firms in Ghana. *European Journal of Business and Management* , 2222-2839.
- Afrasiabishani J., A. H. (2012). A Comprehensive Review on Capital Structure Theories . *School of Doctoral Studies(European Union) Journal*.
- Arabahmadi, A. a. (2013). The relationship between capital structure and profitability : case study in Tehran stock exchange. *Technical Journal of Engineering and Applied Sciences*, 1787-1789.
- Arbabian, A.-A. a. (2009). The effects of capital structure and profitability in the listed firms in Tehran stock exchange . *journals of management Perspective* , 159-175.
- Azhagaiah, R. a. (2011). The Impact of capital Structure on profitability with Special Reference to IT Indstry in India. *Managing global transitions*, 371-392.
- Aziz, A. a. (2014). Impact of capital structure on firm performance: Analysis of Food Sector Listed on Karachi stock Exchange. *International Journal of Multidiciplinary consortium*, Vol 1.
- Brooks. (2008). *Introductory Econometrics for Finance second ed*. Cambridge University Press.
- Chisti, A. a. (2013). Impacts of Capital Structure on Profitability of Listed companies: Evidence from India. *the UVS Annals of Economics and Public Administration*, Vol 13.
- Chole, E. (1985). Constraints to Industrial Development in Ethiopia. *Mimeo Addis Abeba*.
- D.Andrew, T. J. (2003). *Financial Management Principles and Practice, third ed*. Prentice Hall.
- Ebaid, E. (2009). The Impact of capital Structure Choice on firm Performance: Emprical Evidence from Egypt. *The Journal of Risk Finance*, 447-487.
- Eichholtz, B. a. (2001). capital structure theory: Evidence from European Property companies capital offerings. *Journal of Real Estate Economics*, 4-21.

- Ejupi, F. a. (2012). Capital Structure and Profitability: The Macedonian case . *European Scientific Journal*, Vol 8.
- Ephrame, W. (2011). Impact of working capital management on profitability of small and medium enterprises in Addis Abeba: The case of Nifas-silk and Kirkos sub-cities.
- Gill, A. N. (2011). The effects of Capital Structure on Profitability: Evidence from the United States. *International Journal of Management*, 3-15.
- Gitman, L. J. (2000). *Principles of Managerial Finance, ninth ed.* Addison-Wesley Longman, Inc.
- Gujarat, W. (2004). *Basic Econometrics, fourth ed .* McGraw-Hill USA.
- Gujarati, D. (2003). *Basic Econometrics, fourth ed.* New York: McGraw Hill.
- H., M. M. (1977). Debt and taxes. *Journal of Finance*, 261-275.
- Kamfeso, A. (2013). The Impact of Working Capital Management on Firms' Profitability- Case of Selected Sole Proprietorship Manufacturing Firms in Adama City. 23-53.
- Iacobucci, C. a. (2005). *Marketing Research: Methodological Foundations, 9th ed.* Thomson South-western.
- Lasher, W. R. (2008). *Practical Financial Management, fifth ed.*
- Leon, J. (2013). The Impact of capital structure on Financial Performance of the Listed Manufacturing firms in Sri Lanka. *Global Journal of Commerce and management Perspective*, 56-62.
- Loop, T. v. (2003). clothing and footwear in Africa Industrialization: The case of Ethiopia, clothing and footwear Network in Africa Project. *Institute of Social studies (ISS), the Netherlands*.
- Manufacturing Detailed Structure and Explanatory Notes' accessed (ISIC). (2011, April 26). .pdf. Retrieved from [http:// unstat02/un.org/ustd/statcom/doc02/isic.pdf](http://unstat02/un.org/ustd/statcom/doc02/isic.pdf)

