COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMNET OF ACCOUNTING AND FINANCE

DETERMINANTS OF CAPITAL STRUCTURE OF SMALL AND MEDIUM SIZED ENTERPRISES IN ADDIS ABABA

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APPROVAL BY ADVISOR

As thesis research advisor, I hereby certify that I have read and evaluated this thesis prepared under my guidance by Abebe Nigusie entitled: DETERMINANTS OF CAPITAL STRUCTURE OF SMALL AND MEDIUM SIZED ENTERPRISES IN ADDIS ABABA. I recommend that it can be submitted as fulfilling the thesis requirement.

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As members of the Board of Examiners of the MSc thesis open defense examination, we certify that we have read and evaluated the thesis prepared by Abebe Nigusie and examined the candidate. We recommend that the thesis can be accepted as fulfilling the thesis requirements for the degree of Masters of Business Administration in Finance.

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ABSTRACT

The objective of the study is to investigate the determinants capital structure of small and medium sized enterprises in Addis Ababa . The scope of this study was limited to the determinants of capital structure decision of small and medium sized enterprises in Addis Ababa reference to small and medium sized firms operating in Addis Ababa .This study adopted quantitative research approach which is numerical by using panel data model to meet the research objective. This study used a descriptive survey design and data used for this study was from both primary and secondary data sources. Primary data was collected by using document review tools. Document review tools were used to gather information from SMEs. Secondary data was collected from documents and archival records of the selected SMEs. The target population for this study was 300 small and medium sized enterprises located in selected sub cities of Addis Ababa . A sampling frame of each of all the members of the selected SMEs sectors: manufacturing sector, trade sector, and construction sector was used for sample selection. The sample size was determined by using the formula of Yemane (1976) and a sample of 172 respondents was selected from 2 sub cities of Addis Ababa city administration using simple random sampling technique. A multiple linear regression model was used to determine the relative importance of each independent variable to determine SME's capital structure. This study used econometric model of multiple linear regressions where leverage was regressed against Tangibility, Growth, Age, Profitability, GDP growth rate, Inflation and Interest rate. The data collected was presented using tables and analyzed using percentages, means, and standard deviation in line with the objectives of the study. The data was cleaned, coded, and entered in to STATA 13 for analysis. The findings of this research show that. Interest rate, age, profitability, growth opportunity and tangibility variables were found to be significant factors that affect capital structure decision measured by leverage of SMEs.

Key Words: *Capital Structure, Leverage, GDP growth, SMEs growth, Interest rate, Inflation, SMEs age, Tangibility, Profitability*

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Acronyms/Abbreviations

CLRM = Classical Linear Regression Model

GDP = Annual GDP growth

GDP = Gross Domestic Product

GRO = growth of SMEs

INF = Annual Inflation rate

INT= Interest rate

M&M = Modigliani and Miller

NBE = National Bank of Ethiopia

PRO = profitability of SMEs

SD = Standard Deviation

SME = Small and Medium Sized enterprise

SSMCs = Small Scale Manufacturing Co-operatives

TAN = Tangibility of SMEs

VIF = Variance Inflation Factor

CHAPTER ONE

Introduction

1.1. Background of the Study

Capital structure is the mix of debt and equity that a company uses to finance its business. Capital structure of a firm describes the way in which a firm raises capital that is needed to establish and expand its business activities. It is a mixture of various types of equity and debt capital a firm maintains resulting from its financing decisions Myers (1984)

Capital structure decision is one of the most important decisions made by financial managers in this modern era. The capital structure decision is at the center of many other decisions in the area of corporate finance. One of the many objectives of a corporate financial manager is to ensure low cost of capital and thus maximize the wealth of shareholders. Hence, capital structure is one of the effective tools of management to manage the cost of capital (Kibrom, 2010)

Capital structure decision basically deals with the decision to choose either debt or equity or both to finance the operations of a firm. However, such decision is not an easy task because it requires financial managers to strike the optimum balance between equity and debt financing. In effect, maintaining optimal capital structure comes into the equation when financial managers think of ways to finance the operations of a firm. Optimum capital structure is the capital structure that keeps the value of a firm at its maximum and the weighted average cost of capital at its minimum. So much so, the way a firm finances its operations is a common concern to both managers of the firm and its suppliers of funds because wrong mix of finance between equity and debt ruins the performance and survival of a firm (Kibrom, 2010).

After the capital structure theories were developed, as discussed in the literature review section of this paper, various empirical studies on determinants of capital structure have been conducted in financial and non-financial firm's environment. For example Naveed et al. (2010) stated that firm's size, profitability, risk, liquidity, and age are important determinants of capital structure for life insurance sector in Pakistan. Profitability, firm size, non-debt tax shields, earnings volatility, and non-circulating shares, according to Lim (2012), are important variables of capital structure in China's financial sector. Most of such studies focused on internal (firm specific) factors that can affect financing decision of a firm. This study basically dealt with the determinants of capital structure of small and medium scale

enterprises in Addis Ababa by taking into account both firm specific variables and external factors.

1.2. Background of the Organization

1.2.1. Definition of Small and Medium Enterprise (SMEs

According to the National SME development Strategy and the Development Bank of Ethiopia, SMEs are defined by number of employees and net worth (i.e for service sector SME with 6-30 hired labor and capital of Birr 50,001 to 500,000 are categorized under small enterprise and SME with 31-100 hired labor and capital of Birr 500,001 to 7,500,000 are categorized under medium enterprise; whereas for industry sector SME with 6-30 hired labor and capital of Birr 100,001 to 1,500,000 are categorized under small enterprise and SME with 31-100 hired labor and capital of Birr 1,500,001 to 7,500,000 are categorized under medium enterprise. It is also important to note that SMEs are defined differently depending on whether they operate in the service/trade sector or the industrial/manufacturing sector (KonjitDebela, 2011).

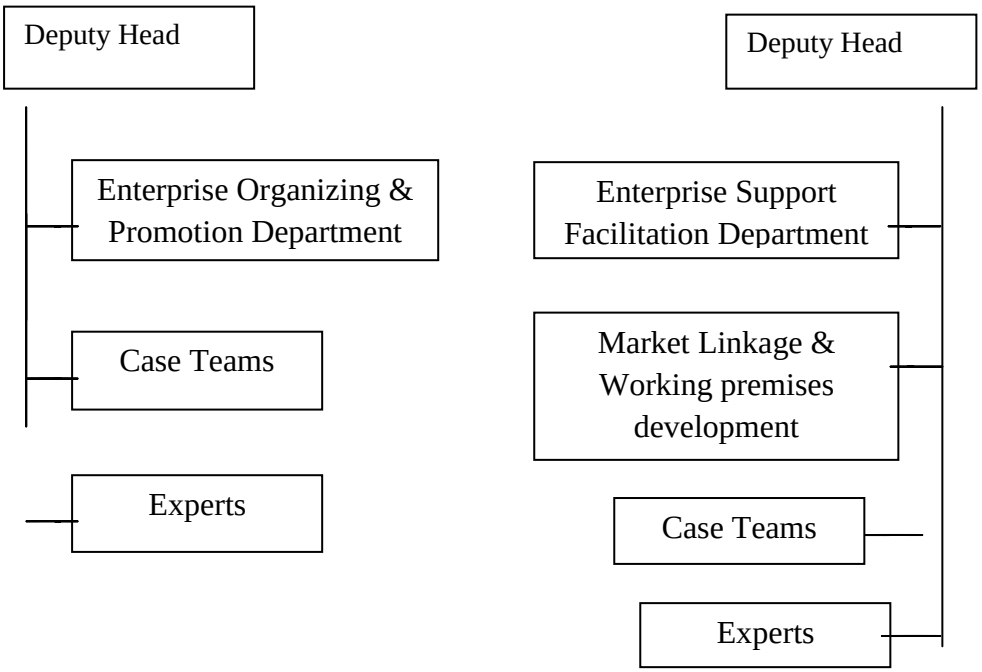
According to the National SME development Strategy and the Development Bank of Ethiopia (see table below), SMEs are defined by number of employees and net worth. It is also important to note that SMEs are defined differently depending on whether they operate in the service/trade sector or the industrial/manufacturing sector.

Table 1.2 SMEs sectorial threshold

S.N.	Enterprise level	Sector	Hired labor	Capital
1	Small	Service	6 - 30	Birr 50,001 – 500,000
		Industry	6 - 30	Birr 100,001 – 1,500,000
2	Medium	Service	31 - 100	Birr 500,001 – 7,500,000
		Industry	31 - 100	Birr 1,500,001 – 7,500,000

1.2.2. Organizational Structure of SMEs Development

Head, Addis Ababa city administration micro & small enterprises development bureau



1.2.3. Government Supports and Selected Sectors

Since our country has limited capital, government support to SMEs depending up on the importance of the sector in the economy. Accordingly, growth-oriented industries are given the most government support, whereas non-selected industries are given the least. The following are some examples of growth-oriented industries:

- Metal and engineering, textile and garment, leather products, wood work goods, agro processing, and handicraft products are among the manufacturing industries..
- Contractor, building material manufacturing, and cobblestone manufacture are examples of classic mining extraction methods in the construction industry.
- Urban agriculture: cattle fattening, honey production, forestry, poultry farm, and animal food preparation.
- Trade sector: domestic product wholesale and retail trade.
- Service sector: solid waste collection and recycling, maintenance service, etc…

1.3. Statement of the Problem

Since an early influential paper of Modigliani and Miller (1958), capital structure issue in general and optimal capital structure as well as what determines it in particular became an eye catching issue in the area of finance. Yet, what factors affect firms' decision regarding their financing choice is still a debating issue in the area of finance. A lot of studies have actually been done by numerous researchers both in developed and developing countries such

as Ethiopia to investigate what determines the capital structure choice of firms with varying samples and period as well as application of several and divergent statistical estimation. Indeed most capital structure studies made to date are based on data from developed countries. There are few studies that provide evidence from developing countries. Booth et al. (2001), Maghyereh (2005), Amidu (2007), Abor (2008), Monica (2008) and Tugba Bas et al. (2009) were among the scholars who have studied the capital structure issues in the developing nations.