- Miller. (1977). Corporate Income taxes and cost of capital: A correction. *American Economic Review*, 433-443.
- Modigliani F., a. M. (1963). Corporate Income taxes and cost of capital: correction. *American Economic Review*, 433-443.
- Modigliani, M. &. (1958). The cost of capital, corporation finance and the theory of investment. *American economic Review*, 261-297.
- Morri, G. a. (2009). *What determines the capital structure of real estate companies?* Retrieved from www.emeraldinsight.com/journals.htm?articleid:
<http://www.emeraldinsight.com/journals.htm?articleid>
- Mwangi, M. a. (2014). Relationship between capital structure and Performance of Non-financial companies listed in the Nairobi Securities Exchange Kenya. *Global Journal of contemporary Research inAccounting, Auditing and Business Ethics*, vol 1.
- Myers S. C, a. M. (1984). Corporate financeing and Investment decisions when firms have information that investors do not have . *journal of Financial Economics*, 87-221.
- National Bank of Ethiopia. (2010/11). *Annual Report*. Addis Abeba: NBE.
- Niresh. (2012). Capital Structure and Profitability in Srilanka Banks.
- Opoku, A. a. (2013). The Impact of Capital Structure and Profitability of listed Banks on the Ghana Stock Exchange. *Social and Basic Sciences Research Review*, 74-91.
- Pandey, I. M. (1999). *Financial Management eight ed*. Vikas Publishing House Pvt Ltd.
- Patrick, O. a. (2013). *The Impact of Capital structre on Firms' Performance in Nigeria*. Retrieved from [www./mpira.ub.uni-muenchen.de/46173/](http://www.mpra.ub.uni-muenchen.de/46173/): <http://mpira.ub.uni-muenchen.de/46173/>
- Pratheepkanth, P. (2011). Caapital Structure and Financial Performance: evidence from selected business companies in colombo stock exchange Srilanka. *International Refereed Research Journal*, 171-183.

- Rehman, F. a. (2012). Impact of Debt structure on profitability in Textil Industry of Pakistan. *International Journal of Economics*, 61-70.
- Ross, S. (1977). The Determination of financial Structure: the incentive signalling approach. *Bell Journal of Economocs*, 23-40.
- Ross, W. T. (2001). *Corporate Finance core principles and Applicatios second ed.* McGraw-Hill.
- Shas, P. (2009). *Financial Management second ed.* Delhi: Printman(India).
- Tian, Z. a. (2007). Capital Structure and Coprorate Performanc: evidence from Jordan. *Australasian Accounting Business and Finance Journal*, 40-53.
- Titman, S. a. (1988). The Determinants of Capital Structure Choice. *Journal of Finance*, 1-19.
- W., J. M. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *journal of financial Economics*, 305-306.
- Yegon, C. S. (2014). The effects of Capital Structure on Firm's Profitability: Evidence from Kenya's Banking Sector. *Research Journal of Finance and Accounting* , 222-2847.

Appendixes

Raw Data

obs	ROA	DER	TDR	LTDR	STDR	FS	FG
1 - 10	0.032012	0.018770	0.018424	0.000000	0.026889	0.000000	0.052614
1 - 11	0.010219	0.031378	0.030423	0.000000	0.022043	0.000000	0.004564
1 - 12	0.020337	0.035293	0.034090	0.000000	0.034090	0.000000	0.005595
1 - 13	0.013040	0.022540	0.022043	0.000000	0.030423	0.000000	0.064222
1 - 14	0.014626	0.027632	0.026889	0.000000	0.018424	0.000000	0.062297
2 - 10	0.036143	0.009995	0.009896	0.000000	0.009896	0.000000	0.069137
2 - 11	0.049503	0.016952	0.016669	0.000000	0.016669	0.000000	0.001634
2 - 12	0.063928	0.057817	0.069696	0.054066	0.015629	0.478097	0.010926
2 - 13	0.033157	0.056696	0.053654	0.059881	0.003773	0.056536	0.083905
2 - 14	0.040362	0.056769	0.053719	0.057819	0.005900	0.148123	0.043118
3 - 10	0.008170	0.031349	0.030396	0.000000	0.030396	0.000000	0.041493
3 - 11	0.006832	0.027710	0.026963	0.000000	0.026963	0.000000	0.059403
3 - 12	0.008590	0.035951	0.034703	0.000000	0.034703	0.000000	-0.011753
3 - 13	0.007402	0.028971	0.028156	0.000000	0.028156	0.000000	0.117560
3 - 14	0.012437	0.031015	0.030082	0.000000	0.030082	0.000000	0.010081
4 - 10	0.005815	0.022428	0.021936	0.000000	0.021936	0.000000	0.160869
4 - 11	0.010319	0.018862	0.018513	0.000000	0.018513	0.000000	0.050689
4 - 12	0.003476	0.002628	0.002621	0.000000	0.002621	0.000000	0.009392
4 - 13	0.002439	0.065877	0.061806	0.000000	0.061806	0.000000	0.053080
4 - 14	0.008497	0.065487	0.061462	0.000000	0.061462	0.000000	-0.096767
5 - 10	0.000512	0.002150	0.000150	0.000000	0.000150	0.000000	0.000181
5 - 11	0.001433	0.000499	0.000498	0.000000	0.000498	0.000000	0.035593
5 - 12	0.000548	0.012417	0.012264	0.000000	0.012264	0.000000	0.002457
5 - 13	0.001057	0.074113	0.065520	0.042174	0.023345	3.999815	0.000690
5 - 14	0.000481	0.058902	0.055626	0.040372	0.015254	3.940147	0.024640
6 - 10	0.000411	0.027969	0.007906	0.000000	0.007906	0.000000	0.000140
6 - 11	0.000420	0.034009	0.004984	0.000000	0.004984	0.000000	0.070726
6 - 12	0.000290	0.037890	0.017575	0.009649	0.007926	3.630223	-0.008979
6 - 13	0.000353	0.032803	0.014587	0.009534	0.005053	0.977542	0.012087
6 - 14	0.054000	0.015565	0.015327	0.009527	0.005800	0.030090	0.000741
7 - 10	0.001452	0.011078	0.010957	0.000000	0.010957	0.000000	0.004369
7 - 11	0.001474	0.012972	0.012806	0.000000	0.012806	0.000000	0.035162
7 - 12	0.001633	0.010370	0.010263	0.000000	0.010263	0.000000	0.006484
7 - 13	0.001637	0.011331	0.011204	0.000000	0.011204	0.000000	0.017015
7 - 14	0.001606	0.013443	0.013265	0.000000	0.013265	0.000000	0.013947
8 - 10	0.001882	0.020336	0.019930	0.000000	0.019930	0.000000	0.031299
8 - 11	0.002203	0.020023	0.019630	0.000000	0.013630	0.000000	0.092496
8 - 12	0.001393	0.024220	0.013647	0.000000	0.019647	0.000000	0.037406
8 - 13	0.001795	0.025495	0.014862	0.000000	0.014862	0.000000	0.005494
8 - 14	0.001499	0.020891	0.010463	0.000000	0.010463	0.000000	0.001816

Source – Eview6 out put

Descriptive statistics of the variables

Date: 05/18/05

Time: 06:24
Sample: 2010 2014

	ROA	DER	TDR	LTDR	STDR	FS	FG
Mean	0.011585	0.028265	0.024590	0.007076	0.018015	0.331514	0.029396
Median	0.002958	0.024858	0.018469	0.000000	0.015058	0.000000	0.015481
Maximum	0.063928	0.074113	0.069696	0.059881	0.061806	3.999815	0.160869
Minimum	0.000290	0.000499	0.000150	0.000000	0.000150	0.000000	-0.096767
Std. Dev.	0.016569	0.018545	0.018811	0.017196	0.013806	1.031751	0.042351
Skewness	1.762073	0.847525	1.045234	2.300672	1.507481	3.104411	0.428734
Kurtosis	5.059463	2.985287	3.056712	6.648919	5.727523	10.89915	5.385593
Jarque-Bera	27.76831	4.789022	7.288786	57.47828	27.54896	168.2433	10.71051
Probability	0.000001	0.091217	0.026137	0.000000	0.000001	0.000000	0.004723
Sum	0.463383	1.130596	0.983605	0.283022	0.720581	13.26057	1.175823
Sum Sq. Dev.	0.010707	0.013413	0.013800	0.011533	0.007433	41.51593	0.069951
Observations	40	40	40	40	40	40	40
Source – Eview6 out put							

Correlation matrix between explanatory variables

	ROA	TDR	DER	LTDR	STDR	FS	FG
ROA	1.000000	0.325752	0.167144	0.457295	-0.050716	-0.159075	0.028982
TDR	0.325752	1.000000	0.923925	0.681001	0.554178	0.367278	-0.080512
DER	0.167144	0.923925	1.000000	0.654001	0.488864	0.486523	-0.118770
LTDR	0.457295	0.681001	0.654001	1.000000	-0.205873	0.457213	0.029857
STDR	-0.050716	0.554178	0.488864	-0.205873	1.000000	-0.077329	-0.113129
FS	-0.159075	0.367278	0.486523	0.457213	-0.077329	1.000000	-0.172734
FG	0.028982	-0.080512	-0.118770	0.029857	-0.113129	-0.172734	1.000000

Source – Eview6 out put

Heteroskedasticity Test: White

F-statistic	0.801319	Prob. F(22,17)	0.6915
Obs*R-squared	20.36329	Prob. Chi-Square(22)	0.5603
Scaled explained SS	27.92338	Prob. Chi-Square(22)	0.1782

Test Equation:
 Dependent Variable: RESID^2
 Method: Least Squares
 Date: 05/18/05 Time: 14:04
 Sample: 1 40
 Included observations: 40
 White Heteroskedasticity-Consistent Standard Errors & Covariance
 Collinear test regressors dropped from specification