Generally speaking, capital structure is one of the least researched topics in Ethiopia compared to other developing countries. Thus far, very limited studies have been made on capital structure in Ethiopia. Yet, much of the previous studies that dealt with capital structure in the country focus on large firms other than SMEs. Capital structure choices of larger firms differ from small firms because larger firms have higher access to debt financing than small firm. More specifically, Bayeh (2013), Ashenafi (2005), Mintesnot (2010), Usman (2013) and Saddam (2014) look into the determinants of capital structure of large firms other than SMEs.

To the best knowledge of the researcher, very few attempts have been so far made to investigate the determinants of capital structure choices of SMEs (except the work of Workineh (2015). Yet, Workineh (2015) approached the question of capital structure using data from medium firms in Ethiopia. He regressed non-debt tax shield, economic risk, age of firms, size of firms, tangibility, profitability, and growth against leverage and discovered that non-debt tax shield, economic risk, profitability, growth, tangibility, and age all had a negative coefficient of correlation with debt to equity ratio. This necessitates the current study to investigate the internal (SME's age, SME's growth, SME's tangibility, and profitability) and external (interest rate, GDP growth, and inflation) as determinants of capital structure of small and medium scale enterprises in Addis Ababa with reference to small and medium sized enterprises operating in Addis Ababa city administration. Thus, this study triggers three research questions: What internal factors do influence the capital structure decision of small and medium scale enterprises in Addis Ababa?, What external factors do affect the capital structure decision of small and medium scale enterprises in Addis Ababa ?, and How shall small and medium scale enterprises in Addis Ababa determine optimum capital structure?

1.4. Objectives of the Study

1.4.1. General Objective

The general objective of the intended case study is to investigate the determinants capital structure of small and medium sized enterprises in Addis Ababa .

1.4.2. Specific Objectives

Specifically, the objective of the current study is to investigate whether;

- To analyze whether Interest rate determines the capital structure choice of small and medium sized enterprises in Addis Ababa .
- To investigate whether Inflation determines the capital structure choice of small and medium sized enterprises in Addis Ababa .
- To evaluate whether GDP growth determines the capital structure choice of small and medium sized enterprises in Addis Ababa .
- To discuss whether SMEs age determines the capital structure choice of small and medium sized enterprises in Addis Ababa .
- To evaluate whether SMEs profitability determines the capital structure choice of small and medium sized enterprises in Addis Ababa .
- To examine whether SMEs growth determines the capital structure choice of small and medium sized enterprises in Addis Ababa .
- To investigate whether SMEs tangibility determines the capital structure choice of small and medium sized enterprises in Addis Ababa .

1.5. Research Hypothesis

Hypotheses of the study stands on the theories related to determinants of capital structure and past empirical studies related to determinants of capital structure of small and medium sized enterprises. The present study seeks to test the following alternative hypotheses with respect to the objectives of the study and leverage (total debt to total equity) ratio was used as measure for capital structure.

Interest Rate

Trade off theory predicts a positive relationship between interest rate and leverage of firms. This means firms will prefer more debt because an increase in interest rate would highly increase the cost of equity Frank and Goyal, (2005).

H1: There is significant positive relationship between interest rate and leverage of SMEs operating in Addis Ababa .

Inflation

Trade-off theory postulates a positive relationship between leverage and inflation. For the purpose of this study inflation rate is measured by annual general inflation rate in Ethiopia and based on trade-off theory and empirical evidence of researchers' inflation rate expected positive impact on leverage (Myers, 2001).

H2: There is significant positive relationship between inflation and leverage of SMEs operating in Addis Ababa .

GDP growth

According to Frank and Goyal (2005), Trade off theory predicts a positive impact of GDP growth rate. This positive relationship implies that firms will have more debt level in the period of higher economic growth than did in lower economic growth.

H3: There is significant positive relationship between GDP growth and leverage of SMEs operating in Addis Ababa .

SMEs Age

Researchers including Bayeh (2011) and Usman (2013) found a statistically significant as well as positive association of firms' age and their debt level, implying that aged firms are well known and matured then they can raise more debt.

H4: There is significant positive relationship between SME's age and leverage of SMEs operating in Addis Ababa.

SMEs Profitability

According to Woldemikael (2012), profitability had a negative relationship with leverage, and statistically significant. This result also shows that, higher profits increase the level of internal financing of firms. Furthermore, the findings suggested that profitable organizations accumulate internal reserves, allowing them to rely less on external capital. Despite the fact that profitable enterprises may have easier access to external funding, the demand for debt financing may be reduced if new investments can be financed from existing reserves.

H5: There is significant negative relationship between SME's profitability and leverage of SMEs operating in Addis Ababa .

SMEs Growth

Trade-off theory predicts a negative relation between leverage and growth emphasizing that grown firms lose more of their value when they go into distress thereby they will be less leveraged (Myers, 2001).

H6: There is significant negative relationship between SME's growth and leverage of SMEs operating in Addis Ababa .

SMEs Tangibility

Findings by Daniel Kebede (2011) shows that tangibility has positive relation with leverage and this confirms to both the trade-off theory, which suggests that firms with large tangible assets tend to have greater liquidation value, thus they tend to have relatively easier access to debt finance with lower costs of financing, and the agency theory, which suggests that if debt can be collateralized, the borrower is restricted to use the borrowed funds for a specified project, thereby reduces the agency problem.

H7: There is significant positive relationship between SME's tangibility and leverage of SMEs operating in Addis Ababa .

1.6. Significance of the Study

The findings of this research work will provide useful information to stakeholders in the field of finance on the knowledge level and the choice of capital structure in the SME sector. Stakeholders such as the financial institutions, government and nongovernmental organisations will also be guided by the findings to fashion out financial policies to enable SMEs operators to adhere to best operational practices

Academicians can also rely on the results from this research to develop optimum capital structure theories under constraints that determine the capital structure to suit the understanding and needs of the SMEs. The findings from the study will contribute greatly to filling the research gap in the literature on SMEs operators' knowledge and application of the capital structure and the factors that influence the choice of capital structure by the SMEs operators in Ethiopia.

1.7. Scope of the Study

The scope of this study was limited to the determinants of capital structure decision of small and medium sized enterprises in Addis Ababa with reference to small and medium sized firms operating in Addis Ababa city administration. To this end this study was limited to firm specific and macroeconomic determinants of capital structure (Tangibility, Growth, Age, Profitability, GDP, Inflation and Interest rate). And this research was also limited to the sample of small and medium sized enterprises to be selected from small and medium sized enterprises operating in Addis Ababa until 2019 G.C.

1.8. Organization of the Paper

This report was organized in to five chapters; chapter one is made from: the background of the study, problem statement, specific and general objective of the study, a research hypothesis, scope and significance of the study. In chapter two various theories and empirical studies are overviewed and the studies are summarized with their methodologies, variables used, findings and conclusion. Third chapter is the methodology part and includes the research design, nature of data used, sampling design; data processing, analyzing and presentation methods. Under chapter four the result the study was presented and analyzed. Finally, in chapter five findings were summarized, conclusion made based on the findings and also appropriate recommendations was given.

CHAPTER TWO

Review of Related Literature

2.1. Theoretical Foundation of Capital Structure

2.1.1. Modigliani and Miller Theory

In (1958), Modigliani and Miller published their theory, denoted by M&M; the capital structure irrelevance theory. M&M theory is based on some of the assumptions, such as (no taxes, no transaction, and bankruptcy costs.)

M&M addressed two propositions without any tax. All external and internal users of the corporation will have access to the same information (symmetry of information); the cost of debt is the same for the equity cost, and the company Earnings before Interest and Tax (EBIT) is not affected by debt financing). The proposition I without tax stated that the capital structure does not affect the company's market value based on the assumptions mentioned above. After that, they developed their theory and they said when the debt increases, then the equity shareholder perceives a higher risk. Thus, the equity requires a high return according to the increase of the risk. After various criticisms, Modigliani and Miller (1963) stated an alteration to their M&M I, which is referred to as M&M II. In this theory, they take into account the benefits of the tax, as determinants of the capital structure. The advantage of the taxation is offsetting interest, which is namely the tax shields, so the company will pay a lower tax. In other words, M&M shows that the increasing in the leverage will give the corporation an opportunity to increase the firm value and performance due to the tax deductibility from the interest payment.

2.1.2. Pecking Order Theory

Pecking order theory is popularized by Myers and Majluf (1984), postulates that cost of funding increases alongside with asymmetric information. According to this Pecking Order theory, firms have a strong preference for internal finance Myers (1984) as it is believed to have a cost advantage over new debt and equity. That means firms use internal finance first then debt and only when such options are exhausted, equity finance is used. This is explained by the fact that internal and external finance are not perfect substitutes.

According to pecking order theory, there is no clear understanding for optimal capital structure to exist. However, Pecking order theory explains that firms should follow a hierarchy of order to finance their operation .Because, there are two equity types. Those are internal equity and external equity, one at the top of the pecking orders hierarchy and the

other at the bottom. In another word, this theory suggest that firms should prioritize sources of finance by first preferring internal equity or retained cash flow, then debt and thereafter external equity of share issuance as a last resort. Myers and Majluf (1984) argue that the higher the profitable a firm is the lesser a probability of using more debt due to the availability of internal retained earnings to finance its operations. In contrary manner with tradeoff and agency cost theories, this theory predicts that less profitable firms will use more debt finance because they do not have internal.

Pecking order theory predicts a positive impact of growth opportunities and dividend payout factors on leverage. According to this theory, the positive association of firm's growth and its leverage implies that firms with more growing assets should accumulate more debt through time. Pecking order models prediction of positive relation between dividends and leverage of a firm suggests that paying out dividend in form of cash increases financing deficit which in turn forced a firm to increase the amount of debt issuance in order to fill such deficit Frank and Goyal (2005).

According to pecking-order theory, the attraction of interest tax shields is assumed as a second-order effect. When internal cash flow, net of dividends, and real investment opportunities are out of balance, leverage ratios alter. Firms with limited investment prospects work their way down to low debt ratios. Firms whose investment opportunities exceed internally generated funds are forced to borrow more Brealey and Myers (2003). This indicates that unlike trade off and agency cost theories of capital structure, pecking order theory predicts the existence of negative relationship between firm's profitability and its leverage implying that more profitable firms will become less levered over time due to utilization of their internally generated cash flows to finance operations. The negative prediction of pecking order theory for the relation of profitability and leverage seems reliable and supported by plenty of empirical studies. It also predicts negative relation of firm's leverage with size factor indicating that large firms have been around and are better known thereby they face lower adverse selection and can more easily issue equity as compared to small firms with severe adverse selection problems. Besides, it predicts that tangibility of assets appears to have negative impact on leverage Frank and Goyal, (2005).

According to the Pecking Order Theory, more profitable enterprises with high cash flows are predicted to require less loan capital than those with lower cash flows. The pecking order theory argues that businesses adhere to a hierarchy of financing sources and prefer internal

financing when available. However, when external financing is required, firms prefer debt over equity. Equity entails the issuance of additional shares of a company, which generally brings a higher level of external ownership into the company. Therefore; the form of debt that a firm chooses can act as a signal for its need of external finance. Thus firms that are profitable and therefore generate high cash flows are expected to use less debt compared to those who do not generate high cash flows. This theory therefore suggests that firms prefer debt to equity Muritala (2012).

2.1.3. Tradeoff Theory

Tradeoff theory was developed by Myers (1984), he propose firms will have an optimal capital structure by using debt finance until the present value of benefits from debt equals the present value of costs associated with debt financing. This means tradeoff theory stated that an optimal capital structure can be achieved by equating the present value of tax shields on debt with the present value of financial distress (bankruptcy) costs associated with leverage. Furthermore, it implies that investors are risk-averse and that end-of-period bond wealth is taxed at a progressive rate. Dividend and capital gain yields are both taxed at the same rate. So, such risk neutrality forces the investor to invest into whichever security offers the better expected after-tax benefit. The tradeoff theory also assumes that until the firm faces a constant marginal tax rate on end-of-period wealth, it can deduct both interest and principal payments, but the investor must pay taxes as these payments are received, the firm will face a constant marginal tax rate on end-of-period wealth. According to this theory, non-debt tax shields do exist but it is impossible to arbitrage them across firms or over time. If the firm makes a default in its debt payment, then it will incur high amount of financial distress costs thereby 'the optimal capital structure pie shrinks.'

2.1.4. Agency Cost Theory

Another important theory of capital structure is agency cost theory. Agency cost theory was developed by Jensen and Meckling (1976). This theory emphasize on the cost associated with conflicting interests between mangers, debt holders and equity holders. Jensen and Meckling (1976) stated shareholders - managers and shareholders bondholders' conflicts as major kinds of conflict those will cause agency problem thereby agency costs. They also recognized an agency problem in relation with debt known as risk shifting. Their point is that if the firm is operated with equity finance, only cash flows in non-bankrupt conditions matter. Thus, such firm will tend to accept projects of higher risk but with large payoffs in good conditions as well. It is obvious that this type of behavior is occasionally observed when a firm is in bad

conditions but its general importance is debatable. If both kinds of agency conflicts occur, then their relative importance will become ambiguous Saddam (2014).

According to agency theory, with the issuance of debt in exchange for stock, managers can bond their promise to pay out future cash flows in a manner that is impossible to achieve by slight dividend increases. By doing so, they can give debt holders the right to put a firm into bankruptcy court if they default with their promise to make the interest plus principal payments. As a result, debt lowers the agency costs associated with free cash flows by decreasing the cash flow available for spending based on the managers' judgment. These effects of debt considered as a potential determining factor of a firm's financial mix Jensen (1986). This theory emphasized that firms with more debt as compared to their equity will benefit from the tax advantages in that interest payments are tax deductible. On the other hand, this theory also suggests that increasing leverage will have costs as well. Similarly speaking, as a firm becomes more leveraged, the ordinary agency costs associated with debt finance (including bankruptcy costs) tend to increase. Thus, according to agency cost theory one firm can achieve an optimal capital structure thereby maximizing its value by balancing the marginal costs of debt with the marginal benefits Jensen, (1986).

Agency theory of Jensen and Meckling (1976) also suggest that to control the agency costs caused by free cash flow, firms with more profitable assets will tend use a larger portion of their earnings for debt payments. This will give such firms a debt capacity thereby they can leverage themselves by using such debt capacity due to their good credit ratings. Similarly speaking, according to agency theory firms with higher profits as compared to their investments also benefit from debt which in turn reduces the problem associated with free cash flow (Jensen, 1986). Thus, agency theory predicts a positive relation between firm's profitability and its leverage. Besides, as per this theory, agency costs associated with debt are lower for firms with more tangible assets implying a positive relationship between tangibility of assets and leverage. Conversely, agency theory predicts an inverse relation of firm's growth opportunity and its debt level emphasizing that the underinvestment problem is more serious for growing firms that leads them to be less leveraged Frank and Goyal, (2005).

2.2. Firm Specific Determinants of Capital Structure

In addition to macroeconomic factors capital structure decisions also influenced by firm specific factors.

2.2.1. Profitability

One of the main theoretical controversies is the relationship between leverage and profitability of a firm. Profitability is a measure of earning power of a firm. The earning power of a firm is the basic concern of its shareholders .The pecking order theory proposed by Myers explained the effect of profitability on leverage quite well (1984). According to this idea, businesses have an ordered preference for financing, with retained earnings being the most preferred source of money for investment, followed by debt . External equity financing would be a company's last resort. The reason for this ranking was that internal finances were seen to be inexpensive and unaffected by outside influences. As a result, a negative association between profitability and leverage is expected when profitable enterprises have higher retained earnings and opt to have lower leverage.

However, according to the static trade-off theory, high profitability level gives high level of borrowing capacity. This situation promotes the use tax-shield. Firms normally have to pay taxes on their profits. To avoid this, they prefer to take more debt in their capital structure as interest payments on debt are generally tax deductible. Agency costs theories also predict that profitable firms would take more debt in their capital structure to control the activities of managers. As a result, the more prosperous a company is, the more debt it will have on its balance sheet. As a result, the trade-off theory proposes that profitability and debt levels have a positive connection (Frank and Goyal, 2003).

2.2.2. Tangibility

Tangibility also known as Asset Composition or collateral value; are those assets that creditors can accept as security for issuing the debt. Because a corporation's tangible assets are the most frequently accepted sources for bank borrowing and secured loans in an unpredictable world with asymmetric information, the asset structure of a corporation has a direct impact on its capital structure. If banks have imperfect information regarding the behavior of the firm, firms with few tangible assets find it difficult to raise funds via debt financing. The type of assets the firm holds plays a significant role in determining that firm’s capital structure. The reason can be that when a large fraction of the firm’s assets is tangible, assets can serve as collateral, which diminishes the risk of the lender suffering agency costs of debt.

Findings by Rajan and Zingales (1995) cited in Saddam(2014) are consistent with the Static trade-off theory saying that tangible assets are appropriate for the purpose of raising debt

since it act as good collateral. It also seems to reduce the cost of financial distress. Concluding this, firms with large ratios of tangible assets would be expected to raise more debt. On the other hand, the pecking order theory stretch that firms with few tangible assets faces larger asymmetric information problems and will therefore tend to raise more debt over time and become more levered (Frank and Goyal, 2003).

2.2.3. Growth

According to Titman and Wessels, (1988) cited in kibrom (2010) the relationship between growth opportunities and the debt ratio is also quite conflicting. The Trade-off theory predicts that firms with more growth opportunities will have less debt as there is less need for the disciplining role of debt. Firms that have growth opportunities would prefer to retain debt capacity as they might need to borrow in the future. Growth possibilities, on the other hand, are capital assets that add value to a company but cannot be collateralized and do not create current taxable income.

Generally, according to the trade-off theory, firms experiencing large growth would raise less debt since the value of their growth opportunities in case of bankruptcy is close to zero. On the other hand, the pecking order theory stretches that small firms faces larger information asymmetries and therefore raise more debt. In order to minimize such asymmetries, firms with high growth will seek to issue debt. Since high growth firms traditionally have higher market-to-book ratios this measure will be used as a proxy Frank and Goyal, (2003).

2.2.4. Age of the Firm

In capital structure models, the firm's age is a typical metric of repute. As a company grows older, it establishes itself as a running corporation, increasing its capacity to take on more debt; thus, age is positively associated to debt. Banks analyze the creditworthiness of entrepreneurs before giving a loan since they are thought to be placing high hopes on very risky ventures with big profit margins.

As firms became aged, the long years of track record will enable them to easily convince creditors and also will expertise in finding alternative credit source cost effectively or in favorable terms while going for debt capital Mintesinot (2010) as cited by AmanuelMekonnen (2011)..

2.3. External Determinants of Capital Structure

In addition to the above stated various capital structure theories, a number of empirical studies identified various factors affecting capital structure decision of firm

2.3.1. GDP Growth

The Gross Domestic Product (GDP) is a measure of a country's overall economic performance. It's a monetary measure of the market value of all final goods and services produced inside a country's borders during a given period of time.

According to Frank and Goyal, (2003) Trade off theory predicts a positive impact of GDP growth rate of a country on leverage of firms operate within that country. This positive prediction implies that firms will have more debt level in the period of higher economic growth than did in lower economic growth. According to Korajezyk and Levy's research, GDP growth rate was inversely associated to leverage ratio for Nepalese enterprises (2003) He also mentions that economic progress tends to lead to the usage of greater debt, which is in line with Booth et al's findings (2001). Saddam (2014) notes that GDP growth rate have insignificant effect of leverage ratio of firms. According to Charles Muthama (2013), GDP growth rate has a favorable impact on long-term debt ratios but a negative impact on overall debt ratios and short-term debt ratio.