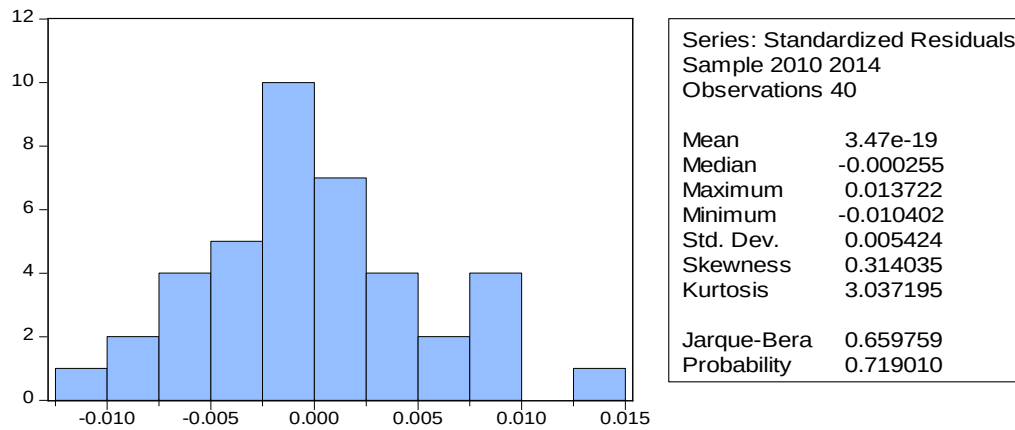
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000274	0.000246	1.114330	0.2806
DER	-0.103662	0.127187	-0.815032	0.4263
DER^2	2.802225	3.706893	0.755950	0.4600
DER*TDR	5.160292	7.327689	0.704218	0.4908
DER*LTDR	-15.18517	4.755041	-3.193490	0.0053
DER*STDR	-6.661436	4.328883	-1.538835	0.1422
DER*FS	0.000575	0.017016	0.033803	0.9734
DER*FG	-0.026010	0.222733	-0.116775	0.9084
TDR	-0.093857	0.168901	-0.555691	0.5857
TDR^2	-4.312279	5.053387	-0.853344	0.4053
TDR*LTDR	-3.226936	8.518515	-0.378814	0.7095
TDR*STDR	5.126832	6.766258	0.757706	0.4590
TDR*FS	-0.003986	0.105067	-0.037936	0.9702
TDR*FG	0.785423	0.487844	1.609989	0.1258
LTDR	0.324811	0.104515	3.107798	0.0064
LTDR^2	9.303042	4.246427	2.190793	0.0427
LTDR*STDR	18.53534	12.24549	1.513646	0.1485
LTDR*FS	0.004186	0.110103	0.038020	0.9701
STDR	0.201627	0.060429	3.336623	0.0039
STDR^2	-2.434738	2.922188	-0.833190	0.4163
STDR*FG	-0.736087	0.406870	-1.809145	0.0881
FG	-0.001898	0.014163	-0.134017	0.8950
FG^2	0.002058	0.044810	0.045939	0.9639
R-squared	0.509082	Mean dependent var	0.000149	
Adjusted R-squared	-0.126223	S.D. dependent var	0.000303	
S.E. of regression	0.000321	Akaike info criterion	-12.95532	
Sum squared resid	1.75E-06	Schwarz criterion	-11.98422	
Log likelihood	282.1065	Hannan-Quinn criter.	-12.60420	
F-statistic	0.801319	Durbin-Watson stat	1.271926	
Prob(F-statistic)	0.691545			

Source-Eview6output

Tests for multicollinearity

	DER	TDR	LTDR	STDR	FS	FG
DER	1.000000	0.923925	0.654001	0.488864	0.486523	-0.118770
TDR	0.923925	1.000000	0.681001	0.554178	0.367278	-0.080512
LTDR	0.654001	0.681001	1.000000	-0.205873	0.457213	0.029857
STDR	0.488864	0.554178	-0.205873	1.000000	-0.077329	-0.113129
FS	0.486523	0.367278	0.457213	-0.077329	1.000000	-0.172734
FG	-0.118770	-0.080512	0.029857	-0.113129	-0.172734	1.000000

Source-View 6 out put



Normality test assumptionSource- View6 out put

Regression result- fixed effect model

$$ROA_{it} = \beta_0 + \beta_1 (DER) + \beta_2 (TDR) + \beta_3 (LTDR) + \beta_4 (STDR) + \beta_5 (FS) + \beta_6 (FG) + \epsilon$$

$$ROA = 0.016145 - 1.6409461918DER + 1.16299521004TDR + 0.505647594291LTDR + 0.591059696865STDR - 0.000286105742131FS - 0.0308785839522FG + \epsilon$$