2.3.2. Interest Rate

The cost of borrowing money for a set period of time is represented by interest rates. However according to Myers (1984), prevailing interest rates are of much concern to many firms, because of indexing of interest rates to inflation. Studies show that interest rates affect capital structure decisions. Under pecking order theory, there is no effect, or else an increase in the interest rate will tend to reduce debt level Frank and Goyal, (2003). On the other hand, trade off theory predicts a positive relationship between interest rate and leverage of firms, in that firms will prefer more debt because an increase in interest rate would highly increase the cost of equity Frank and Goyal, (2003).

According to Singh (1993) cited in Charles Muthama et al.(2013) if the interest rate is high investment falls, a low rate of interest lead to increase in investment activity. Increased investment may imply use of more debt. However, in the short run interest is inelastic and fails to influence the level of investment. Hence a relation exists between investment and use of debt and level of interest rates. Charles Muthama and his colleagues (2013) discovered

that interest rates as measured by treasury bills have a favorable impact on the long and total debt ratios, but a negative impact on the short term debt ratio.

2.3.3. Inflation Rate

Inflation is described as a steady increase in an economy's overall price levels over time. Low or moderate levels of inflation in a country can be beneficial to the business sector by acting as a motivator to produce. High levels of inflation however can harm company's profitability by affecting the cost of inputs as well as reducing final demand for its output. The type of a firm's operations, as well as its competitive environment, ultimately determine the impact of inflation on it. Charles Muthama et al. (2013). and his colleagues

Inflation had a detrimental impact on short-term indebtedness, according to Charles Muthama et al. (2013). According to trade-off theory, leverage and predicted inflation have a positive relationship. According to Frank and Goyal (2003), the positive relationship between inflation and leverage is mostly attributable to tax code elements, suggesting that the real value of debt tax deductions is larger when inflation is expected to be high.

2.4. Empirical Evidences of Determinants of Capital Structure

The question of what determines firms' choices of capital structure has been a major field in the corporate finance literature. After the influential paper of Modigliani and Miller (1958), there were a number of researches directed towards finding the determinants of capital structure choice. Researchers of such empirical studies emphasized firm specific factors those are internal for the firm's business environment such as size, profitability, liquidity, tangibility of assets, age, business risk, growth opportunity, and non-debt tax shields to have significant influence on firms financing choice and macroeconomic factors those are external for firms business environment. This means macroeconomic factors are factors which are beyond the control of the business firm such as GDP growth, inflation, interest rate, lending policy, taxation policy etc.. have significant effect on capital structure of firms.

For instance, Hoa Nguyen and Zainab Kayani (2013) investigate the impact of firm-specific drivers on bank capital structure decisions vs macroeconomic considerations. In general, the results are quite in line with those of previous researches, where most of bank-level factors (collateral, dividend, size, asset risk and profit) are significant in explaining capital structure decision of banks, meanwhile macroeconomic factors(GDP growth, inflation and interest rate) are less influential.

Najjar and Petrov (2011) also examined the impact of five explanatory variables on leverage ratio of insurance firms in Bahrain for the period from 2005-2009. Such variables were profitability, growth opportunity, firm size, liquidity, and assets tangibility. Leverage was represented by total debt ratio. According to their regression results firm size, liquidity, and asset's tangibility are major factors that affect capital structure decision. They also emphasized firm size and asset tangibility has a positive relationship with firm leverage while liquidity has a negative impact on debt level of insurance companies in Bahrain.

Gill et al. (2009), from their study on service sector of United States found that tangibility of assets and profitability were significant factors affecting leverage negatively as measured by total debt ratio. On the other hand, they found that among the regressed factors; effective income tax rate, non-debt tax shields, firm size, and growth opportunities were insignificant for determining capital structure of service firms in the United States.

Charles Muthama et al. (2013) investigate the impact of macroeconomic conditions on the capital structure of a number of Kenyan publicly traded enterprises. Lever (debt ratios) was regressed on GDP growth rate, inflation, and interest rate in an econometric model with multiple linear regressions. The study found that macroeconomic conditions do have a significant impact on the capital structure of publicly traded corporations. The GDP growth rate was found to have a favorable impact on long-term debt ratios while having a negative impact on total and short-term debt ratios. Inflation, on the other hand, had a negative impact on short-term debts, whilst interest rates assessed by Treasury bills had a positive impact on long-term debt ratios and total debt ratios, but a negative impact on short-term debt ratios.

MK Magwai (2014) looks into the impact of macroeconomic factors on the capital structure of South African listed companies. He used three variables: the rate of GDP growth, the rate of inflation, and the rate of unemployment. The findings reveal that real GDP growth has a beneficial impact on long-term debt and overall leverage. Inflation, on the other hand, has a negative impact on long-term and overall leverage. On the other hand, the unemployment rate was found to have a favorable impact on long-term leverage, short-term leverage, and overall leverage.

In Ethiopia case, Workineh (2015) approached the question of capital structure using data from medium firms in Ethiopia. He regressed variables such as non-debt tax shield, economic risk, firm age, business size, tangibility, profitability, and growth against leverage. The findings revealed a negative association between debt to equity ratio and non-debt tax-

shield, economic risk, profitability, growth, tangibility, and age. Another study employed eight explanatory factors to explain the determinants of capital structure evidence from industrial enterprises in Tigray, Ethiopia: Tangibility, Profitability, Growth, Age, Uniqueness, Size, Earnings Volatility, and Non-Debt Tax Shields. He could get the following results after regressing these variables against leverage: Growth, Age, Size, and Earnings are all factors to consider. In at least one of the three capital structure models used in his research, volatility and non-debt tax-shield variables are major predictors of capital structure (AmanuelMekonnen, 2011).

Usman's paper on the determinants of capital structure evidence from major Ethiopian tax payer share companies was published in 2013. For the study period of 2006 to 2010, econometric analyses were conducted for a panel of 37 listed firms in the Ethiopian Revenue and Customs Authority (ERCA) major taxpayers' branch office in Addis Ababa. Profitability, size, age, tangibility, liquidity, non-debt tax shield, growth, dividend payout ratio, and earnings volatility were among the nine traditional explanatory factors included in this study. The findings demonstrate that a company's size, age, tangibility, liquidity position, and non-debt tax shield are all positively correlated with leverage, whereas profitability, earnings volatility, and dividend payout ratio are all adversely correlated. In Ethiopia, the growth variable was shown to have no statistically significant impact on the leverage of large taxpayer share enterprises. The sign of these relationships suggests that Agency cost theory is more convincing than other capital structure theories in explaining the capital structure of major taxpayer share firms in Ethiopia.

. Bayeh (2011) looked at the drivers of capital structure at the firm level in Ethiopian insurance businesses. The panel regression model was used in this investigation. The findings reveal that the capital structure of Ethiopian insurance businesses is influenced by growth, profitability, and the firm's age. For long-term debt and total debt ratio, liquidity and business risk were also relevant. Asset tangibility and firm size, however, were found to have statistically insignificant contributions to the capital structure of Ethiopian insurance businesses among the hypothesized capital structure drivers.

. Mohammed (2014), a study that looked at the drivers of capital structure and their impact on the performance of the Ethiopian insurance market from 2004 to 2013.He took variables firm leverage, growth opportunities, size, risk, tangibility and liquidity The results of regressing these variables demonstrate that firm leverage, size, tangibility, and business risk

have a substantial impact on Ethiopian insurance businesses' performance. While the relationship between business growth and liquidity was not evident, regression analysis revealed a statistically proven association. The findings support the pecking order hypothesis of capital structure, which claims that leverage is a major driver of company performance. Leverage and performance are found to have a considerable negative relationship.

Using seven years of data, Saadam (2014) examines the impact of firm-specific and macroeconomic factors on capital structure decisions in the Ethiopian insurance sector (2007-2013). In order to achieve this aim the researcher regressed profitability, liquidity, business risk, size, growth opportunity, age, GDP growth rate, interest rate, and inflation rate against the dependent variable as measured by total debt ratio. The results of this study suggest that business risk, firm size, age, and inflation rate variables were significant factors affecting leverage of insurance firms in Ethiopia positively; confirming tradeoff and pecking order theories as prominent theories for the sector. On the other hand, profitability, liquidity, growth opportunity, GDP growth rate, and interest rate variables found as insignificant to affect the dependent variable. Thus, Ethiopian insurance firms and their managers are advised to have closer attention on business risk, size, age, and inflation rate factors in order to make optimal decision pertaining to capital structure. Besides, they also advised to give attention first for tradeoff then for pecking order theories of capital structure respectively as per their weight of importance.

In Addis Ababa, Ethiopia, AmanuelMekonnen (2011) investigated the importance of theoretical internal (firm level) determinants in determining capital structure of manufacturing share businesses. With sample of 12 companies using secondary data from audited financial statements for the period of five years (1996-2002EC). Tangibility, non-debt tax shields, earning volatility, profitability, and business size are all key predictors of capital structure, according to the findings.

Daniel Kebede (2011) looked at the factors that influence capital structure in Ethiopian Small Scale Manufacturing Cooperatives (SSMCs). Pecking order and agency theories are empirically tested utilizing trade-offs and a variety of business characteristics, including size, tangibility, profitability, earning volatility, growth, and age. A structured record review was made to collect a panel data, which included 13 SSMCs's five years data. The findings suggested that size, age, tangibility, and growth variables are the most important determinants of capital structure of SSMCs in Ethiopia. The findings also show that the most

popular capital structure theories (trade-off, pecking order, and agency theories) are all valid for SSMC capital structures; in fact, trade-off theory best explains SSMC capital structures. All firm specific variables except earnings volatility variable seem to have an effect on the level of leverage in SSMCs in Ethiopia

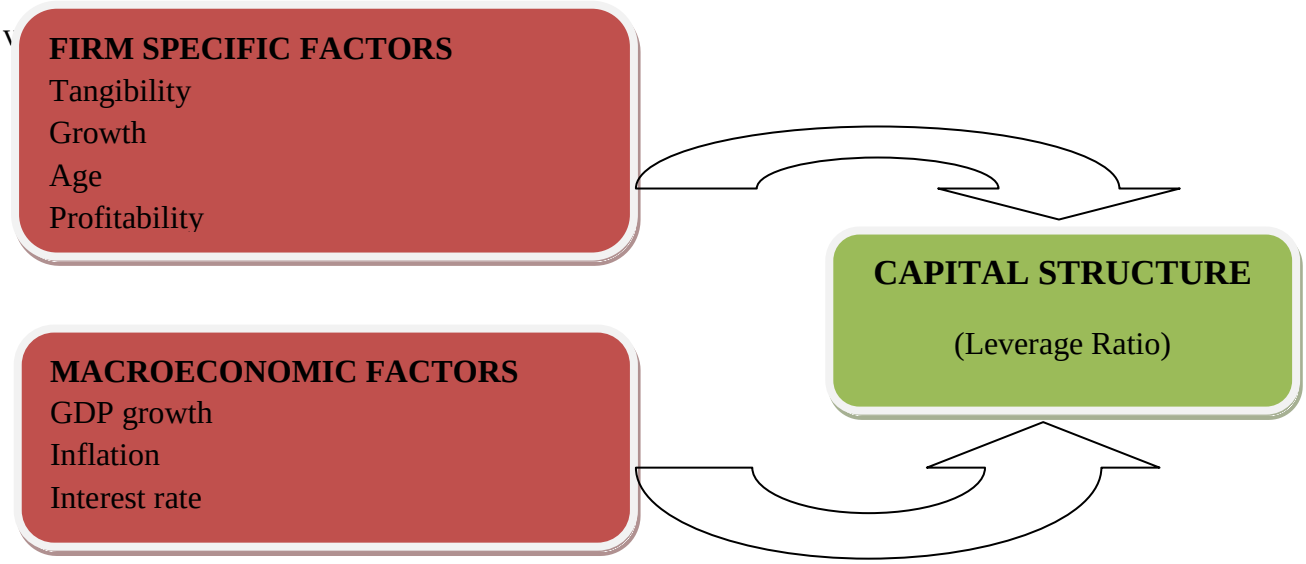
2.5. Summary and Literature Gap

Capital structure is the mix of debt and equity to finance a business firm. It represents the proportionate relationship between debt and equity. Debt represents the creditors' claim i.e. liabilities or borrowings. Equity includes paid-up share capital, share premium, and reserve and surplus.

As discussed in the above literature review part there are various theories of capital structure. Among the theories MM without taxes, MM with taxes, pecking order, trade off theory and agency cost theory. Those theories express what determines capital structure and the issue of optimal capital structure differently. Various empirical studies also conducted regarding determinants of capital structure but almost all were debating each other. Most of those studies were also limited to investigate internal determinants of capital structure of firms, ignoring the inclusion external determinants of capital structure assessment in firms as a potential gap for further study. Such literature gap is wider in Ethiopian context as compared to other countries. In addition to that as compared to other countries besides lack of assessment in relation with external factors impact on capital structure decision, there was also insufficiency of empirical studies regarding firm specific (internal) factors impact on capital structure of small and medium scale enterprises. More specifically, as per the knowledge of the researcher there was no a single study that investigated both firm specific and macroeconomic factors that affect financing decision of small and medium scale enterprises (SMEs) in Addis Ababa city administration. Therefore, this study will be a good for further studies in this area of Ethiopian context by filling the above gap through the examination of both firm specific and macroeconomic factors.

2.6. Conceptual Framework

Conceptual framework shows the potential link between the dependent & independent v



Source: Constructed based on the literature review

CHAPTER THREE

Research Methodology and Design

3.1. Research Methodology

According to Creswell (2009), there are three basic research approaches; these are quantitative, qualitative and mixed research approaches. The quantitative data research relies on the measurement and analysis of statistical data to produce quantifiable conclusions. Quantitative research is a means for testing objective theories by examining the relationship among variables (Creswell, 2009). Therefore, this study adopted quantitative research approach which is numerical by using panel data model to meet the research objective. Brooks (2008) stated the advantage of using panel data is to address a broader range of issues and tackle more complex problems than pure time-series or pure cross-sectional data alone.

3.2. Research design

This study employed a descriptive survey (description of the features of an actual phenomena) to gather information on the determinants of capital structure in Ethiopian small and medium-sized firms, with a focus on those operating in the Addis Ababa city administration. Descriptive survey design was used since it provides insights into the research problem by describing the variables of interest. It is used for defining, estimating, predicting and examining associative relationships. This helps in providing useful and accurate information to answer the questions based on who, what, when, and how (Kombo &Tromp, 2006).

3.3. Sources of data and collection method

The data used for this study was from both primary and secondary data sources. Primary data was collected by using document review tools. Document review tools were used to gather information from SMEs and secondary data was collected by examining the documents and archival records of the selected SMEs.

3.4. Total population and Target population

3.4.1. Total population

The total population for this study includes all small and medium sized enterprises located in Addis Ababa from all sectors of SMEs.

3.4.2. Target population

The target population for this study was the sub cities with the largest number of SMEs namely Arada, and Nifas Silk and SMEs sectors with active operation on the market, namely manufacturing, construction and trade. The reason for selecting the two sub cities purposively is that these sub cities has high number of SMEs active and effective in their performance and the reason for selecting the three SMEs sectors is that the SMEs in this three sectors have at least four years organized data and they can represent the others as much as the result of the study is unanimously applicable to all SMEs operating in the Addis Ababa. And SMEs in these sectors with at least four years data are three hundred (300) in number. Therefore, the target population for this study was 300 SMEs.

3.5. Sample size and Sampling techniques

A simple random sampling (SRS) was employed in the selection of the sample from each SMEs for the study from three (3) SMEs sectors of the two sub cities of Addis Ababa city administration. The sample size was determined by using the formula of Yemane (1976). A 95% confidence level and e = 0.05 are assumed.

$$n = \frac{N}{1+N(e)^2}$$ = 171.43≈172

Where: N = Total Population, *n* = Sample Size and *e* = Sample error

And a sample of **172** respondents was selected from 2 sub cities of Addis Ababa using simple random sampling technique.

3.6. Operational Definition of Variables

In this study, the researcher has used one dependent variable (Leverage = Debt to Equity Ratio) and seven explanatory variables. The operational definition of each of the variables is provided below.

3.6.1. Dependent variable

According to corporate finance literatures, there are three proxies that are commonly used to measure capital structure. These measures are market value leverage, book value leverage, and interest coverage ratios. Among those three measures, book value leverage is used in a repeatable manner to measure capital structure in majority of empirical studies pertaining to capital structure determinants. Book value of leverage differed from its market value counterpart in that

the former uses book value of equity to determine a capital structure instead of market value of equity that used by the later. Three ratios namely long term debt, total debt (total leverage), and debt to equity ratios are the most widely used ratios to represent book value leverage, in most studies.

Thus Saadam (2014), Kibrom (2010), Weldemichael (2012), Bayeh (2013), Usman (2013), Amanuel (2011) conducted study on determinants of capital structure and used leverage as dependent variable and is defined as the ratio of total liability to total equity. This, therefore, leverage (total debt to total equity ratio) is used as dependent variable for the current study.

3.6.2. Independent Variables

Age

According to various researchers, how much one firm stay in a particular business is one factor that can influence an issuance of debt in different ways. For example Solomon (2012) found an inverse but insignificant relationship of firm's age and its leverage. On the opposite side; researchers including Bayeh (2011) and Usman (2013) found a statistically significant as well as positive association of firms' age and their debt level, implying that aged firms are well known and matured then they can raise more debt.

Age = Log (observation year – establishment year)

Profitability

According to various theories and empirical researches, profitability factor is considered as one of the major firm specific factors that determine capital structure of a firm. A positive association between a firm's profitability and leverage is predicted by trade-off theory. Similarly, agency cost theory predicts a positive association of profitability with leverage. On the other hand, pecking order theory argues a negative relation of profitability and leverage, implying that more profitable firms will become less levered through time due to utilization of internally generated cash flows for financing their operation. In line with pecking order theory, researches including Naveed et al. (2010), Bayeh (2011), Kibrom (2010) and Woldemikael (2012) confirmed such a negative relation of profitability and leverage.

Profitability = Operating Income / Total Asset

Growth

Theories of capital structure reveal that there exists a positive or negative relationship among growth and leverage. Trade-off theory predicts a negative relation between leverage and growth emphasizing that grown firms lose more of their value when they go into distress thereby they will be less leveraged. Similarly, agency cost theory also predicts an inverse relation of firm's leverage and its growth, reflecting that agency costs of free cash flow are less severe for growing firms which leads them to use less debt. Conversely, pecking order theory predicts a positive association of firm's growth with its debt level, implying that firms with more growth opportunity should become more leveraged through time Frank and Goyal, (2005). Empirical researchers including Bayeh (2011), Usman (2013), Kibrom (2010) and Woldemikael (2012) growth opportunity of a firm and its leverage found to have a negative relationship. However, researcher; including Amanuel (2011), and Solomon (2012) found growth opportunity variable to have a positive impact on firm leverage. Thus, for the purpose of this study the researcher measured growth opportunity in terms of percentage increase in total assets of SMEs. Based on trade-off and agency cost theories and various empirical studies growth opportunity expected a negative impact on leverage.

Growth = (Change in Total Assets / Total assets of current year) x 100%

Tangibility

Tangible assets are the most widely accepted source for secured debts, since it can serve as collateral, which diminish the risk of the lender. That is to say, a company's asset structure has a substantial impact on its capital structure. Static trade-off and pecking order theories maintain that there is a positive correlation between debt ratio and tangibility.