Redundant Fixed Effects Tests

Equation: RFIXED EFFECT TEST2

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	15.558048	(7,26)	0.0000
Cross-section Chi-square	65.859368	7	0.0000

Cross-section fixed effects test equation:

Dependent Variable: ROA

Method: Panel Least Squares

Date: 05/19/05 Time: 03:30

Sample: 2010 2014

Periods included: 5

Cross-sections included: 8

Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	-0.617043	0.338652	-1.822054	0.0775
TDR	0.397212	0.682903	0.581651	0.5648
LTDR	0.772231	0.605611	1.275127	0.2112
STDR	0.197958	0.677848	0.292039	0.7721
FS	-0.005730	0.002730	-2.099044	0.0435
FG	-0.032723	0.052520	-0.623062	0.5375
C	0.013089	0.004788	2.733976	0.0100
R-squared	0.443946	Mean dependent var		0.011585
Adjusted R-squared	0.342845	S.D. dependent var		0.016569
S.E. of regression	0.013432	Akaike info criterion		-5.624794
Sum squared resid	0.005953	Schwarz criterion		-5.329241
Log likelihood	119.4959	Hannan-Quinn criter.		-5.517931
F-statistic	4.391128	Durbin-Watson stat		0.762621
Prob(F-statistic)	0.002291			

Redundant Fixed Effects Tests

Equation: RFIXEFFECTTEST2

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	15.558048	(7,26)	0.0000
Cross-section Chi-square	65.859368	7	0.0000

Cross-section fixed effects test equation:

Dependent Variable: ROA

Method: Panel Least Squares

Date: 05/19/05 Time: 03:30

Sample: 2010 2014

Periods included: 5

Cross-sections included: 8

Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	-0.617043	0.338652	-1.822054	0.0775
TDR	0.397212	0.682903	0.581651	0.5648
LTDR	0.772231	0.605611	1.275127	0.2112
STDR	0.197958	0.677848	0.292039	0.7721
FS	-0.005730	0.002730	-2.099044	0.0435
FG	-0.032723	0.052520	-0.623062	0.5375
C	0.013089	0.004788	2.733976	0.0100
R-squared	0.443946	Mean dependent var		0.011585
Adjusted R-squared	0.342845	S.D. dependent var		0.016569
S.E. of regression	0.013432	Akaike info criterion		-5.624794
Sum squared resid	0.005953	Schwarz criterion		-5.329241
Log likelihood	119.4959	Hannan-Quinn criter.		-5.517931

F-statistic	4.391128	Durbin-Watson stat	0.762621
Prob(F-statistic)	0.002291		

***,**indicate significance at 1% and 10% respectively**

Correlated Random Effects - Hausman Test

Equation: EQ01

Test cross-section random effects

	Chi-Sq.		
Test Summary	Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	20.941375	6	0.0019

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
DER	-1.640946	-1.379197	0.011263	0.0136
TDR	1.162995	0.958245	0.006044	0.0084
LTDR	0.505648	0.563125	0.002697	0.2684
STDR	0.591060	0.454378	0.004105	0.0329
FS	-0.000286	-0.001233	0.000000	0.0170
FG	-0.030879	-0.037811	0.000041	0.2797

Cross-section random effects test equation:

Dependent Variable: ROA

Method: Panel Least Squares

Date: 05/19/05 Time: 03:19

Sample: 2010 2014

Periods included: 5

Cross-sections included: 8

Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.016145	0.002896	5.575053	0.0000
DER	-1.640946	0.254589	-6.445464	0.0000
TDR	1.162995	0.364433	3.191246	0.0037
LTDR	0.505648	0.315545	1.602456	0.1211
STDR	0.591060	0.351853	1.679851	0.1050
FS	-0.000286	0.001613	-0.177369	0.8606
FG	-0.030879	0.028446	-1.085505	0.2877

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.892834	Mean dependent var	0.011585
Adjusted R-squared	0.839251	S.D. dependent var	0.016569
S.E. of regression	0.006643	Akaike info criterion	-6.921279
Sum squared resid	0.001147	Schwarz criterion	-6.330171
Log likelihood	152.4256	Hannan-Quinn criter.	-6.707553
F-statistic	16.66260	Durbin-Watson stat	2.357093
Prob(F-statistic)	0.000000		

Source-Eview6output