Findings by Rajan and Zingales (1995) as cited in Saddam (2014) are consistent with the Static trade-off theory saying that tangible assets are appropriate for the purpose of raising debt since it act as good collateral. It also seems to reduce the cost of financial distress. Concluding this, firms with large ratios of tangible assets would be expected to raise more debt. On the other hand, the pecking order theory stretch that firms with few tangible assets faces larger asymmetric information problems and will therefore tend to raise more debt over time and become more levered Frank and Goyal,(2003).

Tangibility = Fixed Assets / Total Asset

Interest Rate

In the literature, studies about capital structure determinants, commonly interest rate factor is measured with lending rate of financial institutions within a country in which lending rate represents a cost that firms incur in order to raise debt. The relationship between leverage and annual interest rate is explained differently by pecking order theory and trade off theory. According to the pecking order theory, either there is no effect or an increase in the interest rate tends to reduce debt levels (Frank and Goyal, 2005). The trade-off theory, on the other hand, anticipates a positive link between interest rates and business leverage. This means firms will prefer more debt because an increase in interest rate would highly increase the cost of equity Frank and Goyal, (2005). Researchers including Bas et al. (2009) confirmed such a positive prediction of trade off theory for the relationship between interest rate and leverage. Thus, in the present study, interest rate is measured as an average lending rate of financial institutions in Ethiopia and the researcher expected a positive relationship with the dependent variable.

Inflation

The inflation rate which is a general increase in price of commodities is measured by annual general inflation rate recorded in the country. According to trade-off theory, leverage and inflation have a positive relationship. For the purpose of this study inflation rate is measured by annual general inflation rate in Ethiopia and based on trade-off theory and empirical evidence of researchers' inflation rate expected positive impact on leverage.

Gross Domestic Product (GDP)

Trade off theory predicts a beneficial influence of GDP growth rate, according to Frank and Goyal (2005). This positive relationship implies that firms will have more debt level in the period of higher economic growth than did in lower economic growth. Results of empirical studies including Bas et al. (2009), confirmed positive relationship of GDP growth rate and leverage. GDP growth factor as measured by annual real gross domestic product. Based on trade-off theory and various empirical studies, GDP growth expected positive impact on leverage.

3.7. Model Specification

A multiple linear regression model was used to determine the relative importance of each independent variable to determine SME's capital structure. The data collected from 158 SMEs record was used to analyze the capital structure decisions of SMEs in Addis Ababa city

administration. This study used random effect econometric models of multiple linear regressions where leverage was regressed against Tangibility, Growth, Age, Profitability, GDP growth rate, Inflation and Interest rate. The regression model used is expressed as follows;

$$\textbf{Leverage} = \alpha + \beta_1 (\text{Age}_i, t) + \beta_2 (\text{Prof}_i, t) + \beta_3 (\text{Grow}_i, t) + \beta 4 (\text{Tan}_i, t) + \beta 5 (\text{INF } t) + \beta 6 (\text{GDP } t) + \beta 7 (\text{INT } t) + \varepsilon$$

Where

Leverage = Total Debt to Total Equity Ratio

α = the constant (intercept) term

$\beta 1, \beta 2 \ldots . \beta 7$ respective coefficients for independent variables

(Age_i, t) = represents age of SME i at year t

(Prof_i, t) = represents profitability of SME i at year t

(Grow_i, t) = represents growth of SME i at year t

(Tan_i, t) = represents tangibility of SME i at year t

(INT t) = the interest rate in year t

(INF t) = the annual inflation rate in year t

(GDP t) = Annual GDP growth rate in year t

ε = represents error term which is constant over time

This model assumes that there is a panel data to be obtained from the selected SMEs over five year's period.

CHAPTER FOUR

Data presentation and analysis

4.1. Response Rate of SMEs

The response rate, according to Lea Ray (2004), is defined as the total number of questionnaires collected from SMEs to the total number of questionnaires returned in the study. For the current study, the sample size was 172 SMEs, and a total of 158 questionnaires were collected. Therefore, 158 sets of collected questionnaires were used for the data analysis. Thereby, the response rate was 91.86%, which enough to draw conclusions.

4.2. Data presentation and analysis

The data collected using the data collection instrument was presented using tables and analyzed using percentages, means, and standard deviation in line with the objectives of the intended case study. The data was cleaned, coded, and entered in to STATA 13 for analysis. On the other hand, both correlation and regression analysis was established in order to measure the relationship between capital structure choice and firm growth, firm age, profitability, tangibility, GDP growth, inflation, and interest rate.

4.2.1. Model Specification Test

The first step before running a regression analysis and thus to investigate significant factors that can affect financing decision of SMEs, is to specify an estimation model. According to Saadam (2014) panel data can be estimated using three distinctive estimation models including pooled cross section estimation, fixed effect estimation and random effect estimation.

When the cross sections in the sample are randomly picked from the population, the random effects model, according to Brooks (2008), is more appropriate. When cross sectional units in the sample effectively represent the total population, a fixed effect model is more efficient. Furthermore, since there are fewer parameters to be estimated in random effects model (due to the absence of dummy variables) and thereby degrees of freedom are saved, the random effects model should yield more efficient estimation than the fixed effects one. Moreover, random effects model is appropriate if number of cross sections is larger and time period observations are smaller, and if the assumptions underlying random effects model hold, random effect estimators are more efficient than fixed effect estimators Gujarati, (2004). On the other hand, the random effects approach has a major problem that it is appropriate only when the composite error term is

not correlated with all of the independent variables. This assumption of random effect is more stringent than its correspondent one in the fixed effects occasion, because with random effects we thus require both cross sectional error term and new individual observation error term to be uncorrelated with all explanatory variables. This can also be interpreted as a consideration of whether any unobserved omitted variables (that were allowed to have different intercepts for each cross section) are not correlated with the selected explanatory variables. If error terms and independent variables are not correlated, a random effects model can be better to use; if not the fixed effects one is appropriate Brooks, (2008).

In order to test validity of the above assumption thereby to choose appropriate model for the study, a Haussmann test was carried out by the researcher. The Haussmann test as presented below tests the null hypothesis of random effects model is appropriate against fixed effects model. So, if the probability of Haussmann chi-square is less than 0.05, the researcher could use fixed effects model and if the probability of Haussmann chi-square is greater than 0.05 the researcher could use random effects model.

Table 4.1 Correlated Random Effects – Haussmann Test

Test summary	chi-sq stastic	chi-sq d.f. prob.
Panel random	0.98	0.9952

Source: Researcher's own computation through STATA 13 based on random effects regression result

As shown in the above Table 4.1 the probability of chi-square for a Haussmann test is 0.9952, which is insignificant to reject the null hypothesis. If the probability of chi-square Haussmann is greater than 0.05 it is appropriate to use random effects regression model. So, regression analysis and discussion of results of the next sections of this paper was made based on a random effects model of panel estimation.

4.3. CLRM Assumptions and Tests

Before discussing the results of a regression analysis thereby to conclude about what factors to determine capital structure of SMEs operating in Addis Ababa, it is important to assure whether the model is consistent with the classical linear regression model (CLRM) assumptions or not.

Basically, there are five major assumptions underlying CLRM as described by Brooks (2008). The first assumption of CLRM is required that the mean value of an error terms to be zero. This assumption is no more vulnerable for violation, if a constant term is included in the regression equation. The second assumption holds that variance of the error terms is constant and is known as the assumption of Homoscedasticity. The violation of this assumption is known as Heteroscedasticity. The test associated with this assumption also called Heteroscedasticity test. The third assumption stated that covariance between the error terms is zero over time for time series data or over individual cross sections, for cross sectional data. This assumption holds that the errors are uncorrelated with one another. If the errors are correlated with one another, they are known to be Auto correlated and the test to detect such problem is called autocorrelation tests. The fourth major assumption that underlies CLRM stated that the explanatory variables are not correlated with the errors of an estimated model and the test associated to this problem is multicollinearity and the test is known as Multicollinearity test. Whereas, the fifth and the last major assumption of CLRM hold that the disturbances are normally distributed. To check whether the disturbances are normally distributed, a normality tests can be made.

4.3.1. Normality Test

The Assumption of Normality is used to examine whether or not a data set is well-modeled by a normal distribution and to calculate the probability that an underlying random variable is normally distributed..

Table 4.2: Shapiro-Wilk W test for normal data

Variable	Obs.	W	V	Z	Prob.>z
e	28	0.98211	1.101	0.209	0.41723

Source: Researcher's own computation through STATA 13 based on financial data collected through document review tool and NBE reports

The researcher of this study applied Shapiro-Wilk W to test normality. The result of Shapiro-Wilk W test shown in Table 4.2 that p-value is greater than 0.05 which is 0.41723 and this show the null hypothesis that indicates the residual values are normally distributed and error terms of the model are normally distributed is accepted.

4.3.2. Multicollinearity Test

Multicollinearity means that there is linear relationship between explanatory variables which may cause the regression model to be biased (Gujarati, 2003).The researcher employed Variable Inflation Factor (VIF) technique to detect the multicollinearity problem.

Table 4.3 Variable Inflation Factor (VIF) Technique to Detect Multicollinearity

Variables	VIF	1/VIF
AGE	2.99	0.334540
GR	2.24	0.445576
GDP	2.05	0.487052
INT	1.79	0.558509
PRO	1.63	0.613342
INF	1.23	0.814392
TAN	1.17	0.053039
Mean VIF	1.87	

Source: Researcher's own computation through STATA 13 based on financial data collected through document review tool and NBE reports

According to (Gujarati, 2003) if the mean VIF is above 10 there is a multicollinearity problem. But in this study as shown in the above Table 4.3 the mean VIF is less than 10 which is 1.87. Therefore multicollinearity was not a serious problem for this study

4.3.3. Heteroscedasticity Test

Heteroscedasticity is a systematic pattern in the errors where the variances of the errors are not constant (Gujarati, 2003).To detect heteroscedasticity the researcher employed Cook-Weisberg Test and the result obtained is presented below in Table 4.4

Table4.4.Breusch-Pagan/ Cook-Weisberg test for Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity Ho: Constant variance	Variables: fitted values of leverage ratio	chi2 (1) = 0.02	prob.> chi2= 0.8886

Source: Researcher's own computation through STATA 13 based on financial data collected through document review tool and NBE reports

The rule is, if p-value is greater than 0.05 accept the null hypothesis. This means H0 says there is constant variance. So, as shown in Table 4.4 p-value is greater than 0.05 that means it is 0.8886 and thus, the null hypothesis cannot be rejected. This implies that there is no heteroscedasticity problem in this study.

4.3.4. Ramsey RESET Test for Omitted Variables

RESET stands for Regression Specification Error Test and was proposed by Ramsey in 1969. This test is made on the basis of null hypothesis that says model has no omitted variables (Kibrom (2010).

Table 4.5: Ramsey RESET Test

Ramsey RESET test using powers of the fitted values of leverage ratio	Ho: model has no omitted variables	F(3, 59) = 0.62	Prob. > F = 0.60

Source: Researcher's own computation through STATA 13 based on financial data collected through document review tool and NBE reports

The RESET result, shown in Table 4.5, fails to reject the null hypothesis of no omitted variables indicating no model specification error. This implies that the regression result shows that there are no omitted variables in the model.

4.4. Descriptive Analysis

The summary of descriptive statistics includes the mean, standard deviation, minimum and maximum of one dependent variable (Leverage) and seven explanatory variables (Tangibility, Growth, Age, Profitability, GDP growth rate, inflation and lending interest rate). The total observation for the dependent variable of leverage as well as for independent variables was 28, composed of seven cross sections multiplied by 4 years data for each cross section.

Table 4.6 Summary of descriptive statistics

Variables	Observations	Mean	Maximum	Minimum	SD
Leverage	28	0.30412	0.36314	0.2529	0.04724
Age	28	1.60944	2.07944	1.38629	0.69315
Profitability	28	0.46061	0.49467	0.43508	0.02872
Growth	28	0.45212	0.78849	0.26791	0.24064
Tangibility	28	0.40206	0.45618	0.34041	0.04747
Interest rate	28	13.125	13.5	12.75	0.43301
Inflation	28	11.985	16.774	7.50403	4.7304
GDP	28	8.73195	10.2219	7.79259	1.10258

Source: Researcher's own computation through STATA 13 based on financial data collected through document review tool and NBE reports

By looking at Table 4.6 the researcher has discussed the following issues.

The mean leverage (total debt divided by total equity) of SMEs in the sample was 30.41 percent, meaning on average those sample SMEs generated over one third of their financing need for operation from debt sources of finance. That is the SMEs financing decision is inclining to the equity financing. Maximum and minimum leverage ratios, as measured by total debt ratio for a sample was 36.31 and 25.29 percent respectively whereas the dispersion of debt ratios among the sample measured with standard deviation was 4.7 percent. This refers to the debt ratio of the SMEs based on the sample measured varies with the percentage figure of 4.7%.

The mean interest rate represented by average lending rate of commercial banks, during the study period was 13.13 percent. It was also found that during four years of the study period, average lending rate of commercial banks ranged from a minimum of 12.75 percent in 2016 and 2017 up to a maximum of 13.50 percent in 2018 and 2019. The standard deviation of average lending rate during the study period was 0.43 percent which shows that there is a relatively stable in interest rate of banks in Ethiopia.

Another Macroeconomic variable employed by the researcher was Inflation rate. Average inflation rate of Ethiopian economy during the last four years of observation was 11.99 percent per annum whereas the standard deviation was 4.73 percent. Through the study period Inflation

rate ranged from 7.5 percent per annum up to 16.77 percent per annum. This indicates the existence of highly fluctuating inflation trend in Ethiopia for the last four years. The minimum annual inflation rate was recorded in the year 2017 whereas the maximum was registered in 2018.

The mean real GDP growth rate of Ethiopian economy in the last four years was 8.73 percent per annum with a standard deviation of 1.1 percent. During the study period a maximum real GDP growth rate was registered in the year 2017 with 10.2 percent whereas the minimum was registered in the year of 2018, which was 7.8 percent.

Age variable was represented by the logarithm value observation year minus establishment year of SMEs. The mean was 1.61 where as the standard deviation was 0.69. For the sample throughout the study period, the maximum age of SMEs in terms of logarithm was 1.38 years.

During the study period the average profitability of the sample SMEs was 46.06 percent which is measured by the ratio of operating income to total asset. The maximum profitability of the sample SMEs record was 49.47 percent whereas the minimum appeared with 43.51percent. The dispersion of profitability measured by standard deviation was 2.87 percent.

Growth opportunity which was measured by percentage change in total asset to total asset of average was 45.21 percent. This indicates that the asset of the SMEs has grown at a rate of 45.21 percent per annum on average during the study period. The maximum growth was 78.85 percent, whereas the minimum was 26.79 percent.

The mean of asset composition i.e. tangibility which was measured by the ratio of fixed asset to total asset was 40.21 percent. This indicates that the fixed assets of SMEs represent only 1.91 percent of their total assets. The study also indicates that tangibility of SMEs operating in Ethiopia ranges from minimum of 34.04 to maximum of 45.61 percent.

4.5. Correlation Analysis

The correlation coefficient, as defined by Kibrom (2010), is a measure of linear relationship between two variables. Correlation coefficient values are always between -1 and +1. A positive linear correlation coefficient of +1 indicates that two variables are perfectly associated, whereas a negative linear correlation coefficient implies that two variables are perfectly related. A

correlation coefficient of zero, on the other hand, shows that the two variables have no linear relationship.

Table 4.7 below presents a correlation matrix which shows the degree of linear relationship between the dependent and independent variables of the study.

Table 4.7 Correlation Matrix of Dependent and Independent Variables

	LEV	***AGE***	***PRO***	***GRO***	***TAN***	***INT***	***IN***	***GDP***
LEV	1							
AGE	0.8327695	1						
PRO	-0.173639	0.3118695	1					
GRO	-0.0458537	-0.5103453	-0.7563672	1				
TAN	-0.2831216	0.0413829	0.1419617	0.4744687	1			
INT	0.4692668	0.5773502	-0.2432004	-0.4162442	-0.7139474	1		
IN	0.5107195	0.6749280	-0.1111424	-0.5164807	-0.6670585	0.9891096	1	
GDP	0.924265	-0.5679775	0.522243	-0.3889107	-0.2879918	-0.4038860	-0.391110	1

Source: Researcher's own computation through Microsoft excel based on financial data collected through document review tool and NBE reports

Table 4.7 shows that leverage (dependent variable) which was measured by total debt to total equity was negatively correlated with tangibility of asset, profitability, and growth opportunity for the coefficient estimates of correlation -0.2831216, -0.173639, and -0.04585 respectively. While Age, GDP, inflation and interest rate that having positive correlation with leverage of SMEs for the coefficient, 0.8327695, 0.924265, 0.5107195, and 0.4692668 respectively.

4.6. Regression Analysis and Discussion of Results

4.6.1. Regression Analysis

In this section of the study, the regression analysis presented which is followed by discussion of results obtained from the analysis based on random effects model of panel estimation. This

regression analysis represents discussion of results from which conclusion to be made about factors affecting capital structure decision as represented by leverage of SMEs.

To recall from chapter three the random effects model used throughout this study which equates firm specific and macroeconomic explanatory variables with the dependent variable is:

Leverage = α + β1 (INT t) + β2 (INF t) + β3 (GDP t) + β4 (Age i, t) + β5 (Prof i, t) + β6 (Grow i, t) + β7 (Tan i, t) + ε i

Where

Leverage =Debt Equity Ratio over 4 years period of 172 SMEs)

α = the constant (intercept) term

β1, β2…. β7 respective coefficients for independent variables

(INT t) = the interest rate in year t

(INF t) = the annual inflation rate in year t

(GDP t) = Annual GDP growth rate in year t

(Age i, t) = represents age of SME i at year t

(Prof i, t) = represents profitability of SME i at year t

(Grow i, t) = represents growth of SME i at year i

(Tan i, t) = represents tangibility of SME i at year t

ε = error term which is constant over time

In order to choose from the most widely used panel estimation models of random effects and fixed effects models, the researcher employed a Haussmann test of correlated random effects. The Haussmann test result as it is shown in table 4.1, suggested that random effects model was appropriate than and preferable to the fixed effects model. Table 4.8 presents the result of the random effects model.

Table 4.8 Random Effects Regression Result

Variables	Coefficient	Std. error	t-statistics	Prob.
INT	0.1100365	0.05761	-1.91	0.075*
INF	0.0102679	0.0163992	0.63	0.531
GDP	0.2604886	0.2495003	1.04	0.296
AGE	0.0720951	0.0175837	4.10	0.000 ***
PRO	-0.0396606	0.02167	-1.83	0.082 *
GRO	-0.073414	0.0263291	2.79	0.005 **
TAN	-0.4666403	0.1708098	-2.73	0.006*
CONS	-0.0302939	0.0570062	-0.53	0.595
R-squared	0.7485			
*** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level				

Source: Researcher's own computation through STATA 13 based on financial data collected through document review tool and NBE reports

As shown in Table 4.8 the R-square of the model is 0.7485. This implies that around 75 percent of the variation in leverage is explained by the explanatory variables that are considered in the study. Table 4.8 also shows that of the explanatory variables considered in this study five were found to have significant effect on the dependent variable at 1%,5% and at 10%. The discussion is presented as follows:

Interest Rate(INT)

Research hypothesis 1 was formulated in chapter one for the assessment of the relationship between Leverage and interest rate. Beta coefficient associated with Interest rate rejects the null hypothesis. In this study, interest rate is estimated to be negatively related with bank's leverage ratio and this relationship is found statistically significant with p-value 0.075 at 10 percent significance level. The positive coefficient of interest rate is in consistent with tradeoff theory's prediction of direct relationship between interest rate and debt level and found significant. This finding is in line with a study by Mehdi et al. (2012).

Age

Research hypothesis four was formulated to estimate the relationship between age and leverage. The result of beta coefficient linked to age variable disproves the null hypothesis and it shows positive relationship between capital structure and age of SMEs. In this study, age is estimated to have significant positive relationship with leverage of SMEs. The positive relationship is statistically significant at 1 percent significance level with p-value 0.000

This finding can be interpreted as, the more firms stay in business, the more likely they become known and mature thus they can easily raise more debt. This result in turn indicates that older SMEs have a reputation of credit and build a good relationship with creditors, thus, they have better conditions to obtain debt than younger SMEs. The observed sign coincides with Static trade-off theory but opposes pecking order theory. Accordingly, with 1 percent significance level and direct relationship between age and leverage, it is expected that aged SMEs maintain high debt to equity ratio and utilize more debt source compared to equity source. This finding is consistent with empirical evidences of Bayeh (2011), Mohamed and Mahmoud (2013), Sadaam (2014) and Kibrom (2010).

Profitability(PRO)

Research hypothesis five was formulated for the assessment of the relationship between leverage and profitability. Beta coefficient associated with profitability rejects the null hypothesis. In this study, profitability is estimated to be negatively related with SMEs' leverage ratio and this relationship is found statistically significant at 10 percent significance level with p-value 0.082. This implies that, higher profits increase the level of internal financing of SMEs. This result is consistent with pecking order theory which states that firms prefer to finance first with internal funds before raising external financing. Empirically this result is consistent with Woldemikael (2012), Bayeh (2011) and Kibrom (2010) but contrary to study of Solomon (2012) and Saddam (2014).

Growth Opportunity(GRO)

Research hypothesis six was formulated to predict that the relationship exists between capital structure and growth, and the regression result of beta coefficient linked to growth rejects the null hypothesis. The study result based on random effects estimator as shown in table 4.9, implies that the existence of negative and significant relationship of growth opportunity and

leverage with a p-value of 0.005 at 5 percent significance level. This result explains that SMEs whose growth opportunities were high maintain low debt to equity ratio and vice versa. This result is consistent with pecking order theory. Empirically this finding is consistent with findings of Woldemikael (2012), Sadaam (2014) and Usman (2013) but contrary with finding of Kibrom (2010).

Tangibility

The last research hypothesis, hypothesis seven, was developed to assess the relationship between leverage and tangibility of asset. The result of beta coefficient

associated with tangibility variable accept the null hypothesis and proved that there is a negative and significant relationship between capital structure and tangibility of SMEs with p-value of 0.06 at 10 percent significance level. This negative sign of tangibility of asset is contrary with Static tradeoff theory, pecking order theory and agency cost theory that theorize positive relationship between leverage and tangibility. Empirically this result is contrary with the findings of Kibrom (2010).

Based on table 4.9 The findings demonstrate that a SME's, Interest rate, age, growth opportunity, tangibility were significant factors to the dependent variable of capital structure, whereas Inflation rate and GDP growth rate variables were insignificant factors to the dependent variable of capital structure.

CHAPTER FIVE

Conclusions and Recommendations

The final chapter of this paper presents summary of findings, conclusion based on results found and providing recommendations.

5.1. Summary of Findings

Descriptive result of the study shows the mean leverage (total debt divided by total equity) of SMEs in the sample was 30.41 percent, meaning on average those sample SMEs generated over one third of their financing need for operation from debt sources of finance. That is the SMEs' financing decision is inclining to the equity financing.

The researcher regress macroeconomic variables of interest rate, inflation rate and GDP growth plus firm specific variables of age, profitability, growth opportunity and tangibility against the dependent variable leverage as measured by debt to equity ratio. In order to examine the relationship thereby to find out significant factors that affect capital structure decision of SMEs, the researcher employed random effects model of panel estimation with the help of STATA 13.

Then based on random effects model estimation, a researcher found the following relationship of macroeconomic and firm specific factors on the dependent variable.

- Interest rate as measured by lending rate of commercial banks, found to have a positive and statistically significant relationship with the dependent variable which was represented by leverage. This positive relationship between interest rate and leverage is in consistent with tradeoff theory's prediction of direct relationship between interest rate and debt level and found significant.
- Age variable which is represented by logarithm value of the difference between observation year and establishment year of SMEs found to have a positive and statistically significant impact on debt level of SMEs. This reflects that under the study period, aged SMEs were more leveraged than younger SMEs that operate in the SMEs' sector. This findings is in line with Static trade-off theory but opposes pecking order theory
- Profitability measured by the ratio of operating income to total assets found to have a negative and statistically significant impact on the leverage of SMEs. This result implies

that SMEs having high profit maintains low debt to equity ratio. This result is consistent with pecking order theory which states that firms prefer to finance first with internal funds before raising external financing.

- Growth opportunity measured in terms of percentage increase in total assets of SMEs was found that negative and statistically significant effect on leverage of the SMEs. This result explains that SMEs whose growth opportunities were high maintain low debt and vice versa. This result is consistent with pecking order theory.
- Tangibility of asset variable which is measured by as the ratio of fixed asset to total asset found that negative and statistically significant to leverage ratio of SMEs. This negative sign of tangibility of asset is contrary with Static tradeoff theory, pecking order theory and agency cost theory that theorize positive relationship between leverage and tangibility.
- The remaining variables inflation rate and GDP growth rate were found to have insignificant relationship with the dependent variable. In more specific manner all these variables were found to have positive but not significant relationship with leverage of SMEs. This positive sign attached with coefficient of GDP growth and inflation rate is consistent with tradeoff theory but it is insignificant.

5.2 Conclusions

Capital structure is the mix of debt and equity that a company uses to finance its business. In this research capital structure represented by leverage measure of total debt to equity ratio, is a composition of debt and equity that a firm uses to make up its business. Following the work of Modigliani and Miller (1958), theoretical as well as empirical works were conducted in relation with capital structure in general and regarding its determinant factors in particular.

Based on the above major findings the study made the following conclusions;

- The study concludes that the more firms stay in business, the more likely they become known and mature thus they can easily raise more debt. This implies that older SMEs have a reputation of credit and build a good relationship with creditors, thus, they have better conditions to obtain debt than younger SMEs.

- The study also concludes that the higher profits of SMEs increase the level of internal financing of SMEs. This result is consistent with pecking order theory which states that firms prefer to finance first with internal funds before raising external financing.

- The findings of the study implied the research to conclude that SMEs whose growth opportunities were high maintain low debt to equity ratio and vice versa. This result is consistent with pecking order theory.

- Based on the above findings it can be conclude that GDP growth and inflation rate has no significant effect on the capital structure choice of SMEs .

- Finally the study concluded that, based on the regression results tangibility was found to be (positive and significant)and interest rate was found to be (negative and significant) factor that affect capital structure decision measured by leverage of SMEs.

5.3 Recommendations

Based on the major findings and conclusion discussed above, the researcher drawn the following recommendations.

- The result of this study shows that SMEs use irregular mix of debt to equity ratio to finance their business which is exposed to different factors that may affect its leverage ratio. Accordingly SME's owners, shareholders should adopt to use optimal mix of debt to equity ratio to finance their business and maximize their value.
- The study found that SME's age, profitability, growth opportunity and tangibility of asset were the significant factors that can influence in financing decision of SMEs. Accordingly, managers, shareholders, and potential investors of SMEs, are recommended to give closer consideration for such factors in order to get the fruits of an optimal capital structure.
- SMEs need to use optimal mix of capital structure by reducing their cost of capital and maximizing their value; they should work in line with keeping the profitability, using growth opportunities and tangibility of assets.
- Since the use of best mix of debt to equity ratio of SMEs is important for their continuity in business activity and involvement in the mobilization of resources in the whole

economy, SME's owners, stakeholders, investors and creditors should be more concerned on achieving the optimal mix of capital structure.

- Further, determinants of capital structure may be determined by other different factors such as corporate governance, unemployment rate, and foreign exchange rate, and others. Hence; researchers should include the above factors.

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APPENDIX

Addis Ababa University
College of Business and Economics
MBA in Finance

Document Review Tool to gather data from SMEs

This document review tool is prepared by MBA in finance student of Addis Ababa University, college of business and economics. The objective of this review tool is to collect information concerning DETERMINANTS OF CAPITAL STRUCTURE IN SMALL AND MEDIUM SIZED ENTERPRISES IN ETHIOPIA (A CASE STUDY IN ADDIS ABABA CITY ADMINISTRATION). You are kindly requested to complete this review tool sincerely and honestly. All information you provide will be kept with strict for academic purpose and will not be used for other purpose than the intended one. Thank you in advance!

1. Name of the SMEs _____
2. Startup year _____
3. Sector in which the SME involved in

Manufacturing ☐

Urban Agriculture

Construction ☐

Services ☐

Trade ☐

Please fill in the table below correctly. Indicate the value on each of the following items for the years given

Years / **Items**										
Current Liability (Birr)										
Long term Liability (Birr)										
Total Liability (Birr)										
Current Asset (Birr)										
Fixed Asset (Birr)										
Total Asset (Birr)										
Total Equity (Birr)										
Operating Income (Birr)										

Addis Ababa University

College of Business and Economics

MBA in Finance

Document Review Tool to gather data from National Bank of Ethiopia

This document review tool is prepared by MBA in finance student of Addis Ababa University, college of business and economics. The objective of this review tool is to collect information concerning DETERMINANTS OF CAPITAL STRUCTURE IN SMALL AND MEDIUM SIZED ENTERPRISES IN ETHIOPIA (A CASE STUDY IN ADDIS ABABA CITY ADMINISTRATION). You are kindly requested to complete this review tool sincerely and honestly. All information you provide will be kept with strict for academic purpose and will not be used for other purpose than the intended one. Thank you in advance!

Please fill in the table below correctly. Indicate the value on each of the following items for the years given

YEAR	GDP GROWTH	INFLATION RATE	INTERST RATE